

1967

County of

Water Resources Data for Wisconsin

Wisconsin

- Part 1. Surface Water Records
Part 2. Water Quality Records

Courtesy of



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of Wisconsin
and with other agencies

United States Department of the Interior
Geological Survey - Water Resources Division

WATER RESOURCES DATA
FOR
WISCONSIN

1967

Part 1: Surface Water Records

Prepared in cooperation with

Wisconsin Department of Natural Resources
Division of Conservation
Division of Resource Development
University Extension, The University of Wisconsin
Geological and Natural History Survey
Wisconsin State Highway Commission
Southeastern Wisconsin Regional Planning Commission
Corps of Engineers, U. S. Army
Fish and Wildlife Service, Department of the Interior
Soil Conservation Service, Department of Agriculture

Copies of this report may be obtained from
District Chief, Water Resources Division
U. S. Geological Survey
1815 University Avenue
Madison, Wisconsin, 53706

1968

CALENDAR FOR WATER YEAR 1967

OCTOBER 1966

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JANUARY 1967

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JUNE 1967

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AUGUST 1967

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SEPTEMBER 1967

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WATER RESOURCES DATA FOR WISCONSIN, 1967

Part 1: Surface Water Records

INTRODUCTION

The surface-water records for the 1967 water year for gaging stations, partial-record stations, and miscellaneous sites within the State of Wisconsin are given in this report. For convenience there are also included records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U. S. Geological Survey, under the direction of C. L. R. Holt, Jr., district chief.

This report is a continuation of a new method of presenting, annually, basic data on surface-water records by States. Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U. S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in Wisconsin were contained in Parts 4 and 5 of that series.

Beginning with the 1961 water year, streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports is limited and primarily for local needs. Records will be published in Geological Survey water supply papers at 5-year intervals.

COOPERATION

Cooperative agreements between the U. S. Geological Survey and organizations of the State of Wisconsin for the systematic collection of streamflow records began in 1913. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

Wisconsin Department of Natural Resources, Division of Conservation, L. P. Voigt, administrator.

Wisconsin Department of Natural Resources, Division of Resource Development, Freeman Holmer, administrator.

Wisconsin State Highway Commission, Wesley J. Burmeister, State highway engineer, and W. A. Kline, chief bridge engineer.

Southeastern Wisconsin Regional Planning Commission, Kurt W. Bauer, executive director.

University Extension, the University of Wisconsin Geological and Natural History Survey, George F. Hanson, state geologist and director.

Assistance in the form of funds or services was given by the Corps of Engineers, U. S. Army, in collecting records for 24 gaging stations published in this report.

Assistance was also furnished by the Fish and Wildlife Service of the United States Department of Interior and the Soil Conservation Service of the United States Department of Agriculture.

The following organizations aided in collecting records:

Wisconsin Valley Improvement Co.; Lake Superior District Power Co.; Wisconsin-Michigan Power Co.; Wisconsin Public Service Corp.; Northern States Power Co.; Dairyland Power Cooperative; Wisconsin Power and Light Co.; Nekoosa-Edwards Paper Co.; Wisconsin River Power Co.; and Milwaukee County Park Commission.

DEFINITION OF TERMS AND ABBREVIATIONS

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

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height, or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimes will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

Partial-record station is a particular site where limited stream-flow data are collected systematically over a period of years for use in hydrologic analyses.

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 (in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

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 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 or lake. 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.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main-stem station listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed 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 indentation in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indentation shows 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.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations, so that the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete 8-digit number for each station, such as 04-0255.00, includes the part number "04" and a six digit number. In this report, the nonessential zeros are not shown. For example, the complete number 04-0255.00 would appear as 4-0255, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

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 a water-stage recorder that gives a continuous record of fluctuations (for digital recorders, a tape punched at 15- or 60-minute intervals) or from direct readings on a nonrecording gage. 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.

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, or computation of flow over dams or weirs), 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 in effect 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 required 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. For such stations, the rate of change in stage is used as a factor in determining discharge.

At some gaging stations 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.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute the daily discharge. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins.

The data in this report generally comprise a description of the station, and a table showing the daily discharge and monthly and yearly discharge of the stream. For regular continuing gaging stations, records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1966 water year is shown on page II to facilitate finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. 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 "Records available" are given periods for which there are published records for the present station or for stations generally equivalent to the present one. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U. S. Coast and Geodetic Survey. 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 if it is significant. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." 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 to conditions which affect the natural flow at the gaging station is given under "Remarks."

The daily table gives the discharge corresponding to the daily mean gage height unless there are large or rapid changes in discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean discharges for several parts of a day. For digital records, the daily mean discharge is always the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; 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. Discharge for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."). Figures 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 flow is appreciably affected by regulation by reservoirs upstream.

In the yearly summary below the monthly summary, the figures 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 height for 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 can be presented. Peak discharges are not published for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time, for example 12:30 a.m. is 0030; 1:30 p.m. is 1330.

In a general footnote, introduced by the word "Note", certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For gaging stations on lakes the data presented comprise a description of the station and a table of stage observations. For reservoirs a brief description and a table showing month-end contents are given.

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 under "Remarks" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good" within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Discharge 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, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversion, 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.

The data normally collected at partial-record stations and at miscellaneous sites are given at the end of this report. Data for partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are given in special tables after the list of measurements at miscellaneous sites.

Information of a more detailed nature than that published for most of the gaging stations is on file in the district office, such as discharge measurements and recorder charts or nonrecording-gage readings. Many gaging-station records in the State through 1960 have been analyzed with an electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year. These data are in a report "Flow Characteristics of Wisconsin Streams," and "Supplement to Report on Flow Characteristics of Wisconsin Streams," copies of which are available from the district office.

At or near some gaging stations, water-quality records also are collected. Data are obtained on the chemical quality of the stream water, on water temperature, on suspended-sediment concentration, and on the particle-size distribution of suspended sediment and bed material. These data are given in Part 2 of this report. Under the "Remarks" paragraph of the gaging-station description, reference is made to water-quality records collected on a regular basis.

SELECTED REFERENCES

- Ericson, D. W., Floods in Wisconsin, magnitude and frequency: 1961.
- Young, K. B., Flow characteristics of Wisconsin streams: 1963.
- _____, Supplement to report on flow characteristics of Wisconsin streams: 1965.
- Holt, C. L. R., Young, K. B., and Cartwright, W. H., 1964, The water resources of Wisconsin in Wisconsin Blue Book: State of Wisconsin, Madison, Wisconsin, p. 178-198.
- Olcott, P. G., 1968, Water resources of Wisconsin--Fox-Wolf River basin: U. S. Geol. Survey Hydrol. Inv. Atlas HA-321.

HYDROLOGIC CONDITIONS

Streamflow in Wisconsin for the water year ending Sept. 30, 1967, varied from less than 40% of the long-term average in the upper Rock River basin to over 125% of average in most of the Chippewa and Black River basins and some tributaries of the Wisconsin River (see figure 1). The above-average flows were due to the high runoff from snowmelt which occurred near the end of March and the first half of April.

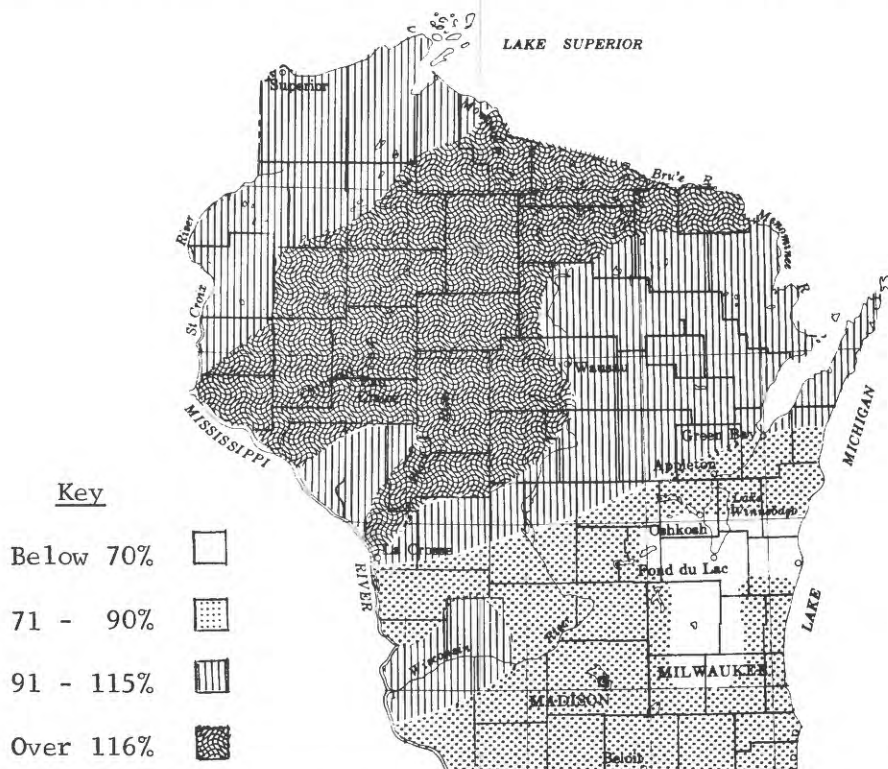


Figure 1. Variation of the 1967 mean annual streamflow as a percent of the long-term average flow.

Runoff in the upper Rock River basin was below normal most of the year and runoff from snowmelt was minimal. Runoff for the year at the gaging station on the West Branch Rock River near Waupun was only 2.20 inches, a sharp contrast from the 12.63 inches of runoff during the 1966 water year. It was the fourth lowest runoff in the last 18 years.

Excessive monthly flows (upper 25% of record) occurred in the northwest in October, April and June (see figure 2). In the northeast excessive monthly flows occurred in April and June, July, August. Otherwise, monthly flows in the north were near or above average. In the south some streams experienced excessive flow in January and some in June. During the rest of the year flow was near average or below. In the extreme southwest corner runoff was deficient (lowest 25% of record) for five months, May through September.

The spring breakup came suddenly in northern Wisconsin. Unseasonal high daytime temperatures and warm nights occurred near the end of March and quickly melted a heavy snow cover. Damage from the spring flood was estimated in millions of dollars, and as a result, numerous counties were declared disaster areas. The table below lists some of the outstanding peak flows.

Outstanding Flood Discharges for March-April 1967 in Wisconsin

Stream	Drainage Area (sq mi)	Period of Record	Maximum Peak Previously Known			Maximum in 1967 Flood		
			Date	Discharge	cfs/sq mi	Date	Discharge	cfs/sq mi
Jump River at Sheldon	574	1915-67	8/31/41	46,000	80	4/1/67	20,900	36
Chippewa River at Chippewa Falls	5,600	1888-1967	9/1/41	102,000	18	4/1/67	83,300	15
Hay River at Wheeler	426	1950-67	4/11/65	10,900	26	3/31/67	13,600	32
Red Cedar River at Menomonie	1,760	1913-67	4/4/34	40,000	23	3/31/67	33,200	19
Chippewa River at Durand	9,010	1928-67	5/3/54	101,000	11	4/2/67	123,000	14
Black River near Galesville	2,120	1931-67	9/11/38	58,000	27	4/1/67	65,500	31
Wisconsin River at Rothschild*	4,000	1944-67	4/12/65	49,200	12	3/31/67	49,200	12
Big Eau Pleine River at Stratford	224	1914-25 1937-67	9/9/38	41,000	183	3/30/67	18,100	81
Yellow River at Babcock	223	1944-67	4/2/52	11,600	52	3/31/67	10,800	48

*Flood of Sept. 1, 1941, reached a discharge of 75,000 cfs (from tailwater data at Rothschild dam and rating curve extended above 45,000 cfs).

High flows occurred in the Kickapoo Valley in June, the result of rains over a period of several days. Up to nearly five inches of rain was reported at some stations in the basin.

Runoff was also high in the southeast in June. That of the Fox River at Wilmot (at the Wisconsin-Illinois line) was the second highest for June for the period of record (1939-67). Yearly instantaneous maximums for other small streams south and southwest of Milwaukee occurred in the June 10-13 period.

Figures 3 and 4 indicate for selected lakes the extremes of stage for water year 1967 compared with those of each water year since 1937. No new maximum or minimum stage occurred on these lakes during the 1967 water year.

HYDROLOGIC CONDITIONS

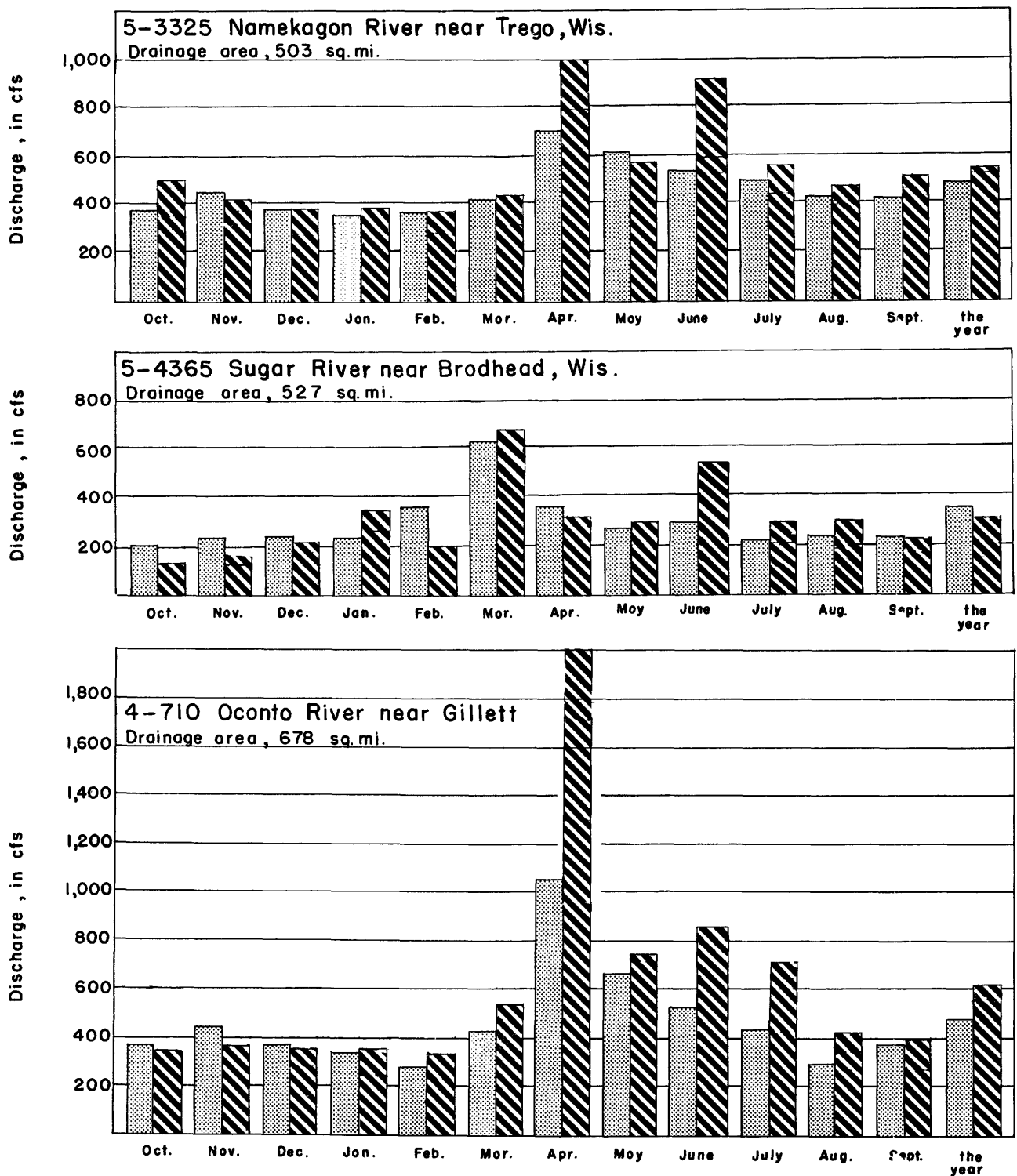


Figure 2. Comparison of discharge at three long-term representative gaging stations during 1967 water year with median discharge for period 1931-60.

 Median of monthly and yearly mean discharge for period 1931-60.
 Monthly and yearly mean discharge for 1967 water year.

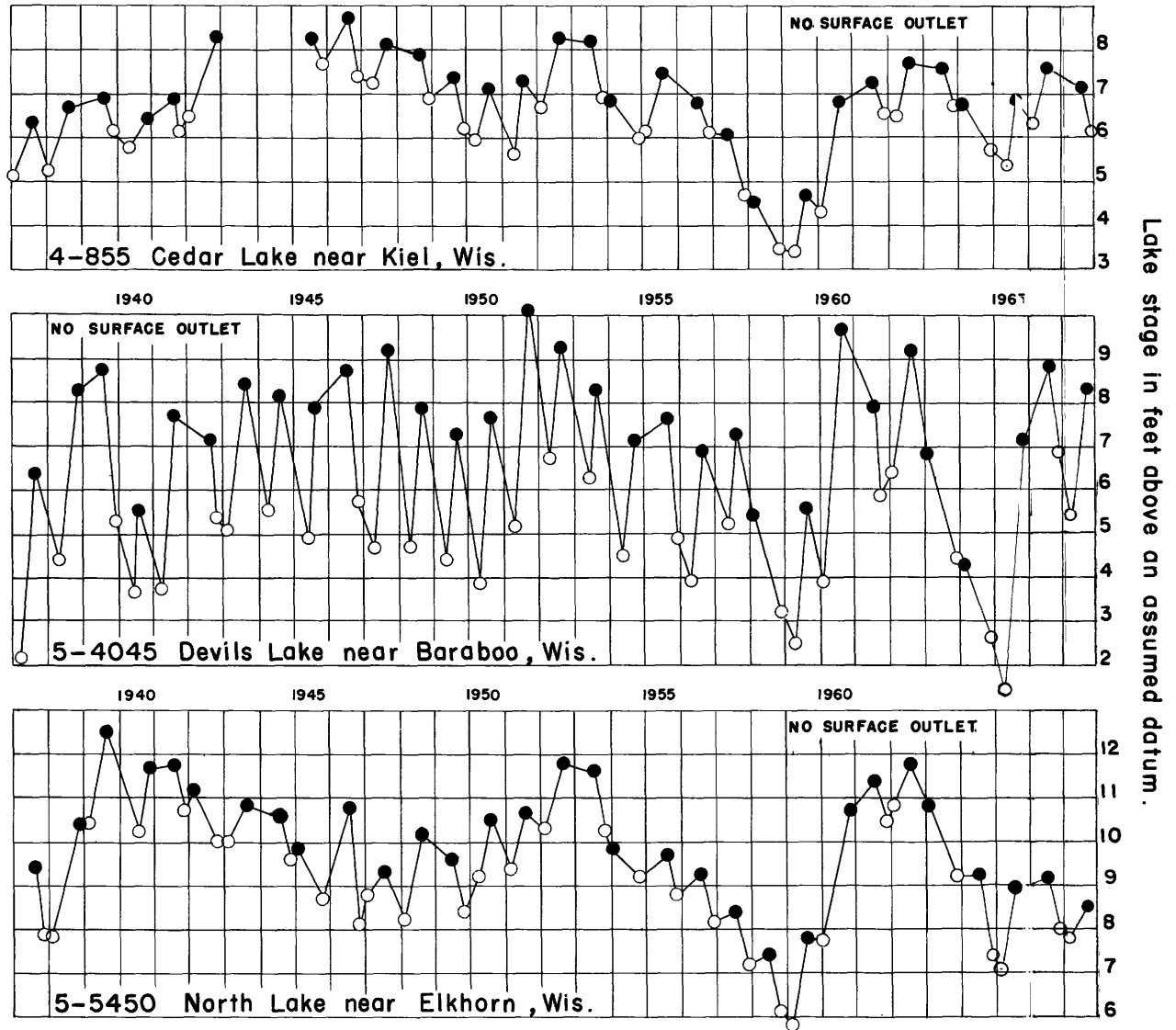


Figure 3. A comparison of extremes of stage of three southern lakes for each water year since 1937.

- Maximum stage observed
- Minimum stage observed

Connecting lines do not indicate actual stage between extremes.

HYDROLOGIC CONDITIONS

Lake stage in feet above an assumed datum.

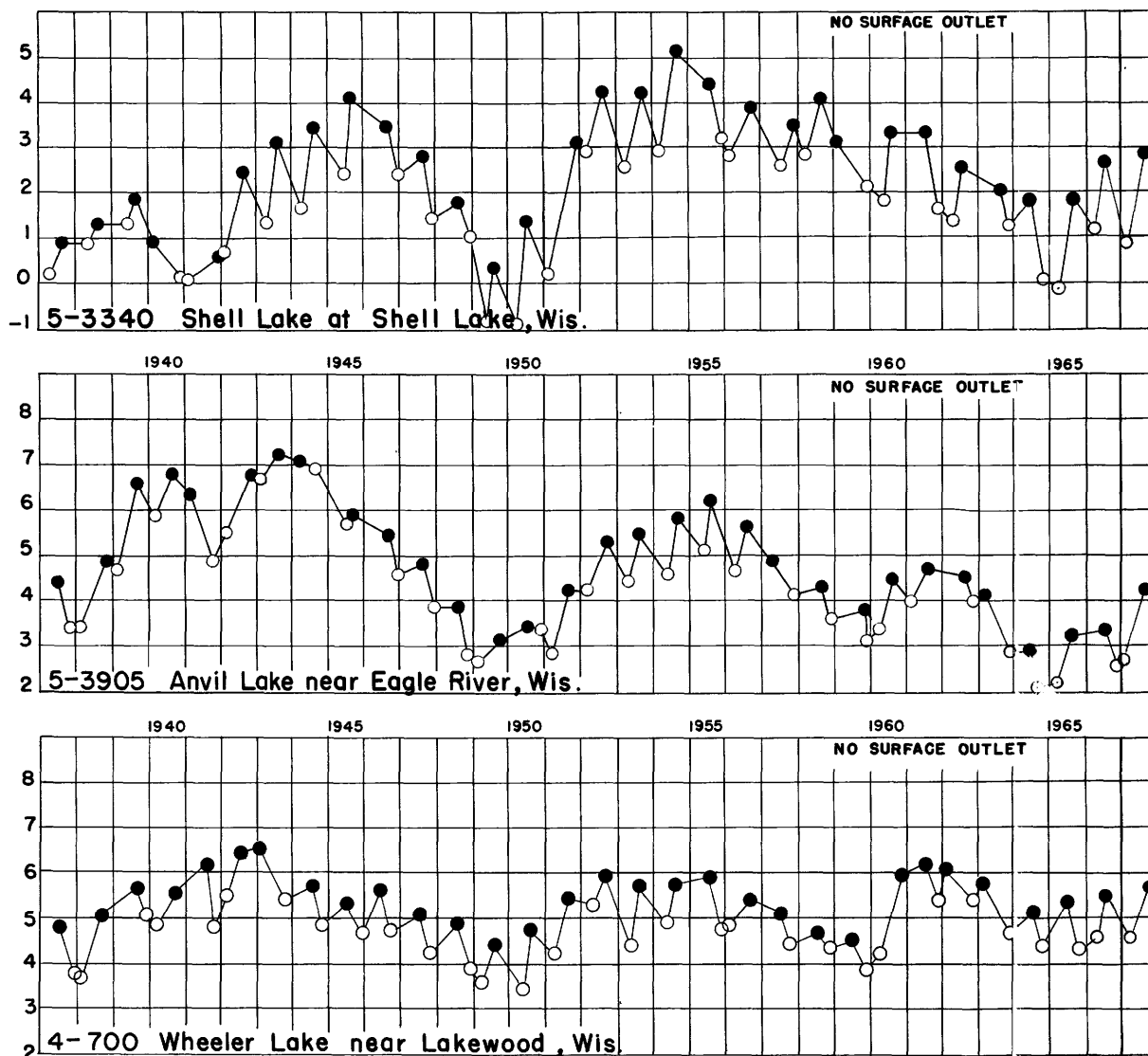


Figure 4. A comparison of extremes of stage of three northern lakes for each water year since 1937.

● Maximum stage observed

○ Minimum stage observed

Connecting lines do not indicate actual stage between extremes.

STREAMS TRIBUTARY TO LAKE SUPERIOR

4-0255. Bois Brule River at Brule, Wis.

Location--Lat 46°32'15", long 91°35'45", in NW 1/4 SW 1/4 sec. 23, T. 47 N., R. 10 W., on right bank, 1.4 miles southwest of Brule Post Office, 1.4 miles downstream from Nebagamon Creek, and 1.7 miles upstream from Little Brule River.

Drainage area--113 sq mi.

Records available--October 1942 to September 1967. Prior to January 1943 monthly discharge only, published in WSP 1377.

Gage--Digital water-stage recorder. Datum of gage is 948.49 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1964, chain gage at same site and datum supplemented by graphic water-stage recorder part of 1959-62. Oct. 1, 1964, to July 11, 1967, graphic water-stage recorder at same site and datum.

Average discharge--25 years, 169 cfs.

Extremes--Maximum discharge during year, 963 cfs Mar. 31 (gage height, 4.31 ft); minimum, 104 cfs July 31, Aug. 5 (gage height, 1.40 ft).

1942-67: Maximum discharge, 1,520 cfs June 5, 1944 (gage height, 5.2 ft, from graph based on gage readings), from rating curve extended above 750 cfs; minimum observed, 67 cfs Mar. 13, 1943.

Remarks--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	143	115	138	132	120	545	210	137	238	142	124
2	131	142	105	136	132	120	451	204	135	228	152	122
3	132	146	115	134	132	120	386	198	132	216	141	120
4	143	137	125	132	132	120	357	188	134	200	135	119
5	143	138	130	132	132	120	359	182	138	190	128	117
6	138	140	135	134	132	120	338	174	148	178	132	119
7	137	140	142	136	130	120	326	178	150	170	135	118
8	134	142	146	138	128	122	328	186	178	170	133	117
9	132	140	137	140	126	128	333	184	184	174	129	117
10	134	142	138	144	124	130	321	182	182	174	126	115
11	131	140	130	143	124	131	300	210	192	161	123	117
12	129	143	120	144	125	129	287	214	218	151	122	117
13	129	138	115	145	125	129	276	204	230	142	121	127
14	138	137	125	146	126	129	284	196	410	137	120	125
15	186	137	137	146	126	129	298	186	549	133	119	176
16	212	138	135	142	125	129	298	180	542	136	118	159
17	206	142	135	136	122	125	331	172	467	143	118	147
18	196	143	134	132	122	120	343	169	415	138	125	137
19	186	138	134	134	122	124	326	165	415	133	122	133
20	176	137	125	136	120	131	310	161	426	129	119	131
21	167	137	122	136	120	134	296	165	381	127	118	132
22	161	140	120	140	120	132	274	170	362	144	117	131
23	156	145	120	140	120	132	257	170	357	191	117	129
24	151	145	120	140	120	134	242	165	340	183	115	129
25	150	153	122	136	120	140	228	161	323	176	115	127
26	148	156	126	134	120	148	222	156	296	173	163	125
27	146	163	130	134	120	150	214	153	280	155	169	125
28	145	156	130	134	120	160	206	150	276	141	156	125
29	145	130	135	132	- - - - -	170	202	146	263	135	146	125
30	143	128	136	132	- - - - -	276	196	143	259	133	138	125
31	143	- - - - -	138	132	- - - - -	709	- - - - -	140	- - - - -	131	128	- - - - -
Total	4,700	4,256	3,977	4,258	3,497	4,781	9,134	5,462	8,519	5,030	4,041	3,900
Mean	152	142	128	137	125	154	304	176	284	162	137	130
Max	212	163	146	146	132	709	545	214	549	238	169	195
Min	129	128	105	132	120	120	196	140	132	127	115	115
Cfsm	1.35	1.26	1.13	1.21	1.11	1.36	2.69	1.56	2.51	1.43	1.15	1.15
In.	1.55	1.40	1.31	1.40	1.15	1.57	3.01	1.80	2.80	1.66	1.33	1.28
Cal yr 1966: Total	62,521			Mean 171		Max 473		Min 105	Cfsm 1.51		In. 20.58	
Wtr yr 1967: Total	61,555			Mean 169		Max 709		Min 105	Cfsm 1.50		In. 20.26	

4-0261. Long Lake near Iron River, Wis.

Location.--Lat 46°35'30", long 91°20'30", in SW 1/4 sec. 35, T. 48 N., R. 8 W., at residence of Stanley Wilcox, on north end of lake 3.6 miles northeast of Iron River.

Drainage area.--1.28 sq mi. Area of Long Lake, 184 acres.

Records available.--October 1964 to September 1967 (fragmentary).

Gage.--Staff gage read once weekly during open water. Altitude of gage is 1,096 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 2.05 ft June 17, 24; minimum observed, 1.50 ft Aug. 21.
1964-67: Maximum gage height observed, 2.24 ft Mar. 31, 1966; minimum observed, that of Aug. 21, 1967

Remarks.--Lake has no surface outlet. Lake ice covered Nov. 4 to Apr. 29.

Elevation, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.78						1.87			2.03		
2												1.84
3			1.81		1.82	1.82			1.95			
4		1.81									1.92	
5		1.81										
6				1.81				1.81				
7												
8	1.78		1.79				1.87		1.82	2.01		
9									2.01			1.78
10			1.81									
11					1.82	1.84					1.92	
12		1.81						1.83				
13				1.81								
14												
15	1.78						1.91			2.01		
16												1.78
17			1.81						2.05			
18					1.82	1.84					1.86	
19		1.81						1.85				
20												
21				1.81							1.50	
22	1.78						1.91			2.01		1.72
23									2.05			
24			1.81		1.82	1.84						
25												
26		1.79								1.77	1.86	1.53
27				1.81				1.91				
28												
29	1.78				- - - - -		2.03			1.97		
30					- - - - -				2.03			1.72
31		- - - - -	1.81		- - - - -		- - - - -		- - - - -			- - - - -

STREAMS TRIBUTARY TO LAKE SUPERIOR

4-0270. Bad River near Odanah, Wis.

Location.--Lat 46°29'15", long 90°41'45", in SE 1/4 sec. 2, T. 46 N., R. 3 W., on left bank just downstream from Elm Hoist Bridge, 5.0 miles downstream from Potato River, 8.5 miles south of Odanah, and 23 miles from mouth.

Drainage area.--611 sq mi.

Records available.--July 1914 to December 1922, May 1948 to September 1967. Monthly discharge only for some periods, published in WSP 1307.

Gage.--Water-stage recorder. Datum of gage is 668.3 ft above mean sea level, datum of 1929. May 17, 1948, to Nov. 6, 1959, water-stage recorder, Nov. 7, 1959, to Oct. 18, 1960, wire-weight gage, Oct. 19, 1960, to Nov. 23, 1961, Bristol pressure gage, and Nov. 24, 1961, to July 12, 1962, wire-weight gage at same site and datum. Prior to Nov. 11, 1922, water-stage recorder at site 2 miles downstream at different datum.

Average discharge.--27 years (1914-22, 1948-67), 605 cfs.

Extremes.--Maximum discharge during year, about 11,000 cfs Apr. 2 (gage height, 14.50 ft, backwater from ice); minimum discharge, 100 cfs Sept. 9 (gage height, 2.32 ft).

1914-22, 1948-67: Maximum discharge, 27,700 cfs Apr. 24, 1960 (gage height, 21.7 ft, from floodmarks), from rating curve extended above 12,000 cfs and comparison with contracted-opening measurement of peak flow (45,600 cfs) at Odanah, drainage area 970 sq mi, approximately; minimum, 49 cfs Aug. 8, 1964 (gage height, 2.03 ft).

Flood of June 24, 1946, reached a stage of at least 22.2 ft (top of bridge submerged), from information by Indian Service.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	272	299	310	210	230	175	5,400	1,020	233	820	157	265
2	255	272	260	205	230	180	10,000	1,240	218	680	268	221
3	239	279	240	200	230	180	7,800	1,050	206	500	393	186
4	329	292	240	190	225	185	6,700	820	197	424	314	168
5	451	336	240	185	225	185	5,000	570	192	380	239	146
6	433	310	260	180	220	185	4,000	520	203	340	200	130
7	376	317	284	180	220	180	3,300	585	227	315	183	116
8	325	389	285	185	215	180	3,000	680	272	296	186	111
9	289	415	285	190	210	185	2,700	600	520	310	203	106
10	259	406	265	200	205	190	2,450	520	510	330	218	116
11	243	376	250	209	200	195	2,350	800	1,040	303	218	119
12	227	364	240	210	200	200	2,380	1,300	1,240	262	191	114
13	218	336	240	210	195	200	2,600	1,200	1,370	233	163	111
14	215	360	240	215	195	200	2,200	1,070	2,620	233	143	119
15	1,330	352	240	215	194	200	2,050	960	4,760	209	130	156
16	2,500	360	240	215	190	200	2,200	860	6,000	198	116	186
17	2,240	456	240	215	190	195	2,600	760	3,600	230	116	188
18	1,860	540	240	215	190	190	3,000	700	2,600	230	136	168
19	1,470	495	240	220	185	190	2,900	640	2,030	212	157	152
20	1,150	510	240	220	185	190	2,600	600	2,000	192	157	141
21	920	402	240	230	180	190	2,100	540	1,700	174	149	135
22	758	419	235	240	180	190	1,600	500	2,100	317	172	130
23	645	615	225	250	175	192	1,290	460	2,600	1,020	127	130
24	560	670	220	250	175	195	1,050	428	1,840	645	116	124
25	485	665	220	250	175	200	880	410	1,700	447	111	119
26	433	742	220	245	170	205	750	389	1,500	364	206	124
27	397	792	215	240	170	220	680	356	1,150	332	980	116
28	364	680	215	240	170	280	610	321	1,300	279	920	124
29	336	540	220	235	---	500	580	290	1,400	227	676	130
30	310	430	220	235	---	1,000	610	275	1,150	194	475	130
31	303	---	215	235	---	2,000	---	255	---	168	348	---
Total	20,192	13,419	7,524	6,719	5,529	8,957	85,380	20,719	46,478	10,864	8,128	4,281
Mean	651	447	243	217	197	289	2,846	668	1,549	350	262	143
Max	2,500	792	310	250	230	2,000	10,000	1,300	6,000	1,020	980	265
Min	215	272	215	180	170	175	580	255	192	168	111	106
Cfsm	1.07	.732	.398	.355	.322	.473	4.66	1.09	2.54	.573	.429	.234
In.	1.23	.82	.46	.41	.34	.55	5.20	1.26	2.83	.66	.49	.26
Cal yr 1966 : Total	240,431			Mean 659	Max 6,800	Min 84	Cfsm 1.08	In. 14.65				
Wtr yr 1967 : Total	238,190			Mean 653	Max 10,000	Min 106	Cfsm 1.07	In. 14.51				

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-2	-	14.50	11,000	6-16	2300	10.17	6,440

4-0275. White River near Ashland, Wis.

Location.--Lat 46°29'50", long 90°54'15", in sec. 6, T. 46 N., R. 4 W., at downstream end of powerplant of Lake Superior District Power Co., 0.3 mile downstream from bridge on State Highway 112 over dam, and 4.5 miles south of Ashland city limits.

Drainage area.--269 sq mi.

Records available.--May 1948 to September 1967.

Gage.--Chain gage read twice daily or more often when plant load is changed. Datum of gage is 660.15 ft above mean sea level, datum of 1929 (Lake Superior District Power Co. bench mark).

Average discharge.--19 years, 291 cfs.

Extremes.--Maximum discharge during year, 4,210 cfs Mar. 30 (gage height, 6.00 ft); minimum observed, 62 cfs Dec. 1, 2, 12, 20, 24 (gage height, 0.56 ft).

1948-67: Maximum discharge, 6,270 cfs July 1, 1953 (gage height, 7.90 ft), from rating curve extended above 3,000 cfs; minimum, 3.1 cfs Apr. 28-30, 1949 (gage height, 0.09 ft).

Remarks.--Records good except those for winter months, which are fair. Diurnal fluctuation caused by powerplant at gage.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	177	101	180	205	205	1,920	282	185	255	176	178
2	167	167	73	175	210	210	1,500	300	185	212	192	178
3	167	152	118	170	205	210	1,200	290	188	212	227	172
4	167	172	197	165	200	205	960	231	201	228	192	167
5	183	182	180	123	195	200	837	225	201	212	175	172
6	183	182	186	175	200	195	619	225	188	201	175	172
7	167	172	191	163	195	190	591	215	203	195	169	167
8	162	182	197	131	189	190	553	241	214	217	175	155
9	162	182	186	158	190	188	532	241	260	222	175	167
10	162	182	174	178	195	200	522	241	249	222	169	155
11	162	182	174	189	200	205	507	379	252	201	156	167
12	162	172	100	213	195	210	468	464	374	181	170	167
13	162	139	197	183	194	210	434	420	434	202	164	172
14	174	197	186	201	195	210	434	374	507	180	169	261
15	249	202	191	199	195	210	439	311	607	180	169	361
16	321	178	203	176	195	200	517	252	951	174	158	393
17	292	183	203	185	195	190	1,020	227	774	202	176	345
18	244	183	186	200	190	182	711	214	670	207	176	254
19	233	212	180	190	195	185	659	198	615	192	192	225
20	217	190	117	190	200	200	591	201	490	180	182	208
21	195	187	191	194	200	220	502	185	406	193	176	190
22	201	187	181	200	200	260	411	201	370	225	176	202
23	182	187	169	205	205	277	312	188	545	262	170	190
24	182	192	97	205	200	270	269	191	448	254	164	184
25	187	187	157	200	200	275	258	182	448	206	175	178
26	182	249	180	194	200	284	253	188	391	194	243	161
27	172	225	170	200	200	303	243	182	310	206	271	167
28	172	228	169	205	200	363	233	170	286	206	343	167
29	177	146	180	210	- - - - -	1,040	233	194	260	188	299	167
30	177	162	180	210	- - - - -	3,110	233	179	260	176	211	167
31	172	- - - - -	175	210	- - - - -	2,520	- - - - -	188	- - - - -	176	199	- - - - -
Total	5,918	5,538	5,189	5,777	5,543	12,917	17,961	7,579	11,472	6,361	5,971	6,009
Mean	191	185	167	186	198	417	599	244	382	205	193	200
Max	321	249	203	213	210	3,110	1,920	464	951	262	343	393
Min	162	139	73	123	189	182	233	170	185	174	156	155
Cfsm	.710	.688	.621	.691	.736	1.55	2.23	.907	1.42	.762	.717	.744
In.	.82	.77	.72	.80	.77	1.79	2.48	1.05	1.59	.88	.83	.83
Cal yr 1966 : Total	89,921		Mean	246	Max	1,490	Min	73	Cfsm	.915	In.	12.44
Wtr yr 1967 : Total	96,235		Mean	264	Max	3,110	Min	73	Cfsm	.981	In.	13.33

STREAMS TRIBUTARY TO LAKE SUPERIOR

4-0300. Montreal River near Saxon, Wis.

Location.--Lat 46°32'45", long 90°24'05", in NW 1/4 sec. 23, T. 48 N., R. 49 W., Michigan meridian, on right bank 2 miles upstream from mouth and 3.5 miles north of Saxon.

Drainage area.--262 sq mi.

Records available.--September 1938 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 760 ft (from power company data). Prior to Aug. 8, 1967, graphic water-stage recorder at present site and datum.

Average discharge.--29 years, 325 cfs.

Extremes.--Maximum discharge during year, 4,920 cfs Mar. 31 (gage height, 6.74 ft, backwater from ice); minimum daily, 110 cfs Dec. 2.

1938-67: Maximum discharge, 6,600 cfs Apr. 24, 1960 (gage height, 7.50 ft); minimum, 2 cfs Sept. 21, Oct. 8, 1939, Sept. 9, 1965.

Remarks.--Records good except those for winter months, which are fair. Diurnal fluctuation caused by Saxon Falls powerplant 1.5 miles upstream. Flow regulated by Gile Reservoir on West Branch Montreal River (capacity, 1,290,000,000 cu ft) since April 1941.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	191	197	125	185	195	150	3,700	533	204	298	191	205
2	187	184	110	185	195	160	2,400	743	204	197	248	189
3	191	190	145	180	190	165	1,970	672	191	222	214	199
4	276	200	165	180	185	165	1,600	563	191	194	240	193
5	272	214	175	180	180	170	1,920	447	187	214	226	201
6	268	222	180	175	175	175	1,770	306	208	218	204	213
7	208	191	184	170	160	180	1,320	264	208	214	229	210
8	201	248	190	165	150	190	1,270	306	240	289	226	205
9	178	264	185	170	140	195	1,530	377	264	302	260	203
10	171	236	175	175	130	200	1,520	358	244	218	264	198
11	158	211	165	185	125	200	1,170	522	353	222	261	209
12	152	180	170	194	115	200	930	693	358	208	223	212
13	146	175	180	190	115	200	819	628	298	222	194	211
14	158	180	190	190	130	200	948	545	699	222	182	212
15	676	181	190	185	130	195	1,390	358	1,340	208	181	222
16	1,240	197	190	185	130	190	1,450	280	1,570	211	181	233
17	994	260	190	180	125	185	1,840	256	1,720	248	192	232
18	700	311	185	175	125	180	2,500	229	1,370	197	215	226
19	504	248	180	180	135	175	1,830	218	921	204	241	220
20	382	236	175	185	140	170	1,440	211	632	197	211	216
21	302	204	175	190	140	170	1,090	211	569	194	201	223
22	248	244	170	200	135	165	852	214	545	268	190	203
23	222	367	165	205	130	160	728	214	788	470	188	200
24	194	358	165	205	125	162	645	226	884	298	192	195
25	191	358	170	205	120	175	527	218	819	214	187	201
26	178	377	175	210	120	190	338	201	569	289	331	204
27	201	414	180	210	125	195	298	194	306	280	693	215
28	158	300	180	205	135	210	268	197	311	191	536	203
29	146	250	180	205	- - - -	280	215	208	414	187	393	194
30	201	185	180	205	- - - -	1,490	256	208	388	191	271	204
31	191	- - - -	185	200	- - - -	3,900	- - - -	208	- - - -	178	210	- - - -
Total	9,485	7,382	5,374	5,854	4,000	10,742	38,534	10,808	16,995	7,265	7,765	6,251
Mean	306	246	173	189	143	347	1,284	349	566	234	250	208
Max	1,240	414	190	210	195	3,900	3,700	743	1,720	470	693	233
Min	146	175	110	165	115	150	215	194	187	178	181	189
Cfsm	1.17	.939	.660	.721	.546	1.32	4.90	1.33	2.16	.893	.954	.794
In.	1.35	1.05	.76	.83	.57	1.52	5.47	1.53	2.41	1.03	1.10	.89
Cal yr 1966: Total	119,138		Mean 326		Max 2,290	Min 110	Cfsm 1.24	In. 16.92				
Wtr yr 1967: Total	130,455		Mean 357		Max 3,900	Min 110	Cfsm 1.36	In. 18.51				

4-0310. Black River near Bessemer, Mich.

Location--Lat 46°30'41", long 90°04'28", in NE 1/4 SE 1/4 sec. 32, T. 48 N., R. 46 W., on right bank 450 ft downstream from bridge on county highway, 500 ft downstream from Powder Mill Creek, and 2 1/2 miles northwest of Bessemer.

Drainage area--200 sq mi.

Records available--October 1954 to September 1967.

Gage--Digital water-stage recorder. Altitude of gage is 1,150 ft (from topographic map). Prior to July 15, 1965, graphic water-stage recorder at same site and datum.

Average discharge--13 years, 227 cfs.

Extremes--Maximum discharge during year, 4,250 cfs Mar. 31 (gage height, 9.05 ft); maximum gage height, 10.04 ft Mar. 31 (ice backwater); minimum discharge, 28 cfs July 21 (gage height, 0.74 ft).

1954-67: Maximum discharge, 14,800 cfs Apr. 24, 1960 (gage height, 14.27 ft, from floodmark), from rating curve extended above 5,300 cfs on basis of slope-area measurement of peak flow; minimum, 12 cfs July 19, 1962, July 28, 29, 1965.

Remarks--Records good except those for winter months, which are fair. Some ground water pumped from mines at Bessemer.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	105	145	76	74	52	2,960	490	54	165	73	154
2	54	110	140	74	74	52	2,360	501	48	127	207	186
3	50	120	135	72	74	52	1,820	435	43	100	187	159
4	106	125	135	70	72	52	1,770	378	40	85	143	85
5	165	120	140	68	72	50	2,110	315	37	72	114	60
6	144	112	145	68	70	50	1,930	270	36	63	93	49
7	119	124	150	68	70	50	1,490	244	36	55	101	44
8	103	189	155	68	68	50	1,550	291	58	105	102	40
9	91	178	160	68	68	50	2,000	282	92	103	303	41
10	84	164	160	68	66	50	1,870	254	103	79	293	35
11	74	151	155	68	66	49	1,480	393	262	78	203	32
12	65	140	145	70	64	49	1,260	448	285	64	154	31
13	61	130	135	70	64	49	1,180	381	290	66	122	30
14	85	125	125	72	64	49	1,590	321	1,260	59	92	29
15	888	114	115	72	62	48	2,160	266	1,510	53	56	49
16	1,090	132	110	72	62	48	1,930	224	1,540	73	47	91
17	885	192	105	72	60	48	2,580	193	1,410	112	131	83
18	675	175	100	72	60	49	3,210	172	975	75	156	72
19	520	165	96	72	58	49	2,020	158	671	42	179	66
20	417	160	92	72	58	49	1,370	142	549	35	144	63
21	345	153	90	74	58	50	975	135	421	30	145	76
22	285	242	88	74	56	50	710	130	331	162	151	77
23	235	359	86	74	56	52	555	139	575	410	113	68
24	198	337	86	74	56	56	463	166	508	248	66	60
25	170	351	86	76	54	70	391	133	464	182	61	53
26	151	375	86	76	54	100	327	122	347	260	447	50
27	136	310	86	76	54	120	282	103	281	232	919	55
28	120	250	84	76	54	160	236	87	273	175	582	52
29	110	200	82	76	- - - -	220	188	79	212	130	388	49
30	100	165	80	76	- - - -	1,500	188	69	192	101	325	45
31	101	- - - -	78	76	- - - -	3,700	- - - -	61	- - - -	85	266	- - - -
Total	7,681	5,573	3,575	2,240	1,768	7,073	42,955	7,382	12,903	3,626	6,473	1,984
Mean	248	186	115	72.3	63.1	228	1,432	238	430	117	279	66.1
Max	1,090	375	160	76	74	3,700	3,210	501	1,540	410	919	186
Min	50	105	78	68	54	48	188	61	36	30	47	29
Cfsm	1.24	.93	.58	.36	.32	1.14	7.16	1.19	2.15	.58	1.04	.33
In.	1.43	1.04	.66	.42	.33	1.32	7.99	1.37	2.40	.67	1.20	.37

Cal yr 1966: Total 82,471 Mean 226 Max 3,130 Min 15 Cfsm 1.13 In. 15.34

Wtr yr 1967: Total 103,233 Mean 283 Max 3,700 Min 29 Cfsm 1.41 In. 19.20

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-31	2000	9.05	4,250	6-16	1300	5.35	1,660
4-18	0400	8.37	3,610				

STREAMS TRIBUTARY TO LAKE SUPERIOR

4-0315. Presque Isle River at Marenisco, Mich.

Location.--Lat 46°22'20", long 89°41'32", in SE 1/4 NW 1/4 sec. 21, T. 46 N., R. 43 W., on left bank 0.3 mile upstream from highway bridge in Marenisco and 1 1/2 miles downstream from confluence of East and West Branches.

Drainage area.--171 sq mi.

Records available.--February 1945 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 1,489.30 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation). Prior to May 27, 1949, wire-weight gage at site 0.3 mile downstream at different datum.

Average discharge.--22 years, 172 cfs.

Extremes.--Maximum discharge during year, 1,410 cfs Apr. 18 (gage height, 8.04 ft); minimum, 58 cfs Aug. 17 (gage height, 3.43 ft); minimum gage height, 3.42 ft Oct. 3.

1945-67: Maximum discharge, 3,520 cfs Apr. 25, 1960 (gage height, 11.25 ft); minimum observed, 13 cfs Sept. 30, 1948 (gage height, 2.25 ft, site and datum then in use).

Remarks.--Records good except those for winter months, which are fair. Occasional regulation for lake or pond level control at several places above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	105	110	100	100	82	600	460	125	232	103	133
2	69	99	110	100	100	82	900	604	125	212	161	114
3	65	96	110	98	100	80	800	616	121	207	152	99
4	80	94	115	96	100	80	660	518	110	196	134	88
5	87	90	115	94	98	78	700	377	103	184	118	87
6	86	90	120	92	98	78	720	335	108	173	101	87
7	74	94	120	92	98	78	680	323	121	156	93	89
8	73	104	125	94	96	76	764	329	149	156	93	83
9	80	116	125	96	96	76	804	323	180	154	113	80
10	92	118	120	98	96	76	855	311	175	150	112	76
11	90	117	120	98	96	76	812	341	247	155	104	74
12	89	114	120	98	96	78	748	381	259	144	92	69
13	84	116	120	98	94	78	664	379	247	133	81	64
14	93	106	120	98	94	78	634	355	333	117	74	62
15	296	101	115	96	94	78	776	325	470	112	66	90
16	495	101	115	94	94	76	925	300	720	108	62	208
17	525	109	115	94	94	76	1,210	274	940	112	65	225
18	432	117	110	94	92	74	1,400	204	880	105	83	210
19	303	110	110	94	92	74	1,280	215	688	99	99	181
20	240	113	110	94	92	74	1,040	225	574	90	99	150
21	215	113	110	96	90	74	764	223	424	82	92	137
22	205	129	105	98	90	74	640	252	355	143	86	125
23	178	144	105	100	88	76	515	247	498	245	78	112
24	133	146	105	100	86	78	492	233	592	250	80	99
25	133	161	105	100	86	82	462	220	625	235	84	93
26	154	172	105	105	84	92	299	207	556	254	122	80
27	158	162	100	105	84	110	305	189	445	232	252	80
28	129	150	100	105	82	130	353	178	348	199	257	77
29	122	140	100	100	-----	180	335	142	237	160	244	74
30	116	120	100	100	-----	300	323	123	238	129	199	72
31	110	-----	100	100	-----	400	-----	127	-----	112	161	-----
Total	5,081	3,547	3,460	3,027	2,610	3,144	21,460	9,336	10,993	5,036	3,660	3,218
Mean	164	118	112	97.6	93.2	101	715	301	336	162	118	107
Max	525	172	125	105	100	400	1,400	616	940	254	257	225
Min	65	90	100	92	82	74	305	123	103	82	62	62
Cfsm	.959	.690	.655	.571	.545	.591	4.18	1.76	2.14	.947	.690	.626
In.	1.11	.77	.76	.66	.57	.68	4.66	2.03	2.39	1.09	.80	.70
Cal yr 1966 : Total	62,736		Mean 172	Max 1,000	Min 29	Cfsm 1.01	In. 13.66					
Wtr yr 1967 : Total	74,572		Mean 204	Max 1,400	Min 62	Cfsm 1.19	In. 16.22					

4-0375. Cisco Branch Ontonagon River at Cisco Lake Outlet, Mich.

Location.--Lat 46°15'12", long 89°27'05", in E 1/2 sec. 32, T. 45 N., R. 41 W., on right bank 80 ft downstream from Cisco Lake Dam, 2 1/2 miles upstream from Langford Creek, 5 miles upstream from U. S. Highway 2, and 13 miles west of Watersmeet.

Drainage area.--50.7 sq mi.

Records available.--October 1944 to September 1967.

Gage.--Staff gage read once daily. Datum of gage is 1,676.69 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 45.6 cfs.

Extremes.--Maximum discharge during year, 240 cfs June 17 (gage height, 1.96 ft); minimum daily, 0.60 ft cfs Apr. 29, 30.

1944-67: Maximum discharge, 288 cfs May 1-4, 1951 (gage height, 2.10 ft); minimum daily, 0.20 cfs May 29 to June 17, 1948, Nov. 8, 9, 1961.

Remarks.--Records fair except those below 5 cfs, which are poor. Flow regulated by Cisco Lake (usable capacity, 15,600 acre-ft).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	82	40	40	42	25	130	62	17	42	11	33
2	16	82	40	40	42	25	130	24	5.3	31	12	13
3	17	82	42	40	42	25	130	48	5.3	33	11	11
4	17	80	40	40	49	25	130	83	5.3	31	37	9.7
5	23	77	40	40	59	25	130	106	5.9	25	1.2	9.7
6	38	74	40	42	59	25	130	90	5.9	23	1.0	9.7
7	77	74	42	45	56	25	130	75	5.9	22	1.0	9.7
8	142	71	42	45	56	25	130	106	18	22	.9	8.8
9	138	69	42	45	56	25	130	99	38	43	1.2	8.8
10	134	69	42	47	54	25	134	99	38	71	19	8.0
11	130	69	42	54	54	25	134	96	78	77	26	2.8
12	130	69	42	71	50	25	134	96	98	71	26	1.0
13	126	66	42	71	42	25	130	96	105	42	26	1.0
14	122	64	42	71	42	25	134	93	129	31	26	1.0
15	126	61	42	66	40	25	145	76	176	31	25	24
16	126	59	40	59	38	25	139	37	220	31	25	84
17	130	59	40	61	38	25	102	15	240	24	25	104
18	126	46	40	59	40	25	82	13	212	9.2	26	98
19	122	25	40	61	38	25	64	14	182	4.3	26	94
20	118	25	40	59	38	25	60	14	119	4.3	25	91
21	111	26	40	52	38	28	55	16	64	4.3	25	91
22	108	31	42	40	38	29	24	15	64	4.3	25	49
23	104	38	40	38	38	29	12	18	69	48	25	33
24	101	38	38	38	38	29	3.1	29	69	75	25	17
25	98	40	38	38	38	29	2.2	41	69	80	25	3.2
26	94	56	40	42	38	29	1.9	54	66	103	25	.9
27	91	47	40	42	36	30	1.6	54	70	111	28	.9
28	88	36	38	40	32	54	.9	51	82	88	51	.9
29	88	40	40	40	---	69	.6	47	80	59	99	.9
30	85	40	42	40	---	79	.6	45	69	25	108	.9
31	82	---	40	40	---	110	---	37	---	9.7	65	---
Total	2,924	1,695	1,258	1,506	1,231	1,015	2,529.9	1,749	2,405.6	1,275.1	852.3	819.9
Mean	94.3	56.5	40.6	48.6	44.0	32.7	84.3	56.4	80.2	41.1	27.5	27.3
Max	142	82	42	71	59	110	145	106	240	111	108	104
Min	16	25	38	38	32	25	.6	13	5.3	4.3	.9	.9
Cal yr1966 : Total	16,234.7		Mean	44.5	Max	188	Min	.6	Cfsm	.878	In.	11.92
Wtr yr1967 : Total	19,260.8		Mean	52.8	Max	240	Min	.6	Cfsm	1.04	In.	14.12

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0610. Brule River near Florence, Wis.

Location.--Lat 45°57'31", long 88°15'57", in SE 1/4 SE 1/4 sec. 11, T. 41 N., R. 32 W., Michigan meridian, on left bank 40 ft upstream from highway bridge, 1 mile upstream from Paint River, 2 1/2 miles north of Florence, and 5 miles upstream from confluence with Michigan River.

Drainage area.--389 sq mi.

Records available.--January 1914 to February 1916, June 1944 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 1,210 ft (from topographic map). Prior to Aug. 29, 1944, wire-weight or chain gages at bridge 40 ft downstream at present datum. Aug. 29, 1944, to Sept. 29, 1966, graphic water-stage recorder at present site and datum.

Average discharge.--24 years (1914-15, 1944-67), 347 cfs.

Extremes.--Maximum discharge during year, 2,010 cfs Apr. 10 (gage height, 4.36 ft); maximum gage height, 7.99 ft Mar. 31 (ice jam); minimum daily discharge, 220 cfs Jan. 4-6.
1914-16, 1944-67: Maximum discharge, 4,700 cfs July 2, 1953 (gage height, 6.57 ft); maximum gage height, 8.01 ft Jan. 8, 1960 (ice jam); minimum discharge, 118 cfs Dec. 2, 1963 (discharge measurement); minimum gage height, 1.79 ft July 24, 1964.

Remarks.--Records good except those for winter months, which are fair. Discharge includes mine pumpage (see sta. no. 605 in Michigan Report).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	284	278	310	225	280	260	1,500	668	363	506	291	283
2	273	272	270	225	280	255	1,590	692	349	468	363	271
3	270	270	270	225	275	250	1,560	605	340	523	353	263
4	291	270	270	220	270	245	1,400	549	328	484	317	259
5	292	270	280	220	270	240	1,390	516	330	429	299	251
6	283	270	300	220	265	235	1,500	490	368	392	304	248
7	272	270	315	230	265	230	1,440	469	376	363	424	244
8	267	272	330	235	260	230	1,340	465	434	353	408	244
9	269	271	340	245	260	230	1,540	458	496	368	429	244
10	271	272	340	255	260	230	1,900	447	451	368	403	237
11	268	270	320	255	255	235	1,920	504	485	392	349	237
12	264	265	300	260	250	240	1,540	603	560	363	313	237
13	260	260	280	260	250	240	1,240	598	547	344	295	237
14	277	260	270	255	250	245	1,170	557	505	330	283	244
15	724	260	270	245	250	245	1,320	510	492	317	279	363
16	937	269	260	235	250	245	1,480	473	610	313	271	759
17	800	268	260	230	255	245	1,530	444	780	313	271	675
18	626	274	260	225	260	240	1,660	424	710	326	283	523
19	507	263	255	230	270	240	1,660	415	592	321	275	419
20	446	273	255	230	270	240	1,340	408	528	299	267	363
21	401	270	250	240	275	240	1,090	409	484	291	291	335
22	374	276	250	250	275	245	933	428	457	321	287	313
23	342	307	245	260	280	250	813	509	424	330	271	295
24	324	333	245	270	280	260	725	659	419	335	263	287
25	310	380	240	285	280	270	660	566	414	321	259	279
26	301	430	240	290	275	280	611	498	387	339	299	275
27	292	390	235	295	270	310	575	457	398	349	556	271
28	288	320	230	295	265	370	544	426	717	317	490	263
29	280	290	230	290	- - - -	500	543	406	766	304	382	259
30	275	330	225	285	- - - -	700	546	391	592	291	326	259
31	264	- - - -	225	280	- - - -	900	- - - -	378	- - - -	283	299	- - - -
Total	11,332	8,703	8,370	7,765	7,445	9,145	37,060	15,422	14,702	11,053	10,200	9,437
Mean	366	290	270	250	266	295	1,235	497	490	357	329	315
Max	937	430	340	295	280	900	1,920	692	780	523	556	759
Min	260	260	225	220	250	230	543	378	328	283	259	237
Cfsm	.94	.75	.69	.64	.68	.76	3.18	1.28	1.26	.92	.85	.81
In.	1.08	.83	.80	.74	.71	.87	3.54	1.47	1.41	1.06	.98	.90
Cal yr 1966 : Total	128,427		Mean 352	Max 1,060	Min 188	Cfsm 0.90	In. 12.28					
Wtr yr 1967 : Total	150,634		Mean 413	Max 1,920	Min 220	Cfsm 1.06	In. 14.39					

4-0630. Menominee River near Florence, Wis.

Location.--Lat 45°57'04", long 88°11'13", in NE 1/4 sec. 16, T. 41 N., R. 31 W., Michigan meridian, on left bank half a mile downstream from confluence of Brule and Michigamme Rivers, 3 1/2 miles northeast of Florence, and at mile 117.

Drainage area.--1,780 sq mi.

Records available.--January 1914 to September 1967. Published as "at Twin Falls near Iron Mountain, Mich." 1914-57. Records published for both sites July 1950 to September 1957.

Gage.--Digital water-stage recorder. Altitude of gage is 1,120 ft (from topographic map). Prior to July 1950, headwater and tailwater gages and generation data entered hourly in daily log sheets by company employees at the Twin Falls Powerplant of Wisconsin-Michigan Power Co., 10.4 miles downstream. July 5, 1950, to Aug. 14, 1963, graphic water-stage recorder at present site and datum.

Average discharge.--53 years, 1,771 cfs.

Extremes.--Maximum discharge during year, 11,600 cfs Apr. 20 (gage height, 10.39 ft); minimum, 46 cfs Oct. 12 (gage height, 1.21 ft); minimum daily, 479 cfs Sept. 24.

1914-67: Maximum discharge, 19,500 cfs Apr. 26, 1960 (gage height, 14.15 ft); minimum daily, 154 cfs Aug. 9, 1925.

Remarks.--Records excellent. Prior to July 1950 discharge determined from powerplant records computed on basis of load-discharge rating of hydroelectric units and rating for tailwater gage during periods of spill. Ratings developed by Geological Survey. Flow regulated by powerplants, and by Michigamme Reservoir (capacity, 119,950 acre-ft) and Peavy Pond (capacity, 33,860 acre-ft) on Michigamme River, and by many smaller reservoirs above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	587	1610	1840	638	2080	1960	3070	3910	1930	2960	1450	1360
2	657	1590	1620	1160	2120	1840	3410	3710	1780	2690	1460	1210
3	1270	1510	991	1670	2080	1890	3490	2730	1210	3040	1500	833
4	1120	1630	1000	1840	1450	1830	3820	2940	1160	3050	1480	800
5	1080	701	1650	1640	1410	1780	4350	3280	1830	2930	1390	1350
6	1070	759	1640	1710	1850	1990	5040	3440	1350	2710	1610	1240
7	1110	1600	1620	1060	1980	1850	4950	3490	1610	2600	1530	1150
8	688	1560	1560	1350	1980	1720	4390	3470	1830	1480	1770	1080
9	960	1700	1710	1710	2030	1710	5020	3590	1630	1370	1980	782
10	1440	1730	1630	1450	1920	1500	6390	3280	1920	1870	2680	899
11	1090	1740	1490	1670	1450	1130	6110	3220	1990	1670	2080	1360
12	1050	1760	1640	1790	1580	1090	5120	3340	2830	1980	1610	1190
13	1320	1050	1670	1900	1910	1730	4280	2940	2830	2120	1250	1230
14	1270	1590	1680	1040	1830	1840	4430	2790	2770	2100	1540	1290
15	1440	1670	1610	1800	1930	1610	4880	3010	3000	1970	1560	1420
16	2460	1630	1480	1730	1990	1480	6070	3010	3990	1670	1440	1520
17	3100	1480	1060	1940	1860	1420	7950	2760	5500	1770	1420	1580
18	2780	1560	978	1800	1720	1080	10700	2710	6650	1670	1490	1490
19	2540	1110	1880	1870	1330	690	11100	2080	6330	1630	1420	1430
20	2250	1080	1670	1760	1900	1650	11100	1260	4730	1740	1140	1340
21	1860	1630	1740	1450	1810	1370	8990	1190	2860	1550	1480	1390
22	1690	1600	1750	1310	1770	1350	6200	1660	2790	1250	1500	1150
23	1410	1590	1760	1790	1900	1220	4060	1840	2880	1450	1420	842
24	1840	1380	1200	1820	1950	1250	3330	2410	2800	1660	1380	479
25	1780	1470	925	2120	1870	1300	3240	2410	2930	1550	1390	1340
26	1680	1340	908	2010	1750	1420	3750	2660	2480	1680	1120	1470
27	1760	1070	1410	2020	2050	2600	4100	2630	2680	1480	1940	1410
28	1710	1730	1570	1780	2280	2490	3600	1710	4720	1500	1660	1310
29	1210	1320	1790	1710	- - - -	2610	2940	2380	5130	1390	1610	1110
30	1270	1440	1740	1850	- - - -	2810	3070	1300	3340	1400	1690	643
31	1660	- - - -	1100	2060	- - - -	3430	- - - -	2030	- - - -	1430	1340	- - - -
Total	47,152	43,630	46,312	51,448	51,780	53,640	158,950	83,180	89,480	59,360	48,330	35,698
Mean	1,521	1,454	1,494	1,660	1,849	1,730	5,298	2,683	2,983	1,915	1,559	1,190
Max	3,100	1,760	1,880	2,120	2,280	3,430	11,100	3,910	6,650	3,050	2,680	1,580
Min	587	701	908	638	1,330	690	2,940	1,190	1,160	1,250	1,120	479
Cal yr 1966: Total	691,698			Mean 1,895	Max 5,270	Min 587						
Wtr yr 1967: Total	768,960			Mean 2,107	Max 11,100	Min 479						

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0637. Popple River near Fence, Wis.

(Hydrologic bench-mark gaging station)

Location.--Lat 45°45'50", long 88°27'50", in NW 1/4 sec. 23, T. 38 N., R. 16 E., on left bank 20 ft upstream from U. S. Forest Service Road 2159, 1.8 miles downstream from Mud Creek, 2.6 miles northwest of Fence, and 11 1/2 miles upstream from mouth.

Drainage area.--131 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 1,406.16 ft above mean sea level, datum of 1929. Prior to June 18, 1964, wire-weight gage at present site and datum.

Extremes.--Maximum discharge during year, 862 cfs Apr. 12 (gage height, 3.67 ft); minimum, 35 cfs Oct. 12, 13 (gage height, 1.25 ft). 1963-67: Maximum discharge, 1,100 cfs May 10, 1965 (gage height, 4.17 ft); minimum, 15 cfs July 19, 23, 24, 1964 (gage height, 1.04 ft).

Remarks.--Records excellent except those for winter months, which are fair. Records of chemical analysis, water temperatures, and suspended sediment loads for the water year 1967 are published in Part 2 of this report. Hydrologic bench-mark stations are installed in specially selected areas where water resources have not yet been affected by works of man. Continuous records of natural hydrologic conditions, such as streamflow and water quality, will make possible assessment of changes which occur as a result of the vagaries of climate and other natural factors. These data will provide a frame of reference against which hydrologic changes wrought by man may be evaluated.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	64	62	44	48	42	320	220	95	407	63	128
2	42	60	54	44	48	42	420	223	91	386	84	106
3	44	59	51	44	47	42	520	220	84	366	90	91
4	46	58	50	43	47	42	570	200	77	338	84	78
5	47	56	50	43	46	42	590	178	72	308	72	72
6	44	56	53	43	46	41	590	164	75	268	72	64
7	40	58	62	43	45	41	596	153	80	226	143	60
8	40	60	64	42	45	41	637	145	90	181	172	56
9	43	59	69	42	45	41	727	143	135	140	188	52
10	38	59	64	42	44	42	790	138	158	133	172	50
11	38	58	59	42	43	42	830	172	167	164	153	48
12	36	58	52	43	43	44	852	213	172	164	128	47
13	37	59	54	43	43	45	844	229	175	145	106	47
14	49	58	50	44	43	46	799	226	172	130	95	48
15	161	58	51	44	42	46	767	210	156	120	84	69
16	236	58	51	44	41	46	762	181	164	86	75	150
17	254	63	51	44	41	43	772	158	250	72	69	220
18	243	62	52	44	41	41	785	145	286	82	64	246
19	220	64	51	44	41	41	776	138	290	80	61	246
20	191	64	50	44	41	41	727	128	260	74	59	223
21	158	64	49	44	41	41	672	131	226	61	60	206
22	140	64	48	45	41	42	605	145	194	64	59	188
23	123	74	47	45	41	43	546	164	156	76	55	169
24	108	86	47	46	41	44	489	188	131	86	51	150
25	93	126	46	47	41	45	437	191	119	90	49	128
26	90	156	46	48	41	48	378	172	112	91	58	110
27	84	161	45	48	42	56	327	156	103	97	135	99
28	78	138	44	48	42	70	278	140	197	99	194	86
29	75	110	44	48	- - - - -	100	240	128	335	90	197	80
30	70	84	44	48	- - - - -	140	216	114	403	77	188	77
31	67	- - - - -	44	48	- - - - -	210	- - - - -	106	- - - - -	69	158	- - - - -
Total	2,979	2,254	1,604	1,381	1,210	1,690	17,862	5,219	5,025	4,770	3,238	3,394
Mean	96.1	75.1	51.7	44.5	43.2	54.5	595	168	168	154	104	113
Max	254	161	69	48	48	210	852	229	403	407	197	246
Min	36	56	44	42	41	41	216	106	72	61	49	47
Cfsm	.734	.573	.395	.340	.330	.416	4.54	1.28	1.28	1.18	.794	.863
In.	.85	.64	.46	.39	.34	.48	5.07	1.48	1.43	1.35	.92	.96
Cal yr 1966: Total	39,306		Mean 108	Max 522	Min 28	Cfsm .824	In. 11.17					
Wtr yr 1967: Total	50,626		Mean 139	Max 852	Min 36	Cfsm 1.06	In. 14.37					

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-12	2000	3.67	862	7-1	0600	2.67	415

STREAMS TRIBUTARY TO LAKE MICHIGAN

27

4-0645. Pine River at Pine River powerplant, near Florence, Wis.

Location.--Lat 45°49'40", long 88°14'55", in sec. 28, T. 39 N., R. 18 E., at powerplant of Wisconsin-Michigan Power Co., 5.0 miles downstream from Popple River and 6.5 miles south of Florence.

Drainage area.--528 sq mi.

Records available.--October 1923 to September 1967.

Average discharge.--44 years, 420 cfs.

Extremes.--Maximum daily discharge during year, 2,800 cfs Apr. 18; minimum daily, 121 cfs Dec. 3.

1923-67: Maximum daily discharge, 4,380 cfs Apr. 9, 1929; no flow at times during 1924, 1926-27, 1930-31, 1933, 1940.

Remarks.--Records good except those above 700 cfs and those below 100 cfs, which are fair. Daily discharge determined from powerplant records. Flow regulated by powerplant at station, but pondage is small and monthly discharge is very nearly natural flow.

Cooperation.--Records of daily discharge computed by Wisconsin-Michigan Power Co., on basis of load-discharge rating of hydroelectric units as developed by Geological Survey and gate ratings based on theoretical formulas.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	177	281	297	199	222	200	1,330	944	429	1,260	247	416
2	199	229	250	222	222	200	1,600	904	381	1,020	326	371
3	229	177	121	199	222	200	1,820	934	222	1,060	312	382
4	240	177	199	211	222	200	1,850	824	312	924	342	303
5	229	278	255	211	267	188	2,090	704	364	824	281	281
6	207	281	268	199	211	177	2,000	694	364	744	260	281
7	177	281	317	199	211	200	1,870	624	390	642	520	278
8	199	307	329	177	211	188	1,840	624	468	559	624	229
9	199	257	329	199	200	200	2,340	624	520	555	664	229
10	213	281	281	211	211	200	2,540	624	258	520	664	177
11	199	255	255	199	211	177	2,510	581	340	684	572	229
12	199	281	229	222	200	200	2,400	784	405	613	468	177
13	199	177	252	211	200	200	2,230	954	674	555	416	200
14	222	229	229	222	200	200	2,200	944	624	329	393	200
15	580	255	229	211	200	200	2,320	864	624	401	281	352
16	974	294	255	211	200	177	2,380	724	849	356	341	590
17	984	278	229	211	200	200	2,610	624	1,020	356	247	864
18	924	281	229	211	200	177	2,800	624	964	330	245	934
19	824	229	242	199	200	177	2,580	602	824	333	199	904
20	714	229	229	199	200	200	2,350	537	714	304	199	704
21	624	281	216	211	200	177	2,100	520	581	261	333	624
22	624	330	216	211	200	177	1,860	509	624	267	281	598
23	416	330	224	211	200	200	1,640	581	520	274	281	468
24	416	382	199	222	200	177	1,420	784	468	312	268	442
25	274	430	199	267	200	206	1,300	744	416	316	229	446
26	382	624	199	222	200	205	1,160	664	416	329	274	382
27	307	624	199	222	200	269	949	624	405	357	580	333
28	330	520	199	290	200	342	864	624	962	333	784	307
29	277	390	199	211	- - - -	433	754	494	1,360	356	774	304
30	293	268	199	222	- - - -	599	749	455	1,300	281	674	281
31	281	- - - -	199	222	- - - -	999	- - - -	468	- - - -	281	572	- - - -
Total	12,112	9,236	7,272	6,634	5,810	7,645	56,456	21,205	17,798	15,736	12,651	12,286
Mean	391	308	235	214	208	247	1,882	684	593	508	408	410
Max	984	624	329	290	267	999	2,800	954	1,360	1,260	784	934
Min	177	177	121	177	200	177	749	455	222	261	199	177
Cfsm	.741	.583	.445	.405	.394	.468	3.56	1.30	1.12	.962	.773	.776
In.	.85	.65	.51	.47	.41	.54	3.98	1.49	1.25	1.11	.89	.87
Cal yr 1966: Total	149,354		Mean 409	Max 1,580	Min 87	Cfsm .775	In. 10.52					
Wtr yr 1967: Total	184,841		Mean 506	Max 2,800	Min 121	Cfsm .958	In. 13.02					

Location.--Lat 45°35'25", long 87°46'35", in sec. 21, T. 37 N., R. 28 W., Michigan meridian, on left bank 700 ft upstream from Pemene Creek, 4 miles west of Nathan, Mich., 15 miles southeast of Pembine, and at mile 65.3.

Remarks.--Records good except those for winter months, which are fair. Flow regulated by powerplants and by Michigamme Reservoir (capacity, 119,950 acre-ft) and Peavy Pond (capacity, 33,860 acre-ft) on the Michigamme River, and by many smaller reservoirs above station.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,440	2,520	1,450	1,700	2,600	2,650	11,000	5,810	2,940	6,230	2,090	2,350
2	1,310	1,870	2,000	1,700	2,700	2,550	8,000	6,710	2,740	5,830	2,090	1,740
3	1,370	2,190	2,150	1,800	2,700	2,550	9,000	5,600	2,700	5,140	2,050	1,980
4	1,610	2,220	1,600	2,000	2,700	2,400	8,840	4,820	2,040	5,140	2,180	1,450
5	1,600	2,170	1,900	2,200	2,300	2,400	10,500	5,360	1,950	4,980	1,880	1,260
6	1,440	1,360	2,300	2,200	2,100	2,300	10,400	5,300	2,570	3,730	1,990	1,520
7	1,450	1,410	2,400	2,200	2,350	2,450	10,200	5,380	2,550	4,280	2,330	1,790
8	1,370	2,030	2,200	1,900	2,500	2,300	9,700	5,160	2,490	3,390	2,760	1,630
9	1,280	2,160	2,200	1,900	2,450	2,300	9,800	5,160	2,870	2,850	2,660	1,360
10	1,380	2,510	2,200	2,000	2,400	2,350	11,600	4,980	3,210	2,720	3,700	1,190
11	1,650	2,430	2,200	2,050	2,500	2,100	12,500	5,300	3,410	2,810	3,690	1,400
12	1,680	2,310	2,200	2,050	2,200	1,900	11,500	5,220	4,210	2,940	2,750	1,540
13	1,460	2,300	2,200	2,400	2,250	2,000	9,620	5,590	4,740	3,320	2,230	1,830
14	1,510	1,730	2,100	2,200	2,450	2,350	9,500	5,540	4,610	3,310	1,990	1,640
15	2,610	2,310	2,150	1,900	2,400	2,350	9,200	5,220	4,370	2,930	2,060	1,640
16	3,560	2,170	2,100	2,050	2,450	2,250	10,100	5,110	4,920	2,830	2,130	2,340
17	4,070	2,190	2,000	2,300	2,450	2,050	12,200	4,840	7,280	2,470	2,180	2,550
18	4,450	2,280	2,050	2,200	2,350	2,050	14,500	4,500	8,480	2,570	2,050	2,610
19	4,520	2,010	2,150	2,200	2,300	1,800	15,500	4,040	8,900	2,570	1,920	2,640
20	4,080	1,930	2,100	2,250	2,200	1,850	16,600	3,440	7,940	2,420	1,680	2,690
21	3,620	1,550	2,200	2,150	2,200	1,950	16,100	2,600	4,950	2,240	1,890	2,670
22	3,060	2,150	2,300	2,000	2,400	1,950	11,900	2,570	4,370	2,410	1,450	2,310
23	2,930	2,530	2,100	2,200	2,300	1,900	9,100	3,000	4,100	2,120	2,030	1,600
24	2,470	2,490	2,000	2,350	2,300	2,050	6,940	3,510	4,130	1,990	2,300	1,610
25	2,430	2,510	1,700	2,500	2,500	2,050	5,880	4,550	3,950	2,100	1,890	1,480
26	2,490	2,530	1,600	2,600	2,400	2,250	6,340	4,480	4,020	2,210	1,610	2,050
27	2,550	2,740	1,850	2,500	2,350	3,000	6,270	4,150	3,490	2,180	2,280	1,910
28	2,460	2,550	2,000	2,600	2,500	4,800	6,480	3,940	5,330	2,230	2,670	1,890
29	2,390	2,650	2,050	2,400	- - - - -	5,200	5,170	3,420	8,760	2,150	2,690	1,830
30	1,910	2,040	2,000	2,400	- - - - -	6,000	4,640	3,280	7,460	1,980	2,650	1,430
31	1,600	- - - - -	1,900	2,400	- - - - -	8,000	- - - - -	2,870	- - - - -	2,010	2,690	- - - - -
Total	71,750	65,840	63,350	67,300	67,300	84,100	300,080	141,450	135,480	96,080	70,560	55,930
Mean	2,315	2,195	2,044	2,171	2,404	2,713	10,003	4,563	4,516	3,099	2,276	1,864
Max	4,520	2,740	2,400	2,600	2,700	8,000	16,600	6,710	8,900	6,230	3,700	2,690
Min	1,280	1,360	1,450	1,700	2,100	1,800	4,640	2,570	1,950	1,980	1,450	1,190
Cal yr 1966: Total	1,077,280		Mean	2,951	Max	9,040	Min	1,110				
Wtr yr 1967: Total	1,219,220		Mean	3,340	Max	16,600	Min	1,190				

4-0665. Pike River at Amberg, Wis.

Location.--Lat 45°29'50", long 87°59'40", in SW 1/4 sec. 15, T. 35 N., R. 20 E., on left bank 500 ft upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 0.2 mile south of Amberg, and 1.2 miles downstream from confluence of North and South Branches.

Drainage area.--253 sq mi.

Records available.--February 1914 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 865 ft above mean sea level (from survey level line along railroad). Prior to May 23, 1931, chain gage at railway bridge at datum 1 ft higher. May 23, 1931, to Aug. 4, 1934, chain gage at highway bridge three-quarters of a mile downstream at different datum. Aug. 5, 1934, to Oct. 6, 1946, staff gage, and Oct. 7, 1946, to June 8, 1964, graphic water-stage recorder at present site and datum.

Average discharge.--53 years, 216 cfs.

Extremes.--Maximum discharge during year, 1,140 cfs Apr. 3 (gage height, 4.95 ft); minimum, 81 cfs Dec. 19 (gage height, 1.69 ft). 1914-67: Maximum discharge, 2,800 cfs Apr. 10, 1922 (gage height, 7.8 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 1,100 cfs; minimum observed, 26 cfs Dec. 27, 1925 (gage height, 1.30 ft, site and datum then in use).

Remarks.--Records good except those for winter months, which are fair.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	116	119	108	105	113	105	819	344	180	662	135	135
2	114	114	115	110	110	108	1,030	384	173	525	157	128
3	116	107	160	112	110	110	1,130	353	166	424	171	122
4	120	106	170	110	110	109	1,040	318	156	364	152	118
5	118	122	160	109	110	105	808	292	153	315	140	115
6	114	128	137	109	108	104	768	272	159	271	140	113
7	112	119	126	110	107	104	695	252	167	241	181	111
8	111	121	124	117	107	108	695	251	233	224	205	108
9	109	124	125	118	107	115	800	245	316	217	193	107
10	108	130	120	120	106	120	933	239	302	271	179	105
11	106	131	112	118	105	123	837	325	307	321	162	105
12	106	126	110	117	104	125	665	439	336	282	149	104
13	107	120	115	115	104	125	560	471	358	228	140	98
14	111	120	119	110	105	125	549	435	344	204	134	104
15	187	125	123	104	106	120	570	380	319	186	130	138
16	255	124	120	100	107	120	574	333	373	175	125	170
17	237	126	115	100	106	118	702	293	420	171	122	180
18	203	129	110	100	105	116	875	267	392	261	123	155
19	177	127	97	105	104	116	840	251	321	334	123	140
20	161	125	105	115	102	117	699	237	277	270	120	131
21	152	125	110	122	101	120	590	236	243	215	118	150
22	143	126	105	126	100	123	513	272	210	193	120	158
23	136	138	102	127	100	127	450	291	187	184	117	144
24	132	168	100	127	99	133	404	327	181	175	115	134
25	127	208	99	125	99	141	362	318	189	167	112	127
26	126	235	98	123	99	150	327	286	186	174	121	123
27	125	216	98	120	100	168	308	258	213	187	200	120
28	124	189	98	118	102	190	294	235	547	167	233	119
29	122	120	98	117	-----	270	285	218	782	154	192	117
30	120	110	99	116	-----	370	281	204	805	145	162	123
31	120	-----	102	115	-----	569	-----	192	-----	139	146	-----
TOTAL	4,215	4,078	3,580	3,540	2,936	4,654	19,403	9,218	8,995	7,846	4,617	3,802
MEAN	136	136	115	114	105	150	647	297	300	253	149	127
MAX	255	235	170	127	113	569	1,130	471	805	662	233	180
MIN	106	106	97	100	99	104	281	192	153	139	112	98
CFSM	.54	.54	.46	.45	.41	.59	2.56	1.18	1.19	1.00	.59	.50
IN.	.62	.60	.53	.52	.43	.68	2.85	1.36	1.32	1.15	.68	.56

CAL YR 1966: TOTAL 70,839
WAT YR 1967: TOTAL 76,884

MEAN 194
MEAN 211

MAX 662
MAX 1,130

MIN 91
MIN 97

CFSM .77
CFSM .83

IN 10.41
IN 11.30

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0670. Menominee River below Koss, Mich.

Location.--Lat 45°21'50", long 87°39'20", in sec. 9, T. 34 N., R. 27 W., Michigan meridian, on left bank at powerplant of Wisconsin Public Service Corp., 0.5 mile upstream from Little Cedar River, 3.6 miles southeast of Koss, and at mile 24.7.

Drainage area.--3,790 sq mi, approximately.

Records available.--July 1907 to March 1909 (published as "at Koss"), July 1913 to September 1967.

Gage.--Headwater and tailwater gages and generation data entered hourly in daily log sheet by company employees. Prior to June 1913, chain gage on railroad bridge 4 miles upstream.

Average discharge.--55 years (1907-8, 1913-67), 3,103 cfs.

Extremes.--Maximum daily discharge during year, 16,900 cfs Apr. 21; minimum daily, 1,100 cfs Sept. 11. 1908, 1913-67: Maximum daily discharge, 33,000 cfs May 10, 1960; minimum daily, 162 cfs Sept. 15, 1931.

Remarks.--Records fair. Daily discharge computed on basis of average daily load and load-discharge rating of combined hydroelectric units. Flow regulated by powerplants, and by Michigamme Reservoir (capacity, 119,950 acre-ft) and Peavy Pond (capacity 33,860 acre-ft) on Michigamme River, and by many smaller reservoirs above station.

Cooperation.--Records of daily discharge furnished by Wisconsin Public Service Corp. since 1913.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,280	1,930	1,440	2,010	2,350	2,210	6,130	4,900	3,000	9,170	2,020	2,620
2	1,470	2,370	1,470	1,620	2,650	2,500	7,550	6,120	3,300	7,480	2,250	2,080
3	1,610	2,080	1,760	1,520	2,590	2,300	9,600	7,080	2,520	6,540	1,870	1,940
4	1,560	1,940	2,410	1,860	2,500	2,350	13,700	5,770	2,800	5,740	2,240	1,900
5	1,530	2,110	1,610	1,880	2,830	2,400	11,300	4,990	2,290	5,740	2,230	1,440
6	1,870	2,020	2,190	2,270	1,960	2,150	11,600	5,010	2,140	5,740	1,950	1,500
7	1,450	1,380	2,620	2,160	1,950	2,080	11,700	4,970	2,840	4,630	2,250	1,350
8	1,560	1,660	2,750	2,130	2,200	2,500	10,800	5,140	3,150	3,400	2,970	1,600
9	1,690	2,080	2,260	1,600	2,400	1,920	10,500	5,050	3,000	3,330	2,660	1,600
10	1,500	2,300	2,490	1,730	2,540	2,050	10,500	4,950	3,400	2,810	2,910	1,250
11	1,380	2,640	2,350	1,730	2,210	2,110	11,500	5,070	3,420	3,070	3,480	1,100
12	1,580	2,370	2,350	2,090	2,330	1,870	11,600	5,640	3,420	3,000	3,480	1,270
13	1,660	2,270	2,300	1,950	1,990	1,620	12,300	5,190	4,220	3,100	2,610	1,390
14	1,760	2,370	2,440	2,350	1,970	1,730	10,600	5,500	5,640	3,400	2,130	1,630
15	2,140	1,790	2,240	2,330	2,320	2,180	9,660	5,580	5,640	3,350	2,250	1,650
16	2,590	2,260	2,350	1,610	2,300	2,300	9,780	5,640	5,640	3,000	2,060	1,570
17	2,590	2,310	2,480	2,140	2,280	2,110	9,620	5,690	5,880	2,750	2,180	2,400
18	2,640	2,310	2,100	2,280	2,250	1,800	11,800	5,180	7,660	2,550	2,280	2,400
19	4,140	2,100	1,900	2,250	2,250	1,870	13,800	5,350	8,560	2,760	2,000	2,640
20	4,190	2,080	2,380	2,100	2,100	1,510	16,200	5,400	8,650	2,620	2,010	2,400
21	3,790	2,020	1,770	2,270	1,970	1,660	16,900	4,230	7,550	2,680	1,730	2,460
22	3,000	1,930	2,140	2,130	2,020	1,880	16,300	2,930	5,300	2,630	1,800	2,400
23	2,760	2,230	2,340	1,940	2,270	1,800	13,000	3,100	4,950	2,400	2,050	2,120
24	2,570	2,620	1,980	2,130	2,200	1,830	9,390	3,480	5,070	2,160	2,010	1,730
25	2,400	2,680	2,020	2,440	2,160	1,970	6,470	3,360	4,950	1,940	2,300	1,440
26	2,280	2,700	1,180	2,660	2,280	2,110	5,270	3,360	4,310	2,350	1,870	1,810
27	2,320	2,920	1,770	2,650	2,260	2,490	6,140	3,480	4,040	2,500	2,000	1,780
28	2,570	2,820	1,900	2,440	2,120	3,170	6,000	3,650	4,410	2,300	2,730	1,720
29	2,500	2,720	2,150	2,440	- - - - -	3,690	7,180	3,300	6,500	2,250	2,940	1,680
30	2,190	2,430	2,060	2,300	- - - - -	4,230	5,140	3,600	8,640	2,310	2,690	1,790
31	1,960	- - - - -	1,600	2,380	- - - - -	4,940	- - - - -	3,360	- - - - -	2,150	2,590	- - - - -
Total	68,530	67,440	64,800	65,390	63,250	71,330	312,030	146,070	142,890	109,850	72,540	54,660
Mean	2,211	2,248	2,090	2,109	2,259	2,301	10,401	4,712	4,763	3,544	2,340	1,822
Max	4,190	2,920	2,750	2,660	2,830	4,940	16,900	7,080	8,650	9,170	3,480	2,640
Min	1,280	1,380	1,440	1,520	1,950	1,510	5,140	2,930	2,140	1,940	1,730	1,100

Cal yr 1966 : Total 1,074,150 Mean 2,943 Max 8,400 Min 1,020
Wtr yr 1967 : Total 1,238,780 Mean 3,394 Max 16,900 Min 1,100

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Location.--Lat 45°02'50", long 87°04'40", in NE 1/4 sec. 30, T. 30 N., R. 22 E., on left bank 75 ft downstream from Chicago and Northwestern Railway bridge, 0.5 mile downstream from Wisconsin Public Service Corp. powerplant in Peshtigo, and 11 1/2 miles upstream from mouth.

1953-67: Maximum discharge, 9,790 cfs May 9, 1960 (gage height, 11.59 ft), from rating curve extended above 5,000 cfs on basis of computation of peak flow through dam gates; minimum, that of Nov. 29, 1966; minimum daily, 84 cfs Aug. 5, 1957.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	448	493	501	407	500	440	6,830	1,340	654	3,040	547	838
2	234	380	287	340	460	450	5,700	1,300	583	3,040	478	828
3	387	402	480	351	450	500	5,160	1,380	653	2,480	610	687
4	570	295	625	511	440	450	4,090	1,340	450	1,940	625	432
5	333	298	298	389	460	415	4,070	1,260	366	1,740	655	549
6	451	350	515	433	420	350	4,290	1,350	698	1,660	590	429
7	348	249	030	545	460	370	4,700	1,160	633	1,260	510	564
8	370	491	620	406	430	430	4,840	1,160	1,050	1,120	787	438
9	327	476	599	370	519	440	4,510	1,090	1,220	1,030	809	378
10	356	565	574	390	460	420	3,670	931	1,230	996	703	349
11	402	560	472	418	430	440	3,600	1,330	1,390	886	782	443
12	336	451	254	464	360	380	3,960	1,820	1,690	996	731	480
13	293	374	314	397	350	340	3,490	1,670	1,750	1,200	629	459
14	370	333	468	415	410	540	3,340	1,610	1,620	1,430	505	362
15	597	372	453	360	460	588	3,280	1,470	1,980	798	671	431
16	841	464	431	370	460	600	3,110	1,470	2,340	715	479	498
17	772	575	349	400	430	600	4,500	1,590	2,580	655	641	506
18	758	544	471	410	400	500	5,360	869	2,600	755	477	1,000
19	910	371	402	400	315	663	5,460	943	2,280	946	356	938
20	777	442	418	420	315	562	4,720	1,030	1,920	745	358	794
21	824	356	450	430	370	664	4,100	993	1,940	685	360	927
22	559	617	466	390	470	733	3,490	1,020	1,190	665	493	903
23	684	662	500	330	410	873	2,860	1,120	1,000	610	480	656
24	348	714	400	360	440	923	2,530	1,150	952	542	414	536
25	561	409	420	678	380	904	2,350	1,220	900	566	311	396
26	464	790	290	560	340	1,030	2,100	1,170	683	586	356	733
27	456	1,050	260	450	330	1,010	1,680	1,290	886	615	977	642
28	559	606	469	590	390	1,590	1,560	1,010	1,190	650	1,420	531
29	434	675	260	450	-----	2,870	1,310	800	2,110	605	1,130	430
30	434	757	280	400	-----	4,800	1,260	934	2,780	356	1,160	465
31	424	-----	363	510	-----	6,210	-----	481	-----	432	983	-----
TOTAL	15,627	15,061	13,119	13,344	11,659	31,085	112,580	37,301	41,518	33,744	20,027	17,622
MEAN	504	502	423	430	416	1,003	3,753	1,203	1,384	1,089	646	587
MAX	910	1,050	630	678	519	6,210	6,830	1,820	2,780	3,040	1,420	1,000
MIN	234	249	254	330	315	340	1,260	481	366	356	311	349
CFSM	.45	.45	.38	.38	.37	.89	3.34	1.07	1.23	.97	.57	.52
IN.	.52	.50	.43	.44	.39	1.03	3.72	1.23	1.37	1.12	.66	.58
CAL YR 1966: TOTAL 295,703 MEAN 810 MAX 2,840 MIN 180 CFSM .72 IN 9.78												
WAT YR 1967: TOTAL 362,687 MEAN 994 MAX 6,830 MIN 234 CFSM .88 IN 12.00												

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0700. Wheeler Lake near Lakewood, Wis.

Location.--Lat 45°19'05", long 88°29'00", in NW 1/4 sec. 27, T. 33 N., R. 16 E., on west shore of lake at Arthur Anderken's cottage, 2 1/4 miles northeast of Lakewood.

Drainage area.--2 sq mi, approximately.

Records available.--August 1936 to September 1967 (fragmentary).

Gage.--Staff gage. Prior to Apr. 19, 1939, gage was located at Chas. J. Voigt's on east shore of lake. Apr. 20, 1939, to June 13, 1960, gage was located on southwest shore of lake.

Extremes.--Maximum elevation observed during year, 95.68 ft July 4; minimum observed, 94.56 ft Jan. 4.

1936-67: Maximum elevation observed, 96.50 ft Oct. 5, Nov. 9, 1943; minimum observed, 93.45 ft Feb. 5, 1950.

Remarks.--Gage heights have been reduced to elevations above datum assumed for this lake by Wisconsin Department of Natural Resources. No outlet. Lake ice covered Nov. 28 to Apr. 16.

Elevation, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		4.62									5.47	
2												
3								5.61				
4	4.68			4.56						5.68		5.40
5												
6									5.40			
7					5.06							
8											5.57	
9								5.59				
10												
11	4.65									5.62		5.32
12												
13						4.97			5.49			
14											5.47	
15												
16								5.61				
17								5.60				
18	4.80									5.54		5.44
19												
20									5.63			
21												
22								5.44			5.37	
23								5.44				
24												
25	4.67						5.62			5.54		
26												5.36
27									5.62			
28												
29					- - - -						5.49	
30					- - - -			5.42				
31		- - - -			- - - -		- - - -		- - - -			- - - -

Note.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources.

STREAMS TRIBUTARY TO LAKE MICHIGAN

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4-0710. Oconto River near Gillett, Wis.

Location.--Lat 44°51'55", long 88°18'00", in NW 1/4 sec. 34, T. 28 N., R. 18 E., on left bank just upstream from highway bridge, 2 miles upstream from Christy Brook, 2 miles south of Gillett, and at mile 29.

Drainage area.--678 sq mi.

Records available.--June 1906 to March 1909, October 1913 to September 1967. Monthly discharge only for some periods, published in WSP 1307.

Gage.--Digital water-stage recorder. Altitude of gage is 735 ft (from river-profile map). Prior to March 1909, chair gage on bridge at datum 4.0 ft lower. Jan. 6, 1914, to Aug. 24, 1938, chain gage on bridge at present datum, and Aug. 25, 1938 to July 11, 1967, graphic water-stage recorder at present site and datum.

Average discharge.--56 years (1906-8, 1913-67), 570 cfs.

Extremes.--Maximum discharge during year, 3,580 cfs Mar. 31 (gage height, 5.83 ft); maximum gage height, 8.18 ft Mar. 31 (backwater from ice); minimum, 119 cfs Dec. 1 (gage height, 0.30 ft), flow retarded by anchor ice above station.

1906-9, 1913-67: Maximum discharge, 8,400 cfs Apr. 10, 1922 (gage height, 11.2 ft from floodmarks), caused by failure of dam at Pulcifer 4 miles above station; minimum, 93 cfs Nov. 26, 1941 (gage height, 0.13 ft), flow retarded by anchor ice above station.

Remarks.--Records excellent except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	271	311	280	320	380	300	3,190	898	505	1,430	354	574
2	271	307	270	320	375	300	2,820	909	476	1,490	379	496
3	274	300	290	320	370	300	2,730	875	452	1,430	377	453
4	274	282	320	323	370	300	2,680	848	411	1,320	382	420
5	274	292	369	320	370	300	2,540	792	406	1,220	371	403
6	274	307	395	320	365	305	2,400	743	406	1,060	381	391
7	274	326	465	320	362	305	2,300	705	433	949	464	380
8	271	322	510	320	355	310	2,240	668	700	892	520	357
9	268	311	520	320	350	310	2,250	658	870	809	548	333
10	264	311	510	320	345	315	2,180	648	921	754	493	345
11	264	338	470	325	330	320	2,050	716	926	748	441	331
12	303	334	415	325	320	330	1,910	864	955	710	425	322
13	292	322	365	325	320	345	1,780	944	961	669	404	297
14	271	311	350	325	315	362	1,660	949	984	634	372	301
15	415	311	335	325	310	360	1,570	915	1,110	584	346	329
16	495	285	325	325	310	345	1,640	864	1,200	527	344	395
17	490	330	325	325	310	335	2,230	792	1,210	491	334	473
18	486	363	325	325	305	330	2,940	716	1,270	468	324	516
19	471	350	325	325	305	325	3,000	674	1,340	482	347	516
20	476	330	325	325	305	320	2,700	613	1,290	508	352	469
21	424	326	325	330	305	320	2,360	608	1,150	493	341	435
22	384	384	325	335	305	320	2,040	618	984	475	330	403
23	363	438	320	355	305	320	1,790	679	842	439	318	384
24	346	466	320	385	305	325	1,570	723	765	442	311	389
25	330	500	320	410	305	350	1,420	754	792	429	307	377
26	326	520	320	430	305	370	1,310	760	782	423	313	359
27	326	520	320	445	305	640	1,190	726	679	443	570	343
28	322	500	320	450	305	860	1,100	663	875	444	713	338
29	307	432	320	430	-----	1,300	1,040	588	1,030	418	791	336
30	311	320	320	400	-----	2,000	978	559	1,120	397	740	340
31	311	-----	320	390	-----	3,450	-----	530	-----	376	650	-----
Total	10,428	10,749	11,019	10,813	9,212	16,672	61,608	22,999	25,845	21,954	13,352	11,805
Mean	336	358	355	349	329	538	2,054	742	862	708	431	394
Max	495	520	520	450	380	3,450	3,190	949	1,340	1,490	791	574
Min	264	282	270	320	305	300	978	530	406	376	307	297
Cfsm	.496	.528	.524	.515	.485	.793	3.03	1.09	1.27	1.04	.636	.581
In.	.57	.59	.60	.59	.51	.91	3.38	1.26	1.42	1.20	.73	.65

Cal yr 1966 : Total 194,942 Mean 534 Max 1,830 Min 224 Cfsm .788 In. 10.67
Wtr yr 1967 : Total 226,456 Mean 620 Max 3,450 Min 264 Cfsm .914 In. 12.41

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-31	1500	5.83	3,580	7-2	0600	3.09	1,500
4-18	2400	5.18	3,060				

4-0735. Fox River at Berlin, Wis.

Location.--Lat 43°57'15", long 88°57'10", in NE 1/4 sec. 16, T. 17 N., R. 13 E., on left bank, 0.4 mile downstream from government dam, 1 mile south of Huron Street bridge in Berlin, 2.5 miles upstream from Barnes Creek, and at mile 89.0.

Drainage area.--1,430 sq mi, approximately.

Records available.--January 1898 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 744.52 ft above mean tide at New York City (by Corps of Engineers). Prior to Oct. 27, 1954, staff gage at site 0.3 mile upstream at same datum. Oct. 28, 1954, to June 7, 1964, graphic water-stage recorder, at present site and datum.

Average discharge.--69 years, 1,084 cfs.

Extremes--Maximum discharge during year, 2,990 cfs Mar. 28 (gage height, 12.27 ft); minimum, 350 cfs Nov. 4 (gage height, 7.48 ft); minimum gage height, 7.42 ft Nov. 30, Sept. 10.

1898-1967: Maximum discharge observed, 6,900 cfs Mar. 17, 18, 1946 (gage height, 15.5 ft); minimum observed, 248 cfs Sept. 16, 1948 (gage height, 6.1 ft).

