

1966

Water Resources Data for Wisconsin

Part 1. Surface Water Records

Part 2. Water Quality Records



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

1966

Part 1: Surface Water Records

Prepared in cooperation with

Wisconsin Department of Resource Development
Wisconsin Public Service Commission
Wisconsin State Conservation Department
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
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U. S. Geological Survey
1815 University Avenue
Madison, Wisconsin, 53706

1967

CALENDAR FOR WATER YEAR 1966

OCTOBER 1965

S	M	T	W	T	F	S
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31						

NOVEMBER 1965

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DECEMBER 1965

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JANUARY 1966

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FEBRUARY 1966

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MARCH 1966

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APRIL 1966

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MAY 1966

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JUNE 1966

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JULY 1966

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AUGUST 1966

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SEPTEMBER 1966

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WATER RESOURCES DATA FOR WISCONSIN, 1966

Part 1: Surface Water Records

INTRODUCTION

The surface-water records for the 1966 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:

Public Service Commission of Wisconsin, Arthur L. Padrutt, chairman, and R. E. Purucker, chief engineer.

Wisconsin State Conservation Department, L. P. Voigt, director.

Wisconsin Department of Resource Development, Freeman Holmer, director.

Wisconsin State Highway Commission, Wesley J. Burmeister, State highway engineer, and H. B. Schultz, engineer of bridges.

Southeastern Wisconsin Regional Planning Commission, Kurt W. Bauer, executive 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 indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention 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 table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily 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 "Cfsr"), 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.

HYDROLOGIC CONDITIONS

Streamflow in Wisconsin for the water year ending Sept. 30, 1966, was near the long-term average in the area north of a line extending southwest and southeast of Wausau. Smaller areas of near long-term average flow also occurred in the central and southwestern part of the State (see figure 1). A rather large area of above long-term average flow occurred across the central portion of the State and the southeast. This area included two small basins which exceeded 145% of the average. Southeast Wisconsin experienced yearly flows ranging from 140 to 183% of long-term averages. The only area of below average discharge occurred in the southwest corner of the State.

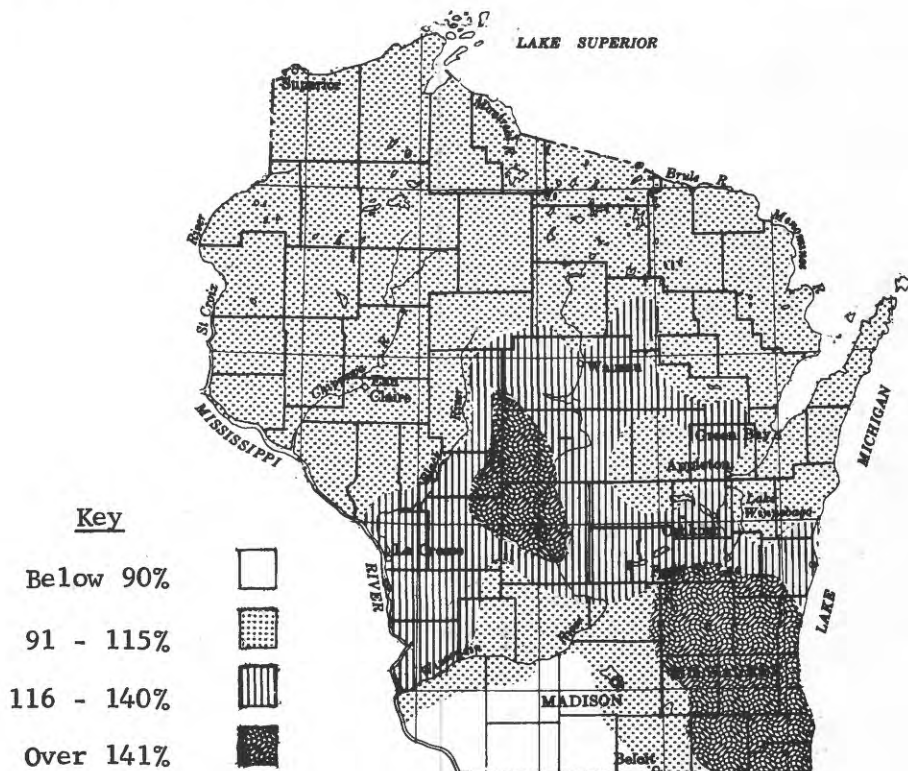


Figure 1. Variation of 1966 mean discharge as a percent of long-term average flow.

Monthly flow over most of the State was near normal or above. Two index stations in the northern area indicated that for ten months of the year the monthly flow was above normal. At the index station in the south in the area of low runoff only five months had above normal flow. Figure 1 is a map of the State showing the variation of 1966 mean annual streamflow as a percent of long-term average flow.

Figure 2 is a comparison of discharge at three long-term representative stations during 1966 water year with median discharge for the period 1931-60.

Streamflow for most of the State was excessive or above median for the first six months of the year. Warm temperatures and melting snow in December resulted in near record runoff for that month on many rivers. January runoff continued excessive or above normal. Record high flows during February, caused by rain and temperatures above the mid 40's about February 8-11, occurred on streams in the west-central area and the southern one-third of the State. Especially high stages were recorded on the Kickapoo, Baraboo, La Crosse, Trempealeau, and Yellow Rivers. A peak flow for 27 years of record was registered on the Kickapoo River at LaFarge on February 9. The discharge at the peak was 9,910 cfs with a stage of 13.67 ft. Peak flow of record was also recorded at Gays Mills on February 10 with a discharge of 10,600 cfs. A record high gage height of 12.82 ft occurred at Steuben but due to ice conditions the discharge was less than that of the 1961 flood. Many other streams in the southern half of Wisconsin registered their peak flow for the year during this period of high runoff.

High flows on the Grant and Platte Rivers in southwest Wisconsin in mid-July were the result of locally heavy rains (unofficially, 5 inches in 36 hours at one site). Other scattered thunderstorms with heavy rainfall caused some peak flows at stations having short periods of record.

Extreme southwestern Wisconsin registered below long-term average flow for the year. Only February and March flows in this area showed appreciable differences from the average and they were offsetting. The remaining ten months were slightly above or below the average.

Figures 3 and 4 indicate for selected lakes the extremes of stage for water year 1966 compared with those of each water year since 1937. No new maximum or minimum stage occurred on these lakes during 1966 water year.

HYDROLOGIC CONDITIONS

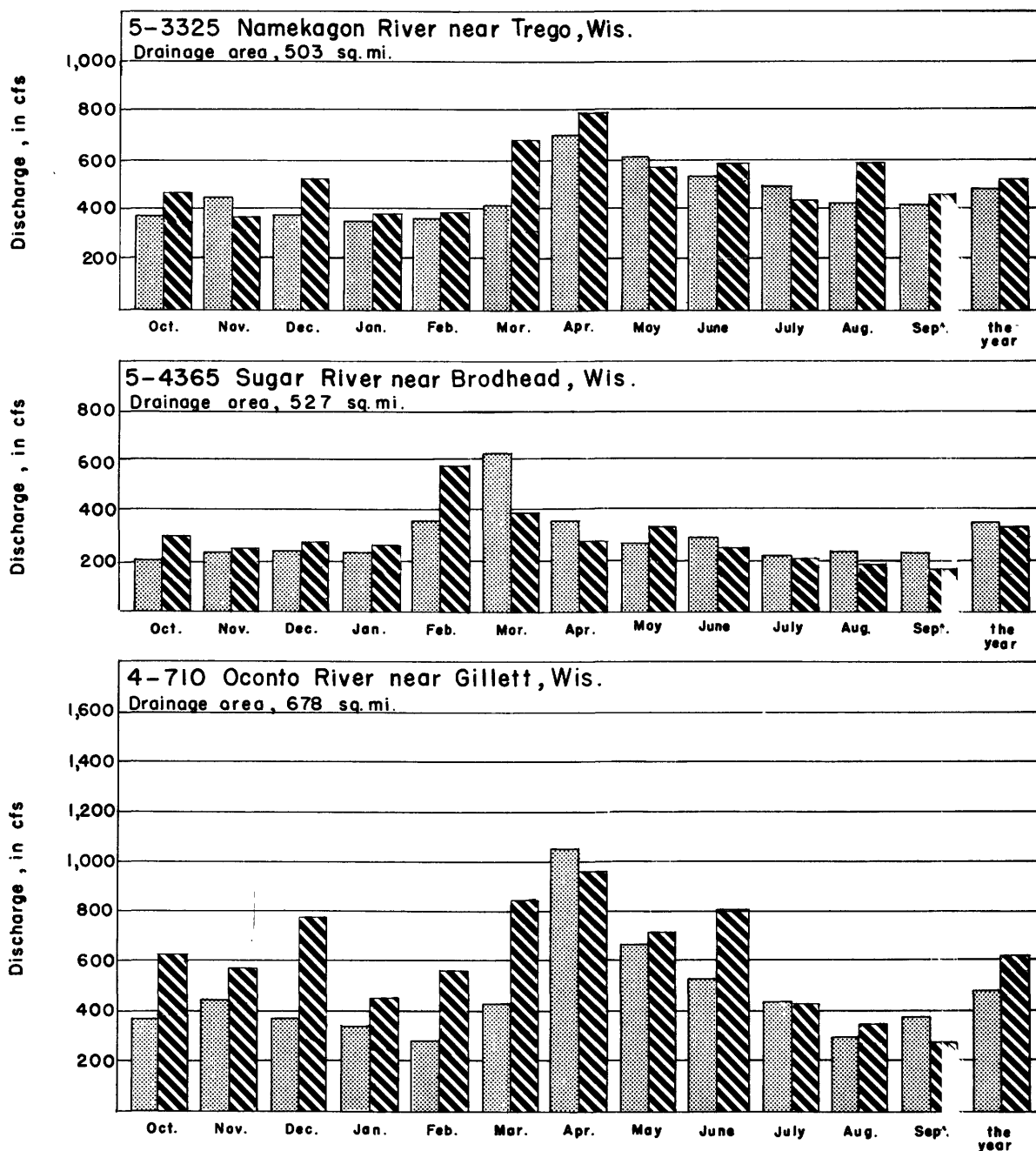


Figure 2. Comparison of discharge at three long-term representative gaging stations during 1966 water year with median discharge for period 1931-60.

-  Median of monthly and yearly mean discharge for period 1931-60.
 Monthly and yearly mean discharge for 1966 water year.

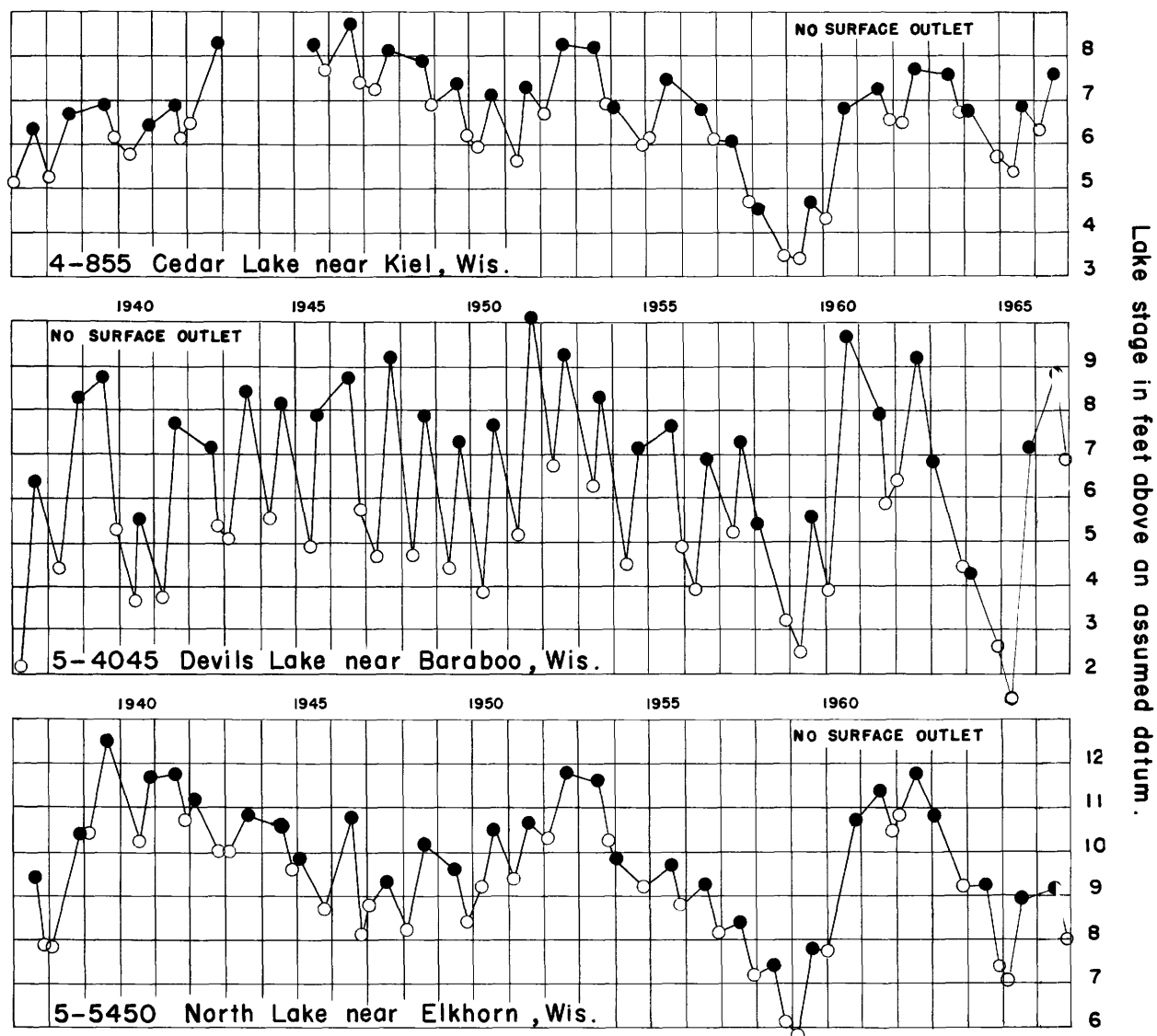


Figure 3. A comparison of extremes of stage of three southern lakes for each water year since 1937.

- Maximum stage observed
- Minimum stage observed

Connecting lines do not indicate actual stage between extremes.

HYDROLOGIC CONDITIONS

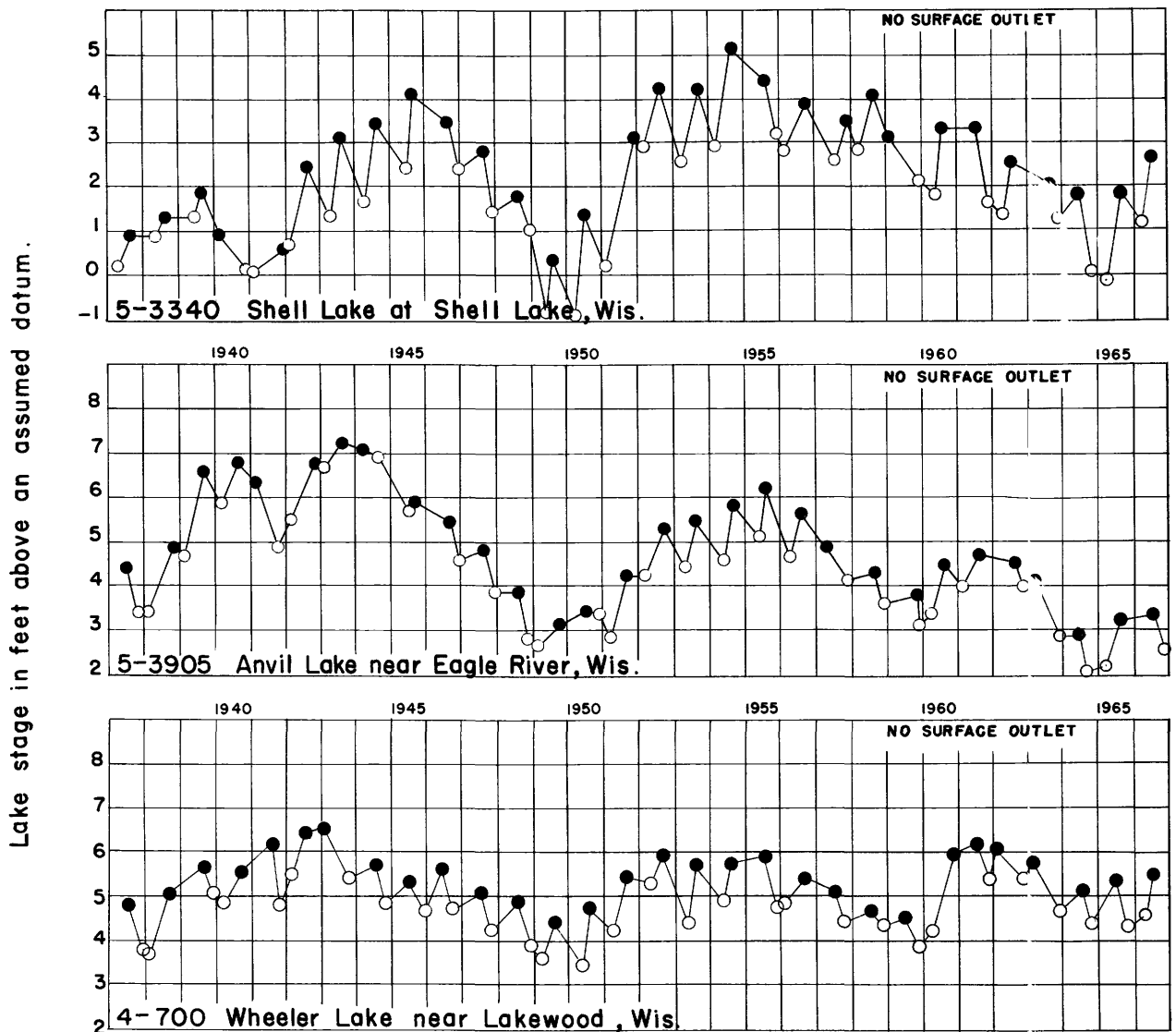


Figure 4. A comparison of extremes of stage of three northern lakes for each water year since 1937.

● 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 1966. Prior to January 1943 monthly discharge only, published in WSP 1307.

Gage--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.

Average discharge--24 years, 169 cfs.

Extremes--Maximum discharge during year, 549 cfs Mar. 17 (gage height, 3.35 ft); minimum, 117 cfs July 1-3 (gage height, 1.44 ft).
1942-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	249	145	160	170	130	137	335	253	145	118	143	145
2	236	148	158	180	130	134	338	244	143	117	150	160
3	222	142	158	185	150	137	343	236	142	119	143	153
4	212	139	158	190	130	140	326	226	154	125	135	150
5	200	139	156	185	135	140	312	218	180	146	130	146
6	190	137	153	180	140	140	300	214	184	138	167	143
7	186	135	153	180	150	145	285	210	176	131	174	140
8	240	139	153	175	170	146	276	204	163	122	169	138
9	253	137	150	175	200	146	276	196	151	165	161	136
10	249	136	150	175	205	150	278	190	146	165	153	132
11	238	134	155	175	190	154	287	184	145	165	146	132
12	222	140	165	170	178	160	296	182	143	156	140	132
13	208	143	190	170	165	161	310	180	140	145	154	136
14	206	145	200	170	175	174	310	182	137	132	192	140
15	204	146	201	170	190	202	307	186	136	126	188	138
16	194	150	200	165	205	249	305	186	134	124	180	134
17	194	150	200	165	220	367	300	194	132	122	169	132
18	196	150	190	160	230	473	303	212	131	153	154	130
19	192	151	200	160	240	340	314	212	130	167	146	128
20	194	153	200	153	250	320	331	210	126	160	146	126
21	186	150	180	150	260	310	314	204	125	150	192	128
22	178	150	175	150	260	295	298	192	124	140	198	126
23	172	148	170	145	240	280	294	186	122	131	200	126
24	169	150	170	140	225	275	285	184	124	128	190	125
25	163	150	165	135	205	265	273	174	134	131	178	125
26	160	158	165	130	180	260	270	170	134	143	167	124
27	158	160	170	130	165	250	268	165	130	137	154	124
28	153	162	170	130	150	247	270	158	126	132	146	126
29	151	162	165	130	-----	242	263	154	122	128	143	136
30	150	161	165	125	-----	253	263	150	119	124	140	136
31	148	-----	165	125	-----	276	-----	148	-----	122	140	-----
Total	6,073	4,410	5,310	4,943	5,248	6,968	8,930	6,004	4,198	4,262	4,988	4,047
Mean	196	147	171	159	187	225	298	194	140	137	161	135
Cfsm	1.73	1.30	1.51	1.41	1.65	1.99	2.64	1.72	1.24	1.21	1.42	1.19
In.	2.00	1.45	1.75	1.63	1.73	2.29	2.94	1.98	1.38	1.40	1.64	1.33

Calendar year 1965: Max 664 Min 118 Mean 177 Cfsm 1.56 In. 21.21
 Water year 1965-66: Max 473 Min 117 Mean 179 Cfsm 1.58 In. 21.52

STREAMS TRIBUTARY TO LAKE SUPERIOR

17

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 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 1966 (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, 2.24 ft Mar. 31; minimum observed, 1.64 ft Nov. 10.
1964-66: Maximum gage height observed, that of Mar. 31, 1966; minimum observed, 1.57 ft Aug. 25, 1965.

Remarks--Lake has no surface outlet. Lake ice covered Nov. 20 to Apr. 22.

Elevation, in feet, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1												
2	1.67									2.19		
3						1.90						1.83
4									2.20			
5												
6		1.74						2.22			1.96	
7								2.21				
8												
9	1.69									2.07		
10		1.64										1.81
11									2.20			
12												
13		1.74								1.81	1.90	
14								2.21				
15			2.00									
16	1.71									2.03		
17												1.79
18									2.20			
19		1.76									1.82	
20											1.92	
21				1.97				2.21				
22												
23	1.71									1.97		
24												1.73
25									2.20			
26												
27											1.92	
28								2.21				
29												1.75
30	1.73									1.97		1.75
31		-----			-----	2.24	-----		-----			-----

STREAMS TRIBUTARY TO LAKE SUPERIOR

4-0263. Sioux River near Washburn, Wis.

Location.--Lat 46°41'20", long 90°57'02", in NE 1/4 sec. 35, T. 49 N., R. 5 W., on right bank 75 ft upstream from culvert on County Trunk C, 2 1/2 miles west of junction with State Highway 13 in Washburn, 4 1/2 miles upstream from Lake Superior, and 7 1/2 miles northwest of Ashland.

Drainage area.--17.5 sq mi.

Records available.--Annual maximum, water years 1959-65, and occasional low-flow measurements, water years 1962-64. October 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Datum lowered 0.66 ft Apr. 13, 1966. Sept. 28, 1958, to Oct. 28, 1964, crest-stage gage only.

Extremes.--Maximum discharge during water year, 525 cfs Mar. 17 (gage height, 12.47 ft, by crest gage); minimum recorded discharge, 6.0 cfs July 23, 24 (gage height, 8.29 ft).
1959-66: Maximum discharge, 1,630 cfs May 23, 1964 (gage height, 17.5 ft). 1964-66: Minimum recorded discharge, that of July 23, 24, 1966.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	8.9						33	8.6	7.1	14	9.3
2	17	8.9						25	8.6	7.4	10	13
3	12	8.9						22	37	7.7	8.0	9.3
4	11	8.5						19	53	8.7	7.1	8.6
5	9.7	8.9						18	60	14	7.4	8.3
6	9.3	8.9						17	44	8.9	10	7.7
7	8.9	8.9						16	28	8.0	22	7.7
8	9.7	8.9						14	18	8.9	25	7.7
9	11	8.9						13	11	9.3	18	7.7
10	10	8.9						13	9.9	9.6	13	7.7
11	8.9	8.9						14	9.6	8.3	9.0	8.3
12	8.9							13	9.3	8.9	9.0	7.7
13	8.5						94	13	8.3	8.6	11	9.3
14	9.3						86	14	8.0	8.6	15	15
15	9.3						73	19	8.0	9.6	10	9.3
16	8.5						70	22	8.0	9.9	9.3	8.3
17	8.9						60	26	7.7	9.3	8.7	8.0
18	8.9						60	26	7.7	8.0	8.3	7.7
19	9.3						75	20	7.4	7.1	7.7	8.0
20	10						65	17	7.4	7.4	8.0	8.3
21	10						42	14	6.8	7.4	19	8.3
22	9.7						35	12	7.1	6.6	21	8.3
23	9.3						38	12	7.1	6.0	27	8.0
24	9.3						34	11	8.0	6.0	16	8.0
25	9.3						27	9.9	8.6	6.8	12	8.0
26	9.3						24	9.9	8.0	9.9	8.9	8.0
27	8.9						25	9.3	7.4	9.6	8.0	8.3
28	8.5						37	8.9	7.4	8.0	8.0	8.0
29	8.5						49	8.9	7.1	7.4	7.7	9.3
30	8.9						48	8.6	7.1	7.4	7.4	13
31	9.3							8.6		7.7	7.7	
Total	321.1							487.1	434.1	258.1	366.2	264.1
Mean	10.4							15.7	14.5	8.30	11.8	8.80
Cfsm	.594							.897	.828	.474	.674	.503
In.	.68							1.04	.92	.55	.78	.56

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 1966. 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--26 years (1914-22, 1948-66), 603 cfs.

Extremes--Maximum discharge during year, 7,110 cfs Mar. 18 (gage height, 10.65 ft); maximum gage height, 11.59 ft Mar. 17 (backwater from ice); minimum discharge, 79 cfs July 25 (gage height, 2.18 ft).

1914-22, 1948-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,110	227	500	850	178	185	2,040	1,560	239	97	132	197
2	1,050	230	485	740	178	190	2,290	1,400	224	92	230	268
3	842	221	460	640	178	290	1,840	1,240	215	119	206	348
4	670	215	440	680	178	560	1,640	1,050	336	344	166	292
5	550	203	400	610	178	970	1,350	950	424	470	138	246
6	480	203	350	535	179	840	1,190	884	2,190	470	180	221
7	437	200	340	500	180	800	1,060	814	1,800	321	781	209
8	726	215	350	510	185	790	980	775	1,130	236	1,380	197
9	1,250	255	355	530	450	780	1,050	682	758	605	1,160	186
10	1,210	279	340	470	1,420	800	1,150	615	530	191	998	174
11	1,020	268	335	420	1,200	900	1,250	560	415	177	758	163
12	830	272	680	380	900	1,500	1,400	535	372	160	570	154
13	692	393	2,180	350	720	1,800	1,620	510	344	146	433	152
14	595	340	1,600	325	560	2,200	1,860	540	306	135	475	218
15	525	380	1,200	305	500	2,500	2,130	630	272	127	555	239
16	475	365	1,050	290	430	3,000	2,370	676	243	119	555	227
17	437	350	900	280	360	4,000	2,520	670	227	119	393	194
18	406	360	700	270	310	6,800	2,660	980	206	103	314	174
19	385	370	600	260	250	5,120	3,570	950	188	100	252	160
20	364	370	540	255	210	3,320	4,440	797	183	92	230	149
21	352	360	500	255	190	2,870	3,900	687	171	89	447	146
22	329	350	460	250	185	2,380	2,960	590	154	87	1,080	141
23	310	330	440	235	182	1,820	2,580	525	143	87	1,240	135
24	282	295	420	220	182	1,470	2,480	490	132	84	1,100	132
25	272	350	390	210	182	1,350	2,300	442	132	87	824	130
26	262	360	365	200	182	1,325	2,060	402	141	138	600	127
27	252	410	360	190	182	1,275	1,900	360	130	149	442	124
28	239	450	360	185	182	1,200	1,890	321	119	143	340	127
29	230	520	370	180	---	1,140	1,760	292	114	124	279	149
30	224	510	410	180	---	1,225	1,640	268	103	108	233	230
31	224	---	540	180	---	1,200	---	255	---	95	215	---
Total	17,030	9,651	18,420	11,485	10,211	54,600	61,880	21,450	11,941	5,414	16,706	5,609
Mean	549	322	594	370	365	1,761	2,063	692	398	175	539	187
Cfsm	.899	.527	.972	.606	.597	2.88	3.38	1.13	.651	.286	.882	.306
In.	1.04	.59	1.12	.70	.62	3.32	3.77	1.31	.73	.33	1.02	.34

Calendar year 1965: Max 6,100 Min 97 Mean 661 Cfsm 1.08 In. 14.70

Water year 1965-66: Max 6,800 Min 84 Mean 670 Cfsm 1.10 In. 14.89

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-18	1300	10.65	7,110	4-20	1800	8.60	4,600

STREAMS TRIBUTARY TO LAKE SUPERIOR

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 1966.

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.--18 years, 292 cfs.

Extremes.--Maximum discharge during year, 2,160 cfs Mar. 17 (gage height, 4.00 ft); minimum observed, 109 cfs Nov. 27, 28 (gage height, 0.82 ft).

1948-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	425	175	240	388	145	174	933	366	237	146	193	212
2	374	181	270	250	135	196	1,110	361	264	157	213	328
3	293	175	260	190	135	218	1,040	330	232	178	208	245
4	242	175	245	200	135	320	913	308	242	178	191	234
5	220	164	230	225	135	370	726	263	288	224	191	201
6	204	181	190	230	140	380	608	218	317	230	191	196
7	193	175	164	150	145	360	488	232	379	192	218	196
8	199	181	200	130	230	340	492	237	370	149	252	190
9	214	186	230	140	270	340	480	223	273	179	257	178
10	208	186	236	160	661	355	470	217	212	179	230	178
11	218	192	242	170	482	390	458	212	195	222	217	178
12	202	198	652	165	300	500	468	212	214	184	200	184
13	202	215	823	160	250	689	463	222	191	168	200	184
14	202	192	574	160	200	898	472	207	187	174	211	184
15	186	203	450	160	170	630	468	213	182	168	211	190
16	202	220	350	160	175	898	468	243	174	152	239	178
17	202	215	315	155	160	1,490	463	249	174	163	217	178
18	186	181	280	155	140	1,080	458	244	182	168	189	178
19	186	203	270	150	130	726	585	299	151	152	183	178
20	186	220	265	145	125	620	635	278	193	152	183	178
21	189	210	265	145	125	550	591	279	160	155	250	178
22	189	205	270	140	130	450	517	268	165	155	239	200
23	189	200	260	140	135	250	472	253	160	155	217	189
24	183	200	200	135	150	170	416	247	163	155	284	178
25	172	200	160	135	155	240	384	251	178	166	280	166
26	178	160	140	130	155	245	374	241	177	188	224	166
27	178	135	135	130	155	250	370	206	167	192	201	166
28	172	128	125	130	165	270	370	204	170	177	201	166
29	172	190	150	125	-----	290	374	191	154	166	191	177
30	178	215	250	125	-----	310	370	217	160	166	190	182
31	178	-----	374	140	-----	334	-----	224	-----	155	178	-----
Total	6,522	5,661	8,815	5,118	5,433	14,333	16,436	7,715	6,311	5,345	6,849	5,736
Mean	210	189	284	165	194	462	548	249	210	172	221	191
Cfsm	.781	.703	1.06	.613	.721	1.72	2.04	.926	.781	.639	.822	.710
In.	.90	.78	1.22	.71	.75	1.98	2.27	1.07	.87	.74	.95	.79

Calendar year 1965: Max 1,640 Min 120 Mean 279 Cfsm 1.04 In. 14.07
 Water year 1965-66: Max 1,490 Min 125 Mean 258 Cfsm .959 In. 13.03

STREAMS TRIBUTARY TO LAKE SUPERIOR

21

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 1966.