Remarks--Records good except those for winter months, which are fair. An average of about 10 to 15 cfs was diverted into the basin from the Wisconsin River at Portage Canal throughout the year.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	JCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	450	552	400	455	595	520	2,770	1,300	612	967	417	432
2	436	482	405	455	590	530	2,770	1,250	648	936	448	429
3	471	397	400	455	580	540	2,760	1,170	660	904	480	422
4	436	355	400	460	570	540	2,710	1,070	644	872	473	415
5	412	400	425	460	560	540	2,660	987	632	816	431	406
6	391	478	455	460	560	540	2,670	928	616	799	445	405
7	412	532	490	465	555	540	2,650	869	632	798	452	401
8	422	540	540	470	555	540	2,600	815	648	699	435	401
9	415	536	570	475	555	555	2,610	550	712	640	455	399
10	400	485	580	487	550	565	2,560	543	761	632	428	359
11	397	584	580	485	550	580	2,490	766	770	622	444	386
12	420	560	505	480	555	595	2,430	821	825	597	461	404
13	748	560	550	470	560	615	2,390	880	870	566	456	406
14	805	576	550	460	580	635	2,350	891	885	540	439	424
15	820	544	550	450	599	690	2,300	869	925	548	430	458
16	775	536	500	445	590	714	2,240	842	956	565	421	501
17	725	528	500	440	585	720	2,270	848	967	554	424	524
18	684	520	500	440	580	720	2,220	828	961	541	440	555
19	668	513	550	450	570	730	2,150	852	979	522	396	562
20	628	468	530	460	560	740	2,090	760	1,010	537	393	564
21	630	488	520	465	555	760	2,050	704	1,020	538	399	576
22	644	506	500	470	550	795	2,000	713	997	521	373	537
23	672	536	475	490	540	830	1,920	746	988	515	391	541
24	616	524	465	520	535	940	1,840	744	960	507	404	511
25	548	506	460	560	530	1,100	1,760	698	950	500	402	497
26	513	580	550	600	530	1,300	1,690	709	939	467	412	533
27	506	615	445	615	525	1,650	1,640	715	940	476	420	487
28	540	496	445	620	520	2,500	1,530	648	969	450	398	467
29	496	399	450	615	-----	2,960	1,430	636	958	453	443	466
30	471	390	460	605	-----	2,900	1,370	640	974	441	437	476
31	510	-----	460	600	-----	2,830	-----	620	-----	437	399	-----
TOTAL	17,073	15,166	15,350	15,382	15,684	30,714	66,920	25,472	25,408	18,960	13,246	13,944
MEAN	551	506	495	496	560	991	2,231	822	847	612	427	465
MAX	820	615	580	620	599	2,960	2,770	1,300	1,020	967	480	576
MIN	391	355	400	440	520	520	1,370	543	612	437	373	359
CFSM	.39	.35	.35	.35	.39	.69	1.56	.57	.59	.43	.30	.33
IN.	.44	.39	.40	.40	.41	.60	1.74	.66	.66	.49	.34	.36
CAL YR 1960: TOTAL 386,563 MEAN 1,059 MAX 3,100 MIN 355 CFSM .74 IN 10.05												
WAT YR 1967: TOTAL 273,339 MEAN 749 MAX 2,960 MIN 355 CFSM .52 IN 7.11												

STREAMS TRIBUTARY TO LAKE MICHIGAN

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4-0749.5 Wolf River at Langlade, Wis.

Location.--Lat 45°11'15", long 88°44'00", between secs. 3 and 10, T. 31 N., R. 14 E., near left bank on upstream side of bridge handrail, on State Highway 64 at Langlade, 1 1/2 miles east of White Lake, 3 miles upstream from White Lake Creek, and at about mile 170 above mouth.

Drainage area.--460 sq mi.

Records available.--March 1966 to September 1967.

Gage.--Wire-weight gage read once daily. A staff gage mounted on wingwall is used intermittently by Wisconsin Conservation Department. Altitude of gage is about 1,240 ft (from topographic map).

Extremes.--Maximum discharge observed during year, 1,730 cfs Apr. 17 (gage height, 9.20 ft); minimum observed, 216 cfs Nov. 13 (gage height, 7.40 ft).

1966-67: Maximum discharge observed, that of Apr. 17, 1967; minimum observed, 166 cfs July 25, 1966 (gage height, 7.25 ft).

Remarks.--Records good except those for winter months and period of no gage-height record Oct. 1-31, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	296	220	265	305	250	1,000	716	320	865	350	402
2	265	248	235	275	295	250	1,260	661	315	917	459	392
3	270	251	260	280	290	255	1,320	628	305	890	453	381
4	270	330	285	285	285	255	1,340	601	300	874	419	355
5	270	345	315	280	280	255	1,310	549	310	857	345	345
6	270	350	335	270	275	255	1,320	524	305	808	365	330
7	270	276	350	260	270	260	1,640	494	300	755	381	320
8	270	276	355	250	265	265	1,600	482	419	704	402	315
9	270	286	350	250	260	275	1,610	470	494	677	392	305
10	260	286	340	250	260	280	1,610	459	470	641	376	295
11	260	281	325	260	260	285	1,660	556	476	607	350	286
12	260	276	310	270	260	285	1,570	568	488	494	330	267
13	285	216	300	275	260	285	1,480	581	494	402	315	239
14	385	325	310	275	260	280	1,390	594	459	360	310	234
15	440	325	320	265	260	270	1,390	614	581	350	300	286
16	445	295	325	260	260	255	1,390	607	654	350	291	634
17	415	265	325	255	260	245	1,730	588	682	350	286	568
18	380	245	320	250	260	235	1,580	549	654	376	310	536
19	400	235	310	245	260	240	1,520	524	614	360	305	506
20	390	240	305	250	260	250	1,440	488	621	350	300	476
21	375	260	295	270	260	250	1,380	530	588	345	291	543
22	355	270	290	295	260	255	1,290	500	634	335	291	524
23	320	280	285	315	260	255	1,190	512	648	350	276	506
24	310	300	285	335	255	260	1,110	500	500	350	276	488
25	310	325	280	340	255	260	1,050	453	459	376	272	476
26	305	340	275	340	255	275	980	413	430	402	482	430
27	305	350	260	340	250	300	920	397	408	430	476	397
28	300	345	250	335	250	350	882	371	628	402	476	376
29	295	285	245	325	---	450	808	355	833	381	464	335
30	290	225	245	315	---	600	793	345	808	365	442	315
31	295	---	255	310	---	800	---	330	---	350	430	---
Total	9,815	8,627	9,160	8,790	7,430	9,285	39,563	15,959	15,197	16,073	11,225	11,862
Mean	317	288	295	284	265	300	1,319	515	507	518	362	395
Max	445	350	355	340	305	800	1,730	716	833	917	482	634
Min	260	216	220	245	250	235	793	330	300	335	272	234
Cfsm	.689	.626	.641	.617	.576	.652	2.87	1.12	1.10	1.13	.787	.859
In.	.79	.70	.74	.71	.60	.75	3.20	1.29	1.23	1.30	.91	.96

Cal yr : Total Mean 447 Max 1,730 Min 216 Cfsm .972 In. 13.18
Wtr yr 1967 : Total 162,986 Mean 447 Max 1,730 Min 216 Cfsm .972 In. 13.18

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0752. Evergreen Creek near Langlade, Wis.

Location.--Lat 45°10'11", long 88°48'12", in NW 1/4 sec. 18, T. 31 N., R. 14 E., at culvert on State Highway 64, 3 1/2 miles southwest of Langlade.

Drainage area.--8.0 sq mi, approximately.

Records available.--Annual maximum, water years 1959-66, and occasional low-flow measurements, water years 1961-64. June 1964 to September 1967, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Sept. 17, 1958, to June 16, 1964, crest-stage gage only.

Extremes.--Maximum discharge during water year, 44 cfs Apr. 17 (gage height, 10.84 ft); minimum recorded 9.0 cfs May 31 to June 4 (gage height, 9.69 ft).

1959-67: Maximum discharge, 78 cfs Apr. 11, 1965 (gage height, 11.62 ft); minimum recorded 7.7 cfs Sept. 5-7, 15-18, 1964 (gage height, 9.76 ft).

Remarks.--Records good. No winter record.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	10					17	11	9.0	12	10	10
2	11	10					27	10	9.0	11	12	10
3	11	11					19	10	9.0	11	10	10
4	12	10					13	10	9.0	10	9.9	10
5	11	10					13	9.9	9.3	9.9	9.9	10
6												
7	11	10					21	9.9	9.5	9.9	12	9.9
8	11	10					15	10	10	9.7	13	9.9
9	11	11					14	10	16	9.7	11	9.9
10	12	12					17	9.9	11	9.7	11	9.9
11	11	10					14	11	10	11	11	9.9
12	11	10										
13	11	10					12	16	12	11	11	9.9
14	11	9.9					11	12	13	9.9	11	9.9
15	13	10					11	11	11	9.7	11	9.9
16	18	10					13	10	9.9	9.5	10	10
17							13	9.9	15	9.5	10	20
18	12	11					14	9.7	19	9.5	10	15
19	12	12					36	9.7	14	9.5	11	11
20	11	12					20	9.7	11	9.5	11	10
21	11	12					14	9.7	11	9.5	11	10
22	11	11					12	9.7	12	9.5	11	10
23	11	10					12	11	9.9	9.5	11	10
24	11	11					11	11	9.7	9.7	11	10
25	11	16					11	9.9	9.9	9.7	11	9.9
26	11	13										
27	11	11					11	9.7	9.5	12	17	10
28	11	10					11	9.5	14	10	20	9.9
29	10	10					10	9.5	29	9.9	12	9.9
30	9.9	9.6					11	9.5	15	9.7	11	9.9
31	10					21	11	9.5	12	9.7	10	9.9
						20		9.3		9.7	10	
Total	350.9	332.5					438	321.0	358.4	310.6	350.8	314.7
Mean	11.3	11.1					14.6	10.4	11.9	10.0	11.3	10.5
Max	18	18					36	16	29	12	20	20
Min	9.9	9.6					10	9.3	9.0	9.5	9.9	9.9
Cfsm	1.41	1.39					1.82	1.30	1.49	1.25	1.41	1.31
In.	1.63	1.55					2.04	1.49	1.67	1.44	1.63	1.46

4-0770. Wolf River at Keshena Falls, Wis.

Location.--Lat 44°53'30", long 88°39'20", in E 1/2 sec. 22, T. 28 N., R. 15 E., on right bank 500 ft downstream from Keshena Falls, 1.7 miles upstream from Keshena, 3.1 miles downstream from West Branch Wolf River, and at mile 136.4.

Drainage area.--812 sq mi.

Records available.--May 1907 to March 1909, October 1910 to September 1967. Monthly discharge only for some periods, published in WSP 1307. Published as "at Keshena" prior to April 1928.

Gage.--Digital water-stage recorder. Datum of gage is 820.0 ft above mean sea level (levels by Wisconsin Power and Light Co.). Prior to March 1909, staff gage, and February 1911 to March 1928, chain gage, at bridge in Keshena 1.7 miles downstream at datum 4.03 ft lower and Mar. 23, 1928, to May 4, 1966, graphic water-stage recorder at present site and datum.

Average discharge.--58 years (1907-8, 1910-67), 753 cfs.

Extremes.--Maximum discharge during year, 3,220 cfs Apr. 17 (gage height, 8.35 ft); minimum discharge, 295 cfs Dec. 2 (gage height, 5.14 ft).
1907-9, 1910-67: Maximum discharge, 4,830 cfs May 7, 1960 (gage height, 9.67 ft) from rating curve extended above 3,300 cfs; instantaneous peak caused when earthfill wall near powerplant was dynamited to relieve pressure on dam; maximum discharge after flow stabilized, 4,430 cfs May 8 (gage height, 9.36 ft) from rating curve extended above 3,300 cfs; maximum gage height, 13.83 ft Nov. 17, 1943 (backwater from ice); minimum discharge, 91 cfs Dec. 22, 1939 (gage height, 4.67 ft), result of ice storage.

Remarks.--Records good except those for winter months, which are fair. Diurnal fluctuation caused by powerplant upstream.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	463	484	365	450	570	410	2,210	1,280	624	1,470	563	685
2	454	475	400	470	570	420	2,680	1,200	627	1,470	599	664
3	448	416	436	480	560	430	2,760	1,130	628	1,480	717	644
4	444	409	450	474	550	430	2,270	1,070	633	1,420	705	622
5	446	521	480	460	550	440	2,170	1,010	638	1,340	651	600
6	448	517	544	420	546	440	2,260	944	653	1,240	632	583
7	446	518	580	400	530	450	2,380	893	670	1,170	769	572
8	442	495	600	400	520	450	2,380	876	1,010	1,110	731	558
9	445	489	600	400	520	460	2,380	860	1,190	1,060	678	545
10	442	503	590	440	510	470	2,400	839	1,090	1,040	652	530
11	426	501	590	470	490	480	2,300	1,050	1,010	1,120	617	523
12	421	504	500	480	480	490	2,140	1,210	1,100	1,000	589	537
13	423	451	540	480	480	500	2,000	1,170	1,000	845	566	513
14	451	432	540	470	470	510	1,970	1,100	946	740	550	467
15	661	481	550	470	460	500	1,980	1,070	1,170	687	541	547
16	745	548	550	455	455	500	2,150	1,040	1,450	661	526	879
17	775	524	530	450	450	490	3,030	1,010	1,510	660	517	1,070
18	685	505	530	440	450	480	3,000	962	1,360	662	505	942
19	625	493	510	450	450	490	2,590	913	1,150	689	549	873
20	662	473	480	480	455	500	2,300	828	1,110	664	558	798
21	661	491	470	530	455	500	2,100	807	1,090	634	533	731
22	636	506	480	600	450	505	1,980	864	1,010	648	519	692
23	578	545	460	620	450	510	1,860	906	935	648	481	682
24	538	604	420	620	440	515	1,730	944	907	661	468	690
25	511	658	420	620	430	520	1,620	886	919	639	512	698
26	506	663	420	620	420	520	1,510	828	823	649	519	693
27	506	646	420	610	410	540	1,440	823	802	685	822	660
28	505	593	410	600	410	620	1,380	767	1,150	674	923	597
29	497	464	410	600	-----	700	1,330	718	1,510	639	863	557
30	489	406	420	590	-----	780	1,300	647	1,480	614	746	543
31	488	-----	430	580	-----	1,400	-----	638	-----	584	702	-----
Total	16,267	15,315	15,179	15,629	13,531	16,450	63,600	29,283	30,195	27,603	19,303	19,695
Mean	525	511	490	504	483	531	2,120	945	1,007	890	623	657
Max	775	663	600	620	570	1,400	3,030	1,280	1,510	1,480	923	1,070
Min	421	406	365	400	410	410	1,300	638	624	584	468	467
Cfsm	.65	.63	.60	.62	.60	.65	2.61	1.16	1.24	1.10	.77	.81
In.	.75	.70	.70	.72	.62	.75	2.91	1.34	1.38	1.26	.88	.90
Cal yr 1966 : Total	248,667		Mean 681		Max 1,700	Min 360	Cfsm .84	In. 11.39				
Wtr yr 1967 : Total	282,050		Mean 773		Max 3,030	Min 365	Cfsm .95	In. 12.92				

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4- 3	1800	8.17	3,000	6-16	1700	6.78	1,540
4-17	1400	8.35	3,220	6-29	1800	6.81	1,570

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0785. Embarrass River near Embarrass, Wis.

Location--Lat 44°43'30", long 88°44'10", in SW 1/4 sec. 18, T. 26 N., R. 15 E., on left bank 10 ft downstream from highway bridge, 1 1/4 mile downstream from Mill Creek, and 4 miles northwest of Embarrass.

Drainage area--395 sq mi.

Records available--June 1919 to September 1967.

Gage--Digital water-stage recorder. Altitude of gage is 800 ft (from survey level line in vicinity). Prior to Aug. 23, 1938, chain gage on downstream side of bridge at same datum. Aug. 24, 1938 to July 11, 1967, graphic water-stage recorder at same site and datum.

Average discharge--48 years, 283 cfs.

Extremes--Maximum discharge during year, 3,760 cfs Mar. 31 (gage height, 9.00 ft); minimum, 47 cfs Sept. 12 (gage height, 2.53 ft). 1919-67: Maximum discharge, 7,080 cfs Apr. 12, 1965 (gage height, 12.13 ft), affected by failure of dam near Pella, 9.2 miles above station; minimum observed, 23 cfs Aug. 3, 6, 7, 1931.

Remarks--Records good except those for winter months, which are fair. Slight diurnal fluctuation caused by powerplants above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	125	120	105	145	110	3,300	343	165	668	126	134
2	113	122	110	105	140	110	2,730	366	151	759	131	110
3	116	116	105	108	140	110	2,660	357	149	722	148	94
4	113	109	100	105	140	115	2,230	321	132	594	152	108
5	109	122	99	105	135	120	1,740	299	165	446	148	105
6	106	159	105	105	137	120	1,560	278	165	348	143	174
7	104	139	125	105	135	120	1,550	265	146	290	150	163
8	100	157	160	105	135	120	1,370	270	420	261	177	110
9	104	120	170	105	135	120	1,240	261	883	226	199	96
10	104	144	170	105	135	120	1,160	265	910	226	171	64
11	104	154	165	110	135	125	1,050	354	780	230	155	55
12	102	127	145	120	135	130	938	536	695	230	113	48
13	102	129	130	120	135	139	764	589	748	195	102	66
14	122	122	125	115	140	140	695	488	706	167	122	91
15	205	125	115	110	140	140	674	395	552	155	122	112
16	334	127	110	105	140	140	791	330	647	144	114	200
17	316	132	110	100	140	140	1,770	282	883	150	114	296
18	265	144	110	97	140	140	2,220	270	829	148	118	275
19	226	139	110	98	140	140	1,790	245	642	143	117	212
20	185	134	110	100	135	140	1,360	234	478	139	138	157
21	146	132	110	110	130	140	1,020	230	343	138	127	143
22	157	141	110	135	125	140	888	215	343	141	118	131
23	144	168	110	160	120	145	748	208	290	129	113	124
24	139	211	105	175	120	155	616	249	253	123	113	124
25	132	219	105	180	115	170	462	270	274	131	130	120
26	118	230	105	175	110	205	441	253	303	135	110	111
27	120	222	105	170	110	300	420	230	282	167	141	118
28	127	195	105	165	110	640	375	211	299	173	155	106
29	127	139	105	160	---	1,050	334	201	430	159	177	109
30	127	125	105	155	---	1,600	348	189	520	142	174	111
31	127	---	105	150	---	3,290	---	176	---	134	140	---
Total	4,512	4,428	3,664	3,863	3,697	10,374	37,244	9,180	13,583	7,813	4,258	3,867
Mean	146	148	118	125	132	335	1,241	296	453	252	137	129
Max	334	230	170	180	145	3,290	3,300	589	910	759	199	296
Min	100	109	99	97	110	110	334	176	132	123	102	48
Cfsm	.370	.375	.299	.316	.334	.848	3.14	.749	1.15	.638	.347	.327
In.	.42	.42	.34	.36	.35	.98	3.51	.86	1.28	.74	.40	.36
Cal yr 1966: Total	104,790			Mean 287	Max 1,600	Min 82	Cfsm .727	In. 9.86				
Wtr yr 1967: Total	106,483			Mean 292	Max 3,300	Min 48	Cfsm .739	In. 10.02				

Peak discharge (base, 1,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-31	2100	9.00	3,760	4-18	0300	7.14	2,420

4-0790. Wolf River at New London, Wis.

Location--Lat 44°23'30", long 88°44'25", in SE 1/4 sec. 12, T. 22 N., R. 14 E., on right bank 100 ft downstream from Pearl Street bridge in New London, 0.2 mile downstream from Embarrass River, and at mile 56.3.

Drainage area--2,240 sq mi, approximately.

Records available--March 1896 to September 1967. Prior to October 1913 monthly discharge only, published in WSP 1307.

Gage--Digital water-stage recorder. Datum of gage is 749.37 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 4, 1951, staff gage, and Oct. 5, 1951, to June 7, 1964, graphic water-stage recorder at same site and datum.

Average discharge--71 years, 1,701 cfs.

Extremes--Maximum discharge during year, 10,200 cfs Apr. 4 (gage height, 9.94 ft); minimum, 637 cfs Oct. 12 (gage height, 0.59 ft).
1896-1967: Maximum daily discharge, 15,500 cfs Apr. 13, 1922 (gage height, 11.4 ft); minimum daily, 150 cfs Mar. 1, 1900.
Maximum stage known, 11.6 ft Apr. 16, 1888, from information by Corps of Engineers.

Remarks--Records good except those for winter months, which are fair.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	670	850	830	770	920	740	6,200	3,480	1,460	3,020	1,170	1,240
2	676	818	710	770	900	740	8,230	3,330	1,370	3,060	1,140	1,180
3	709	827	660	770	890	740	9,640	3,190	1,260	3,100	1,140	1,100
4	731	827	670	770	880	740	10,100	3,040	1,180	3,130	1,140	1,060
5	706	834	720	770	860	740	9,910	2,900	1,140	3,170	1,120	1,030
6	691	805	860	780	840	740	9,600	2,780	1,110	3,190	1,120	1,010
7	694	799	910	790	820	740	9,020	2,670	1,110	3,190	1,150	965
8	700	846	970	800	810	750	8,230	2,570	1,170	3,150	1,160	952
9	700	875	1,050	810	800	770	7,650	2,460	1,390	3,080	1,200	942
10	697	898	1,080	820	800	800	6,940	2,330	2,000	2,990	1,260	904
11	658	885	1,100	831	790	830	6,490	2,260	2,320	2,880	1,250	865
12	643	901	1,060	830	780	850	6,090	2,230	2,590	2,770	1,200	875
13	667	920	1,020	830	780	860	5,820	2,270	2,770	2,660	1,150	856
14	685	923	960	820	780	860	5,610	2,310	2,930	2,500	1,090	837
15	728	920	920	800	780	850	5,320	2,320	3,160	2,270	1,030	859
16	815	901	910	780	770	840	5,090	2,310	3,490	2,010	993	894
17	1,040	875	910	770	770	817	4,950	2,270	3,760	1,740	979	946
18	1,260	891	900	760	760	810	4,740	2,190	4,030	1,530	969	1,090
19	1,260	901	900	760	760	810	4,600	2,130	4,160	1,400	962	1,220
20	1,230	920	890	780	760	820	4,570	2,030	4,170	1,330	958	1,300
21	1,180	923	870	790	760	830	4,890	1,890	4,100	1,280	957	1,290
22	1,130	926	850	810	760	840	5,260	1,780	3,990	1,240	990	1,220
23	1,070	952	820	850	760	850	5,390	1,700	3,840	1,220	952	1,140
24	1,030	1,040	800	900	750	860	5,260	1,670	3,690	1,180	942	1,060
25	965	1,180	790	950	750	900	5,020	1,670	3,540	1,120	923	1,020
26	926	1,320	780	1,000	740	1,000	4,780	1,690	3,380	1,120	914	1,010
27	920	1,350	780	1,040	740	1,600	4,440	1,700	3,250	1,140	926	981
28	891	1,310	780	1,040	740	1,800	4,110	1,690	3,160	1,180	939	939
29	875	1,210	770	1,020	-----	2,300	3,850	1,650	3,120	1,220	1,040	955
30	878	1,160	770	990	-----	2,800	3,640	1,590	3,040	1,220	1,140	949
31	882	-----	770	950	-----	4,200	-----	1,540	-----	1,200	1,210	-----
TOTAL	26,707	28,787	26,810	26,151	22,250	33,827	185,440	69,640	81,680	65,290	33,114	30,709
MEAN	862	960	865	844	795	1,091	6,181	2,246	2,723	2,106	1,068	1,024
MAX	1,260	1,350	1,100	1,040	920	4,200	10,100	3,480	4,170	3,190	1,260	1,300
MIN	643	799	660	760	740	740	3,640	1,540	1,110	1,120	914	837
CFSM	.38	.43	.39	.38	.35	.49	2.76	1.00	1.22	.94	.48	.46
IN.	.44	.48	.45	.43	.37	.56	3.08	1.16	1.36	1.08	.55	.51
CAL YR 1966: TOTAL	570,628			MEAN 1,563	MAX 5,180	MIN 643	CFSM .70	IN 9.47				
WAT YR 1967: TOTAL	630,405			MEAN 1,727	MAX 10,100	MIN 643	CFSM .77	IN 10.47				

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0800. Little Wolf River at Royalton, Wis.

Location.--Lat 44°24'45", long 88°51'55", in NW 1/4 sec. 1, T. 22 N., R. 13 E., on right bank 50 ft upstream from highway bridge in Royalton and 6 miles upstream from mouth.

Drainage area.--514 sq mi.

Records available.--January 1914 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 774.00 ft above mean sea level, datum of 1929. Prior to Aug. 20, 1915, chain gage at highway bridge at datum 0.75 ft lower. Aug. 20, 1915, to Apr. 23, 1934, staff gage, and Apr. 24, 1934, to July 27, 1964, graphic water-stage recorder at present site and datum.

Average discharge.--53 years, 395 cfs.

Extremes.--Maximum discharge during year, 4,000 cfs Apr. 1 (gage height, 5.45 ft); maximum gage height, 6.35 ft Mar. 28 (backwater from ice); minimum daily, 145 cfs Nov. 4, Dec. 27-31, Jan. 6.
1914-67: Maximum discharge, 6,950 cfs Mar. 30, 1943 (gage height, 8.00 ft), from rating curve extended above 3,500 cfs; maximum gage height, 11.95 ft, Mar. 28, 1950 (backwater from ice); minimum discharge, 52 cfs Nov. 26, 1958 (gage height, 0.75 ft), result of freezeup.

Remarks.--Records good except those for winter months, which are fair. Occasional fluctuation caused by recreation dam 6 miles upstream.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	160	175	180	150	205	165	3,850	424	261	959	216	195
2	159	165	170	150	205	165	3,440	596	251	958	232	186
3	159	155	165	150	200	165	2,980	456	241	932	243	178
4	159	145	165	150	195	165	2,330	344	231	890	243	170
5	157	175	175	150	190	170	2,030	330	233	743	228	160
6	157	198	190	145	190	170	1,790	357	206	475	218	160
7	157	207	205	150	185	170	1,490	341	233	412	229	158
8	157	201	230	150	185	175	1,400	352	333	464	240	157
9	159	191	240	160	185	185	1,330	352	937	406	249	171
10	156	186	240	175	180	195	1,200	360	1,080	335	246	151
11	153	189	225	196	180	215	1,060	401	903	343	239	151
12	152	186	210	195	175	220	1,000	529	1,190	327	227	151
13	151	184	195	190	175	230	828	685	996	307	216	151
14	153	180	185	185	175	235	728	512	1,020	276	209	156
15	180	180	180	175	175	240	742	477	1,260	258	201	185
16	226	184	180	165	175	241	758	432	1,660	245	189	235
17	383	187	180	160	175	245	860	351	1,870	240	180	485
18	338	186	175	155	175	250	1,110	304	1,690	234	187	391
19	172	186	170	150	170	250	1,180	322	1,410	234	186	242
20	185	189	170	150	170	250	1,180	313	1,000	231	188	232
21	189	192	170	155	170	250	1,080	302	751	230	188	222
22	188	202	165	165	170	250	920	295	639	229	184	208
23	183	236	160	185	170	250	762	305	513	231	181	190
24	181	282	155	205	165	260	437	326	486	225	178	187
25	179	427	155	240	165	285	641	344	496	220	175	186
26	177	497	150	255	165	350	594	334	501	226	176	185
27	176	338	145	250	165	660	350	325	471	229	191	184
28	177	174	145	235	165	1,900	400	306	609	230	209	184
29	176	195	145	225	-----	2,960	408	307	607	223	232	179
30	173	206	145	220	-----	3,300	409	301	591	211	253	167
31	173	-----	145	210	-----	3,760	-----	279	-----	202	222	-----
TOTAL	5,845	6,398	5,510	5,596	5,000	18,326	37,287	11,662	22,669	11,725	6,555	5,957
MEAN	182	213	178	181	179	591	1,243	376	756	378	211	199
MAX	383	497	240	255	205	3,760	3,850	685	1,870	959	253	485
MIN	151	145	145	145	165	165	350	279	206	202	175	151
CFSM	.35	.41	.35	.35	.35	1.15	2.42	.73	1.47	.74	.41	.39
IN.	.41	.46	.40	.40	.36	1.33	2.70	.84	1.64	.85	.47	.43
CAL YR 1966: TOTAL 131,708 MEAN 361 MAX 2,100 MIN 145 CFSM .70 IN 9.53												
WAT YR 1967: TOTAL 142,330 MEAN 390 MAX 3,850 MIN 145 CFSM .76 IN 10.30												

Peak discharge (base, 1,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-1	0100	5.45	4,000	6-17	1900	3.59	2,000

STREAMS TRIBUTARY TO LAKE MICHIGAN

41

4-0825. Lake Winnebago at Oshkosh, Wis.

Location.--Lat 44°00'40", long 88°32'00", in sec. 24, T. 18 N., R. 17 E., in mouth of the Upper Fox River at Chicago and North Western Railway bridge, 0.2 mile downstream from Main Street Bridge in Oshkosh and 18 miles up the lake from Menasha Dam and outlet.

Drainage area.--6,030 sq mi, approximately, at lake outlet at Menasha Dam.

Records available.--October 1938 to September 1967 in reports of Geological Survey. Records from 1857 to 1938 in files of Corps of Engineers. A report on Fox River by Corps of Engineers, published as House Document No. 146, 67th Congress, 2nd session, contains semi-monthly records of inflow to Lake Winnebago for the period 1896-1917.

Gage.--Staff gage read once daily. Datum of gage is 745.05 ft above mean tide at New York City (levels by Corps of Engineers). Prior to 1882, lake levels were referred to Deuchman gage at lake outlet of Menasha Dam. Datum of Deuchman gage, which is still in existence, is 745.00 ft above mean tide at New York City.

Extremes.--Maximum gage height observed during year, 3.22 ft May 19; minimum observed, 0.77 ft Mar. 17.
1957-67: Maximum gage height observed, 5.33 ft (Deuchman gage) Nov. 8, 1881; minimum observed, -2.00 ft (Deuchman gage) Nov. 28, 1891.

Remarks.--Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 1/4 in. above the crest of Menasha Dam down to crest during navigation season, plus additional 18 in. below crest during winter. Oshkosh staff gage gives true level of lake, while Deuchman gage readings are affected by loss of head in the channel between lake and dam.

Cooperation.--Records furnished by Corps of Engineers.

Gage height, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.03	1.96	1.91	2.00	1.88	1.12	1.45	2.99	3.03	3.13	2.84	2.53
2	2.02	2.01	1.90	2.00	1.88	1.10	1.64	2.72	3.05	3.14	2.83	2.52
3	2.01	1.92	1.90	2.00	1.85	1.08	1.80	3.00	3.03	3.16	2.83	2.49
4	1.95	2.02	1.90	1.97	1.84	1.04	1.96	3.02	3.01	3.18	2.81	2.49
5	1.98	1.98	1.89	1.98	1.82	1.00	2.10	3.03	3.00	3.18	2.77	2.50
6	1.98	1.95	1.90	1.95	1.80	.96	2.32	3.03	2.98	3.12	2.74	2.49
7	1.98	1.92	1.95	1.95	1.80	.93	2.42	3.03	3.00	3.05	2.71	2.48
8	1.96	1.90	2.08	1.94	1.80	.90	2.58	3.03	3.01	3.03	2.70	2.43
9	1.94	2.02	2.03	1.93	1.80	.90	2.74	3.00	2.92	3.01	2.71	2.52
10	1.92	2.04	2.03	1.98	1.70	.87	2.91	3.00	2.95	3.00	2.75	2.44
11	1.98	2.00	2.03	1.99	1.68	.87	2.92	3.17	2.98	3.00	2.71	2.38
12	1.99	1.99	2.03	1.98	1.66	.86	2.93	3.10	3.03	3.00	2.70	2.39
13	1.99	1.98	2.03	1.98	1.65	.85	2.93	3.10	3.09	2.95	2.69	2.38
14	1.98	1.97	2.03	1.98	1.60	.89	3.05	3.11	3.12	2.94	2.69	2.35
15	1.98	1.97	1.99	1.98	1.58	.78	3.03	3.12	3.10	2.93	2.64	2.37
16	1.98	1.98	2.00	1.97	1.57	.78	3.01	3.08	3.17	2.91	2.60	2.37
17	1.98	1.99	2.00	1.97	1.52	.77	3.00	3.08	3.15	2.89	2.60	2.41
18	2.00	1.90	2.01	1.97	1.50	.78	3.10	3.08	3.12	2.89	2.55	2.41
19	1.99	1.91	2.02	1.97	1.48	.79	3.19	3.22	3.10	2.89	2.55	2.43
20	2.00	1.93	2.01	1.98	1.46	.80	3.15	3.17	3.03	2.86	2.54	2.40
21	2.00	1.95	2.00	1.95	1.42	.81	3.05	3.13	3.01	2.86	2.53	2.39
22	2.00	1.96	1.99	1.92	1.41	.85	3.00	3.09	3.12	2.86	2.52	2.50
23	1.99	1.96	2.00	1.88	1.40	.88	2.95	3.09	3.12	2.87	2.52	2.33
24	1.98	1.97	2.00	1.95	1.40	.88	2.91	3.02	3.13	2.88	2.45	2.38
25	1.98	1.98	1.99	1.97	1.34	.92	2.85	3.05	3.14	2.88	2.45	2.35
26	1.98	1.96	1.98	1.96	1.28	.96	2.88	3.05	3.15	2.88	2.47	2.34
27	1.98	1.94	1.97	1.97	1.22	1.02	2.87	3.07	3.11	2.89	2.49	2.47
28	1.97	1.92	1.98	1.94	1.18	1.09	2.85	3.09	3.15	2.90	2.51	2.36
29	1.97	1.91	2.00	1.91	- - - -	1.12	2.89	3.12	3.11	2.90	2.50	2.26
30	1.97	1.91	2.00	1.88	- - - -	1.15	2.94	3.08	3.12	2.89	2.47	2.34
31	1.96	- - - -	2.00	1.89	- - - -	1.25	- - - -	3.05	- - - -	2.88	2.48	- - - -

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0845. Fox River at Rapide Croche Dam, near Wrightstown, Wis.

Location.--Lat 44°19'00", long 88°11'50", in SE 1/4 sec. 4, T. 21 N., R. 19 E., at Rapide Croche Dam, 2 miles upstream from Wrightstown, and 18 miles upstream from mouth.

Drainage area.--6,150 sq mi, approximately.

Records available.--March 1896 to September 1917 (monthly discharge only), October 1917 to September 1967.

Gage.--Recording headwater and tailwater gages and electric generation data taken each half hour are used to compute the discharge records.

Average discharge.--71 years, 4,146 cfs.

Extremes.--Maximum daily discharge during year, 15,400 cfs Apr. 17; minimum daily, 860 cfs Oct. 19.

1918-67: Maximum daily discharge, 24,000 cfs Apr. 18, 1952; minimum daily, 138 cfs Aug. 2, 1936.

Remarks.--Records good. Flow regulated by storage in Lake Winnebago (see p. 41). Daily discharge determined from records of flow through turbines, head, gate openings, and lockages through navigation canal. An average of about 10 to 15 cfs diverted into basin from Wisconsin River at Portage Canal throughout the year.

Cooperation.--Figures of daily discharge furnished by Corps of Engineers. Records reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,250	930	1,920	2,440	3,330	4,580	2,380	4,540	2,520	3,180	2,430	1,810
2	1,370	2,000	1,470	2,390	3,210	4,980	2,510	4,470	2,760	7,550	2,540	1,750
3	1,330	1,610	3,440	2,400	3,230	4,320	3,170	3,960	2,870	7,770	2,260	1,720
4	1,160	1,870	3,970	2,360	3,280	4,100	4,750	4,260	2,800	6,910	1,890	1,600
5	1,150	1,700	2,270	2,380	2,750	4,130	4,670	4,370	2,650	5,490	2,060	1,740
6	1,280	1,660	2,360	2,480	3,680	4,130	5,390	4,590	2,700	6,850	2,150	1,670
7	1,350	1,720	2,280	2,500	3,460	4,120	6,090	4,670	2,860	6,980	2,150	1,920
8	1,300	1,720	2,470	2,460	4,320	4,150	6,500	4,470	2,890	6,670	2,110	1,720
9	1,190	1,590	2,610	2,490	4,310	3,280	6,880	4,280	3,300	6,590	2,270	1,520
10	1,300	1,740	2,310	2,400	4,280	4,190	7,140	4,400	3,270	6,680	1,790	1,620
11	1,180	1,630	2,240	2,470	4,070	3,470	9,920	4,560	3,150	5,440	2,070	1,700
12	1,140	1,770	2,440	2,440	4,110	4,030	11,000	4,380	5,260	5,270	2,070	1,580
13	1,210	1,770	2,440	2,530	4,390	3,860	11,100	4,600	7,150	5,030	2,030	1,630
14	1,180	1,780	2,330	2,380	4,410	3,630	12,200	4,580	7,150	3,810	1,790	1,670
15	1,350	2,550	2,340	2,450	3,710	2,970	12,700	4,590	3,840	3,840	1,740	1,680
16	1,190	2,350	2,370	2,470	4,970	2,950	13,300	4,720	9,040	3,100	2,000	1,520
17	980	2,290	2,350	2,320	4,850	2,480	15,400	4,750	7,010	3,510	2,820	1,480
18	1,530	2,210	2,320	2,370	4,440	1,630	14,300	4,950	7,490	2,960	2,600	1,420
19	860	2,260	2,520	2,650	4,580	2,220	14,600	4,720	7,530	2,300	1,410	1,710
20	1,030	2,390	2,410	3,600	4,740	2,090	14,600	3,490	7,750	2,570	1,930	1,770
21	1,370	2,450	2,430	3,790	5,030	1,730	14,500	2,640	7,540	2,750	2,010	1,500
22	1,450	2,300	2,310	3,480	5,030	1,720	14,200	2,720	7,530	2,590	1,750	1,710
23	1,250	2,420	2,320	3,880	4,840	1,860	14,000	3,320	7,500	2,340	1,870	1,670
24	990	2,320	2,430	3,710	4,750	2,060	14,000	2,900	7,090	2,750	1,840	1,550
25	1,160	2,690	2,310	3,910	4,650	2,090	13,900	2,770	6,950	2,530	1,860	1,820
26	1,250	2,370	2,280	3,190	4,570	2,670	13,400	3,260	7,200	2,870	1,860	1,740
27	1,370	2,120	2,490	3,190	4,670	2,910	11,400	2,690	7,380	2,400	1,850	1,210
28	1,200	2,090	2,450	3,480	4,590	1,970	6,920	2,660	7,680	2,400	1,870	1,590
29	1,050	2,340	2,440	3,310	- - - -	2,190	5,590	2,610	7,240	2,480	1,900	1,410
30	1,230	2,460	2,450	3,370	- - - -	2,160	4,230	2,520	7,650	2,340	1,530	1,800
31	1,310	- - - -	2,420	3,330	- - - -	2,240	- - - -	2,590	- - - -	2,260	- - - -	- - - -
Total	37,960	61,100	75,190	88,620	118,250	94,910	290,740	120,030	172,750	135,210	62,170	49,230
Mean	1,225	2,037	2,425	2,859	4,223	3,062	9,691	3,872	5,758	4,362	2,005	1,641
Max	1,530	2,690	3,970	3,910	5,030	4,980	15,400	4,950	9,040	8,180	2,820	1,920
Min	860	930	1,470	2,320	2,750	1,630	2,380	2,520	2,520	2,260	1,410	1,210

Cal yr 1966: Total 1,459,640 Mean 3,999 Max 14,200 Min 860
Wtr yr 1967: Total 1,306,160 Mean 3,579 Max 15,400 Min 860

STREAMS TRIBUTARY TO LAKE MICHIGAN

43

4-0852. Kewaunee River near Kewaunee, Wis.

Location.--Lat 44°27'30", long 87°33'23", in SW 1/4 sec. 14, T. 23 N., R. 24 E., on left bank just downstream from bridge on County Trunk F, about 7 miles upstream from mouth, and 2.3 miles west of Kewaunee.

Drainage area.--129 sq mi.

Records available.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1963-64. September 1964 to September 1967. No winter records for water years 1965 and 1966.

Gage.--Water-stage recorder and crest-stage gage. Apr. 3, 1957, to Sept. 2, 1964, crest-stage gage only.

Extremes.--Maximum discharge during year, 2,230 cfs Mar. 27 (gage height, 13.20 ft); minimum, 4.5 cfs Nov. 3, 4 (gage height, 8.14 ft), result of freezeup.
1958-67: Maximum discharge, 6,500 cfs Mar. 30, 1960 (gage height, 16.03 ft); 1965-67; minimum, that of Nov. 3, 4, 1967.

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

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	11	11	12	18	12	264	92	33	108	17	18
2	10	11	10	12	17	12	226	102	33	131	18	16
3	9.9	9.9	10	12	16	13	220	69	33	224	16	14
4	9.5	9.5	10	12	15	13	153	57	32	157	14	14
5	9.5	10	11	12	15	13	131	50	30	107	14	13
6	9.5	10	14	12	14	13	166	46	29	83	15	13
7	9.0	11	19	12	14	13	172	44	31	63	18	13
8	8.6	11	25	12	14	12	144	48	61	52	16	13
9	9.0	12	39	12	14	12	141	50	157	48	16	12
10	8.6	13	30	12	14	13	160	49	328	45	15	12
11	8.3	12	25	13	14	14	123	137	245	38	13	12
12	8.3	12	20	13	14	16	98	185	272	35	13	12
13	8.6	11	16	13	15	30	87	113	727	32	12	12
14	9.9	10	14	13	15	70	85	80	262	30	11	13
15	12	10	13	12	15	78	83	59	460	29	11	13
16	12	10	13	12	15	62	78	50	566	25	11	13
17	11	10	13	11	15	45	255	44	283	25	11	13
18	10	10	13	10	15	35	175	40	172	25	12	13
19	11	10	12	10	15	31	118	41	119	25	13	12
20	11	10	12	10	15	29	92	40	95	24	12	12
21	11	10	12	11	14	29	88	38	87	23	12	12
22	11	11	12	12	14	29	94	42	79	22	12	12
23	10	11	12	13	13	31	79	45	67	22	12	12
24	9.9	13	11	19	12	45	67	50	69	21	11	12
25	10	20	11	30	12	200	60	46	85	20	11	12
26	11	18	11	32	12	1,100	56	42	72	21	11	12
27	11	18	11	32	12	1,710	51	38	61	24	24	13
28	11	17	11	30	12	920	48	36	71	22	28	13
29	11	14	12	26		622	46	36	94	20	24	13
30	11	12	12	23	- - - -	460	48	36	78	18	25	13
31	11	- - - -	12	20	- - - -	392	- - - -	35	- - - -	17	20	- - - -
Total	313.6	357.4	457	485	400	6,074	3,608	1,840	4,731	1,536	468	387
Mean	10.1	11.9	14.7	15.6	14.3	196	120	59.4	158	49.5	15.1	12.9
Max	12	20	39	32	18	1,710	264	185	727	224	28	18
Min	8.3	9.5	10	10	12	12	46	35	29	17	11	12
Cfsm	.078	.092	.114	.121	.111	1.52	.930	.460	1.22	.384	.117	.100
In.	.09	.10	.13	.14	.12	1.75	1.04	.53	1.36	.44	.13	.11

Cal yr 1966 : Total - Mean - Max - Min - Cfsm - In. -
Wtr yr 1967 : Total 20,657 Mean 56.6 Max 1,710 Min 8.3 Cfsm .439 In. 5.94

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0855. Cedar Lake near Kiel, Wis.

Location.--Lat 43°55'35", long 87°56'25", in SW 1/4 sec. 24, T. 17 N., R. 21 E., at Cedar Lake Resort on narrows of lake, 5.8 miles east of Kiel.

Drainage area.--1.33 sq mi.

Records available.--August 1936 to September 1942; April 1945 to September 1967 (fragmentary).

Gage.--Staff gage. Altitude of gage is 890 ft (from topographic map).

Extremes.--Maximum elevation observed during year, 97.15 ft May 6; minimum observed, 96.10 ft Sept. 23.

1936-42, 1945-67: Maximum elevation observed, 98.72 ft Mar. 9, 1946; minimum observed, 93.34 ft Oct. 4, Nov. 1, 1958, Jan. 17, 1959.

An elevation of 100.37 ft was observed May 20, 1929, by Wisconsin Department of Natural Resources.

Remarks.--Gage heights have been reduced to elevations above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake ice covered about Nov. 26 to Apr. 1.

Elevations, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.80						6.81					6.38
2			6.40						7.05			
3												
4												
5	6.71	6.50									6.70	
6								7.15		7.00		
7												
8	6.66						6.83		6.97	6.96	6.67	
9												6.20
10			6.40	6.74					7.00			
11												
12		6.52									6.60	
13								7.13				6.17
14			6.60		6.80							
15	6.60						6.95			7.00		
16												6.16
17			6.58						7.08			
18												
19		6.52									6.50	
20								7.13				
21												
22	6.60						7.11			6.78		6.10
23												
24			6.58						6.98			
25						6.81						
26		6.52					7.05				6.40	
27								7.05				
28												
29	6.56						7.09			6.84		6.12
30									7.04			
31						6.81						

Note.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources.

4-0860. Sheboygan River at Sheboygan, Wis.

Location.--Lat 43°44'25", long 87°45'35", in E 1/2 sec. 29, T. 15 N., R. 23 E., on left bank 0.7 mile upstream from bridge on State Highway 28, near west city limits of Sheboygan, and 4.2 miles upstream from mouth.

Drainage area.--432 sq mi.

Records available.--June 1916 to September 1924 (published as "near Sheboygan"), September 1950 to September 1966. Monthly discharge only for some periods, published in WSP 1307, 1727.

Gage.--Digital water-stage recorder. Datum of gage is 584.00 ft above mean sea level, datum of 1929. June 1916, to June 1924, chain gage at site 0.7 mile downstream at different datum. November 1950, to June 1951, staff gage at site 0.3 mile downstream at datum 3.15 ft lower. June 1951 to June 9, 1964, graphic water-stage recorder at present site and datum.

Average discharge.--25 years (1916-24, 1950-67), 232 cfs.

Extremes.--Maximum discharge during year, 2,710 cfs Apr. 17 (gage height, 7.86 ft); minimum, 19 cfs Oct. 11 (gage height, 1.52 ft). 1916-24, 1950-67: Maximum discharge observed, 7,140 cfs Mar. 26, 1920 (gage height, 9.40 ft, datum then in use); minimum observed, about 1 cfs Aug. 27, 1922 (gage height, 1.48 ft, datum then in use), caused by shutdown of powerplants.

Remarks.--Records good except those for winter months, which are fair. Diurnal fluctuation caused by numerous powerplants above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	36	39	37	46	230	56	936	275	77	184	43	34
2	32	44	37	48	200	60	852	308	67	158	42	30
3	33	38	37	50	180	66	811	295	66	139	40	32
4	34	28	37	53	160	68	696	238	66	126	39	29
5	39	47	40	58	150	66	645	183	57	113	37	30
6	28	46	50	62	135	64	1,490	117	56	108	34	34
7	27	44	96	64	120	64	1,210	80	67	100	36	33
8	23	48	184	64	120	66	892	76	92	89	40	30
9	22	60	236	63	120	90	792	80	92	81	37	29
10	24	64	177	63	125	140	790	72	106	93	34	29
11	21	66	139	63	120	370	632	140	139	100	37	29
12	28	60	113	63	110	400	525	215	210	80	33	25
13	37	51	84	64	110	380	480	185	384	67	34	28
14	41	48	78	64	110	340	455	160	356	60	32	25
15	49	80	70	63	115	300	417	162	243	56	30	27
16	51	64	60	62	115	260	554	161	208	55	30	32
17	52	40	55	61	100	220	2,020	147	198	49	27	31
18	47	39	48	60	90	200	1,110	136	198	44	29	35
19	49	37	44	62	82	170	792	141	170	43	26	34
20	49	39	42	64	74	150	590	138	139	42	29	34
21	48	44	41	74	70	135	511	119	116	45	36	33
22	44	51	41	90	66	130	507	116	113	42	31	32
23	39	52	41	120	64	220	469	117	105	48	31	31
24	40	52	41	200	62	400	413	121	105	49	32	27
25	40	61	41	340	60	480	350	119	111	48	29	29
26	41	66	41	350	58	600	305	111	130	53	31	30
27	38	76	42	340	56	1,190	273	98	114	53	34	47
28	46	72	42	320	56	1,000	224	98	109	63	35	49
29	43	41	43	310	-----	900	214	87	202	56	33	41
30	42	38	44	270	-----	843	250	87	228	48	42	30
31	38	-----	45	240	-----	927	-----	84	-----	49	37	-----
TOTAL	1,181	1,535	2,126	3,851	3,058	10,355	20,205	4,466	4,324	2,341	1,060	959
MEAN	38.1	51.2	68.6	124	109	334	674	144	144	75.5	34.2	32.0
MAX	52	80	236	350	230	1,190	2,020	308	384	184	43	49
MIN	21	28	37	46	56	56	214	72	56	42	26	25
CFSM	.09	.12	.16	.29	.25	.77	1.56	.33	.33	.17	.08	.07
IN.	.10	.13	.18	.33	.26	.89	1.74	.38	.37	.20	.09	.08

CAL YR 1966: TOTAL 83,212 MEAN 228 MAX 4,640 MIN 21 CFSM .53 IN 7.16
WAT YR 1967: TOTAL 55,461 MEAN 152 MAX 2,020 MIN 21 CFSM .35 IN 4.77

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-6	0900	6.84	1,900	4-17	0400	7.86	2,710

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0865. Cedar Creek near Cedarburg, Wis.

Location.--Lat 43°19'25", long 87°58'50", on line between secs. 14 and 23, T. 10 N., R. 21 E., on upstream side of highway bridge, 2 miles north of Cedarburg and 6 miles upstream from mouth.

Drainage area.--121 sq mi.

Records available.--August 1930 to September 1967.

Gage.--Wire-weight gage and crest-stage indicator; gage read twice daily. Datum of gage is 795.33 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 11, 1958, chain gage at same site and datum.

Average discharge.--37 years, 62.7 cfs.

Extremes.--Maximum discharge during year, 613 cfs Mar. 26 (gage height, 7.65 ft, backwater from ice); minimum daily 7.4 cfs Oct. 1-12 (gage height, 5.17 ft).

1930-67: Maximum discharge observed, about 3,600 cfs Mar. 30, 1960 (gage height, 12.25 ft, from graph based on gage readings, backwater from ice); minimum observed, 0.2 cfs Aug. 9-12, 1936.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	11	15	17	100	21	166	71	32	58	30	12
2	7.4	11	12	17	84	22	157	67	28	50	24	11
3	7.4	11	11	18	66	23	150	64	26	33	21	10
4	7.4	11	11	19	58	24	132	58	24	29	18	10
5	7.4	11	11	20	50	24	110	55	22	28	16	9.0
6	7.4	11	13	21	45	25	119	50	21	27	14	9.0
7	7.4	13	30	22	40	25	122	49	22	26	13	8.5
8	7.4	17	45	23	38	26	116	46	28	22	14	8.5
9	7.4	22	58	24	36	35	150	44	36	21	14	8.0
10	7.4	25	41	24	35	90	170	47	73	19	14	8.0
11	7.4	22	31	25	35	150	132	90	259	19	12	8.0
12	7.4	19	23	25	35	150	108	128	266	24	11	8.5
13	8.6	17	21	25	35	140	100	119	221	27	10	8.5
14	12	16	19	25	35	125	96	119	157	22	9.5	8.5
15	16	16	18	25	36	110	88	80	82	19	9.0	9.0
16	17	16	17	25	37	96	88	73	71	17	8.5	9.0
17	14	16	16	25	36	84	119	62	58	16	8.5	9.0
18	14	14	15	25	38	72	125	53	53	14	8.5	9.0
19	12	14	15	25	33	64	103	64	47	14	10	9.0
20	12	15	14	26	30	60	88	62	42	11	12	9.0
21	12	16	14	28	28	56	84	60	39	12	12	9.0
22	11	17	14	35	25	52	128	57	36	12	10	9.0
23	11	18	14	41	24	58	110	50	33	17	10	8.5
24	11	19	14	60	22	90	90	49	33	14	9.0	8.0
25	11	22	14	100	22	300	82	44	42	15	8.0	8.0
26	11	22	14	170	21	600	73	40	37	17	9.5	9.5
27	11	24	14	180	21	500	67	37	32	19	9.5	10
28	11	28	15	180	21	282	64	36	47	19	9.5	10
29	11	26	15	175	- - - -	218	64	42	80	17	11	10
30	11	20	15	160	- - - -	189	64	40	67	24	12	10
31	11	- - - -	16	125	- - - -	173	- - - -	37	- - - -	36	15	- - - -
Total	316.4	520	595	1,710	1,086	3,884	3,265	1,893	2,014	698	392.5	273.5
Mean	10.2	17.3	19.2	55.2	38.8	125	109	61.1	67.1	22.5	12.7	9.12
Max	17	28	58	180	100	600	170	128	266	58	30	12
Min	7.4	11	11	17	21	21	64	36	21	11	8.0	8.0
Cfsm	.084	.143	.159	.456	.321	1.03	.901	.505	.555	.186	.105	.075
In.	.10	.16	.18	.53	.33	1.19	1.00	.58	.62	.21	.12	.08
Cal yr 1966: Total	22,088.6			Mean 60.5	Max 755	Min 7.4	Cfsm .500	In. 6.78				
Wtr yr 1967: Total	16,647.4			Mean 45.6	Max 600	Min 7.4	Cfsm .377	In. 5.10				

4-0870. Milwaukee River at Milwaukee, Wis.

Location--Lat 43°06'00", long 87°54'30", in NE 1/4 sec. 5, T. 7 N., R. 22 E., on left bank near northeast limits of Milwaukee in Estabrook Park, 2,000 ft downstream from Port Washington Road Bridge and 6 miles upstream from mouth.

Drainage area--686 sq mi.

Records available--April 1914 to September 1967. Published as "near Milwaukee" prior to 1936.

Gage--Digital water-stage recorder. Datum of gage is 607.23 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Apr. 6, 1929, staff or chain gage near present site at different datum. Apr. 6, 1929, to Jan. 8, 1934, chain gage at bridge half a mile upstream at different datum. Jan. 8, 1934, to Aug. 14, 1967, graphic water-stage recorder at same site and datum.

Average discharge--53 years, 384 cfs.

Extremes--Maximum discharge during year, 3,470 cfs Aug. 6 (gage height, 5.18 ft, regulated); minimum 50 cfs Sept. 24-25 (gage height, 1.95 ft).

1914-67: Maximum discharge, 15,100 cfs Mar. 20, 1918, Aug. 6, 1924 (gage height, 9.00 ft, datum then in use, from floodmark for 1918, from graph based on gage readings for 1924); no flow Sept. 8, 1943.

Remarks--Records good except those for winter months and period of no gage height record, Mar. 25 to Apr. 19, which are fair. Occasional regulation caused by dams above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	142	120	120	330	140	1,150	490	255	482	235	84
2	102	265	105	120	315	145	1,050	490	240	432	215	90
3	106	152	98	120	305	150	940	505	230	364	190	79
4	102	109	100	130	300	150	860	307	210	313	142	73
5	102	102	115	138	290	145	780	220	190	283	152	76
6	102	102	150	140	290	140	910	325	180	255	450	77
7	98	113	180	150	272	140	1,020	370	358	235	116	78
8	95	138	512	135	255	135	960	390	185	170	106	77
9	91	265	390	145	245	140	1,150	358	260	165	102	75
10	78	175	360	140	240	155	1,300	397	760	180	102	66
11	67	165	320	140	220	250	960	615	996	175	102	66
12	70	147	270	140	210	450	880	809	885	180	98	70
13	142	120	240	140	210	745	800	905	895	175	92	70
14	156	109	210	140	210	828	780	772	866	170	86	70
15	175	109	190	140	200	736	780	700	700	138	83	69
16	102	102	160	140	200	709	1,300	624	583	116	84	65
17	102	109	150	135	185	632	2,300	490	468	124	87	64
18	102	120	125	130	170	551	1,650	482	397	147	86	67
19	116	124	115	130	160	505	1,300	475	460	120	86	83
20	106	120	105	130	150	460	1,060	432	468	116	81	89
21	113	120	105	135	150	460	965	411	446	134	86	98
22	109	120	105	145	145	383	925	390	383	109	94	71
23	113	120	100	170	140	383	809	418	319	241	96	64
24	109	134	100	460	140	482	736	404	301	120	95	53
25	113	225	100	720	140	980	640	404	271	138	90	52
26	109	185	100	730	135	840	658	439	277	205	122	104
27	106	418	105	700	130	2,000	615	453	277	165	81	109
28	106	265	110	600	130	1,700	575	338	690	160	73	82
29	106	225	110	500		1,500	520	225	425	165	272	69
30	102	147	125	410	- - - -	1,400	498	200	535	190	143	121
31	286	- - - -	120	360	- - - -	1,300	- - - -	225	- - - -	205	85	- - - -
Total	3,488	4,747	5,195	7,633	5,867	18,734	28,871	14,063	13,510	6,172	3,932	2,311
Mean	113	158	168	246	210	604	962	454	450	199	127	77
Max	286	418	512	730	330	2,000	2,300	905	996	482	450	121
Min	67	102	98	120	130	135	498	200	180	109	73	52
Cfsm	.165	.230	.245	.359	.306	.880	1.40	.662	.656	.290	.185	.112
In.	.19	.26	.28	.41	.32	1.02	1.57	.76	.73	.33	.21	.13
Cal yr 1966: Total	155,200		Mean	425	Max	5,060	Min	37	Cfsm	.620	In.	8.41
Wtr yr 1967: Total	114,523		Mean	314	Max	2,300	Min	52	Cfsm	.458	In.	6.21

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-27	-	-	-	8-6	0800	5.18	3,470
4-17	-	-	-				

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0871.2 Menomonee River at Wauwatosa, Wis.

Location.--Lat 43°02'44", long 87°59'59", in NW 1/4 sec. 27, T. 7 N., R. 21 E., near left bank on downstream side of 70th Street bridge in Wauwatosa, 800 ft downstream from Honey Creek, and 6 1/4 miles upstream from mouth.

Drainage area.--123 sq mi.

Records available.--October 1961 to September 1967.

Gage.--Wire-weight gage and crest-stage indicator; gage read about five times weekly. Datum of gage is 630.86 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 64.6 cfs.

Extremes.--Maximum discharge during year, 1,700 cfs June 10 (gage height, 4.81 ft); minimum daily, 6.0 cfs Oct. 9.

1961-67: Maximum discharge, 6,010 cfs July 18, 1964 (gage height, 9.03 ft) from rating curve extended above 3,200 cfs on the basis of slope conveyance study; minimum daily, 2.8 cfs Jan. 18, 1964.

Remarks.--Records fair except those for winter months, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	8.4	9.4	9.0	31	15	120	68	23	44	20	13
2	6.2	8.1	9.0	9.0	29	16	120	52	24	34	17	11
3	6.5	8.1	9.0	9.2	26	17	94	42	23	26	18	10
4	6.2	8.1	9.0	9.8	23	30	84	37	19	24	19	11
5	6.1	8.4	11	12	25	29	70	37	22	21	18	12
6	6.5	8.8	49	16	26	35	77	33	21	18	19	11
7	7.2	9.4	45	24	27	26	66	33	54	20	17	11
8	6.2	11	172	20	27	110	62	40	54	17	14	12
9	6.0	115	63	16	28	140	87	37	64	18	14	11
10	6.1	27	23	13	28	159	80	48	781	18	15	11
11	6.1	13	15	16	26	94	66	117	706	16	16	11
12	6.1	12	14	20	24	89	52	135	327	16	14	12
13	20	11	13	18	23	82	52	75	226	15	14	12
14	210	8.1	12	16	34	72	50	60	150	13	13	13
15	81	11	12	14	26	58	48	52	89	16	14	14
16	14	12	12	13	23	39	50	47	52	14	16	15
17	7.5	13	13	12	21	34	58	44	77	14	16	14
18	7.5	7.5	12	11	20	32	54	37	54	37	13	12
19	14	8.1	11	11	20	32	45	89	36	14	14	13
20	10	7.5	11	13	19	32	40	39	82	29	14	12
21	7.8	8.4	10	21	19	87	220	39	28	17	12	21
22	7.2	11	9.8	30	19	87	165	37	27	18	13	12
23	7.8	11	9.4	150	20	129	82	52	24	16	13	11
24	6.5	10	9.2	250	20	212	64	44	30	18	14	10
25	8.1	30	9.0	120	17	174	54	42	28	12	14	9.6
26	7.5	13	9.0	60	15	168	44	40	22	42	16	94
27	8.1	180	9.0	45	15	279	40	34	28	32	14	29
28	9.4	25	9.0	42	15	141	34	75	204	18	12	22
29	8.8	10	9.0	39	---	135	62	29	112	15	16	18
30	8.4	9.6	9.0	36	---	126	48	29	62	14	18	13
31	8.8	---	9.0	34	---	112	---	27	---	17	17	---
Total	530	623.5	625.8	1,109	646	2,791	2,188	1,570	3,449	643	474	480.6
Mean	17.1	20.8	20.2	35.8	23.1	90.0	72.9	50.6	115	20.7	15.3	16.0
Max	210	180	172	250	34	279	220	135	781	44	20	94
Min	6.0	7.5	9.0	9.0	15	15	34	27	19	12	12	9.6
Cfsm	.139	.169	.164	.291	.188	.732	.593	.411	.935	.168	.124	.130
In.	.16	.19	.19	.34	.20	.84	.66	.47	1.04	.19	.14	.15
Cal yr 1966 : Total	25,045.2		Mean	68.6	Max	2,100	Min	6.0	Cfsm	.558	In.	7.58
Wtr yr 1967 : Total	15,129.9		Mean	41.5	Max	781	Min	6.0	Cfsm	.337	In.	4.57

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-10	1900	4.81	1,700				

STREAMS TRIBUTARY TO LAKE MICHIGAN

49

4-0872.04 Oak Creek at South Milwaukee, Wis.

Location.--Lat 42°55'30", long 87°52'15", in NW 1/4 sec. 2, T. 5 N., R. 22 E., on left bank 25 ft downstream from 15th Avenue bridge in South Milwaukee and 2 3/4 miles upstream from mouth.

Drainage area.--25.0 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder and crest-stage indicator. Altitude of gage is 630 ft (from topographic map).

Extremes.--Maximum discharge during year, 612 cfs June 11 (gage height, 6.71 ft); minimum 0.9 cfs Oct. 6, 10. 1963-67: Maximum discharge, that of June 11, 1967; minimum, 0.4 cfs Jan. 3, 1964 (gage height, 2.33 ft).

Remarks.--Records good except those for winter months, which are fair. Low flows may occasionally be affected by activity of gravel pit upstream.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	2.2	6.0	2.2	8.3	4.1	40	14	4.2	17	4.4	2.3
2	2.4	2.6	4.8	2.2	7.8	4.5	40	10	4.2	12	3.6	2.2
3	2.4	2.9	3.8	2.2	7.2	4.9	35	8.6	3.8	9.9	2.5	2.0
4	2.4	2.7	3.5	2.2	6.8	5.8	23	7.5	3.6	8.8	2.5	1.8
5	1.8	2.6	3.8	2.6	6.5	7.0	18	7.2	3.3	7.2	2.7	2.0
6	2.1	2.4	7.4	3.3	6.2	9.2	17	6.7	3.6	6.7	3.1	2.0
7	2.2	2.4	13	4.2	5.8	11	15	7.7	4.4	6.4	2.9	2.0
8	2.4	4.4	28	2.9	5.6	12	13	9.9	7.5	5.6	2.7	2.9
9	1.8	18	25	2.7	5.2	24	26	9.9	19	5.4	2.5	2.5
10	1.4	16	14	2.5	4.7	152	25	12	143	5.4	2.2	1.8
11	1.2	8.7	7.2	2.4	4.3	125	16	79	432	5.1	2.0	2.0
12	1.5	4.8	5.8	3.1	4.1	65	13	38	450	4.4	2.0	2.5
13	5.2	3.5	5.2	2.8	5.4	54	12	20	370	4.0	2.0	2.5
14	9.3	3.3	4.8	2.5	5.6	47	13	15	144	4.2	2.2	2.3
15	6.7	3.1	4.6	2.4	5.0	29	13	13	54	3.6	2.2	2.2
16	4.0	3.3	4.4	2.3	5.0	23	12	11	35	3.3	2.2	2.2
17	3.8	3.1	4.2	2.3	5.6	21	13	9.9	88	3.3	2.2	2.2
18	3.1	3.3	4.2	2.2	5.8	16	11	11	54	3.3	2.9	2.0
19	2.9	3.1	3.8	2.2	6.0	14	9.1	11	25	3.3	2.7	2.7
20	2.4	2.9	4.0	3.6	6.0	14	9.1	10	18	3.1	2.0	6.4
21	2.4	3.1	3.7	3.6	5.9	23	32	8.8	13	2.9	1.8	4.6
22	2.4	3.6	3.3	4.2	5.7	80	159	8.3	12	3.1	2.0	2.9
23	1.9	3.6	2.9	12	5.6	112	60	8.6	11	8.3	2.2	3.1
24	2.4	3.8	2.5	39	4.4	124	29	8.3	10	5.4	2.3	2.0
25	2.2	6.2	2.3	105	3.8	116	20	7.7	9.1	3.1	2.3	1.8
26	2.2	5.6	2.1	53	3.8	80	16	6.9	7.7	4.2	2.5	4.6
27	2.4	21	2.0	21	3.8	106	13	6.7	6.4	3.6	2.3	4.4
28	2.2	29	1.9	14	3.8	56	11	6.4	106	3.1	1.8	5.4
29	2.2	13	2.1	9.9	---	35	13	5.6	128	2.9	8.6	6.4
30	2.2	8.4	2.2	9.1	---	29	16	5.6	37	2.7	4.0	4.4
31	2.2	---	2.2	8.6	---	33	---	4.6	---	4.0	2.9	---
Total	86.1	192.6	184.7	332.2	153.7	1,436.5	742.2	388.9	2,206.8	165.3	84.2	88.1
Mean	2.78	6.42	5.96	10.7	5.49	46.3	24.7	12.5	73.6	5.33	2.72	2.94
Max	9.3	29	28	105	8.3	152	159	79	450	17	8.6	6.4
Min	1.2	2.2	1.9	2.2	3.8	4.1	9.1	4.6	3.3	2.7	1.8	1.8
Cfsm	.111	.257	.238	.428	.220	1.85	.988	.500	2.94	.213	.109	.118
In.	.13	.29	.27	.49	.23	2.14	1.10	.58	3.28	.25	.13	.13
Cal yr 1966: Total	5,566.5		Mean	15.3	Max	490	Min	1.2	Cfsm	.612	In.	8.28
Wtr yr 1967: Total	6,061.3		Mean	16.6	Max	450	Min	1.2	Cfsm	.664	In.	9.02

Peak discharge (base, 250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
June 11	1600	6.71	612				

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0872.2 Root River near Franklin, Wis.

Location.--Lat 42°52'25", long 87°59'45", in SE 1/4 sec. 22, T. 5 N., R. 21 E., on right bank 400 ft upstream from State Highway 100, 2.1 miles upstream from Root River Canal, 2.4 miles southeast of Franklin, 5 1/2 miles southeast of Hales Corners and about 24 miles upstream from mouth.

Drainage area.--49.3 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 674.5 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 808 cfs June 11 (gage height, 7.06 ft); minimum, 1.2 cfs Nov. 3 (gage height 1.70 ft).
1963-67: Maximum discharge, 1,600 cfs Mar. 5, 1965 (gage height, 8.43 ft, backwater from ice); minimum, 0.8 cfs Sept. 2, 1966 (gage height 1.62 ft).
Flood of Mar. 30, 1960, reached a stage of 9.57 ft (discharge, 5,130 cfs, from rating curve extended above 1,400 cfs on basis of contracted-opening measurement of peak-flow).

Remarks.--Records fair except those for winter months, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	4.5	14	6.0	25	8.3	54	30	11	49	11	7.2
2	3.2	3.4	9.4	6.0	23	8.2	57	25	8.9	40	10	6.1
3	3.8	3.1	6.2	6.0	21	8.4	59	22	10	30	11	5.3
4	3.8	3.1	6.0	6.2	19	8.6	41	20	11	25	9.5	4.9
5	3.4	3.1	7.2	6.6	18	8.8	43	18	11	22	9.5	5.3
6	3.1	3.2	13	6.9	17	10	52	17	11	19	8.9	7.8
7	3.4	3.8	35	8.6	16	13	47	17	15	17	11	6.8
8	3.2	6.1	85	8.0	15	18	42	28	25	17	8.4	6.1
9	3.1	26	67	7.0	15	28	62	25	48	17	10	6.1
10	3.2	43	30	6.6	14	106	59	23	148	17	7.8	6.1
11	3.8	14	20	7.0	14	227	41	119	675	15	5.7	6.1
12	3.2	6.4	16	7.2	14	103	36	69	635	13	5.3	6.4
13	4.9	4.5	13	7.4	13	88	31	38	401	12	4.9	6.4
14	12	4.5	12	7.4	14	80	31	29	153	12	4.2	6.8
15	36	4.5	11	7.2	16	56	27	26	90	11	4.5	6.8
16	19	4.5	13	6.8	22	45	25	22	59	9.5	5.3	6.4
17	8.4	4.5	11	6.2	19	43	30	20	127	10	4.2	6.1
18	4.9	4.9	11	5.8	17	39	24	19	78	10	5.3	7.8
19	4.9	4.9	11	5.6	15	33	19	28	46	11	5.3	7.2
20	5.3	6.1	11	5.5	14	33	18	22	41	8.9	4.5	11
21	5.3	6.4	10	5.6	14	40	52	20	36	13	4.5	18
22	4.2	5.3	9.2	6.0	14	84	217	20	30	11	3.4	12
23	3.8	5.3	8.2	15	13	139	100	18	24	11	3.1	9.5
24	4.2	5.7	7.8	80	11	154	56	20	22	16	2.9	8.9
25	3.8	17	7.2	190	8.8	163	44	18	22	9.5	3.4	7.8
26	3.4	19	5.8	91	8.6	138	30	17	18	8.4	4.5	8.4
27	3.2	66	5.6	51	8.4	170	23	14	17	14	4.5	18
28	3.2	53	5.6	36	8.4	108	20	14	215	9.5	4.2	18
29	3.4	21	5.6	32	- - - -	68	28	22	248	7.2	7.8	14
30	3.8	15	5.6	28	- - - -	54	32	15	85	6.4	18	9.5
31	4.9	- - - -	5.8	27	- - - -	54	- - - -	11	- - - -	13	9.5	- - - -
Total	180	371.8	478.2	695.6	427.2	2,136.3	1,400	806	3,320.9	484.4	212.1	256.8
Mean	5.81	12.4	15.4	22.4	15.3	68.9	46.7	26.0	111	15.6	6.84	8.56
Max	36	66	85	190	25	227	217	119	675	49	18	18
Min	3.1	3.1	5.6	5.5	8.4	8.2	18	11	8.9	6.4	2.9	4.9
Cfsm	.118	.252	.312	.454	.310	1.40	.947	.527	2.25	.316	.139	.174
In.	.14	.28	.36	.52	.32	1.61	1.06	.61	2.51	.37	.16	.19
Cal yr 1966: Total	10,875.2	Mean	29.8	Max	900	Min	2.2	Cfsm	.604	In.	8.21	
Wtr yr 1967: Total	10,769.3	Mean	29.5	Max	675	Min	2.9	Cfsm	.598	In.	8.13	

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-25	1700	5.17	228	6-11	2000	7.06	808
3-10	0800	5.46	262	6-29	0100	6.28	423
4-22	0800	5.50	267				

STREAMS TRIBUTARY TO LAKE MICHIGAN

51

4-0872.33 Root River Canal near Franklin, Wis.

Location--Lat 42°48'55", long 87°59'40", in SE 1/4 sec. 10, T. 4 N., R. 21 E., on right bank 10 ft downstream from highway bridge 3.5 miles upstream from mouth, 5.5 miles southeast of intersection U. S. 45 and State 100 in Franklin, and 8.7 miles southeast of Hales Corners.

Drainage area--57.2 sq mi.

Records available--October 1963 to September 1967.

Gage--Water-stage recorder. Altitude of gage is 670 ft (from topographic map).

Extremes--Maximum discharge during year, 574 cfs June 13 (gage height, 9.33 ft); minimum, 1.1 cfs Nov. 21, 22 (gage height 2.01 ft).
1964-67: Maximum discharge, 774 cfs Feb. 11, 1966; minimum daily, 0.4 cfs Dec. 19, 1963, result of freezeup.

Remarks--Records fair for the year.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	1.4	4.6	3.2	21	7.4	135	34	7.7	40	4.4	2.2
2	2.4	1.5	2.8	3.3	20	7.4	157	28	6.8	31	4.1	2.2
3	2.1	1.6	2.1	3.3	19	7.4	147	23	7.0	25	3.8	2.2
4	1.9	1.5	1.9	3.2	18	7.4	106	21	6.8	20	6.2	2.1
5	1.9	1.6	2.0	3.3	17	7.4	84	20	7.0	16	6.5	2.1
6	1.9	1.6	4.4	3.3	17	7.7	72	19	7.7	14	4.6	2.2
7	1.7	1.6	18	3.3	16	8.0	61	18	9.8	13	4.2	2.4
8	1.7	1.7	54	3.2	16	9.4	51	26	18	11	4.2	2.5
9	1.6	3.8	62	3.1	16	12	71	20	29	11	5.0	2.6
10	1.5	8.5	39	3.0	16	120	70	19	120	10	4.4	2.6
11	1.5	3.2	23	2.8	16	372	54	142	399	10	3.2	2.6
12	1.4	1.9	15	2.7	16	333	46	148	497	9.2	2.9	2.7
13	1.4	1.6	12	2.8	16	253	44	91	557	8.0	2.8	2.9
14	1.8	1.3	10	2.8	16	204	42	66	503	7.7	2.6	3.0
15	2.0	1.3	8.7	2.8	16	59	40	50	362	7.5	2.6	3.4
16	2.0	1.5	8.0	2.8	14	70	32	30	233	7.0	2.7	3.0
17	1.8	1.5	7.5	2.6	12	55	34	32	206	6.5	2.5	2.9
18	1.7	1.5	7.3	2.5	11	58	27	28	183	6.3	2.8	3.0
19	1.9	1.3	6.3	2.4	11	40	23	26	123	6.1	3.2	3.0
20	1.9	1.2	7.0	2.3	10	40	22	20	90	5.5	2.9	3.2
21	1.9	1.2	5.6	2.3	9.6	52	48	16	72	5.2	2.6	4.4
22	1.7	1.2	4.4	3.0	9.3	122	216	14	62	4.6	2.5	4.2
23	1.6	1.3	3.8	30	9.0	180	148	14	49	6.5	2.6	4.1
24	1.5	1.5	3.4	120	8.6	225	93	15	43	6.3	2.4	4.0
25	1.4	1.7	3.0	183	8.2	251	69	12	37	4.4	2.1	3.6
26	1.4	1.7	2.9	119	8.0	236	55	12	29	4.4	2.1	3.4
27	1.5	20	2.8	58	7.8	260	44	10	23	7.0	2.4	4.6
28	1.6	38	3.0	49	7.6	222	36	9.8	59	24	2.2	2.9
29	1.6	14	3.0	35	-----	155	36	12	90	10	2.4	1.8
30	1.6	9.0	3.1	27	-----	120	38	11	59	6.3	2.9	1.2
31	1.6	-----	3.2	23	-----	106	-----	8.7	-----	5.4	2.7	-----
Total	53.9	130.7	333.8	708	382.1	3,607.1	2,101	995.5	3,985.8	348.9	104.5	87.0
Mean	1.74	4.36	10.8	22.8	13.6	116	70.0	32.1	130	11.3	3.37	2.81
Max	2.4	38	62	183	21	372	216	148	557	40	8.2	4.6
Min	1.4	1.2	1.9	2.3	7.6	7.4	22	8.7	6.8	4.4	2.1	1.2
Cfsm	.030	.076	.189	.399	.238	2.02	1.22	.561	2.27	.198	.059	.049
In.	.04	.08	.22	.46	.25	2.35	1.37	.65	2.53	.23	.07	.06

Cal yr 1966: Total 13,006.1 Mean 35.6 Max 763 Min 1.2 Cfsm .622 In. 8.46
Wtr yr 1967: Total 12,748.3 Mean 34.9 Max 557 Min 1.2 Cfsm .610 In. 8.31

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-25	1200	6.13	193	4-22	1300	6.72	234
3-11	2130	8.23	412	5-12	2030	6.17	196
3-27	1430	7.17	269	6-13	1530	9.33	574
4- 3	0330	5.65	160	6-28	2400	4.72	106

3,985.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0872.4 Root River at Racine, Wis.

Location.--Lat 42°45'05", long 87°49'25", in NE 1/4 sec. 6, T. 3 N., R. 23 E., on left bank 30 ft downstream from State Highway 38 bridge in Racine, 350 ft downstream from Horlick Dam, and 5.2 miles upstream from mouth.

Drainage area.--187 sq mi.

Records available.--August 1963 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 610 ft (from topographic map). Prior to Feb. 5, 1964, wire-weight gage on bridge 30 ft upstream.

Extremes.--Maximum discharge during year, 2,250 cfs June 13 (gage height, 6.53 ft); minimum discharge, 3.0 cfs Oct. 11-13 (gage height, 2.05 ft).

1963-67: Maximum discharge, 2,500 cfs Feb. 12, 1966; minimum daily, 1.3 cfs Oct. 12, Dec. 31, 1963, Jan. 1, 2, 1964.

Remarks.--Records good except those for winter months, which are fair, and those below 10 cfs, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	6.1	33	15	66	31	316	143	26	260	24	22
2	4.6	8.2	29	15	62	32	352	126	24	146	24	15
3	4.6	8.6	24	15	60	33	356	109	24	109	27	12
4	4.4	6.5	21	16	58	34	291	100	24	93	27	11
5	3.7	6.9	21	16	56	36	227	91	25	81	27	10
6	3.5	6.9	23	16	54	38	195	87	26	73	21	9.3
7	3.5	7.3	39	16	52	45	178	85	33	66	27	8.8
8	3.7	8.6	104	16	52	60	149	93	57	60	17	9.8
9	3.7	13	170	16	51	90	159	106	79	53	17	9.8
10	3.5	48	134	16	51	270	202	102	252	50	17	7.3
11	3.3	62	80	16	52	960	171	149	731	45	16	7.7
12	3.0	31	52	17	54	800	143	308	1,150	42	14	7.7
13	4.6	20	48	17	55	640	135	252	1,900	36	12	8.0
14	6.1	15	45	17	55	519	129	154	1,440	32	12	8.8
15	17	13	38	17	54	397	129	113	1,080	30	12	9.3
16	34	12	37	17	52	282	121	98	786	26	9.8	9.3
17	35	12	33	17	48	210	118	89	634	25	10	9.8
18	18	12	30	16	46	180	124	80	496	25	11	10
19	13	11	25	15	43	130	106	72	418	25	12	9.3
20	9.0	10	27	14	40	118	132	66	283	24	13	9.3
21	8.2	10	25	14	39	134	137	60	216	22	13	11
22	8.6	11	22	16	37	244	449	50	178	22	11	14
23	8.2	11	21	80	36	423	496	40	149	32	11	18
24	6.1	11	20	160	35	560	394	35	126	24	9.8	13
25	6.1	11	19	341	33	597	249	38	118	31	9.3	10
26	5.6	13	18	356	32	627	191	34	104	25	8.8	13
27	5.2	48	17	320	31	634	159	29	89	23	9.8	16
28	5.6	113	17	240	31	587	137	30	106	24	9.8	17
29	4.8	89	16	140	-----	502	129	32	320	36	15	29
30	4.6	48	16	90	-----	556	143	32	438	31	18	25
31	5.2	-----	16	74	-----	295	-----	29	-----	30	22	-----
Total	251.2	683.1	1,220	2,151	1,335	9,864	6,217	2,832	11,332	1,601	459.3	370.2
Mean	8.10	22.8	39.4	69.4	47.7	318	207	91.4	378	51.6	14.8	12.3
Max	35	113	170	356	66	960	496	308	1,900	260	24	29
Min	3.0	6.1	16	14	31	31	106	29	24	22	8.8	7.3
Cfsm	.043	.122	.211	.371	.255	1.70	1.11	.489	2.02	.276	.079	.066
In.	.05	.14	.24	.43	.27	1.96	1.24	.56	2.25	.32	.09	.07

Cal yr 1966: Total 39,428.8 Mean 108 Max 2,400 Min 3.0 Cfsm .578 In. 7.84
Wtr yr 1967: Total 38,315.8 Mean 105 Max 1,900 Min 3.0 Cfsm .561 In. 7.62

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-11	0845	5.53	1,000	6-13	0315	6.53	2,250
3-25	0230	4.20	680	6-30	1030	3.80	464
4-23	1345	3.88	507				

5-3325. Namekagon River near Trego, Wis.

Location.--Lat 45°56'50", long 91°53'15", in SW 1/4 sec. 17, T. 40 N., R. 12 W., at powerplant of the Northern States Power Co., 4 miles downstream from Potato Creek and 5 miles northwest of Trego.

Drainage area.--503 sq mi.

Records available.--October 1927 to September 1967.

Gage.--Headwater and tailwater gages read hourly.

Average discharge.--40 years, 468 cfs.

Extremes.--Maximum daily discharge during year, 1,740 cfs Apr. 3; minimum daily, 268 cfs Dec. 2.
1927-67: Maximum daily discharge, 5,200 cfs Sept. 2, 1941; minimum daily, 113 cfs Aug. 17, Sept. 7, 1930.

Remarks.--Records good. Discharge computed from powerplant records on basis of ratings developed by Geological Survey.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	349	371	308	394	384	352	1,520	659	414	693	443	486
2	411	396	268	379	379	352	1,720	659	447	730	469	376
3	423	345	352	371	368	360	1,740	659	420	694	514	415
4	460	417	374	368	385	322	1,560	615	441	687	478	420
5	520	405	380	368	370	360	1,400	648	500	670	453	442
6	422	398	414	368	379	357	1,320	594	507	674	440	418
7	489	413	404	335	384	356	1,160	561	505	595	515	414
8	505	421	424	360	372	338	1,050	611	622	644	460	414
9	441	425	420	355	367	375	1,100	640	626	619	470	359
10	377	417	422	372	369	402	1,100	600	660	628	435	360
11	412	432	357	368	360	382	974	605	783	664	371	346
12	412	286	351	385	370	389	982	666	855	602	465	387
13	390	403	371	378	357	400	865	638	785	587	409	343
14	460	438	395	388	356	406	844	659	950	526	454	589
15	658	450	402	391	375	397	851	641	1,360	506	386	775
16	713	446	393	388	352	390	937	579	1,540	513	418	807
17	733	441	417	365	355	377	1,000	535	1,660	515	366	777
18	656	416	405	357	347	330	961	504	1,290	506	476	689
19	644	358	415	344	375	355	1,020	498	1,530	513	474	618
20	571	431	345	344	350	375	944	497	1,370	487	433	556
21	576	470	380	370	358	409	825	517	1,170	483	456	516
22	528	444	373	373	352	405	777	548	1,100	504	423	498
23	485	415	355	390	340	387	746	548	1,040	491	378	512
24	516	429	355	391	358	402	728	532	1,060	493	385	512
25	475	446	355	382	368	432	691	493	1,080	503	389	512
26	426	454	355	373	373	527	673	499	1,000	484	515	510
27	473	448	333	394	347	530	460	500	911	454	649	524
28	522	418	359	386	352	542	673	451	941	453	688	507
29	462	328	380	384	- - - -	598	659	451	871	454	599	438
30	472	396	364	387	- - - -	689	659	421	854	454	514	511
31	417	- - - -	368	390	- - - -	1,150	- - - -	448	- - - -	449	502	- - - -
Total	15,398	12,357	11,594	11,598	10,202	13,446	29,939	17,476	27,292	17,275	14,387	15,031
Mean	497	412	374	374	364	434	998	564	910	557	464	501
Max	733	470	424	394	385	1,150	1,740	666	1,660	730	688	807
Min	349	286	268	335	340	322	460	421	414	449	366	343
Cfsm	.988	.819	.744	.744	.724	.863	1.98	1.12	1.81	1.11	.922	.996
In.	1.14	.91	.86	.86	.75	.99	2.21	1.29	2.02	1.28	1.06	1.11
Cal yr 1966: Total	188,161			Mean 516	Max 1,280	Min 268	Cfsm 1.03	In. 13.90				
Wtr yr 1967: Total	195,995			Mean 537	Max 1,740	Min 268	Cfsm 1.07	In. 14.48				

ST. CROIX RIVER BASIN

5-3335. St. Croix River near Danbury, Wis.

Location--Lat 46°04'30", long 92°14'50", in sec. 33, T. 42 N., R. 15 W., on left bank at downstream side of bridge on State Highway 35, 3.5 miles downstream from Namekagon River, 10 miles northeast of Danbury, and at mile 129.2.

Drainage area--1,588 sq mi.

Records available--March 1914 to September 1967. Prior to October 1933 published as "at Swiss".

Gage--Water-stage recorder. Datum of gage is 882.21 ft above mean sea level, datum of 1929. Prior to Apr. 23, 1937, staff or chain gage at old highway bridge 40 ft downstream at same datum. Apr. 23, 1937, to Jan. 5, 1939; chain gage at present site and datum.

Average discharge--53 years, 1,284 cfs.

Extremes--Maximum discharge during year, 6,260 cfs Apr. 1 (gage height, 5.60 ft); minimum discharge, 676 cfs Aug. 16, 17 (gage height, 0.46 ft).

1914-67: Maximum discharge, 10,200 cfs May 6, 1950 (gage height, 8.22 ft); minimum observed, 393 cfs Aug. 6, 13, 1934 (gage height, -0.20 ft, site then in use).

Remarks--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.030	1.040	730	940	950	880	5.900	1.670	1.020	2.160	972	1.260
2	1.000	1.100	700	930	940	880	5.720	1.610	980	1.880	1.040	1.210
3	1.020	1.040	870	920	930	880	5.300	1.490	988	1.860	1.040	1.120
4	1.080	988	930	920	930	880	5.310	1.400	948	1.800	1.040	1.030
5	1.180	1.060	980	920	930	870	5.300	1.400	956	1.730	964	972
6	1.160	1.090	1.020	910	920	870	4.950	1.400	1.080	1.650	1.030	900
7	1.140	1.040	1.060	910	920	870	4.130	1.430	1.150	1.620	1.120	940
8	1.160	1.020	1.080	900	920	860	3.520	1.410	1.630	1.630	1.100	956
9	1.160	1.030	1.100	901	910	940	3.540	1.430	1.720	1.610	1.010	956
10	1.060	1.040	1.080	910	910	990	3.410	1.440	1.690	1.520	996	980
11	996	1.030	920	920	900	1.000	3.010	1.620	2.010	1.380	924	893
12	1.030	932	910	930	900	980	2.570	1.660	2.210	1.260	948	900
13	1.000	1.000	910	950	916	990	2.540	1.620	2.490	1.190	972	858
14	996	1.050	930	960	900	1.000	2.480	1.610	2.970	1.170	851	980
15	1.450	996	950	940	900	1.000	2.350	1.620	3.900	1.240	886	1.120
16	1.710	1.020	980	930	890	990	2.300	1.540	4.640	1.200	872	1.310
17	1.790	1.040	1.000	920	880	950	2.680	1.460	5.030	1.160	893	1.290
18	1.790	1.080	1.000	910	880	900	3.140	1.340	4.540	1.120	916	1.240
19	1.720	988	970	910	880	910	3.080	1.360	4.260	1.080	972	1.120
20	1.610	1.100	950	920	880	990	2.820	1.440	4.660	1.060	948	1.070
21	1.430	1.080	920	940	880	1.110	2.600	1.460	4.840	1.070	872	1.120
22	1.450	1.090	900	980	880	1.110	2.390	1.340	3.740	1.120	830	1.060
23	1.420	1.080	890	1.000	880	1.080	2.280	1.310	3.140	1.220	858	1.090
24	1.410	1.020	880	1.000	880	1.070	2.180	1.240	3.280	1.190	851	1.060
25	1.280	1.170	870	1.010	880	1.190	2.010	1.160	3.180	1.140	858	1.000
26	1.140	1.160	860	1.000	880	1.290	1.880	1.180	2.900	1.060	1.200	964
27	1.120	1.140	870	1.000	880	1.320	1.800	1.200	2.630	1.020	1.590	964
28	1.110	1.070	890	1.000	880	1.380	1.780	1.270	2.480	1.010	1.540	980
29	1.170	940	910	990	- - - - -	1.530	1.740	1.220	2.250	988	1.470	932
30	1.120	900	920	990	- - - - -	1.800	1.710	1.120	2.300	980	1.380	1.120
31	1.100	- - - - -	920	980	- - - - -	3.300	- - - - -	1.040	- - - - -	948	1.350	- - - - -
Total	38,832	31,334	28,900	29,341	25,226	34,810	94,420	43,490	79,612	41,066	32,293	31,395
Mean	1.253	1.044	932	946	901	1.123	3.147	1.403	2.654	1.325	1.042	1.046
Max	1.790	1.170	1,100	1,010	950	3,300	5,900	1,670	5,030	2,160	1,590	1,310
Min	996	900	700	900	880	860	1,710	1,040	948	948	830	858
Cfsm	.789	.657	.587	.596	.567	.707	1.98	.883	1.67	.834	.656	.659
In.	.91	.73	.68	.69	.59	.82	2.21	1.02	1.86	.96	.76	.74

Cal yr 1966: Total 513,165 Mean 1,406 Max 5,700 Min 700 Cfsm .885 In. 12.02
 Wtr yr 1967: Total 510,719 Mean 1,399 Max 5,900 Min 700 Cfsm .881 In. 11.97

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4- 1	1500	5.60	6,260	6-17	0900	4.78	5,140
4-18	1700	3.18	3,210				

Location.--Lat 45°44'40", long 91°55'05", in NE 1/4 sec. 25, T. 38 N., R. 13 W., attached to post in bed of lake near Petersons Boat House in the village of Shell Lake.

Records available.--August 1936 to September 1967 (fragmentary).

Extremes.--Maximum gage height observed during year, 2.86 ft June 24; minimum observed, 0.87 ft Nov. 26.
1936-67: Maximum gage height observed, 5.13 ft July 17, 1954; minimum observed, -0.92 ft Nov. 28, 1949.

Remarks.--Lake has no surface outlet. Lake frozen over Dec. 1 to Apr. 15.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.27									2.83		
2												2.14
3									1.70			
4												
5		1.07							1.86		2.37	
6								1.92				
7												
8	1.21									2.81		
9			1.04	1.09								
10									1.96			2.04
11												
12		1.03									2.27	
13								1.94				
14					1.28							2.01
15	1.33									2.69		
16												2.02
17								2.03		2.70		
18												
19		.95									2.11	
20						1.23		1.90				
21											2.07	
22	1.23									2.59		
23												1.93
24									2.86			
25												
26		.87					1.95				2.27	
27								1.84		2.47		
28												
29	1.13						1.99					1.82
30										2.49		1.82
31		-----			-----		-----		-----			-----

ST. CROIX RIVER BASIN

5-3360. St. Croix River near Grantsburg, Wis.

Location.--Lat 45°55'25", long 92°38'20", near center of sec. 30, T. 40 N., R. 18 W., on left bank at Norway Point, 0.5 mile downstream from Sand Creek, 10 miles north of Grantsburg, and at mile 102.4.

Drainage area.--2,820 sq mi, approximately.

Records available.--April 1923 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 848.98 ft above mean sea level, adjustment of 1912 (levels by Northern States Power Co.). Prior to Aug. 15, 1934, chain gage, Aug. 15, 1934, to Oct. 21, 1938, staff gage, in stilling well at same site and datum, and Oct. 21, 1938, to Aug. 7, 1967, graphic water-stage recorder at same site and datum.

Average discharge.--44 years, 2,298 cfs.

Extremes.--Maximum discharge during year, 14,700 cfs Apr. 2 (gage height, 11.92 ft); minimum daily, 1,130 cfs Dec. 1. 1923-67: Maximum discharge, 26,300 cfs May 7, 1950 (gage height, 15.06 ft); minimum, 510 cfs Aug. 14, 17, 1934.

Remarks.--Records good except those for winter months, which are fair. Diurnal fluctuation caused by powerplants above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1510	1820	1130	1480	1640	1550	10800	2670	1660	3520	1480	1890
2	1500	1780	1160	1490	1630	1550	13900	2780	1550	3290	1580	1830
3	1480	1760	1220	1500	1620	1550	13600	2600	1520	2990	1620	1690
4	1480	1680	1370	1500	1600	1550	11700	2510	1520	2820	1620	1590
5	1620	1690	1520	1490	1600	1550	10200	2400	1540	2680	1760	1530
6	1670	1650	1700	1480	1600	1550	9530	2320	1620	2600	1700	1480
7	1630	1640	1730	1480	1590	1550	8860	2310	1790	2390	1690	1420
8	1680	1640	1730	1480	1580	1550	7840	2340	2420	2370	1740	1460
9	1660	1630	1680	1480	1570	1550	7010	2330	3640	2390	1620	1450
10	1670	1720	1610	1500	1560	1550	6720	2290	4000	2290	1530	1440
11	1480	1660	1620	1500	1550	1560	6360	2390	4210	2180	1520	1450
12	1700	1470	1590	1500	1540	1560	5620	2700	4690	1880	1470	1350
13	1550	1700	1560	1500	1540	1580	4810	2690	5040	1830	1480	1430
14	1590	2000	1540	1500	1540	1590	4660	2610	5640	1730	1400	1430
15	1850	2050	1540	1500	1540	1600	4640	2590	6740	1710	1390	1540
16	2410	1720	1590	1500	1540	1610	4690	2520	8350	1820	1370	1650
17	2630	1620	1620	1480	1540	1620	4830	2330	10000	1680	1400	1760
18	2710	1690	1660	1480	1540	1640	5130	2260	11000	1660	1430	1710
19	2610	1670	1690	1500	1540	1650	5560	2170	10000	1600	1430	1610
20	2520	1710	1710	1510	1540	1640	5500	2140	9610	1580	1390	1570
21	2440	1760	1690	1580	1550	1630	5090	2130	10500	1530	1400	1580
22	2320	1760	1630	1600	1550	1670	4600	2190	11200	1550	1360	1580
23	2230	1740	1580	1620	1550	1710	4110	2180	9800	1600	1370	1530
24	2160	1700	1500	1620	1550	1750	3820	2010	7900	1710	1340	1500
25	2120	1800	1430	1630	1550	1800	3510	2050	6910	1710	1350	1530
26	1990	1830	1430	1640	1550	1850	3230	1930	6310	1610	1530	1500
27	1870	1800	1410	1660	1550	1900	3030	1860	5580	1520	1970	1450
28	1840	1650	1400	1680	1550	2000	2910	1860	4850	1480	2050	1420
29	1800	1450	1410	1680	- - - - -	2200	2710	1890	4450	1500	2010	1470
30	1840	1220	1420	1670	- - - - -	3100	2500	1780	3970	1450	1930	1410
31	1860	- - - - -	1450	1650	- - - - -	7500	- - - - -	1730	- - - - -	1470	1860	- - - - -
Total	59,420	51,010	47,320	47,880	43,800	58,660	187,470	70,560	168,010	62,140	48,790	46,250
Mean	1,917	1,700	1,526	1,545	1,564	1,892	6,249	2,276	5,600	2,005	1,574	1,542
Max	2,710	2,050	1,730	1,680	1,640	7,500	13,900	2,780	11,200	3,520	2,050	1,890
Min	1,480	1,220	1,130	1,480	1,540	1,550	2,500	1,730	1,520	1,450	1,340	1,350
Cfsm	.680	.603	.541	.548	.555	.671	2.22	.807	1.99	.711	.558	.547
In.	.78	.67	.62	.63	.58	.77	2.47	.93	2.22	.82	.64	.61
Cal yr 1966: Total	866,650		Mean	2,374	Max	11,700	Min	1,130	Cfsm	.842	In.	11.40
Wtr yr 1967: Total	891,310		Mean	2,442	Max	13,900	Min	1,130	Cfsm	.866	In.	11.74

5-3385. Snake River near Pine City, Minn.

Location.--Lat 45°50'30", long 92°56'00", in SE 1/4 NW 1/4 sec. 26, T. 39 N., R. 21 W., on left bank at site of former powerplant and dam, half a mile downstream from Cross Lake and 1 1/2 miles northeast of Pine City.

Drainage area.--958 sq mi.

Records available.--June 1913 to September 1917, July 1951 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 919.00 ft above mean sea level, datum of 1929. June 25, 1913, to Sept. 30, 1917, staff gage at site 500 ft downstream at different datum. July 1 to Oct. 28, 1951, staff gage and Oct. 29, 1951 to May 10, 1966, graphic water-stage recorder at present site and datum.

Average discharge.--20 years, 559 cfs.

Extremes.--Maximum discharge during year, 7,670 cfs June 20 (gage height, 8.10 ft); minimum, 32 cfs Sept. 12, 28; minimum gage height, 2.78 ft Sept. 12.
1913-17, 1951-67: Maximum discharge 11,500 cfs April 18, 1965 (gage height, 9.56 ft); minimum, 5.5 cfs Oct. 1, 1964 (gage height, 2.57 ft).

A discharge measurement of 12,500 cfs was made May 9, 1950.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	167	158	114	118	108	3,700	536	183	1,780	95	89
2	66	148	139	117	117	110	4,540	570	182	1,470	160	73
3	97	139	129	117	117	113	5,120	494	161	1,210	162	69
4	120	148	134	117	118	111	5,480	470	186	994	123	72
5	97	153	134	117	119	112	5,440	462	197	841	113	69
6	97	153	140	117	118	115	5,140	454	202	717	103	63
7	97	162	140	117	118	114	4,660	454	199	618	106	62
8	104	153	159	117	118	111	4,030	446	325	555	109	62
9	120	153	153	117	118	107	3,450	383	422	504	92	46
10	134	162	148	117	120	105	2,880	364	622	460	77	42
11	100	162	144	117	121	104	2,470	408	870	422	74	39
12	78	144	140	117	122	100	2,150	424	1,090	364	71	37
13	81	144	138	118	122	97	1,860	436	1,330	308	72	60
14	112	148	136	118	119	95	1,640	456	1,550	266	70	66
15	213	153	138	117	120	95	1,450	444	1,810	245	67	65
16	224	162	135	117	120	95	1,240	428	2,450	257	65	64
17	230	173	139	116	120	97	1,170	406	3,690	233	78	71
18	242	162	138	116	119	100	1,090	388	5,160	208	67	68
19	248	139	147	115	117	104	1,010	373	6,590	189	73	69
20	242	153	146	117	116	106	966	292	7,480	175	64	74
21	248	158	146	119	115	109	976	274	7,600	156	52	63
22	348	173	147	119	114	111	897	263	7,260	152	49	48
23	254	178	138	119	115	115	819	273	6,720	168	59	59
24	218	178	136	120	115	123	780	260	5,980	140	74	41
25	207	196	132	119	115	141	761	254	5,190	111	85	37
26	213	196	128	118	114	171	732	271	4,400	107	163	46
27	207	201	122	117	111	200	685	232	3,700	92	150	36
28	207	173	122	117	110	248	622	220	3,040	96	134	33
29	196	158	122	117	- - - -	392	586	204	2,540	81	131	37
30	190	178	117	117	- - - -	1,160	486	179	2,120	72	110	40
31	213	- - - -	116	118	- - - -	2,400	- - - -	175	- - - -	73	103	- - - -
Total	5,274	4,867	4,261	3,635	3,286	7,269	66,830	11,293	83,249	13,064	2,951	1,700
Mean	170	162	137	117	117	234	2,228	364	2,775	421	95.2	56.7
Max	348	201	159	120	122	2,400	5,480	570	7,600	1,780	163	89
Min	66	139	116	114	110	95	486	175	161	72	49	33
Cfsm	.18	.17	.14	.12	.12	.24	2.33	.38	2.90	.44	.10	.06
In.	.20	.19	.17	.14	.13	.28	2.59	.44	3.23	.51	.11	.07
Cal yr 1966 : Total	262,889		Mean	720	Max	6,000	Min	66	Cfsm	.75	In.	10.21
Wtr yr 1967 : Total	207,679		Mean	569	Max	7,600	Min	33	Cfsm	.59	In.	8.06

ST. CROIX RIVER BASIN

5-3405. St. Croix River at St. Croix Falls, Wis.

Location.--Lat 45°24'30", long 92°38'45", in NW 1/4 sec. 30, T. 34 N., R. 18 W., on left bank 1,800 ft downstream from powerplant of Northern States Power Co., in St. Croix Falls, and at mile 52.2.

Drainage area.--5,930 sq mi, approximately.

Records available--January 1902 to September 1966 in reports of Geological Survey. Prior to January 1910, monthly discharge only, published in WSP 1308. Prior to October 1939, published as "near St. Croix Falls."

Gage.--Digital water-stage recorder. Datum of gage is 690.47 ft above mean sea level, adjustment of 1912. Prior to July 1905, gage heights and discharge measurements were used to determine flow. July 1905 to February 1940, records were computed from power generation at the St. Croix Falls powerplant 1,800 ft upstream. Mar. 16, 1940, to Nov. 30, 1963, graphic water-stage recorder at present site and datum.

Average discharge.--65 years, 4,034 cfs.

Extremes.--Maximum discharge during year, 33,600 cfs Apr. 2 (gage height, 15.64 ft); minimum daily, 1,140 cfs Dec. 3. 1902-67: Maximum discharge, 54,900 cfs May 8, 1950 (gage height, 25.19 ft); minimum daily, 75 cfs July 17, 1910.

Remarks.--Records good except Dec. 28 to Jan. 11, Jan. 29 to Feb. 22, which are fair. Flow regulated by powerplant upstream.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	UCL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2,040	2,730	1,210	2,100	2,350	2,190	20,200	4,540	2,440	7,630	2,270	2,790
2	2,400	2,600	1,640	2,160	2,260	1,870	30,300	5,400	2,930	7,570	2,650	2,420
3	1,960	2,360	1,140	2,180	2,380	2,190	31,500	5,400	2,200	7,060	2,360	2,520
4	2,110	2,750	1,400	2,180	2,060	1,980	30,200	4,850	2,230	5,920	2,300	2,360
5	1,040	1,860	1,770	2,080	2,400	2,280	27,300	5,000	2,470	5,200	2,440	1,770
6	2,410	2,120	2,350	2,060	2,110	2,100	24,500	4,890	2,390	5,140	2,430	2,090
7	2,080	2,630	2,300	1,780	2,400	2,160	22,400	4,450	2,880	4,460	2,740	2,120
8	2,220	2,610	2,600	1,650	2,400	2,120	20,600	4,460	3,580	4,030	2,650	1,990
9	2,420	2,420	2,300	2,140	1,800	2,020	18,300	4,390	4,400	4,240	2,310	2,040
10	2,120	2,280	2,460	1,640	2,240	2,220	16,700	4,530	6,920	3,950	2,470	1,860
11	2,250	2,370	2,300	1,910	2,300	1,830	15,500	4,700	7,020	3,830	1,880	1,640
12	2,010	1,710	2,310	2,340	2,240	2,040	14,200	4,490	7,220	3,630	2,070	1,930
13	2,890	1,370	2,100	1,930	2,320	2,320	13,200	4,960	8,720	3,570	2,220	2,020
14	1,050	2,370	2,270	2,010	2,220	2,260	10,100	4,980	9,820	2,620	2,270	2,280
15	3,340	2,420	1,510	1,840	2,220	2,110	10,000	4,840	12,600	2,760	1,660	2,060
16	3,050	2,960	2,190	2,310	2,120	2,350	10,500	4,650	21,800	2,610	1,880	2,010
17	4,010	2,930	2,180	2,040	2,020	2,100	10,600	4,470	26,300	2,740	1,950	2,340
18	3,740	2,120	2,340	2,270	1,900	2,170	10,800	4,360	27,200	2,860	1,670	2,310
19	3,460	1,770	2,200	2,210	2,080	2,380	11,300	3,740	26,900	2,690	2,090	2,140
20	3,040	1,990	2,300	2,080	2,440	2,300	11,500	3,690	27,300	2,650	2,010	2,280
21	4,100	2,520	2,470	2,010	1,000	1,950	10,800	3,640	28,000	3,140	1,680	2,320
22	3,340	3,390	2,310	2,110	2,240	2,190	9,870	3,520	28,100	1,910	2,040	1,660
23	3,320	2,640	1,810	2,340	2,020	2,250	8,880	3,630	26,700	2,100	1,880	2,490
24	3,060	2,400	2,030	2,380	2,400	2,520	8,100	3,590	23,400	2,490	2,070	2,010
25	3,070	2,020	1,970	2,270	2,130	2,670	7,630	3,340	19,700	2,700	1,680	1,730
26	2,970	2,600	1,800	2,070	2,160	2,970	7,220	3,570	17,300	2,740	2,290	2,160
27	3,170	2,740	2,210	1,940	2,050	3,390	6,580	3,030	14,900	2,150	2,850	1,840
28	2,070	2,600	2,070	2,540	2,240	3,990	5,450	2,680	13,000	1,740	2,860	2,230
29	2,380	1,860	1,860	2,480	-----	5,030	5,590	2,940	12,600	2,000	3,030	1,870
30	2,050	2,060	2,300	2,230	-----	10,500	5,230	2,830	8,880	2,170	2,660	1,730
31	3,090	-----	1,900	2,420	-----	20,000	-----	2,780	-----	2,510	2,570	-----
TOTAL	67,020	71,940	64,200	66,100	61,240	100,490	441,050	128,340	399,900	110,810	70,130	63,010
MEAN	2,160	2,319	2,071	2,132	2,187	3,242	14,700	4,140	13,330	3,575	2,262	2,100
MAX	4,100	3,390	2,600	2,540	2,480	20,000	31,500	5,400	28,100	7,630	3,030	2,790
MIN	1,050	1,370	1,140	1,780	1,660	1,830	5,230	2,680	2,200	1,740	1,660	1,640
CFSM	.47	.40	.35	.36	.37	.55	2.48	.70	2.25	.60	.38	.35
IN.	.55	.45	.40	.41	.38	.63	2.77	.80	2.51	.69	.44	.40
LAL YR 1966: TOTAL 1,028,830 MEAN 5,010 MAX 27,300 MIN 1,140 CFSM .84 IN 11.47												
WAT YR 1967: TOTAL 1,064,230 MEAN 4,360 MAX 31,500 MIN 1,140 CFSM .77 IN 10.44												

5-3415. Apple River near Somerset, Wis.

Location.--Lat 45°09'30", long 92°43'00", in sec. 21, T. 31 N., R. 19 W., at powerplant of Northern States Power Co., 3.5 miles downstream from Somerset.

Drainage area.--555 sq mi.

Records available.--January 1901 to September 1914 (monthly discharge only), October 1914 to September 1967.

Gage.--Headwater and tailwater gages read hourly.

Average discharge.--66 years, 305 cfs.

Extremes.--Maximum daily discharge during year, 1,920 cfs Apr. 2, 3; minimum daily, 78 cfs Dec. 2.

1901-67: Maximum daily discharge, 2,510 cfs Apr. 13, 1965; minimum daily, 7 cfs Aug. 21, 1927, Sept. 30, 1929, July 19, 1932, Aug. 2, 3, 1933.

Remarks.--Records good except those below 100 cfs, which are fair. Records of daily discharge computed on basis of gate openings, head, and plant efficiency. Flow regulated by many powerplants upstream.

Cooperation.--Records of daily discharge furnished by Northern States Power Co.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	207	220	145	225	280	236	1,870	325	230	374	220	245
2	200	215	78	170	240	270	1,920	450	225	390	265	257
3	210	180	160	220	265	270	1,920	400	235	295	545	278
4	200	216	255	190	320	270	1,900	390	250	465	545	120
5	240	225	255	190	265	270	1,860	321	180	335	465	265
6	240	225	230	205	205	235	1,660	320	235	200	250	215
7	243	190	270	180	275	275	1,480	335	225	391	310	180
8	215	220	225	215	245	230	1,480	380	170	235	295	103
9	240	225	234	155	290	250	1,280	355	202	260	235	150
10	205	206	230	215	285	281	1,160	425	320	235	320	190
11	245	165	210	200	260	280	990	440	350	260	205	115
12	215	130	90	210	250	325	605	445	735	310	270	215
13	215	135	255	200	200	215	530	445	530	295	200	205
14	230	130	215	220	310	335	672	460	535	294	110	215
15	241	215	220	220	250	295	625	355	280	230	230	236
16	300	160	215	170	195	270	710	325	915	275	170	190
17	360	155	225	200	215	255	705	410	865	205	195	185
18	365	190	250	180	280	255	740	405	530	230	187	140
19	375	170	195	185	280	280	725	303	740	230	215	160
20	275	175	220	205	230	218	695	375	935	215	235	230
21	343	150	225	220	280	295	533	380	1,100	219	125	195
22	365	230	180	265	250	275	368	255	920	210	180	211
23	320	205	90	190	270	265	445	373	823	220	180	210
24	305	220	175	280	255	311	635	255	823	185	175	305
25	290	210	210	250	225	331	535	275	905	245	201	105
26	270	210	170	210	295	350	385	209	645	230	185	235
27	255	250	230	249	190	360	300	280	530	200	230	175
28	202	125	180	270	285	410	340	300	355	217	230	185
29	210	260	190	320	- - - - -	465	350	84	515	205	240	191
30	290	205	200	225	- - - - -	805	340	350	516	210	275	200
31	205	- - - - -	205	305	- - - - -	1,430	- - - - -	215	- - - - -	140	375	- - - - -
Total	8,076	5,812	6,232	6,739	7,190	10,612	27,758	10,640	15,819	8,005	7,859	5,906
Mean	261	194	201	217	257	342	925	343	527	258	254	197
Max	375	260	270	320	320	1,430	1,920	460	1,100	465	545	305
Min	200	125	78	155	190	215	300	84	170	140	110	103
Cfsm	.470	.350	.362	.391	.463	.616	1.67	.619	.950	.465	.458	.355
In.	.54	.39	.42	.45	.48	.71	1.86	.71	1.06	.54	.53	.40
Cal yr 1966: Total	112,363		Mean 308		Max 1,060	Min 70	Cfsm .555	In. 7.53				
Wtr yr 1967: Total	120,648		Mean 331		Max 1,920	Min 78	Cfsm .596	In. 8.09				

5-3445. Mississippi River at Prescott, Wis.

Location.--Lat 44°44'45", long 92°48'00", in sec. 9, T. 26 N., R. 20 W., on left bank at Prescott, 200 ft downstream from St. Croix River, 300 ft south of Chicago, Burlington & Quincy Railroad bridge, 800 ft south of bridge on U. S. Highway 10, and at mile 811.4 upstream from Ohio River.

Drainage area.--44,800 sq mi, approximately.

Records available.--June 1928 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 600.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers). Prior to Aug. 2, 1932, staff gage at railroad bridge 300 ft upstream at following datums: June 3, 1928, to Sept. 30, 1929, 69.27 ft higher; Oct. 1, 1929, to Sept. 30, 1930, 67.68 ft higher; Oct. 1, 1930, to Aug. 1, 1932, 69.28 ft higher. Aug. 2, 1932, to Oct. 30, 1938, water-stage recorder at present site at datum 69.28 ft higher. Auxiliary water-stage recorder 10.7 miles downstream from base gage.

Average discharge.--39 years, 15,370 cfs.

Extremes.--Maximum discharge during year, 87,800 cfs Apr. 5 (gage height, 84.94 ft); minimum daily, 3,800 cfs Dec. 1; minimum gage height, 74.26 ft Mar. 13.
1928-67: Maximum discharge 228,000 cfs Apr. 18, 1965 (gage height, 93.11 ft); minimum daily, 1,380 cfs July 13, 1940; minimum gage height, 65.08 ft Aug. 29, 1934, present datum.

Remarks.--Records good. Some regulation by reservoirs, navigation dams, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,030	10,000	3,800	8,100	8,600	8,000	58,300	32,300	12,500	44,300	9,060	9,190
2	9,320	10,100	3,900	8,300	8,400	8,600	70,100	32,400	11,000	41,000	9,220	8,480
3	7,870	10,500	4,100	8,400	8,300	8,600	77,600	32,600	10,300	38,700	8,640	8,130
4	6,260	10,600	3,900	8,700	8,600	8,500	83,400	33,400	10,800	36,700	7,720	7,520
5	7,220	11,000	4,700	8,300	8,900	8,600	86,600	33,000	11,400	34,800	7,990	7,180
6	8,450	11,500	6,900	8,300	8,200	8,300	86,800	31,900	11,400	32,400	8,480	7,140
7	9,740	10,900	9,220	8,500	8,300	7,700	83,400	30,800	12,400	31,200	10,000	6,830
8	10,100	10,300	8,890	7,800	8,500	7,700	79,800	30,600	14,200	29,600	9,540	6,090
9	9,180	9,470	8,040	6,500	9,000	8,200	77,100	29,000	13,400	27,300	7,640	5,510
10	7,420	8,960	9,520	7,500	7,800	10,400	72,900	28,400	15,000	25,800	7,500	6,630
11	8,260	8,690	7,900	7,900	8,200	11,200	69,800	27,800	18,900	25,800	7,380	7,220
12	9,080	8,930	8,300	7,700	7,900	10,600	67,100	27,100	22,900	25,400	7,770	7,300
13	9,240	8,670	8,100	8,500	7,300	10,300	64,400	26,800	26,200	24,300	6,730	7,060
14	11,000	7,790	8,640	8,400	8,500	13,900	61,800	25,600	27,600	22,200	6,980	7,100
15	12,400	8,270	8,990	8,100	8,700	16,400	58,800	25,300	29,400	19,900	7,460	7,060
16	13,800	8,480	9,220	8,200	8,500	16,200	55,800	24,400	33,600	18,600	7,260	7,060
17	13,700	9,600	8,930	7,900	8,100	13,800	54,100	23,400	40,700	16,700	6,730	6,530
18	13,600	9,800	9,090	7,900	8,000	15,000	51,800	22,700	49,500	15,100	6,570	7,540
19	14,200	10,300	8,830	7,300	7,900	15,600	50,000	21,500	55,700	14,000	6,590	7,020
20	14,700	9,910	8,540	7,400	7,800	15,500	48,800	19,700	59,900	12,500	7,260	6,460
21	14,400	9,800	8,900	7,500	7,500	14,500	48,100	19,200	62,600	12,200	6,280	6,080
22	13,500	10,000	9,000	8,000	7,700	13,600	45,800	18,900	64,400	12,400	7,100	6,550
23	13,400	10,500	8,700	9,700	8,200	13,400	43,500	19,100	65,900	12,300	8,040	4,980
24	12,200	10,100	8,000	9,400	8,200	16,100	41,500	17,500	65,500	11,600	7,880	6,160
25	12,400	10,200	8,100	8,300	8,200	20,600	40,000	16,400	63,000	10,500	7,500	6,910
26	12,800	10,900	6,800	9,000	8,100	24,100	38,800	16,300	59,800	10,200	6,570	4,590
27	12,600	10,100	7,400	8,800	7,500	27,300	37,200	16,300	57,100	10,500	8,300	4,960
28	11,800	9,580	7,900	8,500	7,600	28,200	35,500	15,300	53,200	8,860	9,220	5,580
29	11,600	8,890	9,000	8,500	- - - -	29,800	34,400	13,600	49,500	7,950	8,960	4,840
30	11,400	5,810	8,000	8,400	- - - -	33,600	33,700	13,000	47,000	8,630	8,730	5,400
31	10,300	- - - -	8,500	8,800	- - - -	43,500	- - - -	12,800	- - - -	8,290	8,880	- - - -
Total	339,970	289,650	239,810	254,600	228,500	487,800	1,756,900	737,100	1,074,800	649,730	242,980	199,100
Mean	10,970	9,655	7,736	8,213	8,161	15,740	58,560	23,780	35,830	20,960	7,838	6,637
Max	14,700	11,500	9,520	9,700	9,000	43,500	86,800	33,400	65,900	44,300	10,000	9,190
Min	6,260	5,810	3,800	6,500	7,300	7,700	33,700	12,800	10,300	7,950	6,280	4,590
Cfsm	.245	.216	.173	.183	.182	.351	1.31	.531	.800	.468	.175	.148
In.	.28	.24	.20	.21	.19	.40	1.46	.61	.89	.54	.20	.17

Cal yr 1966 : Total 8,032,990 Mean 22,010 Max 74,000 Min 3,800 Cfsm .491 In. 6.67
Wtr yr 1967 : Total 6,500,940 Mean 17,810 Max 86,800 Min 3,800 Cfsm .398 In. 5.40

5-3560. Chippewa River at Bishops Bridge, near Winter, Wis.

Location.--Lat 45°50'55", long 91°04'45", in sec. 23, T. 39 N., R. 6 W., on right bank 15 ft upstream from highway bridge, 3.2 miles downstream from Lake Chippewa Dam, and 3.7 miles northwest of Winter.

Drainage area.--787 sq mi.

Records available.--February 1912 to September 1967. Monthly discharge only for winter of 1913, published in WSP 1308.

Gage.--Digital water-stage recorder. Altitude of gage is 1,270 ft (from Lake Chippewa datum). Prior to Jan. 27, 1914, staff gage at same site at datum 3.44 ft higher. Jan. 27, 1914, to May 27, 1916, staff gage and May 28, 1916, to July 22, 1930, chain gage at same site and datum. July 23, 1930, to July 11, 1967, graphic water-stage recorder at same site and datum.

Average discharge.--55 years, 707 cfs.

Extremes.--Maximum discharge during year, 6,460 cfs June 18 (gage height, 9.92 ft); minimum discharge, 126 cfs Mar. 29 (gage height, 3.96 ft).
1912-67: Maximum discharge, 7,520 cfs Sept. 4, 5, 1941 (gage height, 11.05 ft); minimum, 14 cfs Apr. 17-20, 1925 (gage height, 3.25 ft).

Remarks.--Records good. Flow completely regulated by Moose Lake and Lake Chippewa (see p. 73).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	231	1,210	1,120	1,020	936	1,370	275	1,450	336	3,160	450	593
2	231	1,220	1,120	1,020	936	1,360	238	1,220	332	3,180	450	593
3	231	1,200	1,120	1,020	936	1,320	203	1,120	314	2,690	445	593
4	235	1,200	1,120	1,010	928	1,290	167	1,040	260	1,540	445	592
5	278	1,200	1,120	1,010	928	1,260	164	864	242	606	440	592
6	390	1,200	1,110	1,000	920	1,140	158	746	231	400	445	591
7	612	1,060	1,090	1,000	920	1,140	150	718	196	346	440	592
8	599	984	1,090	1,000	920	1,220	153	512	310	323	445	554
9	606	976	1,090	1,000	912	1,150	156	400	651	318	536	498
10	599	984	1,090	1,000	912	1,120	142	400	824	318	559	484
11	606	984	1,090	1,000	904	1,090	133	410	920	360	606	383
12	599	984	1,080	984	904	1,080	131	400	1,400	690	559	326
13	599	976	1,080	984	904	1,060	128	524	1,600	768	559	247
14	612	976	1,080	984	896	1,040	136	651	2,260	760	559	228
15	644	976	1,070	984	888	1,030	147	697	3,350	768	559	220
16	625	976	1,070	976	888	1,010	147	725	4,640	768	559	301
17	711	976	1,060	976	896	1,000	147	920	5,520	760	606	385
18	768	1,020	1,060	976	888	976	144	1,320	6,350	760	559	385
19	760	1,140	1,060	968	880	960	136	1,900	6,400	760	559	385
20	872	1,140	1,050	968	872	936	136	1,890	6,370	760	559	385
21	1,150	1,140	1,050	960	864	920	136	1,860	6,350	768	599	385
22	1,550	1,140	1,040	960	864	904	310	1,350	5,880	768	599	385
23	1,870	1,140	1,040	960	864	880	500	984	4,120	768	599	385
24	2,180	1,130	1,040	960	856	848	753	824	2,940	1,060	599	378
25	2,380	1,130	1,040	952	856	840	1,000	606	2,460	1,220	592	379
26	1,940	1,130	1,040	952	848	840	1,260	566	1,900	1,220	606	380
27	1,220	1,130	1,040	952	904	599	1,530	560	1,770	1,130	599	299
28	1,220	1,120	1,040	944	1,140	203	1,540	560	-	1,050	599	240
29	1,220	1,120	1,040	944	- - - -	164	1,540	560	2,110	952	595	240
30	1,210	1,120	1,030	944	- - - -	231	1,540	490	2,730	856	595	240
31	1,210	- - - -	1,030	936	- - - -	375	- - - -	375	- - - -	506	594	- - - -
Total	27,958	32,682	33,200	30,344	25,364	29,356	13,300	26,642	74,546	30,333	17,275	12,238
Mean	902	1,089	1,071	979	906	947	443	859	2,485	978	557	408
Max	2,380	1,220	1,120	1,020	1,140	1,370	1,540	1,900	6,400	3,180	606	593
Min	231	976	1,030	936	848	164	128	375	196	318	440	220

Cal yr 1966: Total 287,895 Mean 789 Max 2,910 Min 115
 Wtr yr 1967: Total 353,238 Mean 968 Max 6,400 Min 128

5-3565. Chippewa River near Bruce, Wis.

Location--Lat 45°27'05", long 91°15'40", in SE 1/4 sec. 5, T. 34 N., R. 7 W., on right bank 1 mile east of Bruce and 1 mile downstream from Thornapple River.

Drainage area--1,630 sq mi, approximately.

Records available--December 1913 to September 1967.

Gage--Digital water-stage recorder. Datum of gage is 1,059.62 ft above mean sea level, datum of 1929. Prior to May 28, 1935, chain gage at railroad bridge 0.8 mile upstream at datum 2.30 ft higher. May 29, 1935, to May 7, 1964, graphic water-stage recorder at present site and datum.

Average discharge--53 years (1914-67), 1,420 cfs.

Extremes--Maximum discharge during year, 19,000 cfs Apr. 1 (gage height, 17.48 ft, backwater from ice); minimum discharge, 497 cfs Oct. 1 (gage height, 1.68 ft).

1913-67: Maximum discharge, 25,800 cfs Sept. 1, 1941 (gage height, 20.46 ft, from floodmarks), from rating curve extended above 20,000 cfs; minimum, 155 cfs June 10, 1932 (gage height, 0.9 ft, site and datum then in use).

Remarks--Records good except those for winter months, which are fair. Flow from 48 percent of the drainage area regulated by Moose Lake and Lake Chippewa (see p. 73).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	501	1,540	1,150	1,250	1,150	1,500	18,000	1,950	1,000	3,560	951	886
2	525	1,500	1,100	1,250	1,150	1,550	15,500	2,100	980	3,690	1,000	873
3	559	1,450	1,350	1,250	1,150	1,550	12,800	2,300	940	3,850	929	872
4	594	1,450	1,800	1,250	1,150	1,550	9,700	2,300	900	3,040	886	860
5	605	1,460	1,900	1,250	1,150	1,500	7,680	2,000	900	2,020	837	853
6	665	1,450	1,900	1,250	1,150	1,500	7,640	1,680	1,000	1,250	835	854
7	812	1,410	1,850	1,250	1,100	1,500	7,290	1,610	1,700	994	837	855
8	973	1,320	1,750	1,250	1,100	1,500	5,870	1,680	2,740	915	836	850
9	960	1,250	1,700	1,250	1,100	1,550	5,070	1,530	3,420	876	824	792
10	956	1,290	1,600	1,250	1,100	1,550	4,450	1,380	3,370	855	917	741
11	938	1,280	1,550	1,270	1,100	1,500	4,300	1,870	3,660	829	962	729
12	930	1,290	1,450	1,250	1,150	1,450	3,850	2,280	4,100	845	945	634
13	922	1,330	1,450	1,250	1,150	1,400	3,340	1,980	4,350	1,150	941	602
14	1,040	1,280	1,410	1,250	1,200	1,400	3,190	1,880	5,140	1,180	935	997
15	2,120	1,260	1,400	1,200	1,200	1,350	3,850	1,760	8,000	1,190	920	1,080
16	2,810	1,250	1,400	1,150	1,150	1,350	4,170	1,680	9,700	1,250	868	888
17	2,390	1,280	1,400	1,150	1,150	1,350	4,000	1,600	11,600	1,390	888	786
18	2,140	1,290	1,350	1,150	1,150	1,350	3,820	1,750	10,800	1,320	908	804
19	1,900	1,350	1,350	1,150	1,100	1,350	3,570	2,160	9,590	1,250	898	749
20	1,670	1,420	1,300	1,150	1,150	1,350	3,150	2,400	8,910	1,210	893	747
21	1,730	1,420	1,300	1,150	1,120	1,350	2,930	2,400	8,240	1,170	878	745
22	1,970	1,410	1,250	1,200	1,100	1,350	2,700	2,300	7,610	1,190	868	734
23	2,230	1,400	1,250	1,200	1,100	1,350	2,600	2,200	6,460	1,220	858	710
24	2,280	1,400	1,250	1,200	1,100	1,350	2,400	2,050	4,870	1,210	835	698
25	2,600	1,400	1,250	1,200	1,100	1,350	2,300	1,850	4,100	1,470	866	706
26	2,580	1,400	1,250	1,200	1,100	1,400	2,200	1,700	3,420	1,550	951	682
27	1,930	1,350	1,250	1,200	1,200	1,400	2,100	1,500	2,780	1,530	1,110	676
28	1,610	1,300	1,250	1,200	1,300	1,500	2,000	1,400	2,690	1,410	1,050	612
29	1,590	1,200	1,250	1,200	-----	1,600	1,950	1,250	2,640	1,400	956	532
30	1,560	1,150	1,250	1,200	-----	3,500	1,950	1,150	3,010	1,250	924	500
31	1,550	-----	1,250	1,200	-----	11,000	-----	1,100	-----	1,140	908	-----
TOTAL	45,640	40,580	43,960	37,620	31,920	56,250	154,370	56,790	138,620	47,204	28,214	23,053
MEAN	1,472	1,353	1,418	1,214	1,140	1,815	5,146	1,832	4,621	1,523	910	768
MAX	2,810	1,540	1,900	1,270	1,300	11,000	18,000	2,400	11,600	3,850	1,110	1,080
MIN	501	1,150	1,100	1,150	1,100	1,350	1,950	1,100	900	829	824	500

CAL YR 1966: TOTAL 549,590 MEAN 1,506 MAX 8,130 MIN 420
 WAT YR 1967: TOTAL 704,221 MEAN 1,929 MAX 18,000 MIN 500

5-3585. Flambeau River at Babbs Island, near Winter, Wis.

Location.--Lat 45°46'10", long 90°45'45", in SE 1/4 sec. 17, T. 38 N., R. 3 W., on right bank 3.6 miles upstream from Connors Creek, 11.5 miles upstream from South Fork Flambeau River, 13 miles east of Winter, and at mile 61.9.

Drainage area.--1,000 sq mi.

Records available.--August 1929 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Digital water-stage recorder. Altitude of gage is 1,330 ft (from river profile map). Prior to Oct. 1, 1934, graphic water-stage recorder at bridge 300 ft upstream at datum 9.0 ft lower. Oct. 1, 1934, to Sept. 8, 1938, graphic water-stage recorder at bridge 300 ft upstream at present datum. Sept. 8, 1938, to Apr. 3, 1966, graphic water-stage recorder at present site and datum.

Average discharge.--38 years, 969 cfs.

Extremes.--Maximum discharge during year, 8,540 cfs Apr. 2 (gage height, 8.58 ft); minimum discharge, 409 cfs Nov. 21 (gage height, 1.04 ft).

1929-67: Maximum discharge, 9,440 cfs June 25, 1946 (gage height, 9.45 ft); minimum, 86 cfs Oct. 21, 22, 1948 (gage height, 0.20 ft); minimum daily, 118 cfs Oct. 10, 1948.

Remarks.--Records good except those for winter months or backwater from vegetation, which are fair. Flow regulated by Rest Lake and Flambeau Flowage (see p. 73).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	710	762	880	700	1,010	1,040	7,370	1,470	970	2,210	981	851
2	691	682	760	640	1,020	1,060	5,930	2,140	936	1,900	1,060	843
3	733	666	920	760	1,020	1,050	3,740	2,010	979	1,490	1,110	719
4	741	724	1,060	810	1,010	1,040	3,000	1,970	846	1,370	1,060	543
5	658	670	1,080	820	1,030	1,030	2,840	1,830	806	1,160	1,020	459
6	633	765	1,000	820	1,010	1,030	2,900	1,780	1,070	1,020	991	868
7	622	729	920	840	1,020	1,030	2,520	1,590	1,040	937	914	805
8	612	714	810	840	1,020	1,030	2,240	1,580	1,140	944	987	757
9	587	761	770	870	1,020	1,020	2,170	1,780	1,470	1,000	930	761
10	587	736	760	880	1,030	980	2,270	1,670	1,460	982	975	868
11	575	730	760	885	1,060	950	2,080	1,760	1,550	1,130	980	809
12	592	730	760	886	1,070	915	1,740	1,850	1,680	1,440	986	735
13	533	740	760	900	1,070	900	1,500	1,760	1,520	976	921	660
14	657	760	770	880	1,070	900	1,590	1,710	1,970	1,070	911	745
15	1,390	796	790	850	1,070	900	1,960	1,590	3,430	1,000	852	782
16	1,730	830	800	840	1,050	900	2,270	1,450	4,070	1,030	918	795
17	1,420	798	810	820	1,040	900	2,330	1,410	5,150	968	860	740
18	1,220	720	810	830	1,050	900	2,330	1,330	5,030	1,060	973	494
19	1,220	620	810	880	1,050	910	2,170	1,280	4,610	1,010	919	661
20	1,050	541	810	940	1,050	910	1,960	1,220	4,600	942	875	676
21	929	479	800	940	1,050	990	1,860	1,120	4,550	940	792	682
22	882	889	800	940	1,050	1,020	2,000	1,170	3,310	984	790	675
23	827	824	800	940	1,050	1,030	2,130	1,010	2,760	1,110	785	636
24	741	901	760	950	1,040	1,040	2,060	1,170	3,030	1,220	744	635
25	819	943	530	950	1,010	1,050	1,770	1,100	3,210	1,200	784	624
26	735	1,050	530	950	920	1,070	1,350	1,080	920	1,110	831	584
27	706	973	750	940	750	1,100	1,370	1,070	1,620	1,110	946	632
28	791	712	830	940	960	1,110	1,200	1,060	2,710	1,170	735	583
29	715	940	840	900	-----	1,140	1,140	988	2,550	1,000	798	577
30	648	970	830	700	-----	1,250	1,180	1,010	2,350	1,030	917	542
31	488	-----	780	880	-----	4,500	-----	982	-----	1,000	881	-----
TOTAL	25,242	23,155	25,090	26,721	28,600	34,695	70,970	44,940	74,397	35,513	28,228	20,573
MEAN	814	772	809	862	1,021	1,119	2,366	1,450	2,480	1,146	911	686
MAX	1,730	1,050	1,080	950	1,070	4,500	7,370	2,140	5,150	2,210	1,110	886
MIN	488	479	530	640	750	900	1,140	982	846	937	735	459
CFSM	.81	.77	.81	.86	1.02	1.12	2.37	1.45	2.48	1.15	.91	.69
IN.	.94	.86	.93	.99	1.06	1.29	2.64	1.67	2.77	1.32	1.05	.77
CAL YR 1966: TOTAL	352,527			MEAN 966		MAX 4,500	MIN 479	CFSM .97	IN 13.11			
WAT YR 1967: TOTAL	438,124			MEAN 1,200		MAX 7,370	MIN 459	CFSM 1.20	IN 16.29			

CHIPPEWA RIVER BASIN

5-3595. South Fork Flambeau River near Phillips, Wis.

Location--Lat 45°42'15", long 90°36'55", in NW 1/4 SW 1/4 sec. 10, T. 37 N., R. 2 W., on downstream side of bridge on left span, 0.4 mile downstream from Big Elk River and 12 miles west of Phillips.

Drainage area--615 sq mi.

Records available--August 1929 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage--Wire-weight gage and crest-stage indicator; gage read once daily. Altitude of gage is 1,360 ft (by barometer). Prior to Oct. 5, 1939, chain or staff gage and Oct. 5, 1939, to Jan. 11, 1954, wire-weight gage at site 600 ft downstream at same datum.

Average discharge--38 years, 583 cfs.

Extremes--Maximum discharge observed during year, 6,900 cfs Apr. 2 (gage height, 12.45 ft); minimum daily, 115 cfs Sept. 15. 1929-67: Maximum discharge, 10,200 cfs June 18, 1943 (gage height, 14.32 ft); minimum, 39 cfs Aug. 31, Sept. 3-5, 1933.

Remarks--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	223	450	320	260	210	180	4,200	819	344	808	220	260
2	225	450	310	255	210	180	6,770	824	337	752	230	223
3	230	465	310	250	205	175	6,300	1,010	306	726	214	211
4	236	480	305	245	205	175	6,060	1,010	288	701	201	201
5	227	510	305	240	200	175	6,040	1,060	344	691	198	189
6	220	530	300	240	200	175	5,740	1,070	426	676	198	186
7	204	512	300	235	200	175	5,140	1,030	530	666	195	166
8	198	512	310	235	195	175	4,820	1,000	580	580	186	163
9	195	508	320	225	190	180	4,740	994	824	530	180	154
10	195	508	300	225	190	180	4,690	1,060	851	490	172	152
11	192	486	270	225	190	195	4,380	1,070	976	430	166	146
12	180	481	270	235	190	220	3,470	1,050	1,060	376	160	135
13	177	456	270	230	190	245	2,430	1,040	1,120	344	152	121
14	189	481	285	230	185	270	2,520	1,070	1,340	325	146	118
15	267	430	290	230	185	270	2,510	1,050	1,400	306	163	115
16	829	426	300	230	180	275	2,470	1,030	2,000	299	160	135
17	1,760	422	310	230	175	275	2,490	1,000	2,410	288	152	140
18	1,700	364	320	230	170	270	2,400	911	2,610	281	154	135
19	1,510	356	330	230	170	270	2,300	851	2,520	274	157	132
20	1,480	310	330	240	165	280	2,240	819	2,380	270	160	129
21	1,450	318	330	275	165	290	2,210	767	2,160	264	149	129
22	1,120	295	315	290	160	310	1,820	726	1,820	250	143	126
23	782	306	305	290	160	320	1,500	716	1,690	256	149	124
24	777	405	300	270	155	340	1,440	661	1,620	253	140	129
25	726	486	295	250	155	380	1,430	627	1,580	253	149	140
26	604	486	290	240	160	420	1,310	580	883	250	160	124
27	585	490	285	230	165	560	1,120	566	861	233	300	126
28	494	450	280	225	175	650	1,020	516	861	211	464	124
29	490	400	275	220	- - - -	770	872	473	829	186	420	121
30	478	355	270	220	- - - -	1,100	829	430	813	204	370	118
31	464	- - - -	265	215	- - - -	2,000	- - - -	384	- - - -	211	310	- - - -
Total	18,407	13,128	9,265	7,445	5,100	11,480	95,261	26,214	35,763	12,384	6,318	4,472
Mean	594	438	299	240	182	370	3,175	846	1,192	399	204	149
Max	1,760	530	330	290	210	2,000	6,770	1,070	2,610	808	464	260
Min	177	295	265	215	155	175	829	384	288	186	140	115
Cfsm	.966	.712	.486	.390	.296	.602	5.16	1.38	1.94	.649	.332	.242
In.	1.11	.79	.56	.45	.31	.69	5.76	1.59	2.16	.75	.38	.27
Cal yr 1966 : Total	204,055		Mean	559	Max	3,580	Min	96	Cfsm	.909	In.	12.32
Wtr yr 1967 : Total	245,237		Mean	672	Max	6,770	Min	115	Cfsm	1.09	In.	14.82

5-3605. Flambeau River near Bruce, Wis.

Location--Lat 45°22'20", long 91°12'35", in lot 7 of NW 1/4 sec. 2, T. 33 N., R. 7 W., on right bank 2.5 miles downstream from Thornapple powerplant, 6 miles upstream from mouth, and 7 miles southeast of Bruce.

Drainage area--1,897 sq mi.

Records available--August 1951 to September 1967.

Gage--Digital water-stage recorder. Altitude of gage 1,060 ft (by river survey, WSP 417). Prior to May 6, 1964, graphic water-stage recorder at same site and datum.

Average discharge--16 years, 1,764 cfs.

Extremes--Maximum discharge during year, 17,000 cfs Apr. 2 (gage height, 10.67 ft); minimum discharge, 483 cfs Nov. 13 (gage height, 2.58 ft).

1951-67: Maximum discharge, 17,400 cfs May 1, 1954 (gage height, 10.90 ft); minimum, about 100 cfs Aug. 7, 9, 1957 (gage height, 2.06 ft).

Remarks--Records good except those for winter months, which are fair. Flow regulated by several powerplants above station and by Rest Lake and Flambeau Flowage (see p. 73).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	837	930	1,150	1,150	1,350	1,350	14,500	2,340	1,450	3,390	1,320	1,300
2	1,190	1,060	760	1,100	1,350	1,400	16,600	2,720	1,380	3,660	1,350	1,330
3	864	1,230	940	1,100	1,400	1,400	13,300	3,330	1,290	3,150	1,380	1,200
4	1,080	1,060	1,400	1,050	1,400	1,350	10,700	3,310	1,190	2,440	1,260	1,180
5	963	772	1,600	1,100	1,400	1,350	10,100	3,240	1,270	2,240	1,300	1,020
6	988	1,170	1,500	1,150	1,350	1,400	9,840	2,750	1,350	2,000	1,250	809
7	919	1,100	1,550	1,200	1,300	1,350	9,390	2,270	1,700	1,710	1,260	917
8	886	1,350	1,450	1,250	1,300	1,350	7,390	2,600	3,040	1,440	1,140	930
9	877	1,230	1,350	1,150	1,300	1,300	7,870	2,680	3,540	1,530	1,090	995
10	849	978	1,350	1,200	1,350	1,300	7,650	2,920	2,970	1,580	1,100	954
11	768	1,240	1,250	1,200	1,350	1,300	6,750	3,190	2,820	1,640	1,150	944
12	742	1,260	1,200	1,230	1,300	1,300	6,310	3,190	3,400	1,510	1,110	1,080
13	786	1,070	1,250	1,230	1,300	1,300	5,290	3,720	3,780	2,170	1,210	1,140
14	1,360	936	1,250	1,200	1,350	1,300	4,910	2,990	3,650	1,330	1,080	1,060
15	3,620	1,300	1,250	1,200	1,400	1,250	5,240	2,980	5,270	1,090	1,060	1,130
16	3,980	1,440	1,250	1,150	1,400	1,300	6,100	2,890	7,340	1,340	1,020	1,210
17	3,590	1,540	1,250	1,150	1,350	1,300	6,680	2,600	8,630	1,470	1,050	1,240
18	3,180	1,530	1,150	1,150	1,350	1,300	6,380	2,370	9,020	1,360	1,110	1,170
19	2,860	1,460	1,300	1,150	1,400	1,350	6,280	2,300	7,640	1,420	1,210	955
20	2,730	1,210	1,100	1,150	1,350	1,350	5,430	1,800	7,200	1,460	1,100	884
21	2,600	1,030	1,100	1,200	1,300	1,350	4,960	1,930	7,440	1,390	1,140	784
22	1,850	894	1,250	1,350	1,300	1,400	4,810	1,880	6,160	1,360	991	928
23	1,750	980	1,250	1,450	1,300	1,450	4,440	1,950	4,870	1,640	1,040	969
24	1,630	1,430	1,100	1,400	1,300	1,500	4,620	2,040	5,250	1,730	1,120	953
25	1,390	1,250	1,200	1,450	1,300	1,600	3,870	1,930	4,650	1,440	1,160	893
26	1,600	1,550	960	1,400	1,300	1,700	3,270	1,900	4,240	1,540	1,090	877
27	1,710	1,640	860	1,350	1,250	2,000	3,050	1,800	4,300	1,500	1,320	942
28	1,590	1,620	840	1,350	1,250	2,500	2,680	1,710	4,050	1,280	1,880	836
29	1,400	1,060	1,100	1,350	-----	4,500	2,610	1,590	4,090	1,430	1,510	952
30	1,320	1,050	1,150	1,300	-----	7,600	2,450	1,600	3,720	1,370	1,310	905
31	1,490	-----	1,150	1,300	-----	7,000	-----	1,610	-----	1,230	1,480	-----
TOTAL	51,399	36,370	37,260	38,160	37,350	59,200	203,470	76,130	126,700	53,840	37,591	30,487
MEAN	1,658	1,212	1,202	1,231	1,334	1,910	6,782	2,456	4,223	1,737	1,213	1,016
MAX	3,980	1,640	1,600	1,450	1,400	7,600	16,600	3,720	9,020	3,660	1,880	1,330
MIN	742	772	760	1,050	1,250	1,250	2,450	1,590	1,190	1,090	991	784

C&L YR 1966: TOTAL 631,182

MEAN 1,729

MAX 8,950

MIN 624

WAT YR 1967: TOTAL 787,957

MEAN 2,159

MAX 16,600

MIN 742

CHIPPEWA RIVER BASIN

5-3620. Jump River at Sheldon, Wis.

Location.--Lat 45°18'30", long 90°57'20", in sec. 26, T. 33 N., R. 5 W., on right bank just downstream from highway bridge in Sheldon, 1,500 ft upstream from Shoulder Creek and 11 miles upstream from mouth.

Drainage area.--574 sq mi.

Records available.--July 1915 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 1,092.75 ft above mean sea level, datum of 1929. Prior to Feb. 9, 1939, and Sept. 1, 1941, to Apr. 1, 1953, chain gage, and Feb. 9, 1939, to Aug. 31, 1941, water-stage recorder, at same site and datum. Apr. 2, 1953, to Feb. 18, 1954, tape gage in creamery wellhouse 400 ft upstream at same datum, Feb. 19, 1954, to Sept. 27, 1964, wire-weight gage at same datum.

Average discharge.--52 years, 506 cfs.

Extremes.--Maximum discharge during year, 20,900 cfs Apr. 1 (gage height, 14.14 ft); minimum, 37 cfs Aug. 22-24 (gage height, 3.45 ft).
1915-67: Maximum discharge observed, 46,000 cfs Aug. 31, 1941 (gage height, 18.8 ft, floodmarks), from rating curve extended above 13,000 cfs on basis of contracted-opening measurement of peak flow; minimum observed, 11 cfs Dec. 18, 1943 (gage height, 3.99 ft).

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	160	105	80	96	92	18,300	328	131	477	73	101
2	62	132	100	80	96	94	15,300	328	118	423	83	85
3	64	101	100	80	94	96	13,400	328	114	418	99	73
4	69	105	100	80	94	98	8,580	328	115	517	103	66
5	70	115	100	80	94	100	5,440	310	118	408	89	58
6	82	128	105	80	92	100	4,670	283	170	317	79	54
7	90	140	105	82	92	105	4,670	267	267	252	73	50
8	86	168	100	84	92	105	4,550	270	529	207	70	47
9	78	176	98	86	92	115	4,220	290	1,330	179	68	43
10	70	173	94	86	92	125	4,060	320	1,350	165	68	41
11	65	165	90	86	92	120	3,310	750	1,200	149	66	40
12	62	119	88	87	94	115	2,590	1,780	1,110	131	58	38
13	60	137	88	86	96	110	2,000	1,300	908	112	55	38
14	76	150	90	84	98	105	1,740	900	713	99	52	57
15	964	152	90	84	98	105	1,700	700	643	85	49	52
16	2,480	144	94	80	98	105	1,650	606	1,280	79	44	52
17	2,260	140	98	78	98	100	1,600	500	1,900	79	41	52
18	1,700	135	98	76	98	100	1,550	408	1,580	73	41	52
19	1,230	135	96	76	98	100	1,500	342	1,100	71	41	54
20	901	140	92	78	96	100	1,460	296	1,020	68	38	54
21	694	190	90	80	96	100	1,200	267	1,300	60	38	52
22	546	173	88	82	94	100	1,030	299	995	60	37	46
23	429	165	86	86	94	105	894	359	693	73	37	44
24	347	196	84	92	92	110	719	355	546	116	40	41
25	300	216	84	100	90	120	612	328	511	149	40	41
26	261	273	82	100	90	170	529	296	472	124	50	43
27	232	317	82	105	90	350	460	258	389	110	68	43
28	212	200	82	105	92	800	404	223	612	89	240	40
29	190	130	80	105	-----	1,700	363	194	758	75	235	38
30	179	110	80	100	-----	6,000	331	172	625	68	170	38
31	170	-----	80	98	-----	17,600	-----	151	-----	68	124	-----
Total	14,084	4,785	2,849	2,686	2,638	29,245	108,832	13,536	22,597	5,301	2,369	1,533
Mean	454	160	91.9	86.6	94.2	943	3,628	437	753	171	76.4	51.1
Max	2,480	317	105	105	98	17,600	18,300	1,780	1,900	517	240	101
Min	55	101	80	76	90	92	331	151	114	60	37	38
Cfsm	.791	.279	.160	.151	.164	1.64	6.32	.761	1.31	.298	.133	.089
In.	.91	.31	.18	.17	.17	1.89	7.05	.88	1.46	.34	.15	.10
Cal yr 1966 : Total	158,430		Mean 434	Max 8,000	Min 28	Cfsm .756	In. 10.27					
Wtr yr 1967 : Total	210,455		Mean 577	Max 18,300	Min 37	Cfsm 1.01	In. 13.61					

Peak discharge (base, 3,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-1	0200	14.14	20,900				

5-3655. Chippewa River at Chippewa Falls, Wis.

Location.--Lat 44°55'35", long 91°24'40", in lot 1, sec. 12, T. 28 N., R. 9 W., on right bank at Chippewa Falls, 1 mile downstream from Duncan Creek.

Drainage area.--5,600 sq mi, approximately.

Records available.--June 1888 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Digital water-stage recorder. Datum of gage is 798.46 ft above mean sea level, datum of 1929. Prior to January 1914, staff gage, and January 1914 to June 1932, graphic water-stage recorder, at site 1 mile upstream at different datum. June 19, 1932, to Aug. 22, 1963, graphic water-stage recorder at present site and datum.

Average discharge.--79 years, 5,057 cfs.

Extremes.--Maximum discharge during year, 83,300 cfs Apr. 1 or 2 (gage height, 22.49 ft); minimum, 199 cfs June 1, July 15 (gage height, 1.11 ft); minimum daily, 323 cfs Oct. 2.

1888-1967: Maximum discharge, 102,000 cfs Sept. 1, 1941 (gage height, 24.8 ft); minimum, 22 cfs Apr. 2, 1934 (gage height, 0.63 ft); minimum daily, 40 cfs Feb. 4, 1917.

Maximum stage known, 26.94 ft Sept. 10, 1884, site and datum in use to June 1932.

Remarks.--Records good. Flow completely regulated by many powerplants above station, especially Chippewa Falls hydroelectric plant, which is just upstream, and by Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota (see p. 73).

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	UCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	407	4,610	2,530	2,360	5,580	5,430	72,000	6,650	3,620	9,620	5,240	4,050
2	323	3,390	2,790	2,070	4,930	5,200	79,000	5,920	3,150	9,650	5,930	2,900
3	2,400	3,350	1,440	3,950	3,940	5,350	72,000	6,870	2,120	9,630	3,070	2,380
4	2,440	3,430	380	4,100	2,830	4,830	58,800	6,630	430	8,390	3,370	1,330
5	2,290	2,110	1,950	2,670	2,940	4,320	43,200	6,930	2,660	7,390	1,120	2,940
6	2,170	1,360	3,030	3,870	4,440	3,320	33,500	6,850	2,810	6,460	1,650	3,020
7	1,690	3,880	4,230	1,270	4,560	4,140	35,400	5,490	944	4,370	3,060	1,950
8	847	3,650	4,450	1,400	4,760	3,260	28,100	4,060	5,250	3,320	3,440	2,290
9	988	3,460	4,270	2,630	4,620	3,630	28,400	5,160	9,650	1,620	3,110	531
10	3,320	3,040	2,870	4,020	4,530	4,100	25,900	6,700	9,710	3,710	2,940	640
11	3,370	3,190	3,180	2,370	4,050	3,590	20,400	7,540	9,660	2,680	2,380	1,530
12	3,060	2,860	3,340	1,970	3,200	2,720	17,800	6,700	9,660	3,180	975	2,800
13	1,830	2,000	3,540	2,950	4,660	3,960	15,500	9,610	10,900	3,000	1,190	2,760
14	2,620	3,540	2,840	1,780	4,960	4,130	13,200	8,670	12,000	3,100	3,000	4,130
15	5,200	3,560	3,430	2,520	4,760	3,750	15,500	7,050	11,800	3,190	2,970	3,630
16	9,520	3,600	2,540	3,420	4,930	4,080	15,300	6,720	18,100	2,000	3,440	1,030
17	10,300	3,280	2,010	3,070	4,920	3,930	15,500	6,260	25,600	3,150	1,910	915
18	10,300	4,080	1,090	4,150	4,580	3,430	15,400	5,700	26,900	3,020	1,640	2,730
19	10,200	1,880	4,130	3,070	3,090	3,770	14,300	5,640	24,700	2,970	1,220	3,940
20	7,760	1,790	4,140	2,240	4,440	4,140	12,500	4,010	20,300	3,020	1,550	3,380
21	6,940	3,770	4,140	1,610	4,840	3,470	9,840	4,410	20,100	4,820	2,760	2,560
22	5,660	4,600	2,930	2,580	4,510	3,510	10,000	5,550	19,700	1,400	2,880	1,470
23	3,470	3,970	1,920	3,470	4,470	3,480	9,720	5,620	15,300	1,980	3,250	824
24	5,120	1,380	1,940	4,190	4,830	3,380	8,240	5,580	13,800	3,350	2,410	511
25	5,680	4,480	1,420	4,890	5,970	3,910	8,210	4,810	12,700	3,970	2,140	2,640
26	5,410	3,120	1,590	3,150	4,280	4,860	7,580	5,070	9,570	3,830	1,140	2,760
27	5,400	4,250	4,010	3,360	5,040	7,400	6,940	3,380	9,610	3,360	1,580	2,170
28	5,140	3,730	4,070	2,280	5,610	7,900	6,090	1,390	9,550	3,570	3,530	2,590
29	3,050	4,370	1,610	1,680	-----	8,500	5,750	5,140	9,580	2,560	4,400	970
30	2,810	4,400	1,890	4,260	-----	10,300	7,840	2,240	8,780	1,320	2,780	594
31	4,680	-----	2,460	5,610	-----	31,300	-----	2,830	-----	3,540	2,720	-----
TOTAL	134,395	100,130	86,160	92,960	126,270	169,090	711,910	174,580	338,654	127,170	82,795	65,965
MEAN	4,335	3,338	2,779	2,999	4,510	5,455	23,730	5,632	11,290	4,102	2,671	2,199
MAX	10,300	4,610	4,450	5,610	5,970	31,300	79,000	9,610	26,900	9,650	5,930	4,130
MIN	323	1,360	380	1,270	2,830	2,720	5,750	1,390	430	1,320	975	511

CAL YR 1966: TOTAL 1,712,975

MEAN 4,693

MAX 30,800

MIN 323

WAT YR 1967: TOTAL 2,210,079

MEAN 6,055

MAX 79,000

MIN 323

Location.--Lat 45°24'05", long 91°46'39", in center sec. 30, T. 34 N., R. 11 W., on downstream side of bridge on U. S. Highway 8, 1 1/4 miles west of Cameron and 3 1/2 miles east of junction with State Highway 25 in Barron.

April 1966-67: Maximum discharge, that of Mar. 30, 1967; minimum observed, that of Nov. 17, 1966.

Revisions.--Revised daily figures of discharges in cubic feet per second, and monthly summary figures superseding those published in the 1966 Water Resources Data for Wisconsin are as follows:

Date	Discharge	Date	Discharge	Month	Cfs days	Minimum	Mean	Per square mile	Runoff in inches
1966		1966		July 1966...	8,063	126	260	0.578	0.67
July 4	132	Aug. 5	148	Aug.....	7,223	155	233	.518	.60
5	126	6	155						
aug. 4	155	7	155						

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	202	304	155	180	230	260	1,760	510	251	685	213	198
2	195	264	155	180	230	260	1,330	495	251	691	259	198
3	198	284	160	185	230	265	1,280	452	239	697	255	198
4	202	232	175	185	240	270	1,170	359	224	679	276	202
5	198	116	190	180	245	270	1,100	325	243	667	243	188
6	202	164	200	180	250	260	1,100	325	255	638	272	182
7	202	182	210	180	250	230	1,100	346	239	410	232	202
8	195	239	210	180	245	225	1,060	359	309	317	251	198
9	188	224	200	185	240	225	1,040	359	317	342	272	192
10	188	288	185	185	230	250	991	359	317	359	268	188
11	188	224	180	190	230	270	935	410	380	363	268	172
12	188	220	190	190	230	275	887	410	548	354	296	182
13	185	220	195	190	230	270	854	419	848	350	284	172
14	205	215	205	190	235	265	835	419	805	338	280	354
15	406	205	210	185	245	260	835	414	900	333	272	450
16	363	213	210	175	250	250	823	401	1,410	329	272	428
17	346	112	210	170	250	250	823	397	1,490	333	255	410
18	338	185	210	170	250	245	817	380	1,380	329	264	388
19	329	185	205	170	250	245	787	384	1,170	325	224	380
20	321	195	200	175	250	245	548	367	1,120	317	216	371
21	264	198	185	180	250	240	600	376	1,050	300	213	359
22	264	198	170	185	250	245	600	371	991	188	192	350
23	243	195	160	190	250	245	628	376	991	220	185	346
24	268	192	160	200	250	255	600	367	949	220	195	321
25	195	216	160	210	250	275	595	388	829	220	195	321
26	202	213	165	215	250	305	579	376	842	220	224	251
27	213	205	170	220	255	370	569	354	835	216	247	272
28	220	185	170	220	255	500	564	329	823	205	243	284
29	235	170	170	225	- - - - -	1,050	486	309	805	205	235	300
30	243	155	175	225	- - - - -	3,430	505	120	781	202	228	300
31	224	- - - - -	175	225	- - - - -	3,260	- - - - -	120	- - - - -	202	220	- - - - -
Total	7,410	6,198	5,715	5,920	6,820	15,265	25,801	11,376	21,592	11,254	7,479	8,357
Mean	239	207	184	191	244	492	860	367	720	363	241	279
Max	406	304	210	225	255	3,430	1,760	510	1,490	697	296	450
Min	185	112	155	170	230	225	486	120	224	188	185	172
Cfsm	.531	.460	.409	.424	.542	1.09	1.91	.816	1.60	.807	.536	.620
In.	.61	.51	.47	.49	.56							

Cal yr	:	Total	Mean	Max	Min	Cfsm	In.
Wtr yr1967	:	Total 133,187	Mean 365	Max 3,430	Min 112	Cfsm .811	In. 10.99

CHIPPEWA RIVER BASIN

69

5-3680. Hay River at Wheeler, Wis.

Location.--Lat 45°02'50", long 91°54'40", in SW 1/4 sec. 25, T. 30 N., R. 13 W., on right bank 25 ft downstream from highway bridge in Wheeler, 1.8 miles upstream from Otter Creek, and 2.4 miles downstream from South Fork Hay River.

Drainage area.--426 sq mi.

Records available.--October 1950 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 893.66 ft above mean sea level, datum of 1929. Prior to Mar. 25, 1951, wire-weight gage on bridge at same datum, and Mar. 26, 1951, to Apr. 20, 1966, graphic water-stage recorder at same datum.

Average discharge.--17 years, 272 cfs.

Extremes.--Maximum discharge during year, 13,600 cfs Mar. 31 (gage height, 15.04 ft), from rating curve extended above 9,000 cfs; minimum 90 cfs Mar. 17.

1950-67: Maximum discharge, that of Mar. 31, 1967; minimum, 55 cfs Mar. 13, 1954 (gage height, 2.32 ft), result of freezeup. Maximum stage known since at least 1915, 16.6 ft in April 1934, from floodmarks.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	146	160	130	136	137	122	9,080	307	197	382	271	178
2	144	156	128	137	137	123	3,560	314	195	395	578	176
3	146	153	132	139	135	125	3,590	291	192	339	622	174
4	149	159	141	141	133	127	1,930	280	191	313	307	170
5	149	156	150	143	129	126	1,320	273	203	297	245	168
6	148	155	154	146	128	125	1,270	273	242	283	230	167
7	145	156	159	150	124	123	1,280	278	240	271	232	165
8	148	156	162	152	123	122	974	284	341	266	223	163
9	159	155	167	153	120	120	824	277	358	260	215	161
10	148	154	164	154	118	120	722	280	295	228	207	160
11	147	153	152	155	117	121	622	385	361	223	202	160
12	146	145	148	152	117	124	532	430	753	214	198	159
13	145	156	150	151	120	126	491	331	955	210	197	169
14	156	150	153	145	122	128	490	289	662	207	199	201
15	520	150	155	140	122	129	532	269	725	204	248	196
16	780	151	153	137	120	124	533	265	1,090	202	178	182
17	363	152	143	135	121	117	485	254	947	200	167	175
18	261	152	136	130	123	116	443	245	727	196	173	171
19	229	145	129	130	126	117	412	240	609	192	181	168
20	216	147	121	133	128	118	391	236	573	191	180	167
21	208	145	116	138	129	118	394	235	511	190	180	165
22	199	145	112	143	129	118	370	232	425	212	177	164
23	189	147	120	149	129	123	340	230	400	295	178	163
24	182	147	129	153	127	131	321	230	381	296	180	162
25	178	148	132	158	127	150	309	226	369	226	178	161
26	172	149	134	158	125	250	301	221	350	206	192	159
27	170	148	136	155	123	850	297	217	348	198	248	160
28	168	142	138	151	122	1,590	293	212	346	191	224	161
29	164	137	138	147	-----	2,320	289	210	335	187	199	162
30	162	135	138	143	-----	6,840	291	206	328	184	187	161
31	162	-----	137	139	-----	13,000	-----	201	-----	182	181	-----
Total	6,399	4,504	4,357	4,493	3,511	27,943	32,686	8,221	13,649	7,440	7,107	5,048
Mean	206	150	141	145	125	901	1,090	265	455	240	229	168
Max	780	160	167	158	137	13,000	9,080	430	1,090	395	622	201
Min	144	135	112	130	117	116	289	201	191	182	167	159
Cfsm	.48	.35	.33	.34	.29	2.12	2.56	.62	1.07	.56	.54	.39
In.	.56	.39	.38	.39	.31	2.44	2.85	.72	1.19	.65	.62	.44
Cal yr 1966 : Total	96,976		Mean 266	Max 4,040	Min 112	Cfsm .62	In. 8.47					
Wtr yr 1967 : Total	125,358		Mean 343	Max 13,000	Min 112	Cfsm .80	In. 10.94					

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-16	0500	5.60	1,060	6-16	0500	5.55	1,130
3-31	0600	15.04	13,600				

CHIPPEWA RIVER BASIN

5-3690. Red Cedar River at Menomonie, Wis.

Location.--Lat 44°53'00", long 91°55'55", in NW 1/4 sec. 26, T. 28 N., R. 13 W., on right bank at Menomonie, 900 ft downstream from powerplant of Northern States Power Co., and 1,000 ft downstream from Wilson Creek.

Drainage area.--1,760 sq mi, approximately.

Records available.--June 1907 to September 1908, May 1913 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Digital water-stage recorder. Datum of gage is 780 ft above mean sea level (Northern States Power Co. bench mark). Prior to Sept. 3, 1908, chain gage at site 1 mile downstream at different datum. May 9, 1913, to Sept. 30, 1923, graphic water-stage recorder at same site at datum 0.42 ft lower than present datum. Oct. 1, 1923, to Aug. 13, 1964, graphic water-stage recorder at present site and datum.

Average discharge.--55 years (1907-8, 1913-67), 1,198 cfs.

Extremes.--Maximum discharge, 33,200 cfs Mar. 31 (gage height, 12.80 ft); minimum, 132 cfs June 30 (gage height, 0.81 ft).

1907-8, 1913-23, 1925-67: Maximum discharge, 40,000 cfs Apr. 4, 1934 (gage height, 16.0 ft, from floodmarks), from rating curve extended above 13,000 cfs on basis of computed flow over Cedar Falls Dam 6 miles upstream; minimum, 21 cfs Dec. 9, 1928 (gage height, 0.65 ft).

Remarks.--Records good except those for winter months, which are fair. Flow regulated by powerplants at Menomonie and Cedar Falls and by Birch, Cedar, Long, and Bear Lakes (see p. 73).

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	678	808	600	630	885	1,090	26,500	1,170	1,040	2,890	1,390	650
2	570	852	500	940	863	1,120	16,100	1,180	1,110	1,690	3,380	858
3	819	841	430	680	863	1,160	10,300	1,400	1,160	1,850	3,240	703
4	852	830	720	920	863	1,060	8,090	1,590	1,030	1,730	2,190	756
5	731	766	610	640	753	1,100	5,330	1,300	1,370	1,800	1,320	799
6	608	678	800	700	742	1,090	4,790	1,470	1,340	1,670	1,560	800
7	753	797	820	640	775	1,020	4,450	1,270	1,650	1,460	1,340	908
8	780	731	900	660	896	929	4,360	1,430	1,880	1,470	1,460	826
9	764	918	750	700	803	885	3,730	1,330	2,410	1,290	1,290	792
10	647	907	700	874	803	1,030	3,610	1,400	2,130	1,300	1,130	820
11	699	863	750	678	863	830	3,110	1,700	2,100	1,290	1,080	990
12	731	598	770	808	819	1,070	3,050	1,900	2,410	1,060	757	829
13	616	830	720	797	753	1,120	2,950	1,350	3,590	1,130	993	1,250
14	1,150	786	840	742	689	1,050	2,820	1,600	3,380	1,210	910	1,550
15	1,940	850	995	742	852	995	2,660	1,400	3,170	1,180	887	1,620
16	2,520	820	852	764	689	1,020	2,570	1,990	3,860	1,040	904	1,610
17	2,090	760	753	710	808	918	2,660	1,470	3,770	1,050	893	1,550
18	1,360	700	819	720	753	896	2,450	1,430	3,910	1,100	800	1,690
19	1,460	660	973	742	731	918	2,280	1,110	3,990	1,110	884	964
20	964	800	780	731	819	1,020	2,250	1,180	3,380	964	1,030	858
21	973	740	800	720	753	973	1,910	1,150	2,760	1,070	749	878
22	918	760	830	710	808	951	1,640	1,210	2,650	968	742	800
23	808	700	550	819	731	1,020	1,620	1,220	2,470	1,140	933	741
24	1,020	800	520	1,040	1,040	1,070	1,410	1,270	2,230	1,350	799	928
25	731	920	550	1,200	896	1,470	1,040	1,260	2,040	1,120	898	1,400
26	863	800	820	731	995	2,530	1,070	1,200	1,830	862	1,140	832
27	907	960	640	852	1,020	2,900	1,270	1,170	2,210	918	1,330	813
28	797	800	720	720	1,200	3,850	1,170	1,180	2,150	932	1,120	878
29	775	620	620	940	-----	5,070	995	1,250	2,470	908	1,180	811
30	830	680	700	852	-----	9,870	1,200	1,160	2,130	832	948	956
31	874	-----	680	841	-----	25,300	-----	852	-----	731	794	-----
TOTAL	30,314	23,595	22,402	24,243	23,475	75,325	127,885	41,592	71,620	39,165	38,156	29,926
MEAN	978	787	723	782	838	2,430	4,263	1,342	2,387	1,263	1,231	998
MAX	2,520	960	995	1,200	1,200	25,300	26,500	1,990	3,990	2,890	3,380	1,890
MIN	570	598	430	630	689	830	995	852	1,030	731	742	650

Cal yr 1966: Total 432,160 Mean 1,184 Max 11,000 Min 430
 Wtr yr 1967: Total 547,698 Mean 1,501 Max 26,500 Min 430

5-3695. Chippewa River at Durand, Wis.

Location--Lat 44°37'45", long 91°58'10", in SW 1/4 sec. 21, T. 25 N., R. 13 W., on left bank at Durand, 75 ft downstream from highway bridge and 9.5 miles downstream from Red Cedar River.

Drainage area--9,010 sq mi, approximately.

Records available--July 1928 to September 1967.

Gage--Digital water-stage recorder. Datum of gage is 694.59 ft above mean sea level, datum of 1929. Prior to Dec. 9, 1930, chain or staff gage at bridge 400 ft downstream at same datum. Dec. 10, 1930, to May 5, 1964, graphic water-stage recorder at present site and datum.

Average discharge--39 years, 7,270 cfs.

Extremes--Maximum discharge during year, 123,000 cfs Apr. 2 (gage height, 16.93 ft); minimum discharge, 2,120 cfs Oct. 10 (gage height, 0.69 ft).

1928-67: Maximum discharge, that of Apr. 2, 1967; minimum observed, 1,020 cfs Nov. 24, 1950 (gage height, 0.12 ft).

Maximum stage known, 18.4 ft Sept. 12, 1884.

Remarks--Records good except those for winter months, which are fair. Flow partly regulated by powerplants, Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota on Chippewa and Flambeau Rivers, and by Birch, Cedar, Bear, and Long Lakes on upper Red Cedar River (see p. 73).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3,000	6,370	5,830	4,600	5,800	7,200	65,000	10,200	4,700	14,300	5,140	4,280
2	2,400	6,060	5,100	4,700	6,200	7,400	117,000	8,430	4,730	13,800	10,100	5,340
3	2,380	5,190	5,400	5,000	5,700	7,400	104,000	8,810	4,940	14,600	10,300	4,520
4	3,000	5,170	5,100	5,400	5,200	7,200	89,500	9,590	3,780	14,400	8,000	3,960
5	3,370	5,060	4,700	5,800	5,000	7,000	71,700	9,680	3,960	12,600	6,350	3,270
6	3,690	4,270	5,400	5,400	5,400	6,600	57,100	9,450	3,530	11,600	4,610	4,300
7	3,420	3,710	6,200	5,600	6,000	6,300	45,600	9,330	4,730	9,910	4,390	4,390
8	3,130	5,170	7,000	5,000	6,300	6,000	45,000	8,200	5,160	7,800	5,730	3,820
9	2,660	5,210	7,400	4,500	6,300	6,000	40,900	6,990	7,890	6,880	6,000	3,350
10	2,410	5,130	6,600	5,000	6,300	6,100	37,400	8,030	10,100	4,850	5,760	2,640
11	4,010	4,970	5,600	5,600	6,200	6,200	34,300	9,480	12,600	5,980	4,890	2,670
12	4,310	4,780	5,700	4,700	5,600	6,200	29,600	10,100	13,300	5,680	4,450	2,960
13	4,050	4,360	5,800	4,500	5,300	6,200	25,400	11,000	14,000	5,490	3,260	3,960
14	3,690	4,110	5,700	4,500	6,000	6,200	21,800	12,500	16,200	5,420	3,100	5,220
15	5,740	4,990	5,600	4,300	6,600	6,200	19,300	11,100	16,300	5,340	4,240	6,710
16	9,500	5,080	5,400	4,400	6,700	6,200	22,000	9,650	17,800	4,820	4,870	5,920
17	13,400	5,280	5,000	4,800	6,800	6,200	20,900	9,560	24,100	4,280	4,660	3,740
18	13,000	4,860	4,600	4,700	6,800	6,200	22,300	9,220	28,800	5,680	4,150	3,960
19	12,600	5,280	4,200	5,200	6,200	6,200	20,400	7,910	30,600	4,940	3,260	4,890
20	11,500	3,930	5,800	4,700	5,700	6,300	19,100	8,000	28,900	4,770	2,810	5,420
21	9,540	3,960	5,800	4,300	6,300	6,400	16,000	6,930	24,400	4,660	3,270	4,920
22	8,500	5,170	5,000	4,000	6,600	6,400	14,100	6,300	24,300	6,460	4,110	4,320
23	7,190	5,740	4,600	4,030	6,800	6,400	13,800	7,240	23,300	4,320	4,320	3,150
24	6,250	5,520	4,400	4,700	7,000	6,500	13,000	7,750	19,000	4,410	4,970	2,880
25	6,750	3,950	4,300	5,500	7,200	9,000	11,600	7,630	17,300	5,530	4,070	2,980
26	7,080	5,410	4,300	5,700	7,400	11,000	11,000	7,330	15,100	5,710	3,840	3,940
27	7,020	5,000	4,300	5,000	7,400	15,000	10,000	7,070	14,100	5,500	3,780	4,150
28	6,840	5,790	5,000	4,800	7,300	17,000	9,540	5,840	13,900	5,320	3,720	3,640
29	6,440	5,290	5,500	4,400	-----	16,000	8,960	4,280	14,400	5,120	6,000	3,960
30	5,150	5,500	5,000	4,100	-----	25,000	8,780	5,450	14,400	4,200	6,190	2,810
31	4,740	-----	4,800	5,100	-----	35,000	-----	5,400	-----	3,440	5,060	-----
							1,025,080					
TOTAL	186,760	150,310	165,130	150,030	176,100	283,000	1,025,114	258,450	436,320	217,810	155,400	122,070
MEAN	6,025	5,010	5,327	4,840	6,289	9,129	34,170	8,337	14,540	7,026	5,013	4,069
MAX	13,400	6,370	7,400	5,800	7,400	35,000	117,000	12,500	30,600	14,600	10,300	6,710
MIN	2,380	3,710	4,200	4,000	5,000	6,000	8,780	4,280	3,530	3,440	2,810	2,640

CAL YR 1966: TOTAL 2,611,820

MEAN 7,156

MAX 35,200

MIN 2,060

WAT YR 1967: TOTAL 3,326,460

MEAN 9,114

MAX 117,000

MIN 2,380

CHIPPEWA RIVER BASIN

5-3700. Eau Galle River at Spring Valley, Wis.

Location.--Lat 44°51'00", long 92°14'15", between secs. 5 and 6, T. 27 N., R. 15 W., on downstream side near center of bridge at Spring Valley, 0.1 mile upstream from Mines Creek, 0.5 mile downstream from Lousy Creek, and at mile 29.96.

Drainage area.--64.8 sq mi.

Records available.--March 1944 to September 1967.

Gage.--Wire-weight gage and crest-stage indicator; gage read twice daily. Datum of gage is 909.45 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to July 31, 1957, chain gage at same site at datum 3.0 ft higher. Aug. 1, 1957, to June 6, 1966, wire-weight gage at same site at datum 1.00 ft higher.

Average discharge.--23 years, 26.1 cfs.

Extremes.--Maximum discharge during year, 2,660 cfs Mar. 29 (gage height, 7.96 ft); minimum observed 5.6 cfs Nov. 10 (gage height, 0.68 ft).

1944-67: Maximum discharge, 7,000 cfs Apr. 15, 1954 (gage height, present datum, 12.50 ft); minimum observed, that of Nov. 10, 1966.

Maximum stage known since at least 1894, 19.98 ft present datum Sept. 18, 1942, from floodmarks (discharge, 33,000 cfs estimated by Corps of Engineers on basis of slope-area measurement by Geological Survey of peak discharge of 39,000 cfs at Elmwood, drainage area, 91.9 sq mi).

Remarks.--Records poor except those above 200 cfs, which are fair. Some pumpage of ground water into stream during construction of flood-control dam upstream by Army Engineers. Second-feet per square mile and runoff figures are not published.

Revisions.--The discharge, in cubic feet per second, for June 12, 1966, as published in Water Resources Data For Wisconsin-1966, is revised to 82 cfs.

Month	Cfs days	Max	Min	Mean
June 1966	431	82	10	14.4
Water year 1965-66	10,766.5	1,580	8.9	29.5

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	7.9	7.0	9.0	8.9	8.1	60	77	14	26	12	11
2	9.4	7.9	7.0	9.0	8.8	8.1	768	21	14	35	12	11
3	9.4	7.6	7.0	9.0	8.6	8.1	66	16	15	20	14	11
4	9.4	7.0	7.0	9.0	8.4	8.1	35	15	15	17	12	13
5	9.4	7.0	7.0	9.2	8.2	8.1	27	15	14	16	12	13
6	9.4	6.8	7.2	9.4	8.0	8.1	153	14	13	15	13	10
7	9.4	6.2	7.6	9.4	7.9	8.1	45	15	14	15	13	10
8	9.4	6.2	8.0	9.6	7.8	8.1	33	15	15	15	12	9.4
9	9.4	6.2	8.2	9.8	7.7	8.1	38	17	14	15	12	10
10	9.4	6.2	8.6	10	7.6	8.1	28	17	14	15	12	9.8
11	9.3	6.8	8.6	10	7.6	8.1	22	17	18	13	13	10
12	9.4	7.0	8.6	10	7.7	8.1	21	16	124	13	12	9.8
13	13	7.0	8.6	10	7.8	8.1	20	15	35	14	11	12
14	21	6.8	8.8	9.8	8.1	8.1	21	15	19	14	14	10
15	17	6.6	9.2	9.4	8.3	8.1	22	15	19	14	13	9.8
16	11	7.9	9.3	9.0	8.3	8.1	20	15	44	13	12	10
17	9.4	7.7	9.3	9.0	8.3	8.1	19	15	18	13	11	11
18	9.3	7.4	9.1	9.0	8.3	8.1	18	15	16	13	13	10
19	9.1	7.3	8.9	9.0	8.3	8.1	18	14	19	12	12	9.3
20	9.1	7.2	8.9	9.2	8.3	8.1	19	14	16	12	13	9.3
21	8.9	7.2	8.7	9.4	8.3	8.3	18	14	16	12	13	9.3
22	8.9	7.2	8.6	9.6	8.3	8.3	16	14	15	12	13	9.6
23	8.9	7.2	8.6	9.8	8.1	8.3	14	14	15	42	13	10
24	8.9	7.2	8.6	10	8.1	30	14	14	15	16	12	9.4
25	8.7	7.2	8.6	10	8.1	320	15	14	14	12	12	9.8
26	8.5	7.2	8.8	9.8	8.1	709	15	14	15	12	10	10
27	8.5	7.1	8.9	9.6	8.1	666	15	14	15	12	11	9.8
28	8.1	7.1	9.0	9.4	8.1	968	15	13	14	12	15	10
29	8.1	7.1	9.0	9.2	-----	1,200	15	13	14	12	11	9.3
30	8.1	7.0	9.0	9.1	-----	1,490	15	13	14	12	12	9.3
31	8.1	-----	9.0	9.0	-----	168	-----	13	-----	12	10	-----
Total	305.3	212.2	260.7	292.7	228.1	5,737.9	1,605	523	617	486	380	305.9
Mean	9.85	7.07	8.41	9.44	8.15	185	53.5	16.9	20.6	15.7	12.3	10.2
Max	21	7.9	9.3	10	8.9	1,490	768	77	124	35	15	13
Min	8.1	6.2	7.0	9.0	7.6	8.1	14	13	13	12	10	9.3

Cal yr 1966: Total 8,786.7 Mean 24.1 Max 1,580 Min 6.2
 Wtr yr 1967: Total 10,953.8 Mean 30.0 Max 1,490 Min 6.2

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-29	2100	7.96	2,660	4-2	0730	7.30	2,200

Reservoirs in Chippewa River Basin

The nine reservoirs listed below are used to stabilize the flow of the Chippewa, Flambeau, and Red Cedar Rivers for power utilization, and are also used for recreational purposes. The first four are operated by the Chippewa-Flambeau Improvement Co. The remaining five are operated by the Northern States Power Co., which also furnishes the gage heights and capacity tables for all the above reservoirs. Month-end contents are computed by the Geological Survey. The usable capacity of these reservoirs is usually less in summer than in winter, because the allowable summer drawdown is limited by the Wisconsin Department of Natural Resources in the interest of riparian property owners. There are occasionally formal or informal changes in capacity and in minimum drawdown levels. Usable capacity figures listed below are for winter regulation.

- 5-3554. Moose Lake on West Fork Chippewa River, lat 46°02'00", long 91°04'30", in NE 1/4 sec. 14, T. 41 N., R. 6 W., 15.0 miles north of Winter, Wis., completed in 1893, has a usable capacity of 400,000,000 cu ft. Datum of gage is at mean sea level (Northern States Power Co. bench mark).
- 5-3556. Lake Chippewa on Chippewa River, lat 45°53'20", long 91°04'40", in SE 1/4 sec. 2, T. 39 N., R. 6 W., 3.2 miles upstream from Geological Survey river-gaging station, 5.5 miles northwest of Winter, Wis., completed in 1923, has a usable capacity of 10,000,000,000 cu ft. Datum of gage is at mean sea level (Northern States Power Co. bench mark).
- 5-3573. Rest Lake on Manitowish River, lat 46°08'15", long 89°53'05", in NW 1/4 sec. 9, T. 42 N., R. 5 E., 6.2 miles east of Manitowish, Wis., used as a reservoir since 1887, has a capacity of 660,000,000 cu ft between gage heights 105.00 ft and 108.50 ft. This reservoir includes nine lakes controlled by the same dam. Altitude of gage is 1,490 ft (by U. S. Geological Survey bench mark near lake).
- 5-3574. Flambeau Flowage on North Fork Flambeau River, lat 46°04'15", long 90°13'30", in SE 1/4 sec. 34, T. 42 N., R. 2 E., 0.5 mile upstream from discontinued Geological Survey river-gaging station, 10.2 miles southwest of Mercer, Wis., completed in 1926, has a usable capacity of 5,895,000,000 cu ft. Datum of gage is at mean sea level (Northern States Power Co. bench mark).
- 5-3642. Lake Wissota on Chippewa River, lat 44°56'20", long 91°20'25", in NW 1/4 sec. 3, T. 28 N., R. 8 W., 2.0 miles east of Chippewa Falls, Wis., city limits, completed in 1917, has a usable capacity of 3,547,000,000 cu ft. Datum of gage is at mean sea level (Northern States Power Co. bench mark).
- 5-3671. Birch Lake on Red Cedar River, lat 45°39'35", long 91°33'25", in W 1/2 sec. 25, T. 37 N., R. 10 W., at Birchwood, Wis., used as a reservoir since 1882, has a usable capacity of 908,000,000 cu ft. Altitude of gage is 1,090 ft (from nearby bench marks).
- 5-3672. Red Cedar Lake on Red Cedar River, lat 45°35'20", long 91°36'05", on line between secs. 21 and 22, T. 36 N., R. 10 W., at south edge of Mikana, Wis., used as a reservoir since 1882, has a usable capacity of 577,000,000 cu ft. Altitude of gage is 1,080 ft (Northern States Power Co.).
- 5-3673. Long Lake on Brill River, lat 45°40'05", long 91°40'50", in SW 1/4 sec. 24, T. 37 N., R. 11 W., 1 mile east of Nobleton, Wis., used as a reservoir since 1883, has a usable capacity of 637,000,000 cu ft. Altitude of gage is 1,210 ft (from nearby bench marks).
- 5-3674. Bear Lake on Bear Creek, lat 45°36'30", long 91°46'25", in NE 1/4 sec. 18, T. 36 N., R. 11 W., at Haugen, Wis., used as a reservoir since 1880, has a capacity of 413,000,000 cu ft between gage heights 87.0 ft and 91.8 ft. Altitude of gage is 1,140 ft (from nearby bench marks).

Month-end contents, in millions of cubic feet, water year October 1966 to September 1967

Date	Moose Lake	Lake Chippewa	Rest Lake	Flambeau Flowage	Lake Wissota	Birch Lake	Red Cedar Lake	Long Lake	Bear Lake
Sept. 30.....	407	9,676	850	3,980	3,737	711	577	424	205
Oct. 31.....	213	9,676	350	5,088	3,997	727	604	441	214
Nov. 30.....	25	8,402	350	4,980	3,892	727	577	424	205
Dec. 31.....	5	6,625	350	4,378	3,844	711	565	424	198
Jan. 31.....	20	5,076	350	3,710	3,876	711	604	458	198
Feb. 29.....	15	3,624	350	2,538	763	695	577	389	190
Mar. 31.....	85	1,614	407	1,406	3,852	648	478	406	205
Apr. 30.....	390	9,568	833	5,900	3,785	824	710	424	205
May 31.....	393	9,676	991	5,824	3,822	711	631	441	198
June 30.....	400	10,076	982	5,862	3,898	808	710	546	238
July 31.....	400	9,424	973	5,520	3,951	727	644	458	205
Aug. 31.....	400	8,804	973	4,584	3,919	711	631	458	214
Sept. 30.....	400	8,872	833	4,010	3,796	743	604	441	214

MISSISSIPPI RIVER MAIN STEM

5-3785. Mississippi River at Winona, Minn.

Location.--Lat 44°03'20", long 91°38'15", in sec. 23, T. 107 N., R. 7 W., on right bank at Winona pumping station in Winona, 9 1/2 miles upstream from Trempealeau River and at mile 725.7 upstream from the Ohio River.

Drainage area.--59,200 sq mi, approximately.

Records available.--June 1928 to September 1967. Gage-height records collected in this vicinity since 1878 are contained in reports of Mississippi River Commission.

Gage.--Water-stage recorder. Datum of gage is 639.64 ft above mean sea level, datum of 1929. June 10, 1928, to Apr. 15, 1931, staff gage at site 800 ft upstream. Prior to Oct. 1, 1929, at datum 0.20 ft higher and Oct. 1, 1929, to Apr. 15, 1931, at datum 0.12 ft lower. Apr. 16, 1931, to Nov. 12, 1934, staff gage at present site and datum. Since Mar. 31, 1937, auxiliary water-stage recorder 2.7 miles upstream at tailwater of navigation dam 5A.

Average discharge.--39 years, 24,930 cfs.

Extremes.--Maximum discharge during year, 166,000 cfs Apr. 7 (gage height, 16.92 ft); minimum daily, 8,200 cfs Dec. 4; minimum gage height, 4.92 ft Sept. 26.

1928-67: Maximum discharge, 268,000 cfs Apr. 19, 1965 (gage height, 20.77 ft, from floodmark); minimum, 2,250 cfs Dec. 29, 1933 (gage height, -1.18 ft); minimum gage height, -3.38 ft Aug. 31, 1934.

Remarks.--Records good. Some regulation by reservoirs, navigation dams, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

Cooperation.--Gage-height record at dam 5A furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,900	13,200	12,400	12,900	15,300	16,600	68,600	51,900	20,700	72,700	14,400	16,400
2	11,700	13,100	9,100	12,900	16,700	17,600	80,000	49,800	13,400	70,400	14,900	16,300
3	10,400	17,700	3,400	12,900	16,600	18,800	105,000	49,300	14,200	68,300	17,600	13,900
4	10,400	17,900	3,200	12,900	16,700	18,700	135,000	46,400	15,700	64,700	20,300	13,200
5	10,600	17,900	3,300	13,800	16,800	18,700	157,000	45,800	17,300	62,000	19,100	12,000
6	11,900	17,600	11,400	14,100	16,700	17,000	165,000	46,600	15,800	59,200	15,200	11,500
7	13,300	17,400	11,400	14,200	15,800	17,100	163,000	46,600	15,500	55,900	13,300	11,100
8	15,200	14,500	12,300	14,200	15,800	17,300	154,000	46,500	21,300	52,500	14,800	11,100
9	15,500	14,600	12,900	14,200	15,800	17,200	145,000	45,500	23,400	50,600	15,200	11,100
10	13,500	14,900	13,700	13,700	16,000	17,900	137,000	42,600	25,000	46,900	15,300	10,900
11	12,000	15,100	13,900	12,900	16,100	19,000	129,000	41,900	28,000	42,100	15,400	10,100
12	11,900	15,000	15,200	12,900	16,100	21,200	121,000	42,000	31,500	40,800	15,100	8,700
13	13,700	14,800	15,800	13,500	15,000	22,300	114,000	40,000	40,700	36,400	12,800	9,700
14	17,600	14,800	16,500	13,500	15,700	23,000	103,000	38,700	44,200	33,800	12,000	11,800
15	19,900	14,200	17,100	13,400	15,700	24,500	102,000	43,900	43,100	33,500	10,900	13,500
16	23,800	15,200	17,000	13,500	15,700	23,300	95,400	40,000	52,000	30,000	10,500	14,200
17	25,300	15,700	17,200	13,300	15,600	21,700	89,600	39,200	54,800	26,300	10,500	12,900
18	27,200	16,400	17,200	13,000	15,600	22,000	85,900	37,600	59,300	22,100	12,000	12,800
19	27,600	15,600	16,000	12,000	15,700	24,800	82,300	34,000	62,700	23,600	13,600	12,800
20	27,600	15,000	15,800	12,300	16,800	25,200	78,800	33,100	67,000	23,300	12,100	13,100
21	26,500	14,300	14,600	12,600	15,900	25,400	76,400	33,500	72,900	21,300	11,100	13,100
22	24,200	14,500	14,600	13,200	16,000	25,400	74,400	31,700	73,300	19,900	9,700	12,500
23	22,500	16,900	14,500	14,000	16,000	23,200	71,200	24,800	82,200	20,100	9,400	12,200
24	22,000	17,000	14,000	14,500	16,000	34,300	67,400	25,600	85,200	19,700	11,200	12,000
25	20,200	17,200	13,000	17,400	15,900	54,700	64,200	26,300	86,800	17,400	11,800	9,800
26	19,500	17,300	12,000	17,800	15,800	63,100	62,300	26,500	86,700	16,000	12,700	8,900
27	19,200	17,700	11,400	13,900	15,800	67,000	59,400	27,000	85,600	16,100	13,100	9,000
28	19,600	17,300	12,000	13,700	16,800	65,500	55,200	26,300	83,800	16,600	14,800	8,900
29	20,000	15,500	13,300	13,200	- - - - -	62,100	52,200	24,600	80,600	15,900	14,800	9,100
30	20,000	15,000	13,000	13,000	- - - - -	63,600	53,800	21,500	77,100	15,800	14,900	9,400
31	19,500	- - - - -	12,900	15,200	- - - - -	67,800	- - - - -	21,800	- - - - -	14,900	15,800	- - - - -
Total	564,200	483,300	415,100	444,600	448,400	956,000	2,952,100	1,151,000	1,494,800	1,108,800	429,300	351,000
Mean	18,200	16,110	13,390	14,340	16,010	30,840	98,400	37,130	49,830	35,770	13,850	11,700
Max	27,600	18,200	17,200	18,900	16,800	67,800	165,000	51,900	86,800	72,700	20,300	16,400
Min	10,400	14,200	8,200	12,000	15,000	16,600	52,200	21,500	14,200	14,900	9,400	8,700
Cfsm	.307	.272	.226	.242	.270	.521	1.66	.627	.842	.604	.234	.198
In.	.35	.30	.26	.28	.28	.60	1.85	.72	.94	.70	.27	.22
Cal yr 1966: Total	11,456,900			31,390	Max	105,000	Min	8,200	Cfsm	.530	In.	7.20
Wtr yr 1967: Total	10,798,600			29,590	Max	165,000	Min	8,200	Cfsm	.500	In.	6.78

5-3794. Trempealeau River at Arcadia, Wis.

Location.--Lat 44°15'15", long 91°30'25", in SW 1/4 sec. 32, T. 21 N., R. 9 W., near right bank on downstream side of bridge on State Highways 93 and 95 in Arcadia, half a mile downstream from Turton Creek.

Drainage area.--552 sq mi.

Records available.--July 1960 to September 1967.

Gage.--Wire-weight gage read twice daily. Datum of gage is 719.61 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 327 cfs.

Extremes.--Maximum discharge during year, 8,340 cfs Mar. 27 (gage height, 6.88 ft); minimum observed, 166 cfs Aug. 16 (gage height, 0.12 ft).
1960-67: Maximum discharge, 9,740 cfs Apr. 6, 1965 (gage height, 7.15 ft); maximum gage height observed, 8.04 ft Mar. 2, 1965 (backwater from ice); minimum observed, 110 cfs Aug. 8, 9, 19, 1964.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	189	226	190	190	220	215	1,650	659	235	327	200	208
2	189	218	200	190	205	215	1,480	493	232	334	216	206
3	187	223	215	190	200	215	1,480	417	229	334	213	226
4	189	223	220	190	195	215	1,120	360	226	300	203	200
5	187	220	230	190	195	210	930	331	235	283	196	198
6	187	213	235	190	195	210	903	320	241	273	206	198
7	185	226	240	190	195	210	826	313	260	266	218	198
8	185	235	240	190	195	215	714	356	345	263	213	196
9	185	229	240	190	195	215	659	342	403	293	208	194
10	185	229	230	190	195	225	644	349	406	279	198	203
11	183	223	205	190	195	240	561	514	435	260	194	196
12	185	218	195	190	200	255	518	504	428	247	189	208
13	189	223	195	190	205	265	489	478	406	238	189	198
14	270	223	200	190	205	265	464	385	360	232	189	310
15	1,450	223	210	190	205	270	590	352	648	226	176	260
16	1,060	229	215	200	200	265	579	327	1,050	223	170	241
17	565	223	215	205	200	260	547	320	792	223	185	229
18	414	218	215	205	200	255	507	313	568	220	183	218
19	342	223	215	205	195	250	468	306	414	216	183	213
20	313	213	210	200	195	250	446	293	392	213	180	210
21	270	218	200	195	195	250	442	279	356	213	183	213
22	266	226	190	200	195	255	428	273	349	210	180	210
23	260	226	180	205	195	270	403	266	327	327	185	213
24	253	238	175	220	195	962	381	270	342	378	194	208
25	235	238	175	250	200	3,990	370	263	345	273	189	208
26	241	247	180	305	200	5,370	370	260	327	235	189	213
27	235	235	185	295	205	7,240	345	256	367	216	220	208
28	235	200	185	275	210	4,220	338	253	392	208	235	203
29	229	185	185	255	- - - -	3,200	327	253	345	203	229	203
30	226	180	190	240	- - - -	2,980	356	253	317	203	216	203
31	223	- - - -	190	230	- - - -	2,490	- - - -	244	- - - -	198	210	- - - -
Total	9,512	6,651	6,350	6,535	5,585	35,947	19,335	10,602	11,772	7,914	6,139	6,392
Mean	307	222	205	211	199	1,160	644	342	392	255	198	213
Max	1,450	247	240	305	220	7,240	1,650	659	1,050	378	235	310
Min	183	180	175	190	195	210	327	244	226	198	170	194
Cfsm	.556	.402	.371	.382	.361	2.10	1.17	.620	.710	.462	.359	.386
In.	.64	.45	.43	.44	.38	2.42	1.30	.71	.79	.53	.41	.43
Cal yr 1966: Total	107,471		Mean	294	Max	2,500	Min	163	Cfsm	.533	In.	7.24
Wtr yr 1967: Total	132,734		Mean	364	Max	7,240	Min	170	Cfsm	.659	In.	8.93

TREMPEALEAU RIVER BASIN

5-3795. Trempealeau River at Dodge, Wis.

Location.--Lat 44°07'55", long 91°33'10", in sec. 10, T. 19 N., R. 10 W., near left bank on downstream side of highway bridge in Dodge, 9 miles upstream from mouth.

Drainage area.--643 sq mi.

Records available.--December 1913 to September 1919, April 1934 to September 1967.

Gage.--Wire-weight gage and crest-stage indicator; gage read twice daily. Datum of gage is 663.42 ft above mean sea level, datum of 1929. Prior to July 16, 1941, chain gage at same site and datum.

Average discharge.--38 years (1914-19, 1934-67), 388 cfs.

Extremes.--Maximum discharge during year, 7,350 cfs Mar. 28 (gage height, 10.42 ft); minimum daily, 190 cfs Nov. 30. 1913-19, 1934-67: Maximum discharge, 17,400 cfs Apr. 4, 1956 (gage height, 10.35 ft); minimum daily, 98 cfs Jan. 10, 1938.

Remarks.--Records good except those for winter months, which are fair.

Cooperation.--Gage-height record collected in cooperation with Corps of Engineers.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	226	242	215	210	230	220	2,440	684	292	351	226	210
2	225	237	230	210	225	220	1,950	902	285	353	239	206
3	223	242	240	210	220	225	1,620	537	280	373	249	206
4	228	239	250	210	215	225	1,620	475	276	354	235	202
5	226	239	250	205	215	230	1,280	429	280	340	226	201
6	223	236	255	205	215	230	954	412	292	319	221	200
7	226	240	255	205	215	230	930	400	288	309	263	199
8	228	247	260	205	210	230	780	417	335	303	252	197
9	219	223	265	210	210	230	712	438	390	327	246	194
10	219	249	250	205	210	250	695	419	429	328	237	199
11	218	240	220	205	210	275	635	511	424	316	230	199
12	218	242	205	205	215	290	588	566	459	288	225	206
13	233	229	210	205	220	300	558	520	459	282	219	233
14	244	228	225	205	225	300	548	459	406	276	247	464
15	600	237	235	210	220	300	566	428	390	269	219	343
16	1,030	236	240	215	215	295	616	412	992	261	208	268
17	826	240	245	215	210	285	586	394	1,260	260	193	237
18	539	233	250	215	210	275	556	378	759	255	201	223
19	356	226	250	215	210	270	528	370	537	252	213	213
20	358	230	245	210	210	265	504	358	466	247	212	208
21	325	235	225	205	210	270	495	353	382	244	209	208
22	311	240	215	205	210	280	497	336	390	242	210	208
23	288	250	205	210	210	300	482	338	380	242	206	202
24	277	250	200	220	210	550	459	332	375	468	219	210
25	274	255	195	250	210	1,600	446	330	392	327	212	199
26	256	260	200	280	210	3,580	434	319	373	277	200	202
27	256	230	205	300	210	5,950	426	309	373	253	233	208
28	252	210	210	280	210	5,950	417	301	417	236	244	208
29	246	195	210	260	- - - - -	4,120	409	311	382	230	244	201
30	246	190	210	250	- - - - -	3,260	412	303	372	229	233	204
31	247	- - - - -	210	240	- - - - -	2,860	- - - - -	303	- - - - -	228	217	- - - - -
Total	9,843	7,050	7,080	6,875	5,990	33,865	23,143	13,044	13,135	9,039	6,988	6,658
Mean	318	235	228	222	214	1,092	771	421	438	292	225	222
Max	1,030	260	265	300	230	5,950	2,440	902	1,260	468	263	464
Min	218	190	195	205	210	220	409	301	276	228	193	194
Cfsm	.495	.365	.355	.345	.333	1.70	1.20	.655	.681	.454	.350	.345
In.	.57	.41	.41	.40	.35	1.96	1.34	.75	.76	.52	.40	.39
Cal yr 1966 : Total	122,135		Mean 335	Max 2,450	Min 189	Cfsm .521	In. 7.07					
Wtr yr 1967 : Total	142,710		Mean 391	Max 5,950	Min 190	Cfsm .608	In. 8.26					

5-3810. Black River at Neillsville, Wis.

Location.--Lat 44°33'35", long 90°36'50", in sec. 15, T. 24 N., R. 2 W., on right bank at downstream side of bridge on U. S. Highway 10 in Neillsville, 1 mile downstream from O'Neill Creek and 2.6 miles upstream from Cunningham Creek.

Drainage area.--756 sq mi.

Records available.--April 1905 to March 1909, October 1913 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Digital water-stage recorder. Datum of gage is 962.77 ft above mean sea level, datum of 1929 (levels by U. S. Weather Bureau). Prior to Oct. 24, 1934, chain gage, and Oct. 24, 1934, to July 28, 1964, graphic water-stage recorder at same site and datum.

Average discharge.--57 years (1905-8, 1913-67), 570 cfs.

Extremes.--Maximum discharge during year, 25,700 cfs Mar. 31 (gage height, 18.00 ft); minimum, 29 cfs Oct. 1, 2 (gage height, 2.64 ft).

1905-9, 1913-67: Maximum discharge, 48,800 cfs Sept. 10, 1938 (gage height, 23.8 ft); minimum, 0.6 cfs Aug. 15, 1936 (gage height, 1.84 ft).

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	95	125	66	195	96	17,400	288	90	3,020	158	192
2	30	89	110	66	190	96	16,600	287	80	2,510	280	144
3	31	89	105	66	185	98	13,100	270	72	1,450	351	113
4	33	79	102	66	180	98	7,720	264	65	1,310	325	94
5	36	75	102	66	175	96	4,840	242	65	1,160	223	80
6	35	79	105	66	170	96	6,930	220	72	771	162	70
7	34	77	170	66	165	96	5,190	194	80	492	140	62
8	34	79	230	66	160	96	3,730	235	257	355	112	56
9	35	79	240	66	155	96	5,750	220	860	277	95	50
10	35	81	240	66	150	98	6,340	290	1,210	229	86	45
11	34	80	215	66	145	105	3,810	860	1,020	194	82	40
12	32	80	150	66	140	110	2,500	1,190	846	165	77	38
13	34	79	140	66	135	110	1,750	1,190	695	143	67	36
14	66	75	105	66	130	110	1,530	831	557	127	60	36
15	1,860	83	92	63	130	110	2,110	594	800	112	54	67
16	1,460	87	84	62	125	110	2,220	430	2,090	103	45	64
17	1,100	87	78	61	125	110	2,040	336	2,470	95	46	68
18	845	85	76	60	120	110	1,500	274	2,010	86	46	69
19	676	87	74	60	115	112	1,160	229	1,380	79	47	69
20	514	81	72	61	115	112	898	194	1,880	74	47	64
21	376	79	70	63	110	112	776	170	1,710	70	44	59
22	293	91	68	70	110	112	664	155	1,140	67	41	59
23	239	115	68	90	105	120	549	143	747	152	40	58
24	199	136	68	110	105	130	459	148	525	336	40	52
25	171	168	67	150	100	400	389	158	405	226	37	52
26	153	205	67	185	98	1,500	336	160	347	162	50	51
27	136	210	67	200	99	2,440	300	150	628	129	274	47
28	124	180	66	205	96	3,500	267	140	3,980	105	587	44
29	115	155	67	205	---	9,000	242	129	2,630	88	594	43
30	106	140	67	202	---	19,500	235	114	1,680	75	405	40
31	102	---	66	200	---	24,400	---	99	---	67	267	---
Total	8,968	3,125	3,356	2,971	3,828	63,279	111,335	10,204	30,391	14,229	4,882	1,962
Mean	289	104	108	95.8	137	2,041	3,711	329	1,013	459	157	65.4
Max	1,860	210	240	205	195	24,400	17,400	1,190	3,980	3,020	594	192
Min	30	75	66	60	96	96	235	99	65	67	37	36
Cfsm	.382	.138	.143	.127	.181	2.70	4.91	.435	1.34	.607	.203	.087
In.	.44	.15	.17	.15	.19	3.11	5.48	.50	1.50	.70	.24	.10
Cal yr 1966: Total	183,534			Mean 503	Max 11,700	Min 28	Cfsm .665	In. 9.03				
Wtr yr 1967: Total	258,530			Mean 708	Max 24,400	Min 30	Cfsm .937	In. 12.73				

Peak discharge (base, 5,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-31	0200	18.00	25,700	4-9	1300	10.43	7,540
4-6	0800	10.97	8,560				

5-3820. Black River near Galesville, Wis.

Location.--Lat 44°03'45", long 91°17'30", in sec. 2, T. 18 N., R. 8 W., on left bank 30 ft downstream from bridge on U. S. Highway 53, 4.5 miles southeast of Galesville, and 5 miles downstream from Fleming Creek.

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

Records available.--December 1931 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 658.43 ft above mean sea level, unadjusted. Prior to Apr. 2, 1941, chain gage on bridge 30 ft upstream at same datum.

Average discharge.--35 years (1932-67), 1,630 cfs.

Extremes.--Maximum discharge during year, 65,500 cfs Apr. 1 (gage height, 14.63 ft); minimum daily, 360 cfs Jan. 17, 18 (backwater from ice).

1931-67: Maximum discharge, that of Apr. 1, 1967; minimum observed, 180 cfs Dec. 20, 1932.