Gage.--Water-stage recorder. Altitude of gage 760 ft (from power company data).

Average discharge.--28 years, 324 cfs.

Extremes.--Maximum discharge during year, 2,420 cfs Apr. 21 (gage height, 4.69 ft); minimum, 9.8 cfs Aug. 2 (gage height, 1.13 ft).
1938-66: 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 power-plant 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	414	204	215	265	200	205	539	750	218	204	248	222
2	362	204	215	260	200	215	551	588	218	197	110	178
3	280	194	210	260	200	230	481	481	229	226	174	159
4	226	201	204	255	200	310	431	398	600	188	204	194
5	191	204	197	250	205	351	362	348	404	188	201	188
6	208	204	195	250	210	260	334	302	1,020	233	211	194
7	204	204	190	245	210	230	315	284	930	201	244	188
8	248	222	190	240	205	270	306	260	545	188	229	184
9	453	252	185	235	210	235	324	298	348	208	393	178
10	481	204	188	230	215	290	388	329	244	204	338	174
11	372	194	208	230	220	1,180	470	329	218	204	252	171
12	302	201	250	225	220	1,100	563	306	211	204	201	171
13	260	289	400	225	220	900	693	215	191	194	208	184
14	222	276	430	220	215	600	811	218	201	204	194	240
15	201	244	430	215	210	590	975	248	204	204	194	168
16	215	215	420	215	210	610	1,160	260	215	204	208	159
17	197	210	425	215	195	700	1,320	256	186	204	201	184
18	191	210	410	215	170	2,000	1,370	311	194	201	188	181
19	211	210	400	215	160	1,400	1,720	311	201	201	188	174
20	204	210	370	220	170	1,150	2,120	298	204	208	197	174
21	197	218	340	220	190	950	2,290	284	197	208	256	171
22	201	222	330	218	195	700	1,970	268	194	208	280	168
23	208	222	330	205	195	350	1,800	252	194	208	398	162
24	204	218	330	190	190	320	1,740	236	211	204	324	162
25	201	229	330	195	190	325	1,590	229	222	226	233	159
26	194	218	315	200	195	330	1,240	218	194	268	181	159
27	197	220	305	200	200	345	1,150	229	194	197	188	156
28	197	220	300	200	205	355	1,050	222	197	194	171	156
29	201	210	295	200	-----	365	912	222	201	211	181	184
30	201	210	290	200	-----	385	844	218	215	208	174	191
31	204	-----	285	200	-----	442	-----	208	-----	204	188	-----
Total	7,647	6,539	9,182	6,913	5,605	17,693	29,819	9,376	8,800	6,401	6,657	5,333
Mean	247	218	296	223	200	571	994	302	293	206	224	178
Cfsm	.943	.832	1.13	.851	.763	2.18	3.79	1.15	1.12	.786	.855	.679
In.	1.09	.93	1.30	.98	.80	2.51	4.23	1.33	1.25	.91	.99	.76

Calendar year 1965 : Max 2,540 Min 68 Mean 350 Cfsm 1.34 In. 18.13
 Water year 1965-66 : Max 2,290 Min 110 Mean 329 Cfsm 1.26 In. 17.08

STREAMS TRIBUTARY TO LAKE SUPERIOR

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 1966.

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--12 years, 222 cfs.

Extremes--Maximum discharge during year, 3,670 cfs Mar. 18 (gage height, 8.43 ft); minimum, 13 cfs July 20 (gage height, 0.52 ft).
1954-66: 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 fair. Some ground water pumped from mines at Bessemer.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	326	65	200	115	42	58	394	550	55	18	42	32
2	282	64	190	120	41	60	356	488	51	17	38	36
3	215	63	180	125	41	64	310	434	52	33	28	44
4	181	56	165	125	41	68	278	382	155	33	23	40
5	160	56	155	125	41	76	255	364	119	82	23	36
6	149	53	150	125	41	86	245	356	635	57	47	34
7	134	50	140	120	41	96	229	332	656	41	128	32
8	210	98	130	115	42	110	215	294	470	32	126	30
9	456	122	125	110	44	130	216	255	350	33	201	27
10	397	105	120	105	46	150	231	223	265	28	154	25
11	310	96	120	100	50	190	263	199	207	28	112	23
12	283	137	115	95	54	240	334	179	188	28	87	22
13	258	260	120	90	58	300	440	171	151	23	75	25
14	228	230	120	85	60	400	577	180	121	22	105	50
15	217	260	125	82	62	600	792	189	102	19	92	41
16	190	210	130	80	62	887	1060	198	83	18	79	36
17	173	190	130	75	60	1,600	1,350	186	71	18	65	30
18	164	160	130	72	58	3,130	1,490	186	60	17	52	26
19	149	190	125	68	56	2,300	1,850	174	57	17	40	24
20	135	180	125	65	52	1,690	2,360	173	51	15	37	22
21	117	165	120	62	51	1,500	1,930	159	44	15	110	22
22	103	156	115	58	51	1,220	1,640	145	40	15	185	21
23	92	152	110	56	51	850	1,770	136	36	16	234	21
24	82	144	105	54	52	630	1,770	127	33	15	188	18
25	82	142	105	52	52	606	1,550	114	29	22	138	18
26	73	140	100	50	53	540	1,220	102	27	35	102	18
27	69	140	100	48	54	684	948	90	23	23	77	17
28	64	175	105	46	56	914	814	80	21	20	60	17
29	63	220	105	44	-----	376	655	72	20	19	49	33
30	60	210	110	43	-----	332	626	66	19	17	39	42
31	62	-----	115	42	-----	341	-----	60	-----	18	35	-----
Total	5,484	4,289	3,985	2,552	1,412	20,228	26,168	6,664	4,191	794	2,771	862
Mean	177	143	129	82.3	50.4	653	872	215	140	25.6	89.4	28.7
Cfsm	.885	.715	.645	.412	.252	3.27	4.36	1.08	.700	.128	.447	.144
In.	1.02	.80	.74	.47	.26	3.76	4.87	1.24	.78	.15	.52	.16

Calendar year 1965: Max 3,490 Min 14 Mean 252 Cfsm 1.26 In. 17.10
Water year 1965-66: Max 3,130 Min 15 Mean 218 Cfsm 1.09 In. 14.76

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-18	2100	8.43	3,670	4-20	0800	6.81	2,480
3-28	1300	5.07	1,520				

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 1966.

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.--21 years, 171 cfs.

Extremes.--Maximum daily discharge during year, 1,000 cfs Mar. 19; maximum gage height, about 8.6 ft Mar. 24 (backwater from ice); minimum discharge, 28 cfs July 30, 31 (gage height, 3.07 ft).

1945-66: 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 the winter period, 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	143	59	160	150	72	86	360	445	113	63	37	69
2	137	57	145	155	72	90	335	421	108	59	46	108
3	113	57	140	160	74	92	319	385	104	69	44	108
4	105	52	130	160	74	94	285	351	113	75	41	109
5	96	57	130	155	74	96	259	325	140	89	42	94
6	86	51	125	150	74	98	252	315	410	83	52	84
7	80	50	125	145	74	100	244	305	595	74	77	75
8	83	64	130	145	74	100	230	274	550	67	101	68
9	109	76	135	140	74	105	230	254	419	68	89	61
10	120	73	135	135	80	110	226	235	341	63	86	51
11	116	70	140	130	90	130	232	216	271	64	77	50
12	109	84	143	125	100	160	249	199	252	63	70	48
13	100	137	150	120	105	180	273	196	232	61	63	47
14	95	129	155	120	105	190	309	191	199	57	83	69
15	93	123	155	115	105	200	363	196	175	53	87	69
16	89	125	155	115	100	210	419	202	160	52	81	62
17	88	123	155	110	96	300	500	208	149	50	74	57
18	89	120	150	105	92	600	589	235	144	46	62	50
19	86	114	150	105	90	1,000	724	242	140	39	57	40
20	87	112	150	100	86	900	890	226	127	38	54	42
21	77	112	145	96	84	800	945	212	125	35	92	40
22	80	108	145	94	82	724	850	200	118	34	170	38
23	69	106	140	90	82	680	772	186	112	33	186	34
24	70	104	140	86	80	640	736	183	100	31	175	32
25	70	104	140	84	80	700	688	170	98	31	155	32
26	66	110	135	82	80	800	637	158	89	33	130	31
27	63	120	135	80	82	700	548	140	82	33	106	31
28	60	140	135	80	84	600	532	139	77	32	93	40
29	65	160	135	76	-----	550	485	137	69	32	81	55
30	56	170	140	74	-----	470	462	130	67	30	67	65
31	60	-----	145	72	-----	420	-----	122	-----	29	61	-----
Total	2,760	2,967	4,393	3,554	2,365	11,925	13,943	7,198	5,679	1,586	2,639	1,759
Mean	89.0	98.9	142	115	84.5	385	465	232	189	51.2	85.1	58.6
Cfsm	.520	.578	.830	.673	.494	2.25	2.72	1.36	1.11	.299	.498	.343
In.	.60	.64	.96	.78	.51	2.59	3.04	1.57	1.24	.34	.57	.38

Calendar year 1965: Max 1,590 Min 26 Mean 182 Cfsm 1.06 In. 14.46
 Water year 1965-66: Max 1,000 Min 29 Mean 166 Cfsm .971 In. 13.22

STREAMS TRIBUTARY TO LAKE SUPERIOR

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 1966.

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

Average discharge.--22 years, 45.2 cfs.

Extremes.--Maximum discharge during year, 188 cfs Mar. 25 (gage height, 1.70 ft); minimum daily, 0.60 cfs May 24 to June 2.
1944-66: 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 good 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	108	98	49	27	29	94	77	0.6	3.6	0.9	3.6
2	45	104	94	49	22	28	94	80	.6	3.6	.9	4.6
3	36	91	83	54	22	28	91	70	1.1	3.6	.9	16
4	23	88	64	51	22	34	91	64	2.2	3.6	.9	42
5	23	82	56	51	22	33	91	46	11	4.1	1.1	42
6	32	69	49	51	22	33	89	2.2	23	4.1	1.1	42
7	61	56	49	51	22	33	85	2.2	33	3.6	1.3	40
8	77	47	47	51	22	33	80	2.2	66	3.6	28	40
9	89	29	47	49	24	33	74	1.9	98	4.1	49	32
10	101	29	47	47	29	41	55	1.6	98	4.1	49	17
11	98	31	47	47	29	57	49	1.3	98	4.1	47	12
12	91	33	47	47	29	64	49	1.3	98	4.1	47	2.9
13	85	38	49	47	29	64	49	1.3	94	4.1	45	2.6
14	91	36	54	47	29	64	45	1.1	91	4.1	56	2.9
15	104	3.9	54	45	29	64	40	1.1	73	4.1	67	2.9
16	104	3.9	51	38	29	64	43	1.1	28	4.1	74	2.6
17	101	3.9	51	31	29	54	58	1.1	3.6	4.1	74	2.6
18	94	12	51	31	29	68	82	1.1	3.6	4.1	61	2.9
19	91	37	51	31	29	109	78	1.1	3.6	4.1	36	2.9
20	88	65	51	31	29	146	85	1.1	3.6	1.9	36	2.9
21	88	80	51	31	29	146	80	1.1	4.1	.7	66	6.7
22	85	84	49	31	29	146	85	1.1	4.1	.7	134	16
23	90	88	51	31	29	158	83	.8	4.1	.7	142	16
24	88	82	51	31	29	164	80	.6	4.1	.7	138	16
25	85	85	51	31	29	188	85	.6	4.1	.8	130	16
26	85	97	51	31	29	164	79	.6	3.6	1.0	126	16
27	82	108	49	31	29	151	81	.6	3.6	1.0	115	16
28	88	104	49	31	29	138	71	.6	3.6	.9	98	16
29	101	104	49	31	-----	126	64	.6	3.6	.9	66	15
30	98	104	47	31	-----	118	68	.6	3.6	.9	4.1	15
31	94	-----	49	31	-----	102	-----	.6	-----	.8	3.6	-----
Total	2,463	1,902.7	1,687	1,239	756	2,680	2,198	366.5	868.4	85.9	1,698.8	465.1
Mean	79.5	63.4	54.4	39.9	27.0	86.4	70.9	11.8	28.9	2.77	54.8	15.5

Calendar year 1965: Max 263 Min .70 Mean 48.7 Cfsm .961 In. 13.04
Water year 1965-66: Max 188 Min .60 Mean 45.0 Cfsm .888 In. 12.05

STREAMS TRIBUTARY TO LAKE MICHIGAN

25

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 Michigamme River.

Drainage area.--389 sq mi.

Records available.--January 1914 to February 1916, June 1944 to September 1966.

Gage.--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 same datum.

Average discharge.--23 years (1914-15, 1944-66), 343 cfs.

Extremes.--Maximum discharge during year, 1,070 cfs Apr. 21 (gage height, 3.44 ft); maximum gage height, 6.94 ft Nov. 27 (ice jam); minimum daily discharge, 188 cfs July 21.

1914-16, 1944-66: 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, 1954.

Remarks.--Records good except those for the winter periods, which are fair. Flow not adjusted for ground water pumped from mines into Iron River above station at Caspian, Mich.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	387	241	370	330	235	235	468	598	267	219	207	295
2	344	237	360	350	230	240	456	539	263	219	237	339
3	299	233	350	360	230	240	424	512	267	223	223	335
4	279	230	330	370	230	250	408	473	330	271	213	326
5	267	230	310	370	225	250	398	435	568	267	335	308
6	267	230	290	370	220	260	382	419	630	255	462	299
7	275	230	275	360	225	260	373	403	604	237	550	283
8	317	255	275	350	235	270	373	387	500	223	871	275
9	330	271	280	330	255	280	368	368	424	219	717	271
10	317	263	290	320	280	310	387	353	382	223	556	267
11	295	259	300	310	310	400	398	339	353	223	451	263
12	283	295	320	300	325	450	419	330	392	255	377	263
13	271	506	360	290	315	470	451	326	398	233	335	263
14	271	478	380	280	300	480	500	326	353	219	414	330
15	287	392	375	280	285	500	550	339	335	210	586	326
16	287	392	370	270	275	530	623	349	313	207	534	317
17	295	373	360	270	265	560	703	344	291	200	466	291
18	287	340	350	260	255	620	808	377	287	200	387	283
19	283	320	330	260	235	740	892	387	275	197	339	275
20	279	310	320	260	220	850	992	368	287	194	317	271
21	279	300	310	250	205	820	1,060	349	287	188	414	271
22	275	299	300	250	195	815	1,010	330	275	191	857	271
23	263	287	290	250	195	822	892	317	263	191	843	267
24	259	283	275	250	200	780	815	317	251	191	703	263
25	248	283	260	250	210	700	745	308	248	191	569	255
26	248	287	250	250	215	630	696	295	244	219	512	248
27	244	290	245	250	220	580	656	291	233	230	424	248
28	244	310	240	250	225	540	630	287	230	219	373	248
29	241	350	250	240	-----	510	604	279	230	207	344	275
30	237	360	270	240	-----	490	623	275	223	200	313	271
31	241	-----	300	240	-----	480	-----	271	-----	194	304	-----
Total	8,699	9,134	9,585	9,010	6,815	15,362	18,104	11,291	10,003	6,715	14,225	8,497
Mean	281	304	309	291	223	496	603	364	333	217	459	283
Cfsm	.722	.781	.794	.748	.625	1.28	1.55	.936	.856	.558	1.18	.728
In.	.83	.87	.92	.86	.65	1.48	1.73	1.08	.96	.64	1.35	.81

Calendar year 1965: Max 2,270 Min 150 Mean 383 Cfsm .985 In. 13.28
 Water year 1965-66: Max 1,060 Min 188 Mean 349 Cfsm .897 In. 12.19

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966. 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--52 years, 1,765 cfs.

Extremes--Maximum discharge during year, 5,790 cfs June 9 (gage height, 7.35 ft); minimum, 42 cfs Nov. 4 (gage height, 1.18 ft); minimum daily, 506 cfs Aug. 29.

1914-66: Maximum discharge, 19,500 cfs Apr. 26, 1960 (gage height, 14.15 ft); minimum daily, 154 cfs Aug. 9, 1925.

Remarks--Records good except those for periods of ice effect, which are fair. 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1310	1180	1610	1900	1840	1820	3030	3080	1510	1560	1270	1620
2	796	1240	1660	1810	1640	1910	2910	2900	1410	995	949	1780
3	521	1050	1730	2020	1750	2120	2900	2910	1940	809	993	1110
4	1230	1150	1660	1840	1740	1870	3020	2880	2710	626	1000	681
5	1080	1310	1620	1840	1200	1990	2620	2840	3800	1270	1170	802
6	1020	825	1680	2050	1120	2220	2550	2910	4120	1230	714	1440
7	1300	738	1700	1990	1770	2180	2590	2860	4120	1220	851	1500
8	1360	1410	1850	2030	1740	1970	2240	2880	4730	1330	1550	1300
9	915	1270	1910	1930	1720	2070	1990	3070	5270	1070	1800	1270
10	464	1590	1890	2360	1760	2010	1940	2980	3920	800	1530	1030
11	1190	1390	1820	1980	1920	2380	2000	2770	3400	1740	1520	787
12	1060	1410	1780	1960	1330	2010	2070	2630	2780	1310	1460	1790
13	993	1310	2000	1950	1140	1970	2160	2620	2610	1240	1060	1430
14	1210	1500	1890	1960	1870	2510	2640	2750	2670	1350	1380	1510
15	1300	2110	1810	2000	1800	2510	2860	2700	2760	1230	1730	1320
16	841	1870	1890	1730	2070	2400	2900	2750	2670	740	1700	1370
17	723	1840	1850	1990	1940	2840	2710	2630	2240	924	1370	823
18	1480	1490	1720	1790	1930	3470	2740	2960	2110	1260	1350	721
19	1240	1410	1750	1880	1770	4020	3320	3240	1290	1130	1250	1430
20	1250	1380	1660	1970	1660	3660	4050	3570	2210	1140	1020	1260
21	1450	1660	1790	2010	1630	2930	4290	3410	2220	1170	1640	1160
22	1160	1750	1860	1600	1380	3040	5070	3360	1860	1080	2730	1300
23	940	1740	2120	1760	1430	2850	4770	3230	1740	731	2610	1170
24	541	1690	1820	1980	1570	3130	4260	2840	1690	771	2270	635
25	1430	1530	1920	1860	1480	3220	4080	2570	1020	1540	2360	632
26	1320	1800	1920	1810	990	3260	4180	2050	1330	1180	2130	1440
27	1170	1750	1940	2020	1130	3000	4120	1670	1510	1320	1920	1100
28	1370	1750	1860	2090	1530	3220	3860	1400	1500	1190	1560	1090
29	1410	1730	1900	1780	-----	3090	3210	1110	1690	1050	1760	1100
30	952	1500	2030	1620	-----	3030	3170	921	1710	707	1410	1280
31	617	-----	2010	2060	-----	2880	-----	1260	-----	712	1700	-----
Total	33,643	44,373	56,650	59,570	44,850	81,580	94,250	81,751	74,540	34,425	47,757	35,881
Mean	1,085	1,479	1,827	1,922	1,602	2,632	3,142	2,637	2,485	1,110	1,541	1,196

Calendar year 1965: Max 13,400 Min 464 Mean 1,842
 Water year 1965-66: Max 5,270 Min 464 Mean 1,888

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 1966.

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, 522 cfs Apr. 22 (gage height, 2.93 ft); minimum, 26 cfs July 25, Aug. 1 (gage height, 1.16 ft).
1963-66: 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 analyses, water temperatures, and suspended sediment loads for the water year 1966 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	77	167	102	42	49	170	364	79	41	38	38
2	269	77	130	102	42	50	178	341	77	39	66	57
3	232	76	110	102	43	52	170	318	74	46	61	64
4	200	70	98	99	45	56	155	295	91	57	51	66
5	161	70	92	95	48	62	140	265	211	63	69	63
6	130	69	88	91	50	61	125	250	295	57	90	59
7	122	70	84	88	56	59	122	236	341	50	138	55
8	143	77	82	85	58	58	110	214	341	49	183	51
9	140	84	82	82	64	57	113	193	310	48	190	47
10	143	84	82	79	79	70	125	176	247	51	167	44
11	135	93	84	76	76	100	138	161	193	58	140	44
12	125	108	99	73	71	120	158	152	161	53	117	44
13	113	187	149	71	76	127	183	143	152	48	97	40
14	110	214	160	69	76	133	214	140	146	43	102	40
15	115	214	150	67	74	143	243	146	135	40	110	38
16	115	221	135	65	57	146	276	155	122	36	122	38
17	130	190	120	64	54	176	322	158	117	35	120	37
18	130	236	110	61	52	235	367	173	110	34	110	39
19	122	214	100	59	49	300	405	187	102	32	95	36
20	113	152	92	57	47	330	462	187	91	31	79	33
21	104	135	88	56	45	360	510	173	86	30	77	31
22	95	127	88	54	44	370	522	158	79	29	93	32
23	91	117	90	52	43	240	510	149	70	28	106	31
24	86	106	92	50	43	195	494	143	64	28	104	29
25	82	106	92	48	45	190	462	135	59	30	91	28
26	82	108	90	48	46	230	440	130	55	38	79	28
27	77	143	85	47	48	255	417	117	51	40	69	29
28	76	221	82	46	48	250	390	106	48	37	59	30
29	73	225	80	44	-----	220	367	97	46	33	51	39
30	74	207	82	42	-----	195	371	90	43	30	46	41
31	74	-----	90	42	-----	175	-----	86	-----	29	41	-----
Total	3,942	4,078	3,173	2,116	1,521	5,064	8,659	5,638	3,996	1,263	2,961	1,251
Mean	127	136	102	68.3	54.3	163	289	182	133	40.7	95.5	41.7
Cfsm	.969	1.04	.779	.521	.415	1.24	2.21	1.39	1.02	.311	.729	.318
In.	1.12	1.16	.90	.60	.43	1.44	2.46	1.60	1.13	.36	.84	.36

Calendar year 1965: Max 1,090 Min 32 Mean 147 Cfsm 1.12 In. 15.25
Water year 1965-66: Max 522 Min 28 Mean 120 Cfsm .916 In. 12.40

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-18	1100	2.36	303	4-22	0300	2.93	522
3-23	0300	2.75	340	6-7	0330	2.49	352

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966.

Average discharge.--43 years, 418 cfs.

Extremes.--Maximum daily discharge during year, 1,580 cfs Apr. 21, 22; minimum daily, 87 cfs July 24.

1923-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	744	235	524	388	200	200	592	1,060	331	177	155	229
2	719	267	537	358	200	200	581	984	342	200	200	372
3	664	177	416	433	200	222	602	944	303	177	222	312
4	611	312	442	448	222	252	537	844	420	177	200	252
5	455	267	312	342	200	312	537	744	824	229	252	252
6	394	200	416	373	200	312	494	744	1,020	278	326	281
7	438	177	281	373	222	237	479	744	1,100	229	626	281
8	442	312	378	312	222	267	416	664	1,020	200	884	229
9	494	290	377	312	289	222	468	624	904	177	864	199
10	468	222	352	312	222	312	468	624	724	200	839	177
11	468	312	378	290	312	342	509	581	624	265	694	177
12	442	392	373	222	342	433	529	555	624	216	612	242
13	430	581	591	312	312	494	520	494	546	242	494	177
14	382	624	570	312	312	494	724	507	509	200	477	229
15	378	684	503	312	312	581	769	494	555	177	516	216
16	442	734	468	267	290	581	924	494	468	177	494	199
17	442	602	364	222	200	624	1,060	624	416	155	498	229
18	468	429	390	312	211	1,050	1,170	624	416	207	529	177
19	442	509	312	267	200	1,160	1,330	694	406	132	442	177
20	442	555	364	222	177	1,050	1,500	664	406	155	326	177
21	364	468	364	290	200	1,220	1,580	624	281	132	373	177
22	364	468	416	222	177	1,440	1,580	624	333	132	364	155
23	368	416	429	267	166	1,370	1,510	624	281	132	494	177
24	330	364	390	222	200	723	1,420	572	304	87	520	155
25	307	416	312	166	177	641	1,310	520	268	197	468	155
26	333	364	312	267	222	794	1,260	468	200	155	393	155
27	307	524	364	222	177	864	1,180	468	255	177	333	155
28	281	416	312	245	200	824	1,060	390	177	177	294	132
29	281	520	312	177	-----	744	1,010	364	242	155	252	229
30	281	624	312	188	-----	664	1,100	312	241	155	229	199
31	271	-----	414	200	-----	624	-----	363	-----	155	200	-----
Total	13,252	12,461	12,285	8,855	6,364	19,253	27,219	19,036	14,540	5,624	13,570	6,273
Mean	427	415	396	286	227	621	907	614	485	181	438	209
Cfsm	.809	.786	.750	.542	.430	1.18	1.72	1.16	.919	.343	.830	.396
In.	.93	.88	.87	.62	.45	1.36	1.92	1.34	1.02	.40	.96	.44

Calendar year 1965: Max 4,300 Min 129 Mean 525 Cfsm .994 In. 13.50
 Water year 1965-66: Max 1,580 Min 87 Mean 435 Cfsm .824 In. 11.19

STREAMS TRIBUTARY TO LAKE MICHIGAN

29

4-0660. Menominee River near Pembine, Wis.

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.

Drainage area.--3,240 sq mi, approximately.

Records available.--October 1949 to September 1966. Monthly discharge only for some periods, published in WSP 1307.

Gage.--Water-stage recorder. Altitude of gage is 745 ft (from river-profile map).

Average discharge.--17 years, 2,897 cfs.

Extremes.--Maximum discharge during year, 9,480 cfs Apr. 23 (gage height, 7.49 ft); minimum, 824 cfs Sept. 24 (gage height, 1.92 ft).

1949-66: Maximum discharge, 26,900 cfs May 8, 1960 (gage height, 13.90 ft); minimum, 708 cfs Sept. 1, 1965 (gage height, 1.68 ft).

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.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,510	1,460	3,700	3,100	1,850	2,000	5,040	5,830	2,550	2,390	1,170	2,100
2	2,690	1,870	3,350	3,100	1,900	2,200	4,820	5,620	1,920	1,870	1,410	2,010
3	2,970	1,990	3,000	3,000	1,900	2,500	4,580	5,110	2,580	1,710	1,290	2,430
4	1,980	1,760	2,700	2,800	1,900	2,700	4,680	5,190	3,460	1,620	1,260	1,760
5	2,430	1,860	2,550	2,540	1,900	2,700	4,360	5,000	5,280	1,510	1,420	1,260
6	2,130	1,850	2,500	2,700	1,950	2,700	4,210	4,910	7,460	1,600	1,710	1,340
7	2,230	1,390	2,500	2,900	2,000	2,700	4,150	4,790	8,120	1,490	1,460	1,520
8	1,950	1,500	2,500	3,000	2,100	2,700	4,010	4,560	7,860	1,550	2,290	2,070
9	2,410	1,860	2,550	3,100	2,300	2,800	3,490	4,500	7,780	1,430	2,840	1,540
10	1,910	2,070	2,700	3,100	2,500	2,900	3,530	4,740	7,440	1,380	2,610	1,650
11	1,930	2,230	2,800	3,000	2,650	3,100	3,590	4,310	5,780	1,390	2,530	1,300
12	1,990	2,300	3,000	2,900	2,700	3,300	3,730	4,150	4,800	1,830	2,570	1,320
13	2,290	2,930	3,200	2,900	2,700	3,500	4,120	3,820	4,580	2,210	2,230	1,850
14	1,760	3,420	3,400	2,800	2,700	3,900	4,160	3,880	4,150	1,740	1,540	1,890
15	1,740	3,560	3,500	2,800	2,690	4,400	5,170	4,180	4,210	1,620	2,540	1,640
16	2,280	3,720	3,300	2,800	2,600	5,000	5,300	4,060	4,180	1,430	2,750	1,870
17	1,740	3,740	3,000	2,800	2,500	7,000	5,270	4,180	4,200	1,360	2,350	1,430
18	1,820	3,420	2,600	2,800	2,300	8,600	5,570	4,210	3,510	1,430	2,110	1,200
19	2,360	2,800	2,300	2,800	2,200	9,000	5,830	4,660	2,760	1,560	2,120	1,210
20	2,400	2,870	2,500	2,800	2,100	8,800	7,960	4,290	2,750	1,390	1,740	1,630
21	2,430	2,790	2,800	2,800	2,000	8,000	8,120	5,400	3,370	1,320	1,630	1,560
22	2,360	2,890	2,900	2,750	1,900	7,280	8,700	5,060	3,100	1,310	2,970	1,600
23	1,740	3,000	2,900	2,650	1,850	7,540	9,040	4,770	2,660	1,290	3,300	1,550
24	1,770	2,600	3,100	2,550	1,800	6,570	7,960	4,900	2,540	1,150	3,050	1,110
25	1,820	2,970	3,200	2,400	1,800	5,360	7,540	4,360	2,580	1,160	3,090	1,180
26	2,220	2,780	3,100	2,250	1,800	5,640	7,130	3,670	2,490	1,460	3,140	1,310
27	1,680	3,450	2,800	2,100	1,800	5,480	7,110	3,450	1,790	1,450	2,850	1,320
28	2,040	4,070	2,700	2,050	1,850	5,120	6,620	3,210	2,250	1,630	2,270	1,360
29	1,710	3,590	2,900	2,000	-----	5,720	6,440	2,470	1,940	1,410	2,270	1,380
30	1,710	3,420	3,000	1,950	-----	4,960	5,520	1,600	2,150	1,320	2,300	1,400
31	1,490	-----	2,900	1,900	-----	5,010	-----	2,000	-----	1,110	2,190	-----
Total	65,490	80,160	89,950	83,140	60,240	149,180	167,750	132,880	120,240	47,120	69,000	46,790
Mean	2,113	2,672	2,902	2,682	2,151	4,812	5,592	4,286	4,008	1,520	2,225	1,560

Calendar year 1965: Max 21,000 Min 1,000 Mean 3,184
 Water year 1965-66: Max 9,040 Min 1,110 Mean 3,046

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966.

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.--52 years, 216 cfs.