Remarks.--Records good except those for winter months, which are fair. Flow partly regulated by Hatfield Dam powerplant where drainage area is 1,290 sq mi and storage capacity is 272 million cubic feet. Water diverted periodically from the basin into the Lemonweir River basin for cranberry culture.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	380	450	598	450	725	560	62,000	1,860	815	3,100	560	836
2	384	664	455	440	720	559	51,700	2,010	892	3,770	638	836
3	380	604	470	425	715	580	39,200	2,370	885	4,950	662	626
4	376	522	475	410	715	615	39,800	2,310	836	4,240	686	470
5	384	533	485	415	710	625	23,200	2,220	698	3,480	787	465
6	384	533	510	430	700	605	15,900	2,130	738	2,910	773	455
7	376	455	640	425	695	565	12,100	1,900	801	2,430	632	510
8	376	436	710	415	680	580	12,700	1,680	941	2,110	650	485
9	384	475	740	405	675	620	11,700	1,650	1,370	1,970	731	460
10	372	485	750	395	665	650	8,320	1,670	1,650	1,830	626	426
11	368	522	695	390	655	670	7,800	1,910	2,820	1,450	536	394
12	376	580	605	395	650	670	9,270	2,700	3,930	1,200	490	406
13	400	556	570	400	640	640	7,300	4,090	4,250	1,100	525	414
14	422	450	550	395	635	610	4,870	3,750	4,130	941	495	440
15	634	436	525	380	625	615	3,740	3,320	3,440	927	485	450
16	960	539	505	365	620	655	4,910	2,700	5,670	850	500	500
17	2,460	550	475	360	620	645	5,500	2,370	5,730	692	490	515
18	1,960	550	455	360	615	610	6,290	2,240	6,500	698	480	455
19	1,770	539	420	365	610	630	6,370	1,860	7,190	731	480	440
20	1,700	533	392	370	605	655	5,320	1,680	6,440	752	480	435
21	1,650	445	400	375	605	655	4,240	1,550	5,000	662	505	430
22	1,390	431	400	390	595	675	3,860	1,300	4,710	650	490	435
23	1,070	533	400	415	585	755	3,470	1,120	3,640	620	542	422
24	1,020	556	395	438	580	860	3,200	1,280	2,990	674	440	422
25	912	539	400	510	575	1,800	2,990	1,250	2,690	632	418	402
26	779	475	400	620	565	2,500	2,420	1,200	2,530	668	460	418
27	786	652	410	700	560	3,500	2,320	1,130	2,320	717	572	422
28	718	544	420	720	560	5,000	2,100	1,070	2,140	745	662	410
29	694	465	445	720	---	7,830	1,880	948	2,420	638	656	398
30	604	718	465	730	---	13,900	1,750	899	4,460	638	836	430
31	511	---	460	725	---	30,900	---	899	---	536	836	---
Total	24,980	15,770	15,620	14,333	17,900	80,734	366,220	59,066	92,626	47,311	18,123	14,207
Mean	806	526	504	462	639	2,604	12,210	1,905	3,088	1,526	585	474
Max	2,460	718	750	730	725	30,900	62,000	4,090	7,190	4,950	836	836
Min	368	431	392	360	560	559	1,750	899	698	536	418	394
Cfsm	.380	.248	.238	.218	.301	1.23	5.76	.899	1.46	.720	.276	.224
In.	.44	.28	.27	.25	.31	1.42	6.42	1.04	1.62	.83	.32	.25
Cal yr 1966: Total	567,226		Mean	1,554	Max	18,200	Min	368	Cfsm	.733	In.	9.95
Wtr yr 1967: Total	766,890		Mean	2,101	Max	62,000	Min	360	Cfsm	.991	In.	13.45

Peak discharge (base, 12,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-1	1230	14.63	65,500				

5-3830. La Crosse River near West Salem, Wis.

Location.--Lat 43°54'05", long 91°07'05", in SE 1/4 sec. 32, T. 17 N., R. 6 W., on left bank 30 ft upstream from highway bridge, 2 miles west of West Salem, and 6 miles downstream from Dutch Creek.

Drainage area.--398 sq mi.

Records available.--December 1913 to September 1967.

Gage.--Digital water-stage recorder or chain gage. Datum of gage is 668.0 ft above mean sea level, adjustment of 1912. Prior to Oct. 19, 1938, chain gage at site 30 ft downstream at same datum. Oct. 19, 1938, to Aug. 12, 1964, graphic water-stage recorder at present site and datum.

Average discharge.--53 years (1914-67), 288 cfs.

Extremes.--Maximum discharge during year, 3,620 cfs June 16 (gage height, 10.27 ft); minimum, 143 cfs July 19 (gage height, 3.20 ft). 1913-67: Maximum discharge observed, 8,200 cfs Aug. 6, 1935 (gage height, 12.2 ft), from rating curve extended above 3,000 cfs; minimum, 30 cfs Sept. 5, 1948 (gage height, 0.45 ft).

Remarks.--Records good, except winter months and Oct. 1 to Nov. 2, which are fair. Diurnal fluctuation caused by powerplant a few miles above station.

Cooperation.--Water-stage recorder inspected by employee of Corps of Engineers.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	182	256	190	193	265	159	617	316	189	322	191	208
2	185	256	190	193	260	240	876	312	186	304	215	205
3	177	229	190	190	260	270	722	322	186	299	232	210
4	177	184	190	190	260	270	445	324	186	296	234	210
5	182	191	189	190	260	270	384	319	186	294	210	208
6	182	193	193	194	255	270	229	316	186	286	229	208
7	182	193	191	194	230	265	229	292	213	284	237	201
8	182	229	196	195	220	265	229	256	306	284	234	203
9	182	259	244	195	220	260	227	252	781	284	229	196
10	182	256	262	195	225	255	227	264	1,120	264	222	193
11	185	234	259	195	230	255	232	272	740	279	215	237
12	187	193	249	196	230	270	237	294	722	279	210	309
13	194	193	191	196	230	300	239	301	443	262	205	264
14	189	193	191	198	235	480	246	292	402	210	203	232
15	326	193	191	250	235	440	249	276	560	210	201	237
16	386	193	191	350	235	350	606	264	2,890	210	198	229
17	625	234	193	260	235	290	272	259	2,020	215	193	274
18	217	256	244	190	235	280	266	259	1,300	242	205	302
19	232	256	259	190	240	280	279	256	440	213	201	234
20	225	196	254	190	290	304	289	256	412	148	201	232
21	225	191	227	190	300	456	292	252	404	169	201	232
22	205	191	191	190	300	302	294	222	389	193	201	232
23	217	191	191	195	300	349	299	193	374	201	201	232
24	213	198	189	230	295	867	289	193	396	203	198	232
25	213	254	189	382	290	1,760	284	193	374	210	196	210
26	210	254	189	470	270	2,440	276	191	356	210	203	208
27	205	254	170	440	220	1,560	289	193	343	213	376	213
28	208	254	175	360	180	1,290	299	181	336	205	435	208
29	272	213	180	310	-----	1,180	304	229	326	201	181	213
30	259	191	185	295	-----	930	312	256	296	198	203	210
31	169	-----	190	280	-----	596	-----	191	-----	191	208	-----
TOTAL	6,975	6,578	6,335	7,486	7,005	17,103	10,038	7,996	17,062	7,379	6,868	6,782
MEAN	225	219	204	241	250	552	335	258	569	238	222	226
MAX	625	259	262	470	300	2,040	876	324	2,890	322	435	309
MIN	169	184	170	190	180	159	227	181	186	148	181	193
CFSM	.57	.55	.51	.61	.63	1.39	.84	.65	1.43	.60	.56	.57
IN.	.65	.61	.59	.70	.65	1.60	.94	.75	1.59	.69	.64	.63

CAL YR 1966: TOTAL 106,573

MEAN 292

MAX 4,450

MIN 79

CFSM .73

IN 9.96

WAT YR 1967: TOTAL 107,607

MEAN 295

MAX 2,890

MIN 148

CFSM .74

IN 10.06

MISSISSIPPI RIVER MAIN STEM

5-3895. Mississippi River at McGregor, Iowa

Location.--Lat 43°01'30", long 91°10'20", in SE 1/4 SE 1/4, sec. 22, T. 95 N., R. 3 W., on right bank in city park at north end of Main Street in McGregor, 2.6 miles upstream from Wisconsin River, 4.3 miles downstream from Yellow River, and at mile 633.4 from Ohio River.

Drainage area.--67,500 sq mi, approximately.

Records available.--August 1936 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 605.30 ft above mean sea level, adjustment of 1912. Prior to Aug. 11, 1965 graphic water-stage recorder at same site and datum. Prior to June 1, 1937, and since June 2, 1939, auxiliary water-stage recorder; June 1, 1937, to June 1, 1939, auxiliary staff gage 14.1 miles upstream in tailwater of dam 9, at datum 5.30 ft lower.

Average discharge.--31 years, 32,310 cfs (23,390,000 acre-ft per year).

Extremes.--Maximum discharge during year, 170,000 cfs Apr. 9; maximum gage height, 20.72 ft Apr. 10; minimum daily discharge, 9,400 cfs Sept. 29; minimum gage height, 6.00 ft Sept. 28.

1936-67: Maximum daily discharge, 276,000 cfs Apr. 24, 1965; maximum gage height, 25.38 ft Apr. 24, 1965; minimum daily discharge, 6,200 cfs Dec. 9, 1936; minimum gage height, -0.86 ft Aug. 18, 1936.

Maximum stage known since at least 1828 that of Apr. 24, 1965.

Remarks.--Records good except those for winter periods which are fair. Stage-discharge relation affected by backwater from Wisconsin River and Dam 10. Flow regulated by reservoirs and navigation dams.

Cooperation.--Gage height record at Dam 9 collected in cooperation with Corps of Engineers.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14,100	20,400	16,200	15,200	20,300	20,000	90,400	62,200	21,400	95,300	16,600	19,100
2	15,500	19,100	15,800	15,300	20,000	20,000	92,600	61,300	16,700	92,900	17,500	18,000
3	14,600	18,500	13,800	15,500	19,500	20,000	99,400	58,600	17,100	88,300	21,000	17,300
4	13,100	13,200	12,700	16,000	19,800	20,100	109,000	56,400	15,200	85,100	22,800	17,000
5	12,500	18,200	12,000	16,200	21,000	20,200	125,000	52,000	16,600	82,600	22,800	15,800
6	14,200	18,400	11,700	16,500	21,000	20,000	142,000	51,100	18,800	79,400	22,600	14,100
7	14,300	17,700	12,200	16,500	21,000	18,500	153,000	49,900	20,500	75,800	22,700	13,400
8	15,600	17,200	14,000	16,700	21,000	18,000	159,000	49,300	26,200	71,800	19,200	13,600
9	16,300	18,000	15,200	16,800	19,500	18,000	164,000	47,900	34,100	66,300	17,400	12,600
10	16,600	18,900	16,200	16,800	19,000	19,000	165,000	46,600	41,600	60,300	17,200	12,900
11	16,400	18,800	17,000	16,100	19,000	22,000	163,000	50,600	46,500	54,400	16,300	12,000
12	16,300	18,800	16,300	16,000	19,000	25,000	160,000	48,800	47,400	51,000	15,600	11,700
13	17,000	19,100	16,200	16,000	19,000	28,800	156,000	47,400	45,200	44,500	15,500	12,400
14	18,800	17,900	17,000	15,900	19,000	31,700	149,000	45,700	43,700	39,400	14,700	13,700
15	22,700	17,200	17,700	15,800	20,000	34,000	143,000	44,900	47,600	36,900	13,600	16,600
16	23,600	16,500	18,000	15,800	20,000	32,500	135,000	43,700	51,200	32,400	12,900	17,700
17	33,600	16,600	18,200	16,200	19,800	31,000	129,000	41,700	63,900	33,300	13,000	15,400
18	36,000	16,600	18,200	16,800	19,400	29,500	121,000	41,600	67,400	31,800	14,000	15,100
19	36,200	17,700	18,800	16,200	19,200	29,000	114,000	42,100	68,100	24,900	14,300	16,300
20	36,000	18,200	19,100	15,400	19,200	28,000	107,000	41,700	70,100	22,700	14,500	16,100
21	34,100	18,500	19,300	15,000	19,800	26,900	103,000	37,600	72,900	23,700	12,100	15,200
22	33,000	17,800	18,800	14,800	20,000	27,500	99,500	34,400	76,800	23,500	11,800	14,900
23	30,400	17,800	17,500	15,300	20,000	29,500	94,900	32,600	81,900	23,000	12,100	15,000
24	27,700	18,500	17,000	16,300	18,800	35,500	91,400	31,800	86,500	22,600	14,200	13,700
25	23,900	19,400	16,900	18,300	18,500	43,000	88,100	31,000	90,700	21,400	14,400	12,300
26	22,900	19,700	17,000	21,500	18,400	53,000	83,800	29,900	92,900	20,600	14,700	10,800
27	23,400	19,900	16,800	26,400	18,600	61,000	79,500	28,300	95,700	19,800	16,800	10,000
28	22,900	19,100	16,000	29,000	19,000	76,800	75,000	30,400	97,000	20,000	16,600	9,400
29	22,700	17,800	15,200	28,800	- - - -	81,500	70,800	31,300	98,400	19,600	17,200	10,100
30	23,200	17,000	15,000	28,000	- - - -	90,000	65,700	29,300	96,300	19,000	17,400	- - - -
31	21,900	- - - -	15,200	23,000	- - - -	91,000	- - - -	26,300	- - - -	17,200	19,000	- - - -
Total	694,500	547,500	501,000	558,100	548,800	1,101,000	3,538,100	1,326,400	1,668,400	1,399,500	510,500	430,400
Mean	22,400	18,250	16,160	18,000	19,600	35,520	117,600	42,790	55,610	45,150	16,470	14,350
Max	36,200	20,400	19,300	29,000	21,000	91,000	165,000	62,200	98,400	95,300	22,800	19,100
Min	12,500	16,500	11,700	14,800	18,400	18,000	65,700	26,300	15,200	17,200	11,800	9,400
Cfsm	.33	.27	.24	.27	.29	.53	1.74	.63	.82	.67	.24	.21
In.	.38	.30	.28	.31	.30	.61	1.94	.73	.92	.77	.28	.24

Cal yr 1966: Total 13,472,000 Mean 36,910 Max 112,000 Min 11,700 Cfsm .55 In. 7.42
Wtr yr 1967: Total 12,814,200 Mean 35,110 Max 165,000 Min 9,400 Cfsm .52 In. 7.06

5-3901.8 Wisconsin River at Conover, Wis.

Location.--Lat 46° 02' 52", long 89° 15' 57", in NE 1/4 sec. 8, T. 41 N., R. 10 E., on left bank, 60 ft upstream from highway bridge on County Trunk K, 0.5 mile downstream from Pioneer Creek and 0.6 mile southwest of Conover, Wis.

Drainage area.--176 sq mi.

Records available.--~~October~~ ^{SEP 24} 1966 to September 1967.

Gage.--Graphic water-stage recorder. Prior to Oct. 19, 1966, staff gage at same site and gage datum.

Extremes.--Maximum discharge during year, 520 cfs Apr. 2 (gage height 5.17 ft); minimum, 107 cfs Sept. 13 (gage height 2.69 ft).

Remarks.--Records good except for winter months, which are fair. Flow regulated by Lac Vieux Desert and Twin Lakes Reservoirs (see p. 112).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	159	165	230	200	150	472	208	130	176	125	133
2	132	157	165	230	195	145	503	209	127	178	150	128
3	135	154	170	230	190	140	438	197	122	207	145	126
4	146	154	185	230	185	135	405	185	120	229	134	122
5	147	154	210	232	185	135	385	184	123	247	126	119
6	145	154	220	230	180	130	385	178	130	245	125	115
7	146	160	230	230	180	130	354	171	132	237	130	116
8	167	164	234	240	175	130	354	174	146	229	130	114
9	186	164	240	255	170	135	405	172	153	224	139	112
10	200	166	240	260	160	135	415	169	148	212	140	113
11	201	166	230	260	155	138	415	196	196	188	135	112
12	201	168	220	260	150	140	366	208	206	161	130	110
13	200	178	220	260	150	140	324	194	197	151	127	108
14	213	171	220	260	155	135	335	186	232	143	123	108
15	448	166	230	255	155	130	415	185	307	138	120	146
16	516	167	240	245	160	125	412	170	425	134	117	177
17	496	172	250	235	160	125	442	161	503	133	118	185
18	442	175	245	230	160	120	489	184	503	130	126	186
19	382	172	240	230	160	120	459	153	465	127	124	186
20	351	176	230	230	160	120	398	150	445	126	120	193
21	318	175	225	235	155	120	344	151	418	127	126	200
22	296	178	220	245	150	125	292	154	363	135	128	201
23	282	182	220	260	150	135	249	162	338	156	120	201
24	254	183	220	260	150	145	222	170	335	150	120	201
25	236	194	220	250	150	150	210	161	304	135	115	200
26	223	200	220	240	150	150	200	159	273	150	138	200
27	215	196	215	230	150	150	190	162	234	160	178	200
28	208	174	210	220	150	150	184	163	212	150	165	199
29	189	170	210	215	- - - -	150	185	158	202	140	153	202
30	168	170	215	210	- - - -	160	184	144	193	130	146	203
31	162	- - - -	220	200	- - - -	350	- - - -	135	- - - -	125	135	- - - -
Total	7,537	5,119	6,779	7,397	4,590	4,443	10,431	5,323	7,682	5,173	4,109	4,716
Mean	243	171	219	239	164	143	348	172	256	167	133	157
Max	516	200	250	260	200	350	503	209	503	247	178	203
Min	132	154	165	200	150	120	184	135	120	125	115	108
Cfsm	1.38	.972	1.24	1.36	.932	.812	1.98	.977	1.45	.949	.756	.892
In.	1.59	1.08	1.43	1.56	.97	.94	2.20	1.12	1.62	1.09	.87	1.00

Cal yr	:	Total	Mean	Max	Min	Cfsm	In.
Wtr yr 1967	:	Total 73,299	Mean 201	Max 516	Min 108	Cfsm 1.14	In. 15.47

WISCONSIN RIVER BASIN

5-3905. Anvil Lake near Eagle River, Wis.

Location.--Lat 45°56'20", long 89°03'35", in sec. 13, T. 40 N., R. 11 E., near home of Hans Schaffer on north side of lake, 11 miles northeast of Eagle River.

Drainage area.--3 sq mi, approximately; Area of Anvil Lake, 380 acres.

Records available.--August 1936 to September 1967 (fragmentary).

Gage.--Staff gage in lake bed. Datum of gage is 90.00 ft above datum assumed by Wisconsin Department of Natural Resources; gage readings have been reduced to elevations above this datum. Prior to Aug. 13, 1950, staff gage 0.3 mile south as same datum.

Extremes.--Maximum elevation observed during the year, 94.19 ft June 10; minimum observed, 92.65 ft Oct. 9.
1936-67: Maximum elevation observed, 97.20 ft May 3, 7, 17, 21, 24, 28, June 20, 24, 1943; minimum observed, 92.10 ft July 31, 1964.

Remarks.--Lake has no surface outlet. Lake was ice covered about Nov. 15 to early May.

Elevation, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			2.89									
2		2.77										
3												3.89
4												
5												
6											4.09	
7												
8												
9	2.65			2.92				3.97		4.09		
10									4.19			
11						3.35						3.82
12		2.77										
13											4.07	
14								3.99				
15												
16	2.89											
17									4.17	3.95		
18												
19											3.99	
20												
21												
22												
23										3.93		
24												
25												3.89
26	2.81							3.99				
27												
28											3.99	
29					-----							
30					-----				4.15			3.85
31		-----			-----		-----		-----	3.89		-----

Note.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources.

5-3910. Wisconsin River at Rainbow Lake, near Lake Tomahawk, Wis.

Location.--Lat 45°50'00", long 89°32'50", in S 1/2 SW 1/4 sec. 30, T. 39 N., R. 8 E., on right bank 400 ft upstream from Gilmore Creek, 800 ft downstream from Rainbow Lake, and 2.5 miles northeast of Lake Tomahawk. Records include flow of Gilmore Creek.

Drainage area.--750 sq mi, approximately, includes that of Gilmore Creek.

Records available.--July 1936 to September 1967. Prior to October 1955, published as "at Rainbow Reservoir, near Lake Tomahawk."

Gage.--Digital water-stage recorder. July 1936 to May 17, 1967, graphic water-stage recorder at same site and datum. Datum of gage is 1,570.05 ft above mean sea level (Wisconsin Department of Natural Resources bench mark).

Average discharge.--31 years, 692 cfs.

Extremes.--Maximum discharge during year, 2,530 cfs Apr. 21 (gage height, 5.99 ft); minimum, 124 cfs Apr. 2, 3, 5-12.

1936-67: Maximum discharge, 3,570 cfs Sept. 5, 1941 (gage height, 7.59 ft); minimum, 17 cfs Oct. 10-12, 1940; minimum daily, 35 cfs Apr. 6, 1955.

Remarks.--Records good. Flow regulated by Rainbow Lake and 12 smaller reservoirs above station (see p. 112).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	710	694	885	952	1020	903	192	710	734	978	833	803
2	750	702	876	957	1030	894	146	854	742	976	787	785
3	772	746	862	952	1020	898	156	930	726	972	755	767
4	726	718	858	948	1010	926	235	1020	738	968	785	750
5	627	674	813	952	1010	912	156	1060	742	808	830	735
6	657	670	777	952	1010	885	124	1080	694	592	837	729
7	734	670	722	952	1010	876	124	1100	670	447	824	704
8	768	662	698	957	1020	930	124	1060	604	595	817	695
9	750	662	759	957	1020	898	124	898	561	793	789	689
10	718	639	818	952	1020	858	124	844	564	806	776	717
11	670	639	818	957	1050	822	124	1260	575	756	797	730
12	682	647	849	957	1050	818	240	984	926	747	806	725
13	662	650	898	957	1030	800	634	836	1180	697	828	721
14	682	730	876	952	1020	813	826	714	1400	633	835	719
15	494	804	903	957	1020	831	1040	786	1300	614	839	455
16	420	768	885	957	1020	849	1240	926	1420	696	802	269
17	402	738	880	962	1010	890	1360	1140	1740	773	778	265
18	420	734	880	957	988	908	1790	993	1380	807	716	808
19	428	734	885	952	980	890	2110	813	1260	791	695	997
20	441	734	885	948	966	876	2390	764	1250	778	721	926
21	470	730	898	944	962	867	2510	818	1220	800	757	808
22	564	730	898	939	944	867	2320	844	1210	795	803	650
23	554	722	898	930	952	854	2070	777	1140	685	837	604
24	501	714	898	921	952	849	1900	890	1050	558	837	601
25	447	722	898	939	939	849	1800	962	975	671	812	580
26	433	730	894	984	930	804	1590	988	858	695	761	573
27	473	722	894	1030	916	597	1320	957	817	691	432	575
28	517	702	890	1030	908	407	1250	944	1040	721	533	565
29	568	670	926	1030	---	384	1120	844	1090	768	817	559
30	647	813	934	1030	---	313	808	722	981	783	841	560
31	698	---	934	1020	---	216	---	682	---	801	824	---
Total	18,385	21,270	26,789	29,884	27,807	24,484	29,947	28,200	29,587	23,195	24,094	20,064
Mean	593	709	864	964	993	790	998	910	986	748	777	669
Max	772	813	934	1,030	1,050	930	2,510	1,260	1,740	978	841	997
Min	402	639	698	921	908	216	124	682	561	447	432	265

Cal yr 1966 : Total 247,655 Mean 679 Max 1,160 Min 188

Wtr yr 1967 : Total 303,706 Mean 832 Max 2,510 Min 124

WISCONSIN RIVER BASIN

5-3930. Tomahawk River at Bradley, Wis.

Location.--Lat 45°32'20", long 89°44'45", in NW 1/4 sec. 9, T. 35 N., R. 6 E., at dam at outlet of Lake Nokomis, 0.5 mile east of Bradley, 4.0 miles upstream from Jersey powerplant, and 4.7 miles upstream from mouth.

Drainage area.--545 sq mi.

Records available.--January 1930 to September 1967. Prior to October 1951, published as "at Tomahawk".

Gage.--Lake staff gage read once daily, supplemented by frequent readings of tainter-gage openings. Datum of gage is 1,448.24 ft above mean sea level, datum of 1929. Prior to October 1951, powerplant records at site 4.0 miles downstream.

Average discharge.--37 years, 529 cfs.

Extremes.--Maximum discharge during year, 1,020 cfs Sept. 13; minimum, 45 cfs Mar. 29.
1930-67: Maximum discharge, 2,690 cfs Oct. 2, 1959; no flow at times in 1931, 1934, 1940, 1957.

Remarks.--Records good except those below 250 cfs, which are poor. Flow completely regulated by four reservoirs operated by Wisconsin Valley Improvement Company (see p. 112).

Cooperation.--Record of lake elevations and gate openings furnished by Wisconsin Valley Improvement Company.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	680	445	578	612	503	658	57	299	681	565	682	403
2	720	486	608	612	626	667	62	358	704	565	614	368
3	719	592	607	554	655	663	66	318	752	566	625	543
4	577	543	604	597	653	658	69	298	752	566	650	650
5	449	497	490	696	651	651	72	259	752	518	598	798
6	538	497	423	772	649	645	75	239	708	310	565	847
7	677	576	424	783	737	639	77	297	686	218	483	833
8	676	614	425	776	736	654	80	367	571	495	540	832
9	614	492	476	772	702	660	82	386	380	589	523	829
10	555	401	510	782	701	651	84	368	445	566	518	827
11	547	418	509	746	700	640	85	633	446	434	582	851
12	585	433	580	666	696	628	292	561	420	422	606	939
13	624	437	646	566	754	636	397	392	322	165	634	1,010
14	517	479	634	527	725	688	401	297	518	585	680	1,000
15	117	548	643	528	487	701	566	228	693	598	664	413
16	56	572	630	528	467	717	650	222	789	550	612	59
17	57	571	615	678	640	820	693	278	893	662	647	134
18	57	500	614	780	707	853	726	357	893	626	526	529
19	57	458	612	748	704	791	727	450	891	607	580	723
20	58	459	636	689	701	622	608	541	891	623	646	598
21	157	528	650	663	635	521	521	695	789	631	744	363
22	356	540	529	662	583	559	491	705	741	630	845	362
23	372	454	509	625	626	600	460	687	839	579	869	475
24	298	413	541	604	655	603	460	599	842	587	849	635
25	479	413	601	434	651	445	426	422	769	602	839	676
26	451	414	651	507	647	363	372	257	572	601	730	709
27	474	414	651	614	643	354	295	208	506	641	321	738
28	574	414	604	612	639	267	267	208	518	631	95	772
29	601	533	517	614	- - - -	83	267	209	547	632	349	798
30	585	555	572	654	- - - -	49	209	291	565	650	497	818
31	465	- - - -	612	492	- - - -	53	- - - -	627	- - - -	650	404	- - - -
Total	13,692	14,696	17,701	19,893	18,273	17,539	9,637	12,056	19,875	17,364	18,517	19,532
Mean	442	490	571	642	633	566	321	389	662	560	597	651
Max	720	614	651	783	754	853	727	705	893	662	869	1,010
Min	56	401	423	434	467	49	57	208	322	218	95	59
Cal yr 1966 : Total	187,853		Mean	515	Max	929	Min	56				
Wtr yr 1967 : Total	198,775		Mean	545	Max	1,010	Min	49				

5-3935. Spirit River at Spirit Falls, Wis.

Location.--Lat 45°26'55", long 89°58'50", in NW 1/4 sec. 10, T. 34 N., R. 4 E., near center of span on downstream side of bridge 0.2 mile south of town of Spirit Falls, 0.6 mile upstream from Squaw Creek, and 2.0 miles downstream from Richie Creek.

Drainage area.--82 sq mi, approximately.

Records available.--April 1942 to September 1967.

Gage.--Wire-weight gage and crest-stage indicator; gage read once daily. Altitude of gage is 1,450 ft (from dam and reservoir data). Prior to Oct. 19, 1955, chain gage at same site and datum.

Average discharge.--25 years, 80.8 cfs.

Extremes.--Maximum discharge during year, 2,960 cfs Apr. 2 (gage height, 7.91 ft); minimum discharge observed, 6.0 cfs Aug. 24, Sept. 14.
1942-67: Maximum discharge observed, 4,180 cfs Sept. 18, 1942 (gage height, 10.00 ft), from rating curve extended above 2,000 cfs; minimum observed, 1.0 cfs Aug. 11, 1964 (gage height, 0.85 ft).

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	21	12	13	43	18	2,290	74	22	120	9.9	18
2	9.9	18	10	12	39	18	2,530	90	18	99	18	15
3	9.0	17	9.0	12	38	18	2,090	76	16	123	16	14
4	11	17	8.8	12	37	17	1,300	65	15	97	11	12
5	14	18	9.6	12	36	17	1,200	60	14	82	9.6	11
6	14	20	12	12	36	17	1,120	52	52	68	9.0	9.3
7	12	22	15	12	35	17	1,070	47	44	50	13	8.1
8	11	23	22	12	34	16	845	65	129	40	12	8.1
9	11	23	21	12	32	16	880	76	249	33	12	7.2
10	9.9	22	19	12	31	17	880	87	183	31	11	6.6
11	9.6	20	18	14	28	20	643	289	202	28	9.9	6.3
12	9.6	18	17	15	24	21	475	410	166	25	8.7	6.3
13	9.6	17	16	16	23	22	345	252	129	18	8.1	6.3
14	26	17	16	15	24	24	390	162	101	16	7.8	6.0
15	280	18	16	15	25	24	602	127	145	15	6.9	9.9
16	407	19	16	15	27	23	624	103	352	14	6.9	34
17	252	21	19	16	26	23	444	88	386	15	6.3	23
18	166	23	17	16	25	23	373	76	204	13	9.0	18
19	129	22	16	15	25	23	272	65	162	12	8.7	14
20	101	21	16	15	24	23	209	55	283	10	8.1	14
21	81	20	15	17	24	23	152	51	237	10	7.5	12
22	70	28	15	19	23	23	131	87	155	9.6	6.6	11
23	61	39	15	20	22	23	113	74	111	23	6.3	9.9
24	42	40	14	23	21	23	99	70	97	28	6.0	9.0
25	34	58	14	31	20	25	88	62	114	20	7.8	8.4
26	28	57	14	44	20	45	81	58	90	22	27	8.7
27	26	57	13	56	19	72	81	49	103	26	181	8.4
28	26	46	13	59	18	90	80	43	289	20	100	8.1
29	33	36	13	55	-----	130	76	36	247	15	80	7.5
30	35	23	13	51	-----	580	69	30	152	12	33	7.2
31	28	-----	13	45	-----	2,200	-----	27	-----	11	22	-----
Total	1,965.6	801	457.4	693	779	3,631	19,552	2,906	4,467	1,105.6	679.1	337.3
Mean	63.4	26.7	14.8	22.4	27.8	117	652	93.7	149	35.7	21.9	11.2
Max	407	58	22	59	43	2,200	2,530	410	386	123	181	34
Min	9.0	17	8.8	12	18	16	69	27	14	9.6	6.0	6.0
Cfsm	.773	.326	.180	.273	.339	1.43	7.95	1.14	1.82	.435	.267	.137
In.	.89	.36	.21	.31	.35	1.65	8.87	1.32	2.03	.50	.31	.15
Cal yr 1966: Total	26,157.5		Mean 71.7	Max 1,400	Min 2.5	Cfsm .874	In. 11.86					
Wtr yr 1967: Total	37,374		Mean 102	Max 2,530	Min 6.0	Cfsm 1.24	In. 16.95					

5-3945. Prairie River near Merrill, Wis.

Location.--Lat 45°14'10", long 89°38'50", on line between secs. 20 and 29, T. 32 N., R. 7 E., near center of span on downstream side of highway bridge, 1.5 miles upstream from Meadow Creek, 4.5 miles northeast of Merrill, and 8 miles upstream from mouth.

Drainage area.--181 sq mi.

Records available.--January 1914 to September 1931, August 1939 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Chain gage read once daily. Altitude of gage is 1,300 ft (from topographic map). January 1914 to June 1931 chain gage, and August 1939 to June 28, 1949, wire-weight gage at same site and datum.

Average discharge.--45 years (1914-31, 1939-67), 180 cfs.

Extremes.--Maximum discharge during year, 2,670 cfs Mar. 31 (gage height, 6.76 ft, from floodmarks); minimum observed, 56 cfs Oct. 9 (gage height, 1.55 ft).

1914-31, 1939-67: Maximum discharge, 5,800 cfs Aug. 31, 1941 (gage height, 9.45 ft, from floodmarks), from rating curve extended above 2,200 cfs; minimum observed, 34 cfs Oct. 26, 1947 (gage height, 1.39 ft).

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	78	92	71	130	76	1,600	170	94	460	102	126
2	69	76	74	71	120	78	1,700	180	88	321	164	106
3	69	75	69	71	110	80	1,760	175	83	210	235	106
4	71	76	67	70	92	80	1,790	165	79	210	186	86
5	69	83	72	71	90	79	1,150	160	75	186	164	84
6	69	88	91	72	87	78	1,100	150	73	164	144	84
7	81	90	120	71	85	76	1,160	150	73	144	109	84
8	69	90	130	71	83	76	1,100	150	82	144	92	86
9	56	90	120	72	83	79	1,100	160	164	109	90	84
10	69	92	110	74	82	83	997	291	291	92	86	83
11	70	94	98	77	80	90	842	510	285	89	83	81
12	69	89	94	80	77	99	739	470	235	87	82	80
13	69	85	92	81	75	99	630	380	235	85	80	80
14	100	86	91	81	75	99	540	321	235	84	79	86
15	260	89	89	82	76	92	600	210	186	82	77	140
16	248	97	90	82	78	90	790	186	477	81	76	165
17	222	94	89	80	77	89	980	186	666	81	74	160
18	175	94	87	79	76	87	890	162	504	80	78	130
19	162	94	82	77	76	86	630	150	419	79	82	110
20	154	94	79	76	75	86	540	150	334	76	82	96
21	135	94	76	76	74	86	423	150	262	74	80	90
22	120	94	74	76	74	86	387	164	215	74	76	86
23	100	130	72	77	73	86	353	180	148	77	78	80
24	92	150	72	82	73	88	262	190	130	86	76	79
25	88	130	71	90	72	92	210	190	115	92	80	79
26	84	180	71	110	73	110	186	180	120	87	150	78
27	84	190	71	130	74	400	186	160	148	88	260	87
28	86	180	70	130	76	650	186	144	321	90	235	97
29	86	160	70	140	---	1,040	186	126	790	92	210	84
30	82	120	70	140	---	1,640	164	109	720	86	210	79
31	80	---	70	140	---	2,210	---	100	---	86	144	---
Total	3,257	3,182	2,623	2,700	2,316	8,190	23,181	6,169	7,647	3,796	3,764	2,896
Mean	105	106	84.6	87.1	82.7	264	773	199	255	122	121	96.5
Max	260	190	130	140	130	2,210	1,790	510	790	460	260	165
Min	56	75	67	70	72	76	164	100	73	74	74	79
Cfsm	.580	.586	.467	.481	.457	1.46	4.27	1.10	1.41	.674	.669	.533
In.	.67	.65	.54	.55	.48	1.68	4.76	1.27	1.57	.78	.77	.60
Cal yr 1966: Total	53,414		Mean 146	Max 1,020	Min 56	Cfsm .807	In. 10.97					
Wtr yr 1967: Total	69,721		Mean 191	Max 2,210	Min 56	Cfsm 1.06	In. 14.33					

5-3950. Wisconsin River at Merrill, Wis.

Location--Lat 45°10'40", long 89°40'45", on line between secs. 12 and 13, T. 31 N., R. 6 E., on left bank 300 ft downstream from highway bridge at east end of Merrill and 0.5 mile downstream from Prairie River.

Drainage area--2,780 sq mi, approximately.

Records available--November 1902 to September 1967.

Gage--Digital water-stage recorder. Datum of gage is 1,228.85 ft above mean sea level, datum of 1929. Prior to June 18, 1903, staff gage at different datum. June 18, 1903, to Sept. 10, 1914, chain gage, and Sept. 11, 1914, to Aug. 13, 1964, graphic water-stage recorder at present site and datum.

Average discharge--64 years (1903-67), 2,674 cfs.

Extremes--Maximum discharge during year, 23,800 cfs Apr. 2 (gage height, 13.04 ft); minimum, 971 cfs Nov. 30 (gage height, 3.99 ft).
1902-67: Maximum discharge, 49,400 cfs Aug. 31, 1941 (gage height, 18.26 ft) from rating curve extended above 20,000 cfs; minimum, about 90 cfs Sept. 26, 1908 (gage height, 2.45 ft).

Remarks--Records excellent except those for winter months, which are good. Flow regulated by 20 reservoirs (see p. 112) and 9 powerplants above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1,970	1,940	2,150	2,100	2,250	2,240	16,500	3,790	2,290	5,430	2,150	2,020
2	1,820	1,710	2,200	2,150	2,200	2,100	22,000	3,030	2,280	5,340	2,270	2,100
3	1,640	1,740	1,800	2,100	2,200	2,100	20,200	3,040	1,950	4,000	2,420	2,020
4	1,860	1,820	1,700	2,050	2,300	2,200	15,300	2,630	1,900	3,850	2,330	1,870
5	1,860	1,970	2,200	2,300	2,300	2,100	10,400	2,590	1,940	3,200	2,150	1,880
6	1,650	1,920	2,150	2,350	2,350	2,100	11,700	2,740	2,340	2,700	2,120	2,180
7	1,710	1,890	2,150	2,400	2,350	2,050	12,100	2,460	2,120	2,240	2,050	2,020
8	1,800	1,910	2,480	2,400	2,350	2,100	9,700	2,640	2,900	2,090	2,220	2,180
9	1,740	2,160	2,180	2,100	2,350	2,150	10,300	3,430	3,050	2,430	2,140	1,980
10	1,750	1,980	2,050	2,250	2,300	2,050	9,700	2,830	3,050	2,180	2,070	1,940
11	1,660	1,870	2,000	2,200	2,350	2,050	9,240	4,040	3,160	2,040	2,010	1,870
12	1,680	1,830	1,900	2,300	2,300	2,100	7,330	5,090	2,920	2,490	1,960	1,830
13	1,700	1,770	1,800	2,400	2,350	2,100	6,410	4,640	3,010	2,080	1,990	2,040
14	2,080	1,770	2,000	2,500	2,250	2,100	6,310	3,730	3,220	1,910	1,890	2,110
15	3,540	1,790	2,050	2,500	2,200	2,100	7,190	3,250	5,420	2,030	1,940	3,290
16	3,820	1,890	2,150	2,200	2,150	2,050	8,650	2,580	7,050	2,160	2,000	3,620
17	3,090	2,140	2,100	1,950	2,150	2,050	8,190	2,450	7,440	2,020	2,010	2,590
18	2,840	1,920	1,850	1,890	2,150	2,000	8,710	2,610	6,610	2,190	2,250	2,320
19	2,290	1,920	2,200	2,050	2,200	2,000	7,160	2,770	5,220	1,920	1,910	2,240
20	2,010	2,130	2,000	2,100	2,300	2,000	6,630	2,530	5,590	1,930	1,820	2,460
21	2,010	1,760	1,900	2,150	2,200	2,050	7,190	2,840	4,300	2,110	1,950	2,440
22	1,760	2,120	2,050	2,200	2,100	2,100	6,550	2,980	4,370	2,290	1,900	2,280
23	1,780	2,140	2,150	2,250	2,100	2,050	6,780	2,750	3,620	2,240	2,230	2,080
24	1,940	2,130	2,100	2,250	2,050	2,000	5,940	2,610	4,030	2,160	2,100	1,930
25	1,890	2,310	2,000	2,350	2,000	2,000	4,880	2,610	2,900	1,960	1,990	1,940
26	1,730	2,370	1,950	2,250	2,000	2,100	4,690	2,420	2,820	2,250	2,430	2,150
27	1,920	2,550	1,900	2,100	2,050	2,250	4,580	2,060	4,330	2,060	3,130	2,190
28	1,910	2,170	1,900	2,200	2,150	2,600	3,470	2,200	7,210	2,040	2,800	2,020
29	1,990	1,530	2,050	2,300	-----	4,590	2,890	2,380	6,180	2,200	2,170	2,170
30	1,850	2,100	2,000	2,250	-----	6,000	3,150	2,050	5,760	2,160	2,080	1,980
31	1,750	-----	1,900	2,200	-----	11,500	-----	1,920	-----	2,140	2,250	-----
TOTAL	63,040	59,250	63,010	68,790	62,000	80,980	263,840	89,690	118,980	77,840	66,730	65,740
MEAN	2,034	1,975	2,033	2,219	2,214	2,612	8,795	2,893	3,966	2,511	2,153	2,191
MAX	3,820	2,550	2,480	2,500	2,350	11,500	22,000	5,090	7,440	5,430	3,130	3,620
MIN	1,640	1,530	1,700	1,890	2,000	2,000	2,890	1,920	1,900	1,910	1,820	1,830

CAL YR 1966: TOTAL 891,320 MEAN 2,442 MAX 10,500 MIN 1,440
WAT YR 1967: TOTAL 1,079,890 MEAN 2,959 MAX 22,000 MIN 1,530

5-3975. Eau Claire River at Kelly, Wis.

Location--Lat 44°55'05", long 89°33'00", on line between secs. 9 and 10, T. 28 N., R. 8 E., on right bank 50 ft downstream from highway bridge, 0.7 mile northeast of Kelly, 1.3 miles upstream from Big Sandy Creek, 4.5 miles upstream from mouth, and 5 miles southeast of Wausau.

Drainage area--326 sq mi.

Records available--January 1914 to November 1926, August 1939 to September 1967.

Gage--Digital water-stage recorder. Datum of gage is 1,177.88 ft above mean sea level, datum of 1929. Prior to November 1926, chain gage and August 1939 to September 16, 1953, wire-weight gage, at same site at datum 1.00 ft higher. Sept. 17, 1953, to June 11, 1964, graphic water-stage recorder at present site and datum.

Average discharge--40 years, 246 cfs.

Extremes--Maximum discharge during year, 6,260 cfs Apr. 1 (gage height, 9.38 ft); minimum, 35 cfs Nov. 29 (gage height, 1.02 ft). 1914-26, 1939-67: Maximum discharge, 8,300 cfs Aug. 21, 1926 (gage height, 8.4 ft from graph based on gage readings), from rating curve extended above 6,000 cfs; minimum observed, 8 cfs July 17, 1944 (gage height, 0.17 ft), probably result of temporary regulation.

Remarks--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	77	75	80	50	100	56	5,380	225	98	1,140	74	115
2	80	63	98	50	85	59	3,930	238	92	754	85	102
3	66	61	38	50	74	62	3,320	224	87	617	122	94
4	67	89	70	50	67	65	2,460	203	83	444	122	86
5	67	111	60	50	63	66	1,540	185	82	342	101	80
6	67	92	80	50	59	66	1,490	171	84	271	95	77
7	68	87	110	50	56	64	1,540	148	97	220	108	73
8	68	82	160	50	55	63	1,530	163	265	184	107	70
9	69	80	180	50	53	64	1,310	165	365	163	104	68
10	67	80	160	49	53	67	1,220	161	320	148	98	65
11	66	79	130	50	52	71	1,150	268	374	134	90	63
12	65	72	100	52	52	73	890	435	611	119	82	61
13	66	72	73	53	51	74	667	425	526	108	76	61
14	74	88	62	55	51	75	600	362	399	99	72	65
15	111	99	60	56	49	76	647	294	408	90	69	133
16	157	96	60	55	48	77	729	247	929	84	67	311
17	164	82	59	54	46	78	1,580	211	1,170	81	65	338
18	143	78	58	53	46	80	1,280	187	1,130	77	65	252
19	129	75	56	52	47	81	1,030	169	664	77	69	199
20	115	74	55	52	49	82	752	155	538	78	69	167
21	106	88	54	53	51	84	592	146	456	73	68	150
22	98	83	53	54	53	87	513	158	339	67	64	141
23	93	104	52	56	54	92	442	191	246	75	61	139
24	87	126	52	66	54	97	375	206	218	79	59	132
25	85	150	51	100	54	110	324	201	211	75	59	112
26	82	153	51	140	55	150	290	180	191	78	76	107
27	80	143	51	170	55	250	258	162	185	100	179	100
28	79	123	50	160	56	520	231	145	698	99	238	96
29	77	52	50	150	-----	1,500	210	129	1,320	86	206	93
30	76	66	50	130	-----	2,500	202	119	1,460	77	158	90
31	75	-----	50	110	-----	5,660	-----	108	-----	71	130	-----
Total	2,724	2,723	2,363	2,220	1,588	12,449	36,482	6,381	13,646	6,110	3,039	3,640
Mean	87.9	90.8	76.2	71.6	56.7	402	1,216	206	455	197	98.0	121
Max	164	153	180	170	100	5,660	5,380	435	1,460	1,140	238	338
Min	65	52	50	49	46	56	202	108	82	67	59	61
Cfsm	.27	.28	.23	.22	.17	1.23	3.73	.63	1.40	.60	.30	.37
In.	.31	.31	.27	.25	.18	1.42	4.16	.73	1.56	.70	.35	.42
Cal yr 1966: Total	76,282		Mean 209	Max 1,100	Min 49	Cfsm .64	In. 8.70					
Wtr yr 1967: Total	93,365		Mean 256	Max 5,660	Min 46	Cfsm .78	In. 10.65					

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4- 1	0200	9.38	6,260	6-30	1200	4.28	1,530
4-17	1200	4.78	1,870				

5-3980. Wisconsin River at Rothschild, Wis.

Location.--Lat $44^{\circ}53'10''$, long $89^{\circ}37'50''$, in sec. 26, T. 28 N., R. 7 E., on left bank at Rothschild, 0.5 mile downstream from Rothschild Dam, 2 miles downstream from Eau Claire River, 5 miles upstream from Black Creek, and 5.5 miles south of bridge on State Highway 29, in Wausau.

Drainage area.--4,000 sq mi, approximately.

Records available.--October 1944 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 1,135.86 ft above mean sea level, datum of 1929. Prior to June 23, 1964, graphic water-stage recorder at present site and datum. Auxiliary digital water-stage recorder in Mosinee pond 8 miles downstream. Prior to July 23, 1964, auxiliary staff gage at present site and datum read hourly.

Average discharge.--23 years, 3,256 cfs.

Extremes.--Maximum discharge during year, 49,200 cfs Mar. 31 (gage height, 18.46 ft); minimum daily, 1,300 cfs Dec. 4. 1944-67: Maximum discharge, 49,200 cfs Apr. 12, 1965, Mar. 31, 1967 (gage height, 18.46 ft); minimum daily, 680 cfs Oct. 17, 1948.

Flood of Sept. 1, 1941, reached a stage of 22.3 ft from tailwater data at Rothschild dam (discharge, 75,000 cfs, from rating curve extended above 45,000 cfs by logarithmic plotting).

Remarks.--Records good except those for winter months, or discharge below 1,500 cfs, which are fair. Flow regulated by 20 reservoirs (see p. 112) and 12 powerplants above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1,680	2,290	1,650	1,650	2,700	2,400	42,000	5,020	2,440	9,230	2,510	2,550
2	1,760	2,060	2,000	1,900	2,650	2,300	42,300	4,540	2,780	8,800	2,650	2,490
3	2,020	1,930	1,600	2,500	2,650	2,200	43,300	4,090	2,090	7,960	2,870	1,920
4	2,030	2,000	1,300	2,500	2,600	2,100	28,300	3,650	1,910	6,060	2,860	1,660
5	2,180	1,800	2,200	2,500	2,500	2,250	18,700	3,320	2,240	4,930	2,160	2,040
6	1,960	1,880	2,550	2,500	2,650	2,300	18,600	3,560	2,410	3,930	2,010	2,550
7	1,930	2,220	2,600	2,200	2,700	2,300	21,500	3,310	2,740	3,350	2,510	2,310
8	1,600	2,250	2,500	2,050	2,650	2,300	17,000	3,190	3,760	3,070	2,550	2,260
9	1,540	2,290	2,800	2,500	2,600	2,400	16,900	4,370	4,570	2,550	2,270	1,920
10	2,040	2,430	2,550	2,600	2,600	2,400	18,300	3,470	4,460	3,030	2,500	1,670
11	1,990	2,270	2,150	2,500	2,500	2,100	14,200	5,390	5,000	2,720	2,410	2,160
12	1,800	1,600	2,500	2,500	2,200	1,930	11,300	7,750	5,290	2,640	1,950	2,140
13	1,830	1,740	2,300	2,600	2,500	2,390	8,900	6,750	4,950	2,730	1,660	2,150
14	2,070	2,190	2,510	2,300	2,600	2,480	8,680	5,160	4,460	2,570	2,190	2,370
15	4,080	2,110	2,620	2,050	2,500	2,660	9,920	4,430	7,720	2,000	2,230	3,930
16	5,060	2,190	2,510	2,500	2,300	2,490	11,900	3,660	13,500	1,800	2,190	5,700
17	4,050	2,200	2,260	2,300	2,200	2,720	12,300	3,230	14,300	2,480	2,330	3,840
18	3,440	2,350	1,920	2,100	2,150	2,150	12,700	3,120	11,500	2,530	2,420	2,910
19	2,770	1,900	2,370	2,300	2,350	2,010	10,300	3,370	7,940	2,420	2,050	2,780
20	2,730	2,100	2,400	2,150	2,550	2,400	8,780	3,110	9,150	2,310	1,610	2,780
21	2,430	2,250	2,360	2,000	2,500	2,460	8,810	3,230	7,150	2,360	2,050	2,820
22	1,840	2,350	2,230	2,200	2,300	2,340	8,280	3,590	5,620	2,440	2,140	2,820
23	1,670	2,500	2,450	2,700	2,200	2,560	7,960	3,260	4,870	2,040	2,140	2,260
24	2,130	2,550	1,850	2,800	2,300	2,480	7,260	3,300	5,060	2,450	2,350	2,090
25	2,290	2,550	1,650	2,850	1,900	2,770	6,310	3,190	4,090	2,400	2,470	2,430
26	2,050	2,500	1,650	2,900	2,000	2,490	5,830	3,120	3,670	2,440	2,430	2,440
27	2,160	2,500	1,900	2,700	2,300	4,220	5,830	2,710	4,640	2,550	3,810	2,410
28	2,230	2,400	2,200	2,600	2,250	6,590	4,640	2,300	13,200	2,440	3,930	2,460
29	1,790	1,700	2,100	2,800	-----	9,460	4,640	2,730	15,900	1,960	2,870	2,440
30	1,720	1,550	2,400	3,000	-----	21,100	3,630	2,630	10,400	1,970	2,600	1,970
31	1,940	-----	1,750	2,900	-----	44,500	-----	2,160	-----	2,530	2,670	-----
TOTAL	70,810	64,650	68,030	75,650	67,900	147,190	439,070	116,710	187,810	102,690	75,490	76,270
MEAN	2,284	2,155	2,195	2,440	2,425	4,748	14,640	3,765	6,260	3,313	2,435	2,542
MAX	5,060	2,550	2,800	3,000	2,700	44,500	43,300	7,750	15,900	9,230	3,930	5,700
MIN	1,540	1,550	1,300	1,650	1,900	1,930	3,630	2,160	1,910	1,800	1,610	1,660

CAL YR 1966: TOTAL 1,176,810 MEAN 3,224 MAX 21,100 MIN 1,290
 WAT YR 1967: TOTAL 1,492,270 MEAN 4,088 MAX 44,500 MIN 1,300

WISCONSIN RIVER BASIN

5-3995. Big Eau Pleine River near Stratford, Wis.

Location.--Lat 44°49'15", long 90°04'35", on line between sec. 13, T. 27 N., R. 3 E., and sec. 18, T. 27 N., R. 4 E., on left bank 15 ft upstream from bridge on State Highway 97, 1 mile north of Stratford, and 1.4 miles downstream from small tributary.

Drainage area.--224 sq mi.

Records available.--July 1914 to December 1925, April 1937 to September 1967. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Digital water-stage recorder. Datum of gage is 1,154.24 ft above mean sea level, datum of 1929. July 24, 1914, to Dec. 31, 1925, staff gage at site 0.5 mile upstream at different datum. Apr. 30, 1937, to Sept. 15, 1938, chain gage at present site and datum. Sept. 16, 1938, to June 19, 1967, graphic water-stage recorder at present site and datum.

Average discharge.--41 years (1914-25, 1937-67), 168 cfs.

Extremes.--Maximum discharge during year, 18,100 cfs Mar. 30 (gage height, 20.36 ft); minimum, 1.1 cfs Oct. 10 (gage height, 2.82 ft).

1914-25, 1937-67: Maximum discharge, 41,000 cfs Sept. 9, 1938 (gage height, 24.5 ft, from floodmarks), from rating curve extended above 24,000 cfs; no flow Aug. 17, 1947, Jan. 22 to Feb. 5, 1961.

Flood of June 5, 1914, reached a stage of 20.7 ft, from floodmarks (discharge, 40,000 cfs), former site and datum.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	10	18	7.8	73	10	2,880	93	14	1,940	5.7	20
2	2.8	9.4	11	7.6	65	10	5,720	93	12	727	93	14
3	2.8	9.2	8.3	7.5	58	10	2,080	73	11	685	1.46	10
4	3.6	9.4	6.8	7.3	53	10	884	58	7.9	482	67	8.0
5	3.6	10	6.0	7.0	47	10	577	48	6.5	221	36	6.3
6	3.6	9.8	19	6.7	44	11	2,230	41	7.0	133	23	5.3
7	3.6	10	60	6.4	40	11	1,130	38	12	92	23	4.6
8	2.5	11	150	6.1	37	11	635	41	160	68	20	4.1
9	2.5	12	46	5.8	34	11	2,680	42	142	58	16	3.6
10	3.3	12	27	5.8	31	12	1,170	46	152	48	14	2.9
11	7.0	11	21	5.9	29	15	504	376	171	38	11	2.6
12	7.4	11	17	6.1	27	15	299	461	160	32	10	2.5
13	6.5	10	14	6.7	25	16	206	222	132	28	9.2	2.3
14	5.4	10	13	6.8	23	16	271	142	92	22	7.2	2.9
15	353	11	12	6.8	22	16	779	100	840	18	5.7	40
16	302	12	12	6.7	21	16	523	73	914	15	4.7	42
17	113	14	13	6.5	20	16	557	56	718	14	4.1	22
18	78	14	13	6.5	18	17	314	43	371	12	4.5	15
19	55	13	13	6.6	17	17	196	33	246	10	4.4	11
20	41	12	12	6.8	15	17	139	26	1,080	8.9	3.6	8.5
21	37	13	12	7.0	15	18	134	24	596	7.9	3.2	7.5
22	29	15	11	7.2	14	18	120	20	250	7.4	2.8	6.2
23	25	29	10	7.7	13	19	93	33	151	12	2.7	5.8
24	22	62	9.4	8.2	12	20	78	38	113	14	2.6	5.1
25	20	83	8.8	9.4	12	25	66	33	100	17	2.4	5.1
26	18	74	8.4	14	11	150	59	27	81	14	5.8	6.3
27	16	62	8.3	31	11	900	52	25	90	9.4	84	6.0
28	16	39	8.2	82	10	1,900	45	21	2,260	7.4	276	5.6
29	14	31	8.1	97	-----	3,800	42	19	740	6.0	87	5.0
30	12	23	8.0	92	-----	11,900	43	17	288	5.4	51	4.6
31	11	-----	7.9	83	-----	9,680	-----	16	-----	4.8	32	-----
Total	1,219.4	651.8	592.2	571.9	797	28,697	24,506	2,378	9,917.4	4,757.2	987.6	284.8
Mean	39.3	21.7	19.1	18.4	28.5	926	817	76.7	331	153	31.9	9.49
Max	353	83	150	97	73	11,900	5,720	461	2,260	1,940	206	42
Min	2.5	9.2	6.0	5.8	10	10	42	16	6.5	4.8	2.4	2.3
Cfsm	.175	.097	.085	.082	.127	4.13	3.65	.342	1.48	.683	.142	.042
In.	.20	.11	.10	.09	.13	4.76	4.07	.39	1.65	.79	.16	.05

Cal yr 1966 : Total 55,620.3 Mean 152 Max 5,820 Min 2.5 Cfsm .679 In. 9.25
 Wtr yr 1967 : Total 75,360.3 Mean 206 Max 11,900 Min 2.3 Cfsm .920 In. 12.50

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-30	1500	20.36	18,100	4- 9	1230	11.81	4,210
4- 2	1200	15.13	9,000	6-28	0500	10.61	3,120
4- 6	0930	10.52	3,050	7- 1	0630	10.09	2,750

5-4006. Little Plover River near Arnott, Wis.

Location--Lat 44°28'05", long 89°29'20", in NE 1/4 sec. 24, T. 23 N., R. 8 E., 150 ft below bridge on town road 2.2 miles northwest of Arnott and 3 1/2 miles upstream from mouth.

Drainage area--1.5 sq mi, approximately, of which a portion is noncontributing.

Records available--July 1959 to September 1967.

Gage--Water-stage recorder and Parshall flume. Datum of gage is 1,087.37 ft above mean sea level, datum of 1929 (levels by Wisconsin Conservation Div.). Prior to April 1960 staff gage at same site at datum 0.26 ft higher.

Average discharge--8 years, 3.21 cfs.

Extremes--Maximum discharge during year, 59 cfs June 16 (gage height, 2.97 ft); minimum, 1.7 cfs Feb. 15 (gage height, 0.56 ft), result of regulation; minimum daily, 2.2 cfs Feb. 15.

1959-67: Maximum discharge, 66 cfs Sept. 13, 1962; minimum daily, 0.8 cfs for many days in July, Aug., and Sept., 1959.

Remarks--Records good except those for winter months, which are fair. Records of water temperatures for the 1967 water year are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	3.0	2.8	2.8	3.0	2.6	7.5	5.3	3.5	7.0	4.1	3.4
2	2.9	3.0	2.7	2.8	3.0	2.7	12	4.8	3.5	6.0	4.0	3.4
3	3.0	3.0	2.7	2.7	2.9	2.6	7.8	4.4	3.5	5.6	3.8	3.4
4	2.9	3.0	2.8	2.7	2.8	2.6	6.5	4.2	3.5	5.3	3.7	3.3
5	2.8	3.0	3.0	2.7	2.7	2.6	6.4	4.2	3.6	5.0	3.7	3.3
6	2.8	3.0	3.5	2.7	2.7	2.6	9.0	4.2	3.6	4.9	5.4	3.3
7	3.0	3.1	3.1	2.8	2.7	2.5	6.9	4.6	4.7	4.8	5.6	3.3
8	3.0	3.1	3.5	2.8	2.8	2.5	6.0	4.7	4.7	4.9	4.5	3.2
9	3.0	3.1	3.2	2.8	2.8	2.5	6.5	4.2	5.3	4.8	4.2	3.1
10	3.0	3.1	3.1	2.7	2.8	2.6	5.6	4.6	4.9	4.6	4.1	3.1
11	2.9	3.0	3.0	2.7	2.7	2.7	5.3	5.3	5.9	4.4	3.9	3.1
12	2.9	2.9	2.8	2.8	2.7	2.7	5.3	4.6	6.2	4.4	3.8	3.1
13	3.0	3.0	2.8	2.8	2.8	2.7	5.5	4.5	5.0	4.3	3.8	3.2
14	3.6	2.9	2.8	2.7	2.8	2.7	5.8	4.4	5.6	4.2	3.8	3.3
15	4.7	3.0	2.8	2.7	2.2	2.7	5.4	4.3	17	4.1	3.6	6.1
16	3.7	3.0	2.8	2.7	2.6	2.6	7.7	4.1	3.5	4.2	3.5	4.7
17	3.5	3.0	2.8	2.7	2.7	2.6	8.6	4.1	11	4.1	3.6	4.1
18	3.5	2.8	2.8	2.7	2.7	2.6	6.3	4.2	7.0	4.1	3.7	4.0
19	3.4	2.8	2.9	2.7	2.7	2.6	5.6	4.1	6.6	4.1	3.5	3.8
20	3.3	3.0	3.0	2.8	2.7	2.7	5.3	3.8	6.6	3.9	3.5	3.9
21	3.3	3.1	2.9	2.9	2.7	2.6	5.8	3.9	6.4	3.9	3.5	3.8
22	3.2	3.5	2.8	3.0	2.6	2.5	5.3	3.8	5.8	3.9	3.4	3.6
23	3.1	3.9	2.7	3.3	2.5	2.6	4.9	4.3	5.7	3.9	3.4	3.6
24	3.1	3.8	2.7	3.5	2.4	2.9	4.8	4.1	6.3	3.8	3.2	3.5
25	3.1	3.8	2.6	3.8	2.4	4.4	4.7	3.9	6.0	3.8	3.2	3.5
26	3.1	3.6	2.6	3.4	2.4	9.9	4.7	3.9	5.5	3.8	3.6	3.5
27	3.1	3.4	2.6	3.3	2.4	18	4.6	3.8	5.4	3.8	4.2	3.4
28	3.1	3.2	2.7	3.2	2.5	17	4.5	3.9	5.5	3.7	3.6	3.4
29	3.0	3.1	2.7	3.1	- - - -	13	4.6	3.9	5.3	3.7	3.5	3.4
30	3.1	3.0	2.8	3.0	- - - -	15	5.1	3.7	5.2	3.6	3.2	3.4
31	3.2	- - - -	2.8	3.1	- - - -	12	- - - -	3.6	- - - -	3.6	3.2	- - - -
Total	98.2	94.2	88.8	90.4	74.7	152.3	184.0	131.4	203.8	136.2	118.7	107.2
Mean	3.17	3.14	2.86	2.91	2.67	4.91	6.13	4.24	6.79	4.39	3.87	3.57
Max	4.7	3.9	3.5	3.8	3.0	18	12	5.3	35	7.0	5.6	6.1
Min	2.8	2.8	2.6	2.7	2.2	2.5	4.5	3.6	3.5	3.6	3.2	3.1

Cal yr 1966: Total 1,583.1 Mean 4.34 Max 20 Min 2.6
Wtr yr 1967: Total 1,479.5 Mean 4.05 Max 35 Min 2.2

WISCONSIN RIVER BASIN

5-4006.5 Little Plover River at Plover, Wis.

Location.--Lat 44°28'20", long 89°31'40", in SW 1/4 sec. 14, T. 23 N., R. 8 E., on right bank at bridge on town road, 1 mile northeast of Plover and 1.2 miles upstream from mouth.

Drainage area.--15 sq mi, approximately, of which a large portion is noncontributing.

Records available.--July 1959 to September 1967.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 1,068.34 ft above mean sea level, datum of 1929 (levels by Wisconsin Conservation Div.). Prior to May 1960 staff gage at same site at datum 0.88 ft lower.

Average discharge.--8 years, 9.57 cfs.

Extremes.--Maximum discharge during year, 70 cfs June 16 (gage height, 2.80 ft); minimum, 3.7 cfs Apr. 15 (gage height, 0.47 ft), result of temporary dam at flume entrance; minimum daily, 6.8 cfs Feb. 25.
1959-67: Maximum discharge, 79 cfs Feb. 9, 1966; minimum; 2.4 cfs May 23, 1965; minimum daily, 4.3 cfs Aug. 19, 20, 1959.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.9	8.0	7.8	7.4	8.0	7.1	19	15	11	18	11	9.2
2	7.9	7.9	7.8	7.4	7.8	7.8	23	14	11	16	11	9.1
3	7.9	7.9	7.6	7.4	7.8	7.5	20	14	11	15	10	8.9
4	7.8	8.0	7.9	7.3	7.4	7.3	18	13	11	15	10	8.8
5	7.8	8.0	8.2	7.3	7.4	7.3	18	13	11	14	9.8	8.6
6	7.6	8.0	9.2	7.4	7.3	7.3	21	13	11	14	11	8.6
7	7.6	8.0	8.9	7.4	7.6	7.3	19	14	12	14	14	8.5
8	7.6	8.0	9.4	7.4	7.6	7.1	17	14	14	14	12	8.5
9	7.6	8.0	8.9	7.4	7.9	7.3	18	13	14	14	11	8.5
10	7.6	8.0	8.8	7.4	7.9	7.6	16	14	14	13	11	8.3
11	7.6	8.0	8.3	7.3	7.2	7.6	16	15	14	13	10	8.3
12	7.6	7.9	8.2	7.5	7.2	7.8	16	14	15	13	10	8.2
13	7.8	7.9	8.2	7.7	7.2	7.8	16	13	14	12	10	8.3
14	8.3	7.9	8.2	7.5	7.8	7.8	17	13	15	12	10	8.5
15	11	7.9	8.2	7.2	6.9	7.8	16	13	22	12	10	14
16	9.1	8.0	8.2	7.2	7.1	7.6	18	13	55	12	9.7	12
17	8.8	8.0	8.2	7.2	7.6	7.3	20	13	26	12	9.5	11
18	8.6	7.9	8.2	7.3	7.6	7.5	17	13	20	11	10	10
19	8.5	7.8	8.0	7.3	7.8	7.6	16	13	19	11	9.7	10
20	8.3	8.0	8.5	7.6	7.6	7.6	16	12	19	11	9.5	10
21	8.3	8.2	8.3	7.8	7.3	7.8	16	12	18	11	9.4	9.8
22	8.3	8.9	7.8	7.9	7.5	7.5	16	12	17	11	9.4	9.7
23	8.2	9.5	7.6	8.6	7.2	7.6	15	13	16	11	9.2	9.5
24	8.0	9.4	7.5	8.8	6.9	7.9	15	12	18	11	9.2	9.5
25	8.0	9.2	7.4	9.7	6.8	9.8	15	12	17	10	9.1	9.4
26	8.0	9.1	7.2	8.4	6.9	15	14	12	16	10	9.4	9.4
27	8.0	8.9	7.4	8.3	7.0	23	14	12	15	10	11	9.4
28	8.0	8.5	7.4	8.3	7.0	25	14	12	16	10	9.7	9.4
29	8.0	8.3	7.4	8.2	-----	27	14	12	15	10	9.5	9.4
30	8.0	8.3	7.4	8.2	-----	26	15	12	15	10	9.4	9.4
31	8.2	-----	7.4	8.2	-----	24	-----	11	-----	9.8	9.2	-----
Total	251.9	247.4	249.5	240.0	207.3	330.6	505	401	502	379.8	313.7	282.2
Mean	8.13	8.25	8.05	7.74	7.40	10.7	16.8	12.6	16.7	12.3	10.1	9.41
Max	11	9.5	9.4	9.7	8.0	27	23	1	55	18	14	14
Min	7.6	7.8	7.2	7.2	6.8	7.1	14	1	11	9.8	9.1	8.2

Cal yr 1966: Total 4,173.9 Mean 11.4 Max 47 Min 7.2

Wtr yr 1967: Total 3,910.4 Mean 10.7 Max 55 Min 6.8

Peak discharge (base, 22 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-28	0230	1.85	27	4- 2	1600	1.78	26
3-29	0200	2.45	44	6-16	1130	2.80	70
3-30	2130	1.92	28				

5-4008. Wisconsin River at Wisconsin Rapids, Wis.

Location--Lat 44°22'05", long 89°51'30", in SW 1/4 sec. 24, T. 22 N., R. 5 E., at Centralia powerplant of Nekoosa-Edwards Paper Co., 1.6 miles downstream from Chicago and Northwestern Railway bridge in Wisconsin Rapids.

Drainage area--5,400 sq mi, approximately.

Records available--May 1914 to March 1950 (published as "near Nekoosa"), October 1957 to September 1967.

Gage--Water-stage recorders on headwater and tailwater. Elevation of powerplant pond is 980 ft and datum of powerplant gages is 887.83 ft above mean sea level (levels by Wisconsin Valley Improvement Co.). May 1914 to March 1950, water-stage recorder at site 7.0 miles downstream at different datum.

Average discharge--45 years (1914-49, 1957-67), 4,856 cfs.

Extremes--Maximum discharge during year, 61,000 cfs Apr. 3, 4; minimum daily, 978 cfs Nov. 20.

1914-50, 1957-67: Maximum discharge, 70,400 cfs Sept. 12, 1938 (gage height, 19.10 ft), from rating curve extended above 58,000 cfs; minimum, 26 cfs Sept. 7, 1942; minimum daily, 165 cfs Aug. 12, 1934.

Remarks--Records good. Discharge computed from powerplant records on basis of load-discharge rating of hydroelectric units as developed by Geological Survey and tainter-gate ratings and spillway ratings based on theoretical formulas and discharge measurements. Flow regulated by 21 reservoirs (see p. 112) and many powerplants above station. Water diverted periodically from pond of Wisconsin Rapids powerplant 2.6 miles upstream into Cranberry Creek, a tributary of Yellow River, for cranberry culture. Probably most of the water diverted is lost by evaporation and transpiration. These diversions in cubic feet per second, for water year October 1966 to September 1967, were as follows:

Oct. 1	100	Oct. 14	100	Dec. 15	96	May 27	100	Aug. 5	100	Aug. 17	100	Aug. 29	100
2	100	15	4	16	66	28	89	6	100	18	100	Sep. 11	98
3	100	Nov. 14	96	17	96	29	100	7	100	19	100	12	100
4	100	15	100	18	100	30	78	8	100	20	100	13	100
5	100	16	100	19	100	July 28	98	9	100	21	100	14	100
6	100	17	96	20	13	29	100	10	100	22	98	15	6
7	100	18	100	21	39	30	100	11	100	23	100	25	98
8	100	19	100	22	30	31	100	12	100	24	100	26	100
9	100	20	76	May 22	94	Aug. 1	100	13	100	25	100	27	100
10	100	21	100	23	100	2	100	14	100	26	100	28	100
11	100	22	100	24	100	3	100	15	100	27	100	29	100
12	100	23	100	25	100	4	100	16	100	28	100	30	100
13	100	24	100	26	100								

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,120	2,660	2,320	2,000	3,620	3,130	53,800	4,880	3,460	14,100	3,110	3,310
2	2,120	2,420	2,200	2,600	3,480	3,110	56,500	7,960	3,460	12,300	3,120	3,610
3	2,280	2,260	2,080	2,750	3,270	3,240	59,400	4,720	3,340	10,300	3,070	1,150
4	2,190	2,270	1,830	2,700	3,330	2,960	56,800	4,440	2,580	7,730	2,960	1,000
5	2,310	2,300	2,430	3,220	3,290	2,570	39,700	4,510	2,870	5,290	2,700	2,780
6	2,340	2,340	2,840	3,360	3,290	2,930	31,600	4,260	3,160	5,390	2,700	2,900
7	2,320	2,390	2,610	3,210	3,470	3,000	32,900	4,080	3,610	4,720	3,220	2,950
8	1,970	2,590	3,190	2,590	3,350	2,860	32,100	4,220	4,630	4,400	3,340	2,970
9	1,850	2,550	3,310	2,960	3,370	2,990	27,900	3,830	5,180	4,380	3,450	2,910
10	2,130	2,510	3,090	3,270	3,530	3,200	24,400	4,560	6,680	3,860	2,950	2,140
11	2,230	2,560	2,690	3,060	3,450	3,300	21,900	6,810	8,790	3,740	2,730	2,700
12	2,510	2,300	2,640	3,240	3,160	2,760	18,200	7,410	11,100	3,640	2,610	2,690
13	2,280	2,240	2,730	3,280	3,450	2,930	18,300	7,860	9,110	3,610	2,490	2,460
14	2,290	2,380	2,770	2,960	3,310	3,170	13,100	7,370	8,380	3,540	2,570	2,620
15	4,150	2,550	3,090	2,360	3,480	3,300	12,000	6,120	11,600	3,310	2,760	4,390
16	4,510	2,620	3,020	3,100	3,420	3,270	17,000	4,760	16,600	3,290	3,100	4,210
17	4,480	2,610	3,150	3,270	2,920	3,190	19,100	4,520	17,400	3,180	2,920	4,480
18	3,790	2,360	2,540	3,090	2,840	2,890	19,700	4,300	17,700	2,990	3,020	4,250
19	3,350	2,340	2,860	3,190	2,630	2,380	18,100	4,040	13,600	2,980	3,020	4,120
20	3,250	978	3,170	3,210	2,940	3,000	11,600	3,980	9,180	2,830	2,100	4,120
21	3,250	2,770	3,190	2,790	3,250	3,460	9,570	4,330	10,300	2,450	2,900	4,100
22	2,720	2,960	3,120	2,580	3,290	3,480	11,600	4,420	8,790	2,810	2,820	3,740
23	2,540	3,040	3,170	3,130	3,170	3,860	11,800	4,360	5,600	2,800	2,770	3,040
24	3,030	3,050	1,550	3,000	3,010	4,180	10,200	4,290	5,980	2,840	2,730	1,310
25	2,570	3,120	1,040	3,280	2,720	3,920	8,280	4,510	5,930	2,980	2,720	2,690
26	2,490	2,940	1,080	3,280	2,560	3,340	5,940	4,130	5,140	2,950	3,020	2,620
27	2,520	3,020	3,060	3,460	3,000	4,680	5,430	4,210	5,360	2,960	2,230	2,450
28	2,330	3,190	3,060	3,470	3,100	9,130	6,270	1,540	10,600	2,880	3,680	2,490
29	2,180	2,850	3,070	3,010	-----	15,900	6,730	3,910	17,200	2,790	3,590	2,470
30	2,490	2,520	3,110	3,500	-----	21,900	5,920	3,550	14,900	2,370	3,590	2,520
31	2,280	-----	2,730	3,750	-----	37,700	-----	3,450	-----	2,880	3,320	-----
Total	82,870	76,688	82,740	94,670	89,700	171,730	665,840	147,330	252,230	136,290	91,310	89,110
Mean	2,673	2,556	2,669	3,054	3,204	5,540	22,190	4,753	8,408	4,396	2,945	2,970
Max	4,510	3,190	3,310	3,750	3,620	37,700	59,400	7,960	17,700	14,100	3,680	4,400
Min	1,850	978	1,040	2,000	2,560	2,380	5,430	1,540	2,580	2,370	2,100	1,000

Cal yr 1966 : Total 1,638,207 Mean 4,488 Max 29,300 Min 881
 Wtr yr 1967 : Total 1,980,508 Mean 5,426 Max 59,400 Min 978

WISCONSIN RIVER BASIN

5-4008.53 Buena Vista Creek near Kellner, Wis.

Location.--Lat 44°22'26", long 89°41'52", in center of sec. 20, T. 22 N., R. 7 E., on left bank upstream from highway bridge, 1.2 miles upstream from Fourmile Creek, and 1.7 miles northeast of Kellner.

Drainage area.--44 sq mi, approximately.

Records available.--March 1964 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 1,020.60 ft above mean sea level, datum of 1929. Staff gage read once daily prior to Aug. '27, 1964.

Extremes.--Maximum discharge during year, 178 cfs Mar. 31 (gage height, 3.96 ft); minimum, 9.9 cfs Jan. 3 (gage height, 1.02 ft), result of freezeup; minimum daily, 15 cfs Jan. 18, Feb. 25, 26.
1964-67: Maximum discharge, 193 cfs Feb. 10, 1966; minimum, 8.7 cfs Feb. 19, 1965 (gage height, 0.96 ft), result of freezeup; minimum daily, 14 cfs Feb. 3-5, 9, 25-28, 1966.

Remarks.--Records good except those for winter months, which are fair. Approximately 17 miles of drainage ditcher with 10 check dams are located above station. The check dams are used to control the water level. Sprinkler irrigation from ground-water sources is developing rapidly in the basin. Record of available water temperatures for the period October 1966 to September 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	24	21	20	23	17	148	67	40	76	32	25
2	22	23	21	20	22	17	139	64	40	78	34	25
3	22	21	21	20	22	17	151	60	39	77	32	24
4	22	25	20	19	22	16	128	58	38	72	30	24
5	22	28	22	19	22	16	115	56	38	68	30	23
6	22	27	26	19	21	16	120	55	38	64	30	23
7	22	27	28	18	21	16	124	56	40	60	31	23
8	22	27	32	18	21	17	111	59	50	58	30	23
9	23	26	34	18	21	18	105	56	56	57	30	22
10	22	26	33	18	21	19	102	56	58	55	29	22
11	22	26	26	19	20	20	94	63	60	53	28	21
12	23	26	25	19	18	21	89	63	65	50	28	21
13	23	26	27	19	20	21	87	60	64	50	27	21
14	23	26	30	19	21	23	90	57	62	48	26	23
15	30	26	30	18	20	26	93	54	80	46	26	33
16	31	26	30	18	19	24	90	52	108	45	26	44
17	30	26	30	17	19	23	96	51	132	45	25	39
18	28	25	28	15	20	22	92	50	114	43	26	36
19	28	23	25	16	19	23	82	50	97	42	26	34
20	27	26	24	17	19	25	77	49	92	40	25	33
21	26	26	22	18	19	28	78	48	86	40	25	33
22	26	28	21	20	18	30	76	48	80	38	24	32
23	25	30	21	19	18	32	72	48	76	40	24	31
24	25	30	21	19	17	42	70	48	76	37	23	30
25	25	30	21	21	15	48	68	46	80	36	23	29
26	25	30	20	21	15	69	66	45	75	34	25	28
27	25	30	20	22	16	94	64	44	70	34	31	28
28	25	25	20	22	16	120	63	44	68	33	31	28
29	24	21	20	22	- - - - -	151	62	44	67	32	28	27
30	24	20	21	22	- - - - -	162	63	42	65	32	27	27
31	24	- - - - -	20	22	- - - - -	174	- - - - -	42	- - - - -	31	26	- - - - -
Total	760	780	760	594	545	1,347	2,815	1,635	2,054	1,514	858	832
Mean	24.5	26.0	24.5	19.2	19.5	43.5	93.8	52.7	68.5	48.8	27.7	27.7
Max	31	30	34	22	23	174	151	67	132	78	34	44
Min	22	20	20	15	15	16	62	42	38	31	23	21

Cal yr 1966 : Total 16,429 Mean 45.0 Max 165 Min 20
Wtr yr 1967 : Total 14,494 Mean 39.7 Max 174 Min 15

5-4008.7 Fourmile Creek near Kellner, Wis.

Location.--Lat 44°22'04", long 89°41'52", in SE 1/4 sec. 20, T. 22 N., R. 7 E., on left bank upstream from bridge on country road, 1.2 miles upstream from Buena Vista Creek, 1.5 miles northeast of Kellner, and 6.5 miles east of Wisconsin Rapids.

Drainage area.--51 sq mi, approximately.

Records available.--March 1964 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 1,022.62 ft above mean sea level, datum of 1929. Prior to Aug. 26, 1964, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 278 cfs Mar. 30 (gage height, 8.65 ft); minimum, 4.4 cfs Feb. 23 (gage height, 5.26 ft), result of freezeup; minimum daily, 7.8 cfs Feb. 21, 24, 25, 28, Mar. 1-3.

1964-67: Maximum discharge, that of Mar. 30, 1967; minimum recorded, 3.2 cfs Jan. 28, 1965 (gage height, 5.18 ft), result of freezeup; minimum daily, 4.0 cfs Feb. 4, 5, 1965.

Remarks.--Records good except those for winter months, which are fair. Approximately 40 miles of drainage ditches and 18 check dams in the basin are used to control the water table. There is some sprinkler irrigation from ground-water sources in the upper portion of the basin.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	16	14	13	9.6	7.8	165	67	41	76	23	22
2	15	14	13	12	9.4	7.8	168	62	39	77	24	20
3	15	15	12	12	9.5	7.8	159	61	38	74	22	20
4	15	15	12	12	9.9	8.0	137	60	37	69	22	20
5	15	16	12	12	9.4	8.2	129	59	37	64	21	20
6	15	16	12	12	9.2	8.0	139	57	36	60	20	19
7	15	17	12	12	9.2	8.2	126	58	38	57	20	21
8	15	16	15	12	9.2	8.0	115	63	45	55	21	20
9	15	16	15	12	9.2	8.4	114	60	61	54	20	19
10	14	16	16	12	9.8	8.9	108	60	68	51	19	19
11	15	16	15	11	9.2	9.2	100	68	66	49	19	18
12	15	15	14	11	9.0	9.4	96	66	73	47	19	18
13	15	15	14	9.7	8.9	9.7	92	62	64	45	18	18
14	16	15	14	11	9.8	10	88	59	62	44	18	18
15	19	16	15	9.5	9.1	10	91	57	69	42	18	28
16	19	17	15	9.0	8.5	10	98	54	94	41	17	31
17	18	16	16	8.5	8.1	9.0	98	53	106	40	17	29
18	18	15	17	8.0	8.1	10	90	52	95	39	17	28
19	18	14	14	8.0	8.5	11	86	51	88	37	17	27
20	18	16	14	8.0	8.0	12	84	49	82	35	16	26
21	18	17	14	8.2	7.8	12	86	50	78	31	16	26
22	17	18	13	8.2	8.3	13	80	49	73	30	16	25
23	16	19	13	8.2	8.1	14	78	50	69	32	15	24
24	16	18	13	8.4	7.8	18	75	49	71	31	15	24
25	16	19	13	8.7	7.8	30	72	48	75	29	15	23
26	16	20	12	9.2	8.1	47	70	46	68	28	15	24
27	16	19	12	9.2	8.0	72	69	45	64	28	17	23
28	16	15	12	9.4	7.8	111	67	44	69	26	15	22
29	16	14	13	9.7	- - - -	190	66	45	67	25	18	22
30	16	15	13	9.6	- - - -	256	67	42	63	24	17	22
31	16	- - - -	13	9.8	- - - -	218	- - - -	40	- - - -	23	18	- - - -
Total	499	486	422	313.3	245.3	1,162.4	3,013	1,686	1,936	1,363	56	676
Mean	16.1	16.2	13.6	10.1	8.76	37.5	100	54.4	64.5	44.0	18.4	22.5
Max	19	20	17	13	9.9	256	168	68	106	77	24	31
Min	14	14	12	8.0	7.8	7.8	66	40	36	23	15	18
Cal yr 1966: Total	14,766			Mean 40.5	Max 222	Min 12						
Wtr yr 1967: Total	12,371			Mean 33.9	Max 256	Min 7.8						

WISCONSIN RIVER BASIN

5-4010.2 Tenmile Creek Ditch 5 near Bancroft, Wis.

Location.--Lat 44°18'08", long 89°32'59", in NE 1/4 sec. 16, T. 21 N., R. 8 E., at bridge on country road, 1 1/4 miles west of U. S. Highway 51 and 1 3/4 miles southwest of Bancroft.

Drainage area.--8.8 sq mi, approximately.

Records available.--June 1964 to September 1967.

Gage.--Water-stage recorder and 90° V-notch sharp-crested weir. Datum of gage is 1,063.57 ft above mean sea level, datum of 1929 (levels by Wisconsin Works Progress Administration).

Extremes.--Maximum discharge during year, 61 cfs Mar. 27 (gage height, 3.16 ft); minimum, 2.1 cfs Jan. 18 (gage height, 0.81 ft); minimum daily, 2.9 cfs Oct. 10.
1964-67: Maximum discharge, 138 cfs Feb. 9, 1966; minimum daily, 2.2 cfs Aug. 11, 13, 14, 17-19, 1964.

Remarks.--Records good except those for winter months, which are fair. There is approximately 2 miles of dredged drainage ditching above this gage. Sprinkler irrigation from ground-water wells is quite extensive in the basin. Records of water temperatures for the period of October 1966 to September 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.1	3.4	3.5	3.4	4.5	3.6	1.6	8.2	5.5	18	6.7	4.5
2	3.0	3.3	3.2	3.4	4.4	3.4	1.8	7.7	5.4	14	7.4	4.4
3	3.0	3.3	3.1	3.4	4.4	3.6	1.6	7.5	5.3	13	6.5	4.3
4	3.0	3.3	3.1	3.4	4.4	3.7	1.4	7.3	5.3	12	6.2	4.2
5	3.0	3.3	3.2	3.3	4.2	3.7	1.4	7.3	5.3	11	6.0	4.1
6	3.0	3.3	3.6	3.4	4.1	3.6	1.5	7.2	5.3	11	6.0	4.1
7	3.1	3.4	4.1	3.4	3.9	3.6	1.3	7.3	5.4	9.8	6.1	4.0
8	3.0	3.4	4.8	3.4	4.1	3.6	1.3	7.6	6.2	9.5	6.0	3.9
9	3.0	3.4	4.5	3.4	4.1	3.8	1.3	7.2	1.6	9.3	5.8	3.8
10	2.9	3.4	4.3	3.4	4.1	3.8	1.2	7.5	1.3	9.0	5.5	3.7
11	3.0	3.4	3.9	3.4	3.9	3.7	1.1	8.5	1.4	8.6	5.4	3.7
12	3.0	3.4	3.8	3.5	3.8	3.8	1.1	7.9	1.5	8.2	5.3	3.7
13	3.0	3.4	3.7	3.5	3.9	3.8	1.1	7.5	1.2	8.0	5.1	3.7
14	3.3	3.4	3.7	3.5	4.1	3.8	1.1	7.2	1.1	7.6	5.0	4.0
15	4.7	3.4	3.7	3.4	3.7	3.8	1.0	7.0	1.4	7.3	4.9	9.7
16	4.0	3.5	3.7	3.3	4.1	3.8	1.1	6.8	3.2	7.1	4.6	9.0
17	3.8	3.4	3.7	3.2	4.1	3.8	1.1	6.6	1.8	7.1	4.5	7.4
18	3.7	3.3	3.7	3.2	4.1	4.0	9.8	6.7	1.5	7.3	4.9	7.0
19	3.6	3.3	3.8	3.4	4.1	4.0	9.4	6.8	1.4	6.4	4.9	6.6
20	3.6	3.4	3.8	3.6	4.1	4.1	9.3	6.4	1.3	6.6	4.6	6.4
21	3.5	3.5	3.7	3.5	4.1	4.1	1.0	6.4	1.3	6.8	4.5	6.2
22	3.5	4.0	3.6	3.5	4.1	4.1	9.3	6.3	1.2	7.2	4.5	6.0
23	3.5	4.2	3.5	3.8	4.1	4.2	8.8	6.7	1.2	8.2	4.4	5.9
24	3.5	4.1	3.4	4.4	3.9	4.9	8.6	6.4	1.3	7.7	4.2	5.7
25	3.5	4.5	3.4	5.7	3.8	1.1	8.5	6.2	1.2	7.1	4.1	5.5
26	3.5	4.2	3.2	5.2	3.7	3.0	8.3	6.1	1.1	6.8	4.3	5.6
27	3.5	4.0	3.2	5.0	3.8	5.3	8.2	6.0	1.1	6.6	6.5	5.6
28	3.5	3.8	3.3	4.9	3.7	4.9	8.0	5.9	1.0	6.5	5.4	5.6
29	3.4	3.6	3.3	4.7	-----	3.8	8.0	5.9	1.0	6.3	4.5	5.6
30	3.4	3.6	3.3	4.5	-----	2.7	8.0	5.7	9.7	6.1	4.8	5.5
31	3.4	-----	3.3	4.5	-----	2.0	-----	5.6	-----	6.0	4.5	-----
Total	104.0	106.9	112.1	117.6	113.3	320.3	334.2	213.4	344.4	266.1	163.1	159.4
Mean	3.35	3.56	3.62	3.79	4.05	10.3	11.1	6.88	11.5	8.58	5.26	5.31
Max	4.7	4.5	4.8	5.7	4.5	5.3	1.8	8.5	3.2	1.8	7.4	9.7
Min	2.9	3.3	3.1	3.2	3.7	3.4	8.0	5.6	5.3	6.0	4.1	3.7

Cal yr 1966: Total 2,574.8 Mean 7.05 Max 83 Min 2.6
Wtr yr 1967: Total 2,354.8 Mean 6.45 Max 53 Min 2.9

S-4010.5 Tenmile Creek near Nekoosa, Wis.

Location.--Lat 44°15'44", long 89°48'38", in NE 1/4 sec. 32, T. 21 N., R. 6 E., on left bank upstream from bridge on State Highway 13, 5.8 miles southeast of Nekoosa.

Drainage area.--64 sq mi, approximately.

Records available.--Occasional low-flow measurements, water years 1962-63. October 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 967.39 ft above mean sea level, datum of 1929. Prior to May 13, 1964, staff gage at same datum.

Extremes.--Maximum discharge during year, 275 cfs Mar. 31 (gage height, 5.84 ft); minimum, 13 cfs Mar. 6 (gage height, 3.57 ft). 1963-67: Maximum discharge, that of Mar. 31, 1967; minimum, 9.5 cfs Dec. 16, 1964.

Remarks.--Records good except those for winter months, which are fair. Approximately 40 miles of drainage ditches and 22 check dams are used to control the water table in the basin. Sprinkler irrigation from ground-water sources is developing rapidly in the area.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	23	18	17	16	14	200	81	55	110	55	37
2	24	23	18	17	16	14	184	77	54	123	53	36
3	24	22	18	16	16	14	195	74	53	117	52	35
4	24	22	18	16	16	14	170	73	52	108	51	34
5	24	23	18	17	16	14	154	72	51	100	51	34
6	24	23	18	17	16	14	150	71	50	94	51	34
7	24	23	19	17	15	14	149	72	53	89	50	33
8	23	23	21	16	16	15	141	75	60	86	50	33
9	23	23	21	16	16	16	135	73	101	84	49	32
10	23	23	21	16	16	16	128	73	116	81	49	31
11	23	23	21	16	16	16	117	82	118	78	47	31
12	23	22	19	17	16	16	111	80	130	74	46	30
13	24	21	19	16	16	16	107	77	120	72	46	31
14	24	22	19	16	16	16	111	74	107	70	47	33
15	26	23	19	16	16	16	108	72	104	68	46	46
16	27	23	19	16	16	16	107	70	132	66	42	49
17	26	23	19	16	15	16	110	67	168	66	42	47
18	26	22	19	16	15	16	103	68	141	65	42	43
19	26	22	18	17	15	16	98	69	126	63	41	42
20	25	23	19	17	15	16	94	66	118	62	40	41
21	25	24	19	17	15	16	96	65	114	60	39	40
22	24	25	18	17	15	16	94	64	108	64	39	38
23	24	25	18	17	15	16	89	65	101	69	39	38
24	24	25	17	17	15	16	86	66	106	70	39	37
25	24	25	17	17	15	17	85	64	111	65	37	36
26	23	24	17	17	15	27	82	62	103	62	39	36
27	23	23	17	17	15	47	80	61	96	60	45	36
28	23	22	16	17	15	86	77	59	96	58	43	35
29	25	20	16	17	-----	100	77	60	94	58	41	34
30	23	18	17	16	-----	198	78	58	90	56	39	34
31	23	-----	17	17	-----	247	-----	57	-----	54	39	-----
Total	749	683	570	514	435	1,091	3,516	2,147	2,928	2,352	1,374	1,096
Mean	24.2	22.8	18.4	16.6	15.5	35.2	117	69.3	97.6	75.9	45.0	36.5
Max	27	25	21	17	16	247	200	82	168	123	79	49
Min	23	18	16	16	15	14	77	57	50	54	37	30

Cal yr 1966 : Total 21,878

Mean 59.9

Max 232

Min 16

Wtr yr 1967 : Total 17,475

Mean 47.9

Max 247

Min 14

WISCONSIN RIVER BASIN

5-4011. Fourteenmile Creek near New Rome, Wis.

Location.--Lat 44°12'15", long 89°48'29", in S 1/2 sec. 17, T. 20 N., R. 6 E., 50 feet above twin culverts on State Highway 13, and 2.7 miles southeast of New Rome.

Drainage area.--77 sq mi, approximately.

Records available.--Annual maximum and occasional low-flow measurements, water years 1961-64. March 1964 to September 1967.

Gage.--Water-stage recorder and crest-stage gage. Prior to Mar. 2, 1964, crest-stage gage only at datum 7.03 ft lower, and Mar. 2, 1964, to Aug. 27, 1964, staff gage and crest-stage gage.

Extremes.--Maximum discharge during year, 270 cfs June 17 (gage height, 5.49 ft); minimum daily, 5.9 cfs Aug. 10. 1961-67: Maximum discharge, 275 cfs Mar. 24, 1966; minimum daily (March 1964 to September 1967), that of Aug. 10, 1967.

Remarks.--Records good except those for winter months, which are fair. Slight regulation by Deer Lodge Dam for short periods at low flows.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	17	12	14	14	12	144	57	41	82	41	23
2	18	16	11	14	14	12	135	53	40	90	88	22
3	18	16	10	13	14	12	146	50	39	82	63	22
4	18	16	10	13	14	12	123	49	38	76	37	22
5	17	18	11	14	13	12	112	48	38	60	34	28
6	18	18	15	14	13	12	108	34	39	42	34	40
7	18	18	17	14	13	12	102	46	41	58	34	41
8	18	18	22	13	14	12	95	53	50	62	33	29
9	16	18	22	13	14	12	94	52	70	57	16	22
10	15	18	21	13	14	12	89	54	70	56	5.9	21
11	16	18	19	13	14	12	82	61	79	53	7.2	20
12	14	18	17	13	14	12	78	59	108	50	7.2	20
13	10	17	16	13	14	12	77	56	110	48	22	19
14	15	17	16	13	13	12	79	54	94	45	25	25
15	23	18	16	13	13	13	78	53	92	43	25	39
16	22	18	17	13	13	13	78	50	147	43	24	37
17	20	18	18	13	13	13	79	49	226	44	24	34
18	20	18	18	13	13	14	75	50	191	41	27	58
19	19	16	18	13	13	14	70	59	147	37	24	39
20	18	18	17	13	13	15	66	56	126	36	23	35
21	18	18	17	13	12	15	70	52	111	34	22	34
22	17	19	16	13	12	16	69	50	99	39	22	31
23	17	19	15	14	12	18	66	51	91	46	21	30
24	17	20	15	14	12	21	62	50	91	52	21	31
25	17	21	15	15	12	30	60	49	87	43	20	30
26	17	20	15	15	12	68	58	48	86	39	22	33
27	17	18	14	15	12	115	57	46	82	38	33	32
28	17	17	14	14	12	155	54	45	78	35	29	31
29	17	14	14	14	-----	158	54	45	78	30	28	29
30	17	13	14	14	-----	173	56	43	77	32	25	28
31	17	-----	14	14	-----	173	-----	42	-----	66	23	-----
Total	541	528	486	420	366	1,192	2,516	1,564	2,666	1,559	867.3	905
Mean	17.5	17.6	15.7	13.5	13.1	38.5	83.9	50.5	88.9	50.3	27.8	30.2
Max	23	21	22	15	14	173	146	61	226	82	88	58
Min	14	13	10	13	12	12	54	42	38	30	5.9	19

Cal yr 1966 : Total 18,090 Mean 49.6 Max 262 Min 10
 Wtr yr 1967 : Total 13,603.3 Mean 37.3 Max 226 Min 5.9

5-4015.1 Big Roche a Cri Creek near Hancock, Wis.

Location.--Lat 44°10'15", long 89°34'59", in SE 1/4 sec. 30, T. 20 N., R. 8 E., at bridge on country road, four miles northwest of Hancock.

Drainage area.--9.5 sq mi, approximately.

Records available.--October 1963 to September 1967 (discontinued). Gage heights and discharge measurements available in files of Wisconsin Department of Natural Resources for the period August 1957 to September 1963.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year, 46 cfs Mar. 28 (gage height, 2.98 ft); minimum daily 6.0 cfs Aug. 25, Sept. 6-9, 12. 1963-67: Maximum discharge, 70 cfs Feb. 10, 1966; minimum daily, 4.1 cfs Jan. 31 to Feb. 2, 1965.

Remarks.--Records good except those for winter months, which are fair. There is some sprinkler irrigation from ground-water sources in the basin.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	7.7	7.2	6.7	7.6	6.7	20	12	8.3	13	8.0	6.3
2	7.5	7.6	7.5	6.7	7.5	6.7	22	11	8.2	12	7.7	6.3
3	7.4	7.6	7.2	6.7	7.3	6.6	20	11	8.0	12	7.5	6.2
4	7.5	7.6	7.1	6.7	7.1	6.5	18	11	8.0	12	7.4	6.1
5	7.5	7.6	7.2	6.7	6.7	6.3	18	11	8.0	12	7.5	6.1
6	7.6	7.6	7.6	6.7	6.7	6.3	17	11	8.0	11	7.2	6.0
7	7.5	7.7	7.5	6.7	6.7	6.3	16	11	8.3	11	7.2	6.0
8	7.6	7.7	8.5	6.8	6.7	6.3	16	11	8.8	11	7.5	6.0
9	7.7	7.7	7.9	6.9	6.6	6.3	16	10	12	11	7.5	6.0
10	7.9	7.7	7.6	6.8	6.5	6.6	15	11	11	11	7.0	6.1
11	8.0	7.7	7.5	6.8	6.5	6.7	14	11	13	10	6.7	6.1
12	7.9	7.7	7.4	6.9	6.4	6.8	14	11	14	10	6.6	6.0
13	8.0	7.7	7.2	7.0	6.7	6.7	14	11	12	10	6.5	6.1
14	8.3	7.6	7.1	7.0	6.6	6.6	14	10	11	9.8	6.5	6.6
15	8.9	7.6	7.0	7.0	6.0	6.6	14	10	12	9.8	6.3	10
16	8.6	7.6	7.0	6.9	6.6	6.5	14	9.7	21	9.8	6.4	8.9
17	8.4	7.5	7.0	6.8	6.8	6.4	14	9.7	17	9.8	6.2	8.0
18	8.3	7.5	7.0	6.8	6.8	6.5	13	9.8	15	9.5	6.7	7.9
19	8.4	7.5	7.0	6.8	6.8	6.7	13	10	15	9.2	6.5	7.9
20	8.3	7.5	7.0	6.8	6.7	6.8	13	9.8	14	8.9	6.3	7.7
21	8.2	7.5	6.8	6.8	6.7	7.0	13	9.7	14	8.8	6.3	7.7
22	8.2	7.5	6.8	6.9	6.6	7.0	13	9.7	13	9.0	6.2	7.7
23	8.0	7.5	6.7	7.2	6.6	7.1	12	9.8	13	8.9	6.1	7.7
24	8.0	7.7	6.7	7.5	6.5	7.6	12	9.7	14	8.6	6.1	7.7
25	7.9	8.5	6.8	9.0	6.4	10	12	9.5	13	8.3	6.0	7.6
26	7.9	7.9	6.8	8.3	6.5	16	12	9.2	13	8.0	6.5	7.7
27	7.9	7.6	6.8	8.2	6.6	26	12	8.9	13	8.0	7.5	7.7
28	7.9	7.4	6.8	8.0	6.7	39	12	9.0	13	7.9	6.3	7.7
29	7.7	7.4	6.8	7.9		37	12	9.0	12	7.8	6.5	7.6
30	7.7	7.4	6.7	7.9	- - - - -	30	11	8.8	12	7.7	6.5	7.6
31	7.7	- - - - -	6.7	7.8	- - - - -	24	- - - - -	8.4	- - - - -	7.7	6.5	- - - - -
Total	246.0	228.8	220.9	221.7	187.9	341.6	436	313.7	362.6	303.5	208.8	213.0
Mean	7.94	7.63	7.13	7.15	6.71	11.0	14.5	10.1	12.1	9.79	6.44	7.10
Max	8.9	8.5	8.5	9.0	7.6	39	22	12	21	13	8.0	10
Min	7.4	7.4	6.7	6.7	6.4	6.3	11	8.4	8.0	7.7	6.0	6.0

Cal yr 1966 : Total 3,895.8 Mean 10.7 Max 50 Min 6.1
 Wtr yr 1967 : Total 3,284.5 Mean 9.00 Max 39 Min 6.0

WISCONSIN RIVER BASIN

5-4015.35 Big Roche a Cri Creek near Adams, Wis.

Location.--Lat 44°05'52", long 89°46'30", in SW 1/4 sec. 22, T. 19 N., R. 6 E., at culverts on Brown Deer Avenue, 1/2 mile upstream from Dry Creek, and 10 miles north of Adams.

Drainage area.--54 sq mi, approximately.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Prior to May 15, 1964, staff gage at same site at datum 1.71 ft higher.

Extremes.--Maximum discharge during year, 142 cfs Mar. 31 (gage height, 3.87 ft); minimum, 26 cfs Jan. 15 (gage height, 1.41 ft).
1963-67: Maximum discharge, 178 cfs Mar. 25, 1966; minimum, 24 cfs Dec. 31, 1964 (result of freezeup); minimum daily, 29 cfs Dec. 15, 1964.