Extremes.--Maximum discharge during year, 676 cfs Mar. 19 (gage height, 3.80 ft); minimum, 88 cfs July 25 (gage height, 1.74 ft). 1914-66: 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 cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	464	156	357	215	110	145	313	428	194	123	112	103
2	422	154	280	220	110	150	311	398	186	117	156	116
3	346	154	230	220	115	160	298	368	187	125	153	148
4	285	149	210	226	120	170	296	345	234	152	129	150
5	252	149	200	220	125	190	304	325	472	167	132	141
6	234	149	190	220	130	205	314	313	648	161	147	130
7	226	149	185	210	140	220	310	304	633	148	222	122
8	234	154	180	205	150	220	304	296	518	133	246	118
9	237	156	180	195	160	230	310	284	411	128	221	116
10	229	154	190	190	180	250	334	273	336	125	189	113
11	217	156	210	180	190	270	349	265	279	132	173	110
12	206	209	290	175	200	310	354	259	264	149	168	108
13	196	340	310	170	200	340	354	259	253	139	158	106
14	190	375	320	170	200	360	359	248	241	128	150	106
15	190	346	300	165	200	370	366	248	246	119	158	105
16	190	330	260	160	191	395	369	269	250	113	177	103
17	201	310	240	160	180	383	373	277	252	109	168	102
18	201	280	220	155	170	547	403	294	254	107	147	100
19	201	270	210	145	140	662	462	315	236	104	132	100
20	215	264	220	140	130	557	544	301	220	100	124	100
21	209	246	230	135	125	454	573	281	200	96	127	98
22	196	237	230	130	125	430	548	264	186	96	156	96
23	188	229	230	120	125	370	490	254	173	95	180	96
24	180	223	220	115	125	340	444	291	163	93	159	96
25	173	220	210	110	130	330	408	302	154	91	144	95
26	168	261	205	110	130	315	389	274	147	101	133	94
27	163	320	200	105	135	310	377	250	140	111	123	96
28	161	370	200	105	140	290	385	234	137	117	117	97
29	158	370	200	105	-----	287	414	221	133	108	112	107
30	156	360	205	105	-----	316	430	211	128	98	108	111
31	156	-----	210	105	-----	326	-----	203	-----	94	105	-----
TOTAL	6,844	7,240	7,122	4,986	4,176	9,902	11,485	8,854	7,875	3,679	4,726	3,283
MEAN	221	241	230	161	149	319	383	286	263	119	152	109
CFSM	.874	.953	.909	.636	.589	1.26	1.51	1.13	1.04	.470	.601	.431
IN	1.01	1.06	1.05	.73	.61	1.46	1.69	1.30	1.16	.54	.69	.48

Calendar year 1966: Max 1,140 Min 86 Mean 240 Cfsm .949 In. 12.87
 Water year 1965-66: Max 662 Min 91 Mean 220 Cfsm .870 In. 11.78

STREAMS TRIBUTARY TO LAKE MICHIGAN

31

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 1966.

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.--54 years (1907-8, 1913-66), 3,098 cfs.

Extremes.--Maximum daily discharge during year, 8,400 cfs Mar. 24; minimum daily, 1,020 cfs July 26.
1908, 1913-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,400	1,650	3,280	3,260	2,340	1,980	4,860	6,330	2,210	2,040	1,420	1,870
2	3,360	1,550	3,570	2,850	2,030	1,870	5,350	6,330	2,470	2,060	1,460	1,770
3	3,240	1,980	3,140	3,120	2,390	2,340	5,480	5,640	2,420	1,850	1,320	1,950
4	3,130	1,960	3,150	3,020	2,400	2,700	4,910	5,300	3,020	1,680	1,390	1,990
5	2,530	1,790	3,350	3,200	2,210	3,120	4,980	4,910	3,760	1,870	1,460	1,730
6	2,560	1,950	3,000	3,240	2,020	3,170	5,590	4,950	5,170	1,730	1,320	1,120
7	2,680	2,070	2,690	3,000	2,060	3,810	4,450	4,950	7,000	1,830	1,860	1,310
8	2,480	1,650	2,700	2,760	2,140	2,970	4,220	4,990	7,810	1,620	2,400	1,370
9	2,320	1,810	2,880	2,760	2,160	2,970	4,260	4,990	7,530	1,510	2,550	1,750
10	2,330	1,900	3,120	3,000	2,630	3,110	4,220	4,300	7,550	1,690	2,580	1,580
11	2,400	2,300	3,120	2,880	2,940	3,080	3,840	3,400	6,590	1,300	2,600	1,390
12	2,300	2,500	3,240	2,880	3,000	3,060	3,470	3,400	5,640	1,830	2,700	1,390
13	2,220	2,500	3,360	3,000	3,120	3,940	3,510	3,400	4,810	1,660	2,510	1,360
14	2,160	2,500	3,480	2,970	2,740	3,470	3,700	3,400	4,940	1,980	1,980	1,440
15	2,020	2,500	3,780	2,760	2,570	4,460	4,550	3,400	4,890	1,860	2,270	1,800
16	2,020	2,780	3,340	2,800	2,880	4,460	4,730	3,400	4,440	1,570	2,240	1,740
17	2,190	3,360	3,250	2,760	2,800	4,790	5,570	3,350	3,630	1,600	2,240	1,580
18	2,180	3,370	2,750	2,700	2,900	5,480	5,360	3,370	3,360	1,310	2,220	1,510
19	2,170	3,370	2,120	2,640	2,640	7,910	5,840	3,360	3,200	1,590	1,920	1,260
20	2,380	3,150	2,490	2,800	2,470	8,180	5,960	3,400	3,000	1,360	1,920	1,210
21	2,530	3,120	3,000	2,750	2,120	8,160	7,290	3,530	3,300	1,250	1,800	1,630
22	2,550	3,100	3,150	2,730	2,000	5,940	7,820	4,460	3,250	1,340	2,160	1,730
23	2,500	3,290	2,820	2,740	2,160	7,120	7,810	4,950	2,740	1,320	2,650	1,580
24	1,760	3,150	2,890	2,400	2,110	3,400	7,040	4,950	2,670	1,300	3,480	1,510
25	2,070	2,900	3,710	2,400	1,810	6,550	7,780	4,940	2,640	1,020	3,210	1,370
26	2,180	3,150	3,040	2,480	1,890	5,090	7,440	3,830	2,390	1,680	3,080	1,130
27	2,340	3,450	2,780	2,460	1,870	5,160	6,850	3,360	2,540	1,220	3,240	1,640
28	2,030	4,000	3,100	2,540	1,750	5,160	7,060	3,360	1,910	1,570	3,020	1,070
29	1,970	4,580	2,800	2,440	-----	5,240	6,440	3,360	2,230	1,440	1,950	1,630
30	1,940	3,710	3,000	2,240	-----	5,310	6,330	2,490	2,300	1,360	1,980	1,610
31	1,950	-----	3,290	2,320	-----	4,870	-----	1,850	-----	1,320	1,980	-----
Total	73,890	81,090	95,390	85,900	66,150	143,870	166,710	127,650	119,410	48,760	68,910	46,020
Mean	2,384	2,703	3,077	2,771	2,362	4,641	5,557	4,118	3,980	1,573	2,223	1,534

Calendar year 1965: Max 26,600 Min 1,060 Mean 3,386
Water year 1965-66: Max 8,400 Min 1,020 Mean 3,079

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0695. Peshtigo River at Peshtigo, Wis.

Location--Lat 45°02'50", long 87°44'40", 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.

Drainage area--1,124 sq mi.

Records available--June 1953 to September 1966.

Gage--Digital water-stage recorder. Datum of gage is 584.64 ft above mean sea level, datum of 1929. Prior to Aug. 21, 1963, graphic water-stage recorder at same site and datum.

Average discharge--13 years, 841 cfs.

Extremes--Maximum discharge during year, 3,470 cfs Oct. 3 (gage height, 7.48 ft); minimum, 65 cfs Sept. 26, 27; minimum daily, 180 cfs Feb. 1.

1953-66: 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, 32 cfs Aug. 28, 1953 (gage height, 1.46 ft); minimum daily, 84 cfs Aug. 5, 1957.

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 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1,970	319	951	965	180	497	1,580	1,630	504	465	290	410
2	2,130	706	1,380	670	500	593	1,890	1,520	1,030	649	579	336
3	2,470	511	1,300	630	450	440	1,740	1,540	671	612	507	540
4	1,420	560	1,150	608	500	701	1,640	1,450	864	684	433	465
5	1,240	349	850	700	360	920	1,570	1,430	1,700	503	456	604
6	1,210	789	660	740	450	900	1,480	1,250	2,560	484	502	332
7	1,030	629	670	680	310	845	1,360	1,210	2,640	644	511	319
8	1,130	349	1,060	600	450	730	1,350	1,260	2,570	532	670	388
9	999	565	1,240	640	800	704	1,230	1,000	2,610	617	867	516
10	1,000	516	970	660	1,800	725	1,250	934	2,020	548	773	492
11	747	614	1,050	500	2,000	937	1,180	796	1,800	495	862	473
12	794	742	1,390	450	2,000	1,260	1,180	609	1,560	599	737	382
13	904	1,130	1,730	350	1,800	1,440	1,220	643	1,220	760	654	466
14	830	1,010	2,150	640	1,300	1,830	1,280	762	1,070	582	624	434
15	835	1,020	2,080	620	1,050	1,640	1,280	833	987	603	550	340
16	789	1,510	1,720	640	960	1,640	1,360	977	1,030	488	737	299
17	757	1,430	1,350	480	880	1,640	1,450	1,220	1,070	470	893	333
18	531	1,280	1,080	640	760	1,810	1,470	1,150	927	353	565	361
19	920	999	900	480	620	2,080	1,680	904	976	377	614	293
20	989	1,350	680	470	600	2,300	2,130	983	783	373	614	424
21	1,110	1,180	1,020	640	440	2,320	2,110	1,460	818	315	469	313
22	1,160	1,080	1,190	650	580	2,420	2,610	1,100	925	439	349	302
23	1,110	1,180	1,130	580	540	2,810	2,460	1,060	720	379	604	318
24	599	909	1,610	500	450	2,840	2,360	1,360	644	242	584	330
25	428	1,250	1,190	520	380	2,680	2,310	1,520	550	210	654	352
26	804	1,150	420	540	410	2,560	2,190	1,360	738	328	535	286
27	716	1,690	520	420	435	1,890	2,040	1,220	311	420	570	247
28	469	1,460	640	470	461	1,840	1,900	1,110	535	483	465	269
29	511	1,300	836	540	-----	1,730	1,910	1,000	670	410	446	330
30	915	1,100	987	560	-----	1,430	1,830	615	675	402	446	304
31	340	-----	1,060	300	-----	1,710	-----	545	-----	294	438	-----
TOTAL	30,857	28,677	34,964	17,883	21,466	47,862	51,040	34,451	35,178	14,760	17,998	11,258
MEAN	995	956	1,128	577	767	1,544	1,701	1,111	1,173	476	581	375
CFSM	.885	.851	1.00	.513	.682	1.37	1.51	.988	1.04	.424	.517	.334
IN	1.02	.95	1.16	.59	.71	1.58	1.69	1.14	1.16	.49	.60	.37

Calendar year 1965 : Max 5,650 Min 179 Mean 1,029 Cfsm .915 In. 12.44

Water year 1965-66 : Max 2,840 Min 180 Mean 949 Cfsm .844 In. 11.46

STREAMS TRIBUTARY TO LAKE MICHIGAN

33

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 1966 (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, 95.40 ft Apr. 26, May 3; minimum observed, 94.54 ft Nov. 9.
1936-66: 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 Public Service Commission of Wisconsin.
No outlet.

Elevation, in feet, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1												
2		4.56									4.90	
3								5.40				
4				5.03								
5	4.69									5.14		
6												4.90
7			5.09						5.37			
8												
9		4.54									5.00	
10								5.36				
11				5.03								
12	4.68									5.20		
13												4.87
14			5.10		5.04				5.38			
15						5.23						
16		4.69									5.05	
17								5.30				
18												
19	4.70									5.10		
20												4.78
21			5.07						5.26			
22									5.22			
23		4.71									4.95	
24								5.29				
25												
26	4.62						5.40			4.99		
27												4.70
28	4.58		5.10						5.18			
29												
30		4.91									4.95	
31								5.27				

Note.--Add 90.00 ft to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966. Monthly discharge only for some periods, published in WSP 1307.

Gage.--Water-stage recorder. Altitude of gage is 735 ft (from river-profile map). Prior to March 1909, chain gage on bridge at datum 4.0 ft lower. Jan. 6, 1914, to Aug. 24, 1938, chain gage on bridge at present datum.

Average discharge.--55 years (1906-8, 1913-66), 570 cfs.

Extremes.--Maximum discharge during year, 1,880 cfs June 8 (gage height, 3.63 ft); minimum, 224 cfs Sept. 24 (gage height, 0.70 ft). 1906-9, 1913-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,060	393	860	660	310	370	1,010	1,000	481	350	282	278
2	1,100	389	800	660	310	370	1,040	990	456	334	311	288
3	1,100	384	740	640	310	380	1,060	978	443	330	330	311
4	1,040	384	720	600	320	580	1,050	915	486	338	322	334
5	921	393	660	560	310	660	1,010	870	787	380	307	319
6	770	393	620	540	310	660	967	809	820	420	292	307
7	684	380	600	520	340	630	932	743	1,480	433	303	278
8	658	384	600	510	600	590	904	705	1,830	389	338	282
9	653	389	580	500	800	540	853	679	1,790	371	389	274
10	638	389	559	500	1,100	520	836	658	1,510	384	411	271
11	608	393	544	495	1,200	600	826	643	1,230	490	402	264
12	588	447	770	494	1,200	700	814	608	1,060	820	402	250
13	569	574	1,030	470	1,050	750	798	618	915	904	393	244
14	559	674	1,130	460	940	800	792	598	848	932	363	257
15	559	743	1,220	440	800	850	792	588	826	782	346	271
16	539	782	1,190	420	680	900	782	598	870	574	371	278
17	515	804	1,050	410	610	988	826	613	881	476	393	271
18	520	710	950	400	560	1,000	853	623	848	420	389	257
19	515	648	880	400	510	1,020	909	679	765	393	355	257
20	534	628	800	400	470	1,100	990	726	710	363	326	250
21	569	623	740	400	440	1,200	1,080	732	689	334	322	244
22	554	613	740	410	410	1,240	1,150	732	635	326	399	240
23	530	593	760	400	400	1,310	1,200	700	588	311	371	237
24	500	574	780	385	390	1,290	1,180	694	544	296	367	224
25	490	569	760	370	380	1,220	1,130	732	505	288	346	227
26	476	633	740	360	375	1,150	1,070	732	476	288	315	231
27	456	770	700	350	370	1,030	1,020	705	443	285	311	231
28	447	810	660	345	370	967	984	633	411	292	311	234
29	424	850	640	335	-----	915	973	584	393	288	311	250
30	415	880	640	325	-----	938	996	539	380	285	300	257
31	406	-----	650	310	-----	961	-----	510	-----	274	288	-----
Total	19,397	17,196	24,113	14,069	15,865	26,229	28,827	21,934	24,100	13,150	10,656	7,916
Mean	626	573	778	454	567	846	961	708	803	424	344	264
Cfsm	.923	.845	1.15	.670	.836	1.25	1.42	1.04	1.18	.625	.507	.389
In.	1.06	.94	1.32	.77	.87	1.44	1.58	1.20	1.32	.72	.58	.43

Calendar year 1965: Max 3,800 Min 215 Mean 638 Cfsm .941 In. 12.78
 Water year 1965-66: Max 1,830 Min 224 Mean 612 Cfsm .903 In. 12.23

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-8	1800	3.63	1,800				

STREAMS TRIBUTARY TO LAKE MICHIGAN

35

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 1966.

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.--68 years, 1,089 cfs.

Extremes.--Maximum discharge during year, 3,140 cfs Mar. 8 (gage height, 12.47 ft); maximum gage height, 13.37 ft Feb. 13 (backwater from ice); minimum, 415 cfs Sept. 26 (gage height, 7.60 ft).
1898-1966: 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 1965 to September 1966.

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2,760	1,980	1,600	1,850	880	2,150	2,840	1,220	916	629	531	521
2	2,760	1,940	1,800	1,800	880	2,250	2,800	1,120	914	606	519	559
3	2,730	1,900	1,700	1,850	880	2,400	2,750	1,070	928	597	505	573
4	2,700	1,850	1,600	1,850	880	2,600	2,700	1,020	929	585	519	551
5	2,680	1,810	1,550	1,850	900	2,850	2,640	1,020	915	566	518	546
6	2,660	1,760	1,550	1,750	900	3,050	2,580	1,020	907	529	509	543
7	2,630	1,740	1,450	1,650	930	3,100	2,520	970	882	501	506	532
8	2,590	1,700	1,450	1,600	960	3,100	2,460	970	828	492	510	535
9	2,540	1,660	1,450	1,500	1,250	3,050	2,400	895	804	505	500	527
10	2,490	1,640	1,400	1,450	1,500	2,990	2,340	845	801	508	509	515
11	2,430	1,640	1,400	1,350	1,900	2,940	2,270	845	839	546	500	506
12	2,380	1,650	1,450	1,300	2,400	2,880	2,200	845	933	581	506	504
13	2,320	1,650	1,600	1,250	2,500	2,820	2,130	795	987	624	505	501
14	2,280	1,660	1,700	1,190	2,500	2,780	2,060	748	998	631	502	505
15	2,250	1,670	1,800	1,150	2,500	2,720	2,010	702	982	592	521	477
16	2,220	1,680	1,900	1,150	2,500	2,670	1,950	660	968	585	536	478
17	2,200	1,680	1,900	1,100	2,450	2,600	1,880	620	957	581	551	480
18	2,170	1,680	1,900	1,100	2,400	2,570	1,830	620	955	577	556	475
19	2,140	1,680	1,900	1,100	2,350	2,530	1,780	702	938	584	538	472
20	2,140	1,680	2,000	1,100	2,250	2,470	1,730	870	929	555	519	459
21	2,200	1,680	2,100	1,100	2,200	2,430	1,710	870	913	556	528	451
22	2,200	1,670	2,150	1,080	2,130	2,420	1,680	820	863	561	527	450
23	2,180	1,650	2,100	1,050	2,100	2,600	1,650	820	841	558	548	435
24	2,160	1,640	2,050	1,050	2,100	2,790	1,650	990	808	547	551	424
25	2,140	1,640	1,950	1,000	2,100	2,840	1,590	1,020	782	531	541	427
26	2,130	1,660	1,900	980	2,050	2,910	1,530	1,010	765	535	542	420
27	2,120	1,700	1,800	940	2,050	2,980	1,470	1,040	717	531	539	422
28	2,090	1,650	1,800	920	2,050	2,990	1,410	1,070	698	532	522	425
29	2,078	1,600	1,850	900	-----	2,950	1,360	1,010	677	527	513	451
30	2,050	1,600	1,850	900	-----	2,900	1,300	987	649	525	527	456
31	2,030	-----	1,850	880	-----	2,860	-----	958	-----	522	522	-----
TOTAL	72,440	51,140	54,500	39,740	50,490	85,190	61,220	28,152	26,023	17,299	16,220	14,620
MEAN	2,337	1,705	1,758	1,282	1,803	2,748	2,041	908	867	558	523	487
CFSM	1.63	1.19	1.23	.897	1.26	1.92	1.43	.635	.606	.390	.366	.341
IN	1.88	1.33	1.42	1.03	1.31	2.22	1.59	.73	.68	.45	.42	.38

CALENDAR YEAR 1965 MAX 2,760 MIN 350 MEAN 1,202 CFSM .841 INCHES 11.41
WATER YEAR 1965-66 MAX 3,100 MIN 420 MEAN 1,417 CFSM .991 INCHES 13.45

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--Mar. 21, 1966, to Sept. 30, 1966.

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

Extremes.--March 1966 to September 1966, maximum observed discharge during period, 966 cfs Apr. 22 (gage height, 8.59 ft); minimum observed, 166 cfs July 25 (gage height, 7.25 ft).

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							607	837	269	222	215	270
2							601	790	305	222	235	280
3							594	761	310	215	222	290
4							568	710	335	211	215	285
5							536	682	442	273	215	275
6							536	654	661	264	215	275
7							530	588	661	256	278	265
8							536	562	562	251	325	262
9							524	518	442	243	310	260
10							436	530	442	264	301	260
11							482	518	392	360	296	256
12							470	470	380	366	287	247
13							512	453	375	345	282	222
14							518	512	380	335	292	226
15							536	506	380	264	287	235
16							588	518	370	264	296	222
17							675	500	370	264	269	204
18							746	518	370	251	273	200
19							853	562	360	226	260	200
20							861	524	335	222	256	195
21						740	845	581	282	215	273	198
22						760	966	549	310	197	278	200
23						660	957	536	315	190	310	200
24						530	948	453	296	188	325	202
25						813	903	470	287	166	325	200
26						885	885	447	287	186	376	198
27						798	837	386	273	197	335	192
28						775	829	436	264	190	310	200
29						738	829	402	247	193	290	208
30						696	837	386	247	197	275	210
31						648		376		197	265	
Total							20,545	16,735	10,949	7,434	8,691	6,937
Mean							685	540	365	240	270	231
Cfsm							1.49	1.17	.793	.522	.609	.502
In.							1.66	1.35	.89	.60	.70	.56

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 1959-65, and occasional low-flow measurements, water years 1961-64. June 1964 to September 1966, 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, 50 cfs Dec. 12 (gage height, 10.96 ft). Minimum recorded discharge during water year, 9.7 cfs on June 2 (gage height, 9.69 ft).

1959-66: Maximum gage height, 11.62 ft Apr. 11, 1965 (discharge not determined).

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	11	11				11	11	10	10	13	11
2	12	11	10				11	11	9.7	10	12	12
3	11	11	10				10	11	11	10	12	12
4	11	10					10	11	12	11	12	12
5	12	10					10	11	22	11	12	12
6	12	10					10	11	25	11	12	12
7	13	10					10	11	14	10	14	11
8	13	11					10	11	11	11	12	11
9	12	10					10	10	11	12	12	11
10	12	10					10	10	11	12	12	11
11	12	10					10	10	11	15	13	12
12	12	16					11	10	11	15	12	11
13	12	15					11	10	11	12	12	11
14	12	12					11	10	11	11	12	12
15	12	11					11	10	11	11	13	11
16	12	12					11	11	11	11	13	11
17	13	11					11	12	11	11	12	12
18	12	11				19	13	12	11	11	12	12
19	12	10				13	13	11	11	11	12	11
20	12	11				11	13	11	10	11	12	11
21	11	10				11	12	11	10	11	12	11
22	11	10				14	11	11	10	11	13	11
23	11	10				12	11	12	10	11	12	11
24	11	10				18	11	12	10	11	12	11
25	11	11				11	11	11	10	11	12	11
26	11	16				11	11	10	10	11	12	11
27	11	17				13	11	10	10	11	12	11
28	11	13				12	12	10	10	11	12	11
29	11	11				11	12	10	10	11	12	12
30	11	11				11	12	10	10	11	11	11
31	11	---				10	---	10	---	11	11	---
Total	363	342					331	332	345.7	348	377	340
Mean	11.7	11.4					11.0	10.7	11.5	11.2	12.2	11.3
Cfsm	1.46	1.42					1.38	1.34	1.44	1.40	1.52	1.41
In.	1.69	1.59					1.54	1.54	1.61	1.62	1.75	1.58

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966. 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.--57 years (1907-8, 1910-66), 753 cfs.

Extremes.--Maximum discharge during year, 1,780 cfs June 6 (gage height, 7.04 ft); maximum gage height, 10.58 ft Dec. 19 (backwater from ice); minimum discharge, 247 cfs July 5 (gage height, 5.04 ft).
1907-9, 1910-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1660	635	1050	640	450	600	1220	1420	649	503	399	426
2	1360	608	1060	600	450	620	1180	1360	614	492	450	457
3	1270	594	1080	579	450	660	1120	1290	656	485	455	502
4	1200	628	1080	580	450	680	1080	1240	768	479	446	488
5	1080	568	1080	580	460	740	1000	1180	1470	504	425	479
6	1040	575	1080	580	470	800	1000	1120	1700	534	418	465
7	1000	594	1060	580	480	820	1000	1050	1680	516	449	461
8	1030	537	1060	580	530	820	1020	1020	1300	496	557	465
9	1040	562	1050	590	600	800	983	981	1090	525	576	455
10	1000	588	1020	600	720	780	956	940	956	566	544	444
11	965	575	980	610	860	800	894	870	859	673	647	443
12	928	677	920	616	900	840	876	859	785	821	647	438
13	894	1040	880	610	890	880	919	862	776	775	587	432
14	868	1100	860	600	884	940	974	904	817	676	544	489
15	851	880	840	600	860	1040	1060	894	809	607	539	465
16	826	800	860	600	820	1080	1090	897	760	560	528	443
17	826	750	900	600	760	1110	1150	892	699	527	529	434
18	842	740	940	590	700	1180	1300	925	691	501	499	427
19	817	760	980	590	620	1300	1390	1020	684	457	473	422
20	785	911	1000	580	540	1260	1520	1040	714	433	493	410
21	737	790	1020	580	500	1240	1630	975	621	418	498	408
22	714	740	1000	570	510	1340	1580	934	649	417	517	414
23	699	700	980	560	540	1360	1540	913	614	382	513	417
24	677	700	940	540	582	1140	1570	944	590	401	522	411
25	670	740	900	530	580	1080	1460	912	576	399	529	413
26	730	780	860	520	580	1380	1400	836	559	383	546	406
27	722	900	820	500	580	1410	1400	788	544	360	550	402
28	621	940	800	480	600	1320	1380	776	534	396	534	403
29	568	980	750	470	-----	1280	1400	745	525	398	477	438
30	628	1030	720	460	-----	1310	1410	722	513	387	443	448
31	649	-----	680	460	-----	1240	-----	684	-----	379	429	-----
Total	27,697	22,422	29,250	17,575	17,366	31,850	36,502	29,993	24,202	15,450	15,763	13,205
Mean	893	747	944	567	620	1,027	1,217	968	807	498	508	440
Cfsm	1.10	.920	1.16	.698	.764	1.26	1.50	1.19	.994	.613	.626	.542
In.	1.27	1.03	1.34	.80	.80	1.46	1.67	1.37	1.11	.71	.72	.60

Calendar year 1965: Max 3,220 Min 346 Mean 831 Cfsm 1.02 In. 13.89
Water year 1965-66: Max 1,700 Min 360 Mean 771 Cfsm .949 In. 12.88

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-21	1200	6.90	1,650	6-6	1700	7.04	1,780

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 1966.

Gage.--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.

Average discharge.--47 years, 283 cfs.

Extremes.--Maximum discharge during year, 1,660 cfs June 6 (gage height, 5.85 ft); minimum discharge, 82 cfs Aug. 31, Sept. 1 (gage height, 2.70 ft).

1919-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	926	208	605	320	155	170	764	557	238	132	102	82
2	856	201	430	330	165	180	807	531	179	137	104	93
3	706	211	370	340	180	190	818	478	192	134	111	104
4	525	205	320	340	190	450	732	415	211	129	116	137
5	420	198	280	330	210	1,250	647	375	926	139	111	165
6	377	195	260	310	210	1,200	605	357	1,600	132	116	157
7	352	171	255	280	215	800	552	348	1,520	144	118	132
8	362	195	245	250	220	500	499	330	1,490	141	116	127
9	375	222	250	230	300	405	472	308	1,210	122	116	125
10	380	230	260	220	1,200	357	462	312	775	129	125	116
11	348	226	300	210	1,350	456	441	299	573	141	159	111
12	330	286	621	209	1,300	743	462	325	441	141	173	100
13	278	557	1,170	200	1,000	905	462	334	308	146	179	102
14	278	770	1,250	200	600	802	451	330	312	146	182	104
15	294	743	965	195	350	737	472	330	320	139	168	104
16	316	653	775	190	280	663	494	362	303	137	189	109
17	343	562	642	190	210	642	515	410	282	125	162	111
18	385	462	547	190	180	878	557	446	282	122	151	113
19	362	390	450	190	170	1,250	626	425	274	118	144	111
20	357	400	380	185	165	1,180	706	405	222	111	129	104
21	357	362	340	180	160	948	867	390	245	106	120	104
22	316	330	330	175	160	861	878	357	192	100	118	100
23	290	325	340	170	159	1,050	851	330	226	100	113	97
24	278	325	350	165	155	981	695	357	198	100	116	95
25	261	320	365	160	155	791	589	425	192	97	118	95
26	249	405	370	155	150	679	562	343	179	97	118	93
27	241	775	370	150	155	573	536	299	172	95	113	93
28	234	872	355	150	160	467	531	269	159	95	113	91
29	226	861	340	150	-----	478	499	249	157	97	109	102
30	219	727	330	150	-----	578	509	230	146	100	100	118
31	219	-----	320	150	-----	679	-----	222	-----	100	86	-----
Total	11,460	12,387	14,185	6,664	9,904	21,843	18,061	11,148	13,524	3,752	3,995	3,295
Mean	370	413	458	215	354	705	602	360	451	121	129	110
Cfsm	.937	1.05	1.16	.544	.896	1.78	1.52	.911	1.14	.306	.327	.278
In.	1.08	1.17	1.34	.63	.93	2.06	1.70	1.05	1.27	.35	.38	.31

Calendar year 1965: Max 5,340 Min 67 Mean 409 Cfsm 1.04 In. 14.06
 Water year 1965-66: Max 1,600 Min 82 Mean 357 Cfsm .904 In. 12.27

Peak discharge (base, 1,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-13	1900	5.37	1,360	3-20	0100	5.31	1,330
2-10	1530	7.21	1,600	6- 6	1330	5.85	1,660
3- 4	1530	6.97	1,420				

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966. 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.--70 years, 1,700 cfs.

Extremes.--Maximum discharge during year, 5,190 cfs Mar. 26 (gage height, 8.06 ft); minimum, 640 cfs Sept. 28 (gage height, 0.60 ft). 1896-1966: 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 cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3,820	1,450	2,100	1,900	1,000	1,550	4,170	2,990	1,520	1,000	716	815
2	3,730	1,420	2,100	1,850	1,000	1,520	4,020	2,960	1,430	971	731	787
3	3,650	1,410	2,100	1,750	1,000	1,540	3,920	2,920	1,350	962	737	793
4	3,590	1,380	2,100	1,700	1,020	1,600	3,870	2,850	1,290	930	774	802
5	3,480	1,370	2,150	1,650	1,040	1,700	3,780	2,760	1,300	933	846	809
6	3,420	1,330	2,100	1,600	1,060	1,800	3,720	2,680	1,550	939	888	818
7	3,320	1,310	2,050	1,550	1,080	2,000	3,640	2,600	1,900	923	840	837
8	3,170	1,290	2,000	1,500	1,120	2,350	3,560	2,500	2,140	936	793	856
9	3,000	1,250	1,950	1,500	1,200	2,500	3,450	2,390	2,290	946	768	853
10	2,900	1,260	1,900	1,450	1,550	2,650	3,320	2,300	2,380	952	781	875
11	2,790	1,300	1,900	1,400	1,700	2,800	3,180	2,190	2,480	994	869	885
12	2,690	1,380	1,900	1,400	1,700	3,050	3,050	2,130	2,640	1,040	936	827
13	2,580	1,510	2,000	1,400	1,700	3,300	2,940	2,030	2,760	1,110	1,030	784
14	2,460	1,730	2,100	1,400	1,650	3,450	2,840	2,030	2,800	1,200	1,110	771
15	2,340	1,960	2,150	1,400	1,650	3,600	2,740	1,970	2,740	1,220	1,120	756
16	2,240	2,150	2,250	1,400	1,600	3,820	2,630	1,920	2,560	1,210	1,120	746
17	2,170	2,260	2,350	1,350	1,600	3,960	2,540	1,880	2,320	1,140	1,090	774
18	2,100	2,290	2,450	1,350	1,600	4,150	2,480	1,880	2,080	1,080	1,080	765
19	2,050	2,320	2,500	1,300	1,600	4,190	2,450	1,900	1,870	1,010	1,030	753
20	2,030	2,300	2,500	1,300	1,900	4,150	2,490	1,940	1,670	923	978	722
21	2,110	2,220	2,420	1,300	2,100	4,100	2,580	1,940	1,530	894	923	700
22	2,220	2,150	2,400	1,250	2,200	4,080	2,660	1,890	1,460	869	917	706
23	2,250	2,020	2,350	1,250	2,170	4,440	2,730	1,880	1,420	837	904	694
24	2,200	2,000	2,300	1,200	2,100	4,890	2,820	2,060	1,340	812	894	661
25	2,100	1,960	2,250	1,150	1,900	5,080	2,870	2,060	1,260	802	904	646
26	1,990	1,980	2,200	1,150	1,800	5,180	2,930	2,080	1,200	778	898	652
27	1,880	2,050	2,150	1,100	1,700	5,140	2,980	2,060	1,150	750	888	658
28	1,780	2,050	2,100	1,050	1,600	5,030	3,020	2,000	1,110	737	862	643
29	1,680	2,050	2,050	1,050	-----	4,850	3,020	1,860	1,070	728	893	673
30	1,610	2,100	2,000	1,050	-----	4,620	3,020	1,720	1,010	716	834	670
31	1,540	-----	1,950	1,050	-----	4,370	-----	1,610	-----	697	830	-----
TOTAL	78,890	53,250	66,820	42,750	43,340	107,460	93,420	67,980	53,620	29,039	27,984	22,731
MEAN	2,545	1,775	2,155	1,379	1,548	3,466	3,114	2,193	1,787	937	903	758
CFSM	1.14	.792	.962	.616	.691	1.55	1.39	.979	.798	.418	.403	.338
IN	1.31	.88	1.11	.71	.72	1.78	1.55	1.13	.89	.48	.46	.38

Calendar year 1965: Max 9,680 Min 630 Mean 2,038 Cfsm .910 In. 12.36
 Water year 1965-66: Max 5,180 Min 643 Mean 1,883 Cfsm .841 In. 11.41

STREAMS TRIBUTARY TO LAKE MICHIGAN

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4-0797. Spaulding Creek near Big Falls, Wis.

Location.--Lat 44°38'13", long 89°01'20", 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.

Drainage area.--4.9 sq mi, approximately.

Records available.--Annual maximum, water years 1959-65 and occasional low-flow measurements, water years 1962-64. June 1964 to December 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. May 27, 1958, to June 15, 1964, crest-stage gage only.

Extremes.--1964-66: Maximum discharge during water year, 38 cfs Mar. 4 (gage height, 10.74 ft); minimum recorded, 1.2 cfs Sept. 19-26.
1959-65: Maximum discharge, 101 cfs May 7, 1960 (gage height, 11.64 ft). 1964-66: Minimum recorded discharge, 1.1 cfs July 24, 1964 (gage height, 9.28 ft).

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

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	4.5	7.6	4.8	2.1	2.4	15	12	3.8	1.8	2.1	1.5
2	12	4.9	7.2	4.5	2.1	2.7	16	11	3.6	1.8	2.7	1.9
3	9.7	4.3	6.9	4.2	2.1	3.2	14	10	3.6	1.8	2.0	2.4
4	8.3	4.1	6.7	3.9	2.1	2.3	12	8.9	4.0	1.9	1.8	2.0
5	6.9	4.1	6.2	3.8	2.1	1.6	12	8.6	1.6	2.9	1.7	1.7
6	6.5	4.1	4.9	3.7	2.1	1.1	11	8.3	2.3	2.6	1.6	1.6
7	6.5	4.1	4.9	3.6	2.1	8.1	10	7.9	2.0	2.1	1.8	1.6
8	6.7	4.5	5.3	3.5	2.2	4.7	10	7.6	1.2	1.9	2.2	1.5
9	6.7	4.7	4.9	3.5	7.0	4.5	10	7.2	8.6	2.7	2.2	1.5
10	6.2	4.5	5.1	3.5	2.2	6.5	12	6.5	6.9	2.7	2.0	1.4
11	5.8	4.3	8.1	3.5	1.1	1.2	13	6.9	5.8	2.6	2.1	1.4
12	6.0	9.9	2.2	3.4	1.3	1.7	13	8.6	6.2	4.5	2.0	1.4
13	5.6	2.2	3.5	3.4	1.2	1.5	12	7.9	5.6	6.0	1.8	1.4
14	5.6	1.8	2.6	3.3	1.3	1.2	11	8.1	5.1	4.1	1.8	1.5
15	7.2	1.2	1.4	3.3	5.8	1.3	11	7.6	5.1	3.2	3.7	1.4
16	6.7	1.2	1.0	3.2	5.0	1.2	11	8.9	4.7	2.7	4.5	1.3
17	9.5	1.1	7.0	3.1	4.0	1.3	11	8.3	4.1	2.4	2.7	1.3
18	1.2	8.3	6.1	3.1	3.6	2.6	1.2	8.1	4.0	2.1	2.2	1.3
19	1.0	7.9	5.4	3.0	3.3	2.8	1.4	7.4	3.6	2.0	1.9	1.3
20	9.2	6.9	5.1	2.9	3.0	1.6	1.7	7.2	3.3	1.9	1.8	1.2
21	1.1	6.7	5.0	2.8	2.7	1.3	2.0	6.5	3.2	1.8	2.2	1.2
22	1.0	6.7	5.0	2.7	2.5	1.7	1.8	5.8	3.0	1.7	3.0	1.3
23	8.3	6.7	5.4	2.6	2.4	2.2	1.4	5.8	2.7	1.7	2.6	1.2
24	7.2	6.2	7.8	2.5	2.4	2.1	1.3	7.9	2.5	1.6	2.2	1.2
25	6.5	6.9	6.3	2.4	2.3	1.7	1.2	7.4	2.4	1.6	2.0	1.3
26	5.8	1.2	5.5	2.3	2.3	1.3	1.2	6.2	2.1	1.6	1.7	1.3
27	5.6	2.4	5.0	2.2	2.3	1.2	1.1	5.3	2.0	1.8	1.6	1.3
28	5.3	1.9	4.6	2.2	2.3	1.1	1.1	4.9	2.0	1.6	1.6	1.3
29	4.9	1.4	4.3	2.2	-----	1.1	1.1	4.5	2.0	1.6	1.6	1.6
30	4.7	9.0	4.2	2.2	-----	1.3	1.2	4.3	1.9	1.5	1.5	1.6
31	4.7	-----	5.9	2.2	-----	1.3	-----	4.0	-----	1.5	1.5	-----
Total	235.1	267.3	257.4	97.5	138.8	409.1	381	229.6	172.8	71.7	66.1	43.9
Mean	7.58	8.91	8.30	3.15	4.96	13.2	12.7	7.41	5.76	2.31	2.13	1.46
Cfsm	1.55	1.82	1.69	.643	1.01	2.69	2.59	1.51	1.18	.471	.435	.298
In.	1.78	2.03	1.95	.74	1.05	3.10	2.89	1.74	1.31	.54	.50	.33

Calendar year 1965: Max 75 Min 1.5 Mean 7.44 Cfsm 1.52 In. 20.60
Water year 1965-66: Max 35 Min 1.2 Mean 6.49 Cfsm 1.32 In. 17.96

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 1966.

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.--52 years, 395 cfs.

Extremes.--Maximum discharge during year, 2,400 cfs Feb. 10 (gage height, 5.96 ft, backwater from ice); minimum, 146 cfs Sept. 22-24, 27 (gage height, 1.10 ft).

1914-66: 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 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AVG.	SEPT.
1	748	307	911	420	215	285	904	563	213	196	183	173
2	717	300	520	430	225	290	940	560	225	189	196	191
3	647	297	450	430	240	305	1,050	529	238	189	202	211
4	518	292	380	420	250	500	940	450	245	189	209	221
5	335	283	350	400	265	770	825	375	298	202	202	217
6	417	281	320	370	280	780	778	394	757	206	196	209
7	392	280	310	350	310	720	719	389	858	202	192	200
8	384	280	310	340	400	620	633	375	970	199	196	193
9	384	283	320	330	560	560	512	358	773	199	216	188
10	376	287	330	340	2,000	520	545	346	445	206	220	184
11	362	276	350	350	2,100	660	548	342	379	227	238	180
12	343	314	860	350	1,900	800	539	370	584	231	234	177
13	328	479	1,460	349	1,400	960	527	391	326	231	231	174
14	322	815	1,560	350	900	1,000	517	399	352	238	227	177
15	328	708	1,500	330	700	1,000	507	398	342	230	234	174
16	341	667	1,350	320	520	910	505	405	336	216	241	172
17	390	585	1,200	310	440	773	507	414	317	205	257	170
18	416	442	960	300	370	893	518	415	294	196	249	162
19	426	468	800	290	340	1,110	544	406	290	199	234	157
20	418	437	680	280	320	1,380	646	394	281	192	216	151
21	493	416	600	280	300	1,210	808	376	270	189	209	150
22	527	397	520	275	295	1,170	788	354	252	189	220	152
23	504	387	520	270	293	1,830	764	347	241	183	223	150
24	464	378	540	260	278	1,840	710	369	241	183	234	148
25	418	379	540	250	280	1,570	586	392	231	179	208	154
26	384	477	540	240	280	1,350	531	376	223	183	199	153
27	360	703	520	230	277	1,070	559	342	213	202	191	151
28	342	1,020	500	230	279	750	564	311	202	196	184	151
29	326	986	450	220	-----	740	560	285	199	189	178	157
30	319	998	410	220	-----	837	562	273	196	183	174	160
31	314	-----	410	215	-----	829	-----	257	-----	179	178	-----
TOTAL	13,043	14,222	20,471	9,749	16,017	28,032	19,636	11,955	10,791	6,197	6,571	5,207
MEAN	421	474	660	314	572	904	655	386	360	200	212	174
CFSM	.819	.922	1.28	.611	1.11	1.76	1.27	.751	.700	.389	.413	.339
IN	.94	1.03	1.48	.71	1.16	2.03	1.42	.86	.78	.45	.48	.38

Calendar year 1965 : Max 4,600 Min 135 Mean 473 Cfsm .920 In. 12.50
 Water year 1965-66 : Max 2,100 Min 148 Mean 444 Cfsm .864 In. 11.71

Peak discharge (base, 1,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1500	-	2,400	3-23	1900	3.79	2,160

STREAMS TRIBUTARY TO LAKE MICHIGAN

43

4-0810. Waupaca River near Waupaca, Wis.

Location.--Lat 44°19'50", long 88°59'45", 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, and about 5 miles downstream from Crystal River.

Drainage area.--272 sq mi.

Records available.--June 1916 to September 1966. No winter records for 1964 and 1965 water years.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (from survey level line along railroad). Prior to Oct. 19, 1917, chain gage at site 1 mile downstream at different datum. Oct. 19, 1917, to Nov. 23, 1938, chain gage on bridge at present site and datum.

Average discharge.--48 years (1916-63, 1966), 236 cfs.

Extremes.--1965-66: Maximum discharge during water year, 1,220 cfs Feb. 11 (gage height, 6.15 ft, backwater from ice); minimum, 106 cfs Sept. 14 (gage height, 1.05 ft).

1916-66: Maximum discharge, 2,520 cfs Mar. 20, 1948 (gage height, 6.90 ft); maximum gage height, 8.06 ft Mar. 28, 1950 (backwater from ice); minimum discharge recorded, 38 cfs June 7, 1947.

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

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	267	202	240	220	170	240	318	251	194	160	159	150
2	242	176	219	215	170	240	331	251	191	158	173	163
3	225	181	205	210	170	250	328	245	194	153	170	176
4	230	178	205	205	170	350	305	236	200	143	146	181
5	222	191	200	200	170	700	292	230	230	163	155	165
6	213	183	200	200	170	650	283	228	283	168	155	134
7	210	186	195	195	190	380	279	225	251	148	186	155
8	202	186	190	190	250	280	283	222	236	146	158	158
9	228	191	191	190	400	260	273	208	233	150	170	160
10	213	191	191	185	900	250	264	222	228	155	159	168
11	194	189	213	185	1200	270	254	233	219	163	170	143
12	213	216	376	185	1150	370	254	254	219	163	165	143
13	197	258	498	180	800	320	248	248	200	158	160	163
14	194	258	459	180	500	300	245	245	202	160	160	141
15	200	228	355	175	330	275	236	258	200	165	186	134
16	200	233	270	175	250	270	239	248	197	146	210	146
17	200	236	250	175	230	289	236	248	191	150	200	155
18	213	208	240	170	220	335	245	242	189	138	178	150
19	216	208	235	170	210	376	258	233	191	148	165	143
20	219	197	230	170	210	325	279	219	173	146	160	146
21	248	194	230	170	200	308	299	213	176	138	168	150
22	233	191	225	170	210	362	292	216	173	141	176	141
23	222	200	230	170	240	450	270	216	173	138	183	150
24	210	200	225	170	240	380	270	236	168	136	170	146
25	205	205	215	170	240	330	251	230	168	125	150	141
26	202	248	210	170	240	310	258	230	173	143	165	146
27	178	299	210	170	240	305	264	205	153	150	148	148
28	202	230	205	170	240	305	264	194	160	153	150	150
29	191	200	220	170	-----	299	261	202	163	146	150	153
30	197	225	230	170	-----	335	242	191	155	136	148	153
31	200	-----	230	170	-----	328	-----	191	-----	143	155	-----
Total	6,586	6,288	7,592	5,645	9,710	10,442	8,121	7,070	5,883	4,630	5,146	4,552
Mean	212	210	245	182	347	337	271	228	196	149	166	152
Cfsm	.779	.772	.901	.669	1.28	1.24	.996	.838	.721	.548	.610	.559
In.	.90	.86	1.04	.77	1.33	1.43	1.11	.97	.80	.63	.70	.62

Calendar year : Max --- Min --- Mean --- Cfsm --- In. ---
 Water year 1965-66: Max 1,200 Min 125 Mean 224 Cfsm .824 In. 11.16

Peak discharge (base, 670 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	-	6.15	1,220	3-6	0200	4.64	860

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966 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, 3.05 ft Oct. 25-27; minimum observed, 1.49 ft Feb. 7.

1957-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.92	2.98	2.73	2.69	1.50	2.12	2.59	2.67	2.96	2.80	2.28	2.32
2	2.94	2.98	2.72	2.68	1.50	2.09	2.55	2.66	2.97	2.78	2.40	2.31
3	2.93	2.93	2.72	2.67	1.56	1.92	2.51	2.62	2.89	2.75	2.32	2.31
4	2.92	2.90	2.72	2.64	1.55	2.10	2.48	2.68	2.89	2.72	2.29	2.31
5	2.88	2.90	2.71	2.57	1.53	2.10	2.48	2.72	2.88	2.70	2.32	2.32
6	2.80	2.88	2.70	2.54	1.51	2.10	2.39	2.75	2.88	2.70	2.32	2.33
7	2.78	2.86	2.71	2.50	1.49	2.10	2.38	2.76	2.89	2.69	2.31	2.30
8	2.78	2.84	2.65	2.45	1.50	2.00	2.37	2.77	2.90	2.65	2.30	2.29
9	2.80	2.87	2.63	2.40	1.62	2.00	2.34	2.78	2.89	2.65	2.28	2.28
10	2.81	2.85	2.65	2.30	1.82	1.99	2.31	2.75	2.92	2.65	2.27	2.28
11	2.82	2.85	2.70	2.30	1.90	2.00	2.28	2.73	2.92	2.65	2.27	2.28
12	2.82	2.85	2.75	2.25	1.95	2.03	2.28	2.75	2.91	2.65	2.27	2.28
13	2.80	2.85	2.81	2.20	2.00	2.06	2.20	2.80	2.90	2.67	2.27	2.26
14	2.80	2.85	2.85	2.20	2.04	2.10	2.17	2.78	2.91	2.65	2.27	2.28
15	2.84	2.85	2.85	2.19	2.12	2.15	2.21	2.77	2.96	2.63	2.27	2.22
16	2.83	2.80	2.84	2.18	2.18	2.15	2.24	2.76	2.95	2.57	2.45	2.22
17	2.84	2.80	2.87	2.17	2.22	2.17	2.27	2.86	2.92	2.52	2.37	2.23
18	2.85	2.80	2.86	2.10	2.29	2.31	2.31	2.81	2.94	2.47	2.36	2.23
19	2.89	2.80	2.84	2.03	2.30	2.31	2.38	2.79	2.95	2.50	2.37	2.23
20	2.92	2.80	2.82	1.97	2.31	2.30	2.50	2.78	2.96	2.48	2.37	2.22
21	2.94	2.79	2.73	1.97	2.32	2.30	2.49	2.79	2.97	2.45	2.36	2.18
22	3.00	2.78	2.70	1.94	2.31	2.41	2.48	2.80	2.97	2.45	2.35	2.13
23	3.02	2.69	2.69	1.91	2.30	2.51	2.51	2.82	2.92	2.43	2.32	2.16
24	3.04	2.65	2.69	1.87	2.31	2.48	2.54	2.98	2.92	2.40	2.30	2.20
25	3.05	2.65	2.70	1.85	2.31	2.70	2.58	2.99	2.93	2.38	2.28	2.24
26	3.05	2.65	2.70	1.75	2.27	2.67	2.62	2.99	2.94	2.40	2.30	2.29
27	3.05	2.68	2.71	1.73	2.23	2.64	2.62	3.00	2.95	2.41	2.30	2.08
28	3.04	2.71	2.71	1.75	2.19	2.61	2.42	2.98	2.90	2.38	2.30	2.08
29	3.00	2.75	2.70	1.70	-----	2.61	2.68	2.96	2.82	2.38	2.30	2.11
30	3.00	2.75	2.70	1.65	-----	2.61	2.68	2.95	2.81	2.34	2.28	2.04
31	2.99	-----	2.70	1.60	-----	2.49	-----	2.94	-----	2.31	2.32	-----

STREAMS TRIBUTARY TO LAKE MICHIGAN

45

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 1966.

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

Average discharge--70 years, 4,154 cfs.

Extremes--Maximum daily discharge during year, 14,200 cfs Mar. 29-31; minimum daily, 1,190 cfs Sept. 30.
1918-66: 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. 44). 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,020	5,250	5,310	9,260	4,950	7,610	13,600	4,110	3,710	2,690	1,610	1,200
2	7,930	5,600	5,340	7,600	3,570	7,590	14,100	4,670	3,810	2,770	1,490	1,330
3	7,220	5,550	5,710	8,950	3,200	7,670	13,900	4,400	3,920	2,500	1,770	1,720
4	7,300	5,180	5,740	8,700	3,200	8,760	13,600	4,140	3,870	2,450	1,580	2,140
5	8,000	5,350	5,680	8,260	3,210	7,840	13,800	3,270	3,660	2,500	1,640	2,070
6	7,720	5,250	5,360	8,210	3,130	7,440	13,800	3,050	3,390	2,190	1,620	1,710
7	7,690	5,010	5,110	7,150	3,450	7,380	13,600	3,230	3,520	1,630	1,550	1,460
8	7,220	5,070	5,680	9,220	4,160	7,420	13,300	2,990	3,420	1,480	1,820	1,590
9	6,030	4,730	5,700	8,130	5,960	7,140	12,900	2,750	3,220	2,070	1,530	1,350
10	5,900	4,760	5,530	8,110	8,220	7,180	12,800	3,350	3,390	1,940	1,530	1,630
11	5,940	5,090	5,670	9,450	5,770	7,810	12,400	3,330	3,710	2,980	1,520	1,660
12	5,090	5,200	6,550	7,270	5,380	8,040	9,000	3,050	4,280	2,420	1,650	1,490
13	5,130	5,090	6,860	6,760	5,720	7,900	8,170	2,940	4,090	2,420	1,490	1,380
14	5,450	4,610	8,460	6,830	6,160	8,000	5,650	3,380	3,670	2,400	1,340	1,220
15	5,380	4,950	8,590	6,320	6,900	8,140	3,110	3,390	3,690	2,200	1,710	1,580
16	5,240	5,730	8,200	6,600	6,160	8,140	2,920	3,440	3,590	2,480	1,450	1,530
17	5,200	5,420	8,970	6,490	7,480	8,160	3,180	3,570	3,770	2,240	2,300	1,410
18	5,360	5,800	8,980	6,390	6,750	8,550	3,490	3,510	4,130	2,350	1,300	1,370
19	4,590	5,720	6,760	6,540	7,170	8,480	3,560	3,560	3,750	1,940	1,420	1,350
20	4,770	5,650	8,350	6,210	7,590	8,350	3,740	3,640	3,770	2,150	1,540	1,340
21	4,950	5,500	9,200	6,080	12,000	8,610	3,740	3,690	4,040	2,120	1,680	1,440
22	4,910	5,400	8,870	5,800	8,000	8,260	3,900	3,470	3,600	2,350	1,600	1,250
23	5,100	5,510	8,640	5,460	8,140	9,140	3,960	4,000	3,630	1,930	1,440	1,350
24	4,740	5,850	8,500	5,850	7,830	7,860	3,930	4,340	3,670	1,910	1,430	1,230
25	5,280	6,140	7,610	5,570	8,150	9,500	3,930	4,120	3,650	2,380	1,750	1,260
26	5,380	5,890	7,390	5,520	8,030	12,800	3,880	4,220	2,940	2,150	1,620	1,390
27	4,880	6,000	8,270	5,110	7,970	13,400	3,680	4,410	3,370	2,130	1,740	1,310
28	5,070	4,710	9,310	5,060	7,730	13,600	3,770	3,880	3,030	1,620	1,490	1,310
29	6,000	5,900	8,770	7,380	-----	14,200	3,920	3,360	3,080	1,660	1,530	1,410
30	5,940	5,220	8,400	5,670	-----	14,200	4,270	3,590	2,790	1,540	1,720	1,190
31	5,160	-----	10,500	5,410	-----	14,200	-----	3,720	-----	1,690	1,540	-----
Total	182,590	161,130	228,010	215,360	175,980	283,370	229,600	112,570	108,160	67,280	49,400	43,670
Mean	5,890	5,371	7,355	6,947	6,285	9,141	7,653	3,631	3,605	2,170	1,594	1,456

Calendar year 1965: Max 12,400 Min 1,260 Mean 4,564
Water year 1965-66: Max 14,200 Min 1,190 Mean 5,088

STREAMS TRIBUTARY TO LAKE MICHIGAN

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, 0.4 mile west of junction with County Trunk C, 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 1966, no winter records.

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

Extremes.--Maximum discharge during year, 4,000 cfs Feb. 9 (gage height, 16.05 ft, from crest gage, backwater from ice). Minimum recorded, 7.2 cfs Sept. 1 (gage height, 8.21 ft).

1958-66: Maximum discharge, 6,500 cfs Mar. 30, 1960 (gage height, 16.03 ft); 1965-66: Minimum recorded, 5.9 cfs July 29, 30, 1965 (gage height, 8.08 ft).

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	249	31					173	67	51	16	14	7.9
2	175	30					264	59	43	15	15	9.9
3	115	30					189	54	43	15	14	12
4	85	29					144	48	42	19	14	11
5	66	28					124	46	40	20	14	9.9
6	57	27					113	43	40	20	13	9.5
7	49	27					111	42	44	18	14	9.0
8	48	29					102	42	36	16	19	9.0
9	51	32					94	41	35	18	23	8.3
10	52						87	39	33	18	20	8.3
11	48						80	39	32	24	19	8.3
12	44						75	42	34	41	19	8.3
13	39						69	42	35	48	18	8.3
14	36						65	42	32	39	16	9.5
15	36						63	42	29	30	20	8.6
16	36						60	45	29	24	24	8.6
17	36						58	44	29	19	19	8.6
18	37						65	43	28	16	19	8.6
19	36						81	43	26	16	16	8.6
20	40						101	43	24	14	14	8.6
21	91						104	43	23	14	15	8.6
22	115						91	41	21	14	16	8.6
23	79						74	88	21	14	14	8.6
24	58						67	379	20	13	14	8.3
25	48						60	205	19	13	13	8.3
26	43						57	126	18	13	11	8.3
27	40						69	90	16	14	10	8.3
28	36						75	66	17	20	9.5	8.6
29	34						69	58	17	17	9.0	11
30	32						69	52	16	16	8.3	10
31	32					124		48		14	7.9	
Total	1,943						2,853	2,102	893	608	471.7	269.4
Mean	62.7						95.1	67.8	29.8	19.6	15.2	8.98
Cfsm	.486						.737	.526	.231	.152	.118	.070
In.	.56						.82	.61	.26	.18	.14	.08

STREAMS TRIBUTARY TO LAKE MICHIGAN

47

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 1966 (fragmentary).

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

Extremes.--Maximum elevation observed during year, 97.64 ft May 26; minimum observed, 96.26 ft Oct. 13, Nov. 10, 13, Dec. 8.

1936-42, 1945-66: 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 Public Service Commission of Wisconsin.

Remarks.--Gage heights have been reduced to elevations above datum assumed for this lake by Public Service Commission of Wisconsin. Lake ice covered about Nov. 20 to about April 15.

Elevations, in feet, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1												
2	6.32						7.45			7.35		7.05
3												
4									7.55			
5												
6		6.24									7.13	
7								7.51				
8			6.26									
9	6.32						7.47			7.33		
10		6.26										7.03
11				6.63					7.47			
12												
13	6.26	6.26									7.15	
14								7.51				
15												
16	6.30						7.49			7.45		
17												6.95
18									7.45			
19		6.30									7.15	
20								7.47		7.30		
21							7.55		7.49			
22												
23	6.34						7.53			7.35		
24					7.17							6.85
25									7.43			
26						7.43		7.64				
27		6.34						7.57			7.11	
28												
29												
30	6.30						7.49			7.43		6.85
31						7.46					7.05	

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--23 years (1916-24, 1950-66), 235 cfs.

Extremes.--Maximum discharge during year, 5,150 cfs Feb. 10 (gage height, 9.76 ft); minimum, 23 cfs Aug. 29 (gage height, 1.61 ft). 1916-24, 1950-66: 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 cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	826	288	325	858	82	280	632	309	350	49	42	39
2	600	272	300	641	82	280	748	276	258	42	49	58
3	426	259	275	672	82	290	737	257	186	42	54	205
4	332	245	255	450	82	300	608	232	193	43	44	160
5	299	221	240	300	82	700	537	215	185	44	58	150
6	278	210	220	220	82	580	492	208	171	45	39	85
7	263	242	210	200	82	500	476	182	154	48	35	58
8	238	271	200	250	110	460	440	153	110	43	36	46
9	205	251	200	360	1,610	440	398	154	133	40	42	42
10	182	227	195	220	4,640	500	372	154	158	42	51	41
11	168	215	272	185	3,230	701	351	149	152	67	46	39
12	156	264	1,470	180	2,310	896	324	173	150	90	41	38
13	130	380	1,880	170	1,680	800	288	178	155	91	41	37
14	106	327	1,370	155	1,300	720	275	175	146	77	39	41
15	128	279	997	145	1,000	660	260	171	131	74	51	39
16	167	263	611	135	700	620	242	170	117	69	95	39
17	161	257	510	125	380	600	234	169	113	60	73	36
18	173	226	370	120	340	806	247	154	110	59	53	37
19	182	221	305	110	320	849	341	147	98	54	42	36
20	197	215	280	105	315	782	438	144	92	52	35	37
21	883	208	280	100	310	649	401	136	90	49	43	38
22	1,520	206	290	98	310	722	316	105	88	49	63	37
23	1,180	204	330	94	300	2,330	253	141	81	55	61	37
24	764	193	520	92	300	2,130	256	603	75	52	49	36
25	501	188	480	90	290	1,320	268	539	67	44	42	32
26	417	406	400	88	290	992	257	413	56	38	39	32
27	382	1,140	330	87	290	903	266	326	52	39	40	32
28	355	801	320	86	290	827	271	298	43	40	38	34
29	329	470	320	84	-----	761	272	287	46	42	33	37
30	330	380	397	84	-----	719	312	326	51	33	37	35
31	313	-----	861	82	-----	636	-----	377	-----	35	67	-----
Total	12,191	9,329	15,013	6,586	20,889	23,753	11,312	7,321	3,811	1,607	1,478	1,613
Mean	393	311	484	212	746	766	377	236	127	51.8	47.7	53.8
Cfsm	.910	.720	1.12	.491	1.73	1.77	.873	.546	.294	.120	.110	.125
In.	1.05	.80	1.29	.57	1.80	2.04	.97	.63	.33	.14	.13	.14

Calendar year 1965: Max 4,040 Min 23 Mean 420 Cfsm .972 In. 13.20
 Water year 1965-66: Max 4,640 Min 32 Mean 315 Cfsm .729 In. 9.89

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-21	2300	6.44	1,960	2-10	1900	9.76	5,150
12-12	2300	7.31	2,590	3-23	1400	7.99	3,160

STREAMS TRIBUTARY TO LAKE MICHIGAN

49

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 1966.

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.--36 years, 63.2 cfs.

Extremes.--Maximum discharge during year, 917 cfs Oct. 23 (gage height, 7.92 ft; minimum daily discharge, 7.8 cfs Sept. 29, 30 (gage height, 5.18 ft).