Remarks.--Records good except those for winter months, which are fair. There is some irrigation from ground-water sources in the upper portion of basin.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	38	34	36	41	40	129	68	52	85	48	42
2	40	38	35	36	40	40	114	66	52	87	61	41
3	40	36	36	36	39	40	116	64	50	80	53	42
4	39	38	37	36	38	40	110	62	50	74	48	40
5	38	38	38	35	38	39	100	62	50	71	46	40
6	38	38	42	36	37	38	99	62	50	69	47	40
7	38	38	45	36	38	38	96	62	52	66	48	39
8	39	39	48	36	39	38	90	64	66	65	46	39
9	40	38	52	36	42	38	90	62	76	65	46	39
10	39	38	47	36	41	38	89	64	78	64	44	38
11	38	38	41	36	40	46	84	75	82	62	44	38
12	39	38	40	36	39	47	81	71	110	59	43	38
13	40	38	39	36	40	46	80	66	96	58	42	38
14	42	38	38	36	41	44	82	62	80	58	42	42
15	46	38	41	36	37	44	81	62	80	57	42	65
16	46	38	43	36	38	41	80	60	118	57	41	78
17	42	38	44	35	39	38	81	59	138	58	40	58
18	42	38	43	35	38	37	78	58	125	56	44	52
19	42	36	42	35	39	40	75	60	99	54	44	50
20	42	40	41	36	39	41	73	59	89	54	42	50
21	40	39	40	38	39	42	76	58	85	52	42	50
22	40	40	38	39	38	42	76	58	83	52	42	50
23	40	40	37	40	38	41	72	58	79	54	42	48
24	40	40	36	42	37	44	71	58	81	51	41	48
25	40	44	36	50	37	54	69	57	87	50	40	47
26	40	42	36	47	38	71	68	56	78	49	42	48
27	40	40	36	45	38	93	67	55	74	49	60	50
28	40	40	36	43	39	103	66	54	74	48	54	48
29	39	36	36	42	-----	115	66	55	75	48	46	46
30	38	36	36	42	-----	132	66	54	85	47	44	45
31	38	-----	36	41	-----	142	-----	53	-----	47	42	-----
Total	1,246	1,156	1,229	1,185	1,087	1,692	2,525	1,884	2,394	1,846	1,405	1,389
Mean	40.2	38.5	39.6	38.2	38.8	54.6	84.2	60.8	79.8	59.5	45.3	46.3
Max	46	44	52	50	42	142	129	75	138	87	61	78
Min	38	36	34	35	37	37	66	53	50	47	40	38
Cal yr 1966: Total	22,130		Mean	60.6	Max	170	Min	34				
Wtr yr 1967: Total	19,038		Mean	52.2	Max	142	Min	34				

5-4020. Yellow River at Babcock, Wis.

Location.--Lat 44°18'05", long 90°07'15", in NW 1/4 sec. 14, T. 21 N., R. 3 E., on right bank at downstream side of highway bridge at Babcock, 1.9 miles upstream from Hemlock Creek.

Drainage area.--223 sq mi.

Records available.--March 1944 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 954.75 ft above mean sea level, datum of 1929. Prior to Oct. 28, 1948, chain gage, and Oct. 29, 1948, to July 29, 1964, graphic water-stage recorder at same site and datum.

Average discharge.--23 years, 128 cfs.

Extremes.--Maximum discharge during year, 10,800 cfs Mar. 31 (gage height, 17.05 ft); minimum, 5.7 cfs Sept. 28, 29 (gage height, 1.63 ft).

1944-67: Maximum discharge, 11,600 cfs Apr. 2, 1952 (gage height, 17.38 ft); minimum observed, 1.0 cfs Oct. 1, 1948 (gage height, 1.22 ft).

Remarks.--Records good except those for winter months and period of no gage height record, which are fair. There is a large recreation dam about 5 miles upstream.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	CT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	12	15	10	10	54	18	5,500	205	21	130	12	18
2	12	14	9.0	10	52	17	2,270	446	20	300	14	16
3	12	12	10	10	51	16	3,670	241	19	210	12	14
4	13	12	17	10	50	15	2,050	192	18	150	11	12
5	10	9.7	16	10	49	15	922	94	18	100	10	10
6	12	10	16	11	48	14	651	90	18	82	11	9.3
7	9.4	11	15	13	47	13	1,710	87	20	70	11	8.6
8	11	12	21	15	46	13	1,280	99	93	58	11	7.8
9	11	13	30	17	45	12	686	93	242	50	12	8.0
10	11	12	40	16	44	12	530	89	270	42	16	7.7
11	11	13	54	15	39	12	445	157	331	36	15	6.9
12	11	13	47	13	36	13	355	344	650	33	13	6.9
13	9.2	13	38	12	33	13	280	376	816	30	12	6.6
14	8.5	14	31	11	31	13	215	305	539	27	11	8.2
15	10	14	26	10	29	14	238	198	304	26	11	19
16	30	14	23	10	28	15	314	125	468	27	10	7.2
17	144	15	21	10	36	16	899	95	1,240	32	10	8.8
18	165	16	18	10	34	18	1,110	96	881	32	11	3.9
19	114	15	17	10	32	21	665	64	495	31	10	13
20	77	13	15	10	30	27	397	60	316	30	9.1	11
21	41	15	15	10	28	33	285	53	189	103	8.3	12
22	37	16	15	10	27	40	186	49	168	160	7.9	12
23	26	17	14	11	25	52	195	40	138	140	8.5	9.4
24	27	18	13	13	24	72	169	37	115	80	9.6	9.6
25	12	24	12	15	23	76	126	36	35	35	9.7	7.6
26	18	26	12	21	22	78	108	35	150	18	11	6.9
27	23	13	11	26	21	190	110	27	200	13	16	7.3
28	8.9	12	10	33	20	1,000	77	24	130	12	13	6.4
29	11	12	10	42	-----	2,500	73	23	100	12	9.7	6.8
30	11	11	10	50	-----	4,500	84	22	82	11	19	7.8
31	11	-----	10	55	-----	10,000	-----	21	-----	11	21	-----
TOTAL	920.0	424.7	606.0	520	1,004	18,848	25,600	3,823	8,086	2,091	365.8	473.8
MEAN	29.7	14.2	19.5	16.3	35.9	60.6	853	123	270	67.5	11.8	15.8
MAX	165	26	54	55	54	10,000	5,500	446	1,240	300	21	88
MIN	8.5	9.7	9.0	10	20	12	73	21	18	11	7.9	6.4
CFSM	.13	.06	.09	.08	.16	2.73	3.83	.55	1.21	.30	.05	.07
IN.	.15	.07	.10	.09	.17	3.14	4.27	.64	1.35	.35	.06	.08

CAL YR 1966: TOTAL 58,914.3 MEAN 161 MAX 4,360 MIN 6.0 CFSM .72 IN 9.83
 WAT YR 1967: TOTAL 62,762.3 MEAN 172 MAX 10,000 MIN 6.4 CFSM .77 IN 10.47

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-31	1500	17.05	10,800	4-17	2000	9.19	1,440
4-7	1700	9.87	1,800	6-7	0500	8.88	1,290

Note.--No gage height record June 26 to July 30.

WISCONSIN RIVER BASIN

5-4035. Lemonweir River at New Lisbon, Wis.

Location--Lat 43°52'50", long 90°09'40", in sec. 8, T. 16 N., R. 3 E., near center of span on downstream side of bridge on State Highway 80 in New Lisbon, 200 ft downstream from recreation dam and 1 mile upstream from Webster Creek.

Drainage area--500 sq mi, approximately.

Records available--March 1944 to September 1967.

Gage--Wire-weight gage read twice daily. Datum of gage is 867.05 ft above mean sea level, datum of 1929. Prior to May 5, 1948, chain gage at site 100 ft downstream at same datum. May 5, 1948, to June 30, 1958, chain gage at present site and datum.

Average discharge--23 years, 340 cfs.

Extremes--Maximum discharge during year, 3,140 cfs June 17 (gage height, 10.94 ft); minimum discharge observed, 72 cfs Oct. 12 (gage height, 1.25 ft)

1944-67: Maximum discharge, 6,880 cfs May 8, 1960 (gage height, 12.94 ft, from graph based on gage readings); minimum observed, 36 cfs Aug. 15, 1944 (gage height, -0.06 ft).

Remarks--Records good except those for winter months, which are fair. Occasional regulation by dam 200 ft upstream. Water diverted periodically into the basin from the Yellow and Black River basins for cranberry culture.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	94	84	82	180	135	1,620	237	152	443	97	112
2	81	92	81	84	170	140	1,520	258	130	443	114	116
3	96	89	80	86	160	147	1,500	286	129	447	120	122
4	99	84	80	88	150	140	1,400	321	135	457	123	120
5	88	81	82	90	140	140	1,300	338	131	467	115	114
6	80	86	84	90	135	135	1,270	318	122	454	110	108
7	80	90	92	90	130	130	1,160	272	120	410	109	102
8	86	90	114	90	130	130	1,040	244	148	363	109	96
9	86	93	119	88	140	130	976	241	332	280	108	91
10	85	95	110	88	140	140	912	243	517	203	105	87
11	78	100	100	88	140	155	803	303	970	212	104	84
12	72	105	94	90	135	180	700	357	2,380	198	105	88
13	78	96	90	94	135	211	628	430	2,720	173	110	92
14	87	93	90	93	130	247	604	506	2,230	154	110	99
15	98	92	88	92	130	236	586	532	1,840	140	104	313
16	99	94	92	86	140	230	542	438	2,150	138	98	261
17	100	86	96	80	135	220	499	370	2,990	130	94	208
18	101	85	108	76	130	210	512	315	2,710	124	101	122
19	106	88	111	78	130	200	596	318	2,190	111	109	100
20	103	90	110	83	125	195	658	309	1,760	91	120	99
21	97	90	105	90	120	190	667	292	1,410	101	115	90
22	104	91	94	94	120	185	618	261	1,080	103	112	97
23	106	91	84	105	115	185	551	211	800	133	105	100
24	100	93	78	115	115	241	485	223	662	223	100	104
25	94	101	76	140	115	544	418	213	622	248	97	101
26	96	108	76	182	115	947	380	204	553	198	97	111
27	94	116	76	200	120	1,290	333	184	512	162	116	115
28	90	110	76	190	125	1,840	251	169	483	129	126	108
29	89	96	77	180	- - - -	2,250	225	156	460	116	132	103
30	92	88	78	180	- - - -	2,250	233	148	438	111	128	111
31	96	- - - -	80	180	- - - -	1,850	- - - -	151	- - - -	101	117	- - - -
Total	2,835	2,807	2,805	3,392	3,750	15,223	22,987	8,848	30,876	7,063	3,409	3,574
Mean	91.5	93.6	90.5	109	134	491	766	285	1,029	228	110	119
Max	106	116	119	200	180	2,250	1,620	532	2,990	467	132	313
Min	72	81	76	76	115	130	225	148	120	91	94	84
Cfsm	.183	.187	.181	.218	.268	.982	1.53	.570	2.06	.456	.220	.238
In.	.21	.21	.21	.25	.28	1.13	1.71	.66	2.30	.53	.25	.27
Cal yr 1966 : Total	116,430			Mean 319	Max 2,410	Min 59	Cfsm .638	In. 8.67				
Wtr yr 1967 : Total	107,569			Mean 295	Max 2,990	Min 72	Cfsm .590	In. 8.01				

5-4040. Wisconsin River near Wisconsin Dells, Wis.

Location.--Lat 43°36'20", long 89°45'25", in extreme western part of sec. 14, T. 13 N., R. 6 E., on right bank 0.5 mile downstream from Dell Creek and 3 miles downstream from Wisconsin Dells.

Drainage area.--7,830 sq mi, approximately.

Records available.--October 1934 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 800 ft (from topographic map). Prior to Oct. 1, 1963, graphic water-stage recorder at same site at datum 5.00 ft higher.

Average discharge.--33 years, 6,605 cfs.

Extremes.--Maximum discharge during year, 51,800 cfs Apr. 5 (gage height, 19.22 ft); minimum daily, 2,340 cfs Nov. 21, Dec. 1, 1934-67; Maximum discharge, 72,200 cfs Sept. 14, 1938 (gage height, 23.83 ft, present datum); minimum daily, 1,067 cfs Aug. 19, 1936.

Remarks.--Records good except those for winter months, which are fair. Flow regulated by 23 reservoirs above station (see p. 112). In 1938, when the maximum of record occurred, there were 21 reservoirs above station, the two large reservoirs, Peterwell and Castle Rock not yet in existence. Diurnal fluctuation caused by powerplant of Wisconsin Power & Light Co. at Wisconsin Dells, which shuts down frequently to 1,000 KWH, about 660 cfs, from powerplant records.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2,690	3,200	2,340	3,500	5,700	4,900	22,400	10,000	5,680	16,000	3,800	3,370
2	2,640	3,600	2,600	3,500	5,800	4,900	31,600	9,820	5,670	17,400	3,800	3,450
3	2,810	3,530	3,680	3,600	5,900	4,900	43,900	9,480	5,040	16,200	3,970	3,220
4	2,710	3,640	3,640	3,300	6,000	4,900	50,300	8,440	4,190	11,200	4,030	2,690
5	2,680	3,420	2,560	3,700	6,000	5,300	51,200	7,660	3,000	9,580	3,960	3,090
6	2,740	3,220	3,560	4,100	6,100	5,600	45,800	7,480	3,500	8,770	3,690	3,240
7	2,720	2,870	3,820	3,900	6,200	5,200	37,000	7,420	3,520	8,720	3,790	3,320
8	2,750	3,240	3,960	3,600	5,900	5,000	29,200	7,330	4,730	8,690	3,970	3,390
9	2,650	3,280	4,000	3,700	5,600	5,300	29,200	7,260	5,610	8,010	3,840	3,190
10	2,550	3,340	4,420	3,800	5,000	5,300	29,700	7,310	6,580	7,530	3,880	2,820
11	2,540	3,260	3,300	3,500	4,300	5,400	29,300	7,610	7,640	6,900	3,400	2,610
12	2,500	3,130	3,380	3,400	3,500	5,300	22,000	8,580	9,780	6,040	3,220	3,170
13	2,610	3,220	3,660	4,100	3,900	5,700	20,300	9,170	14,000	5,070	2,750	3,050
14	2,570	3,340	4,250	3,700	4,800	6,590	22,700	8,930	10,500	5,070	2,930	3,240
15	3,380	3,400	4,190	3,100	4,000	6,190	14,600	8,680	11,500	4,350	2,980	4,220
16	3,760	3,500	4,170	3,200	3,000	6,040	12,500	8,590	20,400	4,110	2,940	6,090
17	4,710	3,180	3,660	3,600	4,000	6,020	21,300	8,500	26,300	3,660	2,970	7,440
18	4,730	3,120	3,460	3,800	4,800	6,090	22,200	7,830	24,000	3,460	3,190	6,480
19	4,780	3,160	3,580	4,100	4,500	5,580	19,300	7,570	21,500	3,460	2,800	5,530
20	4,520	2,720	3,540	4,500	4,200	6,030	18,400	7,420	19,600	3,370	3,150	6,030
21	3,640	2,340	3,720	4,300	4,100	6,470	14,700	7,370	16,400	3,050	3,200	5,540
22	3,500	3,140	3,720	4,000	4,200	6,590	12,000	7,360	17,900	2,660	3,320	5,880
23	2,470	3,320	2,960	4,000	4,200	6,730	11,900	7,310	13,800	2,910	3,370	5,390
24	2,620	3,360	3,200	4,200	4,700	7,790	12,900	7,260	11,300	3,370	3,430	4,320
25	2,910	3,230	3,100	4,400	5,000	8,890	12,700	7,230	10,800	3,500	3,300	4,190
26	3,140	3,340	3,100	4,500	5,200	9,310	10,700	6,960	10,300	3,700	3,300	4,070
27	3,160	3,340	3,300	4,500	5,100	9,160	10,500	6,790	9,900	3,950	3,390	3,610
28	3,160	3,260	3,200	4,600	4,900	9,480	9,830	6,740	9,850	3,970	3,440	3,640
29	3,280	3,460	3,600	4,800	-----	8,980	9,730	6,090	10,600	3,960	4,460	3,120
30	3,060	3,600	3,600	5,000	-----	9,900	10,000	6,050	15,200	3,840	4,610	2,390
31	3,120	-----	3,500	5,500	-----	18,600	-----	6,330	-----	3,770	4,490	-----
TOTAL	97,100	97,780	108,770	123,500	136,600	212,140	687,860	240,570	338,790	196,270	109,370	121,790
MEAN	3,132	3,259	3,509	3,984	4,879	6,843	22,930	7,760	11,290	6,331	3,528	4,060
MAX	4,780	3,640	4,420	5,500	6,200	18,600	51,200	10,000	26,300	17,400	4,610	7,440
MIN	2,470	2,340	2,340	3,100	3,000	4,900	9,730	6,050	3,000	2,660	2,750	2,390
CAL YR 1966: TOTAL	2,191,160			MEAN 6,003	MAX 32,600	MIN 2,000						
WAT YR 1967: TOTAL	2,470,540			MEAN 6,769	MAX 51,200	MIN 2,340						

Location.--Lat 43°25'20", long 89°43'30", in S 1/2 sec. 13, T. 11 N., R. 6 E., in Devils Lake State Park, 3 miles south of Baraboo.

Records available.--June 1922 to August 1930, June to August 1932, June 1934 to September 1967 (fragmentary).

Extremes.--Maximum gage height observed during year, 8.35 ft June 19; minimum observed, 5.40 ft Dec. 2.

1922-30, 1932, 1934-67: Maximum gage height observed, 10.6 ft June 1, 1927; minimum observed, 1.49 ft Feb. 8, 1965.

Cooperation.--Observer services furnished by Ralph T. Tuttle, custodian, Devils Lake State Park.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		6.30	5.40								7.60	
2												
3												
4							6.66		7.01			
5												
6	6.55										7.43	
7	7.05											
8								6.96		8.09		6.69
9						5.43			7.17			
10									7.49			
11		6.00							7.78		7.28	
12	7.01						6.70					
13								7.04		8.01		
14		5.80							8.15			6.67
15												
16									8.24		7.05	
17												
18												
19	6.65		5.49					7.00	8.35			6.67
20												
21										7.71		
22							6.86			7.71		6.51
23				5.52								
24	6.50							6.95				
25		5.51									6.91	
26												
27										7.64		
28									8.19			
29					-----		6.88					
30					-----							6.35
31		-----			-----		-----		-----	7.54	6.85	-----

GPO 808-828-7

5-4050. Baraboo River near Baraboo, Wis.

Location.--Lat 43°28'55", long 89°38'00", in NW 1/4 sec. 35, T. 12 N., R. 7 E., on left bank 50 ft downstream from highway bridge, 0.3 mile downstream from Rowley Creek and 4 miles east of Baraboo.

Drainage area.--600 sq mi.

Records available.--December 1913 to March 1922. September 1942 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 788.21 ft above mean sea level, datum of 1929. Dec. 18, 1913, to Mar. 31, 1922, chain gage at bridge 2.3 miles upstream at datum 7.6 ft higher. Sept. 24, 1942, to June 10, 1963, chain gage or wire-weight gage at present site and datum. June 11, 1963 to Apr. 26, 1966, graphic water-stage recorder at present site and datum.

Average discharge.--32 years (1914-21, 1942-67), 367 cfs.

Extremes.--Maximum discharge during year, 3,220 cfs Mar. 29 (gage height, 16.43 ft); minimum, 42 cfs July 19 (gage height, 6.00 ft). 1913-22, 1942-67: Maximum discharge observed, 7,900 cfs Mar. 26, 1917 (gage height, 17.5 ft, estimated, site and datum then in use), from rating curve extended above 6,000 cfs; minimum observed, 9 cfs Feb. 17, 1944 (gage height, 5.08 ft); minimum daily, 26 cfs Oct. 6, 1950.

Flood of Aug. 6, 1935, reached a stage of 15.8 ft, from floodmarks, site and datum in use in 1922 (discharge, 5,100 cfs).

Remarks.--Records good except those for winter months and no gage height record, which are fair. Diurnal regulation from four powerplants at Baraboo.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	131	140	138	120	400	165	1,700	153	165	239	93	151
2	135	153	132	120	250	165	1,320	153	138	227	114	136
3	124	160	130	120	190	155	999	164	101	240	241	124
4	119	144	130	122	160	150	689	150	99	222	196	118
5	138	146	135	125	150	140	546	145	117	204	157	116
6	141	143	140	130	135	130	438	145	99	185	127	109
7	132	145	150	140	135	130	345	141	109	180	124	116
8	120	121	170	145	140	125	293	114	128	160	131	104
9	131	177	180	135	145	130	277	119	814	156	151	108
10	113	176	180	130	140	300	258	157	1,150	152	144	101
11	122	168	170	130	140	819	245	294	1,140	145	148	105
12	117	161	160	130	135	970	204	425	1,630	142	126	106
13	147	171	145	130	140	871	104	391	1,720	143	128	98
14	148	161	130	130	140	754	181	348	1,230	135	126	116
15	160	133	125	130	145	600	220	283	817	135	111	178
16	153	136	120	125	140	460	242	218	559	134	131	411
17	156	140	115	120	140	360	394	166	653	125	119	509
18	141	142	112	115	135	280	407	175	905	88	142	442
19	192	145	112	115	135	240	339	184	1,010	91	140	294
20	178	150	109	125	130	205	287	171	1,110	100	125	205
21	146	150	115	130	130	190	261	159	1,140	81	142	175
22	171	150	115	140	127	190	241	153	741	96	147	150
23	143	154	115	160	125	240	245	123	350	122	145	147
24	135	160	110	331	125	614	237	154	261	165	184	137
25	136	170	105	1,270	125	1,180	214	118	257	201	183	131
26	166	180	100	1,450	128	1,650	199	144	256	210	156	133
27	165	185	100	1,300	140	2,160	164	141	236	181	168	119
28	153	180	105	1,150	159	2,930	151	142	281	131	163	113
29	154	160	107	1,000	-----	3,200	153	149	304	113	153	122
30	132	145	110	900	-----	2,910	163	163	272	109	168	120
31	134	-----	115	700	-----	2,300	-----	161	-----	100	160	-----
TOTAL	4,433	4,646	3,980	11,068	4,284	24,713	11,516	5,703	17,792	4,712	4,543	4,994
MEAN	143	155	128	357	153	797	384	184	593	152	147	166
MAX	192	185	180	1,450	400	3,200	1,700	425	1,720	240	241	509
MIN	113	121	100	115	125	125	104	114	99	81	93	98
CFSM	.24	.26	.21	.60	.26	1.33	.64	.31	.99	.25	.24	.28
IN.	.27	.29	.25	.69	.27	1.53	.71	.35	1.10	.29	.28	.31

CAL YR 1966: TOTAL 111,012 MEAN 304 MAX 5,200 MIN 86 CFSM .51 IN 6.88
WAT YR 1967: TOTAL 102,384 MEAN 281 MAX 3,200 MIN 81 CFSM .47 IN 6.35

Note.--No gage height record Nov. 16 to Dec. 19.

5-4065. Black Earth Creek at Black Earth, Wis.

Location.--Lat 43°08'00", long 89°44'00", in SW 1/4 sec. 25, T. 8 N., R. 6 E., on right bank, 0.7 mile east of Black Earth and 2.1 miles upstream from Vermont Creek.

Drainage area.--46.4 sq mi of which 3.6 sq mi is probably non-contributing.

Records available.--February 1954 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 812.95 ft above mean sea level, datum of 1929. Prior to Aug. 1, 1967, graphic water-stage recorder at same site and datum.

Average discharge.--13 years, 29.0 cfs.

Extremes.--Maximum discharge during year, 631 cfs Jan. 25 (gage height, 5.07 ft); minimum, 8.6 cfs Jan. 16 (gage height, 1.56 ft), result of freezeup.

1954-67: Maximum discharge, 1,750 cfs July 3, 1954 (gage height, 6.58 ft); minimum, 4.8 cfs Nov. 29, 1958 (gage height, 1.39 ft), result of freezeup.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	16	15	16	14	17	33	23	20	27	16	16
2	17	16	16	16	14	18	33	22	20	26	40	16
3	17	16	16	16	14	18	30	21	20	25	22	16
4	16	16	16	16	14	18	27	21	20	24	18	16
5	16	16	17	16	12	20	27	20	20	23	17	16
6	16	16	18	16	12	21	26	21	20	22	18	16
7	15	16	20	16	12	20	26	21	21	22	18	16
8	15	16	169	16	12	19	25	22	21	21	18	16
9	15	16	38	16	12	34	25	21	27	21	17	17
10	15	16	26	16	12	167	24	25	31	21	16	16
11	15	17	24	15	17	82	24	54	34	20	16	16
12	15	16	22	15	17	38	23	34	33	20	16	16
13	15	16	21	15	17	34	24	28	29	20	17	17
14	16	16	20	15	18	28	24	26	26	19	17	25
15	16	16	20	14	20	25	24	24	25	18	17	27
16	16	16	19	14	18	24	26	23	23	19	17	27
17	16	16	18	15	17	23	34	22	28	18	17	22
18	16	16	18	15	17	21	27	21	23	18	17	19
19	16	16	18	15	17	21	25	22	23	18	17	18
20	16	16	18	15	16	22	23	20	25	18	17	18
21	16	16	18	15	16	22	23	20	23	18	17	18
22	16	16	18	16	16	24	24	20	22	18	17	17
23	16	16	17	28	16	70	23	21	22	23	17	17
24	16	16	16	144	15	256	23	20	25	19	17	17
25	16	17	15	291	15	72	23	20	25	18	17	17
26	16	16	15	46	15	55	23	20	23	24	18	17
27	16	16	15	31	15	51	23	20	21	30	18	17
28	16	16	15	28	16	39	23	24	30	20	17	16
29	16	16	15	26	---	37	23	24	30	18	18	17
30	16	16	15	23	---	34	23	22	30	18	17	17
31	16	---	16	21	---	34	---	21	---	19	17	---
Total	492	482	724	977	426	1,364	761	723	740	645	558	536
Mean	15.9	16.1	23.4	31.5	15.2	44.0	25.4	23.3	24.7	20.8	18.0	17.9
Max	17	17	169	291	20	256	34	54	34	30	40	27
Min	15	16	15	14	12	17	23	20	20	18	16	16
Cfsm	.343	.347	.504	.679	.328	.948	.547	.502	.532	.448	.388	.386
In.	.39	.39	.58	.78	.34	1.09	.61	.58	.59	.52	.45	.43
Cal yr 1966: Total	8,327			Mean 22.8	Max 463	Min 15	Cfsm .491	In. 6.66				
Wtr yr 1967: Total	8,428			Mean 23.1	Max 291	Min 12	Cfsm .498	In. 6.75				

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12- 8	0930	3.78	294	3-10	2200	4.21	395
1-25	0200	5.07	631	3-24	1800	4.03	348

5-4070. Wisconsin River at Muscoda, Wis.

Location--Lat 43°12'00", long 90°26'25", in sec. 1, T. 8 N., R. 1 W., on left bank at bridge on State Highway 80, 0.5 mile upstream from Eagle Mill Creek and 1 mile north of Muscoda.

Drainage area--10,300 sq mi, approximately.

Records available--December 1902 to December 1903, October 1913 to September 1967. Monthly discharge only for October and November 1913, published in WSP 1308. Gage-height records collected at same site November 1908 to December 1912 are contained in reports of U. S. Weather Bureau.

Gage--Digital water-stage recorder. Datum of gage is 667.05 ft above mean sea level, datum of 1929. Prior to Nov. 22, 1929, chain gage on bridge 200 ft upstream at same datum. Nov. 22, 1929, to Mar. 15, 1930, chain gage and Mar. 16, 1930, to Apr. 21, 1964, graphic water-stage recorder at present site and datum.

Average discharge--54 years (1913-67), 8,445 cfs.

Extremes--Maximum discharge during year, 54,200 cfs Apr. 7 (gage height, 9.47 ft); minimum, 3,240 cfs Oct. 6, Nov. 14; minimum daily, 3,420 cfs Oct. 5, 12.

1902-3, 1913-67: Maximum discharge, 80,800 cfs Sept. 16, 1938 (gage height, 11.48 ft); minimum daily, 2,000 cfs Feb. 11, 1918.

Remarks--Records good except those for winter months, which are fair. Flow regulated by 23 reservoirs and many powerplants above station (see p. 112). In 1938 when the maximum of record occurred, there were 21 reservoirs above station, the two large reservoirs, Petenwell and Castle Rock not yet in existence. An average of about 10 to 15 cfs diverted out of basin through Portage canal to Fox River throughout the year.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3,620	4,130	4,880	5,000	7,600	7,100	16,300	11,300	7,850	13,500	5,020	5,690
2	3,640	4,160	4,250	5,200	8,800	6,700	19,700	11,500	7,520	16,100	4,780	5,640
3	3,600	4,270	4,200	5,000	8,500	5,880	23,700	11,500	7,750	16,600	6,080	4,430
4	3,820	4,330	3,500	4,900	8,200	6,400	26,700	11,700	6,490	17,900	4,900	4,800
5	3,420	4,680	3,900	5,000	8,200	7,000	33,900	11,300	6,320	16,100	5,450	4,470
6	3,580	4,640	4,300	4,600	8,300	7,300	45,200	9,470	6,550	13,100	5,060	4,410
7	3,780	4,570	4,000	5,200	8,300	7,200	51,200	9,500	5,980	11,800	4,980	4,390
8	3,730	4,730	4,500	5,800	8,100	7,200	50,800	9,230	5,030	10,900	5,200	4,530
9	3,680	4,370	5,900	4,300	7,800	7,300	45,100	9,270	5,510	9,980	5,110	4,450
10	3,920	4,340	5,700	5,000	7,300	7,200	36,500	9,100	10,300	10,200	5,270	4,590
11	3,480	4,460	5,600	5,000	7,000	7,800	31,800	10,900	10,200	9,660	5,200	4,380
12	3,420	4,840	5,400	4,800	6,200	8,200	31,900	10,700	11,700	8,450	4,910	4,200
13	3,890	4,530	4,800	4,700	5,200	8,400	31,300	10,400	11,500	8,390	4,630	4,100
14	3,790	3,900	4,700	4,900	4,900	8,500	28,600	10,900	13,300	7,280	4,440	5,130
15	3,670	4,810	5,400	5,800	5,700	8,600	23,900	11,300	15,700	6,520	4,290	5,330
16	3,620	4,620	5,700	4,200	6,000	8,600	23,700	10,200	13,700	6,160	4,120	6,420
17	4,070	4,400	5,600	4,100	5,600	8,600	18,800	10,400	15,600	5,500	4,260	6,780
18	4,660	4,490	5,300	4,400	5,000	8,400	17,600	10,200	19,800	5,960	4,090	8,370
19	5,360	4,340	4,850	4,800	5,200	8,300	21,800	10,500	23,400	5,310	4,860	7,870
20	5,060	4,340	5,240	4,500	5,700	8,200	24,000	9,130	26,000	4,860	4,170	8,050
21	5,840	4,310	4,810	4,500	5,900	8,400	22,500	9,300	25,200	4,860	4,120	6,480
22	4,760	4,060	4,780	6,000	6,000	8,600	20,900	9,030	23,200	4,720	4,410	7,540
23	4,270	3,660	4,450	5,800	5,900	9,000	16,300	9,030	20,300	4,150	4,510	6,660
24	4,580	4,100	4,400	5,590	5,800	9,800	14,600	9,230	19,400	4,510	4,450	6,890
25	4,090	4,590	3,700	6,400	5,800	11,000	14,100	8,930	16,200	4,420	4,330	6,510
26	3,730	4,310	4,300	7,000	6,000	12,000	14,900	8,930	13,800	4,640	4,620	5,520
27	3,640	4,550	4,500	7,600	6,200	13,200	14,100	7,910	13,000	5,000	4,450	5,900
28	3,930	4,260	4,700	7,200	6,600	14,500	13,600	8,520	14,200	4,950	5,040	5,780
29	4,270	4,740	4,800	7,400	-----	14,100	12,400	9,130	14,400	4,950	4,690	5,390
30	4,130	4,190	4,500	7,400	-----	14,300	11,600	8,310	13,200	5,190	4,740	4,510
31	3,860	-----	4,500	7,400	-----	13,700	-----	7,620	-----	4,940	5,890	-----
TOTAL	124,910	131,720	147,160	169,490	185,800	281,480	757,500	304,440	403,100	256,600	148,070	169,210
MEAN	4,029	4,391	4,747	5,467	6,636	9,080	25,250	9,821	13,440	8,277	4,776	5,640
MAX	5,840	4,840	5,900	7,600	8,800	14,500	51,200	11,700	26,000	17,900	6,080	8,370
MIN	3,420	3,660	3,500	4,100	4,900	5,880	11,600	7,620	5,030	4,150	4,090	4,100

CAL YR 1966: TOTAL 2,872,780 MEAN 7,871 MAX 32,300 MIN 3,380
 WAT YR 1967: TOTAL 3,079,480 MEAN 8,437 MAX 51,200 MIN 3,420

WISCONSIN RIVER BASIN

5-4080. Kickapoo River at La Farge, Wis.

Location--Lat 43°34'30", long 90°38'35", on east-west quarter section line in W 1/2 sec. 29, T. 13 N., R. 2 W., on left bank 10 ft upstream from bridge on State Highway 82, in La Farge, 0.3 mile upstream from Otter Creek, and 1 mile downstream from powerplant.

Drainage area--266 sq mi.

Records available--October 1938 to September 1967.

Gage--Digital water-stage recorder. Datum of gage is 782.00 ft above mean sea level, adjustment of 1912. Prior to Dec. 4, 1939, chain gage on highway bridge at same datum. Dec. 4, 1939, to May 14, 1964, graphic water-stage recorder at present site and datum.

Average discharge--29 years, 167 cfs.

Extremes--Maximum discharge during year, 6,010 cfs June 16 (gage height, 12.34 ft); minimum, 21 cfs May 20 (gage height, 0.60 ft); minimum daily, 65 cfs Sept. 29.
1938-67: Maximum discharge, 9,910 cfs Feb. 9, 1966, (gage height, 13.67 ft); minimum discharge, 1.8 cfs Mar. 24, 1951; minimum daily, 36 cfs Nov. 3, 1939.

Remarks--Records good except those for winter months, which are fair. Considerable diurnal fluctuation caused by operation of powerplant 1 mile upstream.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	103	111	84	85	131	110	233	134	78	154	96	83
2	76	108	71	86	125	115	365	136	88	154	170	82
3	91	107	89	86	120	115	342	105	83	137	116	83
4	92	101	84	86	118	115	221	105	84	135	93	86
5	99	109	88	88	118	115	185	105	88	141	96	88
6	82	108	103	90	114	115	184	102	88	122	76	80
7	92	115	131	92	112	115	182	106	103	120	111	86
8	91	117	153	92	112	110	172	110	226	119	102	81
9	91	112	160	91	113	110	154	107	1,540	125	103	83
10	91	139	108	90	114	150	152	124	508	124	104	76
11	88	122	94	91	112	310	148	219	289	120	84	86
12	103	111	98	93	110	270	139	154	353	112	94	79
13	113	108	104	93	109	220	141	123	190	104	88	83
14	114	102	121	92	110	180	166	117	120	114	87	82
15	114	97	101	92	114	160	181	116	194	102	78	212
16	143	100	106	89	112	130	137	109	3,360	102	92	181
17	131	100	104	79	111	115	146	107	1,580	104	83	105
18	110	102	107	71	114	110	136	103	324	104	110	109
19	104	105	103	83	112	120	135	118	226	97	140	100
20	104	102	99	89	114	110	134	97	180	107	92	99
21	103	101	90	92	112	110	147	93	163	101	88	102
22	99	104	85	94	112	120	143	98	163	97	85	116
23	100	124	82	101	111	130	133	92	156	94	89	76
24	106	114	78	146	109	500	124	96	163	140	93	101
25	108	124	76	1,200	104	1,900	115	88	184	93	68	91
26	106	116	82	600	105	1,600	117	97	155	88	97	79
27	102	117	78	310	106	1,500	118	96	147	95	137	117
28	112	110	78	230	109	916	111	90	183	90	134	98
29	114	93	79	176	-----	527	114	89	168	91	97	65
30	106	108	81	157	-----	584	121	92	147	91	95	92
31	107	-----	85	145	-----	425	-----	99	-----	88	86	-----
TOTAL	3,195	3,257	3,002	5,009	3,163	11,207	4,896	3,427	11,331	3,465	3,074	2,904
MEAN	103	109	96.8	162	113	362	163	111	378	112	99.2	96.8
MAX	143	124	160	1,200	131	1,900	365	219	3,360	154	170	212
MIN	76	93	71	71	104	110	111	88	78	88	68	65
CFSM	.39	.41	.36	.61	.42	1.36	.61	.42	1.42	.42	.37	.36
IN.	.45	.46	.42	.70	.44	1.57	.68	.48	1.58	.48	.43	.41

CAL YR 1966: TOTAL 59,747 MEAN 164 MAX 7,730 MIN 58 CFSM .62 IN 8.35
WAT YR 1967: TOTAL 57,930 MEAN 159 MAX 3,360 MIN 65 CFSM .60 IN 8.10

Peak discharge (base, 1,700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-25	1230	10.72	2,910	6-16	1945	12.34	6,010
6-9	0845	8.99	1,890				

5-4085. Knapp Creek near Bloomingdale, Wis.

Location.--Lat 43°40'05", long 90°46'55", in NW 1/4 sec. 30, T. 14 N., R. 3 W., on right bank, 0.4 mile upstream from confluence with West Fork Kickapoo River, 1.7 miles north of Bloomingdale, and 4 miles east of Westby.

Drainage area.--8.47 sq mi.

Records available.--October 1954 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 960 ft (from topographic map).

Average discharge.--13 years, 4.93 cfs.

Extremes.--Maximum discharge during year, 898 cfs June 16 (gage height, 4.87 ft); minimum discharge 0.4 cfs Nov. 28, result of freezeup.

1954-67: Maximum discharge, 3,710 cfs Aug. 26, 1959 (gage height, 8.76 ft) from rating curve extended above 400 cfs on basis of slope-area measurement of peak flow; minimum discharge, that of Nov. 28, 1966.

Flood in July 1954 reached a stage of about 10.5 ft from floodmarks.

Remarks.--Records good except those for winter months, which are fair. Two detention reservoirs completed during water year 1956 about three miles upstream control flood discharge from 3.88 sq mi of drainage area.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	1.8	1.4	1.5	2.1	1.8	6.8	2.8	1.3	2.9	1.7	1.5
2	1.7	1.7	1.3	1.5	2.0	1.8	18	1.7	1.3	2.6	3.0	1.5
3	1.7	1.8	1.3	1.5	1.9	1.7	8.0	1.6	1.3	2.3	1.8	1.5
4	1.7	2.0	1.5	1.5	1.9	1.7	6.4	1.6	1.3	2.2	1.6	1.5
5	1.6	1.8	1.7	1.5	1.9	1.7	5.4	1.6	1.4	2.0	1.6	1.5
6	1.6	1.8	2.0	1.6	1.9	1.6	4.6	1.6	1.5	1.8	2.3	1.5
7	1.7	2.2	2.3	1.6	1.9	1.6	4.0	1.8	3.8	1.8	2.2	1.5
8	1.7	2.0	2.6	1.6	1.9	1.6	3.5	1.8	3.5	2.0	2.2	1.5
9	1.8	2.2	2.7	1.6	1.9	1.6	4.0	1.6	63	2.0	2.0	1.5
10	1.8	2.2	2.5	1.6	1.9	1.7	3.0	3.0	11	1.8	1.7	1.5
11	1.8	2.0	2.0	1.6	1.9	6.0	2.8	3.8	7.2	1.6	1.6	1.5
12	2.0	1.8	2.0	1.6	1.9	9.2	3.0	2.6	5.2	1.6	1.6	1.5
13	3.1	1.8	1.9	1.6	1.9	6.0	3.5	2.2	2.6	1.6	1.6	1.6
14	2.7	2.0	2.0	1.6	1.9	4.1	4.6	2.0	2.0	1.5	1.6	3.5
15	8.4	1.8	3.0	1.6	1.9	3.3	3.2	2.0	15	1.5	1.6	5.4
16	2.5	2.0	3.5	1.5	1.9	2.7	3.0	1.8	119	1.5	1.6	2.3
17	2.2	2.0	3.2	1.3	1.9	2.4	3.0	1.7	16	1.5	1.7	2.0
18	2.0	1.8	2.7	1.3	1.9	2.1	2.6	1.8	8.8	1.5	2.0	1.8
19	1.8	1.8	2.5	1.4	1.9	1.9	2.4	1.5	6.4	1.5	1.8	1.7
20	1.8	2.2	2.1	1.5	1.9	1.8	2.8	1.5	4.6	1.5	1.7	2.0
21	1.8	2.2	1.7	1.6	1.9	1.8	3.8	1.5	3.8	1.5	1.7	1.8
22	1.8	2.2	1.6	2.9	1.9	2.3	2.8	1.5	3.0	1.5	1.7	1.7
23	1.7	2.3	2.7	3.5	1.9	2.5	2.4	1.6	3.0	1.5	1.6	1.7
24	1.7	2.3	2.0	18	1.8	78	2.2	1.5	4.3	1.5	1.6	1.7
25	1.7	2.3	1.6	72	1.7	76	2.2	1.5	3.0	1.5	1.6	1.7
26	1.8	2.3	1.5	12	1.7	71	2.2	1.5	2.4	1.5	2.4	2.4
27	1.8	2.2	1.4	4.5	1.8	42	2.0	1.4	2.9	1.5	3.8	2.2
28	1.8	1.2	1.3	3.3	1.8	26	2.0	1.5	2.6	1.4	1.7	1.8
29	1.7	1.8	1.4	2.8	- - - -	21	2.2	1.5	2.3	1.4	1.6	1.7
30	1.8	1.7	1.4	2.6	- - - -	24	2.4	1.5	2.6	1.4	1.5	1.8
31	2.0	- - - -	1.5	2.4	- - - -	12	- - - -	1.3	- - - -	1.5	1.5	- - - -
Total	64.9	59.2	62.3	156.1	52.8	412.9	118.8	56.3	306.1	52.9	57.6	56.8
Mean	2.09	1.97	2.01	5.04	1.89	13.3	3.96	1.82	10.2	1.71	1.85	1.89
Max	8.4	2.3	3.5	72	2.1	78	18	3.8	119	2.9	3.8	5.4
Min	1.6	1.2	1.3	1.3	1.7	1.6	2.0	1.3	1.3	1.4	1.5	1.5
Cfsm	.247	.233	.237	.595	.223	1.57	.468	.215	1.20	.202	.220	.223
In.	.28	.26	.27	.69	.23	1.81	.52	.25	1.34	.23	.25	.25
Cal yr 1966: Total	1,542.5		Mean	4.23	Max	336	Min	0.6	Cfsm	.499	In.	6.77
Wtr yr 1967: Total	1,456.7		Mean	4.00	Max	119	Min	1.2	Cfsm	.472	In.	6.38

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	2000	3.36	233	6-9	0500	3.31	345
3-24	1645	2.95	250	6-16	0030	4.87	898
3-26	1800	2.81	219				

5-4100. Kickapoo River at Gays Mills, Wis.

Location.--Lat 43°19'10", long 90°51'10", in NE 1/4 sec. 28, T. 10 N., R. 4 W., on upstream side of State Highway 171 bridge 300 ft downstream from dam in Gays Mills and 3.3 miles downstream from Taintor Creek.

Drainage area.--616 sq mi.

Records available.--December 1913 to September 1934. Monthly discharge only July to September 1934, published in WSP 1308. April 1964 to September 1967.

Gage.--Wire-weight gage read twice-daily. Datum of gage is 685.75 ft above mean sea level, datum of 1929. Prior to July 25, 1964, chain gage at present site and datum.

Average discharge.--23 years (1914-34, 1964-67), 422 cfs.

Extremes.--Maximum discharge during year, 3,540 cfs June 18 (gage height, 13.18 ft); minimum observed, 146 cfs Dec. 2 (gage height, 3.03 ft).

1913-34, 1964-67: Maximum discharge, 10,600 cfs Feb. 10, 1966 (gage height 16.00 ft); minimum observed, 48 cfs July 27, 1931 (gage height, 0.51 ft).

Flood in 1913 reached a stage of 15.2 ft, from floodmark (backwater from ice probable).

Flood in 1961 reached a stage of 16.37 ft, from floodmark.

Remarks.--Records good except those for winter months, which are fair. Occasional regulation caused by dam 300 ft upstream.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	258	264	220	225	410	260	1,000	313	230	396	236	214
2	259	260	172	225	380	270	800	311	252	396	243	212
3	256	260	220	225	360	270	720	322	235	365	403	212
4	270	259	240	225	330	270	660	303	235	342	270	214
5	246	265	250	220	320	270	560	295	242	339	242	212
6	247	263	260	220	310	270	510	292	247	328	238	208
7	244	278	280	225	300	275	470	291	244	312	235	206
8	232	274	305	230	300	280	450	291	290	309	250	205
9	237	283	315	230	290	285	424	290	1,310	311	258	205
10	238	283	300	235	290	320	407	282	1,500	309	255	206
11	260	287	280	240	285	960	416	277	1,510	306	243	206
12	249	286	260	240	285	740	399	436	1,150	300	236	194
13	277	285	255	250	280	580	409	379	721	280	216	206
14	283	285	250	250	280	470	428	332	502	266	222	238
15	355	268	240	250	280	400	429	300	407	259	234	318
16	348	274	240	250	280	350	440	331	669	261	222	344
17	316	272	240	245	275	310	391	331	1,300	259	213	332
18	286	273	235	240	270	290	393	290	2,160	260	218	250
19	278	265	230	240	270	280	360	277	2,210	250	224	243
20	270	261	230	240	270	290	375	274	981	238	276	238
21	272	269	230	245	270	280	317	247	561	254	230	222
22	261	268	230	250	260	300	326	252	464	246	218	222
23	253	270	220	260	260	350	358	261	446	242	226	214
24	252	292	215	290	260	700	355	266	436	234	218	214
25	261	287	210	800	260	2,060	342	260	438	266	222	234
26	261	303	210	940	260	2,690	326	261	424	270	217	236
27	263	306	205	1,100	260	3,270	326	250	407	266	226	234
28	263	287	210	1,050	260	2,860	313	250	423	270	263	238
29	260	250	215	800	- - - -	2,040	318	252	410	265	236	236
30	261	255	220	580	- - - -	1,570	318	252	396	283	234	222
31	260	- - - -	225	470	- - - -	1,160	- - - -	229	- - - -	289	218	- - - -
Total	8,276	8,232	7,412	11,490	8,155	24,720	13,340	8,997	20,800	8,971	7,442	6,935
Mean	267	274	239	371	291	797	445	290	693	289	240	231
Max	355	306	315	1,100	410	3,270	1,000	436	2,210	396	403	344
Min	232	250	172	220	260	260	313	229	230	234	213	194
Cfsm	.433	.445	.388	.602	.472	1.29	.722	.471	1.13	.469	.390	.375
In.	.50	.50	.45	.69	.49	1.49	.81	.54	1.26	.54	.45	.42
Cal yr 1966 : Total	154,736		Mean	424	Max	9,790	Min	172	Cfsm	.688	In.	9.35
Wtr yr 1967 : Total	134,770		Mean	369	Max	3,270	Min	172	Cfsm	.599	In.	8.14

5-4105. Kickapoo River at Steuben, Wis.

Location.--Lat' 43°11'25", long 90°52'30", in NW 1/4 sec. 8, T. 8 N., R. 4 W., on right bank 0.8 mile upstream from Duffy Creek, 1 mile northwest of Steuben and 14 miles upstream from mouth.

Drainage area.--690 sq mi.

Records available.--May 1933 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 657.82 ft above mean sea level, adjustment of 1912. Prior to Oct. 20, 1938, chain gage at site 1 mile upstream at datum 1.3 ft higher. Oct. 20, 1938, to May 24, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--34 years, 455 cfs.

Extremes.--Maximum discharge during year, 3,400 cfs Mar. 28 (gage height, 9.37 ft); minimum, 200 cfs Dec. 2 (gage height, 2.50 ft), result of freezeup.

1933-67: Maximum discharge, 10,800 cfs Mar. 28, 1961 (gage height, 12.33 ft); minimum observed, 161 cfs Aug. 9, 1936 (gage height, 0.76 ft, site and datum then in use).

Remarks.--Records good except those for winter months, which are fair.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	318	287	270	260	470	310	1,470	341	256	441	265	250
2	305	295	230	260	440	320	961	345	256	431	262	243
3	313	294	250	260	400	320	834	348	244	426	400	239
4	306	290	285	260	375	320	854	330	240	404	368	235
5	310	292	305	260	360	320	670	315	242	388	306	241
6	313	298	310	270	350	320	594	313	262	377	269	238
7	308	305	335	270	340	320	557	312	270	368	276	232
8	305	308	380	275	340	320	528	324	285	353	289	232
9	309	313	400	280	330	330	510	319	589	350	295	245
10	306	320	365	280	330	400	493	331	1,130	348	286	237
11	305	318	340	280	330	620	468	448	1,250	350	277	235
12	312	312	305	280	325	860	447	475	1,360	333	270	228
13	316	318	298	280	320	680	451	449	1,150	323	261	235
14	344	309	295	280	320	570	459	383	704	314	252	257
15	375	305	295	285	330	470	473	354	539	303	253	335
16	410	302	290	282	325	400	481	338	563	305	254	381
17	378	306	290	280	320	350	479	324	1,060	306	246	400
18	346	305	285	280	315	320	437	316	1,210	296	245	345
19	333	305	280	280	315	325	422	308	1,580	293	244	285
20	319	299	275	280	310	320	419	297	2,420	288	281	289
21	313	304	270	285	309	320	422	291	1,390	284	286	285
22	315	305	270	295	310	330	426	279	651	288	253	290
23	305	315	258	310	310	380	419	280	538	285	253	283
24	292	320	255	335	310	620	391	281	508	277	248	285
25	295	330	245	580	310	1,350	381	275	497	290	239	264
26	294	340	245	980	310	2,460	361	272	487	302	250	275
27	292	342	240	1,080	310	3,190	357	264	465	270	241	278
28	294	334	240	1,200	310	3,310	349	266	470	261	281	274
29	291	300	240	1,130	-----	2,990	343	271	465	266	309	289
30	285	310	245	730	-----	2,730	343	276	457	258	283	277
31	291	-----	250	550	-----	2,260	-----	263	-----	258	-----	-----
TOTAL	9,798	9,231	8,841	12,957	9,424	28,135	15,799	9,988	21,538	10,036	8,500	8,182
MEAN	316	309	285	418	337	908	527	322	718	324	274	273
MAX	410	342	400	1,200	470	3,310	1,470	475	2,420	441	400	400
MIN	285	287	230	260	309	310	343	263	240	258	239	228
CFSM	.46	.45	.41	.61	.49	1.32	.76	.47	1.04	.47	.40	.40
IN.	.53	.50	.48	.70	.51	1.52	.85	.54	1.16	.54	.46	.44
CAL YR 1966: TOTAL 168,837				MEAN 463	MAX 10,000	MIN 230	CFSM .67	IN 9.10				
WAT YR 1967: TOTAL 152,479				MEAN 418	MAX 3,310	MIN 228	CFSM .61	IN 8.22				

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-28	0800	9.37	3,400	6-20	0500	9.21	2,600

Reservoirs in Wisconsin River Basin

The 24 reservoirs listed below are used to stabilize the flow of the Wisconsin and Tomahawk Rivers for power utilization and are also used for recreational purposes. The first 21 reservoirs are owned and operated by the Wisconsin Valley Improvement Co., which furnished the gage heights and capacity tables. Revised capacity tables for all 21 reservoirs were received from the company in April 1957 and were used to compute month-end usable contents beginning Sept. 30, 1955. Another revised capacity table for Burnt Rollways Reservoir was used to compute month-end usable contents beginning Sept. 30, 1964. Lake Dubay is owned by the Consolidated Water Power Co. Petenwell and Castle Rock are owned and operated by the Wisconsin River Power Co., which furnished the gage heights and capacity tables for these two reservoirs. Month-end contents are computed by the U. S. Geological Survey. The usable capacity of these reservoirs is usually less in summer than in winter because the allowable summer drawdown is limited in the interest of riparian property owners. There are occasionally formal or informal changes in capacity and in minimum drawdown levels. Usable capacity figures listed below are for winter regulation.

- 5-3901. Lac Vieux Desert on Wisconsin River, lat 46°07'20", long 89°09'10", in SE 1/4 NE 1/4 sec. 17, T. 42 N., R. 11 E., 4.8 miles northwest of Phelps, Wis., used as a reservoir since 1908, has a usable capacity of 652,000,000 cu ft. Datum of gage is 1,679.53 ft above mean sea level, datum of 1929.
- 5-3901.5. Twin Lakes on Twin River, lat 46°01'20", long 89°10'10", in SW 1/4 NE 1/4 sec. 19, T. 41 N., R. 11 E., 5.0 miles southwest of Phelps, Wis., used as a reservoir since 1908, has a usable capacity of 313,000,000 cu ft. Altitude of gage is 1,640 ft (from river-profile map).
- 5-3902. Buckatabon Lakes on Buckatabon Creek, lat 46°01'15", long 89°18'35", in SE 1/4 NE 1/4 sec. 24, T. 41 N., R. 9 E., 3.3 miles southwest of Conover, Wis., used as a reservoir since 1908, has a usable capacity of 130,000,000 cu ft. Datum of gage is 1,637.85 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3902.5. Sevenmile Lake on Sevenmile Creek, lat 45°52'30", long 89°04'10", in SE 1/4 NE 1/4 sec. 11, T. 39 N., R. 11 E., 9.1 miles southeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 93,000,000 cu ft. Datum of gage is 1,646.30 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3903. Lower Ninemile Lake on Ninemile Creek, lat 45°53'35", long 89°07'15", in NE 1/4 NW 1/4 sec. 4, T. 39 N., R. 11 E., 6.6 miles southeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 121,000,000 cu ft. Datum of gage is 1,638.27 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3903.5. Burnt Rollways Reservoir on Eagle River, lat 45°53'40", long 89°08'30", in NE 1/4 NW 1/4 sec. 5, T. 39 N., R. 11 E., 5.3 miles southeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 779,000,000 cu ft (revised). This reservoir includes 18 lakes controlled by the same dam. Altitude of gage is 1,620 ft (from river-profile map).
- 5-3904. Long Lake on Deerskin River, lat 46°02'45", long 89°02'35", in NW 1/4 SE 1/4 sec. 7, T. 41 N., R. 12 E., 2.5 miles southeast of Phelps, Wis., used as a reservoir since 1908, has a usable capacity of 400,000,000 cu ft. Datum of gage is 1,695.14 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3906. Deerskin Lake on Deerskin Creek, lat 45°59'05", long 89°09'40", in SE 1/4 sec. 31, T. 41 N., R. 11 E., 6.3 miles northeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 22,000,000 cu ft. Datum of gage is 1,640.16 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3906.5. Sugar Camp Reservoir on Sugar Camp Creek, lat 45°52'15", long 89°23'35", in NE 1/4 sec. 17, T. 39 N., R. 9 E., 7.6 miles southwest of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 471,000,000 cu ft. Datum of gage is 1,591.94 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3907. Little St. Germain Lake on Little St. Germain Creek, lat 45°53'55", long 89°27'00", in SE 1/4 sec. 35, T. 40 N., R. 8 E., 9.6 miles west of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 79,000,000 cu ft. Datum of gage is 1,611.54 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3907.5. Big St. Germain Lake on St. Germain River, lat 45°55'10", long 89°31'55", in SE 1/4 sec. 30, T. 40 N., R. 8 E., 5.0 miles south of Sayner, Wis., used as a reservoir since 1908, has a usable capacity of 202,000,000 cu ft. Datum of gage is 1,588.32 ft above mean sea level (levels by Wisconsin Department of Natural Resources).
- 5-3908. Pickarel Lake on St. Germain River, lat 45°52'20", long 89°31'45", in NE 1/4 sec. 18, T. 39 N., R. 8 E., 5.0 miles northeast of town of Lake Tomahawk, Wis., used as a reservoir since 1935, has a usable capacity of 338,000,000 cu ft. Datum of gage is 1,582.00 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3909. Rainbow Lake on Wisconsin River, lat 45°50'00", long 89°32'40", in SW 1/4 sec. 30, T. 39 N., R. 8 E., 800 ft upstream from U. S. Geological Survey river gaging station, 2.7 miles northeast of town of Lake Tomahawk, Wis., used as a reservoir since 1935, has a usable capacity of 2,181,000,000 cu ft. Datum of gage is 1,570.00 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3911. Pelican Lake on Pelican River, lat 45°31'45", long 89°12'20", in S 1/2 sec. 11, T. 35 N., R. 10 E., 2.8 miles northwest of town of Pelican Lake, Wis., used as a reservoir since 1909, has a usable capacity of 305,000,000 cu ft. Datum of gage is 1,589.98 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3913. North Pelican Lakes (includes Moen Lakes) on North Branch Pelican River, lat 45°38'05", long 89°14'35", in S 1/4 sec. 4, T. 36 N., R. 10 E., 8.0 miles east of Rhinelander, Wis., city limits, used as a reservoir since 1908, has a usable capacity of 218,000,000 cu ft. Datum of gage is 1,569.10 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3921. Minocqua Lake on Tomahawk River, lat 45°52'35", long 89°43'40", on line between secs. 10 and 15, T. 39 N., R. 6 E., 1 mile west of Minocqua, Wis., used as a reservoir since 1910, has a usable capacity of 628,000,000 cu ft. Datum of gage is 1,584.56 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3922. Squirrel Lake on Squirrel River, lat 45°50'35", long 89°54'15", in NE 1/4 sec. 30, T. 39 N., R. 5 E., 9.4 miles west of Minocqua, Wis., used as a reservoir since 1908, has a usable capacity of 182,000,000 cu ft. Datum of gage is 1,560.93 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-3923. Willow Reservoir on Tomahawk River, lat 45°42'45", long 89°50'40", in NE 1/4 sec. 10, T. 37 N., R. 5 E., 8.8 miles southwest of Hazelhurst, Wis., used as a reservoir since 1927, has a usable capacity of 3,302,000,000 cu ft. Datum of gage is 1,505.87 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

Reservoirs in Wisconsin River Basin--Continued

- 5-3925. Lake Nokomis on Tomahawk River, lat 45°32'20", long 89°44'45", in NW 1/4 sec. 9, T. 35 N., R. 6 E., at U. S. Geological Survey river gaging station, 0.5 mile east of Bradley, Wis., used as a reservoir since 1912, has a usable capacity of 1,808,000,000 cu ft. Datum of gage is 1,448.24 ft above mean sea level, datum of 1929.
- 5-3936. Spirit River Flowage on Spirit River, lat 45°26'20", long 89°44'30", in SE 1/4 sec. 9, T. 34 N., R. 6 E., 2.0 miles south of Tomahawk, Wis., used as a reservoir since 1923, has a usable capacity of 756,000,000 cu ft. Datum of gage is 1,420.53 ft above mean sea level, datum of 1929.
- 5-3996. Big Eau Pleine Reservoir on Big Eau Pleine River, lat 44°43'50", long 89°45'35", in SW 1/4 sec. 14, T. 26 N., R. 6 E., 3 miles northeast of Dancy, Wis., used as a reservoir since 1937, has a usable capacity of 4,457,000,000 cu ft. Datum of gage is 1,115.00 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).
- 5-4002.95. Lake Dubay on Wisconsin River, lat 44°39'50", long 89°39'05", in sec. 10, T. 25 N., R. 7 E., 1 1/2 miles downstream from Little Eau Pleine River and 10 1/2 miles northwest of Stevens Point, has a usable capacity of 2,117,000,000 cu ft. Datum of gage is at mean sea level (power company levels).
- 5-4014. Petenwell Flowage on Wisconsin River, lat 44°03'25", long 90°01'15", in SE 1/4 sec. 4, T. 18 N., R. 4 E., 5 1/4 miles upstream from Roche a Cri Creek, 2.4 miles west of Strong's Prairie, Wis., and 3.5 miles northeast of Necedah, Wis., used as a reservoir since 1950, has a total capacity of 19,880,000,000 cu ft. Datum of gage is 790.2 ft above mean sea level (levels by Wisconsin River Power Co.).
- 5-4032. Castle Rock Flowage on Wisconsin River, lat 43°51'50", long 89°57'35", in sec. 13, T. 16 N., R. 4 E., 4 1/2 miles upstream from Duck Creek, and 2 miles south of Germantown, Wis., and 7 miles northeast of Mauston, Wis., used as a reservoir since 1950, has a total capacity of 7,630,000,000 cu ft. Datum of gage is 790.2 ft above mean sea level (levels by Wisconsin River Power Co.).

Month-end contents, in millions of cubic feet, water year October 1966 to September 1967

	Lac Vieux Desert	Twin Lakes	Buckatabon Lake	Sevenmile Lake	Lower Ninemile Lake	Burnt Rollways Reservoir	Long Lake	Deerskin Lake
Sept. 30.....	348	249	118	85	124	738	256	13
Oct. 31.....	297	247	108	69	119	738	252	5
Nov. 30.....	278	164	64	50	109	671	156	2
Dec. 31.....	167	77	24	8	72	490	26	2
Jan. 31.....	94	0	10	0	2	102	17	0
Feb. 28.....	22	0	9	0	0	49	10	1
Mar. 31.....	90	37	34	16	64	158	4	6
Apr. 30.....	369	227	114	85	122	765	282	14
May 31.....	386	271	115	86	122	752	285	18
June 30.....	402	282	118	87	125	779	285	16
July 31.....	367	279	115	87	124	752	250	16
Aug. 31.....	352	282	117	86	123	759	232	19
Sept. 30.....	240	216	93	73	88	644	176	18

	Sugar Camp Reservoir	Little St. Germain Lake	Big St. Germain Lake	Wackerel Lake	Rainbow Lake	Pelican Lake	North Pelican Lakes	Minocqua Lake
Sept. 30.....	399	75	185	273	1,412	162	149	535
Oct. 31.....	455	57	156	237	2,045	178	123	382
Nov. 30.....	447	26	117	233	2,015	155	55	236
Dec. 31.....	367	10	81	228	1,840	120	36	122
Jan. 31.....	243	6	53	222	1,711	118	31	10
Feb. 28.....	30	2	44	171	850	60	28	5
Mar. 31.....	186	24	55	104	398	76	89	72
Apr. 30.....	447	78	174	257	2,127	228	154	336
May 31.....	407	75	156	269	2,129	219	146	425
June 30.....	415	75	156	280	2,153	254	139	571
July 31.....	407	75	162	278	1,730	225	130	484
Aug. 31.....	407	75	156	267	1,056	222	139	532
Sept. 30.....	391	58	158	278	1,006	222	116	529

	Squirrel Lake	Willow Reservoir	Lake Nokomis	Spirit Lake Flowage	Big Eau Pleine Reservoir	Lake Dubay	Petenwell Flowage	Castle Rock Flowage
Sept. 30.....	160	1,187	1,152	422	2,322	4,265	18,257	6,527
Oct. 31.....	140	1,604	1,387	664	2,088	4,239	18,530	6,765
Nov. 30.....	69	1,626	1,355	608	1,772	4,414	18,584	6,650
Dec. 31.....	0	1,191	1,190	384	1,462	4,352	18,512	6,693
Jan. 31.....	23	600	1,078	255	686	4,537	18,728	6,048
Feb. 28.....	35	82	797	97	248	4,119	17,967	4,285
Mar. 31.....	86	370	304	293	3,750	4,465	16,662	3,666
Apr. 20.....	142	2,877	1,790	751	4,443	4,763	19,502	7,296
May 31.....	164	3,268	1,754	706	4,070	4,515	18,424	6,438
June 30.....	164	3,281	1,766	718	4,405	4,379	18,854	6,786
July 31.....	161	2,778	1,626	411	3,898	4,379	18,692	6,592
Aug. 31.....	164	2,330	1,561	325	3,330	4,382	18,692	6,592
Sept. 30.....	161	1,899	1,299	379	3,079	4,301	18,266	6,357

5-4135. Grant River at Burton, Wis.

Location.--Lat 42°43'10", long 90°49'10", in sec. 23, T. 3 N., R. 4 W., on right bank at downstream side of highway bridge at Burton, 6 miles northwest of Potosi and 9.5 miles upstream from mouth.

Drainage area.--267 sq mi.

Records available.--October 1934 to September 1967. Published as "near Burton" October 1934 to September 1947. Records published for both sites March to September 1947. October 1934, monthly discharge only, published in WSP 1308.

Gage.--Water-stage recorder. Datum of gage is 606.89 ft above mean sea level, adjustment of 1912. Oct. 17, 1934, to Sept. 30, 1947, wire-weight gage at site 6 miles upstream at datum 33.18 ft higher. Mar. 18, 1947, to July 27, 1949, wire-weight gage at present site and datum.

Average discharge.--33 years, 161 cfs.

Extremes.--Maximum discharge during year, about 14,000 cfs Jan. 25 (gage height, 23.67 ft, backwater from ice); minimum, 42 cfs Sept. 2, 3, 7-13 (gage height, 4.27 ft).

1934-67: Maximum discharge, 25,000 cfs July 16, 1950 (gage height, 24.82 ft), from rating curve extended above 18,000 cfs on basis of slope-area measurement of peak flow; minimum, 21 cfs Mar. 4, 1954, result of freezeup.

Remarks.--Records good except those for winter months, which are fair.

Cooperation.--Twelve discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	65	55	52	66	70	151	93	63	59	47	44
2	61	64	45	54	62	74	137	81	62	60	58	43
3	61	64	58	58	58	140	130	75	61	58	57	43
4	61	64	66	60	54	250	116	72	61	56	52	44
5	61	64	68	64	52	220	113	72	61	56	48	44
6	60	65	72	66	50	162	111	72	63	55	51	44
7	60	66	89	70	49	140	105	73	70	54	58	43
8	60	68	195	70	48	110	101	78	81	53	55	42
9	61	72	128	66	48	90	103	77	71	54	55	42
10	61	78	83	62	48	725	104	75	92	54	51	42
11	60	70	76	62	48	2,000	102	217	95	54	48	42
12	63	61	74	64	50	778	97	140	86	52	46	42
13	71	65	72	66	54	154	101	100	77	51	46	45
14	72	63	68	66	80	100	122	91	68	50	46	99
15	73	62	63	64	450	88	110	86	66	50	45	292
16	70	64	62	58	240	80	96	82	64	49	45	151
17	66	66	62	50	180	72	97	79	84	49	57	72
18	65	64	61	44	140	70	90	77	87	49	74	61
19	69	62	61	47	110	74	85	76	69	49	55	58
20	69	61	60	54	90	88	86	72	64	49	48	56
21	66	63	60	64	80	94	94	70	64	49	46	60
22	66	63	58	80	74	77	92	69	62	54	46	57
23	65	64	56	200	71	112	84	69	60	50	54	52
24	64	66	52	1,100	68	5,000	81	71	80	49	51	50
25	64	70	54	4,000	66	1,560	80	67	102	48	48	49
26	64	69	56	330	65	309	87	64	70	48	46	49
27	64	66	58	200	65	351	94	66	64	48	46	49
28	66	64	56	140	66	187	83	66	68	49	44	49
29	64	59	56	115	-----	159	81	72	66	49	44	48
30	63	56	54	100	-----	147	81	71	60	48	45	48
31	64	-----	54	80	-----	143	-----	66	-----	47	44	-----
Total	1,995	1,948	2,132	7,606	2,532	13,624	3,014	2,539	2,141	1,600	1,556	1,860
Mean	64.4	64.9	68.8	245	90.4	439	100	81.9	71.4	51.6	50.2	62.0
Max	73	78	195	4,000	450	5,000	151	217	102	60	74	292
Min	60	56	45	44	48	70	80	64	60	47	44	42
Cfsm	.241	.243	.258	.918	.339	1.64	.375	.307	.267	.193	.188	.232
In.	.28	.27	.30	1.06	.35	1.90	.42	.35	.30	.22	.22	.26
Cal yr 1966: Total	41,673			Mean 114	Max 4,500	Min 45	Cfsm 4.27	In. 5.80				
Wtr yr 1967: Total	42,547			Mean 117	Max 5,000	Min 42	Cfsm 4.38	In. 5.93				

Peak discharge (base, 2,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-25	0500	23.67	14,000	3-24	2000	20.37	10,700
3-11	0200	20.18	10,100				

5-4140. Platte River near Rockville, Wis.

Location.--Lat 42°43'55", long 90°38'25", in SW 1/4 sec. 17, T. 3 N., R. 2 W., on right bank just downstream from highway bridge, 0.8 mile upstream from Blakely Branch, 2.2 miles east of Rockville, 4.5 miles northeast of Potosi, and 15.2 miles upstream from mouth.

Drainage area.--139 sq mi.

Records available.--October 1934 to September 1967. Monthly discharge only for October and November 1934, published in WSP 1308.

Gage.--Digital water-stage recorder. Datum of gage is 642.95 ft above mean sea level, adjustment of 1912. Prior to Oct. 1, 1941, chain gage at site 1.3 miles upstream at datum 12.55 ft higher. Oct. 1, 1941, to June 29, 1949, chain gage at present site and datum. June 30, 1949, to June 27, 1967, graphic water-stage recorder at present site and datum.

Average discharge.--33 years, 94.4 cfs.

Extremes.--Maximum discharge during year, about 8,000 cfs Jan. 24 (gage height, 13.42 ft, backwater from ice); minimum, 11 cfs Dec. 1 (gage height, 2.62 ft, from range line) result of freezeup.

1934-67: Maximum discharge, 43,500 cfs July 16, 1950 (gage height, 17.26 ft), from rating curve extended above 7,000 cfs on basis of slope-area measurement of peak flow; no flow Nov. 24, 1950.

Remarks.--Records good except those for winter months, which are fair.

Cooperation.--Twelve discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	46	37	48	58	44	98	58	48	62	46	34
2	50	46	36	48	57	50	90	53	48	61	101	34
3	50	46	35	48	54	60	86	51	48	59	40	34
4	50	46	35	46	52	74	78	51	47	58	39	34
5	48	46	37	46	50	74	75	50	48	55	37	34
6	47	46	45	45	48	70	73	50	48	54	40	34
7	47	48	63	46	47	71	69	52	56	54	41	34
8	48	49	390	47	46	72	68	56	59	55	40	34
9	49	54	100	48	46	80	68	55	52	58	39	34
10	47	56	50	47	46	480	67	54	78	55	37	34
11	46	50	46	46	46	350	63	163	127	53	36	33
12	47	47	44	44	47	180	63	89	156	51	36	34
13	53	46	43	42	53	135	69	76	71	50	36	36
14	54	46	42	40	73	98	81	71	61	50	36	62
15	53	45	41	39	170	84	70	67	56	51	36	390
16	50	46	40	38	81	81	65	63	54	51	36	85
17	49	46	40	38	69	78	64	61	434	51	36	53
18	49	45	41	38	59	76	60	59	141	53	39	48
19	51	44	43	38	52	76	58	58	102	53	37	47
20	49	44	46	39	48	76	59	54	89	52	36	42
21	48	44	47	42	44	80	63	53	83	51	35	41
22	48	45	46	46	39	85	61	52	78	51	39	40
23	46	45	46	150	37	115	55	52	74	51	50	38
24	46	46	45	2,000	35	2,820	55	52	92	49	38	37
25	46	49	44	1,400	35	361	54	52	95	48	36	37
26	46	48	44	200	36	248	58	51	75	48	36	38
27	46	46	43	130	38	197	59	50	71	49	36	40
28	46	43	44	98	40	120	55	51	142	50	36	39
29	45	41	45	78	- - - -	101	55	56	74	48	35	38
30	45	42	46	68	- - - -	96	56	53	63	48	34	38
31	46	- - - -	47	63	- - - -	95	- - - -	50	- - - -	48	34	- - - -
Total	1,495	1,391	1,751	5,146	1,506	6,627	1,995	1,863	2,670	1,627	1,230	1,556
Mean	48.2	46.4	56.5	166	53.8	214	66.5	60.1	89.0	52.5	35.7	51.9
Max	54	56	390	2,000	170	2,820	98	163	434	62	101	390
Min	45	41	35	38	35	44	54	50	47	48	34	33
Cfsm	.347	.334	.406	1.19	.387	1.54	.478	.432	.640	.378	.786	.373
In.	.40	.37	.47	1.38	.40	1.77	.53	.50	.71	.44	.33	.42
Cal yr 1966: Total	31,731			Mean 86.9	Max 2,640	Min 35	Cfsm .625	In. 8.50				
Wtr yr 1967: Total	28,857			Mean 79.1	Max 2,820	Min 33	Cfsm .569	In. 7.72				

Peak discharge (base, 2,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	ab 2200	13.42	ab 8,000	3-24	1930	11.42	6,760

5-4150. Galena River at Buncombe, Wis.

Location.--Lat 42°30'50", long 90°22'40", near center of sec. 33, T. 1 N., R. 1 E., on left bank at Buncombe, 0.6 mile upstream from Coon Branch, 1.5 miles upstream from Scrabble Branch, 2 miles upstream from Wisconsin-Illinois State line, and 3.5 miles southeast of Hazel Green.

Drainage area.--128 sq mi.

Records available.--September 1939 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 682.77 ft above mean sea level, adjustment of 1912 (Corps of Engineers bench mark). Prior to Dec. 1, 1939, wire-weight gage at same site and datum. Dec. 2, 1939, to June 19, 1967, graphic water-stage recorder at same site and datum.

Average discharge.--28 years, 73.8 cfs.

Extremes.--Maximum discharge during year, 4,540 cfs Jan. 25 (gage height, 12.31 ft); minimum discharge, 16 cfs July 25, 29, 30, Aug. 1.

1939-67: Maximum discharge, 12,400 cfs Feb. 20, 1953 (gage height, 15.68 ft), from rating curve extended above 8,100 cfs on basis of slope-area measurement of peak flow; minimum, 0.8 cfs Mar. 3, 1954.

Flood in February 1937 reached a stage of about 17.1 ft, from information by local resident (discharge, 18,000 cfs, from rating curve extended above 8,100 cfs by logarithmic plotting and on basis of slope-area measurement at gage height 15.68 ft for peak of Feb. 20, 1953).

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	28	25	19	32	35	80	51	23	27	18	19
2	23	28	24	20	31	37	63	38	24	29	25	18
3	27	27	23	20	30	60	57	32	22	27	34	20
4	27	28	23	19	29	294	49	32	24	26	25	20
5	27	28	24	19	28	130	47	31	24	27	24	21
6	27	28	27	20	28	81	45	29	25	26	27	20
7	27	34	36	20	27	60	43	32	46	25	33	19
8	27	34	420	20	27	47	40	40	35	24	26	20
9	27	43	220	20	27	65	45	34	62	27	23	19
10	27	44	100	20	27	334	40	35	170	29	21	19
11	27	35	74	20	28	212	35	104	192	28	20	20
12	28	34	60	19	30	65	35	55	66	27	20	19
13	34	31	54	18	33	50	42	47	44	24	23	19
14	40	34	47	18	167	38	53	43	40	24	20	426
15	38	28	36	18	503	34	45	40	37	22	19	275
16	34	28	29	18	60	32	43	39	39	24	18	113
17	32	28	31	18	48	31	49	35	110	27	19	47
18	31	28	31	19	39	30	40	31	66	131	25	38
19	35	27	30	20	34	30	38	31	44	28	23	34
20	34	27	29	28	32	47	40	28	39	22	21	35
21	32	27	27	33	30	38	53	27	35	21	20	33
22	32	27	25	45	27	86	61	25	35	21	21	30
23	32	28	21	760	26	528	46	27	31	20	22	28
24	32	28	19	1,870	25	1,410	43	27	49	21	19	28
25	31	30	19	959	25	190	39	26	52	18	19	28
26	31	37	19	141	27	98	45	24	35	20	22	31
27	28	33	19	76	30	101	48	24	31	22	21	35
28	32	32	19	58	37	70	39	35	41	20	22	29
29	30	29	19	48	---	61	39	34	33	19	21	28
30	28	27	19	40	---	59	42	31	31	17	20	28
31	32	---	19	34	---	63	---	24	---	18	19	---
Total	939	920	1,568	4,457	1,487	4,416	1,384	1,111	1,505	841	690	1,519
Mean	30.3	30.7	50.6	144	53.1	142	46.1	35.8	50.2	27.1	22.3	50.6
Max	40	44	420	1,870	503	1,410	80	104	192	131	34	426
Min	23	27	19	18	25	30	35	24	22	17	18	18
Cfsm	.237	.240	.395	1.12	.415	1.11	.360	.280	.392	.212	.174	.395
In.	.27	.27	.46	1.29	.43	1.28	.40	.32	.44	.24	.20	.44
Cal yr 1966: Total	20,597		Mean 56.4	Max 1,500	Min 19	Cfsm .441	In. 5.98					
Wtr yr 1967: Total	20,837		Mean 57.1	Max 1,870	Min 17	Cfsm .446	In. 6.04					

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-25	0230	12.31	4,540	3-24	1630	10.99	3,200

5-4155. East Fork Galena River at Council Hill, Ill.

Location.--Lat 42°28'05", long 90°20'20", in W 1/2 sec. 31, T. 29 N., R. 2 E., on left bank at Council Hill, 3 miles upstream from mouth and 6 miles northeast of Galena. Records include flow of unnamed creek which enters just below gage.

Drainage area.--20.1 sq mi, includes that of unnamed creek.

Records available.--September 1939 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 686.59 ft above mean sea level, adjustment of 1912 (Corps of Engineers benchmark). Prior to Dec. 1, 1939, wire-weight gage at same site and datum.

Average discharge.--28 years, 12.4 cfs.

Extremes.--Maximum discharge during year, 2,370 cfs July 17 (gage height, 8.34 ft); minimum 1.4 cfs Jan. 26 (result of freezeup) 1939-67: Maximum discharge, 16,600 cfs Apr. 29, 1947 (gage height, 15.3 ft, from floodmarks), from rating curve extended above 1,500 cfs on basis of slope-area measurements of peak flows at gage heights 9.33 and 15.3 ft and contracted-opening measurements at gage height 9.85 and 15.3 ft; minimum, 0.3 cfs June 22, 1940.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	5.7	4.7	4.4	2.9	3.7	10	7.9	4.9	4.9	4.0	3.2
2	6.0	5.7	4.4	4.6	2.9	9.0	9.1	5.4	4.9	4.6	5.2	3.5
3	5.7	5.7	4.2	4.6	3.0	30	7.9	5.2	4.0	4.3	3.8	3.5
4	6.0	5.7	4.6	4.4	3.4	18	6.6	5.2	4.6	4.3	3.2	3.2
5	6.0	5.7	5.0	4.2	3.1	11	6.6	5.2	4.3	4.0	4.0	3.0
6	6.0	5.7	5.5	4.5	3.1	8.1	7.2	5.2	4.9	4.6	7.2	3.2
7	6.0	5.7	10	4.8	3.2	6.8	6.0	5.4	10	4.0	5.2	3.5
8	5.2	5.7	89	5.2	3.5	8.0	6.0	6.0	6.6	4.0	4.0	3.5
9	5.4	9.7	30	5.3	3.7	10	7.9	5.4	6.0	4.0	4.0	4.0
10	5.4	6.6	8.6	5.0	3.4	31	6.0	12	22	4.3	4.0	3.8
11	5.4	5.7	6.6	4.9	3.2	11	5.7	24	4.3	5.2	3.5	3.8
12	5.4	5.4	5.5	4.8	3.3	8.3	5.7	10	14	4.9	3.8	4.3
13	5.7	5.4	4.9	4.6	3.6	6.8	6.6	8.5	8.5	4.0	4.0	5.4
14	5.7	5.4	4.4	4.3	100	5.9	7.2	7.2	5.7	4.3	4.0	156
15	5.7	5.4	3.9	4.1	17	5.3	6.0	6.6	5.4	4.0	3.8	24
16	4.9	5.4	4.2	4.2	10	4.9	10	6.0	5.7	3.8	3.8	7.9
17	5.2	5.4	4.6	4.2	8.0	4.7	8.5	5.4	17	86	4.6	5.2
18	5.2	5.4	5.0	4.4	6.1	4.7	5.7	5.4	7.2	92	5.4	4.9
19	5.4	5.4	5.3	5.1	4.8	4.9	5.4	5.2	6.0	6.6	4.3	5.2
20	5.7	5.4	5.4	5.5	4.0	5.3	7.2	4.6	5.7	5.7	4.0	5.2
21	5.7	5.4	5.1	6.3	3.5	5.9	12	4.6	5.2	5.2	3.8	6.0
22	5.7	5.4	5.0	69	3.2	15	14	4.3	5.2	4.9	4.0	5.7
23	5.7	5.4	4.8	60	2.9	63	8.5	4.9	5.7	4.9	4.3	6.0
24	5.7	5.4	4.7	150	2.7	138	7.9	4.6	13	4.9	4.0	7.2
25	5.7	6.0	4.6	9.0	2.8	19	6.0	4.6	8.5	4.9	3.5	9.7
26	5.7	9.9	4.5	3.8	2.8	16	8.5	4.6	5.2	4.9	4.0	18
27	5.7	7.0	4.4	3.5	3.0	14	6.6	4.6	4.9	5.2	3.8	23
28	5.7	5.9	4.3	3.2	3.2	10	5.2	7.2	8.5	4.9	3.5	8.5
29	5.7	5.4	4.1	3.1	- - - - -	9.1	5.7	5.4	5.2	5.4	4.0	9.7
30	5.7	5.1	4.1	3.0	- - - - -	9.1	6.6	5.2	4.9	5.4	4.0	16
31	6.0	- - - - -	4.2	2.9	- - - - -	9.7	- - - - -	5.2	- - - - -	4.0	3.5	- - - - -
Total	175.0	177.1	265.6	406.9	216.3	506.2	222.3	201.0	256.7	314.1	127.2	366.1
Mean	5.65	5.90	8.57	13.1	7.72	16.3	7.41	6.48	8.56	10.1	4.14	12.2
Max	6.0	9.9	89	150	100	138	14	24	43	92	7.2	156
Min	4.9	5.1	3.9	2.9	2.7	3.7	5.2	4.3	4.0	3.8	3.2	3.0
Cfsm	.281	.294	.426	.652	.384	.811	.369	.322	.426	.502	.206	.607
In.	.32	.33	.49	.75	.40	.94	.41	.37	.47	.58	.24	.68
Cal yr 1966: Total	4,140.5			Mean 11.3	Max 254	Min 3.5	Cfsm .562	In. 7.66				
Wtr yr 1967: Total	3,235.5			Mean 8.86	Max 150	Min 2.7	Cfsm .441	In. 5.98				

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-14	1630	7.44	1,200	9-14	0530	7.14	1,390
7-17	2345	8.34	2,370				

5-4230. West Branch Rock River near Waupun, Wis.

Location.--Lat 43°40'05", long 88°39'10", in SW 1/4 sec. 24, T. 14 N., R. 15 E., on right bank 700 ft downstream from bridge on U. S. Highway 151, 4 miles upstream from South Branch Rock River, and 4.5 miles northeast of Waupun.

Drainage area.--41.4 sq mi.

Records available.--January 1949 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 870.53 ft above mean sea level, datum of 1929.

Average discharge.--18 years, 20.2 cfs.

Extremes.--Maximum discharge during year, about 130 cfs Mar. 12 (gage height, 4.45 ft, backwater from ice); minimum daily, 0.2 cfs Sept. 4, 5, 25, 26, 28, 29.

1949-67: Maximum discharge, 949 cfs Mar. 27, 1950 (gage height, 6.56 ft); no flow Dec. 5, 1949, Feb. 6-13, 1959, Dec. 20-22, 1963, and many days in 1964-65.

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	1.1	1.8	1.4	5.6	2.0	41	13	3.6	3.4	0.9	0.6
2	1.1	1.2	1.2	1.5	5.4	2.0	40	11	3.2	2.9	1.0	.4
3	.9	1.2	1.1	1.5	5.2	2.0	37	9.6	3.2	2.9	.9	.3
4	1.2	1.2	1.1	1.5	5.0	2.1	27	8.9	2.9	2.7	.9	.2
5	1.2	1.2	1.2	1.6	4.8	2.2	25	8.2	2.9	2.4	.8	.2
6	1.1	1.2	1.6	1.7	4.4	2.4	37	8.2	2.9	2.2	.9	.3
7	1.1	1.2	2.1	1.7	4.2	2.6	32	8.2	3.4	2.1	.9	.5
8	1.1	1.3	4.4	1.6	3.9	2.8	26	8.2	4.1	2.0	1.0	.5
9	1.1	1.4	3.3	1.6	3.7	3.1	25	7.9	5.1	2.0	.9	.4
10	1.1	1.4	2.7	1.6	3.5	9.5	22	9.2	6.2	2.0	.9	.3
11	1.1	1.5	2.3	1.6	3.1	4.6	19	25	8.9	1.8	.9	.3
12	1.2	1.5	2.2	1.5	2.8	90	17	26	13	1.5	.8	.3
13	1.4	1.4	2.2	1.5	2.7	110	18	20	17	1.4	.7	.3
14	1.3	1.4	2.1	1.5	2.2	70	20	17	11	1.4	.7	.3
15	1.6	1.4	2.1	1.8	2.2	37	19	15	7.5	1.4	.7	.4
16	1.4	1.4	2.1	2.5	2.3	25	19	13	5.9	1.4	.7	.5
17	1.3	1.4	2.1	2.5	2.2	17	52	11	7.2	1.2	.7	.8
18	1.3	1.4	2.0	1.7	2.0	11	36	9.6	5.9	1.2	.7	.8
19	1.4	1.4	1.8	1.6	1.9	9.8	26	8.9	4.9	1.1	.7	.4
20	1.2	1.4	1.7	1.5	1.8	8.4	21	7.9	4.1	1.0	.8	.4
21	1.2	1.5	1.7	1.6	1.8	7.0	20	7.2	3.6	1.0	1.2	.5
22	1.2	1.6	1.6	1.7	1.8	6.0	22	6.9	3.6	.9	.9	.3
23	1.1	1.6	1.5	2.3	1.9	6.6	19	6.9	3.2	1.0	.7	.5
24	1.2	1.6	1.4	4.6	2.1	8.2	16	6.9	4.1	.9	.6	.5
25	1.2	1.7	1.2	10	2.1	26	14	6.4	5.6	.8	.9	.2
26	1.2	1.7	1.2	9.0	2.1	100	13	5.6	5.1	1.1	1.5	.2
27	1.1	1.8	1.2	8.2	2.0	74	12	5.1	4.1	1.7	1.3	.3
28	1.2	2.2	1.2	7.6	2.0	50	11	4.6	4.6	1.2	1.5	.2
29	1.1	2.0	1.2	6.6	- - - -	40	11	4.9	4.6	1.1	1.1	.2
30	1.1	1.7	1.2	6.2	- - - -	36	12	4.9	4.1	1.0	.9	.3
31	1.1	- - - -	1.3	6.0	- - - -	34	- - - -	4.1	- - - -	.9	.8	- - - -
Total	36.7	44.0	55.8	97.2	84.7	842.7	709	309.3	165.5	49.6	27.9	11.4
Mean	1.18	1.47	1.80	3.14	3.02	27.2	23.6	9.98	5.52	1.60	.90	.38
Max	1.6	2.2	4.4	10	5.6	110	52	26	17	3.4	1.5	0.8
Min	0.9	1.1	1.1	1.4	1.8	2.0	11	4.1	2.9	0.8	0.6	0.2
Cfsm	.029	.036	.043	.076	.073	.657	.570	.241	.133	.039	.022	.009
In.	.03	.04	.05	.09	.08	.76	.64	.28	.15	.04	.03	.01
Cal yr 1966: Total	9,641.8 Mean 26.4 Max 735 Min 0.4 Cfsm .638 In. 8.67											
Wtr yr 1967: Total	2,433.8 Mean 6.67 Max 110 Min 0.2 Cfsm .161 In. 2.20											

Peak discharge (base, 250 cfs).--No peak above the base.

5-4235. South Branch Rock River at Waupun, Wis.

Location.--Lat 43°38'30", long 88°43'15", in NW 1/4 sec. 33, T. 14 N., R. 15 E., on left bank 100 ft upstream from U. S. Highway 151 at Waupun and 3 miles upstream from mouth.

Drainage area.--62.8 sq mi.

Records available.--October 1948 to September 1967. Monthly discharge only for October 1948, published in WSP 1308.

Gage.--Water-stage recorder. Datum of gage is 863.46 ft above mean sea level, datum of 1929.

Average discharge.--19 years, 24.2 cfs.

Extremes.--Maximum discharge during year, 189 cfs Mar. 27 (gage height, 3.78 ft); minimum daily 0.2 cfs Aug. 13, 14, Sept. 4, 5, 11.

1948-67: Maximum discharge, 1,500 cfs Apr. 3, 1959 (gage height, 7.97 ft), from rating curve extended above 650 cfs; no flow at times in 1949, 1953-54, 1958-59, 1963-64.

Remarks.--Records fair except those for winter months or those below 1.0 cfs, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	0.8	1.1	0.9	7.0	2.2	65	19	5.8	5.5	1.0	1.1
2	.6	.8	.9	1.0	6.6	2.2	61	16	3.8	4.8	2.1	.6
3	.8	.8	.7	1.3	6.4	2.1	52	14	2.5	3.1	1.1	.3
4	1.4	.8	.6	1.5	6.2	2.0	40	13	2.2	2.5	1.0	.2
5	1.3	.8	.6	1.6	5.8	2.3	39	13	2.9	2.1	.6	.2
6	1.2	.8	2.5	1.8	5.6	2.8	51	12	3.4	1.4	.5	.3
7	1.1	.8	2.2	1.7	5.2	3.5	40	12	5.5	2.7	.7	.8
8	1.1	2.2	7.0	1.5	4.8	4.0	32	13	5.8	1.9	1.3	1.1
9	.8	3.4	5.0	1.5	4.5	7.0	32	14	13	1.4	1.3	1.1
10	.8	2.5	4.0	1.5	4.2	20	31	17	14	1.4	1.2	.6
11	1.0	1.9	3.4	1.6	3.4	90	27	37	13	1.4	1.1	.2
12	1.0	1.6	3.1	1.6	2.9	60	24	31	25	1.1	.5	.6
13	1.8	1.4	2.8	1.7	3.8	80	25	25	22	1.2	.2	1.4
14	2.2	1.2	2.0	1.6	4.5	50	27	21	15	1.3	.2	1.8
15	5.5	1.1	1.7	1.5	4.2	35	24	19	12	1.2	.3	2.0
16	2.0	1.0	1.6	1.9	4.5	30	31	17	11	.8	.6	1.8
17	1.5	.9	1.5	2.4	3.5	27	56	14	9.6	1.1	.6	.9
18	1.3	.8	1.4	5.0	2.4	23	39	13	8.2	1.2	.6	.8
19	1.5	.8	1.5	2.6	2.2	19	31	12	7.3	1.4	1.5	1.0
20	1.3	.8	1.5	2.0	2.3	19	27	10	7.3	1.5	.6	2.1
21	1.2	.8	1.4	1.4	2.4	18	27	9.2	6.5	1.6	.4	1.7
22	1.2	1.1	1.2	.9	2.5	17	28	9.2	5.5	1.1	.6	.8
23	1.1	1.2	1.1	6.1	2.4	22	24	9.2	4.8	2.4	1.2	1.4
24	1.1	1.2	.9	8.0	2.6	46	22	9.2	9.6	1.3	2.0	1.4
25	1.0	2.1	.7	25	2.6	117	20	9.2	8.2	2.1	1.1	.8
26	1.0	1.5	.6	17	2.5	165	18	8.2	7.3	6.4	2.1	2.1
27	.9	1.2	.7	12	2.4	171	17	6.1	7.7	4.8	2.4	4.5
28	.9	1.2	.9	10	2.3	115	16	5.5	8.2	2.4	1.0	3.5
29	.9	1.2	1.0	8.6		81	15	5.8	6.8	1.5	2.4	2.8
30	.8	1.2	1.1	7.8		64	15	5.5	6.1	.6	1.7	1.2
31	.8		.9	7.2		58		6.1		1.0	1.1	
Total	40.2	37.9	55.6	140.2	109.7	1,355.1	956	425.2	260	64.2	33	39.1
Mean	1.30	1.26	1.79	4.52	3.92	43.7	31.9	13.7	8.67	2.07	1.06	1.30
Max	5.5	3.4	7.0	25	7.0	171	65	37	25	6.4	2.4	4.5
Min	0.6	0.8	0.6	0.9	2.2	2.0	15	5.5	2.2	0.6	0.2	0.2
Cfsm	.021	.020	.029	.072	.062	.696	.508	.218	.138	.033	.017	.021
In.	.02	.02	.03	.08	.06	.80	.57	.25	.15	.04	.02	.02
Cal yr 1966: Total	10,610.1		Mean	29.1	Max	1,020	Min	.6	Cfsm	.463	In.	6.28
Wtr yr 1967: Total	3,516.2		Mean	9.63	Max	171	Min	.2	Cfsm	.153	In.	2.06

Peak discharge (base, 400 cfs).--No peak above the base.

ROCK RIVER BASIN

5-4240. East Branch Rock River near Mayville, Wis.

Location.--Lat 43°31'45", long 88°34'00", in NE 1/4 sec. 10, T. 12 N., R. 16 E., on left bank 500 ft downstream from Kekoskee dam, 0.5 mile upstream from Gill Creek, and 2 miles northwest of railroad bridge in Mayville.

Drainage area.--179 sq mi.

Records available.--May 1949 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 857.20 ft above mean sea level, datum of 1929. Prior to July 11, 1967, graphic water-stage recorder at same site and datum.

Average discharge.--18 years, 86.0 cfs.

Extremes.--Maximum discharge during year, 522 cfs Mar. 29 (gage height, 6.02 ft); minimum 3.3 cfs Sept. 30 (gage height, 2.35 ft). 1949-67: Maximum discharge, 3,400 cfs Apr. 3, 1959; maximum gage height, 11.02 ft Apr. 3 (backwater from ice); minimum discharge, 0.1 cfs June 6, 1949, Aug. 22, 23, 1962.

Remarks.--Records good except those for winter months, which are fair. Minor regulation by recreation dams.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	16	21	19	80	26	286	89	30	118	13	12
2	12	16	17	19	74	26	307	92	26	111	14	9.8
3	11	16	15	19	70	26	272	99	24	99	13	8.0
4	12	14	14	20	64	26	238	92	22	88	14	6.2
5	12	16	15	20	60	26	216	81	21	78	13	6.5
6	12	16	16	20	56	26	227	70	40	68	12	6.5
7	12	16	20	20	53	27	216	62	43	53	12	6.5
8	11	18	70	20	50	27	208	59	27	42	13	5.8
9	9.8	23	86	20	47	28	213	53	29	38	12	5.8
10	10	24	86	20	45	70	203	56	37	34	11	5.1
11	9.4	25	82	21	43	130	189	150	60	29	10	4.9
12	10	29	78	21	41	155	174	195	122	25	9.8	5.9
13	14	26	72	20	39	230	154	194	122	22	9.4	5.6
14	16	26	66	20	39	262	142	189	132	20	8.9	5.5
15	16	28	58	19	38	254	124	168	149	20	9.1	5.5
16	14	25	46	20	36	200	120	146	187	18	8.5	5.8
17	16	24	38	21	35	180	176	105	226	17	6.9	5.3
18	16	22	33	20	32	150	198	76	226	16	6.5	4.9
19	19	22	27	20	29	130	227	60	221	15	26	4.9
20	18	22	24	20	27	105	214	56	203	14	46	4.9
21	19	22	22	20	26	99	192	58	170	13	28	5.5
22	16	21	19	21	27	91	174	54	142	12	12	4.7
23	15	21	17	23	28	88	166	47	91	14	7.2	4.5
24	16	23	16	80	29	114	160	45	85	12	7.2	4.1
25	16	29	15	150	29	163	129	44	98	12	7.2	8.2
26	16	30	15	90	29	248	118	42	99	12	11	13
27	16	36	16	78	28	336	106	37	95	13	11	10
28	14	35	16	80	27	412	81	35	98	12	9.4	6.6
29	16	33	17	80	- - - -	508	77	34	104	13	16	4.4
30	16	27	18	80	- - - -	438	72	32	112	12	16	3.7
31	14	- - - -	18	80	- - - -	380	- - - -	31	- - - -	14	15	- - - -
Total	436.2	701	1,073	1,181	1,181	4,981	5,379	2,551	3,041	1,064	408.1	190.1
Mean	14.1	23.4	34.6	38.1	42.2	161	179	82.3	101	34.3	13.2	6.34
Max	19	36	86	150	80	508	307	195	226	118	46	13
Min	9.4	14	14	19	26	26	72	31	21	12	6.5	3.7
Cfsm	.079	.131	.193	.213	.236	.899	1.00	.460	.564	.192	.074	.035
In.	.09	.15	.22	.25	.25	1.03	1.12	.53	.63	.22	.08	.04

Cal yr 1966: Total 31,730.8 Mean 86.9 Max 1,120 Min 7.6 Cfsm .485 In. 6.59
 Wtr yr 1967: Total 22,186.4 Mean 60.8 Max 508 Min 3.7 Cfsm .340 In. 4.61

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-29	2200	6.02	622				

5-4255. Rock River at Watertown, Wis.

Location.--Lat 43°11'25", long 88°43'35", in sec. 4, T. 3 N., R. 15 E., on left bank at Watertown, 700 ft downstream from Milwaukee Street Bridge and 1.1 mile downstream from Silver Creek.

Drainage area.--971 sq mi.

Records available.--June 1931 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 792.58 ft above mean sea level, datum of 1929. Prior to Sept. 26, 1933, chain gage at site 700 ft upstream at different datum. Sept. 26, 1933, to Apr. 20, 1964, graphic water-stage recorder at present site and datum.

Average discharge.--36 years, 421 cfs.

Extremes.--Maximum discharge during year, 1,040 cfs Apr. 10 (gage height, 3.12 ft); minimum, 17 cfs Sept. 16, 17, 20, 24-26 (gage height, 0.76 ft).

1931-67: Maximum discharge, 5,030 cfs Apr. 4, 1959 (gage height, 6.32 ft); minimum daily, 0.9 cfs Oct. 15, 1959, Sept. 9, 1944.

Remarks.--Records good except those for winter months and Oct. 10 to Nov. 9, which are fair. Slight intermittent regulation caused by a small feed mill 0.2 mile upstream; considerable diurnal regulation caused by powerplant 1.6 miles upstream.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	UCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	28	40	58	70	290	140	970	376	147	328	45	42
2	26	40	55	73	275	140	996	337	132	306	47	43
3	24	39	53	74	260	140	1,010	378	121	328	42	41
4	21	39	53	76	255	140	1,010	436	112	387	40	35
5	22	39	55	78	255	135	1,020	449	96	403	39	31
6	27	40	60	80	240	135	1,030	459	91	365	40	27
7	27	41	70	86	230	135	1,020	428	107	294	43	26
8	27	45	92	96	225	140	1,010	321	107	238	36	26
9	27	76	125	108	230	190	986	275	149	207	37	25
10	24	86	172	117	245	265	992	247	232	209	32	22
11	25	86	190	110	245	371	961	317	409	244	41	21
12	26	76	232	100	250	384	900	453	661	212	39	28
13	32	76	238	92	250	438	794	551	778	159	34	33
14	36	66	254	92	250	459	663	615	848	128	31	26
15	37	64	254	92	250	468	505	655	848	113	30	21
16	37	60	251	94	253	485	480	706	904	101	30	21
17	35	60	228	96	250	480	511	628	904	91	29	20
18	38	54	205	100	240	487	547	658	848	83	46	22
19	43	60	185	106	220	462	564	657	786	66	42	19
20	45	57	170	110	210	463	591	628	731	57	41	18
21	44	57	155	115	195	465	643	593	677	56	37	20
22	42	54	140	120	180	486	737	535	614	54	33	20
23	38	56	125	125	160	534	779	397	476	53	34	22
24	38	61	110	140	145	642	772	261	332	52	32	18
25	33	64	94	180	130	720	776	185	254	51	28	18
26	38	70	80	230	130	750	777	161	224	51	27	21
27	38	71	71	265	135	835	766	141	201	56	42	22
28	38	77	67	285	140	896	720	164	235	55	53	24
29	38	69	65	295	-----	905	630	174	286	52	50	23
30	37	62	64	300	-----	881	501	178	310	53	41	23
31	38	-----	66	300	-----	913	-----	167	-----	51	41	-----
TOTAL	1,034	1,785	4,037	4,200	6,138	14,084	23,661	12,530	12,620	4,903	1,182	758
MEAN	33.4	59.5	130	135	219	454	789	404	421	158	31.1	25.3
MAX	45	86	254	300	290	913	1,030	706	904	403	53	43
MIN	21	39	53	70	130	135	480	141	91	51	27	18
CFSM	.03	.06	.13	.14	.23	.47	.81	.42	.43	.16	.04	.03
IN.	.04	.07	.15	.16	.24	.54	.91	.48	.48	.19	.05	.03

CAL YR 1966: TOTAL 176,624 MEAN 484 MAX 1,860 MIN 15 CFSM .50 IN 6.76
 WAT YR 1967: TOTAL 86,932 MEAN 238 MAX 1,030 MIN 18 CFSM .25 IN 3.33

Peak discharge (base, 1,100 cfs).--No peak above the base.