1930-65: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	230	91	79	428	39	74	157	105	36	16	9.0	11
2	202	84	74	386	40	82	195	91	38	16	11	10
3	128	76	76	300	40	96	173	79	38	16	14	19
4	100	72	76	320	40	200	154	72	38	16	14	23
5	86	64	76	190	41	340	132	64	35	16	17	25
6	76	58	74	140	44	250	119	62	29	16	17	19
7	72	74	72	110	56	180	108	60	26	16	12	16
8	67	81	70	80	70	110	100	58	35	14	11	15
9	64	76	67	68	120	80	94	56	38	14	17	14
10	58	74	58	58	600	100	89	52	35	13	17	13
11	54	67	224	55	700	125	81	76	34	15	12	13
12	51	79	488	52	400	157	76	100	38	19	11	13
13	49	102	528	50	160	214	69	105	41	17	10	12
14	47	97	453	49	100	189	64	97	36	16	10	11
15	84	86	320	48	80	186	62	86	35	17	17	11
16	97	84	220	47	70	182	62	81	34	17	14	11
17	125	76	150	46	64	205	62	74	32	16	16	11
18	147	67	100	46	60	230	72	67	30	15	14	10
19	115	67	80	45	58	208	67	62	28	12	13	10
20	100	64	70	44	56	182	74	58	26	11	13	9.6
21	310	67	72	43	58	182	214	54	25	11	15	9.0
22	734	64	74	42	60	282	147	51	23	11	19	9.0
23	825	60	80	42	62	592	97	58	21	10	23	9.0
24	631	56	140	41	64	755	91	128	19	9.6	20	9.0
25	453	51	272	40	67	524	91	128	18	9.0	17	8.6
26	272	100	220	39	68	294	89	79	17	9.6	14	8.6
27	195	288	170	39	70	200	97	67	17	11	13	8.2
28	144	259	140	38	72	180	89	58	17	11	14	8.2
29	125	132	160	37	-----	170	84	47	16	11	14	7.8
30	113	91	220	36	-----	150	97	42	16	9.6	13	7.8
31	100	-----	350	38	-----	147	-----	39	-----	9.6	11	-----
Total	5,854	2,707	5,253	2,997	3,359	6,866	3,106	2,256	871	420.4	420	361.8
Mean	189	90.2	169	96.7	120	221	104	72.8	29.0	13.6	13.5	12.1
Cfsm	1.56	.745	1.40	.799	.992	1.83	.860	.602	.240	.112	.112	.100
In.	1.79	.83	1.61	.92	1.03	2.11	.95	.69	.27	.13	.13	.11

Calendar year 1965: Max 1,870 Min 4.6 Mean 125 Cfsm 1.03 In. 13.97
 Water year 1965-66: Max 825 Min 7.8 Mean 94.4 Cfsm .780 In. 10.57

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966. Published as "near Milwaukee" prior to 1936.

Gage--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.

Average discharge--52 years, 385 cfs.

Extremes--Maximum discharge during year, 5,380 cfs Feb. 12 (gage height, 6.27 ft); minimum, 27 cfs July 29 (gage height, 1.77 ft). 1914-66: 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, which are fair. Occasional regulation caused by dams above station.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1110	549	570	1260	290	418	965	599	404	113	225	134
2	1100	499	678	1100	310	460	1030	535	364	106	120	356
3	975	471	631	1000	320	559	1070	543	332	95	142	295
4	776	444	542	780	340	800	1020	498	325	88	175	446
5	710	398	499	580	350	1240	925	446	295	197	129	505
6	631	391	465	430	360	1060	856	425	271	102	120	559
7	571	391	340	340	390	1040	674	411	240	102	106	301
8	542	746	350	290	430	1260	772	390	215	98	113	220
9	513	549	360	330	600	1000	709	364	332	98	106	165
10	451	542	391	370	1200	800	666	358	260	88	102	142
11	293	520	631	400	4000	895	640	468	319	267	102	129
12	398	564	1350	370	5060	1010	607	397	301	147	102	156
13	385	578	2000	340	4420	1060	575	543	295	160	116	165
14	359	631	1930	330	3150	1200	535	512	301	250	116	152
15	385	601	1840	330	1700	1060	661	490	289	160	250	138
16	471	571	1480	330	1200	889	468	460	265	152	147	138
17	601	549	300	330	800	1210	460	460	255	152	138	124
18	586	506	740	330	430	863	498	432	235	147	165	116
19	549	471	640	323	350	1280	718	425	210	138	156	113
20	542	444	590	300	360	1130	915	418	205	124	129	113
21	1860	417	570	280	410	1200	1020	351	215	116	411	106
22	2960	411	540	290	400	1430	985	313	205	113	185	102
23	2570	404	530	300	390	2760	856	673	190	109	240	210
24	2130	398	900	310	380	3180	763	778	175	95	265	160
25	1800	385	800	300	380	2580	434	975	160	95	215	95
26	1320	639	700	290	390	1970	599	1100	138	346	156	95
27	1180	995	620	280	390	1640	891	723	129	147	129	95
28	819	1080	580	270	390	1240	387	856	152	37	113	95
29	793	680	560	270	-----	1220	697	790	116	78	116	124
30	760	610	800	270	-----	1110	782	559	113	98	245	102
31	594	-----	1200	280	-----	1020	-----	460	-----	78	176	-----
Total	28,734	16,434	24,727	13,003	29,190	38,584	22,178	16,752	7,306	4,096	5,010	5,651
Mean	927	548	798	419	1,042	1,245	739	540	244	132	162	188
Cfsm	1.35	.799	1.16	.611	1.52	1.81	1.08	.787	.356	.192	.236	.274
In.	1.56	.89	1.34	.70	1.58	2.09	1.20	.91	.40	.22	.27	.31

Calendar year 1965: Max 5,600 Min 5 Mean 641 Cfsm .934 In. 12.70
 Water year 1965-66: Max 5,060 Min 37 Mean 580 Cfsm .845 In. 11.47

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-22	1200	5.12	3,230	12-12	1930	6.27	5,380
12-13	1600	4.29	2,000				

STREAMS TRIBUTARY TO LAKE MICHIGAN

51

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 1966.

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.--5 years, 69.2 cfs.

Extremes.--Maximum discharge during year, 2,520 cfs Feb. 9 (gage height, 6.04 ft); minimum daily, 6.2 cfs Sept. 17, 18, 25. 1961-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	228	63	53	380	25	45	162	70	25	9.4	9.1	8.4
2	165	59	51	300	25	69	150	67	23	8.8	56	14
3	110	55	47	253	25	92	131	69	22	7.8	16	118
4	76	53	44	208	25	437	97	58	24	6.8	9.1	19
5	59	49	40	152	25	250	86	52	24	8.1	8.8	9.1
6	57	45	38	120	27	115	81	52	23	11	8.1	8.1
7	51	43	35	91	32	63	83	48	19	9.1	7.8	7.5
8	51	42	33	72	150	71	80	45	21	8.4	11	6.8
9	48	42	32	64	2100	76	76	42	218	9.4	11	7.5
10	45	33	30	58	1890	100	71	34	49	8.1	12	6.5
11	42	33	403	80	800	180	65	54	31	34	14	6.8
12	37	139	470	66	300	175	60	172	25	24	12	6.8
13	33	105	517	52	100	165	54	191	21	19	8.1	7.5
14	32	74	351	40	94	141	49	150	18	78	8.1	6.8
15	45	53	232	35	97	131	45	80	20	20	7.8	7.2
16	50	57	136	30	108	118	41	69	18	11	42	6.5
17	123	42	90	29	51	102	38	58	16	9.4	12	6.2
18	101	65	72	28	46	86	52	52	15	8.8	8.8	6.2
19	74	38	64	27	42	90	305	47	14	9.1	7.8	6.8
20	88	37	58	27	40	97	210	42	12	9.4	6.5	7.5
21	448	38	54	27	40	141	202	39	12	11	131	7.5
22	1280	38	52	26	39	696	144	47	13	11	40	6.8
23	964	33	60	26	38	1300	124	81	11	8.4	9.4	6.5
24	715	30	90	25	38	720	100	292	11	9.4	9.4	6.5
25	355	30	160	25	37	410	71	345	9.1	10	8.1	6.2
26	196	490	150	25	37	275	71	150	8.1	8.8	8.8	6.5
27	136	245	140	25	38	202	65	72	8.1	17	8.1	6.8
28	114	228	135	24	38	154	69	78	9.1	11	7.5	6.8
29	96	112	192	24	-----	151	56	50	9.4	11	8.1	8.4
30	83	57	398	24	-----	162	72	35	11	7.8	8.1	7.8
31	76	-----	428	24	-----	151	-----	27	-----	7.5	9.1	-----
Total	5,978	2,428	4,655	2,387	6,307	6,965	2,910	2,668	739.8	422.5	523.6	343.0
Mean	193	80.9	150	77.0	225	225	97.0	86.1	24.7	13.6	16.9	11.4
Cfsm	1.57	.658	1.22	.626	1.83	1.83	.789	.700	.201	.111	.137	.093
In.	1.81	.73	1.41	.72	1.91	2.11	.88	.81	.22	.13	.16	.10

Calendar year 1965: Max 1,610 Min 6.2 Mean 129 Cfsm 1.05 In. 14.21
 Water year 1965-66: Max 2,100 Min 6.2 Mean 99.5 Cfsm .809 In. 10.99

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-21	2400	4.26	1,380	3-23	1230	4.50	1,510
2-9	0030	6.04	2,520				

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966.

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

Extremes.--Maximum discharge during year, 526 cfs Feb. 10 (gage height, 6.38 ft); minimum daily, 1.2 cfs Sept. 20, 21, 23, 24. 1963-66: Maximum discharge, that of Feb. 10, 1966; minimum, 0.4 cfs Jan. 3, 1964 (gage height, 2.33 ft).

Remarks.--Records good except those for winter months, Mar. 13-22 and Sept. 2-26, which are fair. Low flows may occasionally be affected by activity of gravel pit upstream.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	8.4	12	144	2.7	9.8	23	48	3.6	2.2	43	2.1
2	16	7.9	11	87	2.6	20	26	23	3.6	2.2	76	1.9
3	10	7.4	12	60	2.5	24	20	16	3.6	2.1	27	3.0
4	7.4	7.0	12	36	2.5	147	16	13	3.5	2.1	12	7.0
5	6.5	6.5	10	24	2.5	62	14	12	3.5	6.4	5.8	4.5
6	6.2	6.2	8.7	20	2.6	28	13	9.8	3.1	3.8	4.2	3.1
7	5.8	14	7.9	15	2.7	17	12	12	2.9	2.2	3.6	2.6
8	6.0	14	7.2	12	5.8	14	11	7.7	2.9	2.1	3.3	2.0
9	5.6	11	7.2	9.0	208	12	11	7.0	1.9	2.1	3.1	1.8
10	5.2	8.4	7.9	8.9	490	16	10	6.5	1.7	1.9	3.1	1.8
11	4.6	9.5	70	7.4	283	45	9.0	9.5	7.7	14	2.9	1.7
12	4.2	25	172	6.0	157	37	8.4	18	4.8	3.6	3.1	1.9
13	4.4	30	147	5.0	68	27	7.7	22	3.8	3.3	3.6	1.9
14	4.6	18	78	4.5	44	22	7.4	29	3.5	10	3.1	1.5
15	4.6	13	42	4.3	30	19	7.4	17	3.3	6.0	12	1.4
16	4.4	12	27	4.1	20	17	7.0	14	2.9	4.6	7.9	1.3
17	15	10	21	3.9	15	16	9.0	11	3.1	3.3	6.7	2.3
18	12	9.0	17	4.0	12	24	15	10	2.7	2.9	4.2	1.7
19	8.7	8.2	14	4.2	10	20	44	8.7	2.6	2.7	3.3	1.3
20	7.7	7.9	12	4.0	8.8	17	41	7.4	2.4	2.7	2.9	1.2
21	61	7.7	13	4.0	8.0	15	45	6.5	2.6	2.6	10	1.2
22	163	7.4	12	3.9	7.2	300	26	5.8	2.4	2.7	6.5	1.4
23	86	7.4	16	3.9	6.7	290	20	11	2.2	2.7	5.2	1.2
24	41	7.2	176	3.8	6.5	133	17	28	2.4	2.4	3.3	1.2
25	27	7.0	172	3.6	6.5	64	13	16	2.4	2.6	2.6	1.3
26	20	68	123	3.5	6.7	46	11	9.0	2.1	2.2	2.4	1.6
27	17	114	78	3.5	6.5	35	11	7.0	2.1	15	2.1	2.6
28	14	45	46	3.3	6.5	26	12	5.2	3.3	11	2.1	2.4
29	12	27	28	3.1	-----	27	14	4.4	2.7	5.6	1.9	2.4
30	11	15	53	3.0	-----	33	96	4.2	2.4	3.5	2.1	2.4
31	9.5	-----	236	2.8	-----	23	-----	3.8	-----	2.9	1.9	-----
Total	625.4	539.1	1,648.9	501.7	1,424.3	1,585.8	576.9	402.5	124.1	153.2	270.9	63.7
Mean	20.2	18.0	53.2	16.2	50.9	51.2	19.2	13.0	4.14	4.94	8.74	2.12
Cfsm	.808	.720	2.13	.648	2.04	2.05	.768	.520	.166	.198	.350	.085
In.	.93	.80	2.45	.75	2.12	2.36	.86	.60	.18	.23	.40	.09

Calendar year 1965 : Max 380 Min 2.6 Mean 28.4 Cfsm 1.14 In. 15.43
 Water year 1965-66 : Max 490 Min 1.2 Mean 21.7 Cfsm .868 In. 11.77

Peak discharge (base, 250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-24	1900	5.32	267	3-23	0900	5.52	313
12-31	1100	5.39	283	7-26	1700	5.26	255
2-10	0030	6.38	526	8- 1	1730	5.50	308

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 1966.

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

Extremes.--Maximum discharge during year, 1,300 cfs Feb. 10 (gage height, 7.76 ft, backwater from ice); minimum, 0.8 cfs Sept. 2 (gage height, 1.62 ft).

1963-66: Maximum discharge, 1,600 cfs Mar. 5, 1965 (gage height, 8.43 ft, backwater from ice); minimum, that of Sept. 2, 1966.

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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	18	33	246	12	30	50	71	11	6.4	11	5.7
2	33	16	26	123	12	54	51	43	9.5	5.7	132	2.2
3	23	17	28	122	12	56	45	38	10	5.7	31	8.2
4	18	15	28	67	12	174	41	31	9.5	5.7	13	15
5	17	12	27	52	13	85	38	29	8.4	6.8	6.4	8.4
6	15	11	24	45	13	51	38	27	9.5	15	6.8	6.4
7	15	29	25	36	14	44	37	23	7.8	10	5.7	5.7
8	17	33	21	35	16	37	35	22	7.2	6.4	6.1	4.2
9	16	24	21	34	350	35	38	21	30	5.7	6.1	4.2
10	14	20	21	31	900	38	36	22	42	5.3	5.7	3.8
11	12	19	106	25	300	85	34	27	17	10	5.7	3.2
12	11	53	244	19	130	80	31	57	12	17	5.7	3.8
13	11	56	219	17	84	61	29	53	11	11	4.9	3.8
14	11	33	108	16	58	56	28	56	8.9	15	4.9	3.2
15	15	28	66	15	45	51	27	40	9.5	20	6.1	3.1
16	15	28	51	14	36	46	26	34	9.5	10	22	3.1
17	30	26	44	14	30	43	27	34	9.5	6.4	14	4.5
18	31	22	36	15	23	53	50	31	8.9	5.3	8.4	3.2
19	20	19	32	16	21	50	109	27	8.9	5.3	6.4	2.9
20	22	19	30	16	20	44	82	24	8.9	5.3	6.4	2.9
21	67	18	29	16	19	43	82	20	11	4.9	11	2.8
22	344	17	30	16	20	542	53	18	8.4	4.5	28	3.1
23	171	17	40	15	21	498	46	20	6.4	4.9	14	2.8
24	77	15	226	14	20	235	43	88	7.8	3.8	7.2	2.8
25	50	15	257	14	20	111	38	33	7.2	4.9	6.4	3.1
26	39	77	142	13	20	89	33	24	6.1	4.5	5.7	3.8
27	32	183	88	13	20	70	32	18	6.1	2.2	4.9	4.9
28	29	67	72	13	22	56	33	15	6.8	14	4.5	5.3
29	21	46	60	13	-----	56	30	13	11	6.8	5.3	4.9
30	23	31	100	12	-----	64	137	11	7.8	4.5	4.9	4.5
31	20	-----	392	12	-----	50	-----	12	-----	4.2	4.9	-----
Total	1,291	984	2,626	1,109	2,263	2,987	1,379	982	327.6	257.0	405.1	135.5
Mean	41.6	32.8	84.7	35.8	80.8	96.4	46.0	31.7	10.9	8.29	13.1	4.52
Cfsm	.844	.665	1.72	.726	1.64	1.96	.933	.643	.221	.168	.266	.092
In.	.97	.74	1.98	.84	1.71	2.25	1.04	.74	.25	.19	.31	.10

Calendar year 1965: Max 1,100 Min 2.1 Mean 55.5 Cfsm 1.13 In. 15.29

Water year 1965-66: Max 900 Min 2.2 Mean 40.4 Cfsm .819 In. 11.12

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-22	1530	6.54	498	12-31	1800	6.49	494
11-27	0700	5.16	221	2-10	0700	7.76	1,300
12-13	0300	5.69	294	3- 4	1430	5.06	217
12-25	0100	6.23	408	3-22	1100	7.01	768

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1966.

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

Extremes.--Maximum discharge during year, 774 cfs Feb. 11 (gage height, 9.27 ft); minimum, 1.2 cfs Aug. 9; minimum gage height, 2.05 ft Sept. 23, 24.
1964-66: Maximum discharge, that of Feb. 11, 1966; minimum daily, 0.4 cfs (revised) Dec. 19, 1963, result of freezeup.

Remarks.--Records fair except those for winter months and those after June 1, which are poor.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	40	41	392	12	41	72	132	13	4.2	5.1	1.9
2	44	37	36	233	12	63	71	84	13	3.5	2.6	1.6
3	34	32	37	158	12	74	64	64	11	3.2	2.0	2.1
4	26	27	34	108	12	190	56	48	10	4.0	6.1	2.6
5	24	24	32	86	12	132	50	43	9.2	3.0	7.5	1.9
6	24	22	26	71	12	80	46	35	8.5	3.6	2.4	1.4
7	21	31	22	57	13	58	42	30	8.0	4.2	1.5	1.5
8	20	43	21	44	13	47	37	28	7.3	3.5	1.5	1.8
9	17	34	19	35	220	43	35	24	15	3.2	1.2	1.6
10	14	28	19	28	718	45	33	21	52	3.0	1.4	1.6
11	13	26	72	23	763	70	30	25	33	4.0	1.8	1.6
12	13	51	183	20	602	91	27	72	21	4.4	2.1	1.5
13	13	70	231	18	392	90	25	82	19	5.0	1.7	1.6
14	11	50	169	16	232	78	23	90	22	12	1.8	2.0
15	14	42	104	15	160	69	22	69	16	15	7.4	1.6
16	13	40	76	14	126	60	21	55	14	7.0	7.2	1.6
17	22	32	59	14	98	55	20	44	12	4.8	7.0	1.6
18	31	26	40	15	74	65	26	40	11	3.6	2.2	1.5
19	26	24	33	15	60	68	54	34	9.0	3.4	2.1	1.6
20	24	25	30	16	50	55	62	28	7.7	2.9	2.7	1.6
21	83	23	28	16	43	62	79	24	8.0	2.8	5.5	1.5
22	273	24	28	15	37	356	65	20	6.8	2.4	10	1.3
23	338	20	31	14	33	452	69	21	6.5	2.5	4.6	1.3
24	316	17	206	13	32	380	87	74	6.3	2.1	7.5	1.3
25	249	17	395	13	30	225	63	49	5.4	1.9	2.5	1.6
26	152	64	299	13	24	151	48	36	4.8	2.5	2.0	1.5
27	99	188	209	13	22	120	41	27	4.6	4.0	2.0	1.3
28	75	117	110	12	24	99	42	22	4.4	3.5	1.9	1.7
29	60	68	47	12	-----	91	31	18	5.4	2.7	2.1	2.0
30	55	49	112	12	-----	96	149	16	5.0	2.5	3.0	2.1
31	46	-----	422	12	-----	79	-----	15	-----	2.6	2.2	-----
Total	2,201	1,291	3,171	1,523	3,838	3,585	1,490	1,370	368.9	127.0	136.0	49.8
Mean	71.0	43.0	102	49.1	137	116	49.7	44.2	12.3	4.10	4.39	1.66
Cfsm	1.24	.752	1.78	.858	2.40	2.03	.869	.773	.215	.072	.077	.029
In.	1.43	.84	2.06	.99	2.50	2.33	.97	.89	.24	.08	.09	.03

Calendar year 1965: Max 450 Min 1.3 Mean 57.1 Cfsm .998 In. 13.54
Water year 1965-66: Max 763 Min 1.2 Mean 52.5 Cfsm .918 In. 12.45

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-23	1730	8.55	341	2-11	0500	9.77	774
11-27	1030	6.54	201	3- 5	1600	6.58	225
12-13	0800	7.03	246	3-23	1700	8.47	464
12-25	1230	8.28	425	4-30	1800	6.18	197
12-31	2300	8.88	613				

STREAMS TRIBUTARY TO LAKE MICHIGAN

55

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 1966.

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, 2,500 cfs Feb. 12 (gage height, 8.13 ft); minimum discharge, 3.3 cfs Sept. 24, 25 (gage height, 2.06 ft).

1963-66: Maximum discharge, that of 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	104	123	823	43	87	200	407	40	17	21	6.5
2	157	93	106	894	43	142	190	295	35	15	151	6.9
3	113	86	100	629	44	186	176	190	31	13	170	8.2
4	86	84	102	397	44	434	154	145	28	13	78	9.0
5	69	73	95	256	45	450	137	126	24	11	46	10
6	64	68	86	203	47	327	126	113	22	12	33	14
7	61	71	74	180	52	193	118	102	20	13	26	10
8	56	93	68	170	60	151	111	100	21	16	21	7.3
9	53	104	66	150	500	121	106	87	32	13	18	6.9
10	49	87	62	105	1,650	118	106	84	64	10	17	5.6
11	44	78	126	80	2,400	167	100	87	89	11	18	5.2
12	38	95	418	62	1,890	256	93	145	59	10	17	4.8
13	35	170	622	56	1,120	256	86	225	49	17	13	4.8
14	35	167	667	54	784	221	82	252	44	23	9.0	4.6
15	34	121	519	52	501	186	80	240	43	24	12	4.1
16	33	104	282	52	341	160	78	173	40	37	11	3.9
17	45	91	200	54	240	142	76	157	38	21	21	3.9
18	74	82	157	59	185	145	87	145	33	15	23	3.9
19	80	73	137	60	175	173	137	132	29	10	15	4.1
20	68	68	116	61	160	154	248	118	25	8.2	11	4.6
21	165	66	106	60	150	160	252	100	23	8.2	23	4.1
22	674	64	100	58	125	642	229	86	22	7.3	24	4.1
23	680	61	97	54	102	1,170	186	78	21	7.3	35	3.9
24	771	59	376	52	93	1,280	186	100	19	7.3	26	3.7
25	667	56	745	50	84	953	170	160	18	6.9	17	3.5
26	536	121	784	49	78	585	134	97	17	6.5	14	3.7
27	322	356	600	48	78	391	113	76	17	8.2	10	3.7
28	207	428	400	46	78	299	109	61	15	19	8.2	3.9
29	164	299	280	45	-----	252	104	49	15	24	7.3	4.8
30	132	170	240	44	-----	256	273	44	16	18	6.5	4.8
31	118	-----	674	43	-----	237	-----	40	-----	14	6.1	-----
Total	5,770	3,592	8,528	4,946	11,112	10,294	4,247	4,214	949	435.9	908.1	168.5
Mean	186	120	275	160	397	332	142	136	31.6	14.1	29.3	5.62
Cfs/m	.995	.642	1.47	.856	2.12	1.78	.759	.727	.169	.075	.157	.030
In.	1.15	.71	1.70	.98	2.21	2.05	.84	.84	.19	.09	.18	.03

Calendar year 1965 : Max 1,380 Min 3.5 Mean 174 Cfs/m .930 In. 12.63
 Water year 1965-66 : Max 2,400 Min 3.5 Mean 151 Cfs/m .807 In. 10.97

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-24	1500	4.37	790	2-12	0015	8.13	2,500
11-28	1530	3.80	439	3- 4	0800	3.87	478
12-14	1430	4.19	674	3-23	1930	5.34	1,420
12-26	2230	4.47	855	5- 1	1430	3.80	423
1- 2	0500	4.60	940				

ST. CROIX RIVER BASIN

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 1966.

Gage.--Headwater and tailwater gages read hourly.

Average discharge.--39 years, 466 cfs.

Extremes.--Maximum daily discharge during year, 1,280 cfs Mar. 18; minimum daily, 292 cfs Nov. 14.

1927-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	579	372	450	495	323	371	901	719	438	403	457	553
2	577	382	488	421	323	384	1060	725	455	379	508	562
3	561	390	462	413	323	433	1060	712	456	419	454	571
4	511	401	489	397	320	489	1040	626	752	440	398	548
5	527	371	459	424	341	520	931	648	1080	501	421	505
6	482	353	425	442	323	522	863	618	1090	506	471	507
7	478	319	415	406	336	459	863	604	1120	460	532	523
8	524	369	451	356	360	394	766	560	933	390	571	487
9	551	372	454	332	507	446	720	588	767	407	572	475
10	522	365	415	410	540	527	624	578	748	432	543	466
11	514	367	498	403	548	562	622	532	703	446	530	421
12	497	370	601	403	510	616	636	568	693	482	500	431
13	494	421	887	403	403	625	636	541	611	469	510	483
14	478	292	815	446	446	621	636	547	529	432	538	514
15	485	384	624	407	405	675	636	545	533	377	586	556
16	444	435	514	388	419	868	635	557	498	386	563	458
17	452	330	423	404	391	920	632	564	539	377	557	456
18	464	362	588	395	389	1280	650	577	569	475	489	405
19	471	386	558	400	369	1030	823	603	490	494	473	403
20	458	431	492	381	341	1060	886	602	438	519	495	398
21	436	391	576	382	371	1040	884	559	448	421	601	420
22	393	391	600	372	345	945	810	603	424	379	986	414
23	394	365	650	359	344	910	801	597	417	404	993	402
24	398	374	594	371	367	633	768	535	439	376	917	370
25	429	426	546	365	373	835	799	574	467	384	850	398
26	368	434	484	372	367	690	799	541	431	453	748	403
27	411	396	426	352	364	621	799	498	448	527	703	394
28	373	306	379	329	371	625	828	484	412	447	630	433
29	410	312	414	338	-----	640	808	441	394	447	617	523
30	418	387	508	320	-----	749	799	442	433	432	535	436
31	409	-----	554	330	-----	616	-----	451	-----	390	545	-----
Total	14,508	11,254	16,239	12,016	10,819	21,106	23,715	17,739	17,755	13,454	18,293	13,915
Mean	468	375	524	388	386	681	790	572	592	434	590	464
Cfsm	.930	.746	1.04	.771	.767	1.35	1.57	1.14	1.18	.863	1.17	.922
In.	1.07	.83	1.20	.89	.80	1.56	1.75	1.31	1.31	.99	1.35	1.03

Calendar year 1965: Max 1,640 Min 250 Mean 487 Cfsm .968 In. 13.12
 Water year 1965-66: Max 1,280 Min 292 Mean 523 Cfsm 1.04 In. 14.09

ST. CROIX RIVER BASIN

57

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 1965. 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.--52 years, 1,282 cfs.

Extremes.--Maximum daily discharge during year, 5,700 cfs Mar. 20; maximum gage height, 7.13 ft Mar. 19 (backwater from ice); minimum discharge, 658 cfs July 3 (gage height, 0.43 ft).

1914-66: 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 excellent except those for winter months, which are good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,150	1,100	980	1,220	900	1,100	2,740	2,210	1,080	879	1,230	1,210
2	2,140	1,020	1,000	1,200	900	1,120	3,030	2,130	1,060	893	1,440	1,340
3	1,940	1,000	1,050	1,200	916	1,160	3,080	1,860	1,000	893	1,340	1,360
4	1,850	964	1,080	1,220	920	1,220	3,220	1,800	1,280	916	1,310	1,320
5	1,570	932	1,130	1,230	920	1,300	3,220	1,710	1,810	1,060	1,260	1,260
6	1,510	932	1,210	1,200	950	1,380	3,000	1,670	1,990	1,240	1,330	1,310
7	1,490	940	1,300	1,100	1,000	1,300	2,860	1,600	1,980	1,200	1,890	1,190
8	1,710	932	1,300	1,050	1,220	1,220	2,700	1,480	1,980	1,080	2,070	1,090
9	1,800	924	1,300	1,080	1,400	1,200	2,380	1,440	1,870	1,050	1,970	1,080
10	1,790	924	1,280	1,120	1,500	1,270	2,320	1,440	1,580	1,120	1,850	1,040
11	1,710	964	1,500	1,160	1,500	1,300	2,320	1,360	1,460	1,190	1,800	1,080
12	1,620	1,060	1,700	1,070	1,460	1,400	2,310	1,300	1,510	1,180	1,620	1,040
13	1,460	1,090	1,800	1,150	1,420	1,500	2,260	1,310	1,360	1,160	1,510	1,030
14	1,380	1,060	1,820	1,140	1,360	1,700	2,220	1,330	1,170	1,120	1,620	1,160
15	1,360	1,020	1,700	1,120	1,340	2,000	2,270	1,560	1,140	1,030	1,590	1,080
16	1,330	1,160	1,400	1,080	1,260	2,500	2,260	1,540	1,120	940	1,620	1,060
17	1,290	1,130	1,500	1,060	1,200	3,000	2,210	1,490	1,060	916	1,550	1,040
18	1,270	1,080	1,650	1,040	1,160	4,000	2,200	1,640	1,120	996	1,450	1,050
19	1,280	1,140	1,600	1,030	1,100	5,500	2,320	1,720	1,100	1,120	1,430	988
20	1,360	1,120	1,500	1,010	1,080	5,700	2,500	1,690	1,020	1,090	1,480	948
21	1,390	1,180	1,600	980	1,050	4,730	2,560	1,620	1,030	1,080	1,930	948
22	1,260	1,140	1,750	960	1,040	4,090	2,420	1,540	1,010	1,000	2,220	908
23	1,180	1,100	1,780	960	1,030	3,650	2,260	1,530	964	972	2,400	879
24	1,180	1,040	1,700	953	1,040	3,140	2,280	1,480	964	988	2,300	900
25	1,120	1,030	1,550	950	1,050	3,020	2,230	1,420	1,060	964	2,100	872
26	1,110	1,020	1,360	940	1,060	2,650	2,030	1,400	1,040	996	1,900	900
27	1,200	1,000	1,240	920	1,080	2,220	2,110	1,300	1,020	1,050	1,800	932
28	1,150	990	1,180	910	1,100	2,080	2,270	1,260	1,060	1,160	1,700	916
29	1,140	960	1,260	900	-----	2,220	2,230	1,220	980	1,260	1,550	1,060
30	1,160	960	1,400	890	-----	2,340	2,160	1,160	858	1,260	1,400	1,120
31	1,170	-----	1,400	900	-----	2,400	-----	1,120	-----	1,190	1,250	-----
Total	45,070	30,912	44,020	32,743	31,956	73,410	73,970	47,330	37,676	32,993	51,910	32,111
Mean	1,454	1,030	1,420	1,056	1,141	2,368	2,466	1,527	1,256	1,064	1,675	1,070
Cfsm	.916	.649	.894	.665	.719	1.49	1.55	.962	.791	.670	1.05	.674
In.	1.06	.72	1.03	.77	.75	1.72	1.73	1.11	.88	.77	1.22	.75

Calendar year 1965: Max 6,360 Min 660 Mean 1,389 Cfsm .875 In. 11.88
 Water year 1965-66: Max 5,700 Min 858 Mean 1,463 Cfsm .921 In. 12.51

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-20	-	-	5,700	4-5	0200	3.27	3,310

ST. CROIX RIVER BASIN

5-3340. Shell Lake at Shell Lake, Wis.

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.

Drainage area.--34 sq mi, approximately. Area of Shell Lake, 3,200 acres.

Records available.--August 1936 to September 1966 (fragmentary).

Gage.--Staff gage read weekly except during winter. Datum of gage is 1,215.88 ft above mean sea level, datum of 1929. May 3, 1952, to Apr. 21, 1961, staff gage 2.3 miles southeast of village of Shell Lake at same datum.

Extremes.--Maximum gage height observed during year, 2.66 ft Apr. 23, June 8; minimum observed, 1.12 ft Nov. 10. 1936-66: 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 free of ice Apr. 23.

Gage height, in feet, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.40									1.93		
2												1.65
3						1.80			2.30			
4												
5												
6		1.22									1.78	
7								2.55	2.31			
8								2.52				
9	1.40									2.11		
10		1.12										1.51
11												
12									2.24			
13		1.14								2.04		
14			1.55					2.45			1.74	
15												
16	1.34											
17												1.47
18									2.12	1.97		
19												
20		1.16		1.75							1.66	
21												
22								2.39				
23	1.36						2.66			1.89		
24												1.37
25									2.04			
26												
27		1.24									1.68	1.32
28								2.33				
29												
30	1.32						2.64			1.77		
31						2.42						

5-3353.8 Bashaw Brook near Shell Lake, Wis.

Location.--Lat 45°47'02", long 92°07'51", in SW 1/4 sec. 8, T. 38 N., R. 14 W., at culvert on town road, 2.7 miles southeast of Hertel, and 10.5 miles northwest of Shell Lake.

Drainage area.--28.2 sq mi, of which about 2.5 sq mi is probably noncontributing.

Records available.--Annual maximum, water years 1959-65, and occasional low-flow measurements, 1962-64. June 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Sept. 25, 1958, to June 24, 1964, crest-stage gage only.

Extremes.--Maximum discharge during year, 80 cfs Mar. 4 (gage height, 13.13 ft, by crest gage); minimum recorded, 3.5 cfs July 30 (gage height, 9.30 ft).

1958-66: Maximum discharge, 600 cfs Apr. 11, 1965 (gage height, 14.90 ft). June 1964 to September 1966: Minimum recorded, that of July 30, 1966.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	5.9						10	6.6	5.6	7.4	5.3
2	10	5.9						9.3	6.6	5.5	6.9	7.4
3	9.0	5.9						8.7	7.1	5.7	5.5	6.3
4	8.2	5.7						8.5	7.1	6.9	5.3	5.5
5	8.1	5.8						8.3	7.1	8.5	5.2	5.3
6	8.0	5.8						8.0	7.8	9.7	5.3	5.3
7	8.7	5.7					13	7.6	7.1	7.3	6.0	4.9
8	10	5.9					13	7.4	6.6	6.2	6.3	4.9
9	9.8	5.6					13	7.4	6.4	6.2	5.9	4.8
10	9.0						13	7.4	6.3	6.2	5.6	4.8
11	8.2						12	7.8	6.6	6.7	5.6	4.6
12	8.4						12	7.7	7.8	6.3	5.6	4.5
13	8.1						12	7.6	6.9	5.9	6.0	5.5
14	7.8						11	8.0	6.6	5.7	6.9	7.4
15	7.6						11	8.4	6.4	5.6	6.2	5.9
16	7.2						11	8.5	6.3	6.7	6.0	5.3
17	7.2						11	8.3	6.3	5.5	5.6	5.0
18	7.4						12	8.1	6.0	6.4	5.2	4.9
19	7.4						19	7.8	5.9	5.7	5.0	4.8
20	8.1						22	8.1	5.9	5.5	5.6	4.9
21	7.6						15	7.6	5.9	5.5	11	4.9
22	7.1						12	7.7	5.9	5.3	5.7	4.9
23	7.0						11	8.0	5.9	5.2	7.3	4.8
24	6.6						11	8.4	6.9	5.2	6.7	5.0
25	6.6						10	7.6	6.9	4.9	5.6	5.0
26	6.5						10	7.1	8.4	5.0	5.5	5.2
27	6.5						11	7.0	6.7	5.2	5.3	5.5
28	6.2						12	6.9	6.6	5.0	5.0	5.5
29	6.2						11	6.7	6.4	4.9	4.8	6.0
30	6.2						11	6.7	5.7	4.8	4.6	6.0
31	6.2							6.6		4.8	4.8	
Total	244.9							243.2	198.7	183.6	187.4	160.1
Mean	7.90							7.85	6.62	5.92	6.05	5.34
Cfsm	.280							.278	.235	.210	.215	.189
In.	.32							.32	.26	.24	.25	.21

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 1966.

Gage.--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 and Aug. 15, 1934, to Oct. 21, 1938, staff gage, in stilling well at same site and datum.

Average discharge.--43 years, 2,294 cfs.

Extremes.--Maximum daily discharge during year, 11,700 cfs Mar. 20; maximum gage height, 12.08 ft Mar. 20 (backwater from ice); minimum discharge, 1,200 cfs Sept. 23 (gage height, 3.80 ft).

1923-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	4,670	1,880	1,860	2,100	1,540	1,700	5,360	4,080	1,780	1,380	1,700	1,770
2	5,460	1,930	1,920	2,140	1,580	1,700	5,920	4,030	1,760	1,340	1,860	1,760
3	5,580	1,950	1,980	2,110	1,620	1,690	6,160	3,750	1,750	1,320	1,830	1,870
4	4,900	1,840	2,060	2,080	1,640	1,740	6,220	3,330	1,820	1,320	1,750	1,830
5	4,130	1,760	2,120	2,040	1,660	1,780	6,220	3,070	2,500	1,570	1,680	1,820
6	3,410	1,770	2,200	2,020	1,700	1,800	6,100	2,950	3,080	1,940	1,650	1,790
7	3,140	1,730	2,260	2,000	1,740	1,860	5,590	2,710	3,100	1,960	1,910	1,770
8	3,110	1,770	2,280	2,000	2,000	1,960	5,220	2,450	2,950	1,920	2,450	1,700
9	3,290	1,760	2,340	2,000	2,300	2,050	4,880	2,310	2,830	1,760	2,660	1,670
10	3,360	1,750	2,400	1,980	2,500	2,150	4,570	2,380	2,500	1,690	2,480	1,580
11	3,240	1,760	2,600	1,960	2,600	2,300	4,520	2,350	2,130	1,810	2,350	1,530
12	3,030	1,790	3,100	1,960	2,600	2,500	4,490	2,220	2,060	1,920	2,240	1,570
13	2,790	2,020	3,300	1,960	2,500	2,800	4,480	2,260	2,040	1,800	2,080	1,550
14	2,540	1,950	3,400	1,960	2,400	3,000	4,410	2,270	1,840	1,710	2,020	1,580
15	2,510	2,030	3,300	1,960	2,300	3,400	4,340	2,330	1,760	1,640	2,150	1,690
16	2,360	2,090	3,200	1,960	2,200	4,000	4,280	2,660	1,680	1,560	2,250	1,610
17	2,200	2,080	3,100	1,940	2,100	5,400	4,200	2,660	1,660	1,390	2,220	1,590
18	2,250	2,080	2,900	1,920	2,050	7,000	4,200	2,910	1,630	1,420	2,050	1,580
19	2,280	2,090	2,800	1,920	1,960	11,000	4,430	3,290	1,630	1,480	1,980	1,550
20	3,050	2,110	2,800	1,910	1,860	11,700	4,810	3,330	1,640	1,490	2,000	1,530
21	3,120	2,000	2,900	1,860	1,800	10,700	5,180	3,100	1,530	1,480	2,260	1,470
22	3,110	1,950	2,900	1,800	1,780	9,410	5,190	2,940	1,500	1,460	2,010	1,600
23	2,760	1,850	2,900	1,760	1,760	8,350	4,810	2,750	1,440	1,360	2,330	1,330
24	2,480	1,750	2,800	1,640	1,740	6,720	4,390	2,630	1,430	1,310	2,720	1,460
25	2,380	1,700	2,600	1,600	1,720	6,190	4,180	2,540	1,530	1,300	3,560	1,430
26	2,230	1,700	2,400	1,560	1,710	5,800	3,960	2,350	1,630	1,380	2,380	1,360
27	2,260	1,740	2,100	1,550	1,700	5,230	3,790	2,330	1,760	1,340	2,990	1,490
28	2,250	1,760	2,000	1,540	1,700	4,530	3,970	2,140	1,630	1,400	2,560	1,440
29	2,120	1,800	2,000	1,530	-----	4,290	4,210	2,030	1,580	1,500	2,370	1,500
30	2,110	1,840	2,040	1,520	-----	4,520	4,240	1,940	1,440	1,510	2,020	1,580
31	2,080	-----	2,100	1,510	-----	4,880	-----	1,890	-----	1,500	1,820	-----
Total	94,200	56,230	78,660	57,790	54,760	142,150	144,320	83,980	57,610	47,960	72,330	48,000
Mean	3,039	1,874	2,537	1,864	1,956	4,585	4,811	2,709	1,920	1,547	2,333	1,600
Cfsm	1.08	.665	.900	.661	.694	1.63	1.71	.961	.681	.549	.827	.567
In.	1.24	.74	1.04	.76	.72	1.87	1.90	1.11	.76	.63	.95	.63

Calendar year 1965: Max 16,400 Min 1,060 Mean 2,616 Cfsm .928 In. 12.58
 Water year 1965-66: Max 11,700 Min 1,300 Mean 2,570 Cfsm .911 In. 12.35

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 1966.

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.--19 years, 559 cfs.

Extremes.--Maximum discharge during year, 6,050 cfs Mar. 21 (gage height, 7.43 ft); minimum, 69 cfs July 26 (gage height, 2.96 ft). 1913-17, 1951-66: Maximum discharge, 11,500 cfs Apr. 18, 1965 (gage height, 9.56 ft); 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,540	613	400	527	261	207	2,170	1,910	631	213	362	292
2	2,130	570	400	518	261	201	2,260	1,860	552	196	341	299
3	2,360	552	407	518	261	218	2,460	1,760	527	190	320	267
4	2,450	494	400	502	254	392	2,680	1,630	478	153	306	254
5	2,430	470	400	462	254	570	2,870	1,550	486	196	299	224
6	2,340	438	378	438	254	685	2,930	1,380	649	178	285	184
7	2,150	422	362	438	248	742	2,880	1,200	907	162	306	173
8	1,920	415	355	408	242	732	2,760	1,070	1,120	167	273	162
9	1,620	362	348	378	292	704	2,530	966	1,310	207	254	153
10	1,400	348	341	355	604	790	2,290	858	1,370	190	270	148
11	1,220	341	334	334	956	1,070	2,060	752	1,290	230	213	139
12	1,050	362	462	320	1,190	1,440	1,850	714	1,160	248	196	134
13	907	378	604	313	1,270	1,730	1,700	685	986	213	207	139
14	809	415	704	312	1,250	2,050	1,570	667	819	184	224	120
15	704	438	917	306	1,160	2,460	1,480	704	667	162	213	112
16	631	454	1,010	313	1,110	2,960	1,410	770	578	158	218	108
17	595	454	1,050	306	976	3,670	1,370	848	502	148	224	112
18	578	462	1,050	299	799	4,830	1,350	1,050	438	144	213	125
19	595	462	1,020	292	649	5,180	1,400	1,310	392	108	184	116
20	770	470	936	292	561	5,680	1,590	1,570	341	97	184	108
21	946	462	887	285	486	6,000	1,820	1,760	299	100	279	112
22	1,150	438	848	279	415	5,940	2,130	1,840	279	93	313	104
23	1,260	422	828	279	334	5,700	2,430	1,900	254	93	379	97
24	1,240	408	790	279	299	5,060	2,660	1,810	230	89	454	89
25	1,190	400	742	279	273	4,830	2,680	1,660	242	93	510	89
26	1,090	392	676	273	248	4,300	2,540	1,500	236	78	518	89
27	976	378	595	273	230	3,760	2,430	1,320	236	85	494	89
28	877	355	561	267	224	3,220	2,340	1,160	261	89	462	85
29	809	362	527	267	-----	2,720	2,060	1,010	248	167	408	104
30	732	392	518	267	-----	2,390	2,010	858	230	267	341	81
31	685	-----	527	267	-----	2,180	-----	742	-----	313	299	-----
Total	39,154	12,929	19,377	10,646	15,361	82,411	64,710	38,814	17,718	5,011	9,508	4,308
Mean	1,263	431	625	343	549	2,658	2,157	1,252	591	162	377	144
Cfsm	1.32	.450	.652	.358	.573	2.77	2.25	1.31	.617	.169	.321	.150
In.	1.52	.50	.75	.41	.60	3.20	2.51	1.51	.69	.19	.37	.17

Calendar year 1965: Max 11,300 Min 51 Mean 965 Cfsm 1.01 In. 13.68

Water year 1965-66: Max 6,000 Min 78 Mean 877 Cfsm .915 In. 12.42

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--64 years, 4,057 cfs.

Extremes--Maximum discharge during year, 35,600 cfs Mar. 18 (gage height, 16.53 ft); minimum daily, 1,680 cfs Sept. 27. 1902-66: Maximum discharge 54,900 cfs May 8, 1950 (gage height, 25.19 ft); minimum daily, 75 cfs July 17, 1910.

Remarks--Records good except Jan. 25 to Mar. 2, 4-11, which are fair. Flow regulated by powerplant upstream.

Discharge, in cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	9,510	4,370	3,350	4,790	2,400	2,900	13,800	10,600	3,880	2,910	3,030	3,080
2	12,900	3,920	3,880	5,100	2,350	3,000	15,100	10,200	3,210	2,640	2,580	3,150
3	15,000	3,960	3,810	4,750	2,350	3,180	16,100	9,730	3,160	2,560	3,230	2,520
4	14,000	3,760	4,070	4,470	2,300	4,500	16,500	9,440	3,440	2,390	3,090	3,220
5	12,000	3,570	4,010	4,340	2,250	5,000	16,700	7,920	3,680	2,900	2,640	2,850
6	10,200	3,080	4,430	4,230	2,300	4,900	16,600	7,920	6,780	2,600	2,810	3,030
7	8,600	3,210	3,810	3,850	2,400	4,900	15,800	6,710	9,320	3,710	2,650	2,470
8	8,200	3,130	4,100	4,270	2,800	4,900	14,500	6,120	9,240	3,690	3,330	2,880
9	7,500	3,250	3,960	3,880	4,000	5,050	13,500	5,430	8,450	3,130	4,190	2,570
10	8,200	3,000	3,950	3,670	6,200	5,600	12,300	5,090	7,440	3,340	4,880	2,280
11	8,000	3,040	4,060	3,500	7,200	6,600	12,000	4,700	6,350	3,210	4,870	2,150
12	7,200	3,370	4,720	3,400	7,400	8,300	11,200	4,760	5,400	3,600	3,960	2,610
13	6,700	3,530	6,120	3,350	7,200	9,070	10,900	4,690	5,000	3,340	4,240	2,150
14	6,100	3,580	7,760	3,300	7,000	10,100	10,300	4,600	4,810	2,960	4,160	2,470
15	5,500	3,970	8,250	3,250	6,800	11,100	10,500	4,550	3,680	3,100	3,430	2,190
16	4,800	3,920	8,480	3,200	6,300	12,800	10,300	4,590	3,770	2,470	3,560	2,550
17	4,700	3,750	8,450	3,150	5,600	16,300	10,100	4,540	3,410	2,510	4,120	2,230
18	4,400	3,620	8,310	3,100	5,200	21,200	9,950	5,410	2,690	2,950	3,980	2,170
19	4,300	4,050	7,270	3,050	4,700	23,400	10,100	7,910	3,000	2,050	3,880	2,560
20	5,440	4,050	7,220	3,060	4,200	26,900	11,100	8,730	2,880	2,070	3,400	2,380
21	7,220	3,920	7,110	3,020	3,800	27,300	12,700	8,590	2,860	2,070	3,680	3,220
22	8,360	3,630	6,890	2,800	3,600	26,000	14,300	8,310	2,440	2,170	4,190	2,060
23	8,390	3,680	7,370	2,800	3,400	24,800	14,100	8,050	2,810	2,190	5,790	1,850
24	7,730	3,720	6,890	3,100	3,100	21,800	13,100	7,330	2,300	2,050	6,720	1,860
25	6,780	3,700	6,270	2,880	2,950	18,800	12,200	6,760	2,100	2,320	6,620	1,860
26	6,140	3,590	5,370	2,750	2,900	17,600	11,300	6,250	3,300	1,990	6,110	1,770
27	5,630	3,260	4,720	2,650	2,900	16,900	10,600	5,760	3,070	1,980	5,550	1,680
28	5,240	1,830	4,030	2,600	2,900	13,700	10,300	5,080	3,580	1,990	4,890	1,860
29	4,840	2,750	3,950	2,550	-----	11,700	10,700	4,660	3,530	2,160	4,370	1,950
30	4,610	2,870	4,730	2,500	-----	11,800	10,900	4,330	3,170	2,790	4,120	2,040
31	4,370	-----	4,750	2,450	-----	12,600	-----	4,240	-----	2,440	3,410	-----
TOTAL	232,560	105,080	172,090	105,810	116,500	392,700	377,550	203,000	128,750	82,280	127,480	71,600
MEAN	7,502	3,503	5,551	3,413	4,161	12,670	12,590	6,548	4,292	2,654	4,112	2,387
CFSM	1.27	.591	.936	.576	.702	2.14	2.12	1.10	.724	.448	.693	.403
IN	1.46	.66	1.08	.66	.73	2.46	2.37	1.27	.81	.52	.80	.45

Calendar year 1965: Max 45,100 Min 1,390 Mean 6,001 CfsM 1.01 In. 13.75
 Water year 1965-66: Max 27,300 Min 1,680 Mean 5,796 CfsM .977 In. 13.27

Note--No gage-height record Jan. 25 to Mar. 11.

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 1966.

Gage--Headwater and tailwater gages read hourly.

Average discharge--65 years, 305 cfs.

Extremes--Maximum daily discharge during year, 1,060 cfs Mar. 20; minimum daily, 70 cfs June 28.

1901-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	356	205	430	312	240	285	645	450	350	215	105	205
2	300	265	291	250	275	310	645	360	235	195	170	285
3	465	225	205	305	250	390	815	390	262	220	110	251
4	310	235	250	170	255	527	760	375	265	115	175	266
5	350	260	280	280	260	532	740	390	355	205	166	125
6	355	245	245	300	280	445	695	382	390	210	170	240
7	375	225	325	280	200	425	586	220	360	200	185	215
8	349	215	315	195	245	450	571	280	370	214	165	205
9	357	220	300	270	390	445	523	240	325	205	190	225
10	365	220	256	220	580	520	530	310	369	235	120	195
11	330	240	265	325	857	563	525	290	320	120	175	240
12	350	235	395	235	822	539	525	380	300	270	188	120
13	330	245	365	260	725	535	530	215	245	265	155	260
14	340	435	430	305	800	540	515	305	280	320	200	205
15	326	675	475	310	520	535	440	310	545	431	135	235
16	320	310	540	320	460	540	449	295	320	530	225	223
17	275	240	579	225	495	635	450	395	360	465	255	175
18	210	205	530	285	533	651	400	360	240	255	260	250
19	285	226	535	285	439	763	390	350	240	340	248	190
20	275	225	370	275	415	1,060	440	358	195	290	195	220
21	270	235	570	270	305	1,000	515	360	205	270	220	315
22	294	205	522	285	330	620	482	385	215	270	130	210
23	330	210	477	275	270	635	512	440	205	270	225	237
24	355	215	549	240	320	675	520	280	197	180	260	235
25	370	240	224	270	296	801	475	355	230	100	290	250
26	335	222	450	260	303	668	365	295	260	145	260	195
27	295	295	230	275	315	640	370	312	285	155	265	245
28	210	295	225	250	325	590	420	327	70	165	230	175
29	222	222	275	260	-----	610	364	300	200	158	120	235
30	205	500	443	255	-----	615	428	210	190	185	225	293
31	265	-----	423	205	-----	610	-----	260	-----	190	220	-----
Total	9,774	7,990	11,769	8,252	11,505	18,154	15,625	10,179	8,383	7,388	6,037	6,720
Mean	315	266	380	266	411	586	521	328	279	238	195	224
Cfsm	.568	.479	.685	.479	.741	1.06	.939	.591	.503	.429	.351	.404
In.	.65	.54	.79	.55	.77	1.22	1.05	.68	.56	.50	.40	.45

Calendar year 1965: Max 2,510 Min 130 Mean 396 Cfsm .714 In. 9.70
 Water year 1965-66: Max 1,060 Min 70 Mean 334 Cfsm .602 In. 8.16

MISSISSIPPI RIVER MAIN STEM

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 1966.

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--38 years, 15,303 cfs.

Extremes--Maximum discharge during year, 74,800 cfs Mar. 23 (gage height, 83.79 ft); minimum daily, 6,400 cfs Nov. 29; minimum gage height, 74.46 ft Sept. 5.
1928-66: Maximum discharge 228,000 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25.100	23.600	10.700	13.300	11.300	16.000	55.400	50.000	29.400	21.400	11.300	14.600
2	32.000	22.600	11.400	16.300	10.900	15.600	55.800	49.900	23.400	20.800	11.800	15.600
3	36.000	22.200	16.700	16.500	10.900	20.100	57.600	49.600	23.500	20.100	11.700	15.500
4	41.100	21.800	16.900	17.300	10.900	25.900	53.300	48.800	29.200	13.700	11.900	14.100
5	43.500	21.500	17.800	17.100	10.700	25.800	60.200	43.600	23.800	16.600	11.900	11.700
6	44.300	21.300	16.200	15.500	10.800	23.600	61.100	46.900	29.000	15.800	11.300	10.100
7	45.100	20.500	15.500	12.500	10.700	27.100	61.400	45.100	29.400	15.100	11.400	11.100
8	44.300	20.200	17.100	14.100	13.700	26.800	61.400	43.600	23.800	14.800	10.400	11.900
9	42.100	20.100	16.800	13.600	19.600	25.100	60.700	42.100	27.900	15.500	10.300	12.500
10	40.400	20.000	17.300	13.900	26.600	26.000	59.400	40.900	27.600	15.500	10.700	12.400
11	39.000	19.500	17.300	14.100	32.200	27.000	57.700	39.200	26.800	16.000	11.200	11.800
12	37.300	18.900	19.600	14.100	40.000	30.100	56.200	38.100	25.700	16.800	13.400	10.100
13	35.800	19.100	21.500	13.800	37.000	31.800	54.300	37.000	24.000	17.600	15.400	9.800
14	34.500	19.400	23.200	14.100	35.900	34.100	52.400	36.400	22.000	17.800	16.900	10.700
15	33.400	20.900	26.000	14.000	30.500	38.100	50.300	35.300	20.700	17.600	17.000	10.200
16	31.600	21.300	23.400	14.000	31.300	43.200	49.000	35.400	19.400	17.300	17.200	9.690
17	30.400	21.200	23.300	13.100	28.800	47.600	48.000	35.400	17.900	17.000	15.900	10.200
18	29.000	21.200	22.300	13.500	26.400	53.600	47.500	35.600	16.600	16.400	14.300	10.500
19	23.000	21.000	19.300	13.500	27.000	60.700	47.000	36.100	15.000	15.000	14.200	9.950
20	23.100	21.400	18.700	13.500	24.900	64.800	46.800	37.200	14.600	13.400	15.100	9.690
21	23.600	21.100	19.300	13.400	23.500	69.300	47.300	38.200	14.000	12.000	15.600	9.790
22	29.200	20.100	22.300	13.100	21.500	72.300	49.100	38.500	14.000	11.900	17.000	10.600
23	30.400	19.900	23.800	13.500	19.300	74.000	51.100	38.200	14.100	11.800	18.200	10.100
24	30.600	20.500	24.300	13.200	20.900	72.600	52.000	38.000	15.300	11.700	18.400	9.500
25	31.200	21.300	23.600	13.100	18.400	70.300	52.000	37.200	17.300	10.600	18.400	9.400
26	30.700	20.000	19.300	11.700	16.100	67.000	51.600	36.800	20.300	9.910	19.700	7.850
27	29.300	16.400	13.500	12.300	14.500	64.400	51.400	36.200	21.000	9.140	19.900	7.720
28	23.000	13.200	14.800	12.000	14.500	62.400	51.400	34.600	21.700	7.940	19.700	8.290
29	27.000	6.400	15.800	11.700	-----	59.900	50.900	33.400	21.800	8.930	19.300	7.020
30	25.800	9.000	13.900	11.400	-----	57.300	50.800	32.000	21.600	10.100	13.500	7.340
31	24.800	-----	13.600	10.400	-----	56.100	-----	31.000	-----	11.200	16.200	-----
Total	1,036,600	585,600	585,200	428,600	598,800	1,393,600	1,608,100	1,225,300	670,800	454,420	464,200	319,740
Mean	33,440	19,520	18,880	13,830	21,390	44,950	53,600	39,530	22,360	14,660	14,970	10,660
Cfsm	.746	.436	.421	.309	.477	1.00	1.20	.882	.499	.327	.334	.238
In.	.86	.49	.49	.36	.50	1.16	1.33	1.02	.56	.38	.39	.27

Calendar year 1965: Max 226,000 Min 5,400 Mean 31,140 Cfsm .695 In. 9.43
Water year 1965-66: Max 74,000 Min 6,400 Mean 25,670 Cfsm .573 In. 7.78

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 1966. Monthly discharge only for winter of 1913, published in WSP 1303.

Gage.--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.

Average discharge.--54 years, 702 cfs.

Extremes.--Maximum discharge during year, 2,940 cfs Apr. 28 (gage height, 7.46 ft); minimum discharge, 115 cfs May 9, 10, 11. 1912-66: 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. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	365	936	1,220	1,570	1,380	1,120	189	2,890	475	286	192	1,320
2	365	1,260	1,200	1,570	1,370	912	183	2,880	475	263	183	1,150
3	370	1,250	1,200	1,570	1,360	590	170	2,380	480	231	180	1,000
4	530	1,250	1,200	1,560	1,350	294	153	1,230	495	220	180	936
5	1,270	1,250	1,190	1,550	1,340	294	153	638	485	183	180	904
6	2,020	1,240	1,180	1,550	1,330	294	147	258	495	177	195	784
7	2,020	1,240	1,180	1,540	1,320	290	144	123	490	174	217	612
8	2,140	1,240	1,180	1,540	1,320	294	144	120	485	174	199	385
9	2,480	1,240	1,180	1,540	1,320	294	142	115	480	177	195	305
10	1,960	1,240	1,180	1,530	1,320	290	142	115	480	177	227	290
11	1,350	1,240	1,180	1,520	1,320	297	142	139	485	241	341	282
12	872	1,220	1,270	1,520	1,300	300	142	450	480	848	395	231
13	618	1,240	1,260	1,510	1,290	300	142	732	475	856	512	185
14	460	1,240	1,220	1,500	1,280	310	142	776	475	591	725	180
15	460	1,240	1,220	1,500	1,270	310	139	776	475	199	800	180
16	460	1,240	1,220	1,500	1,270	200	139	776	475	183	800	177
17	460	1,240	1,220	1,490	1,250	180	142	776	470	183	800	174
18	460	1,220	1,220	1,490	1,240	160	253	776	475	180	792	170
19	460	1,220	1,210	1,480	1,240	158	341	776	475	180	792	167
20	548	1,220	1,210	1,470	1,230	156	355	776	475	177	840	170
21	690	1,220	1,320	1,460	1,220	158	346	776	475	180	1,020	170
22	739	1,220	1,520	1,460	1,210	150	336	776	415	180	1,280	170
23	725	1,220	1,600	1,450	1,200	160	432	776	375	180	1,590	170
24	704	1,210	1,590	1,450	1,190	160	432	776	375	180	1,760	170
25	711	1,210	1,590	1,440	1,170	160	328	856	375	180	2,380	170
26	704	1,220	1,590	1,440	1,150	150	887	896	375	183	2,450	170
27	704	1,220	1,590	1,440	1,140	145	1,800	888	375	183	2,410	174
28	704	1,220	1,580	1,440	1,140	140	2,420	888	370	180	2,080	174
29	625	1,210	1,570	1,410	-----	131	2,910	718	323	180	1,870	174
30	573	1,220	1,570	1,400	-----	133	2,910	580	286	180	1,800	202
31	573	-----	1,580	1,390	-----	147	-----	480	-----	180	1,600	-----
Total	27,120	36,636	41,240	46,280	35,520	8,677	16,305	25,912	13,344	7,686	27,985	11,346
Mean	875	1,221	1,330	1,493	1,269	280	544	836	445	248	935	378

Calendar year 1965: Max 2,880 Min 103 Mean 783
 Water year 1965-66: Max 2,910 Min 115 Mean 819

CHIPPEWA RIVER BASIN

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 N., 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 1966.

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.--52 years (1914-66), 1,411 cfs.