ROCK RIVER BASIN

5-4260. Crawfish River at Milford, Wis.

Location.--Lat 43°06'00", long 88°51'00", in sec. 4, T. 7 N., R. 14 E., near left bank on upstream side of highway bridge in Milford, 1 mile downstream from Rock Creek and 8 miles upstream from mouth.

Drainage area.--732 sq mi.

Records available.--June 1931 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 779.40 ft above mean sea level, datum of 1929. Prior to Nov. 19, 1959, chain gage, and Nov. 19, 1959 to July 28, 1966, wire-weight gage at present site and datum.

Average discharge.--36 years, 333 cfs.

Extremes.--Maximum discharge during year, 1,380 cfs Apr. 1 (gage height, 4.87 ft); minimum, 1.2 cfs Oct. 21 (gage height, 1.23 ft). 1931-67: Maximum discharge, 6,140 cfs Apr. 6, 1959 (gage height, 11.15 ft); minimum observed, 0.2 cfs Sept. 15, 1958 (gage height, 1.11 ft).

Remarks.--Records good except for winter months, which are fair. Some diurnal fluctuation at low flow possible, due to small dams upstream.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	49	78	48	220	450	160	1,370	347	190	444	55	68
2	16	73	48	225	420	170	1,310	421	175	430	65	64
3	13	34	49	230	390	170	1,280	434	155	411	52	60
4	16	26	51	235	370	170	1,110	418	128	374	67	63
5	17	35	55	249	345	170	1,120	391	121	260	59	60
6	19	32	58	250	320	170	1,100	361	108	205	47	56
7	16	41	62	255	300	170	1,030	324	104	235	69	51
8	21	50	102	260	270	170	903	333	87	220	62	43
9	37	64	157	260	250	180	872	314	162	210	95	63
10	52	61	256	260	220	200	872	266	241	220	98	43
11	47	58	300	260	210	250	797	397	382	203	96	35
12	29	94	310	255	190	350	727	430	560	188	96	34
13	35	46	310	250	200	500	692	491	742	175	96	28
14	20	78	300	250	210	600	577	529	767	146	81	37
15	35	46	290	250	200	640	621	544	765	135	73	41
16	75	65	280	245	185	680	582	519	910	100	61	55
17	57	71	275	230	185	700	582	487	832	82	54	53
18	54	98	270	215	185	700	678	388	751	70	77	51
19	74	54	270	205	185	670	696	427	668	65	90	51
20	42	53	265	205	180	650	661	384	623	64	64	37
21	12	47	260	205	175	620	678	331	580	62	65	61
22	14	39	250	205	170	600	700	305	534	62	62	53
23	65	64	240	215	160	627	683	240	486	82	56	36
24	73	86	235	230	150	720	661	271	473	66	60	53
25	57	89	230	260	140	780	604	237	468	54	61	25
26	48	78	230	300	140	820	579	196	448	41	55	23
27	30	191	230	350	150	850	529	223	423	63	82	83
28	62	186	225	410	155	920	454	205	472	64	55	64
29	71	77	220	450	-----	1,050	404	210	472	51	53	55
30	24	50	220	460	-----	1,200	401	206	454	63	102	51
31	47	-----	220	470	-----	1,330	-----	207	-----	60	72	-----
TOTAL	1,227	2,376	6,316	8,364	6,505	16,987	23,273	10,836	13,281	4,905	2,180	1,497
MEAN	39.6	69.2	204	270	232	548	776	350	443	158	70.3	49.9
MAX	75	191	310	470	450	1,330	1,370	544	910	444	102	83
MIN	12	28	48	205	140	160	401	196	87	41	47	23
CFSM	.05	.09	.28	.37	.32	.75	1.06	.48	.60	.22	.10	1.07
IN.	.06	.11	.32	.42	.33	.86	1.18	.55	.67	.25	.11	1.08

CAL YR 1966: TOTAL 143,577 MEAN 393 MAX 2,560 MIN 12 CFSM .54 IN 7.29
 WAT YR 1967: TOTAL 97,447 MEAN 267 MAX 1,370 MIN 12 CFSM .36 IN 4.94

Peak discharge (base, 1,250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-1	0500	4.87	1,380				

5-4280. Lake Mendota at Madison, Wis.

Location.--Lat 43°05'40", long 89°22'10", in SE 1/4 sec. 12, T. 7 N., R. 9 E., attached to left wall of lock of dam at outlet, in Madison.

Drainage area.--254 sq mi. Area of Lake Mendota, 15.2 sq mi.

Records available.--December 1902 to May 1903, January 1916 to September 1967 (incomplete).

Gage.--Staff gage read almost daily during periods of open water. Datum of gage is 847.65 ft above mean sea level, datum of 1929, or 2.00 ft above city of Madison datum.

Extremes.--Maximum gage height observed during year, 2.40 ft June 13; minimum observed, 1.45 ft Mar. 2.
1916-67: Maximum gage height observed, 4.19 ft Apr. 5, 1959; minimum observed, 0.20 ft Feb. 24 to Mar. 10, 1920.

Remarks.--Lake level regulated by concrete dam with two 12-foot tainter gates and 20-foot lock at outlet.

Cooperation.--Gage-height record furnished by city engineer of Madison.

Gage height, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.80	1.68					2.25	2.04	2.08	2.04	1.88	1.76
2	1.78	1.66				1.45	2.27	2.02	2.08	2.06	1.97	1.76
3	1.74	1.68					2.17	1.98	2.08	2.04	1.95	1.76
4	1.74	1.64					2.12	1.94	2.05	2.04	1.95	1.76
5	1.72	1.64					2.10	1.90	2.02	1.98	1.95	1.74
6	1.70	1.60		1.86			2.05	1.90	1.98	1.96	1.94	1.74
7	1.68	1.62					2.05	1.90	2.08	1.96	1.94	1.74
8	1.68	1.72	2.04				2.06	1.96	2.10	1.94	1.94	1.72
9	1.66				2.02		2.06	1.98	2.12	1.94	1.94	1.72
10	1.66						2.06	1.96	2.18	1.94	1.94	1.72
11	1.66						2.02	2.12	2.24	1.92	1.92	1.68
12	1.66		2.09	1.76			1.96	2.18	2.30	1.94	1.97	1.68
13	1.68						2.00	2.16	2.40	1.94	1.90	1.66
14	1.68						2.01	2.16	2.36	1.90	1.90	1.66
15	1.72					1.82		2.12	2.34	1.90	1.86	1.70
16	1.76						2.02	2.12	2.32	1.90	1.86	1.84
17	1.78				1.82		2.10	2.10	2.36	1.88	1.86	1.84
18	1.76			1.66			2.10	2.10	2.32	1.80	1.88	1.84
19	1.80	1.73					2.10	2.12	2.28	1.80	1.88	1.82
20	1.78						2.10	2.10	2.26	1.80	1.88	1.80
21	1.76		2.02				2.10	2.03	2.24	1.80	1.86	1.84
22	1.80						2.20	1.96	2.22	1.84	1.86	1.84
23	1.78			1.58		1.82	2.14	1.96	2.16	1.88	1.84	1.82
24	1.76				1.62		2.10	2.04	2.14	1.90	1.82	1.82
25	1.74						2.08	2.06	2.11	1.92	1.82	1.78
26	1.72	1.73					2.08	2.06	2.10	1.90	1.82	1.76
27	1.70				1.58	2.02	2.04	2.06	2.08	1.92	1.86	1.78
28	1.72						2.04	2.06	2.08	1.92	1.86	1.78
29							2.02	2.12	2.04	1.90	1.80	1.76
30			1.96	2.16	- - - - -		2.02	2.12	2.06	1.90	1.80	1.74
31		- - - - -			- - - - -		- - - - -	2.10	- - - - -	1.90	1.78	- - - - -

ROCK RIVER BASIN

5-4290. Lake Monona at Madison, Wis.

Location--Lat 43°03'50", long 89°23'45", in NW 1/4 sec. 23, T. 7 N., R. 9 E., at end of concrete storm sewer in Brittingham Park, in Madison.

Drainage area--273 sq mi. Area of Lake Monona, 5.3 sq mi.

Records available--September 1915 to September 1967 (fragmentary) in reports of the Geological Survey. For 1856 to March 1917 in reports of Wisconsin Railroad Commission, Volume 19.

Gage--Reference point by which the stage is read almost daily during periods of open water. Datum of gage is 843.61 ft above mean sea level, datum of 1929, or 2.00 ft below city of Madison datum.

Extremes--Maximum gage height observed during year, 2.29 ft June 29; minimum observed, 0.44 ft Dec. 5, 6, 7.
1915-67: Maximum gage height observed, 3.66 ft July 28, 1929; minimum observed, -0.39 ft Jan. 20, 1965.

Remarks--Lake level regulated by concrete dam with four 12-foot stop-log sections and 12-foot lock at outlet of Lake Waubesa.

Cooperation--Gage-height record furnished by city engineer of Madison.

Gage height, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.12		0.53		0.79	0.92		1.73	1.47		1.46	1.12
2	1.10							1.65	1.46		1.50	
3	1.08			.61	.80	.86	1.29				1.43	
4	1.07										1.38	1.12
5	1.06		.44				1.28		1.56			1.12
6	1.05		.44	.61					1.56	1.92		1.12
7	1.04	1.02	.44			.73			1.60	1.89		1.12
8			.57		.87	.70		1.47				1.12
9						.67		1.43	1.80			1.12
10					.88		1.19	1.41				
11		1.12		.65				1.61	1.89		1.20	1.10
12	1.00		.64	.65				1.61		1.79	1.18	1.10
13	1.09		.63		.90	.70		1.60	2.13	1.77		1.09
14		1.11	.62	.65					2.11	1.69	1.16	
15		1.08	.61		.89			1.60	2.11	1.66	1.15	
16		1.11	.59	.64		.64		1.57	2.14		1.15	1.38
17	1.18	1.11	.58		.92	.64		1.55	2.14	1.61	1.15	
18							1.29	1.55		1.68	1.18	
19	1.18		.56	.64				1.59		1.66		
20	1.18		.54		.93				2.22	1.64		1.41
21		1.08	.54				1.41		2.24	1.60	1.18	1.41
22		1.00	.59			.70		1.53	2.20		1.18	1.39
23		.94		.64	.93	.70						
24	1.12					.80		1.45		1.70		
25	1.11			.82			1.58	1.42				1.34
26	1.11			.86			1.62	1.40		1.62		1.32
27			.50		.93	1.12	1.60		2.25	1.63		1.30
28	1.09	.57		.81	.92	1.17	1.62			1.60	1.18	1.32
29		.53				1.19		1.47	2.29		1.16	
30		.53										1.27
31			.59	.79		1.27		1.49		1.48	1.14	

5-4295 Yahara River near McFarland, Wis.

Location--Lat 43°00'30", long 89°18'15", in SW 1/4 sec. 3, T. 6 N., R. 10 E., on left bank just upstream from bridge on U. S. Highway 51, at dam at outlet of Lake Waubesa and 1 mile southwest of McFarland.

Drainage area--351 sq mi.

Records available--September 1930 to September 1967.

Gage--Water-stage recorder. Datum of gage is 840.40 ft above mean sea level, datum of 1929 (levels by Wisconsin Department of Natural Resources). Prior to Dec. 23, 1934, chain gage at same site and datum.

Average discharge--37 years, 149 cfs.

Extremes--Maximum discharge during year, 327 cfs June 20 (gage height, 5.23 ft); minimum, 4.8 cfs Nov. 6.

1930-67: Maximum discharge, 867 cfs Apr. 10, 1959 (gage height, 5.82 ft); maximum gage height, 6.33 ft July 23, 24, 1950 (backwater from aquatic vegetation); minimum discharge, 1.0 cfs Oct. 18, 1964.

Remarks--Records fair. Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. The Madison Metropolitan Sewerage District diverted an average of 26.36 million gallons per day of effluent into the Badfish Creek basin during 1967. Prior to 1958 the effluent was discharged into the Yahara River above McFarland.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	9.0	97	132	181	207	267	193	97	259	111	8.0
2	19	7.4	100	135	188	202	272	190	103	251	113	7.4
3	17	9.0	108	138	186	202	274	188	111	244	91	7.7
4	18	5.9	110	140	184	190	248	181	115	231	111	7.4
5	17	5.6	112	140	193	184	238	179	126	195	97	7.7
6	14	5.3	115	146	204	179	241	164	128	186	89	7.7
7	14	5.3	119	151	197	175	241	151	159	181	83	7.7
8	14	6.2	122	151	195	170	236	149	186	155	73	9.0
9	13	7.7	130	151	195	159	214	126	224	153	75	8.5
10	13	10	134	149	195	161	188	117	285	151	59	10
11	12	8.5	132	149	195	181	188	146	280	149	42	10
12	8.0	9.0	130	149	195	179	151	157	283	149	31	10
13	11	7.7	130	149	195	172	77	153	291	142	34	10
14	10	8.0	130	149	197	165	62	151	297	109	29	10
15	25	7.7	128	151	200	159	42	144	294	99	23	11
16	28	8.0	127	149	216	157	54	144	319	93	18	20
17	28	10	126	149	209	157	56	144	319	95	16	21
18	26	136	124	146	207	155	54	142	319	97	16	21
19	29	219	123	146	204	153	56	144	311	97	16	19
20	27	207	123	144	207	153	61	132	325	93	16	24
21	25	197	121	144	212	164	64	132	325	93	16	32
22	22	195	118	144	209	161	85	132	322	95	16	37
23	19	197	113	146	209	164	87	128	319	123	15	36
24	18	193	111	159	209	193	107	123	316	126	16	32
25	16	190	110	207	209	219	138	121	313	117	14	34
26	14	181	110	212	209	231	161	85	311	117	14	30
27	15	181	112	212	207	248	168	64	305	117	12	37
28	15	181	117	204	207	251	175	75	299	117	12	36
29	13	164	123	204	- - - - -	251	172	93	299	117	12	34
30	10	155	130	188	- - - - -	254	179	91	294	115	10	34
31	10	- - - - -	130	184	- - - - -	259	- - - - -	95	- - - - -	111	8.5	- - - - -
Total	540	2,526.3	3,715	4,918	5,614	5,855	4,556	4,234	7,675	4,377	1,308.5	579.1
Mean	17.4	84.2	120	159	200	189	152	137	256	141	42.2	19.3
Max	28	219	134	212	216	259	274	193	325	259	113	37
Min	8.0	5.3	97	132	181	153	42	64	97	93	10	7.4
Cfsm	.050	.240	.342	.453	.570	.538	.433	.390	.729	.402	.120	.055
In.	.06	.27	.39	.52	.59	.62	.48	.45	.81	.46	.14	.06
Cal yr 1966 : Total	41,641.3		Mean	114	Max	330	Min	5.3	Cfsm	.325	In.	4.41
Wtr yr 1967 : Total	45,897.9		Mean	126	Max	325	Min	5.3	Cfsm	.359	In.	4.85

5-4305. Rock River at Afton, Wis.

Location--Lat 42°36'40", long 89°04'10", in sec. 27, T. 2 N., R. 12 E., on right bank in Afton, 0.3 mile downstream from highway bridge and 0.8 mile upstream from Bass Creek.

Drainage area--3,300 sq mi, approximately.

Records available--January 1914 to September 1967. Monthly discharge only for January 1914, published in WSP 1308.

Gage--Water-stage recorder. Datum of gage is 742.36 ft above mean sea level, datum of 1929. Prior to Aug. 21, 1932, a chain gage, and Aug. 21, 1932, to Sept. 30, 1933, water-stage recorder, at same site at datum 1 ft higher.

Average discharge--53 years, 1,707 cfs.

Extremes--Maximum discharge during year, 5,060 cfs June 17 (gage height, 7.39 ft); minimum, 117 cfs Sept. 30 (gage height, 1.80 ft). 1914-67: Maximum discharge, 13,000 cfs Mar. 23, 24, 1929 (gage height, 11.81 ft, present datum); maximum gage height observed, 13.05 ft, Feb. 5, 1916, present datum (backwater from ice); minimum discharge, 22 cfs Sept. 9, 1964, minimum daily, 42 cfs Aug. 25, 26, 1934; minimum gage height, 0.09 ft Aug. 26, 1934.

Remarks--Records good except those for winter months, which are fair. Diurnal fluctuation caused by powerplants above station. Records of water temperature for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	359	411	600	870	1,540	820	3,650	2,320	1,300	2,410	852	507
2	470	422	560	840	1,520	900	3,630	2,080	1,100	2,350	795	301
3	348	321	590	840	1,500	1,030	3,660	2,170	1,070	2,320	699	428
4	338	338	580	860	1,480	1,080	3,560	2,150	1,030	2,250	809	236
5	550	370	560	870	1,420	1,100	3,520	2,120	576	1,940	788	488
6	488	370	640	820	1,380	1,100	3,580	1,950	1,040	1,740	666	428
7	338	428	726	830	1,340	1,100	3,480	1,990	1,030	1,850	692	446
8	270	428	852	800	1,300	1,220	3,150	1,860	788	1,790	760	411
9	569	556	957	860	1,260	1,200	2,990	1,560	576	1,730	753	227
10	582	666	965	810	1,200	1,530	3,080	1,620	1,580	1,620	699	422
11	280	699	927	800	1,100	2,310	3,090	2,130	2,640	1,300	672	370
12	301	614	957	820	1,000	1,840	3,000	2,100	3,070	1,130	556	370
13	428	576	973	820	1,000	1,680	2,980	1,900	3,900	957	556	452
14	500	569	1,000	760	1,040	1,740	2,770	1,900	3,940	867	588	311
15	500	601	1,060	820	1,040	1,750	2,630	1,950	3,890	823	563	370
16	416	614	1,170	820	1,020	1,880	2,660	2,130	4,040	1,010	531	464
17	428	556	1,120	790	990	1,900	2,390	2,130	4,900	965	595	476
18	452	494	1,080	760	960	1,900	2,310	2,060	4,550	679	646	488
19	434	519	1,170	870	940	1,940	2,220	1,970	4,220	852	556	464
20	482	556	1,160	890	930	2,040	2,100	1,960	3,840	973	660	531
21	494	588	1,190	880	920	2,060	2,270	1,960	3,650	802	620	488
22	666	660	1,180	880	920	2,050	2,370	2,000	3,510	746	550	476
23	470	781	1,180	953	840	2,280	2,350	1,830	3,310	867	251	365
24	464	781	1,140	1,100	800	2,810	2,450	1,610	3,170	823	370	343
25	739	452	1,200	1,600	790	2,930	2,400	1,550	3,060	767	482	525
26	550	290	1,200	1,480	770	2,750	2,450	1,470	2,950	781	343	343
27	470	354	1,130	1,310	770	3,000	2,360	1,390	2,710	942	387	428
28	470	845	1,060	1,390	780	3,200	2,320	1,580	2,720	1,030	296	476
29	428	780	1,000	1,460	- - - - -	3,360	2,330	1,600	2,580	912	525	464
30	488	660	940	1,620	- - - - -	3,410	2,330	1,460	2,450	882	359	255
31	488	- - - - -	900	1,550	- - - - -	3,510	- - - - -	1,390	- - - - -	904	513	- - - - -
Total	14,260	16,299	29,767	30,773	30,550	61,420	84,080	57,890	79,190	39,012	18,132	12,353
Mean	460	543	960	993	1,091	1,981	2,803	1,867	2,640	1,258	585	412
Max	739	845	1,200	1,620	1,540	3,510	3,660	2,320	4,900	2,410	852	531
Min	270	290	560	760	770	820	2,100	1,390	576	679	251	227
Cfsm	.139	.165	.291	.301	.331	.600	.849	.566	.800	.381	.177	.125
In.	.16	.18	.34	.35	.34	.69	.95	.65	.89	.44	.20	.14
Cal yr 1966 : Total	629,080		Mean	1,724	Max	4,730	Min	246	Cfsm	5.22	In.	7.10
Wtr yr 1967 : Total	473,726		Mean	1,298	Max	4,900	Min	227	Cfsm	3.93	In.	5.33

5-4315. Turtle Creek near Clinton, Wis.

Location.--Lat 42°35'55", long 88°51'50", in SE 1/4 sec. 29, T. 2 N., R. 14 E., on left bank 15 ft downstream from highway bridge, 2.5 miles north of Clinton, 11 miles northeast of Beloit, and 14 miles upstream from mouth.

Drainage area.--186 sq mi.

Records available.--September 1939 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 817.00 ft above mean sea level (levels by Corps of Engineers). Prior to Aug. 2, 1967, graphic water-stage recorder at same site and datum.

Average discharge.--28 years, 102 cfs.

Extremes.--Maximum discharge during year, 560 cfs Mar. 11 (gage height, 5.06 ft, backwater from ice); minimum, 21 cfs Nov. 3 (gage height, 2.27 ft), result of freezeup.

1939-67: Maximum discharge, 6,560 cfs Feb. 24, 1949 (gage height, 10.22 ft); minimum, 8 cfs Dec. 29, 1956 (gage height, 2.04 ft), result of freezeup.

Maximum stage known, 12.09 ft in February 1938, from floodmarks (discharge, 10,700 cfs, from rating curve extended above 5,500 cfs by logarithmic plotting).

Remarks.--Records good except those for winter months, which are fair. Some seasonal regulation caused by dams used to maintain levels of Turtle and Delavan Lakes.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	46	48	49	74	51	160	102	47	116	51	37
2	43	46	47	49	68	53	160	93	43	116	57	37
3	43	47	48	49	63	55	146	91	42	108	56	36
4	51	54	52	50	58	57	129	87	42	110	52	36
5	52	44	60	52	56	58	122	84	41	108	48	36
6	54	44	77	58	54	59	120	82	41	104	47	35
7	52	46	96	58	53	59	118	82	41	102	48	35
8	52	48	122	58	52	60	112	98	52	93	48	35
9	50	71	120	58	52	61	124	91	50	89	47	43
10	44	80	108	60	53	250	122	86	122	82	47	34
11	43	63	100	64	54	450	114	275	415	79	44	34
12	43	56	90	68	56	156	110	218	313	79	42	33
13	50	54	81	68	58	82	110	169	304	74	40	34
14	56	50	75	66	62	74	110	149	275	66	39	35
15	66	48	77	60	78	70	104	129	247	58	36	35
16	57	48	84	57	74	68	106	114	228	50	36	36
17	54	47	84	56	64	66	120	100	334	48	35	37
18	51	48	82	55	60	65	110	95	322	44	36	36
19	51	47	77	54	55	64	102	93	319	44	41	36
20	50	47	70	54	52	66	91	79	341	43	46	39
21	47	46	66	56	50	70	100	77	325	42	45	47
22	46	46	61	59	49	96	192	74	278	42	42	43
23	43	46	57	170	48	247	153	68	236	42	38	40
24	44	47	54	220	47	328	124	58	194	44	38	38
25	44	52	51	260	46	234	110	54	162	43	38	37
26	44	62	50	180	46	204	100	52	138	39	38	39
27	44	76	49	140	48	221	93	46	98	46	38	46
28	43	91	49	120	49	182	86	48	106	50	38	41
29	44	61	49	110	-----	178	89	56	114	48	38	39
30	46	53	49	96	-----	157	110	52	116	47	38	43
31	46	-----	49	84	-----	157	-----	48	-----	47	38	-----
Total	1,499	1,614	2,182	2,638	1,579	3,998	3,547	2,950	5,386	2,103	1,325	1,132
Mean	48.4	53.8	70.4	85.1	56.4	129	118	95.2	180	67.8	42.7	37.7
Max	66	91	122	260	78	450	192	275	415	116	57	47
Min	43	44	47	49	46	51	86	46	41	39	35	33
Cfsm	.260	.289	.378	.458	.303	.694	.634	.512	.968	.365	.220	.203
In.	.30	.32	.44	.53	.32	.80	.71	.59	1.08	.42	.26	.23
Cal yr 1966 : Total	33,677		Mean 92.3	Max 1,520	Min 42	Cfsm .496	In. 6.74					
Wtr yr 1967 : Total	29,953		Mean 82.1	Max 450	Min 33	Cfsm .441	In. 6.00					

Peak discharge (base, 1,200 cfs).--No peak above the base.

5-4325. Pecatonica River at Darlington, Wis.

Location.--Lat 42°40'30", long 90°06'55", in NE 1/4 sec. 3, T. 2 N., R. 3 E., on right bank in Darlington, 3 miles upstream from Otter Creek.

Drainage area.--274 sq mi.

Records available.--September 1939 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 802.42 ft above mean sea level, datum of 1929. Prior to Apr. 18, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--28 years, 180 cfs.

Extremes.--Maximum discharge during year, about 6,000 cfs Jan. 25 (gage height, 16.47 ft, backwater from ice); minimum, 17 cfs Nov. 29 (gage height, 2.09 ft), result of freezeup.

1939-67: Maximum discharge, 22,000 cfs July 16, 1950 (gage height, 20.71 ft), from rating curve extended above 11,000 cfs on basis of slope-area determination of peak flow; minimum, that of Nov. 29, 1966; minimum gage height, 1.92 ft Mar. 4, 1954, result of freezeup.

Flood of Feb. 21, 1937, reached a stage of 17.6 ft, from floodmarks.

Remarks.--Records good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	64	61	44	53	92	66	217	102	69	109	52	45
2	62	62	55	54	83	71	195	88	66	108	65	44
3	62	57	46	54	75	80	190	80	64	99	66	45
4	62	61	46	53	71	110	151	77	63	92	53	45
5	61	62	50	52	67	108	136	76	63	87	49	44
6	60	61	61	52	64	119	131	75	64	83	53	44
7	60	64	76	54	61	127	123	76	72	80	65	44
8	61	66	1,340	56	59	98	114	88	88	77	60	43
9	62	80	1,090	56	59	90	114	90	80	76	57	42
10	60	89	180	53	59	400	107	83	119	75	54	41
11	59	77	120	50	59	1,200	99	307	131	74	50	40
12	59	67	101	48	61	1,000	93	219	151	69	49	40
13	74	65	95	46	65	230	101	146	102	66	48	41
14	78	63	95	46	82	135	134	125	80	65	48	128
15	73	62	83	45	220	94	128	123	74	63	47	183
16	70	64	85	45	130	77	112	112	70	61	46	258
17	65	64	81	45	95	71	115	99	882	61	47	96
18	64	63	80	47	82	68	101	98	967	67	60	72
19	66	60	77	48	73	64	93	96	214	64	63	64
20	68	59	76	50	69	59	93	89	152	61	56	64
21	65	60	69	52	65	120	110	83	136	59	50	65
22	64	61	59	57	62	90	120	82	122	58	61	61
23	61	63	53	128	60	136	102	81	107	57	80	57
24	60	63	51	600	59	1,670	93	82	130	55	63	56
25	60	68	50	3,650	58	4,230	89	81	141	52	54	54
26	62	69	50	3,250	58	1,300	96	78	118	52	52	57
27	63	67	49	1,200	59	474	106	76	102	54	52	64
28	63	64	49	470	61	259	95	80	197	56	53	60
29	62	38	49	270	-----	188	88	96	288	55	50	55
30	60	65	49	140	-----	178	92	92	130	54	49	54
31	60	-----	51	105	-----	185	-----	77	-----	53	47	-----
Total	1,970	1,925	4,460	10,929	2,108	13,097	3,538	3,157	5,042	2,142	1,699	2,006
Mean	63.5	64.2	144	353	75.3	422	118	102	168	69.1	54.8	66.9
Max	78	89	1,340	3,650	220	4,230	217	307	967	109	80	258
Min	59	38	44	45	58	59	88	75	63	52	46	40
Cfsm	.23	.23	.53	1.29	.27	1.54	.43	.37	.61	.25	.20	.24
In.	.27	.26	.61	1.48	.29	1.78	.48	.43	.68	.29	.23	.27
Cal yr' 1966: Total	45,524			Mean 125	Max 4,140	Min 38		Cfsm .46	In. 6.18			
Wtr yr 1967: Total	52,073			Mean 143	Max 4,230	Min 38		Cfsm .52	In. 7.07			

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-25	1800	16.47	6,000	3-25	1100	14.43	4,860

5-4330. East Branch Pecatonica River near Blanchardville, Wis.

Location.--Lat 42°47'10", long 89°51'40", in SE 1/4 sec. 26, T. 4 N., R. 5 E., on left bank at downstream side of bridge on State Highway 78, 1.5 miles south of Blanchardville and 3.5 miles upstream from Sawmill Creek.

Drainage area.--221 sq mi.

Records available.--September 1939 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 796.8 ft above mean sea level, unadjusted. Prior to Dec. 20, 1935, wire-weight gage at bridge 50 ft upstream at same datum. Dec. 20, 1939, to Sept. 20, 1964, graphic water-stage recorder at present site and datum. Auxiliary staff gage 2.7 miles upstream at same datum read every six hours or more often when stages exceed 10 ft.

Average discharge.--28 years, 137 cfs.

Extremes.--Maximum discharge during year, 4,810 cfs Jan. 25 (gage height, 13.80 ft); minimum, 18 cfs Nov. 29 (gage height, 2.26 ft), result of freezeup.

1939-67: Maximum discharge, 11,700 cfs Feb. 28, 1948 (gage height, 15.74 ft); minimum, that of Nov. 29, 1966.

Remarks.--Records good except those for winter months, which are fair.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	68	67	54	59	107	72	207	107	84	93	62	53
2	67	66	52	66	93	77	157	95	82	91	63	55
3	68	64	52	61	85	84	152	87	81	88	62	55
4	69	67	54	61	79	96	124	85	81	85	61	55
5	67	66	56	60	76	105	118	85	80	83	61	55
6	66	65	60	60	72	110	114	84	81	80	63	55
7	67	68	70	60	70	110	111	86	87	79	68	55
8	68	70	759	61	69	96	105	99	93	77	63	54
9	67	77	703	62	69	110	106	92	95	77	62	54
10	66	83	149	62	69	325	103	89	141	77	60	54
11	65	70	107	60	70	800	96	333	128	75	59	54
12	66	67	90	59	71	280	94	199	233	72	59	53
13	76	66	89	56	75	130	97	137	114	70	59	53
14	76	65	90	55	86	105	110	123	98	70	59	105
15	82	64	80	55	105	94	103	116	93	68	59	141
16	74	66	81	55	96	88	99	110	92	68	59	104
17	69	66	79	55	88	84	119	105	263	69	59	73
18	69	65	78	56	81	82	99	101	168	87	85	65
19	72	62	76	57	76	82	93	103	111	70	74	62
20	70	62	77	64	72	82	92	95	104	67	61	62
21	68	64	76	66	70	82	100	93	98	65	58	63
22	69	64	70	76	67	86	115	91	95	65	57	60
23	67	65	70	135	66	94	98	92	91	67	57	59
24	67	65	66	691	66	857	94	92	101	66	57	59
25	66	70	62	1,900	66	2,070	91	89	111	63	57	58
26	66	68	60	1,430	66	472	94	88	92	63	57	62
27	67	67	58	700	67	354	97	85	88	65	58	66
28	67	65	57	400	70	202	90	93	128	64	57	61
29	66	54	57	300	-----	169	88	117	143	64	55	60
30	65	58	58	160	-----	153	92	94	100	62	54	60
31	67	-----	58	125	-----	162	-----	87	-----	62	54	-----
TOTAL	2,127	1,986	3,548	7,167	2,147	7,713	3,258	3,352	3,356	2,252	1,879	1,925
MEAN	68.6	66.2	114	231	76.7	249	109	108	112	72.6	60.6	64.2
MAX	82	83	759	1,900	107	2,070	207	333	263	93	85	141
MIN	65	54	52	55	66	72	88	84	80	62	54	53
CFSM	.31	.30	.52	1.05	.35	1.13	.49	.49	.51	.33	.27	.29
IN.	.36	.33	.60	1.21	.36	1.30	.55	.56	.56	.38	.32	.32
CAL YR 1966: TOTAL	41,932		MEAN 115		MAX 4,000	MIN 52	CFSM .52	IN 7.06				
WAT YR 1967: TOTAL	40,710		MEAN 112		MAX 2,070	MIN 52	CFSM .50	IN 6.85				

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12- 8	2400	11.42	1,440	3-25	1000	13.07	3,170
1-25	2000	13.80	4,810				

5-4345. Pecatonica River at Martintown, Wis.

Location.--Lat 42°30'35", long 89°48'00", in SE 1/4 sec. 32, T. 1 N., R. 6 E., on right bank about 400 ft downstream from highway bridge in Martintown, 0.3 mile upstream from Wisconsin-Illinois State line and 9 miles downstream from Skinner Creek.

Drainage area.--1,040 sq mi, approximately.

Records available.--October 1939 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 757.9 ft above mean sea level, datum of 1929. Prior to Jan. 6, 1940, wire-weight gage at same site and datum. Jan. 6, 1940, to May 5, 1966, graphic water-stage recorder at same site and datum. Auxiliary wire-weight gage 1 1/4 miles downstream read several times daily during high water.

Average discharge.--28 years, 683 cfs.

Extremes.--Maximum discharge during year, 6,090 cfs Mar. 27 (gage height, 15.70 ft); minimum, 190 cfs Sept. 12 (gage height, 2.70 ft).
1939-67: Maximum discharge, 14,200 cfs Apr. 3, 1959 (gage height, 20.23 ft); maximum gage height, 20.24 ft Feb. 29, 1948; no flow for part of Dec. 14, 1939.

Remarks.--Records good except those for winter months, which are fair. Slight diurnal fluctuation from powerplant upstream.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	A'G.	SEPT.
1	268	276	226	220	780	281	909	410	313	509	279	230
2	269	275	205	230	540	290	930	460	300	428	286	229
3	265	271	200	235	480	330	856	416	285	408	285	226
4	264	269	205	235	440	450	754	361	276	397	292	226
5	266	261	215	240	400	500	658	339	273	377	279	224
6	263	289	230	240	370	520	584	328	273	370	267	222
7	259	307	255	240	340	520	536	327	286	361	418	210
8	260	300	480	240	320	510	504	348	318	349	412	217
9	263	317	1,400	235	320	520	501	358	350	343	325	218
10	261	364	1,830	230	315	600	495	356	592	340	298	214
11	260	380	1,760	225	315	1,200	461	505	1,090	340	279	211
12	262	345	1,090	225	320	1,500	427	931	1,230	334	265	198
13	270	308	577	225	330	1,500	407	937	1,030	317	260	220
14	329	293	552	230	360	1,450	430	655	699	312	256	234
15	486	287	636	235	500	1,200	439	523	524	308	255	430
16	461	302	487	245	740	540	449	468	462	305	249	584
17	370	312	353	240	700	400	569	420	468	300	249	508
18	340	294	332	235	550	390	495	391	1,070	353	311	418
19	332	288	315	230	430	380	446	376	1,590	435	436	316
20	344	282	305	240	370	385	406	360	1,070	365	410	291
21	340	273	290	250	340	420	412	345	657	328	305	280
22	331	272	260	290	315	480	565	329	541	316	293	282
23	337	276	235	550	305	700	587	320	490	307	334	262
24	321	283	215	1,100	290	3,320	503	320	464	304	327	253
25	303	285	200	1,750	280	3,850	442	319	492	303	287	248
26	297	284	195	1,900	280	4,780	416	311	524	288	268	246
27	314	294	195	1,900	280	5,950	416	301	465	287	256	260
28	313	284	200	1,850	285	5,510	410	306	433	287	255	279
29	296	274	205	1,700	-----	3,390	398	327	478	293	255	267
30	290	254	210	1,400	-----	1,680	390	360	666	276	249	251
31	281	-----	215	1,000	-----	1,070	-----	346	-----	281	242	-----
TOTAL	9,515	8,799	14,073	18,365	11,295	44,616	15,795	12,853	17,709	10,521	9,182	8,320
MEAN	307	293	454	592	403	1,439	527	415	590	339	296	277
MAX	486	380	1,830	1,900	780	5,950	930	937	1,590	509	436	584
MIN	259	254	195	220	280	281	390	301	273	276	242	198
CFSM	.30	.28	.44	.57	.39	1.38	.51	.40	.57	.33	.28	.27
IN.	.34	.31	.50	.66	.40	1.60	.56	.46	.63	.38	.33	.30

CAL YR 1966: TOTAL 190,927

MEAN 523

MAX 5,500

MIN 195

CFSM .50

IN 6.83

WAT YR 1967: TOTAL 181,043

MEAN 496

MAX 5,950

MIN 195

CFSM .48

IN 6.47

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-27	2000	15.70	6,090				

5-4365. Sugar River near Brodhead, Wis.

Location--Lat 42°36'40", long 89°23'50", in SW 1/4 sec. 26, T. 2 N., R. 9 E., on left bank at downstream side of highway bridge, 2 miles upstream from Jordan Creek, and 2 miles southwest of Brodhead.

Drainage area--527 sq mi.

Records available--January 1914 to September 1967. Monthly discharge only for January and February 1914, published in WSP 1308.

Gage--Digital water-stage recorder. Datum of gage is 768.14 ft above mean sea level, datum of 1929. Prior to Oct. 17, 1938, chain gage at same site and datum. Oct. 17, 1938, to July 21, 1964, graphic water-stage recorder at present site and datum.

Average discharge--53 years, 335 cfs.

Extremes--Maximum discharge during year, 3,200 cfs Mar. 26 (gage height, 6.69 ft); minimum, 115 cfs Nov. 29 (gage height, 0.10 ft).
1914-67: Maximum discharge, 14,800 cfs Sept. 13, 1915 (gage height, 11.4 ft, from floodmarks), from rating curve extended above 7,500 cfs; minimum, 35 cfs Sept. 19, 1959 (gage height, -0.16 ft).

Remarks--Records good except those for winter months, which are fair.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	153	170	155	155	270	160	451	294	213	302	524	192
2	152	165	145	155	235	160	475	299	202	280	439	195
3	151	164	140	155	215	160	470	236	194	271	334	195
4	151	162	145	155	200	170	422	236	194	263	263	194
5	149	201	155	150	185	180	356	230	194	253	249	192
6	150	171	170	155	180	210	331	223	190	245	254	189
7	154	172	191	160	175	243	311	222	202	238	299	187
8	150	176	249	165	170	318	297	231	213	231	331	187
9	146	219	371	165	170	288	314	237	235	227	274	185
10	144	219	551	155	170	501	311	224	457	224	247	183
11	141	225	542	145	170	1,180	292	476	890	223	233	181
12	137	203	387	140	170	1,530	273	748	1,150	220	224	184
13	146	190	261	135	170	1,170	266	778	1,060	217	216	187
14	160	184	223	135	180	647	269	532	1,010	211	211	196
15	192	180	219	130	210	405	269	370	588	206	207	305
16	274	180	201	130	450	351	257	296	413	202	203	445
17	273	179	195	135	270	275	296	284	476	196	202	408
18	192	179	193	140	230	264	317	262	1,160	374	274	288
19	188	175	190	140	210	263	297	255	1,860	459	669	255
20	183	172	187	145	195	242	273	237	1,190	340	797	236
21	180	170	187	160	180	251	285	229	562	247	518	231
22	177	173	184	180	175	249	327	215	433	208	313	229
23	170	176	161	200	170	336	341	219	368	240	270	206
24	167	181	150	480	165	1,080	361	219	362	384	257	209
25	156	182	150	1,050	160	2,190	289	215	398	291	239	205
26	163	182	145	1,700	160	3,030	275	210	445	257	230	210
27	166	190	145	1,550	160	1,950	272	204	365	429	226	220
28	166	181	145	1,100	160	1,170	249	227	340	589	220	227
29	167	149	145	680	-----	803	276	233	382	404	215	219
30	163	173	145	450	-----	546	283	259	368	389	212	210
31	171	-----	150	320	-----	471	-----	235	-----	488	205	-----
TOTAL	5,232	5,443	6,577	10,815	5,555	20,793	9,505	9,135	16,114	9,108	9,355	6,750
MEAN	169	181	212	349	198	671	317	295	537	294	302	225
MAX	274	225	551	1,700	450	3,030	475	778	1,860	589	797	445
MIN	137	149	140	130	160	160	249	204	190	196	202	181
CFSM	.32	.34	.40	.66	.38	1.27	.60	.56	1.02	.56	.57	.43
IN.	.37	.38	.46	.76	.39	1.47	.67	.64	1.14	.64	.66	.48

CAL YR 1966: TOTAL 96,874 MEAN 265 MAX 4,020 MIN 137 CFSM .50 IN 6.84
WAT YR 1967: TOTAL 114,382 MEAN 313 MAX 3,030 MIN 130 CFSM .59 IN 8.07

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-26	1300	5.48	1,800	3-26	0800	6.69	3,200
3-12	0500	4.65	1,680	6-19	0800	5.28	1,970

5-4375. Rock River at Rockton, Ill.

Location--Lat 42°27'05", long 89°04'20", in SE 1/4 NW 1/4 sec. 24, T. 46 N., R. 1 E., on left bank at upstream side of bridge on State Highway 2 in Rockton, 0.8 mile downstream from Pecatonica River.

Drainage area--6,290 sq mi, approximately.

Records available--June 1903 to July 1906, October 1906 to March 1909, July 1914 to September 1919, October 1939 to September 1967. Published as "below mouth of Pecatonica River at Rockton" 1903-09; as "at Rockford" 1914-19. Monthly discharge only for some periods, published in WSP 1308.

Gage--Digital water-stage recorder. Datum of gage is 707.94 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1906, chain gage at same site at datum about 1 ft higher. Oct. 1, 1906, to Mar. 31, 1909, chain gage at same site at datum about 2 ft higher. July 30, 1914, to Apr. 30, 1919, chain gage at site at Rockford about 21 miles downstream, at different datum. Mar. 15, 1940, to Oct. 1, 1964, graphic water-stage recorder at present site and datum.

Average discharge--35 years (1903-5, 1914-19, 1939-67), 3,685 cfs (discharge for site at Rockford adjusted for difference in drainage area).

Extremes--Maximum discharge during year, 9,800 cfs Mar. 28 (gage height, 7.70 ft); minimum daily, 776 cfs Oct. 8.

1903-9, 1914-19, 1939-67: Maximum discharge, 32,500 cfs Mar. 30, 1916 (gage height, 13.06 ft, site and datum then in use); minimum daily, 501 cfs Sept. 15, 1958.

Flood in February 1937 reached a stage of 14.6 ft (backwater from ice), from painted floodmark.

Remarks--Records good except those for winter periods, which are poor. Low flow regulated by powerplants above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.010	1.200	1.300	1.750	5.100	1.800	9.380	3.890	2.400	3.920	2.080	1.160
2	1.030	1.170	1.100	1.700	4.700	2.200	9.340	3.650	2.150	3.960	2.080	942
3	1.060	1.180	1.150	1.650	4.400	2.500	8.840	3.570	2.100	3.700	1.930	1.050
4	845	1.090	1.200	1.600	4.000	2.600	7.660	3.600	1.990	3.640	1.860	933
5	1.180	1.100	1.350	1.600	3.800	2.500	6.480	3.480	1.600	3.360	1.820	1.080
6	1.140	1.140	1.440	1.700	3.300	2.600	6.120	3.350	1.830	2.890	1.590	1.110
7	1.120	1.080	1.610	1.700	2.900	2.650	5.660	3.180	1.920	2.960	1.680	1.060
8	776	1.180	2.110	1.800	2.750	2.600	5.300	3.210	1.840	2.870	1.750	1.010
9	1.040	1.340	2.310	1.810	2.650	2.500	4.910	2.940	1.510	2.730	1.920	1.020
10	1.260	1.560	2.450	1.970	2.500	3.100	4.890	2.700	2.780	2.730	1.910	873
11	980	1.610	2.600	1.750	2.400	4.500	4.890	3.890	5.670	2.390	1.720	1.040
12	863	1.590	2.970	1.840	2.300	4.700	4.840	4.300	7.050	2.270	1.620	985
13	1.090	1.510	3.070	1.810	2.400	4.820	4.590	4.110	8.400	1.990	1.790	978
14	1.080	1.430	3.090	1.970	2.400	5.050	4.480	4.320	8.540	1.940	1.770	1.040
15	1.160	1.390	2.600	1.720	2.350	5.240	4.080	4.330	8.020	1.630	1.790	952
16	1.240	1.380	2.600	1.700	2.200	5.060	4.160	4.200	7.410	1.820	1.730	1.230
17	1.250	1.390	2.400	1.700	2.500	4.910	4.030	3.940	7.680	1.730	1.710	1.630
18	1.520	1.350	2.310	1.750	2.550	4.370	3.690	3.620	7.560	1.940	1.620	1.800
19	1.400	1.320	2.270	1.790	2.500	4.110	3.820	3.410	6.990	2.360	1.950	1.780
20	1.320	1.310	2.270	1.970	2.400	3.790	3.670	3.310	7.030	2.490	2.090	1.800
21	1.250	1.350	2.240	1.550	2.100	3.700	3.640	3.240	7.160	2.310	2.220	1.750
22	1.340	1.350	2.240	1.660	2.000	3.820	4.280	3.190	7.090	1.960	2.130	1.620
23	1.340	1.410	1.670	1.950	1.900	4.540	4.380	3.090	6.380	1.860	1.570	1.490
24	1.240	1.750	1.810	2.800	1.700	6.750	4.500	2.700	5.460	1.830	1.700	1.070
25	1.360	1.360	1.900	4.010	1.650	8.000	4.350	2.650	5.030	1.780	1.410	1.440
26	1.400	931	1.850	4.480	1.650	7.890	4.300	2.500	4.720	1.870	1.140	1.260
27	1.240	1.220	1.800	4.600	1.700	8.620	4.040	2.400	4.450	2.010	1.120	1.280
28	1.230	1.590	1.750	4.740	1.750	9.560	3.790	2.550	4.380	2.090	1.030	1.350
29	1.230	2.020	1.700	4.800	- - - -	9.660	3.740	2.730	4.300	2.190	1.160	1.340
30	1.190	1.610	1.700	5.200	- - - -	9.500	3.960	2.560	4.060	2.120	1.190	1.280
31	1.240	- - - -	1.750	5.300	- - - -	9.340	- - - -	2.450	- - - -	2.190	1.130	- - - -
Total	36,424	40,911	62,610	76,370	74,550	152,980	151,810	103,060	147,500	75,530	49,990	37,353
Mean	1,175	1,364	2,020	2,464	2,663	4,935	5,060	3,325	4,917	2,436	1,613	1,245
Max	1,520	2,020	3,090	5,300	5,100	9,660	9,380	4,330	8,540	3,960	2,220	1,800
Min	776	931	1,100	1,550	1,650	1,800	3,640	2,400	1,510	1,630	1,030	873
Cfsm	.19	.22	.32	.39	.42	.78	.80	.53	.78	.39	.26	.20
In.	.22	.24	.37	.45	.44	.90	.90	.61	.87	.45	.30	.22

Cal yr 1966 : Total 1,204,165 Mean 3,299 Max 12,400 Min 776 Cfsm .52 In. 7.12
 Wtr yr 1967 : Total 1,009,088 Mean 2,765 Max 9,660 Min 776 Cfsm .44 In. 5.97

5-5290. Des Plaines River near Des Plaines, Ill.

Location.--Lat 42°04'55", long 87°53'25", in SE 1/4 SE 1/4 sec. 25, T. 42 N., R. 11 E., on right bank 50 ft upstream from dam No. 2 of Cook County Forest Preserve, 0.3 mile downstream from Lake Avenue Bridge, 1.2 miles upstream from Central Road Bridge, 2.5 miles north of Des Plaines, and at mile 69.30.

Drainage area.--359 sq mi.

Records available.--October 1940 to September 1967.

Gage.--Digital water-stage recorder and masonry dam. Datum of gage is 626.31 ft above mean sea level, datum of 1929. Prior to Apr. 8, 1941, staff gage and Apr. 8, 1941, to Mar. 30, 1965, graphic water-stage recorder, at same site and datum.

Average discharge.--27 years, 211 cfs.

Extremes.--Maximum discharge during year, 2,820 cfs June 11 (gage height, 6.30 ft); minimum, 2.5 cfs Oct. 3.

1940-67: Maximum discharge, 4,670 cfs Apr. 2, 1960 (gage height, 8.56 ft); no flow for many days in 1944, 1946, and Aug. 7, 8, 1962.

Flood of July 4, 1938, reached a stage of 9.0 ft, from floodmark (discharge, 5,000 cfs).

Remarks.--Records good except those for winter periods, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	15	58	32	93	53	2,020	604	93	336	76	25
2	17	14	47	30	86	54	2,340	548	86	310	68	22
3	3.9	8.1	44	29	83	60	1,970	495	76	290	58	19
4	5.1	7.8	41	29	80	62	1,550	450	65	274	50	18
5	6.0	8.4	41	30	80	68	1,210	400	65	246	47	19
6	4.2	7.4	52	31	80	72	1,070	355	65	213	43	24
7	5.0	7.0	114	41	82	84	972	310	82	176	48	25
8	5.8	14	235	38	92	86	880	284	131	153	55	24
9	3.9	54	218	33	95	99	802	274	176	140	56	19
10	5.5	56	186	35	100	196	709	257	612	148	45	15
11	13	38	171	31	87	420	621	472	2,590	127	40	15
12	22	25	153	30	80	518	548	525	1,740	118	37	16
13	46	16	135	35	75	578	502	480	964	110	33	16
14	58	12	122	38	87	691	458	458	745	101	29	17
15	66	16	106	35	110	709	414	442	655	93	27	30
16	28	16	97	31	100	673	388	428	638	79	24	21
17	14	14	86	28	95	621	374	414	783	72	25	16
18	14	18	79	26	90	630	362	388	930	68	38	15
19	12	14	72	25	87	630	348	348	1,040	90	49	27
20	7.4	10	66	24	85	596	342	296	1,080	93	37	31
21	9.3	8.5	58	25	83	621	420	252	1,040	82	31	44
22	8.9	10	50	31	80	664	604	218	948	72	29	28
23	6.1	12	44	52	72	754	612	202	830	79	24	20
24	6.1	16	40	80	67	900	604	176	745	76	22	15
25	8.9	34	36	115	63	1,020	646	166	664	82	25	12
26	14	25	53	90	60	1,030	682	153	578	101	20	17
27	11	131	30	80	56	1,010	709	135	495	97	21	29
28	12	135	31	75	54	996	682	140	465	86	19	25
29	10	93	33	72	---	964	664	131	420	93	19	24
30	7.5	72	30	80	---	920	655	114	374	101	27	25
31	7.6	---	31	100	---	1,000	---	101	---	93	24	---
Total	457.2	907.2	2,539	1,431	2,302	16,779	24,158	10,016	19,175	4,199	1,147	653
Mean	14.7	30.2	81.9	46.2	82.2	541	805	323	639	135	37.0	21.8
Max	66	135	235	115	110	1,030	2,340	604	2,590	336	76	44
Min	3.9	7.0	30	24	54	53	342	101	65	68	19	12
Cfsm	.04	.08	.23	.13	.23	1.51	2.24	.90	1.78	.38	.10	.06
In.	.05	.09	.26	.15	.24	1.74	2.50	1.04	1.99	.43	.12	.07
Cal yr 1966: Total	90,463.7			Mean 248	Max 1,720	Min 3.9	Cfsm .69	In. 9.37				
Wtr yr 1967: Total	83,763.4			Mean 229	Max 2,590	Min 3.9	Cfsm .64	In. 8.68				

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-2	0430	5.35	2,460	6-20	0330	2.30	1,100
6-11	0900	6.30	2,820				

5-5438.3 Fox River at Waukesha, Wis.

Location.--Lat 43°00'17", long 88°14'37", in SW 1/4 sec. 3, T. 6 N., R. 19 E., on left bank 20 ft downstream from Prairie Street bridge in Waukesha, 1.0 mile downstream from dam and 3.2 miles downstream from Pewaukee River.

Drainage area.--127 sq mi.

Records available.--January 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 793.04 ft above mean sea level, datum of 1929 (levels by city of Waukesha).

Extremes.--Maximum discharge during year, 369 cfs June 12 (gage height, 3.86 ft); minimum, 6.2 cfs Dec. 15, 16. 1963-67: Maximum discharge, 1,240 cfs Mar. 6, 1965 (gage height, 5.79 ft); minimum, 3.0 cfs Jan. 1, 1964 (gage height, 1.52 ft).

Remarks.--Records good except those for winter months, which are fair. Regulation from mill dam one mile upstream.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	10	15	10	38	18	119	78	32	82	15	12
2	7.0	10	13	10	35	18	127	72	22	65	16	12
3	8.6	9.5	10	12	34	19	105	66	22	51	15	12
4	9.5	10	10	12	32	20	100	58	21	47	14	10
5	9.5	10	10	12	30	20	111	53	22	41	12	11
6	9.0	10	19	14	30	21	67	46	21	37	13	12
7	9.5	12	19	14	27	23	73	46	38	35	13	12
8	8.2	15	60	12	26	25	72	49	41	30	13	13
9	7.8	29	65	12	27	27	79	50	52	28	14	12
10	9.5	18	45	14	28	49	83	52	111	27	13	10
11	8.2	17	28	12	25	70	72	100	192	26	13	11
12	8.6	14	26	14	25	73	70	121	226	26	11	12
13	15	12	24	15	23	90	65	106	248	25	10	12
14	17	12	23	14	27	86	66	93	226	22	11	12
15	15	12	13	12	29	67	64	75	181	22	11	12
16	12	12	12	13	30	61	67	66	157	19	10	12
17	13	12	16	12	29	52	65	62	137	21	11	10
18	12	11	16	12	27	54	65	61	116	22	12	12
19	12	10	16	10	26	48	57	60	94	19	16	14
20	11	10	16	10	24	51	50	54	76	22	10	16
21	11	11	18	10	23	53	59	50	60	19	13	13
22	10	12	16	12	21	80	72	45	56	18	12	12
23	9.0	12	14	23	20	90	83	44	54	20	11	10
24	10	12	12	93	19	108	76	41	52	19	10	9.5
25	10	16	10	94	19	150	67	33	48	18	11	10
26	9.5	14	10	83	18	179	60	30	46	25	15	12
27	10	27	10	60	18	210	58	26	41	18	12	13
28	10	27	12	57	18	205	54	44	92	17	12	12
29	9.0	17	11	49	- - - -	174	56	41	94	16	22	12
30	9.0	19	11	45	- - - -	163	59	41	100	16	16	10
31	10	- - - -	10	41	- - - -	116	- - - -	40	- - - -	19	16	- - - -
Total	317.3	422.5	590	813	728	2,420	2,221	1,803	2,678	872	493	352.5
Mean	10.2	14.1	19.0	26.2	26.0	78.1	74.0	58.2	89.3	28.1	13.0	11.8
Max	17	29	65	94	38	210	127	121	248	82	22	16
Min	7.0	9.5	10	10	18	18	50	26	21	16	10	9.5
Cfsm	.080	.111	.150	.206	.205	.615	.583	.458	.703	.221	.102	.093
In.	.09	.12	.17	.24	.21	.71	.65	.53	.78	.26	.12	.10
Cal yr 1966: Total	25,119.1		Mean	68.8	Max	915	Min	7.0	Cfsm	.542	In.	7.35
Wtr yr 1967: Total	13,620.3		Mean	37.3	Max	248	Min	7.0	Cfsm	.294	In.	3.98

135

Location,--Lat 42°44'35", long 88°38'00", in sec. 5, T. 3 N., R. 16 E., attached to post near shore line, 5 1/2 miles northwest of Elkhorn.

Records available.--May 1937 to September 1967 (fragmentary). Published as Holden Lake prior to October 1958.

Extremes.--Maximum gage height observed during year, 8.58 ft June 17; minimum observed, 7.78 ft Nov. 5.

1937-67: Maximum gage height observed, 12.45 ft Mar. 25, 1939; lake dry for parts of period July to December, 1958.

Remarks.--Lake has no surface outlet. Lake ice covered December through March.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							8.22					7.90
2											8.15	
3			7.93						8.11			
4					8.13	8.18						
5		7.78										
6								8.27	8.24			
7				8.13						8.32		
8							8.22					
9												
10			8.05		8.25				8.50			
11					8.23	8.08						
12		7.88		8.04			8.20					
13							8.20	8.27				
14				8.13						8.22		
15						8.20	8.22					
16												
17			8.05					8.24	8.58			
18					8.23	8.32						
19		7.85										
20								8.24				
21												
22				8.13			8.32					
23												
24			8.05						8.50			
25					8.23	8.32						
26		7.93										
27								8.12				
28				8.13								
29		7.96			-----		8.30	8.48				
30	7.83				-----				8.48			
31		-----	8.08		-----		-----		-----			-----

ILLINOIS RIVER BASIN

5-5455.5 Rockland Lake near Burlington, Wis.

Location.--Lat 42°40'34", long 88°14'57" in NE 1/4, SE 1/4 sec. 33, T. 3 N., R. 19 E., about 3/4 mile east of Burlington at Camp MacLean.

Drainage area.--0.99 sq mi. Area of Rockland Lake, 45 acres.

Records available.--January to September 1967.

Gage.--Staff gage read once weekly.

Extremes.--Maximum gage height observed during period, 5.44 ft June 28; minimum observed, 4.51 ft Jan. 12.

Remarks.--Lake has no surface outlet. Lake usually ice covered December through March.

Elevation, in feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						4.75						
2												
3							4.95		4.83	5.42		
4								4.88			5.33	
5					4.71							
6												4.93
7											5.28	
8												4.93
9												
10						4.76			5.02		5.27	
11							4.90					
12				4.51			4.89					
13								4.88		5.25		
14					4.72				5.27			4.93
15						4.80						
16												
17								4.91				
18							4.88				5.10	
19				4.52								
20												4.87
21										5.14		
22						4.87			5.25		5.04	
23					4.75							
24				4.53								
25							4.91					
26												
27						4.94		4.89				4.85
28									5.27	5.35		
29									5.44		5.00	
30												
31				4.63								

5-5465. Fox River at Wilmot, Wis.

Location.--Lat 42°30'40", long 88°10'45", in SW 1/4 sec. 30, T. 1 N., R. 20 E., on right bank 100 ft downstream from bridge on County Trunk C, 300 ft upstream from Wilmot Dam, 1 mile north of Wisconsin-Illinois State line, and 6 miles upstream from Fox chain of lakes.

Drainage area.--868 sq mi (revised).

Records available.--October 1939 to September 1967.

Gage.--Water-stage recorder and concrete control. Datum of gage is 735.22 ft above mean sea level, datum of 1929. Prior to Sept. 1, 1965, wire-weight gage and concrete control.

Average discharge.--28 years, 451 cfs.

Extremes.--Maximum discharge during year, 2,380 cfs June 14 (gage height, 6.91 ft); minimum, 85 cfs Oct. 3, 8.

1939-67: Maximum discharge, 7,520 cfs Mar. 31, 1960 (gage height, 9.25 ft, from graph based on gage readings); no flow part of day Oct. 26, 1945; minimum daily discharge, 35 cfs Sept. 9, 1958.

Remarks.--Records good except those for winter months, which are fair. Three 6-foot lift gates in Wilmot Dam were in operation during the year; discharge through gates computed by weir and orifice formulas and added to flow over dam.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	163	209	150	300	205	1,070	595	261	1,060	253	192
2	107	179	180	155	295	200	1,120	595	249	858	233	183
3	96	179	170	155	285	200	1,120	602	209	755	233	183
4	99	163	175	155	270	200	1,060	568	192	679	263	179
5	103	147	222	165	260	210	958	523	201	615	268	179
6	103	143	265	170	240	215	904	480	201	539	243	179
7	96	151	316	170	240	230	857	438	219	414	233	179
8	93	183	516	165	240	270	734	455	261	336	233	175
9	96	260	568	160	245	302	701	498	301	327	233	175
10	103	349	533	160	245	412	728	480	619	322	228	179
11	110	338	447	170	240	633	707	745	1,500	312	214	179
12	110	300	372	175	240	779	662	1,170	1,990	303	197	179
13	125	269	331	180	240	720	625	1,060	2,310	266	192	183
14	129	250	321	175	250	680	561	958	2,340	223	183	192
15	191	269	321	170	260	620	373	880	2,160	219	175	190
16	209	231	298	165	260	560	427	783	1,780	205	171	190
17	205	227	284	155	250	500	432	707	1,680	192	171	190
18	183	231	275	151	250	540	461	544	1,830	175	183	190
19	171	231	262	143	245	590	468	562	1,800	219	201	195
20	171	218	258	147	240	600	420	570	1,560	228	210	210
21	151	209	222	147	230	600	443	510	1,320	243	205	260
22	143	205	190	159	220	588	787	442	1,170	273	197	250
23	140	209	180	236	210	718	958	371	1,030	268	188	240
24	155	227	175	361	205	947	879	345	904	273	179	230
25	159	260	170	493	200	1,080	787	331	828	253	171	230
26	151	269	165	562	205	1,170	697	307	741	233	167	270
27	143	407	160	419	210	1,260	643	284	591	253	179	310
28	143	569	160	389	205	1,290	576	280	755	345	183	293
29	155	475	155	350	- - - -	1,170	542	275	1,220	340	175	271
30	159	338	150	330	- - - -	1,080	568	280	1,240	301	197	246
31	159	- - - -	150	310	- - - -	1,010	- - - -	275	- - - -	268	205	- - - -
Total	4,268	7,649	8,200	6,992	6,780	19,579	21,268	16,913	31,462	11,297	6,363	6,301
Mean	138	255	265	226	242	632	709	546	1,049	364	205	210
Max	209	569	568	562	300	1,290	1,120	1,170	2,340	1,060	268	310
Min	93	143	150	143	200	200	373	275	192	175	167	175
Cfsm	.157	.290	.301	.257	.275	.718	.806	.620	1.19	.414	.233	.239
In.	.18	.32	.35	.30	.29	.83	.90	.71	1.33	.48	.27	.27
Cal yr 1966: Total	180,349			Mean 494		Max 3,170	Min 93	Cfsm .561	In. 7.60			
Wtr yr 1967: Total	147,072			Mean 403		Max 2,340	Min 93	Cfsm .458	In. 6.23			

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Superior						
✓ 4-0243.5	Black River near Chaffey, Wis.	S 1/2 sec. 19, T. 46 N., R. 14 W., at bridge on State Highway 35, 4.0 miles southeast of Patzau.	49.5	1964 1967	8-22-67	1.69
✓ 4-0250	Annicon River near Poplar, Wis.	On common boundary of sec. 29 and 32, T. 48 N., R. 12 W., at bridge on U. S. Highway 2, 4.5 miles northwest of Poplar.	112	1964 1967	8-22-67	5.47
✓ 4-0251	Middle River near Poplar, Wis.	SE 1/4 sec. 12, T. 48 N., R. 12 W., at bridge on State Highway 13, 4.6 miles north of Poplar.	51.6	1964 1967	8-24-67	1.43
✓ 4-0260.3	Reefer Creek near Port Wing, Wis.	NW 1/4 sec. 4, T. 49 N., R. 9 W., at bridge on State Highway 13, 5.8 miles southwest of Port Wing.	12.1	1964 1967	8-24-67	3.22
✓ 4-0261.2	Flag River at Port Wing, Wis.	Center of sec. 28, T. 50 N., R. 8 W., at bridge on State Highway 13, just northeast of Port Wing.	32.0	1964 1967	8-23-67	30.3
✓ 4-0261.9	Sand River near Red Cliff, Wis.	NE 1/4 sec. 14, T. 51 N., R. 5 W., at bridge on State Highway 13, 8.5 miles northwest of Red Cliff.	28.2	1964 1967	8-23-67	4.98
✓ 4-0263.5	North Fish Creek near Ashland, Wis.	SW 1/4 sec. 2, T. 47 N., R. 5 W., at bridge on U. S. Highway 2, 3.0 miles west of Ashland.	74.3	1967	8-23-67	84.1
✓ *4-0264	Spillerberg Creek near Cayuga, Wis.	NW 1/4 sec. 21, T. 43 N., R. 2 W., at concrete culvert pipe on State Highway 13, 4 1/4 miles southeast of Cayuga.	a 6.6	1961-67	8-23-67	.15
✓ 4-0265.5	Tyler Forks River near Upson, Wis.	SE 1/4 sec. 28, T. 45 N., R. 1 W., at culvert on State Highway 77, 4.3 miles southwest of Upson.	41.3	1967	8-23-67	11.6
✓ 4-0266	Marengo River near Marengo, Wis.	NW 1/4 sec. 36, T. 46 N., R. 4 W., at bridge on State Highway 13, 0.2 miles north of Marengo.	a 101	1967	8-23-67	35.0
✓ 4-0266.5	Trout Brook near Highbridge, Wis.	SW 1/4 sec. 8, T. 45 N., R. 3 W., at culvert on State Highway 13, 1.9 miles west of Highbridge.	7.91	1967	8-23-67	1.26
✓ 4-0269	Potato River near Gurney, Wis.	SW 1/4 sec. 16, T. 46 N., R. 1 W., at bridge on State Highway 169, 0.7 miles south of Gurney.	a 92.7	1967	8-23-67	21.0
✓ *4-0272	Pearl Creek at Grandview, Wis.	NE 1/4 sec. 22, T. 45 N., R. 6 W., at box culvert on U. S. Highway 63, 0.8 mile east of Grandview.	15.9	1961-67	8-23-67	9.64
✓ 4-0279	Layman Creek near Hurley, Wis.	NE 1/4 sec. 6, T. 45 N., R. 3 E., at bridge on State Highway 51, 8.0 miles southeast of Montreal.	a 17.8	1967	8-22-67	7.67
✓ *4-0297	Boomer Creek near Saxon, Wis.	N 1/2 sec. 3, T. 46 N., R. 1 E., at concrete culvert pipe on U. S. Highway 2, 3 miles east of Saxon.	6.73	1961-64 1966-67	8-22-67	.39

* Also a crest-stage station.

a Approximately.

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan						
✓ #4-0599	Allen Creek tributary near Alvin, Wis.	North boundary sec. 7, T. 40 N., R. 14 E., at culvert on State Highway 70, 2.2 miles southeast of Alvin.	a 1.9	1963-67	9-11-67	1.74
✓ #4-0638	Woods Creek near Fence, Wis.	SE 1/4 sec. 29, T. 39 N., R. 17 E., at box culvert on State Highway 101, 6 miles north of Fence.	42.3	1961 1963-67	10-26-66 9-12-67	19.6 9.55
✓ #4-0663	Cole Creek near Dunbar, Wis.	South boundary sec. 34, T. 37 N., R. 19 E., at culvert on U. S. Highway 8, 3.6 miles southeast of Dunbar.	a 3.2	1961 1963-67	10-27-66 6- 1-67 9-12-67	.98 1.93 .68
✓ #4-0678	Armstrong Creek near Armstrong Creek, Wis.	W 1/2 sec. 27, T. 37 N., R. 16 E., at bridge on U. S. Highway 8, 1 3/4 miles northwest of Armstrong Creek.	23.1	1963-67	10-26-66 9-12-67	8.64 7.26
✓ #4-0718	Pensaukee River near Pulaski, Wis.	NE 1/4 sec. 1, T. 26 N., R. 18 E., at bridge on State Highway 32, 6.1 miles north of Pulaski.	43.2	1961 1963-67	8-16-67	.79
✓ 4-0724	Fox River near Pardeeville, Wis.	NE 1/4 sec. 30, T. 13 N., R. 11 E., at culvert on State Highway 44, 4.5 miles northeast of Pardeeville.	41.1	1962-67	8-15-67	.79
✓ 4-0727	Neenah Creek near Briggsville, Wis.	NW 1/4 sec. 28, T. 14 N., R. 8 E., at bridge on State Highway 23, 1.8 miles northeast of Briggsville.	75.0	1962-67	8-24-67 9-28-67	39.6 39.6
✓ 4-0729.5	Grand River at Markesan, Wis.	NE 1/4 sec. 8, T. 14 N., R. 13 E., at bridge on country road, 1.2 miles southeast of Markesan.	40.2	1962-67	8-16-67	1.07
✓ 4-0731	Belle Fountain Creek near Kingston, Wis.	NE 1/4 sec. 17, T. 14 N., R. 11 E., at bridge on County Trunk B, 4.2 miles west of Kingston.	36.8	1962-67	8-16-67	4.06
✓ 4-0733	Chaffee Creek near Neshkoro, Wis.	NE 1/4 sec. 18, T. 17 N., R. 10 E., at bridge on country road, 6.5 miles west of Neshkoro.	a 40	1962-64 1966-67	8-22-67 9-28-67	31.7 31.4
✓ #4-0734	Bird Creek at Wautoma, Wis.	S 1/2 sec. 34, T. 19 N., R. 10 E., at concrete culvert on State Highway 21, 1/4 mile west of Wautoma.	a 3.9	1961-67	8-17-67 8-22-67 9-28-67	8.41 8.21 8.50
✓ 4-0734.2	Lunch Creek near Neshkoro, Wis.	NE 1/4 sec. 11, T. 17 N., R. 10 E., at bridge on country road, 2.8 miles west of Neshkoro.	a 16	1962-64 1966-67	8-22-67 9-28-67	10.1 11.3
✓ 4-0734.5	Sucker Creek near Berlin, Wis.	SW 1/4 sec. 16, T. 17 N., R. 12 E., at bridge on County Trunk D, 6.6 miles west of Berlin.	20.1	1962-64 1966-67	8-22-67 9-28-67	5.67 5.03
✓ #4-0747	Hunting River near Elcho, Wis.	N 1/2 sec. 24, T. 34 N., R. 10 E., at twin culverts on U. S. Highway 45 and State Highway 47, 1 1/2 miles south of Elcho.	a 6.0	1963-64 1966-67	5-23-67 8-23-67 9- 6-67 9-28-67	12.8 6.60 5.49 6.56
✓ 4-0748.5	Lily River near Lily, Wis.	SE 1/4 sec. 11, T. 33 N., R. 13 E., at bridge on County Trunk T, 3.2 miles north of Lily.	a 52	1963-64 1966-67	8-22-67 9-29-67	30.5 34.8
✓ 4-0775.5	Red River near Antigo, Wis.	SW 1/4 sec. 14, T. 30 N., R. 12 E., at bridge on country road, 8.3 miles southeast of Antigo.	a 21	1963-64 1966-67	8-22-67 9-29-67	27.0 34.4
✓ 4-0781	South Branch Embarrass River near Wittenberg, Wis.	SW 1/4 sec. 7, T. 27 N., R. 11 E., at bridge on State Highway 29, 2.6 miles west of Wittenberg.	a 27	1963-64 1966-67	8-22-67 9-29-67	9.08 7.85
✓ 4-0784	North Branch Embarrass River at Bowler, Wis.	NW 1/4 sec. 6, T. 27 N., R. 13 E., at bridge on County Trunk D, 0.8 mile south of Bowler.	37.1	1962-64 1966-67	8-22-67 9-29-67	15.1 13.3
✓ 4-0796	Little Wolf River at Galloway, Wis.	SW 1/4 sec. 23, T. 26 N., R. 10 E., at bridge on State Highway 49, 0.2 mile north of Galloway.	22.5	1962-64 1966-67	8-22-67 9-29-67	6.99 6.16
✓ 4-0796.5	Comet Creek near Big Falls, Wis.	NE 1/4 sec. 13, T. 25 N., R. 11 E., at culvert on country road, 5.1 miles northwest of Big Falls.	38.9	1962-64 1966-67	8-23-67 9-27-67	16.2 16.6
✓ 4-0798	Whitcombe Creek near Big Falls, Wis.	NW 1/4 sec. 9, T. 24 N., R. 13 E., at bridge on County Trunk 00, 5.3 miles southeast of Big Falls.	25.2	1962-64 1966-67	8-23-67 9-27-67	7.78 9.15

* Also a crest-stage station.

a Approximately.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan--Continued						
✓ 4-0799	Peterson Creek near Scandinavia, Wis.	SE 1/4 sec. 28, T. 23 N., R. 11 E., at bridge on County Trunk Q, 2.1 miles southwest of Scandinavia.	21.2	1962-64 1966-67	8-23-67 9-27-67	17.3 28.8
✓ 4-0808	Tomorrow River near Nelsonville, Wis.	NW 1/4 sec. 31, T. 24 N., R. 10 E., at culvert on County Trunk Q, 1.8 miles northwest of Nelsonville.	a 43	1962-64 1966-67	8-23-67 9-27-67	20.0 22.0
✓ 4-0811	Little River near Weyauwega, Wis.	SW 1/4 sec. 16, T. 21 N., R. 13 E., at bridge on U. S. Highway 10, 2.2 miles south of Weyauwega.	a 54	1963-64 1966-67	8-23-67 9-27-67	16.6 16.3
✓ 4-0814.5	Willow Creek near Redgranite, Wis.	NW 1/4 sec. 12, T. 18 N., R. 11 E., at bridge on County Trunk S, 2.1 miles northwest of Redgranite.	33.6	1962-67	8-22-67 9-28-67	32.2 34.4
✓ 4-0830	West Branch Fond du Lac River at Fond du Lac, Wis.	On common boundary sec. 17 and 20, T. 15 N., R. 17 E., at bridge on County Trunk T, 0.7 mile west of Fond du Lac.	84.5	1939-54# 1962-67	8-16-67	0
✓ 4-0835	East Branch Fond du Lac River at Fond du Lac, Wis.	SW 1/4 sec. 22, T. 15 N., R. 17 E., at bridge on County Trunk VV, 1/2 mile south of Fond du Lac.	77.9	1939-54# 1962-67	8-16-67	3.17
✓ 4-0850.3	Apple Creek near Kaukauna, Wis.	West boundary sec. 2, T. 21 N., R. 18 E., at bridge on State Highway 55, 3 1/2 miles northeast of Kaukauna.	14.6	1963-67	8-15-67	0
✓ 4-0854	Killsnake River near Chilton, Wis.	E 1/2 sec. 6, T. 18 N., R. 20 E., at bridge on country road, 2.4 miles northeast of Chilton.	29.5	1963-67	10- 5-66	.43
✓ 4-0854.8	Sheboygan River near Fond du Lac, Wis.	SW 1/4 sec. 32, T. 16 N., R. 19 E., at bridge on County Trunk W, 10.2 miles east of Fond du Lac.	27.9	1962-67	8-16-67	.18
✓ 4-0857	Sheboygan River tributary near Plymouth, Wis.	On common boundary sec. 2 and 11, T. 15 N., R. 21 E., at concrete culvert on County Trunk J, 3 1/2 miles northeast of Plymouth.	5.51	1961-67	10- 5-66 8- 8-67 8-15-67	1.10 1.55 1.65
✓ 4-0860.2	Sauk Creek at Port Washington, Wis.	SW 1/4 sec. 16, T. 11 N., R. 22 E., at bridge on country road, 1.8 miles north of Port Washington.	30.2	1962-67	8-15-67	0
✓ 4-0861	Milwaukee River at Campbellsport, Wis.	SE 1/4 sec. 7, T. 13 N., R. 19 E., at bridge on private road, 0.7 mile northeast of Campbellsport.	50.1	1962-67	8-15-67	1.79
✓ 4-0863	North Branch Milwaukee River near Cascade, Wis.	SW 1/4 sec. 8, T. 13 N., R. 21 E., at bridge on County Trunk A, 4.1 miles south of Cascade.	37.1	1962-67	8-15-67	9.82
✓ 4-0870.2	Menomonee River at Menomonee Falls, Wis.	SE 1/4 sec. 33, T. 9 N., R. 20 E., at culvert on County Trunk Q, 1.2 miles northwest of Menomonee Falls, Wis.	32.0	1962-67	8-16-67	3.43
✓ 4-0870.5	Little Menomonee River near Freistadt, Wis.	On common boundary sec. 29 and 32, T. 9 N., R. 21 E., at bridge on Donges Bay Road, 2 miles south of Freistadt.	7.96	1961-67	8-15-67	1.77
✓ 4-0871.5	Kinnickinnic River at Milwaukee, Wis.	SE 1/4 sec. 12, T. 6 N., R. 21 E., at bridge on So. 27th Street, in Milwaukee.	17.6	1962-67	8-16-67	11.9
✓ 4-0872	Oak Creek near South Milwaukee, Wis.	On common boundary of sec. 21 and 22, T. 5 N., R. 22 E., at bridge on West Nicholson Road, 3 miles southwest of South Milwaukee.	13.9	1961-67	8-16-67	.03
✓ 4-0872.5	Pike Creek near Kenosha, Wis.	W 1/2 sec. 27, T. 2 N., R. 22 E., at box culvert on State Highway 43, 3 miles northwest of Kenosha.	7.25	1961-67	8-15-67	.07
✓ 4-0872.6	Pike River near Kenosha, Wis.	SW 1/4 sec. 6, T. 2 N., R. 23 E., at bridge on County Trunk & (Meachem Road), 4.8 miles north of Kenosha.	41.0	1962-67	8-16-67	2.78

* Also a crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
St. Croix River Basin						
✓ 5-3317	Moose River near Solon Springs, Wis.	On common boundary of secs. 14 and 23, T. 44 N., R. 13 W., at bridge on County Trunk M, 7.8 miles southwest of Solon Springs.	49.9	1964 1967	8-22-67	2.88
✓ 5-3319	Chippanazie Creek at Stanberry, Wis.	NW 1/4 sec. 33, T. 41 N., R. 10 W., at culvert on U. S. Highway 63, 0.8 miles southwest of Stanberry.	a 33.8	1964 1967	8-22-67	8.49
✓ 5-3319.5	Bean Brook near Spring Brook, Wis.	NE 1/4 sec. 1, T. 39 N., R. 11 W., at culvert on County Trunk M, 3.5 miles southeast of Spring Brook.	a 38.1	1964 1967	8-22-67	21.9
✓ 5-3321	Potato Creek at Trego, Wis.	SW 1/4 sec. 2, T. 39 N., R. 12 W., at culvert on U. S. Highways 53 and 63, 0.9 mile south of Trego.	25.7	1962-64 1966-67	9-27-67	16.0
✓ 5-3327	Stance Brook near Minong, Wis.	SW 1/4 sec. 23, T. 41 N., R. 13 W., at culvert on County Trunk F, 8.8 miles southwest of Minong.	18.2	1964 1967	8-22-67	3.36
✓ 5-3330.6	Ounce River near Gordon, Wis.	SW 1/2 sec. 30, T. 43 N., R. 10 W., at bridge on country road, 7.8 miles southeast of Gordon.	a 41.7	1964 1967	8-22-67	16.4
✓ 5-3330.8	Frog Creek near Minong, Wis.	NW 1/4 sec. 20, T. 42 N., R. 11 W., at bridge on country road, 2.4 miles northeast of Minong.	a 31.7	1964 1967	8-22-67	3.99
✓ 5-3331	Little Frog Creek near Minong, Wis.	NW 1/4 sec. 29, T. 42 N., R. 11 W., at culvert on country road, 2 1/2 miles east of Minong.	13.6	1961 1963-67	7-21-67	1.36
✓ 5-3335.1	Chases Brook near Danbury, Wis.	NE 1/4 sec. 32, T. 42 N., R. 15 W., at bridge on country road, 7.0 miles northeast of Danbury.	a 38.0	1964 1967	8-23-67	2.68
✓ 5-3345	Yellow River at Webster, Wis.	On common boundary of secs. 4 and 5, T. 39 N., R. 16 W., at bridge on State Highway 35, 1.3 miles north of Webster.	228	1914 [#] 1964 1967	8-23-67	156
✓ 5-3353	Clam River near Frederic, Wis.	NW 1/4 sec. 6, T. 36 N., R. 15 W., at bridge on County Trunk W, 9.9 miles east of Frederic.	38.4	1962-64 1966-67	8-22-67 9-28-67	1.00 .96
✓ 5-3389	Wood River near Siren, Wis.	On common boundary of secs. 27 and 28, T. 38 N., R. 17 W., at bridge on country road, 4.8 miles southwest of Siren.	26.8	1964 1967	8-23-67	.28
✓ 5-3389.5	North Fork Wood River near Grantsburg, Wis.	E 1/2 sec. 8, T. 38 N., R. 18 W., at bridge on country road, 3.5 miles northeast of Grantsburg.	67.3	1964 1967	8-23-67	8.25
✓ 5-3403	Trade River near Frederic, Wis.	SW 1/4 sec. 4, T. 36 N., R. 17 W., at box culvert on State Highways 35 and 48, 2.5 miles southwest of Frederic.	5.79	1961-67	8-22-67 9-28-67	1.98 1.78
✓ 5-3404	Wolf Creek near St. Croix Falls, Wis.	SE 1/4 sec. 33, T. 36 N., R. 19 W., at bridge on County Trunk G, 11.0 miles northwest of St. Croix Falls.	29.3	1964 1967	8-23-67	7.90
✓ 5-3414.5	Horse Creek near Star Prairie, Wis.	SW 1/4 sec. 15, T. 32 N., R. 18 W., at culvert on County Trunk X, 5.3 miles northwest of Star Prairie.	32.6	1963-64 1966-67	8-23-67 9-28-67	9.00 9.86
✓ 5-3416.9	Willow River near New Richmond, Wis.	SE 1/4 sec. 25, T. 31 N., R. 17 W., at bridge on State Highway 64, 6.2 miles east of New Richmond.	85.1	1962-64 1966-67	8-23-67 9-28-67	14.1 10.0
✓ 5-3418.5	Kinnickinnic River near Hammond, Wis.	South boundary sec. 2, T. 28 N., R. 18 W., at culvert on County Trunk N, 4.5 miles southwest of Hammond.	47.8	1964 1966-67	7-12-67 9- 6-67	9.98 9.42
Trimble Creek Basin						
✓ 5-3463	Trimble Creek near Ellsworth, Wis.	South boundary sec. 17, T. 26 N., R. 18 W., at bridge on U. S. Highway 10, 5.0 miles west of Ellsworth.	42.8	1964 1966-67	7-12-67 9- 6-67	10.3 8.29

* Also crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Trimble Creek Basin--Continued						
✓ 5-3466	Little Trimble Creek near Bay City, Wis.	S 1/2 sec. 21, T. 25 N., R. 18 W., at bridge on County Trunk K, 7 miles northwest of Bay City.	19.9	1961 1963-67	7-12-67 9- 6-67	2.47 1.11
Isabelle Creek Basin						
✓ 5-3553	Isabelle Creek near Bay City, Wis.	SE 1/4 sec. 28, T. 25 N., R. 17 W., at bridge on County Trunk EE, 2.5 miles north of Bay City.	31.2	1964 1966-67	7-12-67 9- 6-67	5.67 3.13
Chippewa River Basin						
✓ 5-3554.2	Hay Creek near Hayward, Wis.	SW 1/4 sec. 31, T. 41 N., R. 6 W., at culvert on country road, 15.0 miles east of Hayward.	a 14.9	1967	8-24-67	12.7
✓ 5-3555.3	East Fork Chippewa River near Glidden, Wis.	On common boundary of secs. 12 and 13, T. 42 N., R. 2 W., at bridge on State Highway 13, 0.7 miles southeast of Glidden.	a 94.6	1967	8-23-67	37.9
✓ 5-3563.2	Little Weirgor Creek at Exeland, Wis.	SW 1/4 sec. 22, T. 37 N., R. 7 W., at bridge on State Highway 48, in Exeland.	a 31	1963-64 1966-67	8-23-67 9-27-67	13.5 16.0
✓ 5-3563.4	Big Weirgor Creek near Exeland, Wis.	SE 1/4 sec. 8, T. 36 N., R. 7 W., at bridge on country road, 3.9 miles southwest of Exeland.	a 39	1963-64 1966-67	8-23-67 9-27-67	7.47 8.25
✓ 5-3564	Thornapple River near Winter, Wis.	SE 1/4 sec. 8, T. 38 N., R. 4 W., at bridge on County Trunk W, 6.4 miles southeast of Winter.	35.7	1962-64 1966-67	8-22-67 9-29-67	4.07 4.28
✓ 5-3564.5	Little Thornapple River near Ladysmith, Wis.	SW 1/4 sec. 22, T. 36 N., R. 6 W., at bridge on State Highway 27, 8.5 miles north of Ladysmith.	a 18	1963-64 1966-67	9-27-67	.63
✓ 5-3567	Soft Maple Creek near Bruce, Wis.	NE 1/4 sec. 21, T. 34 N., R. 8 W., at bridge on country road, 4.9 miles southwest of Bruce.	a 34	1963-64 1966-67	8-23-67 9-28-67	.50 7.88
✓ 5-3573.5	Lost Creek near Powell, Wis.	SE 1/4 sec. 27, T. 42 N., R. 4 E., at bridge on State Highway 47, 1.0 mile west of Powell.	14.5	1967	8-22-67	7.36
✓ 5-3583	Pine Creek near Oxbow, Wis.	SE 1/4 sec. 36, T. 40 N., R. 3 W., at bridge on County Trunk EE, 3.0 miles northeast of Oxbow.	a 37.4	1967	8-22-67	17.8
✓ 5-3591	Springstead Creek near Park Falls, Wis.	SE 1/4 sec. 16, T. 40 N., R. 3 E., at bridge on Forest Road No. 147, 16 miles east of Park Falls.	a 21.4	1967	8-23-67	9.03
✓ 5-3593.5	Elk River near Phillips, Wis.	On common boundary of secs. 33 and 34, T. 38 N., R. 2 E., at bridge on County Trunk H, 8.9 miles northeast of Phillips.	a 42.1	1967	8-23-67	11.1
✓ 5-3597	Skinner Creek near Hawkins, Wis.	NW 1/4 sec. 23, T. 36 N., R. 3 W., at bridge on County Trunk M, 5.6 miles north of Hawkins.	30.2	1962-64 1966-67	8-22-67 9-29-67	1.00 1.22
✓ 5-3611	Deer Tail Creek near Ladysmith, Wis.	NW 1/4 sec. 34, T. 34 N., R. 6 W., at bridge on State Highway 27, 4.9 miles south of Ladysmith.	a 52	1963-64 1966-67	8-23-67 9-27-67	1.58 2.07
✓ 5-3614	Hay Creek near Prentice, Wis.	SE 1/4 sec. 4, T. 35 N., R. 1 E., at culvert on U. S. Highway 8, 3.5 miles west of Prentice.	20.1	1961-67	7-18-67 8-22-67 9-29-67	4.75 .96 .87
✓ 5-3630	Fisher River at Holcombe, Wis.	SE 1/4 sec. 28, T. 32 N., R. 6 W., at bridge on State Highway 27, in Holcombe.	a 76	1944-45# 1963-64 1966-67	8-24-67 9-27-67	2.98 3.18
✓ 5-3635	O'Neil Creek near Chippewa Falls, Wis.	Sec. 8, T. 29 N., R. 8 W., at bridge on U. S. Highway 53, 3 1/2 miles north of Chippewa Falls.	67.1	1944-45# 1963-64 1966-67	8-24-67 9-29-67	33.1 37.7
✓ 5-3640	Yellow River at Cadott, Wis.	NE 1/4 sec. 31, T. 29 N., R. 6 W., at bridge on State Highway 27, in Cadott.	351	1943-61# 1963-64 1966-67	8-24-67 9-29-67	14.3 14.2

* Also crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Chippewa River Basin--Continued						
✓ 5-3641.2	Big Drywood Creek near Cadott, Wis.	SW 1/4 sec. 22, T. 29 N., R. 7 W., at bridge on country road, 4.4 miles northwest of Cadott.	35.4	1963-64 1966-67	8-24-67 9-29-67	4.28 4.04
✓ 5-3641.6	Paint Creek near Chippewa Falls, Wis.	NW 1/4 sec. 17, T. 28 N., R. 7 W., at bridge on County Trunk K, 6.3 miles east of Chippewa Falls.	55.3	1963-64 1966-67	8-24-67 9-29-67	11.1 10.3
✓ 5-3650	Duncan Creek at Chippewa Falls, Wis.	SW 1/4 sec. 31, T. 29 N., R. 8 W., at bridge on Irvin Park road, in Chippewa Falls.	114	1943-55# 1963-64 1966-67	8-24-67 9-29-67	52.5 53.2
✓ 5-3656	South Fork Eau Claire River near Greenwood, Wis.	SW 1/4 sec. 23, T. 27 N., R. 3 W., at bridge on County Trunk M, 6.2 miles northwest of Greenwood.	77.1	1962-64 1966-67	9-28-67	3.09
✓ 5-3656.5	Hay Creek near Fairchild, Wis.	NE 1/4 sec. 2, T. 25 N., R. 4 W., at bridge on County Trunk I, 8.5 miles northeast of Fairchild.	28.1	1962-64 1966-67	8-22-67 9-28-67	1.92 1.90
✓ 5-3657	Goggle-eye Creek near Thorp, Wis.	West boundary sec. 19, T. 29 N., R. 3 W., at culvert on State Highway 73, 1.3 miles north of Thorp.	7.04	1961-66		c
✓ 5-3659	Wolf River near Stanley, Wis.	NW 1/4 sec. 1, T. 27 N., R. 5 W., at bridge on County Trunk H, 7.2 miles south of Stanley.	70.6	1963-64 1966-67	8-24-67	6.80
✓ 5-3664	Beargrass Creek near Fall Creek, Wis.	SW 1/4 sec. 14, T. 26 N., R. 7 W., at bridge on U. S. Highway 12, 4.3 miles southeast of Fall Creek.	16.0	1962-64 1966-67	8-22-67 9-27-67	3.48 3.53
✓ 5-3665	Eau Claire River near Fall Creek, Wis.	NW 1/4 sec. 19, T. 27 N., R. 7 W., 500 ft east of County Trunk K, 3 1/4 miles north of Fall Creek.	747	1943-55# 1963-64 1966-67	8-22-67 9-27-67	164 145
✓ 5-3670.32	Lowe Creek near Eau Claire, Wis.	NW 1/4 sec. 15, T. 26 N., R. 9 W., at bridge on County Trunk II, 4.0 miles south of Eau Claire.	53.8	1962-64 1966-67	8-22-67 9-27-67	20.1 21.2
✓ 5-3670.6	Muddy Creek near Menomonie, Wis.	SW 1/4 sec. 19, T. 27 N., R. 11 W., at bridge on County Trunk J, 9.3 miles southeast of Menomonie.	67.1	1962-64 1966-67	8-22-67 9-27-67	1.25 3.43
✓ 5-3674.2	Barker Creek near Cameron, Wis.	SE 1/4 sec. 24, T. 34 N., R. 12 W., at bridge on country road, 2.5 miles west of Cameron.	16.7	1963-64 1966-67	9-28-67	3.33
✓ 5-3674.3	Yellow River near Cumberland, Wis.	NE 1/4 sec. 12, T. 35 N., R. 13 W., at bridge on State Highway 48, 5.2 miles east of Cumberland.	a 50	1963-64 1966-67	9-28-67	10.4
✓ 5-3674.4	Vermillion River near Almena, Wis.	NW 1/4 sec. 15, T. 34 N., R. 13 W., at bridge on country road, 3.5 miles northeast of Almena.	a 17	1963-64 1966-67	9-28-67	6.28
✓ 5-3674.6	Pokegama Creek near Cameron, Wis.	SW 1/4 sec. 19, T. 34 N., R. 10 W., at bridge on U. S. Highway 8, 3.6 miles east of Cameron.	a 41	1963-64 1966-67	8-23-67 9-28-67	13.4 13.5
✓ 5-3674.8	East Branch Pine Creek tributary near Dallas, Wis.	SW 1/4 sec. 1, T. 32 N., R. 12 W., at culvert on County Trunk O, 1.5 miles north of Dallas.	3.85	1961 1963-67	10-13-66 8-14-67 8-23-67 9-29-67	1.16 1.18 1.04 1.24
✓ 5-3674.9	Lower Pine Creek at Sand Creek, Wis.	SW 1/4 sec. 14, T. 31 N., R. 11 W., at bridge on County Trunk V, 0.7 mile west of Sand Creek.	50.4	1963-64 1966-67	8-23-67 9-29-67	21.1 19.2
✓ 5-3678	Turtle Creek near Almena, Wis.	SW 1/4 sec. 25, T. 33 N., R. 14 W., at bridge on County Trunk D, 7.0 miles south of Almena.	38.9	1963-64 1966-67	8-23-67 9-28-67	8.99 10.2
✓ 5-3679.3	South Fork Hay River near Boyceville, Wis.	NE 1/4 sec. 23, T. 30 N., R. 14 W., at bridge on State Highway 79, 1.9 miles north of Boyceville.	90.4	1962-64 1966-67	8-23-67 9-28-67	33.1 27.9
✓ 5-3679.7	Beaver Creek at Downing, Wis.	NW 1/4 sec. 31, T. 30 N., R. 14 W., at bridge on State Highway 170, 0.1 mile east of Downing.	17.7	1962-64 1966-67	8-23-67 9-28-67	4.63 3.69
✓ 5-3681	Otter Creek near Wheeler, Wis.	SE 1/4 sec. 19, T. 30 N., R. 12 W., at bridge on County Trunk N, 1.7 miles northeast of Wheeler.	26.1	1962-64 1966-67	8-23-67 9-28-67	9.11 8.30

* Also a crest-stage station.

a Approximately.

c No discharge measurement.

Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Chippewa River Basin--Continued						
✓ 5-3690.3	Gilbert Creek at Menomonie, Wis.	SE 1/4 sec. 27, T. 28 N., R. 13 W., at bridge on County Trunk P, 0.6 mile west of Menomonie.	36.2	1962-64 1966-67	8-22-67 9-28-67	12.3 12.4
✓ 5-3694	Bear Creek near Durand, Wis.	SE 1/4 sec. 15, T. 25 N., R. 13 W., at bridge on State Highway 85, 1.6 miles northeast of Durand.	48.2	1964 1966-67	9- 7-67	12.8
✓ 5-3709	Spring Creek near Durand, Wis.	S 1/2 sec. 9, T. 24 N., R. 13 W., at bridge on country road, 4 miles south of Durand.	6.49	1962-67	10-26-66 9- 7-67	1.37 2.05
✓ 5-3710	Plum Creek at Plum City, Wis.	NW 1/4 sec. 22, T. 25 N., R. 15 W., at bridge on U. S. Highway 10 in Plum City.	31.5	1964 1966-67	9- 6-67	4.64
Buffalo River Basin						
✓ 5-3720	Buffalo River at Tell, Wis.	NW 1/4 sec. 16, T. 16 N., R. 12 W., at bridge on County Trunk F, 1 mile northeast of Tell.	406	1932-51 [#] 1964 1967	9- 7-67	149
Waumandee Creek Basin						
✓ 5-3781	Little Waumandee Creek near Cream, Wis.	SE 1/4 sec. 19, T. 21 N., R. 11 W., at bridge on State Highway 88, 2.8 miles south of Cream.	46.0	1964 1966-67	7-11-67 9- 7-67	24.9 16.3
Trempealeau River Basin						
✓ 5-3792	Trempealeau River at Taylor, Wis.	East boundary sec. 5, T. 21 N., R. 6 W., at bridge on County Trunk P, 0.4 mile north of Taylor.	110	1964 1966-67	7-12-67 9- 7-67	56.2 38.9
✓ 5-3793	Elk Creek at Elk Creek, Wis.	SW 1/4 sec. 31, T. 23 N., R. 8 W., at bridge on State Highway 93 in Elk Creek.	90.1	1964 1966-67	7-11-67 9- 7-67	33.8 24.6
Black River Basin						
✓ 5-3808.2	Little Black River near Medford, Wis.	SW 1/4 sec. 1, T. 30 N., R. 1 E., at bridge on State Highway 13, 2.1 miles south of Medford.	a 58	1963-64 1966-67	8-23-67 9-28-67	.72 .80
✓ 5-3808.7	Pine Creek near Medford, Wis.	SW 1/4 sec. 19, T. 30 N., R. 1 W., at bridge on County Trunk DD, 11.8 miles southwest of Medford.	34.3	1962-64 1966-67	8-23-67 9-28-67	1.21 1.23
✓ 5-3809.7	Cawley Creek near Neillsville, Wis.	SW 1/4 sec. 25, T. 25 N., R. 2 W., at bridge on State Highway 73, 3.7 miles north of Neillsville.	38.6	1962-67	10-10-66 7-26-67 8-22-67 9-28-67	1.91 1.86 1.81 1.96
✓ 5-3811.5	East Fork Black River near Pittsville, Wis.	SW 1/4 sec. 19, T. 23 N., R. 2 E., at bridge on State Highway 73, 9.1 miles west of Pittsville.	37.2	1962-64 1966-67	8-22-67 9-28-67	0 .20
✓ 5-3811.7	Rock Creek near Neillsville, Wis.	SW 1/4 sec. 26, T. 23 N., R. 2 W., at bridge on country road, 8.4 miles south of Neillsville.	a 25	1962-64 1966-67	8-22-67 9-28-67	0 .03
✓ 5-3813.5	Levis Creek near Black River Falls, Wis.	SE 1/4 sec. 12, T. 21 N., R. 4 W., at bridge on State Highway 54, 2.2 miles northeast of Black River Falls.	39.7	1964 1966-67	7-12-67 9- 7-67	16.9 9.19
✓ 5-3814.5	Big Creek near Cataract, Wis.	SW 1/4 sec. 7, T. 19 N., R. 4 W., at bridge on country road, 4.6 miles northwest of Cataract.	64.0	1964 1966-67	7-12-67 9- 7-67	49.0 41.8
✓ 5-3818	Fleming Creek at Stevenstown, Wis.	NW 1/4 sec. 13, T. 18 N., R. 7 W., at bridge on County Trunk T in Stevenstown.	28.5	1966-67	7-12-67 9- 7-67	10.6 8.13
✓ 5-3821	South Fork Beaver Creek at Ettrick, Wis.	W 1/2 sec. 31, T. 20 N., R. 7 W., at bridge on County Trunk D in Ettrick.	33.1	1964 1966-67	7-12-67 9- 7-67	9.97 7.08

* Also a crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Black River Basin--Continued						
*5-3822	French Creek near Ettrick, Wis.	NE 1/4 sec. 27, T. 20 N., R. 8 W., at bridge on County Trunk D and T. 2 1/2 miles west of Ettrick.	14.3	1961 1963-67	10-27-66 7-12-67 9- 7-67 9-12-67	5.13 6.65 5.15 4.15
La Crosse River Basin						
✓ 5-3822.8	Silver Creek near Sparta, Wis.	NW 1/4 sec. 24, T. 17 N., R. 3 W., at bridge on U. S. Highway 16, 6.5 miles east of Sparta.	14.7	1964 1966-67	7-11-67 9- 6-67	8.32 6.28
✓ 5-3825	Little La Crosse River near Leon, Wis.	NE 1/4 sec. 3, T. 16 N., R. 4 W., 30 ft upstream from country road bridge, 1.5 miles northwest of Leon.	77.1	1934-61* 1963-67	10-25-66 7-11-67 9- 6-67	31.7 37.7 26.2
Mormon Creek Basin						
✓ 5-3863	Mormon Creek near La Crosse, Wis.	NE 1/4 sec. 19, T. 15 N., R. 6 W., at bridge on country road, 6 miles southeast of La Crosse.	25.5	1961 1963-67	10-28-66 7-10-67 9- 6-67 9-13-67	11.4 11.5 9.96 9.85
Rush Creek Basin						
✓ 5-3883.7	Rush Creek near Ferryville, Wis.	NW 1/4 sec. 32, T. 11 N., R. 6 W., at bridge on country road, 2.5 miles northwest of Ferryville.	44.8	1963 1966-67	7-12-67 9- 6-67	17.6 13.8
Copper Creek Basin						
5-3883.8	Copper Creek near Mt. Sterling, Wis.	NW 1/4 sec. 29, T. 10 N., R. 5 W., at bridge on country road, 4.2 miles west of Mt. Sterling.	14.1	1963 1966-67	7-12-67 9- 6-67	6.02 5.27
Wisconsin River Basin						
✓ 5-3921.5	Mishonogon Creek near Woodruff, Wis.	NE 1/4 sec. 32, T. 40 N., R. 6 E., at twin culvert on State Highway 47, 3 miles northwest of Woodruff.	11.7	1961 1963-67	10-12-66 8-22-67 9-11-67	19.1 18.0 20.8
✓ 5-3932	Big Somo River near Tripoli, Wis.	NW 1/4 sec. 10, T. 35 N., R. 4 E., at bridge on County Trunk T, 1.8 miles southeast of Tripoli.	a 44.1	1967	8-23-67	2.60
✓ 5-3936.3	Little Pine Creek near Tomahawk, Wis.	On common boundary of secs. 31 and 32, T. 34 N., R. 7 E., at culverts on County Trunk V, 6.5 miles southeast of Tomahawk.	21.1	1967	8-22-67	5.98
✓ 5-3940	New Wood River near Merrill, Wis.	E, 1/2 sec. 15, T. 32 N., R. 5 E., at bridge on County Trunk E, 9.5 miles northwest of Merrill.	a 83	1962-64 1966-67	8- 1-67 8-23-67	8.06 5.80
*5-3942	Devil Creek near Merrill, Wis.	N 1/2 sec. 30, T. 31 N., R. 6 E., at culvert on County Trunk F, 5.8 miles southwest of Merrill.	10.1	1962-67	8-23-67 9- 7-67 9-28-67	.68 .70 1.03
✓ 5-3950.3	Pine River near Merrill, Wis.	NW 1/4 sec. 11, T. 31 N., R. 8 E., at bridge on County Trunk X, 10.8 miles east of Merrill.	60.3	1962-64 1966-67	8-23-67 9-28-67	4.31 6.38
✓ 5-3951.3	Trappe River near Wausau, Wis.	NW 1/4 sec. 21, T. 30 N., R. 8 E., at bridge on County Trunk WW, 8.4 miles north of Wausau.	75.1	1962-64 1966-67	8-24-67 9-28-67	3.41 5.27
5-3955.5	Wood Creek near Rib Lake, Wis.	SE 1/4 sec. 17, T. 32 N., R. 3 E., at twin culverts on country road, 6.0 miles southeast of Rib Lake.	30.8	1962-64 1966-67	8-23-67 9-28-67	4.67 5.70
✓ 5-3960	Rib River at Rib Falls, Wis.	NW 1/4 sec. 27, T. 29 N., R. 5 E., at bridge on County Trunk S, in Rib Falls.	309	1925-57* 1963-64 1966-67	8-24-67 9-27-67	23.7 36.7

* Also a crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Wisconsin River Basin--Continued						
✓ 5-3970	Eau Claire River near Antigo, Wis.	E 1/2 sec. 3, T. 31 N., R. 10 E., at bridge on country road, 4 miles northwest of Antigo.	a 75	1949-55# 1963-64 1966-67	8-23-67 9-28-67	33.5 30.6
✓ 5-3972	Spring Brook near Antigo, Wis.	NW 1/4 sec. 19, T. 30 N., R. 11 E., at culvert on County Trunk H, 5.9 miles southwest of Antigo.	72.8	1962-64 1966-67	8-23-67 9-28-67	12.0 10.2
✓ 5-3981	Black Creek near Mosinee, Wis.	NE 1/4 sec. 4, T. 27 N., R. 7 E., at bridge on County Trunk KK, 4.3 miles north of Mosinee.	a 13	1962-64 1966-67	8-24-67 9-27-67	1.08 1.40
✓ 5-3985	Bull Creek Junior near Rothschild, Wis.	East boundary sec. 12, T. 27 N., R. 7 E., at bridge on County Trunk X, 4 miles south of Rothschild.	26.4	1944-51# 1962-64 1966-67	8-24-67 9-27-67	3.83 2.99
✓ 5-3992.1	Randall Creek near Colby, Wis.	SW 1/4 sec. 18, T. 28 N., R. 3 E., at bridge on County Trunk N, 6.2 miles east of Colby.	a 32	1963-64 1966-67	8-24-67 9-27-67	0 .71
✓ 5-4003	Hay Meadow Creek near Stevens Point, Wis.	NE 1/4 sec. 18, T. 24 N., R. 8 E., at bridge on U. S. Highway 51, 3.2 miles north of Stevens Point.	a 27	1962-64 1966-67	8-24-67 9-28-67	2.97 2.49
✓ 5-4005	Plover River near Stevens Point, Wis.	SW 1/4 sec. 6, T. 24 N., R. 9 E., at bridge on country road, 5 miles northeast of Stevens Point.	136	1914-19# 1944-51# 1962-64 1966-67	8-24-67 9-27-67	89.6 98.6
✓ 5-4007	Mill Creek near Junction City, Wis.	NE 1/4 sec. 20, T. 24 N., R. 6 E., at bridge on State Highway 34, 3.3 miles southwest of Junction City.	a 69	1963-64 1966-67	8-24-67 9-27-67	2.05 4.14
✓ 5-4009.5	Moccasin Creek at Nekoosa, Wis.	NW 1/4 sec. 34, T. 22 N., R. 5 E., at bridge on State Highway 54, 1.9 miles north of Nekoosa.	a 23	1962-64 1966-67	8-22-67 9-27-67	4.09 3.77
✓ 5-4017	East Branch Yellow River near Marshfield, Wis.	SE 1/4 sec. 10, T. 25 N., R. 2 E., at bridge on County Trunk H, 3.0 miles west of Marshfield.	15.5	1963-64 1966-67	8-24-67 9-27-67	.18 .28
✓ 5-4017.5	South Branch Yellow River near Marshfield, Wis.	NW 1/4 sec. 27, T. 25 N., R. 2 E., at bridge on County Trunk B, 4.2 miles southwest of Marshfield.	36.1	1963-64 1966-67	8-24-67 9-27-67	.41 .64
✓ 5-4022	Hemlock Creek near Pittsville, Wis.	SE 1/4 sec. 22, T. 23 N., R. 4 E., at bridge on State Highway 73, 6.1 miles east of Pittsville.	47.3	1962-64 1966-67	8-22-67 9-28-67	.01 .52
5-4032.5	White Creek near Friendship, Wis.	NW 1/4 sec. 35, T. 16 N., R. 5 E., at twin culverts on County Trunk H, 10.9 miles south of Friendship.	63.8	1962-64 1966-67	8-24-67 9-28-67	29.1 27.9
5-4034	Bear Creek near Camp Douglas, Wis.	East boundary sec. 1, T. 17 N., R. 1 E., at bridge on country road, 4.5 miles northwest of Camp Douglas.	33.1	1964 1966-67	7-12-67 9- 7-67	15.6 7.07
*5-4035.2	Webster Creek at New Lisbon, Wis.	NE 1/4 sec. 19, T. 16 N., R. 3 E., at bridge on State Highway 80, 1.2 miles south of New Lisbon.	11.6	1961 1963-67	10-24-66 7-12-67 8-11-67 9- 8-67	2.52 3.29 2.57 2.56
*5-4035.5	One Mile Creek near Mauston, Wis.	SE 1/4 sec. 24, T. 15 N., R. 3 E., at bridge on State Highway 58, 2.4 miles south of Mauston.	30.4	1961 1963-67	10-24-66 7-12-67 9- 8-67 8-12-67	7.42 7.61 6.27 6.96
*5-4037	Dell Creek near Lake Delton, Wis.	NW 1/4 sec. 2, T. 12 N., R. 5 E., at bridge on country road, 6 miles southwest of Lake Delton.	44.9	1957-65# 1966-67	7-12-67 9- 8-67	17.3 14.9
5-4040.3	North Branch Duck Creek near Pardeeville, Wis.	NE 1/4 sec. 18, T. 12 N., R. 11 E., at bridge on County Trunk SS, 3.7 miles southeast of Pardeeville.	33.6	1962 1963-67	8-15-67	3.24
5-4041	Baraboo River near Union Center, Wis.	SW 1/4 sec. 9, T. 14 N., R. 2 E., at bridge on State Highways 80 and 82, 1.4 miles north of Union Center.	73.2	1964 1966-67	7-12-67 9- 7-67	15.7 10.6

* Also a crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Wisconsin River Basin--Continued						
*5-4056	Rowan Creek at Poynette, Wis.	S 1/2 sec. 35, T. 11 N., R. 9 E., at bridge on U. S. Highway 51, in Poynette.	a 9.9	1961-67	10- 6-66 8-15-67	4.47 3.90
5-4058	Spring Creek at Lodi, Wis.	NE 1/4 sec. 27, T. 10 N., R. 8 E., at bridge on town road in Lodi.	37.0	1962-67	8-15-67	12.6
5-4061	Otter Creek near Sauk City, Wis.	E 1/2 sec. 9, T. 9 N., R. 6 E., at bridge on State Highway 60, 2.8 miles west of Sauk City.	33.1	1963 1966-67	7-11-67 9- 6-67	.54 0
5-4062	Honey Creek near Plain, Wis.	East boundary sec. 13, T. 9 N., R. 4 E., at bridge on country road, 5 miles east of Plain.	56.3	1963 1966-67	7-11-67 9- 6-67	10.8 7.75
5-4063	Honey Creek near Sauk City, Wis.	NE 1/4 sec. 17, T. 9 N., R. 6 E., at bridge on State Highway 60, 4.3 miles west of Sauk City.	150	1963 1966-67	7-11-67 9- 6-67	46.6 32.6
5-4064	East Branch Mounds Creek near Black Earth, Wis.	SW 1/4 sec. 5, T. 7 N., R. 6 E., at bridge on County Trunk F, 4.2 miles southwest of Black Earth.	30.8	1962-67	8-15-67	15.0
5-4066	Mill Creek near Spring Green, Wis.	SW 1/4 sec. 21, T. 8 N., R. 4 E., at bridge on country road, 2.3 miles southeast of Spring Green.	96.3	1963 1966-67	7-11-67 9- 6-67	49.9 33.0
5-4066.5	Otter Creek near Clyde, Wis.	NE 1/4 sec. 2, T. 7 N., R. 2 E., at bridge on County Trunk I, 0.5 miles south of Clyde.	95.4	1963 1966-67	7-11-67 9- 6-67	29.6 21.5
5-4067	Bear Creek near Lone Rock, Wis.	NW 1/4 sec. 35, T. 9 N., R. 2 E., at bridge on County Trunk JJ, 2.5 miles northeast of Lone Rock.	65.3	1963 1966-67	7-11-67 9- 7-67	25.4 18.9
5-4067.5	Pine River near Buck Creek, Wis.	NW 1/4 sec. 27, T. 11 N., R. 1 E., at bridge on State Highway 80, 1.0 mile south of Buck Creek.	126	1963 1966-67	7-12-67 9- 7-67	52.7 48.8
5-4068.2	Pine River near Richland Center, Wis.	SE 1/4 sec. 27, T. 10 N., R. 1 E., at bridge on County Trunk O, 2.5 miles southeast of Richland Center.	198	1963 1966-67	7-11-67 9- 7-67	87.5 71.5
5-4068.5	Ash Creek near Richland Center, Wis.	NE 1/4 sec. 2, T. 9 N., R. 1 E., at bridge on County Trunk TB, 4 miles southeast of Richland Center.	18.4	1966-67	7-11-67 9- 7-67	4.49 3.15
5-4068.9	Willow Creek near Richland Center, Wis.	SW 1/4 sec. 6, T. 9 N., R. 2 E., 100 ft above bridge on U. S. Highway 14, 6 miles southeast of Richland Center.	79.3	1966-67	7-11-67 9- 7-67	37.8 31.4
5-4070.5	Fennimore Creek near Blue River, Wis.	South boundary sec. 31, T. 8 N., R. 1 W., at bridge on County Trunk M, 5 miles south of Blue River.	77.2	1963 1966-67	7-11-67 9- 6-67	22.9 19.3
5-4070.8	Knapps Creek near Westport, Wis.	South boundary sec. 32, T. 9 N., R. 2 W., at bridge on State Highway 60, 0.7 mile west of Westport.	85.0	1966-67	7-11-67 9- 6-67	34.3 27.4
*5-4071	Richland Creek near Plugtown, Wis.	NW 1/4 sec. 9, T. 8 N., R. 3 W., at bridge on U. S. Highway 61, 2 miles south of Plugtown.	19.1	1961 1963-67	7-11-67 9- 6-67	7.17 5.69
*5-4072	Crooked Creek near Boscobel, Wis.	SE 1/4 sec. 2, T. 7 N., R. 3 W., at bridge on U. S. Highway 61, 1.6 miles south of Boscobel.	13.1	1961 1963-67	10- 4-66 9- 6-67	6.46 5.07
*5-4074	Morris Creek tributary near Norwalk, Wis.	NW 1/4 sec. 21, T. 16 N., R. 2 W., at bridge on County Trunk T, 2 miles north of Norwalk.	4.67	1961 1963-67	7-11-67 9- 6-67	1.12 .91
5-4087	West Fork Kickapoo River near Viroqua, Wis.	NW 1/4 sec. 32, T. 13 N., R. 3 W., at bridge on State Highway 82, 6.3 miles east of Viroqua.	63.6	1963 1964 1966-67	7-11-67 9- 6-67	26.5 18.5
*5-4088	Bishops Branch near Viroqua, Wis.	N 1/2 sec. 2, T. 12 N., R. 4 W., at bridge on State Highways 56 and 82, 3 miles east of Viroqua.	7.08	1961 1963-67	10- 4-66 7-10-67 9- 6-67 9-13-67	2.82 2.96 2.57 2.49
5-4098	Tainter Creek near Gays Mills, Wis.	SW 1/4 sec. 4, T. 10 N., R. 4 W., at bridge on County Trunk B, 3.5 miles north of Gays Mills.	38.3	1963 1966-67	7-11-67 9- 6-67	14.9 12.5

* Also a crest-stage station.

a Approximately.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Wisconsin River Basin--Continued						
5-4106	Pine Creek near Steuben, Wis.	NE 1/4 sec. 18, T. 8 N., R. 4 W., at bridge on country road, 2.5 miles west of Steuben.	26.5	1963 1966-67	7-12-67 9- 7-67	5.95 5.63
5-4110	Gran Grae Creek near Wauzeka, Wis.	NE 1/4 sec. 32, T. 7 N., R. 5 W., at bridge on State Highway 60, 6.0 miles southwest of Wauzeka.	17.1	1963 1966-67	7-12-67 9- 7-67	4.60 3.94
Sandy Creek Basin						
5-4115.1	Sandy Creek near Bagley, Wis.	NW 1/4 sec. 27, T. 5 N., R. 6 W., at bridge on County Trunk A, 2.1 miles southeast of Bagley.	18.9	1963 1966-67	7-12-67 9- 7-67	1.75 1.30
Grant River Basin						
5-4131	Little Grant River near Lancaster, Wis.	SW 1/4 sec. 36, T. 5 N., R. 4 W., at bridge on County Trunk A, 4.8 miles west of Lancaster.	46.6	1963 1966-67	7-12-67 9- 7-67	8.70 7.61
5-4134.5	Rattlesnake Creek near Cassville, Wis.	SE 1/4 sec. 35, T. 4 N., R. 5 W., at bridge on State Highway 81, 5.0 miles northeast of Cassville.	44.7	1963 1966-67	7-12-67 9- 7-67	4.31 3.78
5-4136	Boice Creek near Potosi, Wis.	SW 1/4 sec. 17, T. 3 N., R. 3 W., 600 ft below bridge on County Trunk U, 4.0 miles northwest of Potosi.	26.2	1966-67	7-12-67 9- 7-67	4.15 2.96
Platte River Basin						
5-4141.5	Little Platte River near Platteville, Wis.	SE 1/4 sec. 4, T. 3 N., R. 1 W., at bridge on State Highway 81, 1.9 miles northwest of Platteville.	54.0	1963 1966-67	7-12-67 9- 7-67	10.4 6.70
*5-4142	Bear Branch near Platteville, Wis.	NW 1/4 sec. 4, T. 3 N., R. 1 W., at box culvert on State Highway 81, 2.3 miles northwest of Platteville.	2.80	1961 1963-67	7-12-67 9- 7-67	.68 .68
5-4142.5	Blockhouse Creek near Dickeyville, Wis.	SW 1/4 sec. 11, T. 2 N., R. 2 W., at bridge on U. S. Highway 151, 2.5 miles north of Dickeyville.	36.3	1963 1966-67	7-12-67 9- 7-67	6.60 5.74
Sinsinawa River Basin						
5-4148	Sinsinawa River near Hazel Green, Wis.	NW 1/4 sec. 27, T. 1 N., R. 1 W., at bridge on State Highway 11, 2.5 miles west of Hazel Green.	24.8	1963 1966-67	7-12-67 9- 6-67	3.74 3.68
Galena River Basin						
*5-4149	Pats Creek near Elk Grove, Wis.	SW 1/4 sec. 4, T. 2 N., R. 1 E., at bridge on State Highway 81, 3/4 mile southeast of Elk Grove and 7 miles southeast of Platteville.	8.49	1961-67	7-12-67 9- 7-67	.75 .68
Rock River Basin						
*5-4233	South Branch Rock River tributary near Waupun, Wis.	S 1/2 sec. 22, T. 14 N., R. 14 E., at concrete culvert on town road, 4 1/2 miles northwest of Waupun.	11.9	1962-67	8-16-67	0
*5-4238	East Branch Rock River tributary near Slinger, Wis.	S 1/2 sec. 26, T. 11 N., R. 18 E., at culvert on U. S. Highway 41, 4 miles northwest of Slinger.	4.64	1961-67	10- 4-66 8-15-67	2.09 1.94
5-4241	Rubicon River near Hartford, Wis.	NW 1/4 sec. 35, T. 10 N., R. 17 E., at bridge on County Trunk P, 4.3 miles southwest of Hartford.	59.8	1962-67	8-15-67	6.81

* Also a crest-stage station.

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Rock River Basin--Continued						
5-4242	Ashippun River near Oconomowoc, Wis.	NW 1/4 sec. 11, T. 8 N., R. 17 E., at bridge on County Trunk P, 4.7 miles north of Oconomowoc.	32.9	1962-67	8-15-67	4.85
5-4254	Silver Creek near Watertown, Wis.	SW 1/4 sec. 21, T. 9 N., R. 15 E., at bridge on country road, 2.2 miles north of Watertown.	21.3	1962-67	8-16-67	.81
5-4255.5	Johnson Creek at Johnson Creek, Wis.	SW 1/4 sec. 18, T. 7 N., R. 15 E., at bridge on State Highway 26, 0.8 miles south of Johnson Creek.	40.4	1962-67	8-16-67	.65
5-4256	North Branch Crawfish River near Columbus, Wis.	SW 1/4 sec. 14, T. 11 N., R. 12 E., at bridge on County Trunk DG, 5.6 miles north of Columbus.	69.4	1962-67	8-15-67	.33
*5-4257	Robbins Creek near Columbus, Wis.	SE 1/4 sec. 11, T. 10 N., R. 12 E., at culvert on U. S. Highway 16, in Columbus.	8.54	1962-67	10- 7-66 8-15-67	.28 .33
5-4259.3	Pratt Creek at Lowell, Wis.	SW 1/4 sec. 13, T. 10 N., R. 14 E., at bridge on U. S. Highway 16 and State Highway 60, 1.5 miles southeast of Lowell.	21.8	1962-67	8-16-67	.33
5-4260.6	Bark River at Hartland, Wis.	SW 1/4 sec. 26, T. 8 N., R. 18 E., at bridge on County Trunk K, 1.1 miles north of Hartland.	30.1	1962-67	8-16-67	5.76
5-4262	Bark River near Sullivan, Wis.	NW 1/4 sec. 14, T. 6 N., R. 16 E., at bridge on country road, 2.3 miles south of Sullivan.	106	1962-67	8-16-67	12.1
5-4263	Duck Creek near Sullivan, Wis.	SW 1/4 sec. 24, T. 6 N., R. 15 E., at bridge on country road, 5.7 miles southwest of Sullivan.	31.4	1962-67	8-16-67	1.60
5-4264	Scuppernong River near Palmyra, Wis.	NW 1/4 sec. 19, T. 5 N., R. 17 E., at culvert on County Trunk Z, 2.4 miles east of Palmyra.	23.6	1962-67	8-16-67	4.70
*5-4272	Allen Creek near Fort Atkinson, Wis.	NE 1/4 sec. 17, T. 5 N., R. 14 E., at box culvert on State Highway 26, 2.5 miles southwest of Fort Atkinson.	15.1	1961-67	8-16-67	.60
5-4272.3	Otter Creek near Milton, Wis.	SW 1/4 sec. 11, T. 4 N., R. 13 E., at bridge on State Highway 26, 3.4 miles north of Milton.	41.5	1962-67	8-17-67	.69
5-4273.5	Koshkonong Creek near Deerfield, Wis.	NE 1/4 sec. 16, T. 7 N., R. 12 E., at bridge on State Highway 73, 1.5 miles north of Deerfield.	64.3	1962-66		c
5-4275.5	Saunders Creek at Albion, Wis.	SW 1/4 sec. 22, T. 5 N., R. 12 E., at bridge on State Highway 106, in Albion.	21.8	1962-67	8-17-67	4.47
5-4277	Yahara River near De Forest, Wis.	NE 1/4 sec. 30, T. 9 N., R. 10 E., at bridge on country road, 2.3 miles south of De Forest.	48.9	1962-67	8-14-67	4.42
5-4279	Sixmile Creek at Waunakee, Wis.	NW 1/4 sec. 16, T. 8 N., R. 9 E., at bridge on country road, 1.5 miles southeast of Waunakee.	40.2	1962-67	8-14-67	1.21
5-4296	Door Creek near McFarland, Wis.	NE 1/4 sec. 6, T. 6 N., R. 11 E., at bridge on County Trunk MN, 3.4 miles east of McFarland.	27.8	1962-66		c
5-4303	Marsh Creek at Janesville, Wis.	SE 1/4 sec. 15, T. 3 N., R. 12 E., at bridge on City Route of U. S. Highway 14, 3.1 miles northwest of Janesville.	27.3	1962-67	8-17-67	10.2
5-4306	Bass Creek near Janesville, Wis.	NE 1/4 sec. 24, T. 2 N., R. 11 E., at bridge on country road, 6.7 miles southwest of Janesville.	d 58.1	1962-67	8-16-67	16.0
*5-4314	Little Turtle Creek at Allens Grove, Wis.	NE 1/4 sec. 6, T. 1 N., R. 15 E., at bridge on country road, 0.2 mile south of Allens Grove.	42.0	1961-67	8-16-67	2.84
5-4321	Pecatonica River near Mineral Point, Wis.	NE 1/4 sec. 21, T. 4 N., R. 2 E., at bridge on U. S. Highway 151, 5.0 miles southwest of Mineral Point.	68.8	1963 1966-67	7-12-67 9- 7-67	16.3 10.4
*5-4323	Rock Branch near Mineral Point, Wis.	SE 1/4 sec. 8, T. 4 N., R. 3 E., at box culvert on State Highway 23, 2.5 miles south of Mineral Point.	5.04	1961 1963-67	7-13-67 9- 7-67	1.38 .91

* Also a crest-stage station.

c No discharge measurement.

d Revised.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Discharge measurements made at low-flow partial-record stations during water year 1967						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Rock River Basin--Continued						
5-4325.5	Ames Branch near Darlington, Wis.	SW 1/4 sec. 12, T. 2 N., R. 3 E., at bridge on County Trunk K, 2.2 miles southeast of Darlington.	44.3	1963 1966-67	7-13-67 9- 6-67	6.48 4.12
5-4326.5	Spafford Creek at South Wayne, Wis.	SW 1/4 sec. 10, T. 1 N., R. 5 E., at bridge on State Highway 11, 0.6 mile west of South Wayne.	47.8	1963 1966		c
5-4328	Dodge Branch at Hollandale, Wis.	NE 1/4 sec. 30, T. 5 N., R. 5 E., at bridge on State Highway 191, in Hollandale.	66.1	1963 1966-67	7-12-67 9- 6-67	19.6 14.7
*5-4335	Yellowstone River near Blanchardville, Wis.	NE 1/4 sec. 34, T. 4 N., R. 4 E., 0.6 mile upstream from bridge on County Trunk H, 7 miles west of Blanchardville.	29.1	1954-65# 1966-67	7-13-67 9- 6-67	7.83 5.75
5-4337	Whiteside Creek near Argyle, Wis.	SW 1/4 sec. 3, T. 2 N., R. 5 E., at bridge on State Highway 78, 2.4 miles southwest of Argyle.	19.9	1963 1966-67	7-11-67 9- 6-67	7.21 4.67
5-4343	Jordan Creek near Browntown, Wis.	South boundary sec. 28, T. 2 N., R. 6 E., at bridge on County Trunk M, 2.3 miles north of Browntown.	14.4	1963 1966-67	7-11-67 9- 6-67	4.72 4.28
5-4359.5	Sugar River near Verona, Wis.	SE 1/4 sec. 33, T. 6 N., R. 8 E., at bridge on State Highway 69, 2.9 miles south of Verona.	84.1	1962-67	8-15-67	15.7
*5-4362	Sugar River tributary No. 2 near Brooklyn, Wis.	NW 1/4 sec. 16, T. 4 N., R. 9 E., at culvert on State Highway 92, 4.3 miles west of Brooklyn.	a 3.3	1961-67	10-10-66 8-15-67	.74 .87
5-4362.5	Allen Creek near Albany, Wis.	NE 1/4 sec. 16, T. 3 N., R. 9 E., at bridge on County Trunk E, 1.9 miles north of Albany.	77.2	1962-67	8-16-67	28.7
5-4363	Little Sugar River near New Glarus, Wis.	SE 1/4 sec. 30, T. 4 N., R. 8 E., at bridge on country road, 2.9 miles southeast of New Glarus.	39.5	1962-67	8-15-67	17.5
5-4364	Little Sugar River near Monticello Wis.	NE 1/4 sec. 22, T. 3 N., R. 8 E., at bridge on country road, 3.1 miles east of Monticello.	76.6	1962-67	8-15-67	45.5
5-4366	Sylvester Creek near Brodhead, Wis.	SW 1/4 sec. 34, T. 2 N., R. 9 E., at bridge on country road, 3.2 miles southwest of Brodhead.	44.9	1962-67	8-16-67	18.4
5-4367	Taylor Creek near Brodhead, Wis.	NW 1/4 sec. 31, T. 2 N., R. 10 E., at bridge on country road, 2.6 miles south of Brodhead.	d 26.5	1962-67	8-16-67	7.81
*5-4372	East Fork Raccoon Creek near Beloit, Wis.	On common boundary of secs. 30 and 31, T. 1 N., R. 12 E., at culvert on State Highway 81, 2.9 miles west of Beloit.	d 10.7	1961-67	10-10-66 8-16-67	.93 1.47
Illinois River Basin						
5-5277	Des Plaines River near Kenosha, Wis.	SW 1/4 sec. 15, T. 1 N., R. 21 E., at bridge on County Trunk MB, 8.8 miles west of Kenosha.	56.2	1962-67	8-15-67	3.12
5-5438	Fox River near Waukesha, Wis.	NE 1/4 sec. 24, T. 7 N., R. 19 E., at bridge on County Trunk SS, 3.5 miles northeast of Waukesha.	77.4	1962-67	8-16-67	4.41
5-5438.5	Pebble Creek near Waukesha, Wis.	SE 1/4 sec. 7, T. 6 N., R. 19 E., at bridge on County Trunk TT, 3.2 miles west of Waukesha.	16.2	1962-67	8-14-67	2.69
5-5443.2	Fox River at Big Bend, Wis.	SE 1/4 sec. 23, T. 5 N., R. 19 E., at bridge on State Highway 24, in Big Bend.	321	1962-67	8-14-67	54.3
5-5451.2	Sugar Creek near Vienna, Wis.	SW 1/4 sec. 14, T. 3 N., R. 18 E., at bridge on country road, 1.4 miles west of Vienna.	71.2	1962-67	8-14-67	12.6
5-5456	Hoosier Creek near Burlington, Wis.	SE 1/4 sec. 3, T. 2 N., R. 19 E., at bridge on State Highway 43, 2.6 miles southeast of Burlington.	20.5	1962-67	8-15-67	1.80

* Also a crest-stage station.

a Approximately.

c No discharge measurement.

d Revised.

Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Illinois River Basin--Continued						
*5-5481.5	North Branch Nippersink Creek tributary near Genoa City, Wis.	E 1/2 sec. 32, T. 1 N., R. 18 E., at bridge on County Trunk B, 3 miles west of Genoa City.	13.0	1961-67	10-29-66 8-15-67	5.63 6.58
Low flow measurements were also made at the following sites where daily discharges were previously published.						
Streams tributary to Lake Superior						
*4-0263	Sioux River near Washburn, Wis.	NE 1/4 sec. 35, T. 49 N., R. 5 W., at twin concrete box culvert on County Trunk C, 2 1/4 miles west of Washburn.	17.5	1962-64 1964-66# c 1967	11- 3-66 4-30-67 9-27-67	9.77 11.6 7.90
Streams tributary to Lake Michigan						
*4-0797	Spaulding Creek near Big Falls, Wis.	On common boundary sec. 14 and 15, T. 25 N., R. 12 E., at concrete culvert on County Trunk E, 1.5 miles north of Big Falls.	a 4.9	1962-64 1964-66# c 1967	8-23-67 9- 5-67 9-27-67	1.84 1.85 2.23
*4-0810	Waupaca River near Waupaca, Wis.	On north line of sec. 1, T. 21 N., R. 12 E., on right bank 10 ft downstream from highway bridge, 4 miles upstream from Weyauwega Lake dam, 4 1/2 miles southeast of Waupaca.	272	b1916-63 1964-66# c 1967	11- 3-66 6- 6-67 7-11-67	136 206 245
St. Croix River Basin						
*5-3353.8	Bashaw Brook near Shell Lake, Wis.	SW 1/4 sec. 8, T. 38 N., R. 14 W., at twin box culvert on country road, 10.5 miles northwest of Shell Lake.	28.2	1962-64 1964-66# c 1967	11- 5-66 4-27-67 7-21-67 8-21-67 9-29-67	6.28 7.86 6.26 5.66 4.89
Chippewa River Basin						
*5-3596	Price Creek near Phillips, Wis.	SW 1/4 sec. 31, T. 38 N., R. 2 W., at culvert on County Trunk W, 13 miles west of Phillips.	14.7	1961-64 1964-66# c 1967	11- 1-66 8-22-67 9-25-67	10.9 3.79 3.89
Waumandee Creek Basin						
*5-3782	Eagle Creek near Fountain City, Wis.	SW 1/4 sec. 33, T. 20 N., R. 11 W., at bridge on County Trunk G, 2 1/2 miles north of Fountain City.	26.8	1961 1963-67	10-27-65 10-27-66 11-29-66 9- 7-67 9-11-67	7.45 7.41 6.96 7.01 7.49
Black River Basin						
*5-3809	Poplar River near Owen, Wis.	NW 1/4 sec. 25, T. 28 N., R. 2 W., at bridge on County Trunk N, 4 1/4 miles south of Owen.	159	1962-64 1964-66# c 1967	10-10-66 11- 7-66 8-23-67	5.11 9.07 4.67

* Also a crest-stage station.

a Approximately.

b Operated as continuous-record gaging station.

c Operated as seasonal continuous-record gaging station without records being published.

Operated as seasonal continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Bad Axe River Basin						
*5-3871	North Fork Bad Axe River near Genoa, Wis.	SW 1/4 sec. 36, T. 13 N., R. 7 W., at bridge on State Highway 56, 4.1 miles southeast of Genoa.	80.7	1961 1963-64 1964-66 [#] c 1967	10- 4-66 7-10-67 9- 7-67 9-13-67	28.8 32.6 24.4 23.5
Wisconsin River Basin						
*5-3923.5	Bearskin Creek near Harshaw, Wis.	SW 1/4 sec. 36, T. 37 N., R. 6 E., at culvert on County Trunk K, 2 1/8 miles southwest of Harshaw.	32.4	1963-64 1964-66 [#] c 1967	10-12-66 9- 8-67	28.1 31.8
*5-4042	Narrows Creek at Loganville, Wis.	SE 1/4 sec. 8, T. 11 N., R. 4 E., at bridge on State Highway 23 and 154, and 1/4 mile north of Loganville.	40.0	1961, 1963 1964-66 [#] c 1967	10-24-66 11-22-66 7-12-67 9- 8-67	3.87 5.02 4.75 3.32
Grant River Basin						
*5-4134	Pigeon Creek near Lancaster, Wis.	SW 1/4 sec. 15, T. 4 N., R. 3 W., at culvert on country road, 2 miles south of Lancaster.	6.90	1961 1963-64 1964-66 [#] c 1967	5- 4-67 7-12-67 7-18-67 8-30-67 9- 7-67	1.34 1.20 1.23 0.80 1.16
Rock River Basin						
*5-4278	Token Creek near Madison, Wis.	SW 1/4 sec. 4, T. 8 N., R. 10 E., at culvert on U. S. Highway 51, 8 miles north of State Capitol in Madison.	24.4	1961-64 1964-66 [#] c 1967	10- 6-66 11-18-66 8- 1-67 8-14-67	13.3 13.3 13.1 14.0
Illinois River Basin						
*5-5453	White River near Burlington, Wis.	NW 1/4 sec. 1, T. 2 N., R. 18 E., at bridge on State Highway 36, 2 1/4 miles southwest of Burlington.	105	1961-64 1964-66 [#] c 1967	10-30-66 8-15-67 9- 7-67	12.6 19.3 19.2

* Also a crest-stage station.

[#] Operated as seasonal continuous-record gaging station.

c Operated as seasonal continuous-record gaging station without records being published.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Streams tributary to Lake Superior							
4-0244	Stony Brook near Superior, Wis.	SE 1/4 sec. 4, T. 47 N., R. 14 W., at box culvert on State Highway 35, 12 1/2 miles south of toll bridge on U. S. Highways 2 and 35 at St. Louis River in Superior.	2.20	1959-67	6-14-67	15.04	200
4-0252	Pearson Creek near Maple, Wis.	Common boundary of secs. 11 and 14, T. 48 N., R. 11 W., at box culvert on State Highway 13, 4 miles north of Maple.	4.55	1957-67	3-31-67	13.73	340
4-0262	Sand River tributary near Red Cliff, Wis.	NE 1/4 sec. 14, T. 51 N., R. 5 W., at box culvert on State Highway 13, 8 miles north-west of Red Cliff.	a 1.7	1959-67	3-30-67	11.84	175
*4-0263	Sioux River near Washburn, Wis.	NE 1/4 sec. 35, T. 49 N., R. 5 W., on County Trunk C, 2 1/2 miles west of Washburn.	17.5	1959-65 1966# 1967	3-30-67	12.85	580
*4-0264	Spillerberg Creek near Cayuga, Wis.	NW 1/4 sec. 21, T. 43 N., R. 2 W., at concrete culvert pipe on State Highway 13, 4 1/4 miles southeast of Cayuga.	a 6.6	1958-67	6-14-67	12.20	84
4-0267	Trout Brook tributary near Marengo, Wis.	NE 1/4 sec. 7, T. 45 N., R. 3 W., at box culvert on State Highway 13, 2.6 miles south-east of Marengo.	a .6	1960-67	3-30-67	12.22	†
*4-0272	Pearl Creek at Grandview, Wis.	NE 1/4 sec. 22, T. 45 N., R. 6 W., at box culvert on U. S. Highway 63, 0.8 mile east of Grandview.	15.9	1960-67	3-30-67	12.74	260
*4-0297	Boomer Creek near Saxon, Wis.	N 1/2 sec. 3, T. 46 N., R. 1 E., at concrete culvert pipe on U. S. Highway 2, 3 miles east of Saxon.	6.73	1958-67	7-23-67	12.47	53
Streams tributary to Lake Michigan							
*4-0599	Allen Creek tributary near Alvin, Wis.	North boundary sec. 7, T. 40 N., R. 14 E., at culvert on State Highway 70, 2.2 miles south-east of Alvin.	a 1.9	1960-67	5-17-60 7-30-61 9-10-62 8- 1-64 5- 8-65 8- 7-66 9-15-67	10.65 10.23 10.15 10.00 10.51 10.32 10.45	g 10 g 6 g 5 g 4 g 9 g 7 g 8
*4-0638	Woods Creek near Fence, Wis.	SE 1/4 sec. 29, T. 39 N., R. 17 E., at box culvert on State Highway 101, 6 miles north of Fence.	42.3	1958-67	3-30-67	11.83	190
*4-0663	Cole Creek near Dunbar, Wis.	South boundary sec. 34, T. 37 N., R. 19 E., at culvert on U. S. Highway 8, 3.6 miles south-east of Dunbar.	a 3.2	1960-67	3-30-67	10.80	27
4-0667	McCall Creek at Wausaukee, Wis.	NW 1/4 sec. 1, T. 33 N., R. 20 E., at culvert on U. S. Highway 141, 1 mile south of Wausaukee.	.38	1959-67	3-30-67	e 12.38	†
4-0675	Menominee River near McAllister, Wis.	Sec. 17, T. 33 N., R. 23 E., 300 ft above high-way bridge on County Trunk JJ, 2.9 miles east of McAllister.	a 4,020	1945-61# 1962-67	4-21-67	16.92	22,500

* Also a low-flow partial-record station.

Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

e Backwater from ice.

g Not previously published.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Streams tributary to Lake Michigan--Continued							
*4-0678	Armstrong Creek near Armstrong Creek, Wis.	W 1/2 sec. 27, T. 37 N., R. 16 E., at bridge on U. S. Highway 8, 1 3/4 miles northwest of Armstrong Creek.	23.10	1958-67	3-30-67	10.20	102
4-0717	North Branch Little River near Coleman, Wis.	On common boundary of sec. 2 and 3, T. 29 N., R. 20 E., at bridge on U. S. Highway 141, 3 3/4 miles south of Coleman.	23.3	1958-67	3-30-67	14.50	640
*4-0718	Pensaukee River near Pulaski, Wis.	NE 1/4 sec. 1, T. 26 N., R. 18 E., at bridge on State Highway 32 and 6.1 miles north of Pulaski.	43.2	1961-67	3-29-67	d 17.00	1,600
*4-0734	Bird Creek at Wautoma, Wis.	S 1/2 sec. 34, T. 19 N., R. 10 E., at concrete culvert on State Highway 21, 1/4 mile west of Wautoma.	a 3.9	1959-67	8-10-61 3- 2-65 6-15-67	12.57 12.47 11.54	g 140 g 130 66
*4-0747	Hunting River near Elcho, Wis.	N 1/2 sec. 24, T. 34 N., R. 10 E., at twin culverts on U. S. Highway 45 and State Highway 47, 1 1/2 miles south of Elcho.	a 6.0	1958-67	6-28-67	11.91	78
*4-0797	Spaulding Creek near Big Falls, Wis.	On common boundary of secs. 14 and 15, T. 25 N., R. 12 E., at culvert on County Trunk E, 1.5 miles north of Big Falls.	a 4.9	1959-65 1966# 1967	4- 2-67	11.03	51
*4-0810	Waupaca River near Waupaca, Wis.	On north line of sec. 1, T. 21 N., R. 12 E., on right bank 10 ft downstream from highway bridge, 4 miles upstream from Weyauwega Lake dam, 4 1/2 miles southeast of Waupaca.	272	1916-63# 1964-65 1966 # 1967	3-30-67	3.74	1,060
4-0810.1	Waupaca River tributary near Waupaca, Wis.	NW 1/4 sec. 1, T. 21 N., R. 12 E., at culvert on U. S. Highway 10, 5 miles southeast of Waupaca.	a 1.0	1960-67	3-28-67	d 14.44	100
4-0819	Sawyer Creek at Oshkosh, Wis.	SW 1/4 sec. 15, T. 18 N., R. 16 E., at bridge on U. S. Highway 41, 1 mile southwest of Algoma Street Fox River bridge in Oshkosh.	15.8	1961-67	4-16-67	11.33	175
4-0834	East Branch Fond du Lac River tributary near Eden, Wis.	NE 1/4 sec. 14, T. 14 N., R. 17 E., at culvert on U. S. Highway 41, 3 miles west of Eden.	1.19	1961-67	3- 2-67	d 12.44	f
*4-0850.3	Apple Creek near Kaukauna, Wis.	On west boundary sec. 2, T. 21 N., R. 18 E., at bridge on State Highway 55, 3 1/2 miles northeast of Kaukauna.	14.6	1960-67	6-15-67	14.06	720
4-0851	East River tributary at Greenleaf, Wis.	NE 1/4 sec. 8, T. 21 N., R. 20 E., at railroad box culvert, 1/2 mile south of Greenleaf.	8.00	1958-67	6-14-67	13.00	390
4-0853	Neshota River tributary near Denmark, Wis.	NE 1/4 sec. 7, T. 22 N., R. 22 E., at box culvert on U. S. Highway 141, 3 3/4 miles northwest of Denmark.	3.08	1959-67	3-26-67	13.81	f
*4-0854	Killsnake River near Chilton, Wis.	E 1/2 sec. 6, T. 18 N., R. 20 E., at bridge on country road, 2.4 miles northeast of Chilton.	29.5	1961-67	3-10-67	11.86	750
*4-0857	Sheboygan River tributary near Plymouth, Wis.	On common boundary of secs. 2 and 11, T. 15 N., R. 21 E., at concrete culvert on County Trunk J, 3 1/2 miles northeast of Plymouth.	5.51	1959-67	3-23-67	a 9.9	60
4-0864	Milwaukee River tributary near Fredonia, Wis.	SE 1/4 sec. 1, T. 11 N., R. 21 E., at culvert on country road, 2.3 miles southeast of Fredonia.	.84	1962-67	3-23-67	10.57	f
*4-0870.5	Little Menomonee River near Freistadt, Wis.	On common boundary of secs. 29 and 32, T. 9 N., R. 21 E., at bridge on Donges Bay Road, 2 miles south of Freistadt.	7.96	1958-67	6-11-67	10.35	70
4-0871	Honey Creek at Milwaukee, Wis.	SE 1/4 sec. 15, T. 6 N., R. 21 E., 400 ft upstream from bridge on S. 68th Street, and 6 miles southwest from mouth of Milwaukee River in Milwaukee.	3.34	1959-67	6-11-67	19.03	f
*4-0872	Oak Creek near South Milwaukee, Wis.	On common boundary of secs. 21 and 22, T. 5 N., R. 22 E., at bridge on West Nicholson Road, 3 miles southwest of South Milwaukee.	13.9	1958-67	6-11-67	15.15	165

* Also a low-flow partial-record station.

f Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

d Peak may be ice affected.

g Not previously published.

Annual maximum discharge at crest-stage partial-record stations

Annual maximum discharge at crest stage partial record stations								
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum			
					Date	Gage height (feet)	Dis-charge (cfs)	
Streams tributary to Lake Michigan--Continued								
4-0872.3	West Branch Root River Canal tributary near North Cape, Wis.	SE 1/4 sec. 33, T. 4 N., R. 21 E., at culvert on County Trunk U, 3 miles southeast of North Cape.	3.92	1962-67	6-11-67	a 11.3	65	
*4-0872.5	Pike Creek near Kenosha, Wis.	W 1/2 sec. 27, T. 2 N., R. 22 E., at box culvert on State Highway 43, 3 miles north-west of Kenosha.	7.25	1960-67	6-11-67	13.29	62	
St. Croix River Basin								
*5-3331	Little Frog Creek near Minong, Wis.	NW 1/4 sec. 29, T. 42 N., R. 11 W., at culvert on country road, 2 1/2 miles east of Minong.	13.6	1961-67	3-30-67	15.89	465	
5-3341	Sawyer Creek near Shell Lake, Wis.	SE 1/4 sec. 13, T. 38 N., R. 13 W., at box culvert on U. S. Highway 63, 2 miles north of Shell Lake.	a .8	1960-67	4-26-60 3-27-61 1962 3-25-63 7-28-64 4-11-65 3-31-66 3-30-67	11.61 11.59 b 10.63 10.81 13.11 10.63 13.19	g 53 g 52 g < 20 g 28 g 32 g 97 g 28 100	
*5-3353.8	Bashaw Brook near Shell Lake, Wis.	SW 1/4 sec. 8, T. 38 N., R. 14 W., at twin box culvert on country road, 10.5 miles northwest of Shell Lake.	28.2	1959-65 1966# 1967	3-30-67	13.93	273	
*5-3403	Trade River near Frederic, Wis.	SW 1/4 sec. 4, T. 36 N., R. 17 W., at box culvert on State Highways 35 and 48, 2.5 miles southwest of Frederic.	5.79	1958-67	7- 8-59 3-27-61 5-19-62 5- 6-65 3-29-66 3-30-67	11.67 11.44 10.94 11.68 11.86 13.25	123 110 78 124 130 223	
5-3417	Willow River tributary near New Richmond, Wis.	NW 1/4 sec. 17, T. 30 N., R. 17 W., at twin box culvert on County Trunk GG, 3.6 miles south-east of New Richmond.	1.40	1959-67	3-29-67	e 12.72	f	
5-3419	Kinnickinnic River tributary at River Falls, Wis.	NE 1/4 sec. 14, T. 27 N., R. 19 W., at bridge on County Trunk FF, 1.6 miles southwest of River Falls.	7.26	1959-67	3-27-67	11.04	f	
Trimble Creek Basin								
*5-3466	Little Trimble Creek near Bay City, Wis.	S 1/2 sec. 21, T. 25 N., R. 18 W., at bridge on County Trunk K, 7 miles northwest of Bay City.	19.9	1961-67	3-28-67	12.60	1,550	
Chippewa River Basin								
*5-3562	Kenyon Creek near Radisson, Wis.	NW 1/4 sec. 22, T. 38 N., R. 6 W., at bridge on State Highway 27, 5 miles east of Radisson.	a 7.5	1960-67	3-31-67	d 12.85	330	
5-3592	South Fork Flambeau River tributary near Park Falls, Wis.	SW 1/4 sec. 15, T. 40 N., R. 1 E., at culvert on State Highway 182, 5.1 miles east of Park Falls.	a .7	1960-67	3-30-67	11.13	f	
*5-3596	Price Creek near Phillips, Wis.	SW 1/4 sec. 31, T. 38 N., R. 2 W., at culvert on County Trunk W, 13 miles west of Phillips.	14.7	1958-65 1966# 1967	3-31-67	11.54	120	

* Also a low-flow partial-record station.

f Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

b Peak did not reach bottom of the gage.

d Peak may be ice affected.

e Backwater from ice.

g Not previously published.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations

Annual maximum discharge at crest-stage partial-record stations							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Chippewa River Basin--Continued							
5-3602	Flambeau River tributary at Ladysmith, Wis.	SW 1/4 sec. 27, T. 35 N., R. 6 W., at culvert on State Highway 27, 1 mile north of Ladysmith.	a 0.8	1960-67	8-28-60 3-27-61 5-19-62 5-10-63 5- 8-64 5-15-65 6-12-66 6-14-67	11.19 11.30 10.60 10.87 10.48 10.60 10.63 11.14	g 14 g 15 g 9 g 11 g 8 g 9 g 9 13
*5-3614	Hay Creek near Prentice, Wis.	SE 1/4 sec. 4, T. 35 N., R. 1 E., at culvert on U. S. Highway 8, 3.5 miles west of Prentice.	20.1	1961-67	3-30-67	e 15.41	†
*5-3640	Yellow River at Cadott, Wis.	NE 1/4 sec. 31, T. 29 N., R. 6 W., at bridge on State Highway 27, in Cadott.	351	1943-61# 1962-67	3-31-67	d 14.18	12,000
5-3641	Seth Creek near Cadott, Wis.	SW 1/4 sec. 17, T. 29 N., R. 6 W., at culvert on State Highway 27, 3.1 miles north of Cadott.	3.04	1962-67	3-28-62 5-13-63 4- -64 4-10-65 12-12-65 3-30-67	12.76 13.53 11.11 13.53 12.82 13.93	g 185 g 300 g 43 g 300 g 192 355
5-3645	Duncan Creek at Bloomer, Wis.	Sec. 8, T. 30 N., R. 9 W., 1/4 mile below Bloomer Dam at Bloomer.	49.2	1945-51# 1958-67	3-31-67	9.56	1,780
*5-3657	Goggle-eye Creek near Thorp, Wis.	West boundary sec. 19, T. 29 N., R. 3 W., at culvert on State Highway 73, 1.3 miles north of Thorp.	7.04	1958-67	3-30-67	15.83	1,150
*5-3665	Eau Claire River near Fall Creek, Wis.	NW 1/4 sec. 19, T. 27 N., R. 7 W., 500 ft east of County Trunk K, 3 1/4 miles north of Fall Creek.	758	1943-55# 1958-67	3-31-67	17.59	20,500
5-3670.3	Willow Creek near Eau Claire, Wis.	On common boundary of secs. 14 and 15, T. 26 N., R. 9 W., at box culvert on State Highway 93, 4 miles south of Eau Claire.	4.38	1958-67	4- 6-58 7- 8-59 5- 7-60 3-27-61 5-19-62 8- 2-63 3-14-64 4- 9-65 2- 8-66 3-29-67	11.95 14.12 11.32 11.88 10.73 11.74 11.84 12.70 11.92 11.86	g 190 g 400 g 140 g 185 g 95 g 170 g 180 f 255 g 188 182
*5-3674.8	East Branch Pine Creek tributary near Dallas, Wis.	SW 1/4 sec. 1, T. 32 N., R. 12 W., at culvert on County Trunk O, 1 1/2 miles north of Dallas.	3.85	1960-67	3-30-67	15.59	430
5-3675	Red Cedar River near Colfax, Wis.	SW 1/4 sec. 22, T. 30 N., R. 11 W., 3.2 miles below Trout Creek and 4.7 miles north of Colfax.	a 1,100	1914-61# 1962-67	3-31-67	9.08	22,800
5-3677	Lightning Creek at Almena, Wis.	NW 1/4 sec. 19, T. 34 N., R. 13 W., at bridge on County Trunk P, in Almena.	19.8	1958-67	3-30-67	12.39	1,550
5-3698	Eau Galle River tributary near Hersey, Wis.	SW 1/4 sec. 5, T. 28 N., R. 15 W., at box culvert on Interstate Highway 94, 2 miles southwest of Hersey.	.65	1960-67	3-29-67	d 11.55	†
5-3706	Arkansaw Creek tributary near Arkansaw, Wis.	SW 1/4 sec. 14, T. 25 N., R. 14 W., at box culvert on U. S. Highway 10, 1 1/4 miles northwest of Arkansaw.	2.56	1959-67	3- -59 12-28-59 6-12-61 3-28-62 7-17-63 5-24-64 4-10-65 3- 4-66 3-29-67	11.67 11.38 11.63 12.80 10.57 11.34 13.37 12.08 12.99	g 130 g 110 g 130 g 200 g 42 g 105 g 330 g 150 280

* Also a low-flow partial-record station.

† Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

d Peak may be ice affected.

e Backwater from ice.

f Revised.

g Not previously published.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Chippewa River Basin--Continued							
*5-3709	Spring Creek near Durand, Wis.	S 1/2 sec. 9, T. 24 N., R. 13 W., at bridge on country road, 4 miles south of Chippewa River bridge in Durand.	6.49	1962-67	3-29-67	12.19	#
By Golly Creek Basin							
5-3713	By Golly Creek near Nelson, Wis.	SW 1/4 sec. 28, T. 23 N., R. 13 W., at culvert on County Trunk D, 3 miles northeast of Nelson.	.28	1962-67	3-27-67	d 10.64	#
Buffalo River Basin							
5-3718	Buffalo River tributary near Osseo, Wis.	S 1/2 sec. 3, T. 24 N., R. 6 W., at culvert on U. S. Highway 10, 6 1/2 miles east of Osseo.	1.44	1960-67	5-21-60 5-27-61 8-31-62 5-10-63 6-18-64 7-13-65 6- 5-66 10-15-66	11.66 11.18 10.13 10.29 10.10 10.60 10.45 10.62	g 125 g 92 g 30 g 40 g 30 g 58 g 50 58
Waumandee Creek Basin							
*5-3782	Eagle Creek near Fountain City, Wis.	SW 1/4 sec. 33, T. 20 N., R. 11 W., at bridge on County Trunk G, 2 1/2 miles north of Fountain City.	26.8	1961-67	3-26-67	11.95	390
Black River Basin							
5-3808	Black River tributary near Whittlesey, Wis.	SW 1/4 sec. 35, T. 32 N., R. 1 E., at bridge on State Highway 13, 1.1 mile south of Whittlesey.	a 4.5	1960-67	3-29-67	d 12.55	#
*5-3809	Poplar River near Owen, Wis.	NW 1/4 sec. 25, T. 28 N., R. 2 W., at bridge on County Trunk N, 4 1/4 miles south of Owen.	159	1958-65 1966# 1967	3-31-67	19.12	10,000
*5-3809.7	Cawley Creek near Neillsville, Wis.	SW 1/4 sec. 25, T. 25 N., R. 2 W., at bridge on State Highway 73, 3.7 miles north of Neillsville.	38.6	1961-67	3-30-67	17.11	#
5-3813	Allens Creek near Black River Falls, Wis.	SW 1/4 sec. 2, T. 21 N., R. 4 W., at culvert on U. S. Highway 12, 2 miles north of Black River Falls.	4.00	1958-67	3-31-67	h 14.44	#
*5-3822	French Creek near Ettrick, Wis.	NE 1/4 sec. 27, T. 20 N., R. 8 W., at bridge on County Trunk D and T, 2 1/2 miles west of Ettrick.	14.3	1960-67	3-27-67	13.07	#
La Crosse River Basin							
5-3823	Beaver Creek tributary near Sparta, Wis.	NW 1/4 sec. 11, T. 17 N., R. 4 W., at box culvert on State Highways 27 and 71, 1.9 miles north of Sparta.	1.72	1959-67	3- -59 5- 7-60 3-26-61 3-28-62 3-26-63 5-15-64 4-10-65 2- 8-66 6-15-67	e 13.19 10.78 12.05 11.06 11.71 11.75 11.85 12.72 12.47	g 152 g 40 g 134 g 56 g 104 g 106 g 104 g 170 168

* Also a low-flow partial-record station.

Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

d Peak may be ice affected.

e Backwater from ice.

g Not previously published.

h Backwater from Black River.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
La Crosse River Basin--Continued							
*5-3825	Little La Crosse River near Leon, Wis.	NE 1/4 sec. 3, T. 16 N., R. 4 W., 4 miles upstream from mouth and 1.5 miles northwest of Leon.	77.1	1934-61# 1962-67	6-15-67	7.20	1,330
Mormon Creek Basin							
*5-3863	Mormon Creek near La Crosse, Wis.	NE 1/4 sec. 19, T. 15 N., R. 6 W., at bridge on country road, 6 miles southeast of La Crosse.	25.5	1961-67	2-15-67	9.92	#
Bad Axe River Basin							
*5-3871	North Fork Bad Axe River near Genoa, Wis.	SW 1/4 sec. 36, T. 13 N., R. 7 W., at bridge on State Highway 56, 4.1 miles southeast of Genoa.	80.7	1959-65 1966# 1967	3-25-67	15.43	1,700
Du Charme Creek Basin							
5-3884.6	Du Charme Creek at Eastman, Wis.	NE 1/4 sec. 13, T. 8 N., R. 6 W., at culvert on County Trunk D in Eastman.	.27	1961-67	7-17-67	14.05	#
Wisconsin River Basin							
*5-3921.5	Mishonagon Creek near Woodruff, Wis.	NE 1/4 sec. 32, T. 40 N., R. 6 E., at twin culvert on State Highway 47, 3 miles northwest of Woodruff.	11.7	1958-67	10-15-66	10.03	56
*5-3923.5	Bearskin Creek near Harshaw, Wis.	SW 1/4 sec. 36, T. 37 N., R. 6 E., at culvert on County Trunk K, 2 1/8 miles southwest of Harshaw.	32.4	1958-65 1966# 1967	4- 2-67	9.63	78
*5-3940	New Wood River near Merrill, Wis.	E 1/2 sec. 15, T. 32 N., R. 5 E., at bridge on County Trunk E, 9.5 miles northwest of Merrill.	a 83.1	1953-61# 1962-67	3-31-67	e 6.38	1,050
*5-3942	Devil Creek near Merrill, Wis.	N 1/2 sec. 30, T. 31 N., R. 6 E., at culvert on County Trunk F, 5.8 miles southwest of Merrill.	10.1	1961-67	3-31-67	e 15.46	#
5-3951	Trappe River tributary near Merrill, Wis.	SW 1/4 sec. 28, T. 31 N., R. 8 E., at culvert on County Trunk P, 9 1/2 miles southeast of Merrill.	a 2.2	1959-67	4- 2-67	13.12	155
5-3961	Scotch Creek tributary near Edgar, Wis.	SE 1/4 sec. 31, T. 29 N., R. 5 E., at culvert on State Highway 29, 1.5 miles northeast of Edgar.	a 7.1	1962-67	3-31-67	14.96	730
5-3976	Big Sandy Creek near Wausau, Wis.	SE 1/4 sec. 31, T. 30 N., R. 9 E., at bridge on State Highway 52, 10 miles northeast of Wausau.	a 9.9	1959-67	3-31-67	e 13.77	1,000
5-3992	Randall Creek tributary near Abbotsford, Wis.	South boundary of sec. 36, T. 29 N., R. 2 E., at concrete culvert, on State Highway 29, 5.8 miles east of Abbotsford.	a .5	1959-67	8-27-67	10.73	#
5-4018	Yellow River tributary near Pittsville, Wis.	On common boundary of secs. 11 and 14, T. 23 N., R. 3 E., at bridge on County Trunk C, 2 miles north of Pittsville.	7.53	1959-67	3-31-67	12.85	#
*5-4035.2	Webster Creek at New Lisbon, Wis.	NE 1/4 sec. 19, T. 16 N., R. 3 E., at bridge on State Highway 80, 1.2 miles south of New Lisbon.	11.6	1961-67	6-16-67	13.47	175

* Also a low-flow partial-record station.

Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

e Backwater from ice.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Wisconsin River Basin--Continued							
*5-4035.5	One Mile Creek near Mauston, Wis.	SE 1/4 sec. 24, T. 15 N., R. 3 E., at bridge on State Highway 58, 2.4 miles south of Mauston.	30.4	1958-67	3-24-67	14.64	560
5-4036.1	Wisconsin River tributary at Wisconsin Dells, Wis.	NE 1/4 sec. 3, T. 13 N., R. 6 E., at culvert on State Highway 13, 0.8 mile north of Wisconsin Dells.	1.44	1962-67	7- 2-62 1963 1964 3- 1-65 2- 8-66 6-11-67	10.25 b b 10.56 10.93 10.21	g 12 g <10 g <10 g 20 g 30 11
*5-4037	Dell Creek near Lake Delton, Wis.	NW 1/4 sec. 2, T. 12 N., R. 5 E., at bridge on town road, 1/4 mile north of State Highway 23, and 5 miles southwest of Lake Delton.	44.9	1957-65# 1966-67	3-24-67	6.29	317
*5-4042	Narrows Creek at Loganville, Wis.	SE 1/4 sec. 8, T. 11 N., R. 4 E., at bridge on State Highways 23 and 154, and 1/4 mile north of Loganville.	40.0	1958-65 1966# 1967	1-25-67	14.89	†
*5-4036	Rowan Creek at Poynette, Wis.	S 1/2 sec. 35, T. 11 N., R. 9 E., at bridge on U. S. Highway 51, in Poynette.	a 9.9	1961-67	1-25-67	13.65	450
5-4068	Rocky Branch near Richland Center, Wis.	E 1/2 sec. 29, T. 10 N., R. 1 E., at culvert on State Highway 80, 1 1/2 miles south of Richland Center.	1.71	1960-67	6-28-67	17.20	†
*5-4071	Richland Creek near Plugtown, Wis.	NW 1/4 sec. 9, T. 8 N., R. 3 W., at bridge on U. S. Highway 61, 2 miles south of Plugtown.	19.1	1958-67	1-25-67	16.22	600
*5-4072	Crooked Creek near Boscobel, Wis.	SE 1/4 sec. 2, T. 7 N., R. 3 W., at bridge on U. S. Highway 61, 1.6 miles south of Boscobel.	13.1	1959-67	1-25-67	12.82	†
*5-4074	Morris Creek tributary near Norwalk, Wis.	NW 1/4 sec. 21, T. 16 N., R. 2 W., at bridge on County Trunk T, 2 miles north of Norwalk.	4.67	1960-67	6-16-67	13.38	1,060
*5-4088	Bishops Branch near Viroqua, Wis.	N 1/2 sec. 2, T. 12 N., R. 4 W., at bridge on State Highways 56 and 82, 3 miles east of Viroqua.	7.08	1959-67	6- 9-67	12.75	2,300
Grant River Basin							
*5-4134	Pigeon Creek near Lancaster, Wis.	SW 1/4 sec. 15, T. 4 N., R. 3 W., at culvert on country road, 2 miles south of Lancaster.	6.90	1960-65 1966# 1967	1-24-67	20.85	2,800
Platte River Basin							
*5-4142	Bear Branch near Platteville, Wis.	NW 1/4 sec. 4, T. 3 N., R. 1 W., at box culvert on State Highway 81, 2.3 miles northwest of Platteville.	2.80	1958-67	1-24-67	15.71	610
Galena River Basin							
*5-4149	Pats Creek near Elk Grove, Wis.	SW 1/4 sec. 4, T. 2 N., R. 1 E., at bridge on State Highway 81, 7 miles southeast of Platteville.	8.49	1960-67	1-24-67	15.24	†
Rock River Basin							
*5-4233	South Branch Rock River tributary near Waupun, Wis.	S 1/2 sec. 22, T. 14 N., R. 14 E., at concrete culvert on country road, 4 1/2 miles north-west of Waupun.	11.9	1959-67	3-27-67	d 10.76	†

* Also a low-flow partial-record station.

† Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

b Peak did not reach bottom of the gage

d Peak may be ice affected.

g Not previously published.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Rock River Basin--Continued							
*5-4238	East Branch Rock River tributary near Slinger, Wis.	S 1/2 sec. 26, T. 11 N., R. 18 E., at culvert on U. S. Highway 41, 4 miles northwest of Slinger.	4.64	1960-67	3-10-67	11.36	120
5-4243	Rock River tributary near Watertown, Wis.	NW 1/4 sec. 18, T. 8 N., R. 16 E., at concrete culvert on old U. S. Highway 16, 5 miles east of Watertown.	4.58	1959-67	3-10-67	11.89	f
*5-4257	Robbins Creek near Columbus, Wis.	SE 1/4 sec. 11, T. 10 N., R. 12 E., at culvert on U. S. Highway 16, in Columbus.	8.54	1960-67	1-25-67	12.50	f
5-4261	Scuppernong Creek near Wales, Wis.	NE 1/4 sec. 6, T. 6 N., R. 18 E., at culvert on U. S. Highway 18, 1.8 miles northwest of Wales.	8.91	1962-67	1967	b	f
*5-4272	Allen Creek near Fort Atkinson, Wis.	NE 1/4 sec. 17, T. 5 N., R. 14 E., at box culvert on State Highway 26, 2.5 miles southwest of Fort Atkinson.	15.1	1958-67	6-12-67	10.32	89
5-4272.5	Koshkonong Creek at Sun Prairie, Wis. (i)	SW 1/4 sec. 33, T. 9 N., R. 11 E., at culvert on U. S. Highway 151 in Sun Prairie.	.46	1961-67	3-25-61 3-19-63 4- 2-64 9- 9-65 5-23-66 6-11-67	11.05 10.53 10.83 10.62 10.25 11.00	g 20 g 8 g 15 g 10 g 2 19
*5-4278	Token Creek near Madison, Wis.	SW 1/4 sec. 4, T. 8 N., R. 10 E., at culvert on U. S. Highway 51, 8 miles northeast of State Capitol in Madison.	24.4	1961-65 1966# 1967	1-25-67	13.52	464
*5-4314	Little Turtle Creek at Allens Grove, Wis.	NE 1/4 sec. 6, T. 1 N., R. 15 E., at bridge on country road, 0.2 mile south of Allens Grove.	42.0	1962-67	3-10-67	14.51	f
*5-4323	Rock Branch near Mineral Point, Wis.	SE 1/4 sec. 8, T. 4 N., R. 3 E., at box culvert on State Highway 23, 2 1/2 miles south of Mineral Point.	5.04	1959-67	1-24-67	16.19	1,180
*5-4335	Yellowstone River near Blanchardville, Wis.	NE 1/4 sec. 34, T. 4 N., R. 4 E., 0.6 mile upstream from bridge on County Trunk F, and 7 miles west-southwest of Blanchardville.	29.1	1954-65# 1966-67	1-24-67	10.25	2,140
5-4342	Skinner Creek tributary near Monroe, Wis.	S 1/2 sec. 14, T. 2 N., R. 7 E., at culvert on State Highway 69, 2.4 miles north of Monroe.	.48	1959-67	3-29-60 3-26-61 3-29-62 3-18-63 3-13-64 3-31-65 2- 8-66 3-24-67	13.44 11.40 11.89 10.75 11.01 11.77 12.16 12.15	g 118 g 38 g 55 g 18 g 26 g 50 g 65 64
5-4359	Sugar River tributary near Pine Bluff, Wis.	SE 1/4 sec. 27, T. 7 N., R. 7 E., at culvert on County Trunk J, 1.1 miles southeast of Pine Bluff.	7.33	1961-67	1-24-67	15.02	460
*5-4362	Sugar River tributary No. 2 near Brooklyn, Wis.	NW 1/4 sec. 16, T. 4 N., R. 9 E., at culvert on State Highway 92, 4.3 miles west of Brooklyn.	a 3.3	1961-67	10-31-60 10-30-61 3-19-63 3-13-64 3-31-65 2- 8-66 6-16-67	13.20 13.46 12.96 12.32 15.06 13.62 14.61	g 105 g 120 g 90 g 62 g 270 g 130 210
*5-4372	East Fork Raccoon Creek near Beloit, Wis. (j)	On common boundary of secs. 30 and 31, T. 1 N., R. 12 E., at culvert on State Highway 81, 2.9 miles west of Beloit.	f 10.7	1958-67	3-23-67	11.61	85

* Also a low-flow partial-record station.

f Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

b Peak did not reach bottom of the gage.

f Revised

g Not previously published.

i Published as Koshkonong River prior to 1967.

j Published as Raccoon Creek tributary prior to 1967.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Illinois River Basin							
*5-5443	Mukwonago River tributary near Mukwonago, Wis.	S 1/2 sec. 36, T. 5 N., R. 18 E., at culvert on State Highway 83, 1 1/2 miles southeast of Mukwonago.	1.32	1960-67	1-24-67	10.66	/
5-5451	Sugar Creek at Elkhorn, Wis.	SW 1/4 sec. 29, T. 3 N., R. 17 E., at culvert on State Highway 11, 2 miles northeast of Elkhorn.	6.33	1962-67	3-25-62 2- 9-66 6-10-67	11.54 11.74 11.48	g 125 g 145 122
5-5452	White River tributary near Burlington, Wis.	On common boundary of secs. 27 and 34, T. 3 N., R. 18 E., at box culvert on State Highway 11, 4.5 miles west of Burlington.	1.75	1958-67	6-17-67	d 13.20	/
*5-5453	White River near Burlington, Wis.	NW 1/4 sec. 1, T. 2 N., R. 18 E., at bridge on State Highway 36, 2 1/4 miles southwest of Burlington.	105	1958-65 1966# 1967	6-17-67	13.20	1,690
*5-5461.5	North Branch Nippersink Creek tributary near Genoa City, Wis.	E 1/2 sec. 32, T. 1 N., R. 18 E., at bridge on County Trunk B, 3 miles west of Genoa City.	13.0	1962-67	6-17-67	12.05	/

* Also a low-flow partial-record station.

/ Discharge not determined.

Operated as a continuous-record gaging station.

d Peak may be ice affected.

g Not previously published.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements at Miscellaneous Sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Measurements made during periods of base flow are designated by an asterisk (*).

Discharge measurements made at miscellaneous sites during water year 1967

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Superior						
Bad River	Lake Superior	SE 1/4 NW 1/4 sec. 25, T. 48 N., R. 3 W., at bridge on U. S. Highway 2, at Odanah, Wis.	a 970	1950 1960 1966	4- 2-67	* 12,900
Chippewa River Basin						
Ding Dong Creek	Chippewa River	SW corner sec. 35, T. 43 N., R. 4 W., at culvert on State Highway 77, 3 miles east of Clam Lake, Wis.	14.4		8-22-67	* 1.64
Brunett River	do	NE 1/4 sec. 9, T. 38 N., R. 5 W., at bridge on County Trunk W, 1 1/2 miles southeast of Winter, Wis.	52.0		8-23-67	* 17.1
Devils Creek	do	SE 1/4 sec. 30, T. 35 N., R. 7 W., at bridge on County Trunk H, 2 1/2 miles north of Bruce, Wis.	45.0		8-23-67	* 8.20
Thornapple River	do	SW corner of NW 1/4 sec. 10, T. 35 N., R. 6 W., at bridge on State Highway 27, 4 miles north of Ladysmith, Wis.	165		8-23-67	* 14.5
Swamp Creek	Flambeau River	NE 1/4 sec. 1, T. 41 N., R. 1 E., at bridge on County Trunk F, 10 miles east of Butternut, Wis.	43.2		8-22-67	* 17.4
South Fork Flambeau River	do	NE 1/4 sec. 36, T. 40 N., R. 2 E., at bridge on U. S. Forest Road 148, 14 miles east of Lac du Flambeau, Wis.	149		8-23-67	* 46.3
Little Elk River	Elk River	SW 1/4 sec. 16, T. 37 N., R. 1 E., at bridge on County Trunk D, 1.5 miles east of Phillips, Wis.	28.2		8-23-67	* 23.7
North Fork Jump River	Jump River	SE 1/4 sec. 3, T. 35 N., R. 1 W., at bridge on State Highway 86, 3 miles east of Catawba, Wis.	55.2		8-23-67	* 3.21
South Fork Jump River	Chippewa River	SE 1/4 sec. 17, T. 36 N., R. 2 E., at bridge on country road, 3 miles northeast of Prentice, Wis.	44.0		8-23-67	* 1.10
Silver Creek	South Fork Jump River	NE 1/4 sec. 13, T. 33 N., R. 1 E., at bridge on State Highway 13 in Westboro, Wis.	34.0		8-23-67	* 1.17
Fisher River	Chippewa River	NW 1/4 sec. 21, T. 32 N., R. 5 W., at 1/4 mile downstream from bridge on County Trunks M and G, and 1/4 mile south of Arnold, Wis.	46.5		8-23-67	* 1.83
North Fork Bobs Creek	do	On south boundary SE 1/4 sec. 22, T. 31 N., R. 7 W., at bridge on State Highway 64, 4 miles east of Cornell, Wis.	16.7		8-23-67	* 2.04
O'Neil Creek	do	On east boundary of SE 1/4 sec. 19, T. 30 N., R. 8 W., at bridge on U. S. Highway 53, 1/4 mile north of Eagleton, Wis.	64.4		8-23-67	* 29.1
North Fork Yellow River	do	On west boundary of NW 1/4 sec. 29, T. 33 N., R. 1 W., at bridge on country road, 11 miles west of Westboro, Wis.	29.7		8-23-67	* .41
Yellow River	do	SE 1/4 sec. 8, T. 30 N., R. 5 W., at the center of quarter section where river makes a sharp bend, 8 miles southeast of Cornell, Wis.	318		8-22-67	* 12.1
do	do	SW corner of SW 1/4 sec. 6, T. 29 N., R. 5 W., at 1/4 mile upstream from bridge on County Trunk D, and 4.4 miles north of Boyd, Wis.	356		8-22-67	* 15.2

a Approximately.

* Base flow.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Chippewa River Basin--Continued						
Duncan Creek	Chippewa River	On east boundary of NW 1/4 sec. 32, T. 31 N., R. 9 W., at bridge on County Trunk Q, 2 miles northeast of Bloomer, Wis.	24.7		8-24-67	* 10.2
do	do	NW corner of NW 1/4 sec. 9, T. 30 N., R. 9 W., at bridge on State Highway 40 in Bloomer, Wis.	46.7		8-24-67	* 18.5
Wolf River	North Fork Eau Claire River	On east boundary SE 1/4 sec. 2, T. 29 N., R. 5 W., at bridge on country road, 3 1/4 miles north of Stanley, Wis.	11.0		8-22-67	* .13
Black Creek	Coon Fork Creek	On common boundary of secs. 4 and 9, T. 25 N., R. 5 W., at bridge on County Trunk M, 4 miles north of Fairchild, Wis.	44.1		8-22-67	* 7.37
Hay Creek	Eau Claire River	On south boundary SE 1/4 sec. 10, T. 27 N., R. 6 W., at bridge on County Trunk D, 10.7 miles north of Augusta, Wis.	30.5		8-22-67	* 2.18
Otter Creek	do	SW 1/4 sec. 27, T. 26 N., R. 8 W., at bridge on County Trunk D, 11.2 miles south of Eau Claire, Wis.	23.7		8-22-67	* 6.42
Elk Creek	Chippewa River	NE corner of NW 1/4 sec. 12, T. 27 N., R. 11 W., at bridge on County Trunk EE, 2 miles south of Elk Mound, Wis.	55.1		8-23-67	* 23.4
Rock Creek	do	NE corner of SE 1/4 sec. 27, T. 26 N., R. 11 W., at bridge on County Trunk H, 1 mile south of Rock Falls, Wis.	30.5		8-22-67	* 6.82
Red Cedar River	do	SE corner of NE 1/4 sec. 21, T. 36 N., R. 10 W., at bridge on State Highway 48, in Mikana, Wis.	143		8-22-67	* 57.2
Brill River	Red Cedar River	On north boundary NW 1/4 sec. 25, T. 37 N., R. 11 W., at bridge on County Trunk D, 1 mile east of Nobleton, Wis.	81.9		8-22-67	* 57.3
do	do	On east boundary NE 1/4 sec. 25, T. 36 N., R. 11 W., at bridge on country road, 6 miles northeast of Rice Lake, Wis.	104		8-22-67	* 82.5
Red Cedar River	Chippewa River	NE corner of NW 1/4 sec. 6, T. 35 N., R. 10 W., at bridge on country road, 5 miles northeast of Rice Lake, Wis.	264		8-22-67	* 123
do	do	NW corner of SW 1/4 sec. 11, T. 35 N., R. 11 W., at bridge on State Highway 48, 2 miles northeast of Rice Lake, Wis.	271		8-22-67	* 133
Running Valley Creek	Eighteenmile Creek	On south boundary NW 1/4 sec. 12, T. 29 N., R. 11 W., at bridge on State Highway 40, 3 miles east of Colfax, Wis.	10.9		8-24-67	* 3.73
Eighteenmile Creek	Red Cedar River	NE corner of NE 1/4 sec. 16, T. 29 N., R. 11 W., at bridge on County Trunk M, 1/8 mile south of State Highway 40 in Colfax, Wis.	25.4		8-24-67	* 12.5
Hay River	do	On north boundary of NE 1/4 sec. 20, T. 33 N., R. 13 W., at bridge on County Trunk D, 5 1/2 miles southeast of Almena, Wis.	54.1		8-23-67	* 20.0
Wilson Creek	do	SE corner SW 1/4 sec. 27, T. 29 N., R. 14 W., at bridge on County Trunk O in Knapp, Wis.	12.6		8-23-67	* 5.52
Bear Creek	Chippewa River	SW corner of NW 1/4 sec. 30, T. 25 N., R. 12 W., at bridge on U. S. Highway 10, 3 miles east of Durand, Wis.	37.9		8-22-67	* 10.6
Arkansaw Creek	do	SE 1/4 sec. 13, T. 25 N., R. 14 W., at bridge on County Trunk N, 0.2 mile north of Arkansaw, Wis.	22.2		8-22-67	* 2.73

* Base flow.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Wisconsin River Basin						
Mud Creek	Columbus Lake	On common boundary of secs. 10 and 15, T. 39 N., R. 10 E., at bridge on Bloom Road, 3 miles south of Eagle River, Wis.			5-17-67	56.9
Yellow River	Wisconsin River	NE 1/4 sec. 27, T. 25 N., R. 2 E., at bridge on County Trunk B, 2.3 miles southwest of Marshfield, Wis.			9-27-67	1.52
Baraboo River	do	On common boundary secs. 14 and 15, T. 12 N., R. 4 E., at bridge on town road, 1 mile south of Reedsburg, Wis.			3-28-67	2,610
do	do	W 1/2 sec. 2, T. 11 N., R. 5 E., on highway bridge at west edge of North Freedom, Wis.		1950 1956 1959-60 1961+ 1962 1965-66	3-28-67	2,720
Black Earth Creek	Blue Mound Creek	SE 1/4 sec. 9, T. 8 N., R. 6 E., at bridge at east village limits of Mazomanie, Wis.		1964-65	11-15-66	20.0
do	do	SE 1/4 sec. 13, T. 8 N., R. 5 E., at bridge on country road, and 2.5 miles west of Mazomanie, Wis.		1964-65	11-15-66	18.7
Kickapoo River	do	SW 1/4 SE 1/4 sec. 30, T. 11 N., R. 3 W., at bridge on State Highway 131, at Soldiers Grove, Wis.		1939# 1960 1962 1965	3-28-67	2,220
Wisconsin River	Mississippi River	SW 1/4 sec. 11, T. 6 N., R. 6 W., at bridge on U. S. Highway 18, at Bridgeport, Wis.	a 11,700	1935-36 1938 1945-47 1950-52 1955 1960 1965-66	3-28-67 4- 6-67 4- 8-67 4-10-67	22,200 31,900 54,000 47,800

Rock River Basin

West Branch Rock River	Rock River	SW 1/4 sec. 35, T. 14 N., R. 15 E., at bridge on U. S. Highway 49, 1.7 miles east of Waupun, Wis.			10-26-66	4.18
East Branch Rock River	do	On west boundary sec. 15, T. 11 N., R. 18 E., at bridge on County Trunk W, at Allenton, Wis.	27.4		8-15-67	* 2.95
East Branch Rock River Tributary	East Branch Rock River	On south boundary NE 1/4 sec. 31, T. 12 N., R. 18 E., at bridge on country road, 1.2 miles north of Nenno, Wis.	17.3		8-15-67	* 1.30
Kohlsville River	do	On west boundary sec. 28, T. 12 N., R. 18 E., at bridge on country road, 2.2 miles northwest of Kohlsville, Wis.	19.8		8-15-67	* 1.78
Kummel Creek	do	NE 1/4 NE 1/4 sec. 3, T. 12 N., R. 17 E., at bridge on State Highway 175, 1.7 miles north of Theresa, Wis.	28.3		8-14-67	* 2.25
Rock River	Mississippi River	NW 1/4 SW 1/4 sec. 10, T. 10 N., R. 16 E., 1,000 ft downstream from dam, downstream from mouth of Wildcat Creek, at Hustisford, Wis.	424		8-15-67	* 1.45
do	do	SE 1/4 sec. 9, T. 10 N., R. 16 E., at bridge on State Highway 109, at Hustisford, Wis.		1966	10-26-66	1.24
Rubicon River	Rock River	NW 1/4 NE 1/4 sec. 23, T. 10 N., R. 16 E., at bridge on County Trunk EE, 2.3 miles southeast of Hustisford, Wis.	79.7		8-15-67	* 6.51
Ashippun River	do	SE 1/4 NW 1/4 sec. 13, T. 9 N., R. 17 E., at bridge on County Trunk O, 2.2 miles northeast of Alderly, Wis.	18.9		8-15-67	* 2.96

* Base Flow

a Approximately

Regular gaging station during this period

+ Measured at Rock Springs, 5 1/2 miles upstream.

Measurements at Miscellaneous Sites						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Rock River Basin--Continued						
Ashippun River	Rock River	NE 1/4 SW 1/4 sec. 12, T. 8 N., R. 16 E., at bridge on County Trunk S, 3 miles northeast of Ixonia, Wis.	79.1		8-16-67	* 5.59
Oconomowoc River	do	NW 1/4 NW 1/4 sec. 32, T. 8 N., R. 17 E., at bridge on U. S. Highway 16, at Oconomowoc, Wis.	103		8-15-67	* 2.42
do	do	On north boundary NW 1/4 sec. 4, T. 7 N., R. 16 E., at bridge on country road, 2.6 miles north of Concord, Wis.	128		8-16-67	* 12.4
Crawfish River	do	SW 1/4 NW 1/4 sec. 2, T. 10 N., R. 12 E., at bridge on U. S. Highway 16, 2.5 miles northwest of Columbus, Wis.	76.1		8-15-67	* 6.76
North Branch Crawfish River	Crawfish River	SE 1/4 SE 1/4 sec. 34, T. 11 N., R. 12 E., at bridge on country road, 1 mile south of Fall River, Wis.	112		8-15-67	* 1.38
Mauneshia River	do	SW 1/4 NE 1/4 sec. 25, T. 9 N., R. 11 E., at bridge on country road, 3 miles northeast of Sun Prairie, Wis.	35.7		8-15-67	* 1.49
Waterloo Creek	do	NW 1/4 NE 1/4 sec. 5, T. 8 N., R. 13 E., at bridge on State Highway 19, at Portland, Wis.	93.7		8-15-67	* 1.31
Fox Lake Outlet	Beaver Dam River	On south boundary SW 1/4 sec. 34, T. 13 N., R. 13 E., at bridge on country road, 1.9 miles southwest of Fox Lake, Wis.	61.2		8-14-67	* .04
Fox Lake Outlet Tributary	Fox Lake Outlet	NE 1/4 NW 1/4 sec. 3, T. 12 N., R. 13 E., at bridge on country road, 1.9 miles southwest of Fox Lake, Wis.	1.13		8-14-67	* .15
Beaver Creek	Beaver Dam River	NW 1/4 NE 1/4 sec. 17, T. 12 N., R. 13 E., at bridge on County Trunk G, 2 miles northeast of Randolph, Wis.	38.9		8-14-67	* .06
Beaver Dam River	Crawfish River	NE 1/4 SW 1/4 sec. 4, T. 11 N., R. 14 E., at Davis Street Bridge in Beaver Dam, Wis.	157		8-14-67	* 26.0
Beaver Dam Creek	do	NE 1/4 sec. 15, T. 10 N., R. 14 E., about 1/4 mile downstream from dam at Lowell, Wis.			10-26-66	7.35
Bark River	Rock River	SW 1/4 NW 1/4 sec. 24, T. 7 N., R. 17 E., at bridge on country road, 2 miles west of Delafield, Wis.	52.9		8-15-67	* 3.53
do	do	NW 1/4 NE 1/4 sec. 2, T. 5 N., R. 15 E., at bridge below Green Isle Lake Dam at Hebron, Wis.	161		8-15-67	* 15.9
Scuppernong River	Bark River	NE 1/4 NE 1/4 sec. 17, T. 5 N., R. 16 E., at bridge on State Highway 135, 2.3 miles northwest of Palmyra, Wis.	32.9		8-15-67	* 8.53
do	do	NW 1/4 NE 1/4 sec. 17, T. 5 N., R. 16 E., on country road, below mouth of Mud Creek, 2.6 miles northwest of Palmyra, Wis.	53.5		8-15-67	* 9.84
Bark River	Rock River	SE 1/4 NE 1/4 sec. 15, T. 5 N., R. 15 E., at Princess Point Bridge on County Trunk D, 2.2 miles south of Hebron, Wis.	251		8-15-67	* 34.4
Rock River	Mississippi River	On common boundary of secs. 3 and 4, T. 5 N., R. 14 E., at bridge on U. S. Highway 12 in Fort Atkinson, Wis.			10-27-66	146
Whitewater Creek	Bark River	NE 1/4 SW 1/4 sec. 18, T. 5 N., R. 15 E., at bridge on County Trunk DN, at Cold Springs, Wis.	68.6		8-15-67	* 16.8
Koshkonong Creek	Rock River	NW 1/4 SW 1/4 sec. 19, T. 7 N., R. 13 E., at bridge on County Trunk O, 0.7 mile north of London, Wis.	109		8-16-67	* 18.0

* Base flow.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements at Miscellaneous Sites

Measurements at Miscellaneous Sites						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Rock River Basin--Continued						
Koshkonong Creek	Rock River	NE 1/4 SW 1/4 sec. 7, T. 5 N., R. 13 E., at bridge on country road, 4 miles northeast of Albion, Wis.	163		10-27-66 8-16-67	* 24.0 26.6
Sixmile Creek	Yahara River	NE 1/4 NW 1/4 sec. 28, T. 8 N., R. 9 E., at bridge on County Trunk M, 3.2 miles south of Waunakee, Wis.	46.9		8-14-67	* 3.51
Spring Creek	Sixmile Creek	NW 1/4 SW 1/4 sec. 28, T. 8 N., R. 9 E., at bridge on County Trunk M, 3.6 miles south of Waunakee, Wis.	13.1		8-14-67	* 1.56 ^f
Pheasant Branch	Yahara River	SE 1/4 SE 1/4 sec. 1, T. 7 N., R. 8 E., at bridge on County Trunk M, at Pheasant Branch, Wis.	24.1		8-14-67	* 2.63
Badfish Creek	do	SW 1/4 SE 1/4 sec. 4, T. 4 N., R. 11 E., at bridge on State Highway 59, 2.2 miles east of Cooksville, Wis.	82.0	1953 1954 1955	8-14-67	* 54.7
Yahara River	Rock River	NE 1/4 SW 1/4 sec. 18, T. 4 N., R. 12 E., at bridge on County Trunk M, at Fulton, Wis.	544		8-14-67	* 144
Bass Creek	do	NE 1/4 NW 1/4 sec. 14, T. 2 N., R. 11 E., at bridge on County Trunk H, at Hanover, Wis.	46.6		8-14-67	* 11.7
Turtle Creek	do	NE 1/4 NW 1/4 sec. 18, T. 2 N., R. 16 E., below Comus Lake Dam, at Delavan, Wis.	30.8		8-15-67	* 6.43
Lake Delavan Outlet	Turtle Creek	SW 1/4 SE 1/4 sec. 20, T. 2 N., R. 16 E., at bridge on country road, 1.4 miles southeast of Delavan, Wis.	41.6		8-15-67	* .70
Swim Pond Outlet	do	SW 1/4 NW 1/4 sec. 18, T. 2 N., R. 16 E., at bridge on County Trunk P, outlet of Swim Pond, at Delavan, Wis.	48.4		8-15-67	* 1.27
Turtle Creek	Rock River	SE 1/4 SE 1/4 sec. 24, T. 2 N., R. 14 E., at bridge on country road, 2.3 miles northwest of Allens Grove, Wis.	118	1966	8-15-67	* 30.6
do	do	NE 1/4 NW 1/4 sec. 9, T. 1 N., R. 13 E., at bridge on country road, 1.3 miles west of Shopiere, Wis.	232		8-15-67	* 41.0
do	do	SW 1/4 SW 1/4 sec. 30, T. 1 N., R. 13 E., at bridge on State Highway 15, at Beloit, Wis.	282		8-14-67	* 34.1

Illinois River Basin

Poplar Creek	Fox River	SE 1/4 NW 1/4 sec. 29, T. 7 N., R. 20 E., at bridge on County Trunk Y, and 3 miles northeast of Waukesha, Wis.	a 23	1966	8-16-67	* .40
Pewaukee Lake Outlet	Pewaukee Lake	SW 1/4 NW 1/4 sec. 9, T. 7 N., R. 19 E., at bridge on County Trunk JJ in the city of Pewaukee, Wis.	a 39	1966	8-16-67	* 1.66
Jerico Creek	Mukwonago River	SW 1/4 SE 1/4 sec. 25, T. 5 N., R. 17 E., at bridge on County Trunk NN, and 1.4 miles south of Jericho, Wis.	a 24	1966	8-16-67	* 1.77
Mukwonago River	Fox River	NW 1/4 NE 1/4 sec. 35, T. 5 N., R. 18 E., 200 ft upstream from bridge on State Highway 15 in Mukwonago, Wis.	a 88	1966	8-16-67	* 20.2
Eagle Creek	do	SE 1/4 NW 1/4 sec. 14, T. 3 N., R. 19 E., at culvert on country road, and 1.5 miles south of Rochester, Wis.	a 15	1966	8-15-67	* 1.07
Honey Creek	Honey Lake	SE 1/4 NW 1/4 sec. 25, T. 4 N., R. 17 E., at State Highway 15, and 0.3 mile northeast of Troy, Wis.	a 42	1966	8-16-67	* 7.55

* Base flow.

^f Located in county mapbook.

a Approximately.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Illinois River Basin--Continued						
Honey Creek	Honey Lake	NE 1/4 SE 1/4 sec. 1, T. 3 N., R. 18 E., at bridge on County Trunk D, and 2 miles north of Vienna, Wis.	a 83	1966	8-15-67	* 12.7
Sugar Creek	Honey Creek	SW 1/4 NE 1/4 sec. 15, T. 3 N., R. 17 E., at bridge on country road, and 4.1 miles northwest of Spring Prairie, Wis.	a 40	1966	8-15-67	* 6.24
White River	Echo Lake	SE 1/4 SE 1/4 sec. 25, T. 2 N., R. 17 E., 500 ft upstream from sewage treatment plant, and 0.8 miles northeast of Lake Geneva, Wis.	a 30	1966	8-15-67	* 12.4
do	Fox River	NE 1/4 sec. 32, T. 3 N., R. 17 E., below dam in Burlington, Wis.			9-15-67	* 49.7
Fox River	Illinois River	SE 1/4 NE 1/4 sec. 32, T. 3 N., R. 19 E., 85 ft downstream from bridge on State Highways 11 and 43 in Burlington, Wis.		1966	9-15-67	* 115
Des Plaines River Basin						
Brighton Creek	Des Plaines River	SW 1/4 NW 1/4 sec. 5, T. 1 N., R. 21 E., at bridge on State Highway 45, 1.5 miles east of Paddock Lake, Wis.	a 26		8-14-67	* 1.37
Kilborne Ditch	do	SE 1/4 SW 1/4 sec. 6, T. 1 N., R. 22 E., at culvert on State Highway 50, 2 miles west of Truesdell, Wis.	a 40		8-14-67	* .10
Dutch Gap Canal	do	SE 1/4 SW 1/4 sec. 34, T. 1 N., R. 21 E., at bridge on County Trunk WG, 3.7 miles east of Bench Lake, Wis.	a 13		8-14-67	* .56

* Base flow.

a Approximately.

LOW-FLOW INVESTIGATIONS

Low-flow investigations in Pine River basin of northeast Wisconsin.

During Aug. 16-19, 1967, a series of current-meter discharge measurements were made in the Pine River basin, a tributary of the Menominee River in northeast Wisconsin. These measurements were used to study base-flow yields of various parts of the basin.

Weather records showed that no precipitation occurred in the basin for more than five days prior to Aug. 16. Total rainfall for August 1967 averaged about four and one-half inches for the basin. Precipitation occurred Aug. 17 and 18. The maximum amount measured for these two days was .15 inch.

It is evident that the Aug. 17-19 measurements were not made under ideal conditions, but the measurements should essentially represent base flow.

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Pine River	Menominee River	SE 1/4 NW 1/4 sec. 30, T. 39 N., R. 13 E., at bridge on U. S. Forest Service Road 2182, 4.6 miles west of State Highway 55, 9.1 miles northeast of Hiles, Wis.	16.2	1966	8-19-67	4.58
Kimball Creek	Pine River	NE 1/4 SW 1/4 sec. 19, T. 39 N., R. 13 E., 50 ft upstream from mouth, 0.7 mile north of U. S. Forest Service Road 2182, 4.7 miles west of State Highway 55, 12.7 miles north of Argonne, Wis.	16.0		8-18-67	4.21
McDonald Creek	do	NW 1/4 NW 1/4 sec. 16, T. 39 N., R. 13 E., 200 ft upstream from mouth, 0.5 mile east of U. S. Forest Service Road 2174, 2.7 miles west of State Highway 55, 14.3 miles north of Argonne, Wis.	13.9		8-18-67	9.21
* Pine River	Menominee River	SE 1/4 SW 1/4 sec. 35, T. 40 N., R. 13 E., at end of trail 0.6 mile west of State Highway 55, 6.1 miles south of Alvin, Wis.	57.7		8-18-67	25.3
Franklin Lake Outlet	North Branch Pine River	NW 1/4 NW 1/4 sec. 28, T. 40 N., R. 12 E., at bridge on U. S. Forest Service Road 2181, 2.1 miles south of State Highway 70, 11.2 miles east of Eagle River, Wis.	6.33		8-17-67	1.59
North Branch Pine River	Pine River	W 1/2 NE 1/4 sec. 26, T. 40 N., R. 12 E., at bridge on U. S. Forest Service Road 2176, 3.0 miles south of State Highway 70, 13.7 miles east of Eagle River, Wis.	13.7		8-17-67	4.93
do	do	NW 1/4 SE 1/4 sec. 18, T. 40 N., R. 13 E., on trail 0.1 mile south of U. S. Forest Service Road 2430, 1.7 miles south of State Highway 70, 4.6 miles southwest of Alvin, Wis.	21.8		8-17-67	11.2
do	do	SW 1/4 SW 1/4 sec. 16, T. 40 N., R. 13 E., at bridge on U. S. Forest Service Road 2174, 2.6 miles west of State Highway 55, 3.6 miles southwest of Alvin, Wis.	25.2		8-17-67	13.6
* do	do	NE 1/4 SE 1/4 sec. 21, T. 40 N., R. 13 E., at bridge on U. S. Forest Service Road 2174, 2.0 miles west of State Highway 55, 3.5 miles south of Alvin, Wis.	29.4		8-17-67	15.7
Pine River	Menominee River	NE 1/4 NE 1/4 sec. 35, T. 40 N., R. 13 E., at bridge on State Highway 55, 5.2 miles south of Alvin, Wis.	92.3	1966	8-17-67	44.8
do	do	NE 1/4 NE 1/4 sec. 1, T. 39 N., R. 13 E., at culvert on unnamed trail 1.0 mile east of State Highway 55, 6.0 miles south of Alvin, Wis.	96.2		8-17-67	46.2
do	do	NW 1/4 SE 1/4 NE 1/4 sec. 18, T. 39 N., R. 14 E., near house, 0.1 mile west of U. S. Forest Service Road 2170, 1.8 miles east of State Highway 55, 7.4 miles south of Alvin, Wis.	99.0		8-18-67	48.4
Sawyer Creek	Jones Creek	SW 1/4 SW 1/4 sec. 14, T. 39 N., R. 13 E., at culvert on U. S. Forest Service Road 2182, 1.0 mile west of State Highway 55, 8.5 miles northwest of Popple River, Wis.	2.14	1966	8-17-67	.94

* No current-meter discharge measurement made. Discharge computed from rating table.

Low-flow investigations in Pine River basin of northeast Wisconsin--Continued.

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Jones Creek	Pine Creek	SE 1/4 NE 1/4 sec. 13, T. 39 N., R. 13 E., at bridge on U. S. Forest Service Road 3854, 0.8 mile east of State Highway 55, 8.5 miles south of Alvin, Wis.	13.2		8-18-67	6.06
Pine Creek	Pine River	SW 1/4 SE 1/4 NE 1/4 sec. 18, T. 39 N., R. 14 E., 200 ft upstream from mouth, near bridge on U. S. Forest Service Road 2170, 2.0 miles east of State Highway 55, 8.5 miles south of Alvin, Wis.	19.6		8-18-67	7.20
Kingstone Creek	do	NW 1/4 SE 1/4 NW 1/4 sec. 15, T. 39 N., R. 14 E., 150 ft upstream from mouth, 0.7 mile north of U. S. Forest Service Road 2168, 3.1 miles west of Long Lake, Wis.	7.35		8-18-67	3.97
Pine River	Menominee River	NW 1/4 NW 1/4 sec. 15, T. 39 N., R. 14 E., downstream from mouth of Kingston Creek, 0.9 mile north of U. S. Forest Service Road 2168, 3.0 miles west of Long Lake, Wis.	131		8-18-67	62.3
do	do	Center of sec. 12, T. 39 N., R. 14 E., at bridge on U. S. Forest Service Road 2169, 6.5 miles east of State Highway 55, 5.8 miles north of Popple River, Wis.	135	1966	8-17-67	64.5
Stevens Creek	Pine River	SE 1/4 SW 1/4 sec. 19, T. 40 N., R. 15 E., at end of trail, 0.6 mile west of State Highway 139, 1.8 miles west of Tipler, Wis.	18.8	1966	8-18-67	11.1
Meadowbrook Creek	Stevens Creek	SW 1/4 SE 1/4 sec. 35, T. 40 N., R. 14 E., at bridge on U. S. Forest Service Road 2169, 4.8 miles south of State Highway 70, 3.7 miles southwest of Tipler, Wis.	7.11	1966	8-18-67	3.66
Stevens Creek	Pine River	SW 1/4 NW 1/4 sec. 6, T. 39 N., R. 15 E., at end of trail, 1.0 mile west of State Highway 139, 3.2 miles north of Long Lake, Wis.	29.0		8-17-67	15.7
Pine River Tributary	do	SW 1/4 NW 1/4 sec. 5, T. 39 N., R. 15 E., at mouth, 0.1 mile east of State Highway 139, 2.4 miles south of Tipler, Wis.	1.64		8-17-67	.51
Johnson Creek	do	NE 1/4 SE 1/4 sec. 5, T. 39 N., R. 15 E., at mouth, 0.8 mile east of State Highway 139, 2.5 miles south of Tipler, Wis.	8.90		8-17-67	3.89
Pine River	Menominee River	SE 1/4 SW 1/4 sec. 4, T. 39 N., R. 15 E., at bridge on U. S. Forest Service Road 2155, 1.3 miles east of State Highway 139, 2.6 miles south of Tipler, Wis.	178	1966	8-18-67	92.3
Coldwater Creek	Long Lake	SW 1/4 NW 1/4 sec. 25, T. 39 N., R. 14 E., at bridge on U. S. Forest Service Road 2404, 1.3 miles west of State Highway 139, 1.5 miles southeast of Long Lake, Wis.	6.87		8-17-67	1.05
Long Lake Outlet	Fay Lake	NE 1/4 NW 1/4 sec. 19, T. 39 N., R. 15 E., at bridge on U. S. Forest Service Road 2168, 0.1 mile west of State Highway 139, at Long Lake, Wis.	11.2	1966	8-17-67	6.30
Fay Lake Outlet	Pine River	SE 1/4 NE 1/4 sec. 10, T. 39 N., R. 15 E., at mouth, 2.8 miles east of State Highway 139, 3.6 miles south of Tipler, Wis.	23.9		8-17-67	10.8
Reisner Lake Outlet	do	NE 1/4 NE 1/4 sec. 10, T. 39 N., R. 15 E., at mouth, 2.9 miles east of State Highway 139, 3.2 miles south of Tipler, Wis.	3.68		8-17-67	1.47
Pine River	Menominee River	NW 1/4 NE 1/4 sec. 1, T. 39 N., R. 15 E., at bridge on U. S. Forest Service Road 2156, 4.6 miles east of State Highway 139, 4.1 miles southeast of Tipler, Wis.	215		8-17-67	96.0

LOW-FLOW INVESTIGATIONS

Low-flow investigations in Pine River basin of northeast Wisconsin-Continued.