Extremes.--Maximum discharge during year, 8,510 cfs Mar. 18 (gage height, 10.16 ft); minimum discharge, 385 cfs July 26 (gage height, 1.57 ft).
1913-66: 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. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1,740	922	1,660	2,100	1,680	1,520	3,350	3,760	899	629	442	1,760
2	1,560	1,370	1,700	2,100	1,680	1,540	4,430	3,670	934	629	509	1,600
3	1,370	1,490	1,800	2,100	1,660	1,560	3,930	3,560	903	603	526	1,500
4	1,190	1,480	1,840	2,050	1,640	1,600	3,200	2,660	1,390	603	474	1,380
5	1,340	1,490	1,900	2,050	1,660	1,640	2,650	1,840	2,310	682	463	1,300
6	2,110	1,460	2,100	2,000	1,660	1,660	2,210	1,310	2,490	649	503	1,280
7	2,440	1,460	2,500	2,000	1,660	1,650	1,890	984	3,080	577	688	1,120
8	2,520	1,490	3,000	2,000	1,700	1,640	1,670	824	2,370	532	820	906
9	2,940	1,480	3,200	2,000	1,720	1,640	1,520	755	1,790	564	761	735
10	3,030	1,480	3,200	2,000	1,760	1,660	1,440	738	1,470	551	669	650
11	2,280	1,480	3,200	2,000	1,760	1,800	1,390	710	1,310	564	596	620
12	1,790	1,520	3,500	2,000	1,740	2,000	1,410	740	1,550	712	708	610
13	1,370	1,600	4,500	1,950	1,720	2,300	1,410	1,090	1,900	1,240	781	600
14	1,130	1,610	5,070	1,900	1,700	3,000	1,410	1,360	1,630	1,210	1,150	600
15	978	1,630	4,800	1,900	1,660	4,000	1,390	1,430	1,400	900	1,490	580
16	942	1,670	4,300	1,900	1,660	5,400	1,370	1,490	1,240	570	1,530	570
17	958	1,610	3,800	1,880	1,640	6,750	1,330	1,490	1,110	480	1,450	560
18	918	1,640	3,400	1,880	1,620	8,130	1,400	1,550	1,050	480	1,300	538
19	974	1,590	3,000	1,870	1,600	6,390	1,830	1,560	1,040	526	1,220	520
20	999	1,590	2,700	1,880	1,580	3,780	2,450	1,540	968	515	1,180	509
21	982	1,570	2,500	1,880	1,570	3,100	2,450	1,540	928	497	1,460	515
22	1,140	1,600	2,400	1,880	1,560	2,600	2,090	1,490	910	503	2,010	509
23	1,130	1,540	2,350	1,860	1,540	2,000	1,830	1,450	820	480	2,270	503
24	1,140	1,530	2,300	1,800	1,530	1,700	1,650	1,410	749	491	2,340	497
25	1,100	1,560	2,250	1,780	1,520	1,500	1,530	1,370	755	463	2,570	491
26	1,060	1,690	2,200	1,740	1,510	1,400	1,450	1,390	754	447	2,840	491
27	1,100	1,700	2,200	1,700	1,510	1,300	2,180	1,390	748	497	2,730	497
28	1,100	1,720	2,200	1,700	1,510	1,220	2,840	1,360	761	458	2,610	503
29	1,060	1,720	2,200	1,700	-----	1,260	3,590	1,340	728	420	2,220	520
30	965	1,680	2,150	1,700	-----	1,550	3,770	1,150	675	431	2,110	520
31	916	-----	2,100	1,680	-----	2,000	-----	1,030	-----	420	1,960	-----
TOTAL	44,272	46,372	86,020	58,980	45,750	79,290	65,060	47,981	38,662	18,323	42,380	22,984
MEAN	1,428	1,546	2,775	1,903	1,634	2,558	2,169	1,548	1,289	591	1,367	766

Calendar year 1965: Max 11,700 Min 415 Mean 1,698
Water year 1965-66: Max 8,130 Min 420 Mean 1,633

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 1966. 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 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.--37 years, 963 cfs.

Extremes.--Maximum discharge during year, about 5,000 cfs Mar. 18 (gage height, 7.01 ft, backwater from ice); minimum discharge, 359 cfs Nov. 1 (gage height, 0.86 ft).
1929-66: 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. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1080	401	1130	980	850	900	1300	1550	738	738	815	768
2	1010	664	1060	960	850	900	1370	1510	716	758	1030	922
3	856	646	1000	960	860	900	1370	1560	726	770	745	869
4	634	622	920	960	860	940	1050	1310	958	785	799	778
5	796	588	900	950	860	1000	1170	1190	960	796	745	714
6	670	611	900	950	860	1100	1040	1200	1050	823	806	770
7	676	664	900	950	660	1100	1020	1340	1280	815	1250	780
8	756	588	900	950	840	1100	950	1290	1070	721	1410	748
9	802	688	900	940	900	1150	922	1270	1020	850	1260	736
10	731	652	900	940	940	1200	872	1210	893	991	1070	725
11	713	652	930	930	960	1300	771	1120	876	792	979	703
12	707	713	1200	930	1000	1400	1010	1030	1090	805	923	688
13	719	897	1500	920	1000	1600	1110	1020	1020	825	873	686
14	756	890	1550	920	1000	1900	1200	1040	948	761	1180	952
15	744	883	1550	920	980	2300	1260	1050	901	700	1280	954
16	725	869	1500	900	960	2700	1290	830	935	760	1210	820
17	713	840	1340	900	950	3200	1270	1110	913	748	1140	805
18	682	820	1250	900	940	4500	1370	1070	857	683	1010	783
19	719	760	1100	900	940	4400	1560	994	876	732	824	702
20	731	640	1070	900	920	2920	1920	936	840	714	889	728
21	750	560	1080	900	920	1810	1890	990	843	735	969	728
22	725	520	1150	900	900	1400	1690	918	768	731	1610	704
23	682	520	1150	893	900	1250	1510	800	806	671	1710	653
24	676	710	1150	890	900	1150	1290	933	768	701	1480	693
25	664	740	1150	880	900	1100	1220	843	810	723	1150	697
26	646	780	1100	860	900	1100	1200	865	842	739	1020	646
27	640	840	980	860	900	1050	1150	841	692	721	945	662
28	725	953	960	850	900	1050	1260	803	811	725	780	643
29	628	1130	960	850	-----	1100	1370	760	739	687	905	753
30	577	1160	1000	840	-----	1140	1380	569	789	697	882	786
31	617	-----	1000	840	-----	1200	-----	807	-----	721	825	-----
Total	22,550	22,001	34,180	28,223	25,350	49,860	37,785	32,759	26,535	23,418	32,514	22,596
Mean	727	733	1,103	910	905	1,608	1,260	1,057	884	755	1,049	753

Calendar year 1965: Max 5,270 Min 401 Mean 1,068
Water year 1965-66: Max 4,500 Min 401 Mean 980

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 1966. 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.--37 years, 581 cfs.

Extremes.--Maximum discharge observed during year, 3,580 cfs Mar. 23 (gage height, 9.90 ft); minimum daily, 96 cfs July 30. 1929-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	970	189	780	460	250	330	1,300	1,100	389	186	112	580
2	994	303	740	470	250	330	1,170	1,090	456	183	174	575
3	905	344	660	480	260	340	1,100	1,090	490	189	186	530
4	652	278	560	470	270	350	1,080	1,030	580	186	201	516
5	534	220	490	460	280	350	1,040	889	575	186	220	384
6	530	189	430	450	290	355	1,020	856	622	177	253	337
7	490	180	390	440	310	360	1,000	803	787	174	468	318
8	468	174	370	430	340	360	980	686	970	180	481	306
9	456	177	350	420	370	360	939	652	1,050	183	512	303
10	447	189	330	410	410	370	933	503	1,070	177	516	299
11	439	253	310	400	440	380	889	503	889	183	534	281
12	426	274	700	390	450	410	911	580	782	163	562	246
13	413	274	939	380	440	470	900	512	652	157	571	278
14	401	306	1,030	370	430	600	845	548	637	157	656	267
15	364	401	1,020	360	410	820	957	580	580	160	813	260
16	337	575	1,020	350	390	1,400	1,000	594	548	129	900	256
17	333	562	900	340	380	2,100	1,030	666	534	115	1,060	253
18	325	500	750	330	370	2,500	1,126	686	447	135	1,050	246
19	321	400	700	320	360	2,800	1,120	671	405	129	963	246
20	318	360	640	310	350	3,200	1,110	676	368	126	939	233
21	278	320	600	300	340	3,400	1,050	666	376	124	988	223
22	281	310	570	300	330	3,500	1,050	622	368	121	1,010	217
23	288	300	560	290	320	3,580	1,080	637	384	115	976	204
24	356	310	540	280	320	3,000	1,080	594	368	115	922	201
25	389	320	510	270	320	2,500	1,100	557	292	112	883	183
26	337	340	480	270	320	1,800	1,100	539	284	112	793	183
27	321	380	460	260	320	1,200	1,110	344	253	110	752	180
28	306	450	450	260	320	1,100	1,126	409	208	107	721	174
29	189	580	450	250	-----	1,100	1,090	329	208	98	701	180
30	186	700	450	250	-----	1,200	1,110	321	195	96	696	183
31	174	-----	460	250	-----	1,500	-----	306	-----	98	632	-----
Total	13,228	10,158	18,639	11,020	9,640	42,065	31,354	20,039	15,767	4,483	20,245	8,642
Mean	427	339	601	355	344	1,357	1,045	646	526	145	653	288
Cfsm	.694	.551	.977	.577	.559	2.21	1.70	1.05	.855	.236	1.06	.468
In.	.80	.61	1.13	.67	.58	2.54	1.90	1.21	.95	.27	1.22	.52
Calendar year 1965 :	Max	5,150	Min	118	Mean	699	Cfsm	1.14	In.	15.42		
Water year 1965-66 :	Max	3,580	Min	96	Mean	562	Cfsm	.914	In.	12.40		

CHIPPEWA RIVER BASIN

69

5-3596. Price Creek near Phillips, Wis.

Location.--Lat 45°43'33", long 90°40'12", in SW 1/4 sec. 31, T. 38 N., R. 2 W., on left bank just upstream from section-plate pipe-arch culvert on County Trunk W, 13 miles west of Phillips.

Drainage area.--14.7 sq mi.

Records available.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1961-64. June 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Aug. 16, 1957, to June 22, 1964, crest-stage gage only.

Extremes.--Maximum discharge during water year, 112 cfs Mar. 18 (gage height, 11.36 ft); minimum recorded discharge, 1.6 cfs Aug. 1 (gage height, 8.73 ft).

1958-66: Maximum discharge, 400 cfs Sept. 22, 1959 (gage height, 15.78 ft). 1964-1966: Minimum recorded discharge, 1.4 cfs Aug. 21, 24, 25, 1964.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	35	5.0						33	7.3	3.4	4.5	8.8
2	32	4.8						31	6.7	3.2	4.8	9.6
3	28	4.2						28	7.0	3.6	4.0	8.5
4	25	4.2						26	20	4.5	3.6	7.6
5	23	4.2						25	22	5.8	3.2	7.6
6	21	4.0						23	31	4.8	5.5	7.0
7	21	4.0						22	32	4.0	9.6	5.8
8	24	4.8						20	29	3.6	8.2	5.2
9	23	4.8						18	25	4.5	7.3	5.0
10	20	4.8						16	20	4.2	6.7	4.8
11	17	5.0						16	18	5.0	6.4	4.5
12	15	8.2						16	24	4.8	5.8	4.2
13	14							16	22	4.2	8.6	6.4
14	13							17	19	3.6	2.8	6.7
15	12							21	17	3.2	1.8	5.8
16	11							20	15	2.8	2.8	5.2
17	9.9							20	13	2.8	2.3	4.8
18	9.2							21	12	2.6	1.9	4.5
19	8.8						40	21	11	2.4	1.6	4.5
20	8.5						51	20	11	2.1	1.5	4.5
21	8.2						50	19	9.6	2.1	2.5	4.5
22	7.6						47	17	8.5	2.0	2.6	4.0
23	7.0						44	17	7.6	2.0	2.4	3.8
24	6.7						42	16	6.7	2.0	2.3	3.8
25	6.1						38	15	6.1	2.1	2.0	3.8
26	6.1						37	13	5.5	3.2	1.6	3.6
27	5.8						37	12	4.8	2.8	1.4	3.6
28	5.0						37	11	4.8	2.6	1.2	4.0
29	5.2						35	9.9	4.2	2.4	9.6	5.8
30	5.0						37	8.8	4.0	2.1	8.5	5.0
31	5.0							8.2		2.0	7.3	
Total	438.1							576.9	423.8	100.4	410.6	162.9
Mean	14.1							18.6	14.1	3.24	13.2	5.43
Cfsm	.959							1.26	.959	.220	.898	.369
In.	1.11							1.46	1.07	.25	1.04	.41

CHIPPEWA RIVER BASIN

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 1966.

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--15 years, 1,737 cfs.

Extremes--Maximum discharge during year, 9,620 cfs Mar. 20 (gage height, 7.83 ft); minimum discharge, 476 cfs July 21 (gage height, 2.90 ft).

1951-66: 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. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2,460	756	2,000	1,550	1,200	1,090	3,100	2,960	1,060	830	955	1,450
2	1,960	777	1,850	1,550	1,200	1,150	3,110	2,730	1,020	927	931	1,250
3	1,950	948	1,600	1,500	1,200	1,200	3,000	3,340	1,020	961	1,180	1,430
4	1,920	990	1,400	1,500	1,200	1,300	3,080	2,810	1,100	1,020	1,010	1,650
5	1,570	746	1,300	1,500	1,200	1,500	3,180	2,480	1,710	1,320	1,030	1,210
6	1,570	1,020	1,300	1,450	1,200	1,450	3,300	2,370	1,950	1,190	1,040	1,220
7	1,470	1,030	1,250	1,450	1,200	1,400	3,300	2,360	2,250	1,240	1,460	1,210
8	1,160	1,070	1,250	1,450	1,200	1,300	3,290	2,390	2,640	1,140	1,900	1,170
9	1,070	971	1,300	1,400	1,400	1,300	3,530	2,420	2,560	1,170	2,280	1,180
10	1,520	779	1,300	1,400	1,600	1,400	3,260	2,030	2,480	1,240	1,660	1,100
11	1,460	1,000	1,400	1,400	1,800	1,550	3,110	1,880	2,230	1,650	1,610	1,110
12	1,260	922	2,690	1,400	1,800	1,800	2,870	1,920	1,710	1,290	1,470	1,190
13	1,260	1,130	3,980	1,400	1,750	2,200	1,950	1,800	1,780	1,300	1,400	1,130
14	1,350	1,330	4,040	1,400	1,750	2,700	1,860	1,560	1,810	1,260	2,330	1,060
15	1,260	1,360	3,470	1,350	1,700	3,300	1,910	1,740	1,630	1,130	2,250	1,260
16	1,240	1,490	3,150	1,350	1,650	4,060	1,890	1,840	1,650	1,060	2,620	1,430
17	1,390	1,670	2,900	1,350	1,600	4,900	1,820	1,820	1,610	950	2,120	1,350
18	969	1,630	2,700	1,350	1,500	6,780	1,850	2,050	1,560	1,410	2,380	1,220
19	1,220	1,730	2,500	1,330	1,400	8,780	2,070	2,310	1,520	1,250	1,960	1,220
20	1,140	1,650	2,300	1,330	1,350	8,950	2,960	1,900	1,380	797	1,190	1,220
21	1,190	1,370	2,100	1,350	1,300	7,050	4,160	1,680	1,280	624	1,530	1,060
22	1,190	1,100	2,000	1,350	1,300	6,190	4,040	1,770	1,430	829	1,930	1,070
23	1,160	1,110	1,900	1,350	1,250	5,240	3,890	2,160	1,240	1,030	2,730	972
24	1,140	1,340	1,800	1,350	1,250	4,620	2,740	1,680	1,000	924	2,830	812
25	1,170	1,140	1,750	1,300	1,200	4,690	2,910	1,570	1,290	966	2,050	812
26	1,150	1,300	1,700	1,300	1,150	4,370	2,900	1,230	1,310	1,080	1,830	1,040
27	1,010	1,450	1,700	1,300	1,100	4,330	2,750	1,430	1,160	999	1,890	1,000
28	1,010	1,550	1,700	1,250	1,100	4,290	2,370	1,260	1,030	975	1,530	803
29	1,040	1,550	1,700	1,250	-----	4,160	2,010	1,290	1,070	967	1,490	812
30	1,020	2,000	1,650	1,200	-----	4,020	2,570	1,350	1,100	927	1,360	1,100
31	756	-----	1,600	1,200	-----	3,040	-----	1,150	-----	860	1,440	-----
TOTAL	41,035	36,909	63,280	42,610	38,550	110,110	84,780	61,280	46,580	33,316	54,386	34,541
MEAN	1,324	1,230	2,041	1,375	1,377	3,552	2,826	1,977	1,553	1,075	1,754	1,151

Calendar year 1965: Max 10,100 Min 743 Mean 1,983
 Water year 1965-66: Max 8,950 Min 624 Mean 1,774

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 1966.

Gage.--Water-stage recorder. Datum of gage is 1,092.75 ft above mean sea level, datum of 1929. Prior to Feb. 9, 1935, 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.--51 years, 504 cfs.

Extremes.--Maximum discharge during year, about 8,700 cfs Mar. 19 (gage height, 15.00 ft, backwater from ice); minimum, 28 cfs July 26 (gage height, 3.46 ft).

1915-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1200	112	660	540	77	75	2360	980	130	46	43	80
2	922	107	560	510	77	76	2850	901	119	43	46	82
3	662	105	470	460	77	86	2700	732	119	43	57	114
4	494	103	400	420	78	300	2410	631	121	44	76	173
5	404	101	350	360	80	580	2030	558	126	49	65	168
6	334	99	320	300	86	600	1560	488	477	52	60	140
7	300	101	310	260	90	497	1230	482	1090	57	82	119
8	304	101	300	250	100	400	1030	399	1040	57	280	105
9	375	103	300	250	250	350	936	356	726	49	334	92
10	409	105	300	260	520	330	973	325	472	46	250	82
11	375	110	330	260	700	360	1100	300	334	50	184	78
12	321	123	900	260	660	700	1270	292	273	58	144	74
13	276	236	2690	250	580	1100	1400	292	246	86	132	67
14	243	523	3270	240	450	1300	1460	296	222	119	265	64
15	226	472	2730	220	350	1300	1440	300	184	101	866	65
16	222	482	1800	210	290	1200	1380	304	160	84	988	70
17	216	505	1300	195	230	3000	1330	325	140	69	846	78
18	206	445	800	177	200	6000	1420	334	126	64	570	67
19	206	429	560	165	170	8000	1610	356	114	50	356	62
20	203	399	450	155	150	5000	1940	347	105	46	243	57
21	200	356	410	145	135	3260	2070	334	107	42	206	52
22	200	356	400	135	120	2980	1880	317	101	39	216	50
23	190	343	420	126	110	2540	1630	296	92	36	370	50
24	173	334	430	115	100	1400	1400	296	82	33	366	48
25	157	296	430	110	92	1000	1200	288	72	32	309	44
26	150	379	410	100	86	860	1040	261	65	28	236	43
27	152	700	360	90	80	780	951	226	57	34	184	42
28	150	966	325	82	76	739	887	190	55	33	147	42
29	132	1000	340	80	-----	732	825	170	52	52	121	50
30	126	840	450	78	-----	951	739	152	49	48	101	52
31	119	-----	510	77	-----	1380	-----	137	-----	39	88	-----
Total	9,647	10,331	23,285	6,880	6,014	47,876	45,051	11,665	7,056	1,629	8,231	2,310
Mean	311	344	751	222	215	1,544	1,502	376	235	53	266	77
Cfsm	.542	.599	1.31	.387	.375	2.69	2.62	.655	.409	.092	.463	.134
In.	.63	.67	1.51	.45	.39	3.10	2.92	.76	.46	.11	.53	.15

Calendar year 1965: Max 9,670 Min 136 Mean 648 Cfsm 1.13 In. 15.33
 Water year 1965-66: Max 8,000 Min 28 Mean 493 Cfsm .859 In. 11.68

Peak discharge (base, 3,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-14	0900	8.18	3,560	3-19	0830	15.00	8,700

CHIPPEWA RIVER BASIN

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 1966. 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.--78 years, 5,044 cfs.

Extremes.--Maximum discharge during year, 33,000 cfs Mar. 19 (gage height, 14.12 ft); minimum, 133 cfs Feb. 20 (gage height, 1.13 ft); minimum daily, 295 cfs Sept. 25.

1888-1966: 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. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.910	3.320	6.360	7.570	3.200	5.250	11.300	8.230	3.500	2.250	2.470	4.370
2	7.650	2.670	6.720	7.060	3.500	4.280	15.700	7.510	3.370	911	1.860	4.140
3	5.610	2.810	5.980	6.490	3.400	4.420	17.800	8.630	2.420	495	1.650	3.000
4	5.850	2.820	7.230	5.750	3.200	6.720	14.800	8.830	1.430	359	1.940	2.920
5	5.360	3.220	4.450	5.990	2.400	8.990	13.600	8.270	2.030	2.880	2.570	3.070
6	4.400	2.240	5.140	5.650	2.000	9.490	9.650	7.960	6.370	2.930	1.200	3.310
7	4.920	1.450	4.940	4.830	3.100	8.300	8.590	3.640	7.240	2.650	683	3.890
8	5.490	3.840	4.650	4.510	3.900	6.010	8.280	2.900	8.720	2.910	3.450	3.410
9	3.680	4.000	3.410	4.370	5.200	5.900	8.230	4.690	6.390	366	3.630	3.580
10	4.800	3.000	4.640	4.350	9.800	4.960	7.620	4.210	5.970	1.720	3.910	1.780
11	5.900	2.750	4.690	4.490	9.800	5.250	6.380	4.520	5.680	5.230	5.530	642
12	6.320	3.490	8.810	4.850	9.800	5.840	7.880	4.150	3.290	2.310	3.450	3.100
13	4.890	3.340	15.900	4.300	5.050	7.500	8.180	4.150	3.350	564	1.550	1.980
14	4.420	3.030	20.500	4.310	6.940	8.730	7.260	2.660	5.000	2.000	2.740	2.610
15	2.840	4.850	19.400	3.330	5.780	9.310	6.140	2.800	3.860	2.220	6.760	1.750
16	2.850	5.190	15.400	3.230	5.540	9.460	5.370	4.410	4.570	911	6.150	1.830
17	742	4.380	12.700	4.990	5.350	9.630	6.460	5.310	4.210	1.380	6.250	1.240
18	4.360	4.420	9.400	4.800	3.950	13.900	6.260	4.830	3.090	3.610	6.790	1.820
19	3.320	5.260	7.400	4.310	3.080	30.800	8.310	4.960	1.910	3.380	5.360	2.610
20	3.700	4.770	6.900	4.130	2.740	25.900	8.030	5.110	3.620	2.620	2.980	2.990
21	2.870	4.570	6.800	4.360	4.040	21.500	11.800	4.310	3.330	2.310	2.960	2.690
22	2.500	3.960	7.720	1.930	4.840	18.400	11.400	4.220	3.130	1.030	5.200	1.810
23	851	3.790	6.290	2.620	4.950	17.100	10.500	4.920	2.750	510	4.820	1.860
24	2.030	4.480	7.110	5.410	4.820	12.600	9.800	4.640	2.160	480	5.830	1.030
25	3.470	2.500	6.630	4.410	4.940	9.910	6.250	4.610	1.560	2.550	6.820	295
26	3.980	5.460	7.520	4.200	3.920	9.990	8.440	4.540	618	1.940	5.580	2.020
27	3.510	5.510	5.510	3.700	4.390	9.920	7.550	3.280	3.050	1.590	5.230	2.210
28	3.820	6.680	5.970	4.000	4.350	9.570	7.700	2.560	2.990	1.600	4.960	2.430
29	2.540	7.210	4.730	2.250	-----	9.680	8.220	2.610	2.960	856	4.990	2.770
30	556	6.330	5.290	2.700	-----	9.740	8.230	1.860	2.350	572	5.070	1.370
31	1.020	-----	6.000	3.200	-----	9.810	-----	4.400	-----	548	4.400	-----
Total	124,159	121,340	244,190	138,090	133,980	328,860	275,730	149,720	110,918	55,682	126,783	72,527
Mean	4,005	4,045	7,877	4,455	4,785	10,610	9,191	4,830	3,697	1,796	4,090	2,418

Calendar year 1965: Max 43,900 Min 333 Mean 6,035
 Water year 1965-66: Max 30,800 Min 295 Mean 5,156

CHIPPEWA RIVER BASIN

73

5-3674.25 Red Cedar River near Cameron, Wis.

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.

Drainage area.--450 sq mi.

Records available.--Mar. 29, 1966, to September 1966.

Gage.--Wire-weight gage read once daily. Altitude of gage is about 1,080 ft (from topographic map).

Extremes.--Maximum discharge during period, 914 cfs Apr. 2 (gage height, 6.32 ft); minimum, 67 cfs May 10 (gage height, 4.55 ft).

Remarks.--Records fair. Flow regulated by Birch, Red Cedar, Long, and Bear Lakes (see p. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							793	367	159	215	255	239
2							914	359	167	175	251	309
3							861	317	175	155	255	304
4							799	304	187	144	140	284
5							745	325	231	101	132	280
6							243	321	524	94	140	255
7							655	313	441	167	140	243
8							739	223	300	155	187	272
9							769	215	296	155	207	243
10							763	67	284	159	264	211
11							751	109	280	207	251	207
12							727	195	333	317	247	203
13							703	215	359	243	239	203
14							534	215	359	243	290	203
15							534	207	359	309	290	203
16							514	215	428	304	204	207
17							477	219	432	304	284	207
18							477	219	423	359	251	207
19							486	215	414	376	215	231
20							342	223	410	359	203	231
21							401	231	397	359	259	227
22							428	227	363	350	239	223
23							436	215	367	359	231	223
24							428	219	363	346	199	211
25							393	219	367	363	203	211
26							393	207	367	280	247	207
27							376	211	363	292	259	199
28							376	203	333	296	243	199
29						510	371	199	219	296	247	219
30					-----	553	380	195	215	259	255	207
31		-----			-----	584	-----	195	-----	259	255	-----
Total							16,808	7,164	9,915	8,000	7,162	6,868
Mean							560	231	330	258	231	229
Cfs/m							1.24	.513	.733	.573	.513	.509
In.							1.39	.59	.82	.66	.59	.57

CHIPPEWA RIVER BASIN

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 1966.

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--16 years, 267 cfs.

Extremes--Maximum discharge during year, 5,510 cfs Mar. 5 (gage height, 11.45 ft); minimum, 140 cfs Aug. 5, 6, Sept. 23-28.

1950-66: Maximum discharge, 10,900 cfs Apr. 11, 1965 (gage height, 14.65 ft) from rating curve extended above 5,000 cfs; 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	249	163	230	580	150	175	1,160	273	185	167	150	145
2	232	162	217	560	150	180	1,130	262	185	164	153	177
3	213	162	200	480	155	204	712	252	189	164	148	197
4	200	162	186	400	155	1,460	540	245	192	180	144	172
5	192	160	181	320	160	4,040	453	251	217	201	142	160
6	190	160	178	280	170	1,820	409	247	325	218	146	156
7	192	159	175	250	190	791	384	245	337	185	186	154
8	194	162	181	230	250	500	367	241	250	171	188	152
9	194	162	173	210	700	387	359	235	218	168	159	148
10	195	162	173	200	2,600	400	352	232	204	168	153	147
11	192	160	197	190	1,600	440	342	236	202	248	153	148
12	188	168	788	184	1,200	500	329	241	407	321	150	157
13	186	190	3,390	180	600	520	322	233	472	402	150	150
14	185	178	2,280	180	420	540	319	225	298	338	173	149
15	185	168	976	180	363	560	314	222	249	259	179	147
16	183	168	608	175	330	580	307	228	228	224	176	146
17	181	162	461	175	310	586	298	232	216	213	164	144
18	180	160	412	175	280	680	317	237	209	206	157	144
19	180	162	360	175	270	821	357	235	207	195	149	143
20	181	159	320	170	250	573	359	231	202	185	149	142
21	192	159	290	170	240	660	351	225	198	177	161	143
22	185	159	270	170	230	684	320	219	192	169	191	143
23	183	159	260	170	220	624	304	218	185	165	182	141
24	178	162	240	165	200	429	297	220	182	163	170	140
25	178	164	230	165	190	370	286	211	187	160	162	141
26	172	192	225	160	190	350	281	206	190	157	157	141
27	170	270	220	160	180	340	272	201	184	156	153	140
28	168	260	220	155	180	340	265	196	185	154	150	142
29	165	280	230	155	-----	349	266	193	177	150	148	147
30	165	300	260	150	-----	458	284	192	171	147	146	146
31	163	-----	450	150	-----	829	-----	189	-----	146	145	-----
Total	5,811	5,394	14,581	7,064	11,933	21,190	12,056	7,073	6,843	6,121	4,934	4,502
Mean	187	180	470	228	426	684	402	228	228	197	159	150
Cfsm	.439	.423	1.10	.535	1.00	1.61	.944	.535	.535	.462	.373	.352
In.	.51	.47	1.27	.62	1.04	1.85	1.05	.62	.60	.53	.43	.39

Calendar year 1965: Max 9,490 Min 115 Mean 387 Cfsm .908 In. 12.32
 Water year 1965-66: Max 4,040 Min 140 Mean 295 Cfsm .692 In. 9.38

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-13	1300	10.39	4,160	3-5	0200	11.45	5,510
2-9	2200	13.44	4,000	4-1	2230	6.16	1,360

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 1966. 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.--54 years (1907-8, 1913-66), 1,193 cfs.

Extremes.--Maximum daily discharge, 13,000 cfs Dec. 14; minimum, 151 cfs Sept. 16, July 29 (gage height, 0.87 ft).

1907-8, 1913-23, 1925-66: 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. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,180	795	1,100	1,470	808	517	2,490	1,100	830	720	689	808
2	1,390	779	953	1,020	786	607	2,810	1,300	841	668	659	1,060
3	1,240	786	1,000	753	760	1,170	4,210	1,120	885	720	659	1,010
4	1,200	844	1,200	808	820	4,110	3,050	1,040	1,270	731	552	808
5	914	949	886	940	863	5,860	2,730	1,220	678	852	753	797
6	1,110	717	1,260	1,430	863	8,400	2,370	1,100	1,780	786	616	852
7	1,070	789	903	1,260	830	3,570	2,470	1,040	1,220	764	797	852
8	1,090	839	930	962	1,170	2,690	2,130	1,030	1,210	647	616	819
9	1,130	845	1,130	918	4,130	2,360	1,860	973	1,060	699	668	753
10	841	949	1,030	1,160	6,970	2,150	1,800	995	950	797	658	797
11	1,050	1,000	1,270	940	11,000	2,290	1,890	852	970	1,200	616	678
12	934	1,020	2,540	1,290	5,030	2,100	1,850	808	1,380	896	764	797
13	1,160	949	5,460	1,200	3,770	2,370	1,690	1,180	2,490	1,120	808	764
14	896	869	13,000	1,110	2,710	2,450	1,130	841	2,230	929	678	742
15	1,080	991	9,000	1,200	1,990	2,470	973	819	1,030	907	1,430	720
16	983	927	4,110	973	1,940	2,530	852	973	598	797	819	689
17	939	928	2,890	1,230	1,240	2,580	753	1,090	525	808	962	689
18	1,030	1,080	2,360	960	1,260	2,600	1,160	1,010	764	896	589	720
19	986	916	2,200	1,050	1,070	2,610	1,640	995	995	710	809	731
20	1,120	902	1,620	1,050	1,010	2,730	1,670	918	1,070	689	659	775
21	1,070	837	1,940	960	1,100	2,530	1,520	874	984	753	973	764
22	892	872	1,930	920	984	2,470	1,470	984	1,010	720	742	689
23	1,020	840	1,860	1,000	1,120	2,760	1,520	984	1,010	731	809	710
24	959	969	2,090	1,030	1,030	2,370	1,240	940	896	647	896	658
25	777	1,060	1,830	980	984	2,180	1,480	1,020	918	710	710	637
26	940	1,180	1,430	920	1,030	2,170	1,370	830	1,050	808	786	753
27	830	1,380	1,240	1,000	1,070	1,990	1,360	1,120	995	525	852	668
28	1,020	1,010	951	860	984	1,830	1,240	720	962	658	753	658
29	914	1,280	852	840	-----	1,580	1,380	852	786	580	819	786
30	735	1,200	1,270	870	-----	1,880	1,290	808	742	626	830	753
31	865	-----	1,560	870	-----	2,200	-----	973	-----	525	830	-----
Total	31,365	28,502	71,795	31,974	57,322	80,124	53,398	30,509	32,129	23,619	23,837	22,937
Mean	1,012	950	2,316	1,031	2,047	2,585	1,780	984	1,071	762	769	765

Calendar year 1965: Max 27,900 Min 490 Mean 1,585
 Water year 1965-66: Max 13,000 Min 517 Mean 1,336

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 1966.