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Lauterman Creek	Pine River	SE 1/4 NW 1/4 sec. 4, T. 39 N., R. 16 E., at mouth, 2.4 miles south of State Highway 70, 6.8 miles east of Tipler, Wis.	7.24		8-17-67	0.90
Pine River	Menominee River	SE 1/4 NE 1/4 sec. 4, T. 39 N., R. 16 E., 600 ft downstream from mouth of Lauterman Creek, 2.3 miles south of State Highway 70, 6.9 miles east of Tipler, Wis.	230		8-18-67	104
Wakefield Creek	Pine River	NW 1/4 SW 1/4 sec. 25, T. 40 N., R. 16 E., at culvert on State Highway 70, 9.2 miles west of Florence, Wis.	2.35	1966	8-19-67	1.19
Pine River	Menominee River	SW 1/4 NW 1/4 sec. 31, T. 40 N., R. 17 E., at bridge on country road, 1.0 mile south of State Highway 70, 8.4 miles west of Florence, Wis.	243		8-18-67	120
Sevenmile Creek	Pine River	SW 1/4 SW 1/4 sec. 27, T. 40 N., R. 17 E., at bridge on State Highway 70, 5.6 miles west of Florence, Wis.	1.66	1966	8-19-67	.84
Pine River	Menominee River	SW corner NE 1/4 sec. 3, T. 39 N., R. 17 E., at end of trail, 2.1 miles west of State Highway 101, 1.3 miles south of State Highway 70, 5.2 miles southwest of Florence, Wis.	251		8-18-67	129
Loon Lake Outlet	Pine River	NE 1/4 SE 1/4 sec. 2, T. 39 N., R. 17 E., at bridge on country road, 0.9 mile west of State Highway 101, 1.6 miles south of State Highway 70, 4.3 miles southwest of Florence, Wis.	7.12		8-17-67	3.81
Seidel Creek	do	NE 1/4 SE 1/4 sec. 15, T. 39 N., R. 17 E., at culvert on country road, 0.4 mile north of State Highway 101, 8.7 miles northeast of Fence, Wis.	3.42		8-18-67	1.31
Pine River	Menominee River	SW 1/4 SW 1/4 sec. 23, T. 39 N., R. 17 E., 15 ft upstream from confluence with Popple River, 1.0 mile south of State Highway 101, 5.3 miles southwest of Florence, Wis.	268	1925	8-16-67	143
Popple River	Pine River	SW 1/4 SW 1/4 sec. 4, T. 38 N., R. 14 E., at bridge on U. S. Forest Service Road 2167, 3.1 miles east of State Highway 55, 3.4 miles west of Popple River, Wis.	32.9	1966	8-17-67	13.0
Little Popple River	Popple River	SW 1/4 NE 1/4 sec. 12, T. 38 N., R. 14 E., at culvert on town road in Popple River, Wis.	13.7	1966	8-17-67	4.46
Popple River	Pine River	SE 1/4 SW 1/4 sec. 6, T. 38 N., R. 15 E., at bridge on State Highway 139, 0.8 mile northeast of Popple River, Wis., 3.2 miles south of Long Lake, Wis.	53.2	1966	8-17-67	17.3
do	do	NE 1/4 NW 1/4 sec. 22, T. 38 N., R. 15 E., at bridge on U. S. Forest Service Road 2398, 4.5 miles east of State Highway 139, 5.8 miles southeast of Long Lake, Wis.	62.7		8-19-67	21.7
Riley Creek	Popple River	NE 1/4 NW 1/4 sec. 10, T. 38 N., R. 15 E., at culvert on U. S. Forest Service Road 2161, 3.1 miles east of State Highway 139, 4.6 miles southeast of Long Lake, Wis.	2.68	1966	8-19-67	2.69
Morgan Creek	do	SE 1/4 SE 1/4 sec. 18, T. 38 N., R. 16 E., at culvert on U. S. Forest Service Road 2161, 0.3 mile upstream from mouth, 5.7 miles west of State Highway 101, 5.1 miles northwest of Fence, Wis.	7.66	1966	8-18-67	1.83
* Popple River	Pine River	NW 1/4 SW 1/4 sec. 20, T. 38 N., R. 16 E., at bridge on U. S. Forest Service Road 2159, 7.1 miles north of U. S. Highway 8, 5.0 miles west of Fence, Wis.	81.4		8-18-67	37.8

* No current-meter discharge measurement made. Discharge computed from rating table.

Low-flow investigations in Pine River basin of northeast Wisconsin--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
South Branch Popple River	Popple River	SW 1/4 NE 1/4 sec. 25, T. 38 N., R. 15 E., at bridge on U. S. Forest Service Road 2159, 7.1 miles west of State Highway 101, 6.6 miles west of Fence, Wis.	10.2	1966	8-19-67	8.02
Simpson Creek	South Branch Popple River	NE 1/4 NW 1/4 sec. 36, T. 38 N., R. 15 E., at bridge on U. S. Forest Service Road 2159, 7.0 miles west of State Highway 101, 6.7 miles southwest of Fence, Wis.	18.1	1966	8-18-67	10.1
* South Branch Popple River	Popple River	SW 1/4 SW 1/4 SE 1/4 SE 1/4 sec. 19, T. 38 N., R. 16 E., at culvert on U. S. Forest Service Road 2383, 6.4 miles north of U. S. Highway 8, 7.7 miles east of Newald, Wis.	32.2		8-18-67	17.5
Rock Creek	do	NE 1/4 NE 1/4 sec. 28, T. 38 N., R. 16 E., at mouth, 6.3 miles north of U. S. Highway 8, 3.0 miles west of Fence, Wis.	5.40		8-18-67	4.06
Popple River Tributary	do	NE 1/4 NW 1/4 sec. 27, T. 38 N., R. 16 E., at mouth, 6.2 miles north of U. S. Highway 8, 2.7 miles west of Fence, Wis.	5.31		8-18-67	3.06
* Popple River	Pine River	NW 1/4 NW 1/4 sec. 23, T. 38 N., R. 16 E., continuous recorder on left bank 20 ft upstream from bridge on U. S. Forest Service Road 2159, 11 1/2 miles upstream from mouth, 2.6 miles northwest of Fence, Wis.	131		8-18-67	64.0
Hendricks Creek	Popple River	SW 1/4 SW 1/4 sec. 6, T. 38 N., R. 17 E., at bridge on country road, 0.9 mile west of State Highway 101, 3.5 miles north of Fence, Wis.	12.8	1966	8-18-67	8.33
Popple River Tributary	do	NW 1/4 SW 1/4 sec. 5, T. 38 N., R. 17 E., at mouth, 400 ft west of State Highway 101, 4.1 miles north of Fence, Wis.	1.69		8-18-67	.53
Popple River	Pine River	NE 1/4 SW 1/4 sec. 5, T. 38 N., R. 17 E., at bridge on State Highway 101, 4.1 miles northeast of Fence, Wis.	154	1966	8-18-67	73.6
Lamon Tangué Creek	Popple River	SE 1/4 SW 1/4 sec. 14, T. 38 N., R. 17 E., at bridge on County Trunk C, 9.0 miles north of U. S. Highway 8, 4.6 miles northeast of Fence, Wis.	14.7		8-18-67	8.30
do	do	SW 1/4 NE 1/4 sec. 4, T. 38 N., R. 17 E., at mouth, 1.0 mile east of State Highway 101, 4.0 miles northeast of Fence, Wis.	24.9		8-18-67	12.7
Woods Creek	do	NW 1/4 NW 1/4 sec. 25, T. 39 N., R. 15 E., at culvert on U. S. Forest Service Road 2156, 5.1 miles east of State Highway 139, 4.9 miles east of Long Lake, Wis.	7.39	1966	8-19-67	1.88
Haley Creek	Woods Creek	SE 1/4 NW 1/4 sec. 23, T. 39 N., R. 16 E., at mouth, 3.6 miles west of State Highway 101, 7.1 miles north of Fence, Wis.	5.51		8-18-67	2.90
Woods Creek	Popple River	Center of sec. 23, T. 39 N., R. 16 E., at culvert on country road just downstream from Haley Creek, 3.4 miles west of State Highway 101, 7.1 miles north of Fence, Wis.	29.2	1966	8-18-67	12.0
Patten Creek	Woods Creek	Center of sec. 19, T. 39 N., R. 17 E., at culverts on country road, 1.5 miles west of State Highway 101, 7.1 miles north of Fence, Wis.	7.34	1966	8-18-67	3.50
Woods Creek	Popple River	NE 1/4 SE 1/4 sec. 29, T. 39 N., R. 17 E., at bridge on State Highway 101, 6.4 miles north of Fence, Wis.	44.1		8-18-67	18.6

* No current-meter discharge measurement made. Discharge computed from rating table.

LOW-FLOW INVESTIGATIONS

Low-flow investigations in Pine River basin of northeast Wisconsin--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Popple River	Pine River	SE 1/4 SW 1/4 sec. 23, T. 39 N., R. 17 E., at mouth, 1.0 mile south of State Highway 101, 7.1 miles southwest of Florence, Wis.	231		8-16-67	126
Halls Creek	do	NW 1/4 NW 1/4 sec. 12, T. 38 N., R. 17 E., at bridge on country road, 4.0 miles south of State Highway 101, 10.2 miles south of Florence, Wis.	2.95		8-18-67	4.32
do	do	NE 1/4 NE 1/4 sec. 31, T. 39 N., R. 18 E., at bridge on country road, 5.2 miles east of State Highway 101, 7.3 miles south of Florence, Wis.	7.03	1966	8-18-67	5.36
Pine River Tributary	do	SW 1/4 NE 1/4 sec. 17, T. 39 N., R. 18 E., on trail, 2.4 miles east of State Highway 101, 4.4 miles south of Florence, Wis.	7.99		8-18-67	3.80
Pine River	Menominee River	SE 1/4 NW 1/4 sec. 28, T. 39 N., R. 18 E., at Pine River dam at end of country road, 1.2 miles west of County Trunk N, 6.2 miles south of Florence, Wis.	527		8-17-67	299
Johnson Creek	Pine River	NE 1/4 NE 1/4 NW 1/4 sec. 23, T. 39 N., R. 18 E., on trail, 0.9 mile east of County Trunk N, 4.9 miles south of Florence, Wis.	4.70		8-18-67	1.05
Pine River	Menominee River	NW 1/4 NE 1/4 sec. 23, T. 39 N., R. 18 E., downstream from mouth of Johnson Creek, 1.2 miles east of County Trunk N, 5.2 miles south of Florence, Wis.	539		8-17-67	280
Pine Creek	Pine River	SE 1/4 NE 1/4 sec. 24, T. 39 N., R. 19 E., on trail 75 ft upstream from mouth, 2.2 miles east of County Trunk N, 5.3 miles southeast of Florence, Wis.	4.26		8-17-67	.90
Deadman Creek	do	NE 1/4 SW 1/4 sec. 1, T. 39 N., R. 18 E., at culvert on trail 2.4 miles east of County Trunk N, 2.1 miles west of Spread Eagle, Wis.	3.92		8-18-67	.80
Lepage Creek	do	NE 1/4 NW 1/4 sec. 19, T. 39 N., R. 19 E., 100 ft upstream from mouth, 4.0 miles south of U. S. Highway 2, 2.6 miles east of County Trunk N, 2.6 miles southwest of Spread Eagle, Wis.	7.75		8-17-67	5.71
Pine River	Menominee River	SE 1/4 SE 1/4 SW 1/4 sec. 21, T. 39 N., R. 19 E., at end of trail, 4.4 miles east of County Trunk N, 2.7 miles south of Spread Eagle, Wis.	560		8-17-67	317

Low-flow investigations in central sand plains of Wisconsin.

One and part of another series of current-meter measurements were made on several streams in the central sand plains during the 1967 water year. These measurements, plus measurements made during the 1964, 1965, and 1966 water years, and some additional measurements to be made in the 1968 water year, will be used to study ground-water discharge from various parts of these basins. On Oct. 10-12, 1966, 59 current-meter measurements were made on several sand plains streams, and on Oct. 26, 1966, 8 additional current-meter measurements were made over part of this same area.

The Oct. 10-12, 1966, measurements represent a condition of no overland runoff. Sept. 29, 1966, was the last day of significant rain (about 0.3 inch) prior to the Oct. 10-12, 1966, measurements. On Oct. 15 over an inch of rain fell. This was the last rainfall prior to the Oct. 26, 1966, measurements. Both series of measurements represent ideal base-flow conditions.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Buena Vista Creek	SE 1/4 SW 1/4 sec. 19, T. 22 N., R. 9 E., at bridge at junction of County Trunk JJ and BB at Keene.	—	10-11-66	1.59
do	SE 1/4 NE 1/4 sec. 14, T. 22 N., R. 8 E., at check dam 7 in ditch 2, 0.5 mile east of U. S. Highway 51, and 5.5 miles north of Bancroft.	—	10-11-66	3.42
do	NE 1/4 NE 1/4 sec. 14, T. 22 N., R. 8 E., at country road in ditch 2 tributary, 0.5 mile east of U. S. Highway 51, and 5.9 miles north of Bancroft.	—	10-11-66	5.73
do	SE 1/4 NW 1/4 sec. 14, T. 22 N., R. 8 E., in ditch 2 at culvert on U. S. Highway 51, 5.5 miles north of Bancroft.	—	10-11-66	10.3
do	NE 1/4 SE 1/4 sec. 13, T. 22 N., R. 7 E., at check dam 46 in ditch 2, 6.3 miles east of Kellner.	—	10-10-66	11.2
do	SE 1/4 SE 1/4 sec. 5, T. 22 N., R. 8 E., at check dam 2 in ditch 1, 3.5 miles southwest of Plover.	—	10-10-66	5.59
do	NW 1/4 NE 1/4 sec. 13, T. 22 N., R. 7 E., in ditch 1, 0.3 mile above junction with ditch 2, and 6.0 miles east of Kellner.	—	10-10-66	4.94
do	SW 1/4 SW 1/4 sec. 14, T. 22 N., R. 7 E., at bridge on County Trunk F, 9.0 miles east of Wisconsin Rapids.	—	10-10-66	15.1
do	In center of sec. 20, T. 22 N., R. 7 E., on left bank upstream from highway bridge, 1.2 miles upstream from Fourmile Creek, and 1.7 miles northeast of Kellner.	—	10-10-66	21.7
Fourmile Creek	SW 1/4 sec. 35, T. 22 N., R. 8 E., in ditch 4 at bridge on U. S. Highway 51, 2.0 miles north of Bancroft.	—	10-11-66 10-26-66	5.73 6.20
do	SW 1/4 SE 1/4 sec. 27, T. 22 N., R. 7 E., in ditch 4 at culverts 0.3 miles west of County Trunk F, 3.5 miles east of Kellner.	—	10-11-66 10-26-66	1.83 3.18
do	E 1/2 sec. 28, T. 22 N., R. 8 E., in ditch 3 at bridge on County Trunk B, 1.2 miles west of U. S. Highway 51, 4.0 miles north of Bancroft.	—	10-11-66	7.98
do	SE 1/4 NE 1/4 sec. 27, T. 22 N., R. 7 E., at check dam 53 in ditch 3 just below County Trunk F, and 3.8 miles east of Kellner.	—	10-11-66	9.74
do	SE 1/4 NW 1/4 sec. 23, T. 22 N., R. 8 E., in ditch 8 at bridge on U. S. Highway 51, 4.5 miles north of Bancroft.	—	10-11-66	2.41
do	SW 1/4 SW 1/4 sec. 23, T. 22 N., R. 7 E., in ditch 8 at culverts on County Trunk F, 3.9 miles east of Kellner.	—	10-12-66	.01
do	SW 1/4 NW 1/4 sec. 27, T. 22 N., R. 7 E., at check dam 12 just north of County Trunk WW, 3.0 miles east of Kellner.	—	10-12-66	11.9
do	SE 1/4 sec. 20, T. 22 N., R. 7 E., on left bank upstream from bridge on country road, 1.2 miles upstream from Buena Vista Creek, 1.5 miles northeast of Kellner, and 6.5 miles east of Wisconsin Rapids.	—	10-12-66	14.5
Tenmile Creek	SE 1/4 SE 1/4 sec. 4, T. 21 N., R. 8 E., at check dam 27 in ditch 9, 1.1 miles west of U. S. Highway 51, 1.9 miles northwest of Bancroft.	—	10-10-66	** .50

** Field estimate.

Low-flow investigations in central sand plains of Wisconsin--Continued

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Tenmile Creek	SE 1/4 SE 1/4 sec. 3, T. 21 N., R. 7 E., in ditch 9 at culverts on County Trunk F, 3.6 miles southeast of Kellner.	—	10-10-66 10-26-66	0 ** .05
do	SW 1/4 SW 1/4 sec. 13, T. 21 N., R. 8 E., in headwaters of ditch 5 at culvert on country road, 1.0 mile east of U. S. Highway 51 and 1.6 miles south of Bancroft.	—	10-10-66	** .005
do	NW 1/4 SW 1/4 sec. 14, T. 21 N., R. 8 E., in headwaters of ditch 5 at culvert on U. S. Highway 51, 1.3 miles south of Bancroft.	—	10-11-66	1.16
do	NW 1/4 NE 1/4 sec. 15, T. 21 N., R. 8 E., in headwaters of ditch 5, 175 feet above junction with south lateral, 0.5 mile west of U. S. Highway 51, 1.0 miles southwest of Bancroft.	—	10-11-66	1.23
do	NW 1/4 NE 1/4 sec. 15, T. 21 N., R. 8 E., at mouth in south lateral of ditch 5, 0.5 mile west of U. S. Highway 51, 1.1 miles southwest of Bancroft.	—	10-11-66	.54
do	NW 1/4 NE 1/4 sec. 15, T. 21 N., R. 8 E., in ditch 5, 800 feet below junction with south lateral, 0.6 mile west of U. S. Highway 51, and 1.1 miles southwest of Bancroft.	—	10-11-66	2.26
do	NW 1/4 SW 1/4 sec. 10, T. 21 N., R. 8 E., in ditch 5 at culvert on country road, 1.5 miles west of Bancroft.	—	10-10-66	** .01
do	NE 1/4 NE 1/4 sec. 16, T. 21 N., R. 8 E., at check dam 31 in ditch 5 near bridge on country road 1-1/4 miles west of U. S. Highway 51 and 1-3/4 miles southwest of Bancroft.	—	10-11-66	2.92
do	NE 1/4 NE 1/4 sec. 15, T. 21 N., R. 7 E., at check dam 29 in ditch 5, 0.1 mile west of County Trunk F, and 5.3 miles southeast of Kellner.	—	10-11-66 10-26-66	1.97 3.33
do	SE 1/4 SE 1/4 sec. 15, T. 21 N., R. 7 E., at check dam 33 in ditch 10, 0.1 mile west of County Trunk F, and 6.2 miles southeast of Kellner.	—	10-10-66 10-26-66	0 ** .10
do	SE 1/4 SW 1/4 sec. 36, T. 21 N., R. 8 E., in headwaters of ditch 6 at culvert on country road, 1.1 miles east of U. S. Highway 51, and 2.0 miles north of Plainfield.	—	10-10-66	0
do	NW 1/4 SW 1/4 sec. 26, T. 21 N., R. 8 E., in headwaters of ditch 6 at culvert on U. S. Highway 51, 3.4 miles south of Bancroft.	—	10-11-66	.64
do	NW 1/4 NW 1/4 sec. 27, T. 21 N., R. 8 E., in headwaters of ditch 6 at bridge on country road, 1.2 miles west of U. S. Highway 51, and 3.2 miles southwest of Bancroft.	—	10-11-66	1.75
do	NW 1/4 SE 1/4 sec. 22, T. 21 N., R. 7 E., in ditch 6, 0.5 mile below check dam 37 and 7.5 miles southwest of Bancroft.	—	10-10-66 10-26-66	2.45 3.48
do	NW 1/4 NE 1/4 sec. 30, T. 21 N., R. 7 E., at bridge on country road, 5.8 miles south of Kellner.	—	10-10-66 10-26-66 10-26-66	2.74 4.39 4.51
do	SE 1/4 SE 1/4 sec. 26, T. 21 N., R. 6 E., at bridge on State Highway 73, 8 miles southeast of Nekoosa.	—	10-10-66	7.28
do	SW 1/4 NW 1/4 sec. 34, T. 21 N., R. 6 E., at bridge on country road, 7 miles southeast of Nekoosa.	—	10-10-66	13.8
do	NE 1/4 sec. 32, T. 21 N., R. 6 E., on left bank upstream from bridge on State Highway 13, 5.8 miles southeast of Nekoosa.	—	10-10-66	23.9
do	SE 1/4 SW 1/4 sec. 26, T. 21 N., R. 5 E., at bridge on County Trunk Z, 3.7 miles southeast of Nekoosa.	—	10-10-66	38.2

** Field estimate.

Low-flow investigations in central sand plains of Wisconsin--Continued.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Fourteenmile Creek	NW 1/4 NW 1/4 sec. 7, T. 20 N., R. 7 E., at check dam 17 in ditch 1, 7.8 miles east of New Rome.	—	10-11-66	0
do	NE 1/4 NW 1/4 sec. 4, T. 20 N., R. 7 E., in ditch 7 at culvert on State Highway 73, 10.3 miles east of New Rome.	—	10-11-66	.04
do	NE 1/4 NE 1/4 sec. 7, T. 20 N., R. 7 E., at check dam 18 in ditch 2, 9.0 miles northeast of New Rome.	—	10-11-66	1.10
do	NE 1/4 NE 1/4 sec. 30, T. 20 N., R. 7 E., at check dam 13, 9.0 miles southeast of New Rome.	—	10-12-66	1.66
do	NE 1/4 NE 1/4 sec. 19, T. 20 N., R. 7 E., at culvert on country road in ditch 4, 8.7 miles east of New Rome.	—	10-12-66	2.34
do	SE 1/4 NW 1/4 sec. 18, T. 20 N., R. 7 E., at check dam 7 in ditch 3, 8.2 miles east of New Rome.	—	10-12-66	3.53
do	SE 1/4 NE 1/4 sec. 14, T. 20 N., R. 6 E., at bridge on country road, 6.8 miles east of New Rome.	—	10-12-66	9.43
Spring Branch	SW 1/4 NE 1/4 sec. 17, T. 20 N., R. 6 E., at culvert on country road, 1,000 feet above mouth and 3.6 miles southeast of New Rome.	—	10-12-66	1.90
Fourteenmile Creek	S 1/2 sec. 17, T. 20 N., R. 6 E., 50 feet above twin culverts on U. S. Highway 13, and 2.7 miles southeast of New Rome.	—	10-12-66	13.6
do	SE 1/4 NE 1/4 sec. 13, T. 20 N., R. 5 E., at bridge on country road, 2.0 miles southeast of New Rome.	—	10-12-66	23.1
do	NW 1/4 SE 1/4 sec. 10, T. 20 N., R. 5 E., at bridge on County Trunk Z, 0.6 mile southwest of New Rome.	—	10-12-66	31.2
Big Roche a Cri Creek	SE 1/4 SE 1/4 sec. 29, T. 20 N., R. 8 E., at bridge on County Trunk KK, 3.2 miles northwest of Hancock.	—	10-12-66	4.64
do	SE 1/4 SE 1/4 sec. 30, T. 20 N., R. 8 E., at bridge on country road, 4.0 miles northwest of Hancock.	—	10-12-66	7.55
do	NE 1/4 SE 1/4 sec. 26, T. 20 N., R. 7 E., at bridge on County Trunk G, 5.5 miles northwest of Hancock.	—	10-12-66	10.4
do	SW 1/4 SE 1/4 sec. 29, T. 20 N., R. 7 E., at bridge on country road, 8.4 miles northwest of Hancock.	—	10-11-66	13.7
Big Roche a Cri Creek Tributary	SE 1/4 SE 1/4 sec. 1, T. 19 N., R. 6 E., at mouth and 50 feet above bridge on country road, 9.8 miles west of Hancock.	—	10-11-66	5.26
Big Roche a Cri Creek	SE 1/4 SE 1/4 sec. 1, T. 19 N., R. 6 E., below tributary at bridge on country road, 9.8 miles west of Hancock.	—	10-11-66	21.2
do	SW 1/4 SW 1/4 sec. 14, T. 19 N., R. 6 E., at bridge on County Trunk C, 10.4 miles north of Friendship.	—	10-11-66	33.2
do	SW 1/4 sec. 22, T. 19 N., R. 6 E., at culverts on Brown Deer Avenue, 1/2 mile upstream from Dry Creek, and 10 miles north of Adams.	—	10-11-66	37.0
do	SW 1/4 SW 1/4 sec. 6, T. 18 N., R. 6 E., at Cottonville Dam at country road, 6.6 miles north of Friendship.	—	10-11-66	56.8
Dead Horse Creek	SE 1/4 SE 1/4 sec. 1, T. 18 N., R. 5 E., at bridge on country road, 500 feet above mouth and 6.6 miles north of Friendship.	—	10-11-66	2.00
Big Roche a Cri Creek	SE 1/4 SE 1/4 sec. 24, T. 18 N., R. 4 E., at bridge on country road, 1.0 mile west of County Trunk Z and 8.1 miles northwest of Friendship.	—	10-11-66	80.1

United States Department of the Interior
Geological Survey - Water Resources Division

WATER RESOURCES DATA
FOR
WISCONSIN

1967

Part 2. Water Quality Records

Prepared in cooperation with
Wisconsin Department of Natural Resources
Division of Conservation
and
University Extension--The University of Wisconsin
Geological and Natural History Survey

Streamflow records for most of the water quality stations in this report are contained in:

Water Resources Data for Wisconsin, 1967

Part 1. Surface Water Records

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Symbols after station name designate type of data: c, chemical;
t, water temperature; s, sediment

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WATER RESOURCES DATA FOR WISCONSIN, 1967

Part 2. Water Quality Records

INTRODUCTION

Water-resources investigations of the U. S. Geological Survey include the collection of water-quality data on the chemical and physical characteristics of surface- and ground-water supplies of the Nation. These data for the 1967 water year for the quality of surface waters in Wisconsin are presented in this report. The data were collected by the Water Resources Division of the U. S. Geological Survey under the direction of C. L. R. Holt, Jr., district chief, Water Resources Division, Madison, Wisconsin.

Water-quality information is presented for chemical quality, fluvial sediment, and water temperatures. The chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ration, specific conductance, and pH. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle size distribution of suspended sediment and bed material. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimums and maximums are obtained.

The Geological Survey has published the annual series of water-supply papers, "Quality of Surface Waters of the United States," from 1941 through 1963 which contained the chemical quality, temperature, and suspended sediment data of the water. Each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records for Wisconsin are contained in Parts 4 and 5 of the water-supply paper series. These publications are available in most public libraries. Beginning with the 1964 water year, water quality records for surface water obtained by the Geological Survey were published in a new series of annual releases on a state boundary basis. This report is primarily for local and immediate use, and its distribution is limited. The records will be published in Geological Survey water-supply papers.

COOPERATION

The work was done under cooperative agreements between the U. S. Geological Survey and the Wisconsin Department of Natural Resources, Division of Conservation, L. P. Voigt, administrator, and University Extension--The University of Wisconsin, Geological and Natural History Survey, George F. Hanson, state geologist and director.

In addition, analyses of samples collected in conjunction with project work done in cooperation with University Extension--The University of Wisconsin, Geological and Natural History Survey, George F. Hanson, state geologist and director, are listed.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms and abbreviations of water-quality and hydrologic data, as used in the text and tabular data of this report, are as follows:

Acre-foot (ac-ft) is a quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or 325,851 gallons.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It equals 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons.

Cubic feet per second (cfs) is a unit expressing rates of discharge. One cubic foot per second is equal to the discharge of a stream of rectangular cross second, 1 foot wide and 1 foot deep, flowing water at an average velocity of 1 foot per second.

Discharge, in its simplest concept, means outflow; therefore, the use of this term is not restricted as to course or location. In this report it represents the total fluids measured in the stream.

Daily mean discharge is the mean discharge for one day.

Mean daily discharge is the arithmetic mean discharge for the same day during a specific period of years.

Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge (at time of sampling). If the discharge at the time of sampling is reported instead of the daily mean, the heading of the discharge column is "Discharge (cfs)."

Drainage area is that area, in a specified location, measured in a horizontal plane, which is enclosed by a drainage divide.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Equivalents per million (epm) is a unit for expressing the concentration of chemical constituents in solution in terms of the interreacting values of the electrically charged particles, or ions. One equivalent per million of a positively charged ion will react with one equivalent per million of a negatively charged ion. Parts per million is converted to equivalents per million by multiplying by the reciprocal of the combining weight of the ion. (See table, p. 185.)

Gage height is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Conversion factors: Parts per million
to equivalents per million

Ion	Multiply by
Aluminum (Al ⁺³).....	0.11119
Ammonia as NH ₄ ⁺¹).....	.05544
Barium (Ba ⁺²).....	.01456
Bicarbonate (HCO ₃ ⁻¹).....	.01639
Bromide (Br ⁻¹).....	.01251
Calcium (Ca ⁺²).....	.04990
Carbonate (CO ₃ ⁻²).....	.03333
Chloride (Cl ⁻¹).....	.02821
Chromium (Cr ⁺⁶).....	.11539
Cobalt (Co ⁺²).....	.03394
Copper (Cu ⁺²).....	.03148
Cyanide (CN ⁺¹).....	.03844
Fluoride (F ⁻¹).....	.05264
Hydrogen (H ⁺¹).....	.99209
Hydroxide (OH ⁻¹).....	.05880
Iodide (I ⁻¹).....	.00788
Iron (Fe ⁺³).....	.05372
Lead (Pb ⁺²).....	.00965
Lithium (Li ⁺¹).....	.14411
Magnesium (Mg ⁺²).....	.08226
Manganese (Mn ⁺²).....	.03640
Nickel (Ni ⁺²).....	.03406
Nitrate (NO ₃ ⁻¹).....	.01613
Nitrite (NO ₂ ⁻¹).....	.02174
Phosphate (PO ₄ ⁻³).....	.03159
Potassium (K ⁺¹).....	.02557
Sodium (Na ⁺¹).....	.04350
Strontium (Sr ⁺²).....	.02283
Sulfate (SO ₄ ⁻²).....	.02082
Zinc (Zn ⁺²).....	.03060

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hardness of water is the property of water attributable to the presence of alkaline earths and is expressed as equivalent calcium carbonate (CaCO₃). Hardness is a physical-chemical characteristic, not a substance.

Partial-record station is a particular site where limited data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm) of suspended sediment or bed material determined by sieve and sedimentation methods.

Particle size classification agrees closely with recommendations made by the American Geophysical Union Subcommittee on sediment terminology (Lane and others, 1947, p. 937). The classification is as follows:

Clay:	Smaller than 0.004 mm.
Silt:	Between 0.004 and 0.062 mm.
Sand:	Between 0.062 and 2.0 mm.
Gravel:	Between 2.0 and 64.0 mm.

The particle size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

Parts per million (ppm) is a unit for expressing the concentration of chemical constituents by weight, usually as grams of constituents per million grams of solution. In the laboratory the results are expressed in weights of solutes in a given volume of water. To express the results in parts per million, the data must be converted. For most waters, this conversion is made by assuming that a liter of water weighs 1 kilogram; thus milligrams per liter is equivalent to parts per million. Parts per million, for suspended sediment, is computed as 1 million times the ratio of the weight of sediment to the weight of the mixture of water and sediment.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks and is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. The following general relations are applicable:

Specific conductance $\times (0.65 \pm 0.05)$ = ppm dissolved solids;

$$\frac{\text{Specific conductance}}{100} = \frac{\text{total epm}}{2}$$

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reaction with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the water year.

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in parts per million by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Water year in Geological Survey reports dealing with surface water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1967, is called the "1967 water year."

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

STATION NUMBERS

A station number has been assigned as an added means of identification for each stream location where regular measurements of streamflow and determinations of water quality have been made. The numbers have been assigned to conform with the standard downstream order of listing gaging stations. The numbering system consists of 2 digits followed by a hyphen and a 6 digit number. The notation to the left of the hyphen identifies the Part or hydrologic region used by the Geological Survey for reporting hydrologic data. The number to the right of the hyphen represents the position of the location in the standard downstream order listing the stations within each of the parts. The assigned numbers are in numerical order but are not consecutive. They are so selected from the complete 6 digit number scale that intervening numbers will be available for future assignments to new locations. The identification number for each station in this report is printed to the left of the station name and contains only the essential digits. For example, the number is printed as 1-2345 for a station whose complete identification number is 01-2345.00.

COLLECTION AND EXAMINATION OF SAMPLES

Water samples for analyses usually are collected at or near points on streams where gaging stations are maintained by the U. S. Geological Survey for measurement of water discharge. Discharge records for streams in Wisconsin have been released in the report "Water Resources Data for Wisconsin, 1967, Part 1. Surface Water Records." Most of these records are used in conjunction with the computations of the chemical constituents and sediment loads in this report.

At sites where water-quality data were collected less frequently than daily, the data may represent conditions only at the time of sampling. For such sites, however, observations obtained over a period of years show relations that are useful in predicting the long-term water-quality characteristics.

Temperature

Water temperatures were measured at most of the water-quality stations. For daily stations, the water temperatures were taken at about the same time each day in order that the data would not reflect normal variations in water temperature. Most large streams have a small diurnal variation in water temperature; small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. The thermometers used for determining the water temperature were accurate to plus or minus 0.5°F.

At stations where thermographs are located, the records consist of maximum and minimum temperatures for each day and the monthly averages of maximum daily and minimum daily temperatures.

Sediment

At some stations, suspended-sediment samples were collected daily with depth-integrating cable-suspended samplers from (a) fixed sampling point(s) (at verticals in the cross section). A hand sampler was used at many stations during periods of low flow. Depth-integrated samples were collected periodically at many verticals in the cross section to determine the ratio of the cross sectional distribution of the concentration of suspended sediment to the daily sampling verticals. During periods of high or rapidly changing flow, samples were taken twice or more often throughout the day at most stations. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

In addition to the records of the quantities of suspended sediment, records of periodic measurements of the particle size distribution of the suspended sediment and the bed material are included.

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WATER QUALITY RECORDS

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0637. POPPLE RIVER NEAR FENCE, WIS.
(Hydrologic bench-mark station)

LOCATION.--Lat 45°45'50", long 88°27'50", stream from Mud Creek, 2.6 miles northwest of Fence, Florence County, and 11.5 miles upstream from mouth, stream from Mud Creek, 2.6 miles northwest of Fence, Florence County, and 11.5 miles upstream from mouth.

DRAINAGE AREA.--131 square miles.

RECORDS AVAILABLE.--Water temperatures: June 1964 to September 1967.

EXTREMES, 1966-67.--Water temperatures: Maximum, 74°F July 26, 27, 29, Aug. 2; minimum, freezing point on many days during December to April.

EXTREMES, 1964-67.--Water temperatures: Maximum, 83°F July 24, 1964; minimum, freezing point on many days during winter months.

REMARKS.--No temperature record July 14-23.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25°C)	pH	Color	Bio- chemical oxygen demand (BOD)	Coliforms, Membrane filter (colonies per 100 ml)
													Calcium	Non- carbon- ate					
Oct. 26, 1966.....	90	11	17	6.5	1.4	0.5	72	11	2.0	0.1	1.0	90	70	10	140	6.8	10	1.8	1,300
Aug. 31, 1967A.....	158				--	--	--				--		--	--	--	--	--	--	--
Sept. 20.....	223				2.5		58				3.0		57	10	122	7.2			

A Analysis made by Wisconsin State Board of Health.

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued
4-0637. POPPLE RIVER NEAR FENCE, WIS.--Continued

Temperature (°F) of water, water year October 1966 to September 1967
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																															Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
October	49	49	50	51	49	49	53	53	53	52	48	51	46	49	50	46	45	44	43	42	43	43	42	41	41	41	41	45	44	40	38	46	
	47	47	48	49	47	45	47	50	52	48	45	44	44	45	46	44	43	43	42	40	42	42	40	39	38	39	40	43	41	37	38	43	
	38	35	35	35	35	35	36	36	37	37	37	35	35	35	35	35	36	36	35	35	35	36	38	39	39	39	38	38	36	35	35	36	
November	35	34	34	34	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	36	38	39	38	38	36	35	35	34	35	35	
	34	34	34	34	34	34	34	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	34	34	34	34	34	34	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
December	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
March	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
April	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
May	32	32	32	32	34	33	35	37	37	36	37	37	38	39	42	46	45	44	44	44	49	49	43	42	44	45	46	47	47	47	47	47	40
	32	32	32	32	32	32	32	34	36	34	34	34	35	37	38	42	44	40	39	42	43	43	40	38	39	41	42	43	44	44	44	37	
	49	47	42	43	46	50	50	48	50	46	44	47	48	48	49	51	55	56	55	53	50	53	50	53	54	61	63	59	60	62	63	51	
June	43	42	39	39	40	43	46	46	45	40	39	41	45	45	45	45	47	52	47	46	46	44	45	45	50	53	58	55	53	53	54	46	
	66	66	69	69	67	62	64	61	59	59	56	58	60	66	69	69	67	66	67	63	66	68	70	68	63	66	68	65	61	66	66	64	
	55	60	60	62	61	60	61	57	57	57	55	55	57	60	65	67	61	60	61	60	61	63	64	62	60	61	63	60	58	60	60	60	
July	67	66	62	60	60	63	66	66	68	70	72	70	65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	74	74	73	73	--	
	64	62	60	58	55	58	60	64	64	66	68	66	61	--	--	--	--	--	--	--	--	--	--	--	--	--	67	68	67	68	67	--	
	August	72	74	73	70	70	70	66	66	66	64	63	66	68	68	70	73	73	72	65	65	--	--	63	65	70	70	62	64	65	63	60	67
68		67	68	65	64	64	62	62	64	62	58	59	61	64	65	68	70	63	59	60	--	--	58	61	62	60	58	58	61	59	56	62	
September		60	62	62	63	65	66	66	66	65	60	59	61	60	62	62	64	64	64	64	63	62	59	57	55	56	55	54	51	50	53	--	60
	56	56	57	58	59	60	61	62	60	55	54	56	57	59	61	61	61	61	61	61	59	56	54	53	52	54	51	49	47	48	--	56	

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued
4-0637. POPPLE RIVER NEAR FENCE, WIS.--Continued

Periodic determinations of suspended-sediment discharge, August 1966 to September 1967

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Discharge (cfs)	Sediment concen- tration (ppm)	Sediment discharge (tons per day)	Suspended sediment								Method of analysis				
						Percent finer than size indicated, in millimeters												
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250		0.500	1.000	2.000	
Aug. 3, 1966.....	0900		63	2	T													
Apr. 10, 1967.....	1245		598	4	6													
Apr. 10.....	1310		1310	6	21													
Apr. 12.....	1400		1280	9	31													
Aug. 18.....	2000		63	27	5													
Aug. 20.....	1950		57	8	1													
Aug. 22.....	2030		56	6	1													
Aug. 24.....	1645		55	7	1													
Aug. 26.....	2010		106	2	1													
Aug. 27.....	0655		127	4	1													
Aug. 27.....	1805		180	4	2													
Aug. 28.....	0850		207	4	2													
Aug. 28.....	1950		229	4	2													
Aug. 29.....	0645		236	2	1													
Aug. 29.....	1800		229	4	2													
Aug. 30.....	0655		214	1	1													
Aug. 30.....	2050		200	16	9													
Aug. 31.....	0655		180	12	6													
Aug. 31.....	1935		155	2	1													
Sept. 2.....	1550		99	2	1													
Sept. 4.....	0635		71	4	1													
Sept. 6.....	1715		63	2	T													
Sept. 8.....	2100		56	2	T													
Sept. 10.....	1950		49	2	T													
Sept. 12.....	1650		47	1	T													
Sept. 14.....	1745		46	3	T													
Sept. 16.....	1810		243	4	3													
Sept. 17.....	1015		262	6	4													
Sept. 17.....	1900		273	7	5													
Sept. 18.....	0650		280	4	3													
Sept. 18.....	1655		280	4	3													
Sept. 19.....	0650		273	3	2													
Sept. 19.....	1815		273	4	3													
Sept. 20.....	1640		250	4	3													
Sept. 21.....	1655		229	2	1													
Sept. 22.....	1655		207	7	4													
Sept. 24.....	1910		155	6	3													
Sept. 26.....	1915		113	6	2													
Sept. 28.....	1800		84	6	1													
Sept. 30.....	1715		77	6	1													

T Less than 0.50 ton.

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN

Chemical analyses, in parts per million, water year October 1966 to September 1967

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (microhmhos at 25°C)	Col- or pH	
																Calcium, magnesium	Non-carbonate				
STREAMS TRIBUTARY TO LAKE SUPERIOR																					
4-0255. BOIS BRULE RIVER AT BRULE, WIS. (LAT 46°32'15", LONG 91°35'45")																					
Nov. 4, 1966..	131	14				18	4.0	2.4	0.4	70	5.4	0.8	0.1	0.2	93	62	4		122	7.3	5
Apr. 29, 1967.	194									62	6.4	.5		.6	77	50	0		109	7.3	20
4-0270. BAD RIVER NEAR ODANAH, WIS. (LAT 46°29'15", LONG 90°41'45")																					
Nov. 3, 1966..	218	17				16	4.8	2.8	0.9	66	7.2	2.0	0.1	0.9	98	60	6		122	6.7	65
May 2, 1967...	1250									38	5.2	.5		1.3	70	36	5		81	7.0	55
4-0275. WHITE RIVER NEAR ASHLAND, WIS. (LAT 46°29'50", LONG 90°54'15")																					
Nov. 2, 1966..	156	15				24	6.8	3.2	0.7	110	4.4	1.0	0.1	0.2	107	88	0		180	7.5	9
Apr. 30, 1967.	161									106	5.6	.5		.5	113	83	0		173	8.0	
STREAMS TRIBUTARY TO LAKE MICHIGAN																					
PINE RIVER AT PINE RIVER CAMPGROUNDS, WIS. (LAT 45°49'55", LONG 88°55'00")																					
May 2, 1967...										23	5.2	0.5		0.8	56	26	7		53	6.4	90
McDONALD CREEK NEAR MOUTH, AT BRIDGE ON WINDSOR DAM ROAD, WIS. (LAT 45°51'50", LONG 88°53'20")																					
May 2, 1967...										44	7.6	0.2		0.8	48	44	8		82	7.2	75
PINE RIVER NEAR ALVIN, WIS. (4 MILES SOUTH, LAT 45°53'46", LONG 88°49'56")																					
May 2, 1967...	116									32	7.2	0.5		0.6	58	32	6		66	6.7	90
NORTH BRANCH PINE RIVER AT ALVIN, WIS. (LAT 45°55'44", LONG 88°51'38")																					
May 2, 1967...	55									46	4.8	0.5		0.8	64	41	4		92	7.0	45
PINE CREEK NEAR MOUTH, NEAR ALVIN, WIS. (6 MILES SOUTH, LAT 45°51'40", LONG 88°46'55")																					
May 2, 1967...										33	8.4	0.5		9.1	55	40	13		84	7.2	65
PINE RIVER AT CHIPMUNK RAPIDS NEAR TIPLER, WIS. (LAT 45°53'37", LONG 88°33'31")																					
May 3, 1967...	384									72	8.4	0.2		0.9	82	64	5		130	7.8	55
LAUTERMAN CREEK NEAR FLORENCE, WIS. (11 MILES WEST, LAT 45°54'20", LONG 88°30'24")																					
May 3, 1967...										178	12	0.5		0.5	151	156	10		294	7.8	10
WAKEFIELD CREEK AT HIGHWAY 70, AT FLORENCE, WIS. (LAT 45°55'02", LONG 88°26'35")																					
May 3, 1967...										115	13	0.5		0.4	121	108	14		200	7.6	60
NORTH BRANCH POPPLE RIVER NEAR FENCE, WIS. (9 MILES WEST, LAT 45°46'00", LONG 88°36'20")																					
May 4, 1967...										33	6.8	0.5		0.5	54	34	7		67	6.5	90
POPPLE RIVER NEAR FENCE, WIS. (6 MILES WEST, LAT 45°45'30", LONG 88°31'40")																					
May 4, 1967	151									38	7.6	0.5		0.6	54	40	9		80	6.7	90

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MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

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Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (micro-mhos at 25°C)	pH	Color
																Calcium	Non-carbonate				
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued																					
SOUTH BRANCH POPPLE RIVER NEAR FENCE, WIS. (6 MILES WEST, LAT 45°44'40", LONG 88°33'40")																					
May 4, 1967...										84	8.0	0.5		1.0	91	76	7		150	7.2	30
SIMPSONS CREEK NEAR FENCE, WIS. (7 MILES SOUTHWEST, LAT 45°44'05", LONG 88°33'50")																					
May 4, 1967...										61	8.8	0.5		0.4	68	58	8		111	7.0	50
SOUTH BRANCH POPPLE RIVER NEAR FENCE, WIS. (4 MILES WEST, LAT 45°45'13", LONG 88°31'54")																					
May 4, 1967...	41									69	10	0.5		0.4	79	64	8		126	7.0	45
POPPLE RIVER NEAR FLORENCE, WIS. (10 MILES SOUTHWEST, LAT 45°48'00", LONG 88°23'48")																					
May 4, 1967...										56	7.2	0.5		0.5	82	52	6		104	7.4	85
4-0638. WOODS CREEK NEAR FLORENCE, WIS. (8 MILES SOUTHWEST, LAT 45°49'53", LONG 88°23'17")																					
May 4, 1967...										80	12	0.5		0.6	94	78	12		150	8.0	45
4-0665. PIKE RIVER AT AMBERG, WIS. (LAT 45°29'50", LONG 87°59'40")																					
Oct. 27, 1966.	126	17	0.10	0.02	29	12	2.9	1.3	145	9.4	12	0.2	0.1	0.5	140	122	3		238	7.9	12
May 24, 1967..	332								98	12		1.0		1.0	130	95	14		171	7.5	
4-0710. OCONTO RIVER NEAR GILLETT, WIS. (LAT 44°51'55", LONG 88°18'00")																					
Nov. 1, 1966..	316	13	0.13	0.02	32	15	2.8	1.2	167	8.0	10	0.2	0.4	0.6	146	142	4		260	7.8	8
May 23, 1967..	684								136	10		1.0		1.0	131	118	6		228	8.1	
4-0752. EVERGREEN CREEK NEAR LANDLADE, WIS. (LAT 45°10'11", LONG 88°48'12")																					
May 23, 1967..	11									176	9.6	0.5		1.0	158	152	4		284	8.3	
4-0785. EMBARRASS RIVER NEAR EMBARRASS, WIS. (4 MILES NORTHWEST, LAT 44°43'30", LONG 88°44'10")																					
Nov. 1, 1966..	125	15	0.14	0.02	48	24	4.0	1.5	244	17	15	3.5	0.3	4.5	224	219	18		395	8.1	9
May 23, 1967..	205								196	15		3.0		2.8	197	180	20		329	7.9	
4-0800. LITTLE WOLF RIVER AT ROYALTON, WIS. (LAT 44°24'45", LONG 88°51'55")																					
Nov. 3, 1966..	187	20	0.07	0.01	50	26	5.6	1.4	260	13	14	5.0	0.4	4.2	248	232	12		418	8.4	7
May 23, 1967..	308								224	14		4.0		3.2	224	195	12		366	7.9	
4-0810. WAUPACA RIVER NEAR WAUPACA, WIS. (LAT 44°19'50", LONG 88°59'45")																					
May 23, 1967..	194									202	12	3.0		5.1	203	190	11		348	8.4	
4-0852. KEWAUNEE RIVER NEAR KEWAUNEE, WIS. (1 MILE WEST, LAT 44°27'30", LONG 87°33'23")																					
Dec. 14, 1966.	12									260	53	13		6.9	320	273	60		522	7.5	
4-0865. CEDAR CREEK NEAR CEDARBURG, WIS. (LAT 43°19'45", LONG 87°58'50")																					
Dec. 5, 1966..	11	12	0.13	0.00	89	52	8.8	2.5	436	69	16	0.4	8.7	467	436	78	801		7.4	13	
Apr. 25, 1967.	85.2								272	96	18		5.8	402	350	117	611		8.4		

WATER QUALITY RECORDS, 1967

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Chemical analyses, in parts per million, water year OCTOBER 1966 TO SEPTEMBER 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (microhmhos at 25°C)	pH or Col-
																Calcium, magnesium	Non-carbonate			
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued																				
4-0870. MILWAUKEE RIVER AT MILWAUKEE, WIS. (LAT 43°06'00", LONG 87°54'30")																				
Oct. 25, 1966.	117	3.4		0.18	0.03	66	37	20	3.0	348	44	30	0.5	1.9	370	317	32		650	7.9
Apr. 23, 1967.	727									289	58	17		2.9	358	320	71		579	8.4
4-0871.2. MENOMONEE RIVER AT WAUWATOSA, WIS. (LAT 43°02'44", LONG 87°59'59")																				
Dec. 6, 1966..	61.5	8.2		1.0	0.45	63	23	245	5.7	187	89	385	0.6	1.0	950	252	98		1690	6.9
4-0872.2. ROOT RIVER NEAR FRANKLIN, WIS. (LAT 42°52'25", LONG 87°59'45")																				
Dec. 7, 1966..	41.9	13		0.43	0.22	91	44	196	6.5	266	143	330	0.6	16	986	408	190		1720	7.0
Apr. 25, 1967.	42.8									295	135	87	9.0		599	416	174		948	7.5
4-0872.33. ROOT RIVER CANAL NEAR FRANKLIN, WIS. (LAT 42°48'55", LONG 87°59'40")																				
Dec. 7, 1966..	18	10		0.49	0.09	101	44	51	11	269	214	85	0.7	1.0	702	433	213		1050	7.1
Apr. 25, 1967.	63									235	166	40	34		551	420	227		821	7.4
4-0872.4. ROOT RIVER AT RACINE, WIS. (LAT 42°45'05", LONG 87°49'25")																				
Apr. 26, 1967.	194									259	136	48	21		522	395	183		807	7.6

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Sam- pling point	Discharge (cfs)	Sediment concen- tration (ppm)	Sediment discharge (tons per day)	Suspended sediment									Method of analysis
							Percent finer than size indicated, in millimeters									
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	
STREAMS TRIBUTARY TO LAKE SUPERIOR																
4-0252. PEARSON CREEK NEAR MAPLE, WIS. (LAT 46°38'51", LONG 91°42'55")																
Apr. 29, 1967.....	0850			0.82	59	T										
4-0255. BOIS BRULE RIVER AT BRULE, WIS. (LAT 46°32'15", LONG 91°35'45")																
Apr. 1, 1967.....	1100			398	34	37										
May 1.....	1115			206	10	6										
June 1.....	1000			140	8	3										
July 3.....	1005			214	12	7										
Aug. 2.....	1020			160	16	7										
4-0263. SIOUX RIVER NEAR WASHBURN, WIS. (LAT 46°41'20", LONG 90°57'02")																
Apr. 30, 1967.....	1015			11.6	20	1										
4-0270. BAD RIVER NEAR ODANAH, WIS. (LAT 46°29'15", LONG 90°41'45")																
Oct. 1, 1965.....	1640			1490	62	249										
May 2, 1967.....	1120			1240	276	924										
June 10.....	0745			480	69	89										
June 10.....	1040			485	8	10										
4-0275. WHITE RIVER NEAR ASHLAND, WIS. (LAT 46°20'50", LONG 90°54'15")																
Apr. 30, 1967.....	1400			161	35	15										
June 9.....	1650			309	14	12										
STREAMS TRIBUTARY TO LAKE MICHIGAN																
4-0610. BRULE RIVER NEAR FLORENCE, WIS. (LAT 45°57'31", LONG 88°15'57")																
Aug. 10, 1966.....	0830			574	16	25										
Aug. 23.....	1030			864	19	44										
Sept. 14.....	0830			313	7	6										
Sept. 23.....	0830			267	4	3										
Oct. 18.....	0830			642	12	21										
Apr. 6, 1967.....	1430			1520	11	45										
Apr. 18.....	1400			1680	7	32										
May 24.....	0930			662	9	16										
June 9.....	0930			506	9	12										
June 19.....	1100			616	18	30										
June 29.....	0900			745	23	46										
Aug. 3.....	0900			353	14	13										
Aug. 10.....	0900			429	29	34										
Aug. 25.....	0900			271	6	4										
Sept. 14.....	0900			255	8	6										

T Less than 0.50 ton.

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Sam- pling point	Discharge (cfs)	Sediment concentra- tion (ppm)	Sediment discharge (tons per day)	Suspended sediment								Method of analysis
							Percent finer than size indicated, in millimeters								
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

4-0860. SHEBOYGAN RIVER AT SHEBOYGAN, WIS. (LAT 43°44'25", LONG 87°45'35")

Sept. 15, 1966.....	1000			42	21	2											
Mar. 27, 1967.....	1030			1700	116	532											
Apr. 1.....	1015			980	120	318											
Apr. 7.....	0830			1270	168	576											
Apr. 9.....	0830			751	48	97											
Apr. 16.....	0830			400	80	86											
Apr. 17.....	1915			1470	1070	4250											
Apr. 18.....	1520			1010	352	960											
May 1.....	1700			313	38	32											
May 12.....	1830			208	44	25											
June 9.....	0800			94	104	26											
June 12.....	1200			195	60	32											
June 13.....	1630			462	99	123											
June 15.....	0800			263	508	361											
June 19.....	0915			179	74	36											
June 25.....	0800			106	27	8											
June 28.....	1430			113	59	18											
June 30.....	0815			235	50	32											

4-0870. MILWAUKEE RIVER AT MILWAUKEE, WIS. (LAT 43°06'00", LONG 87°54'30")

Mar. 14, 1967.....	1212			806	21	46											
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4-0872.2. ROOT RIVER NEAR FRANKLIN, WIS. (LAT 42°52'25", LONG 87°59'45")

Mar. 14, 1967.....	1842			77	53	11											
Mar. 16.....	1600			50	70	9											
June 14.....	0945			4210	160	1820											

4-0872.4. ROOT RIVER AT RACINE, WIS. (LAT 42°45'05", LONG 87°49'25")

Mar. 15, 1967.....	1927			361	32	31											
Mar. 16.....	0835			1920	22	22											
June 13.....	1455				353	1830											

UPPER MISSISSIPPI RIVER BASIN

WISCONSIN RIVER BASIN

5-4006. LITTLE PLOVER RIVER NEAR ARNOTT, WIS.

LOCATION.--Lat 44°28'05", long 89°29'20", temperature recorder at gaging station below flume, 150 feet below bridge on town road 2.2 miles northwest of Arnott, and 3.5 miles upstream from mouth.

DRAINAGE AREA.--1.5 square miles, approximately, of which a portion is noncontributing.

RECORDS AVAILABLE.--Water temperatures: October 1964 to September 1967; April 1960 to October 1964, unpublished.

EXTREMES, 1966-67.--Water temperatures: Maximum, 74°F July 21; minimum, freezing point on several days during winter months.

EXTREMES, 1964-67.--Water temperatures: Maximum, 76°F July 22, 23, 1965; minimum, freezing point on several days during winter months.

REMARKS.--No temperature record Oct. 9-14, Dec. 4-9, 22, 24-31, Jan. 10 to Mar. 31. Maximum temperature observed at this station was 82°F June 30, 1964.

Temperature (°F) of water, water year October 1966 to September 1967
(Continuous recording thermograph with mercury-sensing element)

Month	Day																															Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
October	54	53	51	53	54	58	60	56	--	--	--	--	--	--	55	47	51	50	52	51	50	48	48	47	48	52	54	53	48	45	46	51	
	46	48	48	44	43	47	50	48	--	--	--	--	--	--	46	44	42	46	46	41	44	42	40	39	38	42	44	46	42	39	41	43	
November	42	42	40	42	45	44	48	44	44	43	45	42	44	43	45	49	47	44	42	42	45	48	48	48	48	45	46	45	37	37	40	--	44
	38	36	35	36	38	38	44	44	42	40	40	36	38	37	38	43	44	35	35	37	40	44	44	44	44	42	41	37	34	34	--	39	
December	34	35	35	--	--	--	--	--	--	38	36	37	38	41	41	41	42	40	35	39	39	--	40	--	--	--	--	--	--	--	--	--	--
	33	34	34	--	--	--	--	--	--	--	34	34	34	36	37	38	39	35	34	36	35	--	35	--	--	--	--	--	--	--	--	--	--
January	37	37	36	33	34	33	32	32	33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	35	35	32	32	33	32	32	32	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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March	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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April	54	45	48	47	50	42	54	49	51	53	53	46	48	57	60	50	49	53	57	50	60	47	51	56	57	57	61	60	53	52	--	52	
	40	38	34	36	39	39	39	40	40	38	36	38	41	44	46	45	42	40	39	40	45	39	36	38	39	43	42	42	47	45	--	40	
May	60	48	55	57	58	60	54	52	61	49	50	62	63	62	58	64	66	65	58	62	57	63	61	63	65	70	63	52	66	64	66	59	
	44	41	36	39	36	40	42	43	41	42	41	39	46	46	47	43	46	49	49	43	44	40	47	46	48	52	53	48	46	48	47	44	
June	68	70	68	66	58	60	56	67	62	56	57	65	67	66	66	67	65	63	54	65	63	65	56	52	64	61	55	54	58	66	--	62	
	48	49	50	51	52	53	52	53	54	54	52	52	53	59	56	55	55	50	50	50	52	50	51	48	48	49	51	52	50	51	--	51	
July	62	60	58	57	61	65	66	59	64	69	70	66	62	66	64	62	69	70	69	71	74	68	71	67	68	68	64	66	68	67	68	65	
	53	49	49	49	50	49	50	55	54	55	55	54	53	50	50	53	53	54	55	56	57	60	56	55	54	56	54	50	52	53	54	53	
August	63	69	67	66	66	59	64	61	64	62	63	64	65	63	65	67	69	60	63	63	59	63	63	66	67	59	63	62	64	60	59	63	
	56	55	54	52	52	53	55	54	55	50	47	49	50	51	52	55	57	53	49	50	53	49	52	53	53	55	53	48	53	51	46	52	
September	60	61	60	61	62	62	62	63	60	58	54	61	59	60	59	64	63	61	63	62	61	58	59	56	58	55	54	52	52	56	--	59	
	48	47	48	48	48	49	50	51	50	46	47	49	52	56	56	54	53	52	54	55	55	48	49	46	47	50	46	46	42	43	--	49	

WISCONSIN RIVER BASIN--Continued
5-4008.53. BUENA VISTA CREEK NEAR KELLNER, WIS.

LOCATION.--Lat 44°22'26", long 89°41'52", temperature recorder at gaging station on left bank upstream from highway bridge, 1.2 miles upstream from Fourmile Creek, and 1.7 miles northeast of Kellner.
DRAINAGE AREA.--44 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: June 1965 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 67°F July 24.
EXTREMES, 1965-67.--Water temperatures: Maximum, 72°F June 30, July 10, 1966; minimum, freezing point on many days during winter months.
REMARKS.--No temperature record Oct. 20 to Nov. 15, Dec. 3 to Mar. 22, July 25, 26, Aug. 6-29, Sept. 22-26.

Temperature (°F) of water, water year October 1966 to September 1967 (Continuous recording thermograph with bimetallic coil-sensing element)																																		
Month	Day																															Average		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
October	49	48	50	51	51	49	48	53	52	53	54	51	51	58	60	60	58	60	65															
	46	46	48	50	48	45	45	48	50	50	50	48	49	51	58	57	55	57	60															
November																																		
December																																		
January	35	33																																
	33	33																																
February																																		
March																																		
April																																		
May	49	48	40	42	44	45	44	47	47	48	46	46	45	45	52	54	54	52	49	49	49	53	53	45	45	48	50	51	51	52				
	46	46	41	41	41	43	41	41	47	45	45	45	44	44	45	52	52	49	46	46	48	48	45	40	41	45	48	49	51	51				
June	53	53	51	49	49	51	51	50	51	52	47	49	54	54	54	53	57	59	59	53	54	54	56	56	59	64	64	60	57	58	59	54		
	51	46	47	48	48	49	50	49	48	47	46	46	49	54	53	51	53	57	52	51	50	49	49	55	56	59	60	52	52	57	56	51		
July	60	62	63	62	61	59	58	61	63	62	60	59	64	65	65	65	64	62	61	59	60	60	60	56	55	58	59	58	56	59				
	54	58	60	61	59	58	57	57	61	60	58	58	59	64	64	64	62	61	57	56	59	59	57	53	53	55	58	56	56	56				
August	62	62	58	56	55	57	59	61	60	61	63	63	63	60	58	59	59	61	62	63	64	65	65	67										
	59	58	56	55	54	55	57	59	59	59	61	63	60	58	58	58	59	59	61	62	63	64	64	65										
September	63	63	64	63	62																													
	62	62	62	61	61																													
Minimum	57	57	57	57	58	58	57	60	60	58	54	56	57	59	60	60	60	60	60	61	61						53	50	48	48				
	55	55	55	55	55	56	57	58	58	54	52	53	55	57	59	60	60	60	60	60	60						50	48	45	45				

WISCONSIN RIVER BASIN--Continued

5-4010.2. TENMILE CREEK DITCH 5, NEAR BANCROFT, WIS.

LOCATION.--Lat 44°18'08", long 89°32'59"; temperature recorder at gaging station at bridge on county road, 1.2 miles west of U.S. Highway 51, and 1.8 miles southwest of Bancroft.
 DRAINAGE AREA.--8.8 square miles, approximately.
 RECORDS AVAILABLE.--Water temperatures: June 1965 to September 1967.
 EXTREMES, 1966-67.--Water temperatures: Maximum, 66°F June 30, July 23; minimum, freezing point on many days during December to March.
 EXTREMES, 1965-67.--Water temperatures: Maximum, 72°F July 10, 1966; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1966 to September 1967

(Continuous ethyl alcohol-actuated thermograph)

Month	Day																															Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
October	47	51	50	50	48	49	54	56	55	50	46	46	47	53	53	44	45	45	45	45	46	46	43	42	42	46	49	48	47	42	41	47	
	44	46	48	48	45	43	48	51	50	46	44	42	46	47	44	43	42	43	43	40	43	43	40	39	38	41	44	45	41	38	40	43	
	November																																
Maximum	40	38	35	37	39	40	44	44	42	40	41	40	38	38	41	44	45	44	38	40	42	46	47	47	44	43	43	38	35	36	--	40	
Minimum	38	35	34	34	36	36	40	42	40	39	38	36	36	36	37	41	43	37	36	37	39	42	45	44	42	41	38	34	34	--	38		
December																																	
Maximum	34	33	33	33	35	36	36	36	36	36	35	34	35	36	37	37	39	38	36	37	36	36	33	33	33	33	33	33	32	33	34	34	
Minimum	33	33	33	33	33	35	35	36	36	35	34	34	34	35	35	36	37	36	33	34	36	33	33	33	33	33	33	32	32	32	33	33	
January																																	
Maximum	35	35	35	33	33	33	34	33	33	33	33	35	37	36	32	32	32	32	32	32	32	34	36	37	36	35	35	34	35	35	35	34	
Minimum	34	34	33	33	33	32	32	32	33	32	32	33	35	32	32	32	32	32	32	32	32	34	36	36	35	33	33	33	33	33	33	32	
February																																	
Maximum	35	33	34	35	33	33	33	33	34	35	32	32	33	35	35	32	32	32	32	34	32	32	32	32	33	33	33	34	35	35	35	34	
Minimum	33	33	33	34	33	32	32	32	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	32	
March																																	
Maximum	34	33	35	36	36	34	35	34	35	39	40	38	40	40	39	37	35	36	39	39	42	43	43	44	44	44	39	37	39	40	47	47	38
Minimum	33	32	32	33	33	33	33	33	33	35	37	35	38	37	36	34	34	35	36	38	38	39	38	41	41	41	37	36	36	39	44	35	
April																																	
Maximum	49	47	46	45	47	44	45	47	48	48	48	45	45	52	55	51	50	48	52	49	55	51	46	50	52	52	52	54	51	52	--	49	
Minimum	42	42	39	40	42	42	42	42	44	40	39	40	43	45	47	47	44	42	42	43	46	41	39	40	41	45	44	44	47	49	--	42	
May																																	
Maximum	56	49	53	55	53	57	52	50	57	53	48	54	55	54	51	56	59	58	55	55	51	55	55	56	57	63	60	54	58	56	58	54	
Minimum	47	44	41	44	43	44	46	46	44	46	44	44	45	46	45	43	46	48	48	43	47	42	47	46	48	51	54	49	46	48	47	45	
June																																	
Maximum	60	61	62	59	57	56	55	62	65	61	59	64	64	64	64	63	62	62	60	62	61	62	58	54	61	61	58	56	59	66	--	60	
Minimum	48	49	51	52	53	52	52	52	57	57	56	57	58	59	60	61	57	55	56	55	53	53	54	52	52	53	55	54	53	55	--	54	
July																																	
Maximum	62	58	56	55	60	62	62	58	60	63	64	63	60	61	61	60	62	63	63	64	65	63	66	64	64	64	64	63	64	62	64	61	
Minimum	58	54	53	52	53	53	54	56	55	56	57	57	55	54	54	56	56	57	58	59	59	60	60	59	58	59	57	56	56	57	58	56	
August																																	
Maximum	62	64	64	64	63	61	62	60	60	59	59	60	61	59	62	64	64	63	59	59	59	57	59	61	62	61	61	59	58	60	57	60	
Minimum	59	60	59	57	56	58	58	58	58	55	53	54	55	56	56	59	60	57	54	54	57	53	54	56	56	57	55	54	56	56	52	56	
September																																	
Maximum	58	59	60	61	61	61	63	65	64	60	60	60	61	63	63	62	61	61	60	61	61	57	55	55	55	55	55	52	48	47	50	58	
Minimum	54	55	55	56	57	57	59	61	59	55	56	56	58	61	62	61	58	58	58	58	58	52	53	50	50	52	47	46	43	44	--	54	

ROCK RIVER BASIN

5-4305. ROCK RIVER AT AFTON, WIS.

LOCATION.--Lat 42°36'40", long 89°04'10", temperature recorder at gaging station on right bank in Afton, Rock County, 0.3 mile downstream from highway bridge, and 0.8 mile upstream from Bass Creek.

DRAINAGE AREA.--3,300 square miles, approximately.

RECORDS AVAILABLE.--September 1954 to September 1967.

EXTREMES, 1966-67.--Water temperatures: Maximum, 82°F July 22, 25; minimum, freezing point on many days during December to March.

EXTREMES, 1954-67.--Water temperatures: Maximum, 89°F July 27-30, Aug. 4, 1955, July 26, 28, 1964; minimum, freezing point on many days during winter months.

REMARKS.--No temperature record Dec. 18-21.

Temperature (°F) of water, water year October 1966 to September 1967
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																															Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
October	59	59	59	60	60	60	60	62	63	60	59	58	59	60	61	57	58	57	58	57	56	56	55	55	55	55	56	56	58	57	54	54	58
	56	56	57	58	57	56	57	58	59	58	57	55	57	59	57	54	55	56	56	54	54	54	53	53	52	51	52	54	53	51	52	55	
	54	45	46	46	46	47	52	52	50	49	49	49	47	47	47	49	50	50	46	46	46	47	49	50	51	50	50	47	43	42	--	48	
	50	45	44	44	44	44	47	50	48	48	47	46	45	44	44	46	47	46	44	45	44	46	47	49	50	48	47	43	41	41	--	45	
	41	39	39	39	39	39	41	41	41	40	39	39	39	39	39	39	39	40	--	--	--	33	32	32	32	32	32	32	32	32	32	36	
November	39	39	39	39	39	39	39	40	39	39	39	39	39	39	39	39	39	39	--	--	--	32	32	32	32	32	32	32	32	32	32	36	
	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	32	32	32	32	32	32	32	33	33	34	32	33	33	32	33	32	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	33	33	33	33	33	32	33	32	33	33	33	33	33	34	33	33	33	34	33	33	33	33	33	33	33	32	32	32	--	--	--	32	
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32	
December	32	32	33	33	34	35	35	35	35	36	36	35	34	34	35	35	35	35	34	34	35	36	37	38	39	40	40	40	39	43	45	36	
	32	32	32	32	32	32	32	32	32	33	34	34	34	34	34	33	32	32	33	34	34	34	35	36	37	39	39	39	38	39	43	34	
	44	44	43	42	43	43	44	43	45	45	45	44	43	48	51	52	52	50	50	49	51	50	48	46	46	46	47	49	48	49	--	46	
	44	43	42	41	42	43	43	43	43	44	43	43	43	43	47	50	50	49	48	48	48	46	46	45	44	45	45	46	48	48	--	45	
	53	52	51	50	50	51	52	51	53	51	50	50	52	53	54	54	57	59	65	64	63	63	62	63	65	68	70	68	64	62	63	57	
January	50	51	49	49	49	48	45	50	49	50	48	47	48	50	51	51	53	54	61	60	60	59	59	59	60	63	66	64	62	60	59	54	
	64	67	69	71	70	70	70	73	71	71	70	72	74	76	79	80	80	74	74	70	72	73	73	72	69	70	70	72	75	--	--	72	
	58	61	63	65	62	68	69	67	67	69	68	68	71	74	76	78	75	73	73	71	72	71	72	70	68	67	69	69	70	71	--	69	
	74	74	72	70	69	70	72	75	75	75	78	79	76	74	76	75	76	75	76	78	80	82	81	80	82	79	77	79	79	78	80	76	
	73	71	70	68	76	65	68	71	73	73	73	75	71	70	68	69	70	71	71	72	74	75	76	76	76	76	76	73	73	73	74	72	
February	79	81	81	80	80	77	78	75	75	75	72	72	75	75	72	77	75	73	71	73	73	70	72	74	72	71	59	71	71	70	59	74	
	74	75	75	74	75	73	72	72	72	69	68	68	68	69	70	70	72	71	68	66	67	65	62	64	66	66	63	62	66	65	64	68	
	70	70	68	70	74	74	74	74	73	71	70	70	70	70	70	73	74	74	73	74	74	72	69	69	67	64	63	62	64	--	70		
	63	62	64	64	65	67	67	67	67	65	64	64	64	68	67	68	69	70	69	70	71	71	68	65	62	64	63	62	61	60	--	65	

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN

Chemical analyses, in parts per million, water year October 1966 to September 1967

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (micro-mhos at 25°C)	pH	Color
																Calcium	Non-carbonate				
ST. CROIX RIVER BASIN																					
5-3325. NAMEKAGON RIVER NEAR TREGO, WIS. (LAT 45°56'50", LONG 91°53'15")																					
Nov. 5, 1966..	489	10				20	6.1	2.6	0.4	90	4.0	1.5	0.1	0.9	88	75	1	156	7.2	10	
Apr. 26, 1967.	690									70	4.8	.5		.9	94	58	1	122	7.5	30	
5-3335. ST. CROIX RIVER NEAR DANBURY, WIS. (LAT 46°04'30", LONG 92°14'50")																					
Nov. 5, 1966..	1190	13				18	4.5	2.8	0.6	71	8.8	2.0	0.1	0.5	96	64	6	124	6.9	20	
Apr. 28, 1967.	1750									60	5.2	.5		.9	92	49	0	106	7.8	40	
5-3405. ST. CROIX RIVER AT ST. CROIX FALLS, WIS. (LAT 45°24'30", LONG 92°38'45")																					
Nov. 6, 1966..	2840	27				28	7.7	9.2	1.5	110	9.8	16	0.1	1.8	156	102	12	229	7.4	10	
May 7, 1967...	5000									85	8.0	1.0		2.0	101	73	4	154	7.1		
5-3415. APPLE RIVER NEAR SOMERSET, WIS. (LAT 45°09'30", LONG 92°43'00")																					
Nov. 25, 1966.	210	16		0.24	0.00	34	12	4.0	1.0	164	8.8	2.5	0.1	2.4	168	135	0	273	7.4	4	
May 7, 1967...	335									143	6.8	2.0		2.4	146	120	3	240	7.6		
CHIPPEWA RIVER BASIN																					
5-3560. CHIPPEWA RIVER AT BISHOPS BRIDGE, NEAR WINTER, WIS. (LAT 45°50'55", LONG 91°04'45")																					
Nov. 2, 1966..	1180	7.7				7.6	3.0	1.3	0.4	32	2.8	1.5	0.1	1.3	43	32	6	67	6.5	75	
May 4, 1967...	1040									22	8.4	.5		1.3	54	22	4	51	6.4	95	
5-3565. CHIPPEWA RIVER NEAR BRUCE, WIS. (LAT 45°27'05", LONG 91°15'40")																					
Nov. 8, 1966..	1310	9.8		0.52	0.08	11	3.7	2.0	0.8	43	11	1.0	0.1	1.1	91	42	8	84	6.6	60	
May 4, 1967...	2270									30	6.8	.5		1.2	60	27	2	67	6.7	50	
5-3585. FLAMBEAU RIVER AT BABBS ISLAND, NEAR WINTER, WIS. (LAT 45°46'10", LONG 90°45'45")																					
Nov. 1, 1966..	769	13				15	3.5	3.3	0.8	43	11	7.0	0.1	1.0	100	52	17	110	6.5	65	
May 3, 1967...	1880									30	8.0	1.0		.9	67	32	8	72	7.4	65	
5-3595. SOUTH FORK FLAMBEAU RIVER NEAR PHILLIPS, WIS. (LAT 45°42'15", LONG 90°36'55")																					
Oct. 31, 1966.	459	25		0.65	0.10	9.2	2.7	2.4	0.7	38	7.4	1.0	0.1	1.1	81	34	3	73	6.5	70	
May 3, 1967...	1050									27	5.2	.5		1.3	67	26	4	57	6.8	75	
5-3605. FLAMBEAU RIVER NEAR BRUCE, WIS. (LAT 45°22'20", LONG 91°12'35")																					
Nov. 8, 1966..	1000	8.5		0.57	0.10	13	3.4	3.0	0.6	41	15	3.5	0.2	1.0	98	46	13	96	6.5	95	
May 3, 1967...	3360									26	8.8	1.0		1.2	79	27	6	60	7.5	70	
5-3620. JUMP RIVER AT SHELDON, WIS. (LAT 45°18'30", LONG 90°57'20")																					
Nov. 5, 1966..	177	11		0.42	0.08	17	5.6	3.2	0.8	71	14	1.2	0.2	0.8	108	66	8	134	6.8	70	
May 3, 1967...	384									43	8.0	1.0		1.0	73	39	4	86	6.9	60	
5-3680. HAY RIVER AT WHEELER, WIS. (LAT 45°02'50", LONG 91°54'40")																					
Nov. 11, 1966.	158	16		0.24	0.20	40	18	3.3	0.8	194	15	4.0	0.1	3.2	207	174	15	326	7.9	5	
May 5, 1967...	279									166	12	4.0		3.8	189	160	10	300	8.5	205	

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (microhmhos at 25°C)	Color or pH
CHIPPEWA RIVER BASIN--Continued																				
5-3690. RED CEDAR RIVER AT MEMONIE, WIS. (LAT 44°53'00", LONG 91°55'55")																				
Nov. 11, 1966.	436	11		0.20	0.15	22	9.9	3.2	1.4	100	14	3.3	0.2	2.5	117	96	14		190	7.6
May 5, 1967...	1480									100	8.8	3.0		2.1	135	86	4		185	8.2
TREMPEALEAU RIVER BASIN																				
5-3794. TREMPEALEAU RIVER AT ARCADIA, WIS. (LAT 44°15'15", LONG 91°30'25")																				
Nov. 29, 1966.	189	19		0.67	0.27	28	13	8.6	1.8	118	27	15	0.3	5.2	184	124	27		293	7.3
May 17, 1967..	310									98	24	5.0		4.5	124	105	24		221	7.1
BLACK RIVER BASIN																				
5-3810. BLACK RIVER AT NEILLSVILLE, WIS. (LAT 44°33'35", LONG 90°36'50")																				
Nov. 7, 1966..	80.5	9.6		1.2	0.06	17	5.9	4.7	1.6	69	9.6	6.0	0.1	1.0	119	66	10		150	6.9
May 1, 1967...	319									48	9.2	4.0		1.5	81	21	0		109	6.9
BAD AXE RIVER BASIN																				
5-3871. NORTH FORK BAD AXE RIVER NEAR GENOA, WIS. (LAT 43°33'10", LONG 91°08'58")																				
May 19, 1967..	37									296	12	4.0		2.4	246	256	13		449	8.0
WISCONSIN RIVER BASIN																				
5-3910. WISCONSIN RIVER AT RAINBOW LAKE, NEAR LAKE TOMAHAWK, WIS. (LAT 45°50'00", LONG 89°32'50")																				
Nov. 10, 1966.	647	6.9		0.20	0.00	8.6	1.6	1.8	0.3	34	3.0	0.5	0.1	0.8	39	28	0		66	6.8
May 16, 1967..	44.0									52	5.6	0.5		1.0	54	41	0		92	7.7
5-3930. TOMAHAWK RIVER AT BRADLEY, WIS. (LAT 45°32'20", LONG 89°44'45")																				
Nov. 10, 1966.	383	9.7		0.45	0.11	7.3	2.7	2.2	0.4	33	4.4	1.5	0.1	1.3	42	29	2		68	6.6
May 16, 1967..	210									20	5.6	1.0		1.8	36	19	2		48	6.7
5-3935. SPIRIT RIVER AT SPIRIT FALLS, WIS. (LAT 45°26'55", LONG 89°58'50")																				
Nov. 9, 1966..	24.0	11		0.60	0.19	13	4.6	3.0	0.4	56	6.4	1.0	0.2	1.2	66	52	6		113	6.7
May 16, 1967..	99									28	7.2	1.0		1.0	42	27	4		65	6.8
5-3945. PRAIRIE RIVER NEAR MERRILL, WIS. (LAT 45°14'10", LONG 89°38'50")																				
Nov. 13, 1966.	96	23		0.10	0.01	25	7.3	2.8	0.6	108	5.6	1.2	0.4	0.4	139	92	4		182	7.8
May 18, 1967..	166									64	8.8	1.0		.9	65	55	2		116	7.5
5-3950. WISCONSIN RIVER AT MERRILL, WIS. (LAT 45°10'40", LONG 89°40'45")																				
Nov. 16, 1966.	1750	9.3		0.63	0.00	12	3.4	3.9	0.7	46	11	2.5	0.1	1.2	67	44	6		105	6.6
May 18, 1967..	2520									24	9.6	1.0		1.1	44	25	6		66	6.7

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃	Total acidity as H ⁺	Specific conductance (microhmhos at 25°C)	Col- or pH
WISCONSIN RIVER BASIN--Continued																			
5-3975. EAU CLAIRE RIVER AT KELLY, WIS. (LAT 44°55'05", LONG 89°33'00")																			
Nov. 17, 1966.	83.6	7.7		0.15	0.01	28	12	5.7	1.0	126	13	9.0	0.2	3.5	159	120	16	247	7.6
May 22, 1967..	165								94	11		4.0		1.0	117	82	5	178	8.1
5-3995. BIG EAU PLEINE RIVER NEAR STRATFORD, WIS. (LAT 44°49'15", LONG 90°04'35")																			
Nov. 8, 1966..	10.8	4.6		0.60	0.03	20	6.4	7.6	3.2	90	12	10	0.2	0.8	124	76	2	187	7.1
May 19, 1967..	34.9								48	10		7.0		1.4	85	46	6	123	6.9
5-4015.35. BIG ROCHE A CRI CREEK NEAR ADAMS, WIS. (LAT 44°05'52", LONG 89°46'30")																			
Dec. 6, 1966..	40.7	12		0.51	0.14	28	12	1.6	0.2	126	13	1.5	0.1	3.7	127	120	16	222	7.3
May 11, 1967..	75								126	12		.5		3.3	123	113	10	220	7.9
5-4020. YELLOW RIVER AT BABCOCK, WIS. (LAT 44°18'05", LONG 90°07'15")																			
Nov. 8, 1966..	12	7.8		0.62	0.13	8.2	4.4	3.7	2.5	42	7.4	6.5	0.1	1.1	73	38	4	103	6.6
May 5, 1967...	98								280	15		4.0		2.0	76	32	9	93	6.5
5-4042. NARROWS CREEK AT LOGANVILLE, WIS. (LAT 43°26'32", LONG 90°02'06")																			
May 24, 1967..	11.2									246	13	6.0		2.9	218	215	7	405	8.3
5-4050. BARABOO RIVER NEAR BARABOO, WIS. (LAT 43°28'55", LONG 89°38'00")																			
Nov. 15, 1966.	165	24		0.14	0.11	41	22	11	1.4	230	12	7.0	0.1	4.8	219	193	4	369	7.7
May 15, 1967..	261								148	16		6.0		3.2	154	150	19	278	8.4
5-4058. SPRING CREEK AT LODI, WIS. (LAT 43°19'00", LONG 89°31'40")																			
May 24, 1967..	15									318	8.8	3.0		6.6	262	275	10	484	8.3
NORTH BRANCH HONEY CREEK NEAR BLACK HAWK, WIS. (LAT 43°18'10", LONG 89°55'55")																			
May 24, 1967..										202	12	2.0		1.7	198	180	1	337	8.5
5-4065. BLACK EARTH CREEK AT BLACK EARTH, WIS. (LAT 43°08'00", LONG 89°44'00")																			
Nov. 15, 1966.	16.3	15		0.10	0.00	62	34	6.4	1.0	346	13	6.4	0.2	8.8	304	295	11	546	7.6
May 19, 1967..	24								222	16		5.0		5.8	216	220	22	382	8.6
5-4080. KICKAPOO RIVER AT LA FARGE, WIS. (LAT 43°34'30", LONG 90°38'35")																			
Nov. 23, 1966.	266	9.0		0.33	0.03	51	29	2.7	1.2	278	18	4.0	0.1	4.4	253	246	18	461	7.5
May 19, 1967..	197									278	16	4.0		1.6	236	255	26	428	8.1
5-4105. KICKAPOO RIVER AT STEUBEN, WIS. (LAT 43°11'25", LONG 90°52'30")																			
Nov. 23, 1966.	319	8.3		0.27	0.05	55	30	2.5	1.1	299	18	4.5	0.1	4.2	233	231	13	432	7.5
May 19, 1967..	298								298	15		4.0		2.2	250	270	26	456	8.0
GRANT RIVER BASIN																			
5-4135. GRANT RIVER AT BURTON, WIS. (LAT 42°43'10", LONG 90°49'10")																			
Oct. 19, 1966.	66.7	10		0.13	0.11	67	32	5.2	1.7	336	22	7.4	0.4	3.5	297	299	23	554	7.8
May 16, 1967..	80									326	24	9.0		4.4	312	300	32	527	8.1

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity H ⁺	Specific conductance (micro-mhos at 25°C)	Col. or pH
																Calcium, magnesium	Non-carbonate			
PLATTE RIVER BASIN																				
5-4140. PLATTE RIVER NEAR ROCKVILLE, WIS. (LAT 42°43'55", LONG 90°38'25")																				
Nov. 22, 1966.	45	9.1		0.06	0.03	62	33	3.1	1.1	317	28	5.0	0.2	4.5	290	290	30		528	7.8
May 16, 1967..	62									294	25	5.0		2.5	266	270	28		471	8.2
5-4230. WEST BRANCH ROCK RIVER NEAR WAUPUN, WIS. (LAT 43°40'05", LONG 88°39'10")																				
Oct. 26, 1966.	1.4			0.14	0.04					326	72	57		16	470	318	50		818	7.0
5-4240. EAST BRANCH ROCK RIVER NEAR MAYVILLE, WIS. (LAT 43°31'45", LONG 88°34'00")																				
Oct. 26, 1966.	17	3.1		0.12	0.01	70	45	22	4.5	390	50	35	0.5	2.1	422	360	40		727	8.1
Apr. 26, 1967.	113									304	91	20		2.9	460	391	110		665	8.7
ROCK RIVER AT HUSTISFORD, WIS. (LAT 43°20'30", LONG 88°35'30")																				
Oct. 26, 1966.	1.24			0.26	0.03					385	61	24		2.4	422	365	49		716	7.6
5-4255. ROCK RIVER AT WATERTOWN, WIS. (LAT 43°11'25", LONG 88°43'35")																				
Nov. 16, 1966.	60	9.4		0.12	0.00	59	38	32	3.2	306	60	40	0.4	2.6	400	303	52		676	7.5
Apr. 28, 1967.	809									266	87	22		8.1	399	326	88		614	8.6
BEAVER DAM CREEK AT LOWELL, WIS. (LAT 43°20'15", LONG 88°49'10")																				
Oct. 26, 1966.	7.35			0.12	0.00					304	54	29		0.2	355	278	28		637	7.6
5-4260. CRAWFISH RIVER AT MILFORD, WIS. (LAT 43°06'00", LONG 88°51'00")																				
Nov. 16, 1966.	63	5.8		0.08	0.03	59	40	14	2.5	339	36	24	0.3	2.6	350	312	34		636	7.6
Apr. 28, 1967.	461									245	92	15		5.6	388	331	111		591	8.5
BARK RIVER NEAR FORT ATKINSON, WIS. (4 MILES SOUTHEAST, LAT 42°54'55", LONG 88°46'45")																				
Oct. 27, 1966.				0.19	0.04					314	44	12		4.2	318	297	39		579	7.2
ROCK RIVER AT FORT ATKINSON, WIS. (LAT 42°55'40", LONG 88°50'10")																				
Oct. 27, 1966.	146	7.0		0.18	0.01	63	39	18	4.7	335	47	29	0.6	4.5	369	318	43		657	7.3
KOSHKONONG CREEK NEAR BUSSEYVILLE, WIS. (1.7 MILES NORTHWEST, LAT 42°54'45", LONG 89°00'15")																				
Oct. 27, 1966.	24.0			0.24	0.14					394	61	20		7.8	432	379	56		730	7.5
5-4278. TOKEN CREEK NEAR MADISON, WIS. (LAT 43°10'52", LONG 89°19'28")																				
Apr. 26, 1967.	13									316	20	6.0		15	284	292	32		524	7.7
5-4295. YAHARA RIVER NEAR MCFARLAND, WIS. (LAT 43°00'30", LONG 89°18'15")																				
Nov. 7, 1966..	10									210	31	24		9.0	316	208	36		452	7.6
Apr. 27, 1967.	193									212	31	19		3.0	235	208	34		433	7.7

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Alum-inum (Al)	Iron (Fe)	Man-ga-nese (Mn)	Cal-cium (Ca)	Mag-ne-sium (Mg)	Sodium (Na)	Po-tas-sium (K)	Bicar-bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluo-ride (F)	Ni-trate (NO ₃)	Dissolved solids (residue at 180°C)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (micro-mhos at 25°C)	Col or pH
																Cal-cium, magne-sium	Non-carbon-ate			
ROCK RIVER BASIN--Continued																				
5-4305. ROCK RIVER AT AFTON, WIS. (LAT 42°36'40", LONG 89°04'10")																				
Oct. 27, 1966.	452	10		0.16	0.00	56	38	27	3.3	316	39	37	0.6	0.2	376	296	36	679	7.1	17
5-4315. TURTLE CREEK NEAR CLINTON, WIS. (LAT 42°35'55", LONG 88°51'50")																				
Oct. 27, 1966.	38.0	9.5		0.13	0.05	71	39	10	1.5	341	43	20	0.4	13	368	338	58	643	7.9	3
May 19, 1967..	92.6									302	46	18		9.2	346	315	67	573	7.9	
5-4325. PECATONICA RIVER AT DARLINGTON, WIS. (LAT 42°40'30", LONG 90°06'55")																				
Oct. 18, 1966.	65	15		0.22	0.27	73	38	6.7	2.8	357	50	10	0.1	4.2	360	338	46	629	7.5	5
5-4330. EAST BRANCH PECATONICA RIVER NEAR BLANCHARDVILLE, WIS. (LAT 42°47'10", LONG 89°51'40")																				
Oct. 17, 1966.	65.9									270	21	8.0	10		258	244	23	462	7.4	
May 18, 1967..	100									296	19	7.0	6.5			270	27	475	8.0	

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967 (Methods of analysis: B, bottom with-drawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (° F)	Sam- pling point	Discharge (cfs)	Sediment concen- tration (ppm)	Sediment discharge (tons per day)	Suspended sediment						Method of analysis	
							Percent finer than size indicated, in millimeters							
							0.002	0.004	0.008	0.016	0.031	0.062		0.125
ST. CROIX RIVER BASIN														
5-3335. ST. CROIX RIVER NEAR DANBURY, WIS. (LAT 46°04'30", LONG 92°14'50")														
June 7, 1967.....	0905			1140	8	25								
June 7.....	1055			1200	12	39								
CHIPPEWA RIVER BASIN														
5-3565. CHIPPEWA RIVER NEAR BRUCE, WIS. (LAT 45°27'05", LONG 91°15'40")														
June 8, 1967.....	1800			2440	24	158								
5-3585. FLAMBEAU RIVER AT BABBS ISLAND, NEAR WINTER, WIS. (LAT 45°46'10", LONG 90°45'45")														
May 3, 1967.....	1745			1900	18	92								
5-3605. FLAMBEAU RIVER NEAR BRUCE, WIS. (LAT 45°20'22", LONG 91°12'35")														
June 8, 1967.....	1340			3110	6	50								
5-3620. JUMP RIVER AT SHELDON, WIS. (LAT 45°18'30", LONG 90°57'20")														
Oct. 5, 1965.....	1210			384	4	4								
June 8, 1967.....	0950			414	4	4								
5-3680. HAY RIVER AT WHEELER, WIS. (LAT 45°02'50", LONG 91°54'40")														
Oct. 4, 1966.....	0930			148	7	3								
Oct. 25.....	1330			176	8	4								
Mar. 28, 1967.....	1620			1450	216	846								
June 8.....	1020			230	14	9								
June 12.....	1100			720	48	93								
Aug. 7.....	1300			233	19	12								
Aug. 27.....	1000			260	23	16								
5-3695. CHIPPEWA RIVER AT DURAND, WIS. (LAT 44°37'45", LONG 91°58'10")														
Apr. 3, 1967.....	1318			104000	79	23300								
June 19.....	1800			31600	33	2820								
5-3700. EAU GALLE RIVER AT SPRING VALLEY, WIS. (LAT 44°51'00", LONG 92°14'15")														
Mar. 28, 1967.....	1355			425	1220	1400								
June 5.....	1540			15	52	2								
June 12.....	1145			130	128	45								
TREMPEALEAU RIVER BASIN														
5-3795. TREMPEALEAU RIVER AT DODGE, WIS. (LAT 44°07'55", LONG 91°33'10")														
Aug. 2, 1966.....	1930			200	86	46								
Aug. 7.....	1630			384	1160	1200								
Aug. 30.....	1030			208	152	85								

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Sam- pling point	Discharge (cfs)	Sediment concentra- tion (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	
TREMPEALEAU RIVER BASIN--Continued																	
5-3795. TREMPEALEAU RIVER AT DODGE, WIS. (LAT 44°07'55", LONG 91°33'10")--Continued																	
Mar. 27, 1967.....	1300			6470	74	1290											
Apr. 2.....	1430			2420	20	131											
Apr. 30.....	1708			488	465	613											
May 11.....	1000			448	141	171											
June 11.....	1330			394	222	236											
June 12.....	1140			416	156	175											
June 18.....	1730			650	164	288											
July 8.....	1700			282	168	128											
July 12.....	1900			275	501	372											

BAD AXE RIVER BASIN

5-3871. NORTH FORK BAD AXE RIVER NEAR GENOA, WIS. (LAT 43°33'10", LONG 91°08'58")

Oct. 27, 1966.....	1100			38	54	6											
May 1, 1967.....	1330			42	58	7											
May 26.....	1500			35	56	5											
June 15.....	1100			39	208	22											
July 17.....	1100			29	72	6											
Aug. 23.....	0900			28	42	3											
Sept. 12.....	0900			23	26	2											

WISCONSIN RIVER BASIN

5-3935. SPIRIT RIVER AT SPIRIT FALLS, WIS. (LAT 45°26'55", LONG 89°58'50")

July 14, 1966.....	1000			10	10	T											
Aug. 8.....	1100			103	13	4											
Aug. 25.....	1500			55	10	1											
Sept. 12.....	1600			9	14	T											
Oct. 13.....	1130			16	8	T											
Oct. 18.....	1400			16	18	1											
Mar. 29, 1967.....	1000			362	14	14											
Mar. 31.....	1600			2400	63	408											
Apr. 1.....	1600			1980	20	107											
Apr. 6.....	0900			924	13	32											
Apr. 13.....	0745			332	4	4											
Apr. 17.....	1500			384	10	10											
Apr. 24.....	1500			99	5	1											
May 10.....	1000			63	6	1											
May 26.....	1400			58	6	1											
June 7.....	1500			24	4	T											
June 21.....	1100			238	2	1											
June 27.....	1500			94	7	2											
July 13.....	1400			18	6	T											
Aug. 3.....	1600			16	7	T											
Aug. 18.....	0900			9	6	T											
Aug. 29.....	1000			56	7	1											
Sept. 15.....	1000			10	7	T											

T Less than 0.50 ton.

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Sam- pling point	Discharge (cfs)	Sediment concentra- tion (ppm)	Sediment discharge (tons per day)	Suspended sediment						Method of analysis
							Percent finer than size indicated, in millimeters						
							0.002	0.004	0.008	0.016	0.031	0.062	
WISCONSIN RIVER BASIN--Continued													
5-3945. PRAIRIE RIVER NEAR MERRILL, WIS. (LAT 45°14'10", LONG 89°38'50")													
Oct. 14, 1966.....	1500			94	6	2							
Oct. 16.....	1000			251	24	16							
Nov. 25.....	0900			102	6	2							
Mar. 17, 1967.....	1330			92	9	2							
Mar. 27.....	1330			109	5	1							
Mar. 31.....	1100			2200	22	131							
Apr. 1.....	1230			1550	20	84							
Apr. 6.....	1000			1160	4	13							
Apr. 11.....	1230			842	14	32							
Apr. 12.....	1430			730	6	12							
May 1.....	1400			164	4	2							
June 9.....	1330			164	11	5							
June 12.....	1100			235	6	4							
June 15.....	0930			186	32	16							
June 27.....	1330			144	16	6							
5-3975. EAU CLAIRE RIVER AT KELLY, WIS. (LAT 44°55'05", LONG 89°33'00")													
Mar. 31, 1967.....	1830			6630	68	1220							
Apr. 11.....	1745			1120	58	175							
5-3995. BIG EAU PLEINE RIVER NEAR STRATFORD, WIS. (LAT 44°49'15", LONG 90°04'35")													
Oct. 15, 1966.....	1210			351	47	45							
Oct. 15.....	1700			754	63	128							
Mar. 31, 1967.....	1015			9610	82	2130							
Mar. 31.....	1030			1030	84	2150							
Apr. 2.....	1220			7370	208	4140							
Apr. 6.....	1010			3000	109	883							
Apr. 9.....	1205			4000	204	2200							
May 1.....	1200			100	4	1							
May 11.....	1005			254	16	11							
May 11.....	1230			378	10	10							
June 8.....	0855			206	18	10							
June 15.....	0805			1560	218	918							
June 15.....	1210			1580	111	474							
June 16.....	0815			1120	32	97							
June 19.....	2100			247	23	15							
June 20.....	1630			1340	42	152							
June 28.....	0945			2830	41	313							
July 1.....	0800			2740	82	607							
July 3.....	0900			739	14	33							
5-4020. YELLOW RIVER AT BABCOCK, WIS. (LAT 44°18'05", LONG 90°07'15")													
Nov. 25, 1966.....	1435			109	4	1							
Mar. 28, 1967.....	1605			3050	22	181							
Apr. 18.....	0928			1780	50	240							

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Sam- pling point	Discharge (cfs)	Sediment concen- tration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	

WISCONSIN RIVER BASIN--Continued

5-4020. YELLOW RIVER AT BABCOCK, WIS. (LAT 44°18'05", LONG 90°07'15")--Continued

May 3, 1967.....	0821			241	31	20											
May 12.....	1555			364	39	38											
June 13.....	1622			756	16	33											
July 25.....	1430			22	7	T											
Sept. 1.....	0922			19	9	T											

5-4050. BARABOO RIVER NEAR BARABOO, WIS. (LAT 43°28'55", LONG 89°38'00")

Oct. 25, 1966.....	1400			135	10	4											
Nov. 4.....	1100			92	9	2											
Dec. 15.....	1500			160	27	12											
Mar. 29, 1967.....	1100			3110	212	1780											
Apr. 15.....	1700			222	47	28											
May 13.....	1630			386	49	51											
June 9.....	1430			1170	523	1650											
June 10.....	1100			1160	148	464											
June 30.....	1600			272	58	43											
July 25.....	1100			68	54	10											
Aug. 20.....	1440			160	33	14											
Sept. 16.....	1100			650	68	119											

5-4070. WISCONSIN RIVER AT MUSCODA, WIS. (LAT 43°12'00", LONG 90°26'25")

Oct. 19, 1965.....	1215			9470	33	844											
June 21, 1966.....	1840			8860	26	622											
Apr. 7, 1967.....	1340			54100	239	34900											

5-4105. KICKAPOO RIVER AT STEUBEN, WIS. (LAT 43°11'25", LONG 90°52'30")

Jan. 25, 1967.....	0900			1280	438	1510											
Mar. 13.....	0900			801	309	668											
Mar. 27.....	0900			3100	136	1140											
Mar. 29.....	--			2320	82	514											
June 13.....	0900			1230	443	1470											
June 19.....	1500			1500	397	1610											
July 24.....	--			280	123	93											
Aug. 13.....	0900			251	192	59											

GRANT RIVER BASIN

5-4135. GRANT RIVER AT BURTON, WIS. (LAT 42°43'10", LONG 90°49'10")

July 14, 1966.....	1630			1870	2540	12800											
Mar. 27, 1967.....	1545			293	384	304											

T Less than 0.50 ton.

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (°F)	Sam- pling point	Discharge (cfs)	Sediment concentra- tion (ppm)	Sediment discharge (tons per day)	Suspended sediment						Method of analysis	
							Percent finer than size indicated, in millimeters							
							0.002	0.004	0.008	0.016	0.031	0.062		0.125
ROCK RIVER BASIN														
5-4240. EAST BRANCH ROCK RIVER NEAR MAYVILLE, WIS. (LAT 43°31'45", LONG 88°34'00")														
Oct. 14, 1966	1045			15	33	1								
Nov. 3	1325			8.6	11	T								
Mar. 22, 1967	1045			88	22	5								
Mar. 27	1000			346	18	17								
Mar. 30	1500			425	16	18								
Apr. 20	1040			214	12	7								
May 11	1045			123	12	4								
June 9	1105			26	12	1								
June 12	1045			50	30	4								
June 29	1300			102	10	3								
July 27	1040			14	10	T								
Aug. 24	1300			8.5	28	1								
Sept. 14	1010			4.7	203	3								
5-4260. CRAWFISH RIVER AT MILFORD, WIS. (LAT 48°06'00", LONG 88°51'00")														
Oct. 10, 1966	1750			63	32	5								
Oct. 13	1820			42	34	4								
June 11, 1967	1920			520	290	407								
July 6	2020			344	124	115								
July 18	2000			114	103	32								
Aug. 29	1400			52	141	20								
Sept. 10	1100			43	142	16								
Sept. 13	1410			39	89	9								
Sept. 28	1500			42	55	6								
5-4325. PECATONICA RIVER AT DARLINGTON, WIS. (LAT 42°40'30", LONG 90°06'55")														
June 20, 1966	1345			89	107	26								
May 11, 1967	1600			438	712	842								
June 8	1130			90	102	25								
June 8	2330			85	103	24								
June 23	0900			115	118	37								
June 24	1800			156	206	87								
July 2	1630			107	130	38								
Aug. 23	0930			53	78	11								
Sept. 14	1100			181	117	57								
Sept. 20	0915			62	72	12								
Sept. 21	0900			61	78	13								
Sept. 28	1530			60	46	8								
5-4330. EAST BRANCH PECATONICA RIVER NEAR BLANCHARDVILLE, WIS. (LAT 42°47'10", LONG 89°51'40")														
Oct. 28, 1966	1330			68	10	2								
Nov. 29	1400			40	37	4								
Mar. 28, 1967	1400			196	64	34								
May 2	1530			82	79	20								
May 29	1300			120	57	18								

T Less than 0.50 ton.

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
 (Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
 P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water tem- per- ature (° F)	Sam- pling point	Discharge (cfs)	Sediment concentra- tion (ppm)	Sediment discharge (tons per day)	Suspended sediment								Method of analysis
							Percent finer than size indicated, in millimeters								
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	
ROCK RIVER BASIN--Continued															
5-4365. SUGAR RIVER NEAR BRODHEAD, WIS. (LAT 42°36'40", LONG 89°23'50")															
Oct. 28, 1966.....	1150			167	24	11									
Nov. 30.....	1030			170	38	17									
Mar. 29, 1967.....	1430			752	47	95									
Apr. 26.....	1600			274	60	44									
June 14.....	1030			1060	123	352									
July 18.....	1200			200	289	156									
Aug. 9.....	1400			230	60	37									

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