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.--38 years, 7,222 cfs.

Extremes.--Maximum discharge during year, 37,500 cfs Mar. 20 (gage height, 10.54 ft); maximum gage height, 10.87 ft Feb. 12 (back-water from ice); minimum discharge, 1,920 cfs Aug. 1 (gage height, 0.54 ft).
1928-66: Maximum discharge, 101,000 cfs May 3, 1954 (gage height, 15.40 ft); 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 and Aug. 10 to Sept. 13, which are fair. Flow partly regulated by powerplants, Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota, and by Birch, Cedar, Bear, and Long Lakes on upper Red Cedar River (see p. 78).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10.900	3.100	10.100	8.000	4.300	6.400	14.800	10.900	5.520	4.130	2.140	6.260
2	12.500	4.670	9.270	8.600	4.600	6.400	18.300	10.500	5.490	3.890	3.220	6.290
3	10.100	4.520	8.990	8.200	4.700	6.400	22.900	10.300	5.080	3.210	3.130	6.540
4	8.570	4.480	8.970	7.600	4.700	8.400	24.700	11.100	4.440	3.130	2.920	4.870
5	7.890	4.490	9.110	7.100	4.500	12.000	21.100	11.200	4.360	3.130	3.110	4.610
6	7.700	4.920	6.730	7.000	4.100	15.000	17.500	10.500	4.840	4.160	3.470	6.020
7	6.770	3.930	7.590	6.700	4.500	15.000	14.300	9.390	8.590	4.450	2.640	5.600
8	7.070	3.760	7.230	6.600	8.000	14.000	12.900	6.170	11.700	4.430	2.640	5.530
9	7.540	5.360	6.870	6.400	11.000	11.000	12.400	5.570	12.200	4.190	3.900	5.580
10	6.170	5.620	6.070	6.200	16.000	9.800	11.900	6.680	9.220	2.790	5.170	5.690
11	6.770	4.930	7.010	6.000	21.000	9.400	10.700	6.280	8.910	4.160	5.620	4.440
12	8.210	4.870	10.000	6.000	23.000	10.300	10.500	6.220	8.520	6.260	5.750	3.040
13	8.160	5.400	16.300	5.810	20.000	11.000	11.400	6.480	7.270	4.690	5.620	4.120
14	7.060	5.050	27.500	5.800	16.000	12.000	10.700	6.330	7.360	3.310	4.070	3.340
15	6.290	5.120	31.100	5.800	12.500	13.000	9.890	5.040	7.850	3.800	3.870	3.710
16	5.610	6.560	28.500	5.700	10.700	14.200	8.880	5.060	5.820	3.620	8.220	3.400
17	4.770	7.340	21.400	5.800	8.600	14.600	8.110	6.620	6.200	3.110	7.100	3.100
18	3.650	6.440	16.300	5.800	7.400	15.100	8.510	7.670	5.760	3.450	7.410	2.690
19	5.860	6.330	13.000	6.000	6.600	23.000	9.410	6.890	5.370	4.770	7.300	2.960
20	5.220	7.100	11.500	6.000	6.200	35.200	10.700	7.010	4.360	4.550	7.070	3.710
21	5.810	6.630	10.700	6.000	5.800	34.600	11.800	7.210	5.720	4.300	6.680	3.900
22	4.970	6.190	10.400	5.700	6.000	27.400	14.900	6.380	5.360	3.940	8.450	3.810
23	4.480	6.070	10.000	5.400	6.200	24.200	13.800	6.600	5.270	2.810	6.540	3.310
24	3.540	5.710	9.600	5.400	6.600	22.700	12.800	6.890	5.260	2.490	6.560	2.890
25	4.010	6.220	9.400	5.800	7.000	16.500	12.000	6.570	4.460	2.350	6.890	2.490
26	4.970	5.390	8.800	6.200	6.800	14.800	10.200	6.540	3.910	3.240	6.680	2.350
27	5.500	7.420	8.200	5.800	6.600	13.900	10.800	6.560	3.440	3.650	6.810	2.620
28	5.270	8.300	7.800	5.200	6.400	13.500	10.300	5.600	4.800	3.170	6.640	3.130
29	5.550	9.260	7.200	4.500	-----	13.300	10.600	4.320	4.610	2.910	6.290	3.690
30	4.400	10.200	6.900	4.100	-----	13.400	11.000	4.460	4.810	2.320	6.640	3.440
31	3.190	-----	7.200	4.100	-----	14.000	-----	4.280	-----	2.060	6.240	-----
Total	198,500	175,380	359,740	189,310	249,800	470,500	387,800	221,320	186,500	112,470	168,790	123,130
Mean	6,403	5,846	11,600	6,107	8,921	15,180	12,930	7,139	6,217	3,628	5,445	4,104

Calendar year 1965 : Max 65,200 Min 2,700 Mean 9,137
Water year 1965-66 : Max 35,200 Min 2,060 Mean 7,790

Note.--Once-daily readings Aug. 10 to Sept. 13.

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 1966.

Gage--Wire-weight gage and crest-stage indicator; gage read twice daily. Datum of gage is 910.45 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 2.0 ft higher.

Average discharge--22 years, 25.9 cfs.

Extremes--Maximum discharge during year, 3,060 cfs Mar. 3 (gage height, 9.08 ft); minimum daily, 8.9 cfs Sept. 15, 16.

1944-66: Maximum discharge, 7,000 cfs Apr. 15, 1954 (gage height, present datum, 11.50 ft); minimum observed, 5.8 cfs Sept. 25, 27, 28, 30, 1949.

Maximum stage known since at least 1894, 18.98 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 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 not being published.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	11	11	14	10	10	215	12	12	10	9.6	9.8
2	14	11	12	13	10	12	53	12	12	10	9.3	13
3	13	11	12	13	10	1230	43	12	12	10	9.3	10
4	12	12	12	13	10	538	20	12	12	16	9.1	9.6
5	12	12	11	13	10	36	19	12	20	12	9.3	9.3
6	11	12	11	13	10	16	17	12	40	9.8	9.4	9.1
7	14	14	11	13	10	11	15	12	14	9.6	10	9.3
8	12	12	11	13	11	92	14	12	10	9.3	9.6	9.4
9	12	12	11	13	1580	10	13	12	10	9.8	9.6	9.4
10	11	12	40	13	156	13	13	12	10	14	9.3	9.4
11	11	12	228	13	26	37	13	12	12	11	9.6	9.4
12	11	13	1050	12	19	68	12	12	22	9.6	9.6	9.4
13	11	14	220	11	16	22	12	13	10	9.6	9.6	9.3
14	11	13	65	11	12	17	12	13	10	9.3	9.4	9.1
15	11	11	29	11	10	34	13	13	10	9.3	9.4	8.9
16	10	11	20	11	10	58	13	13	10	9.3	9.4	8.9
17	10	10	17	11	10	57	13	14	10	9.4	10	9.3
18	10	11	15	11	90	103	13	13	10	9.3	9.4	9.3
19	10	11	14	11	90	42	13	13	10	9.3	9.4	9.1
20	10	10	13	11	90	29	24	13	10	9.3	9.6	9.1
21	11	10	13	11	90	59	13	12	11	9.6	10	9.1
22	11	10	13	11	90	46	12	12	11	9.4	10	9.1
23	11	10	13	11	90	25	12	13	10	9.3	9.8	9.1
24	11	10	12	90	90	19	12	13	11	9.3	10	9.1
25	11	10	12	90	10	12	12	12	11	9.6	10	9.1
26	11	20	10	90	10	12	12	12	11	9.3	10	9.1
27	11	21	10	90	10	12	12	12	10	9.3	9.8	9.4
28	11	18	11	90	10	14	12	12	10	9.4	9.6	9.4
29	11	15	13	90	-----	64	12	12	10	9.3	9.6	9.3
30	11	13	46	90	-----	278	12	12	10	9.3	9.8	9.3
31	11	-----	69	90	-----	358	-----	12	-----	10	10	-----
Total	351	372	2,035	349.0	2,023.0	3,251.2	681	383	371	309.7	298.5	282.1
Mean	11.3	12.4	65.6	11.3	72.2	105	22.7	12.4	12.4	10.0	9.63	9.40

Calendar year 1965 : Max 2,340 Min 6.8 Mean 59.8
 Water year 1965-66 : Max 1,580 Min 8.9 Mean 29.3

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-12	0600	7.85	2,200	3-3	1300	9.08	3,060
2-9	0900	8.76	2,830				

CHIPPEWA RIVER BASIN

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 Public Service Commission of Wisconsin 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 1965 to September 1966

Date	Moose Lake	Lake Chippewa	Rest Lake	Flambeau Flowage	Lake Wissota	Birch Lake	Red Cedar Lake	Long Lake	Bear Lake
Sept. 30.....	400	9,705	850	3,980	3,991	808	652	45°	230
Oct. 31.....	220	9,928	378	4,764	3,900	727	602	424	198
Nov. 30.....	35	8,435	350	4,692	3,911	760	590	45°	213
Dec. 31.....	50	7,775	350	4,584	3,911	776	652	441	205
Jan. 31.....	5	5,272	350	3,680	3,841	663	565	40f	205
Feb. 28.....	15	2,825	350	2,490	3,055	648	528	371	190
Mar. 31.....	115	6,680	378	3,474	3,769	760	652	424	205
Apr. 30.....	344	9,856	565	5,748	3,790	743	615	424	213
May 31.....	400	9,712	883	5,520	3,900	743	627	45°	205
June 30.....	400	9,604	991	5,484	3,750	727	640	45°	198
July 31.....	396	9,424	900	4,254	3,876	727	627	45°	198
Aug. 31.....	400	9,892	991	4,409	3,830	760	640	494	205
Sept. 30.....	407	9,676	850	3,980	3,737	711	577	424	205

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 1966. 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.--38 years, 24,810 cfs.

Extremes.--Maximum discharge during year, 105,400 cfs Mar. 26 (gage height, 12.14 ft); minimum daily, 11,200 cfs July 31; minimum gage height, 4.95 ft Sept. 7.

1928-66: Maximum discharge, 268,000 cfs Apr. 19, 1965 (gage height, 20.77 ft); 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33,400	28,500	18,000	35,400	17,600	27,300	80,200	65,200	38,000	24,800	11,700	21,400
2	35,400	29,700	18,200	34,600	17,700	27,400	78,800	64,100	37,200	24,300	12,400	23,100
3	36,000	27,200	23,400	27,300	17,700	29,600	73,500	63,200	36,900	23,300	16,300	25,700
4	40,900	25,000	25,600	18,800	17,700	43,100	73,700	63,600	35,400	26,800	13,300	22,300
5	44,700	25,500	25,800	15,100	17,700	49,200	81,400	62,600	37,200	20,900	19,000	22,200
6	44,100	26,500	25,200	17,000	17,700	52,200	84,800	62,200	37,100	20,200	17,000	16,700
7	43,900	26,800	25,000	13,500	17,600	53,100	85,500	62,400	34,800	18,800	13,000	13,700
8	51,500	25,900	24,200	23,100	20,100	52,200	83,800	61,900	34,700	13,400	17,900	14,500
9	51,300	22,600	22,400	29,700	32,200	51,500	81,800	59,800	37,200	19,200	15,500	15,300
10	50,700	23,500	23,000	30,800	47,000	52,000	79,800	55,400	37,900	20,600	14,900	15,900
11	51,200	23,800	25,000	30,700	52,700	46,500	73,400	53,100	37,600	21,900	15,000	15,400
12	50,600	25,500	28,000	28,200	53,000	47,900	76,200	52,800	36,400	21,600	17,300	14,800
13	48,900	24,600	30,500	23,000	54,700	47,000	73,900	52,400	36,300	23,400	18,900	13,900
14	49,100	21,700	33,800	23,300	54,000	45,600	71,800	51,200	34,600	23,900	16,800	14,800
15	48,400	21,000	40,600	23,500	54,000	46,000	71,400	47,400	32,600	22,600	18,300	15,100
16	47,300	21,300	42,800	23,700	53,500	51,000	69,300	46,100	30,200	21,600	23,800	13,000
17	43,400	23,000	45,200	23,700	50,500	52,200	66,200	45,500	26,700	21,300	23,400	13,000
18	40,300	23,700	48,200	23,500	47,200	56,500	64,500	45,600	25,800	20,500	21,900	13,000
19	37,500	24,900	45,000	23,400	42,700	59,500	63,200	45,500	23,700	19,700	21,700	12,900
20	38,200	24,700	42,300	23,200	41,400	62,600	62,500	45,300	21,400	19,200	21,900	13,700
21	37,900	24,300	45,200	21,800	37,900	67,400	61,400	45,100	19,500	17,300	22,100	15,700
22	36,500	25,200	44,100	21,800	36,100	81,000	60,900	45,600	21,300	17,000	22,800	16,800
23	35,700	25,400	41,900	21,900	36,100	97,900	62,400	44,900	20,600	14,700	23,300	15,200
24	36,100	24,600	41,200	20,000	36,000	104,000	63,800	46,200	19,700	14,000	23,500	12,600
25	33,000	24,400	39,100	18,900	36,300	104,600	64,200	46,200	21,100	14,100	22,500	12,900
26	33,600	25,200	35,300	18,900	35,800	105,000	64,700	46,200	21,000	13,400	24,600	12,600
27	34,900	24,300	28,100	19,200	32,400	100,400	64,400	46,200	23,100	13,600	25,400	11,400
28	34,800	24,000	25,500	19,100	27,600	95,500	63,900	46,000	24,200	13,500	25,700	11,400
29	33,500	18,600	22,400	19,100	-----	90,600	64,700	45,100	24,700	12,300	25,600	12,000
30	31,700	16,700	30,100	19,100	-----	86,300	65,200	41,400	24,600	12,100	25,200	12,000
31	28,100	-----	33,100	17,900	-----	82,200	-----	39,600	-----	11,200	22,400	-----
Total	1,267,600	728,100	998,200	714,200	1,004,900	1,967,300	2,146,300	1,597,800	891,500	586,200	623,100	463,000
Mean	40,890	24,270	32,200	23,040	35,890	63,460	71,540	51,540	29,720	18,910	20,100	15,400
Cfsm	.691	.410	.544	.389	.606	1.07	1.21	.871	.502	.319	.340	.260
In.	.80	.46	.63	.45	.63	1.24	1.35	1.00	.56	.37	.39	.29

Calendar year 1965: Max 264,000 Min 9,700 Mean 43,650 Cfsm .737 In. 10.01
 Water year 1965-66: Max 105,000 Min 11,200 Mean 35,580 Cfsm .601 In. 8.16

TREMPEALEAU RIVER BASIN

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 1966.

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

Average discharge.--6 years, 320 cfs.

Extremes.--Maximum discharge during year, about 3,200 cfs Feb. 10 (gage height, 7.35 ft, backwater from ice and from graph based on gage readings); minimum observed discharge, 160 cfs Sept. 11 (gage height, 0.10 ft).

1960-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	679	262	265	290	210	295	624	327	208	198	180	189
2	487	257	265	280	210	310	582	312	203	196	180	238
3	408	260	265	285	210	340	500	293	206	198	180	296
4	369	267	265	315	210	980	448	279	213	253	176	238
5	342	270	265	310	215	760	399	276	279	312	174	220
6	336	257	260	300	225	601	399	263	507	273	173	213
7	339	260	260	290	260	461	392	253	507	235	346	200
8	357	257	260	285	450	412	282	256	356	218	270	198
9	345	254	260	275	1,200	375	376	244	286	327	218	189
10	339	257	260	255	2,500	390	376	247	260	247	194	171
11	316	250	290	240	2,400	381	369	253	244	302	196	163
12	307	274	573	230	2,000	405	363	266	256	312	187	170
13	288	327	949	230	1,300	384	343	286	286	253	189	198
14	310	363	689	220	800	357	340	289	279	226	196	191
15	310	321	400	220	360	345	327	286	229	229	356	191
16	307	299	320	215	300	354	327	276	235	218	458	194
17	301	288	305	215	260	387	320	266	226	210	336	194
18	299	272	290	210	250	964	327	266	247	203	247	189
19	296	272	285	210	240	844	327	293	220	203	218	189
20	310	267	280	210	240	474	363	286	213	194	200	194
21	321	272	275	210	240	369	372	270	241	187	210	194
22	310	272	270	210	245	372	336	256	210	185	263	191
23	301	277	280	210	250	418	327	260	208	185	238	187
24	282	277	315	210	255	547	309	270	200	183	223	185
25	277	288	310	210	260	547	306	270	200	178	208	187
26	272	351	290	210	270	474	299	286	223	178	200	194
27	272	380	290	210	280	392	320	244	232	208	203	189
28	264	330	330	210	285	376	327	235	208	191	198	189
29	262	300	360	210	-----	286	312	218	206	189	196	196
30	267	270	350	210	-----	659	316	213	206	180	196	194
31	260	-----	315	210	-----	740	-----	208	-----	185	194	-----
Total	10,133	8,551	10,391	7,395	15,925	14,999	11,008	8,247	7,594	6,856	7,003	5,931
Mean	327	285	335	239	569	484	367	266	253	221	226	198
Cfsm	.592	.516	.607	.433	1.03	.877	.665	.482	.458	.400	.409	.359
In.	.68	.58	.70	.50	1.07	1.01	.74	.56	.51	.46	.47	.40

Calendar year 1965: Max 8,010 Min 150 Mean 464 Cfsm .841 In. 11.42
 Water year 1965-66: Max 2,500 Min 163 Mean 312 Cfsm .565 In. 7.68

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 1966.

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.--37 years (1914-19, 1934-66), 388 cfs.

Extremes.--Maximum discharge during year, about 3,600 cfs Feb. 10 (gage height, 8.66 ft, backwater from ice); minimum observed, 185 cfs Sept. 12 (gage height, -1.00 ft).
1913-19, 1934-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	870	291	300	330	220	460	777	358	239	211	198	202
2	675	293	300	315	220	480	708	347	238	208	202	211
3	529	289	300	300	220	520	607	332	242	210	198	283
4	464	282	295	290	225	600	536	321	239	266	194	257
5	424	312	290	295	230	980	492	311	307	288	191	239
6	412	293	290	290	240	1080	472	304	476	329	190	231
7	410	285	285	285	260	900	456	299	568	257	440	222
8	424	282	280	280	310	700	440	296	391	239	321	220
9	422	278	280	270	520	580	429	287	332	242	269	212
10	408	280	280	265	2100	535	422	288	296	294	244	201
11	392	278	300	260	2450	510	413	295	278	356	232	189
12	373	323	522	255	2100	500	404	308	353	329	220	201
13	357	394	975	251	1600	485	391	321	315	287	217	204
14	354	428	800	250	1200	480	378	326	304	272	242	205
15	410	392	500	245	860	468	372	318	273	253	237	204
16	369	369	350	240	520	464	368	307	273	243	482	204
17	357	346	315	235	459	503	368	299	255	231	362	202
18	350	327	310	230	450	705	368	299	251	226	281	204
19	342	308	305	230	430	1080	368	304	248	217	249	202
20	352	300	310	225	415	741	372	310	240	215	239	202
21	371	295	320	220	405	573	404	298	239	208	242	203
22	361	297	340	220	400	559	391	285	234	205	273	202
23	350	293	350	220	400	851	367	278	225	204	278	200
24	331	297	350	220	400	837	354	292	222	208	259	202
25	331	308	325	220	400	725	344	285	221	200	249	206
26	319	344	305	220	410	621	344	278	234	197	240	203
27	310	390	285	220	430	545	359	262	244	227	225	200
28	304	350	275	220	445	494	365	255	234	219	216	206
29	300	325	300	220	-----	524	353	249	223	266	213	217
30	299	305	330	220	-----	672	354	244	215	202	208	220
31	297	-----	340	220	-----	845	-----	242	-----	202	206	-----
Total	12,267	9,554	11,107	7,761	18,319	20,017	12,776	9,198	8,409	7,511	7,817	6,354
Mean	396	318	358	250	654	646	426	297	280	242	252	212
Cfsm	.616	.495	.557	.389	1.02	1.00	.663	.462	.435	.376	.392	.330
In.	.71	.55	.64	.45	1.06	1.16	.74	.53	.49	.43	.45	.37

Calendar year 1965: Max 9,970 Min 160 Mean 533 Cfsm .829 In. 11.23
 Water year 1965-66: Max 2,450 Min 189 Mean 359 Cfsm .558 In. 7.58

BLACK RIVER BASIN

5-3809. Poplar River near Owen, Wis.

Location.--Lat 44°53'10", long 90°34'17", in NW 1/4 sec. 25, T. 28 N., R. 2 W., at bridge on County Trunk N, 4 1/4 miles south of Owen.

Drainage area.--159 sq mi.

Records available.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1962-64. July 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. May 17, 1957, to July 14, 1964, crest-stage gage only.

Extremes.--Maximum discharge during year, 5,600 cfs Mar. 18 (gage height, 16.36 ft). Minimum recorded, 3.9 cfs July 2, 3, 4, 25, 26. (gage height, 7.23 ft).

1958-66: Maximum discharge, 8,250 cfs June 5, 1958 (gage height, 19.46 ft). 1964-66: Minimum recorded, 3.1 cfs Aug. 25, 1965 (gage height, 7.25 ft).

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	362	18					1,770	99	19	4.9	10	6.6
2	196	17					1,840	80	18	4.2	9.2	14
3	122	17					821	57	18	4.6	8.9	74
4	87	16					455	46	18	3.9	8.5	86
5	67	16					286	40	22	5.9	7.3	83
6	54	15					220	33	1,170	7.3	6.6	46
7	53	15					176	28	1,260	8.5	28	24
8	79	16					139	24	398	8.5	112	15
9	118	19					122	22	173	8.1	82	13
10	112	19					121	19	101	9.5	54	11
11	77	19					122	19	64	15	84	9.6
12	56	53					116	21	46	14	24	7.7
13	44	292					92	24	36	17	16	7.0
14	37	236					87	26	30	17	19	7.0
15	37	131					95	26	25	13	75	6.6
16	38						90	29	24	9.2	59	6.2
17	36					630	93	31	19	8.5	48	5.9
18	34					3,840	108	48	18	13	71	5.9
19	33					2,340	193	64	16	8.5	21	5.5
20	51					575	425	65	14	8.1	15	4.9
21	87					626	353	48	13	6.2	17	4.9
22	68					813	230	38	11	5.2	26	4.9
23	51					534	153	32	10	4.9	32	4.6
24	39					420	116	36	8.5	4.6	29	4.6
25	33					300	92	36	7.3	3.9	24	4.6
26	28					215	76	29	6.6	4.6	18	4.6
27	26					150	70	24	5.9	97	14	4.6
28	24					110	65	19	5.9	39	12	4.6
29	20				-----	78	57	19	5.5	21	10	5.5
30	19				-----	272	76	19	4.9	17	8.5	5.9
31	18	-----			-----	648	-----	19	-----	12	7.7	-----
Total	2,106						8,659	1,120	3,567.6	404.1	876.7	487.7
Mean	67.9						289	36.1	119	13.0	28.3	16.3
Cfsm	.427						1.82	.227	.748	.082	.178	.103
In.	.49						2.02	.26	.83	.09	.21	.11

BLACK RIVER BASIN

83

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 1966. 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--56 years (1905-8, 1913-66), 567 cfs.

Extremes--Maximum discharge during year, 13,400 cfs Mar. 18 (gage height, 13.34 ft); minimum, 28 cfs Sept. 26-28 (gage height, 2.60 ft).

1905-9, 1913-66: 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 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2,430	125	760	490	45	88	5,510	683	106	39	52	53
2	1,690	120	620	450	45	86	6,730	687	97	36	50	171
3	1,150	118	520	380	45	100	4,540	564	104	35	48	269
4	790	116	420	330	46	2,300	2,930	455	126	35	45	208
5	558	112	360	290	47	1,900	2,200	388	304	33	42	217
6	428	109	320	260	50	1,300	1,730	330	2,620	33	41	205
7	383	107	275	250	58	940	1,370	290	3,230	35	102	158
8	384	110	270	260	80	760	1,060	259	2,040	48	138	120
9	468	116	270	250	300	700	887	230	1,300	66	158	95
10	583	118	270	210	3,000	660	814	208	853	102	158	73
11	548	120	350	180	2,100	900	819	196	523	1,670	126	64
12	444	216	4,000	170	1,300	1,300	843	190	356	352	153	56
13	358	812	8,070	160	900	1,650	846	190	262	163	113	52
14	301	914	5,400	150	560	1,810	803	199	214	124	95	83
15	274	778	3,100	135	410	2,000	787	214	187	115	158	70
16	246	658	2,000	125	300	2,820	776	226	163	104	242	52
17	233	540	1,400	110	240	3,250	772	246	143	97	196	46
18	213	470	820	100	210	11,700	799	315	124	676	180	43
19	204	440	620	90	190	9,770	1,040	349	108	388	150	41
20	231	370	520	82	165	5,430	1,680	380	95	124	131	40
21	302	320	480	76	145	4,160	1,900	341	85	81	182	38
22	289	280	460	70	125	3,710	1,590	290	75	61	208	42
23	262	250	460	65	115	3,500	1,250	269	68	50	158	34
24	228	240	480	60	110	1,860	980	262	61	43	168	32
25	201	235	470	57	105	1,110	807	239	56	39	182	31
26	181	350	450	54	98	871	708	230	53	41	196	28
27	165	1,300	400	51	88	730	664	205	49	290	166	29
28	154	1,200	350	48	88	597	597	174	46	122	138	29
29	144	1,050	350	47	-----	784	530	150	43	136	115	32
30	137	880	370	45	-----	1,680	554	131	41	85	95	32
31	130	-----	490	45	-----	2,720	-----	117	-----	58	79	-----
TOTAL	14,109	12,574	35,125	5,090	10,965	71,186	46,516	9,007	13,532	5,281	4,065	2,443
MEAN	455	419	1,133	164	392	2,296	1,551	291	451	170	131	81.4
CFSM	.602	.554	1.50	.217	.519	3.04	2.05	.385	.597	.225	.173	.108
IN	.69	.62	1.73	.25	.54	3.50	2.29	.44	.67	.26	.20	.12

Calendar year 1965: Max 16,900 Min 25 Mean 855 Cfsm 1.13 In. 15.36
 Water year 1965-66: Max 11,700 Min 28 Mean 630 Cfsm .833 In. 11.31

Peak discharge (base, 5,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-13	1800	11.46	8,200	3-18	1000	13.34	13,400

BLACK RIVER BASIN

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 1966.

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.--34 years (1932-66), 1,617 cfs.

Extremes.--Maximum discharge during year, 21,400 cfs Mar. 20 (gage height, 12.08 ft); minimum daily, 372 cfs Sept. 26.

1931-66: Maximum discharge observed, 58,000 cfs Sept. 11, 1938 (gage height, 14.31 ft); minimum observed, 180 cfs Dec. 20, 1932.

Remarks.--Records good except those for winter months, which are fair. Flow partly regulated at 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,120	728	3,200	1,500	490	2,100	5,720	2,050	848	522	495	460
2	7,850	735	2,900	1,800	480	2,150	6,640	2,050	856	506	455	460
3	7,150	894	2,600	2,100	490	2,200	8,040	2,070	808	490	522	475
4	4,780	836	2,300	2,100	510	2,250	9,980	2,000	772	574	427	616
5	2,970	815	2,000	2,150	540	2,350	8,740	1,860	856	511	427	758
6	2,580	768	1,800	1,900	620	2,500	6,070	1,800	944	500	409	718
7	2,360	754	1,600	1,800	780	5,200	4,690	1,650	2,130	495	445	616
8	2,290	614	1,350	1,650	1,200	6,000	3,610	1,350	4,410	465	440	658
9	2,210	631	1,250	1,500	1,900	4,400	3,220	1,240	4,510	480	465	586
10	2,070	781	1,200	1,350	2,300	4,000	2,740	1,150	2,580	470	460	544
11	1,940	815	1,300	1,250	2,200	3,500	2,580	1,080	2,040	517	490	506
12	1,880	931	1,500	1,150	3,000	3,600	2,400	1,130	2,020	800	533	404
13	1,820	1,020	2,300	1,100	5,000	4,100	2,380	1,220	1,960	1,620	533	409
14	1,650	1,300	5,310	1,030	4,400	3,400	2,280	1,220	1,600	1,250	511	556
15	1,540	1,640	10,600	960	3,800	2,900	2,180	1,190	1,320	1,130	436	495
16	1,400	2,370	13,000	920	3,500	3,200	2,100	1,040	1,230	848	440	490
17	1,280	2,340	9,370	890	3,500	3,800	2,030	1,050	1,100	779	622	485
18	1,210	2,250	5,600	840	2,900	5,690	1,980	1,240	1,030	586	658	450
19	1,280	2,040	3,800	800	2,600	7,400	1,980	1,320	920	562	682	470
20	1,200	1,900	3,300	760	2,400	18,200	2,090	1,620	832	1,150	694	388
21	1,260	1,840	2,900	740	2,200	16,300	2,950	1,620	848	984	670	380
22	1,360	1,580	2,500	700	2,100	11,400	3,850	1,600	888	676	592	380
23	1,350	1,450	2,300	680	2,050	9,520	3,960	1,600	832	485	682	376
24	1,320	1,480	2,100	660	2,000	8,960	3,260	1,310	765	470	700	384
25	1,290	1,480	2,050	630	2,000	9,790	2,800	1,310	694	440	658	388
26	1,270	1,430	2,100	610	2,000	7,260	2,470	1,280	664	485	616	372
27	1,220	1,600	2,300	590	2,000	5,540	2,190	1,230	586	506	604	380
28	1,150	1,900	2,900	560	2,000	4,330	2,150	1,180	550	485	586	388
29	1,090	3,700	4,000	530	-----	4,080	2,190	1,050	568	500	528	392
30	1,060	3,500	4,200	510	-----	3,640	2,100	912	533	480	427	388
31	962	-----	2,500	500	-----	3,000	-----	840	-----	622	533	-----
Total	69,912	44,322	106,130	35,310	58,960	172,760	109,370	43,262	39,694	20,388	16,740	14,372
Mean	2,255	1,477	3,424	1,139	2,106	5,573	3,646	1,396	1,323	658	540	479
Cfsm	1.06	.697	1.62	.537	.993	2.63	1.72	.658	.624	.310	.255	.226
In.	1.23	.78	1.86	.62	1.03	3.03	1.92	.76	.70	.36	.29	.25

Calendar year 1965: Max 31,800 Min 320 Mean 2,464 Cfsm 1.16 In. 15.78
 Water year 1965-66: Max 18,200 Min 372 Mean 2,003 Cfsm .945 In. 12.83

Peak discharge (base, 12,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-16	0200	11.14	15,000	3-20	1800	12.08	21,400

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 1966.

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.--52 years (1914-66), 288 cfs.

Extremes.--Maximum observed discharge during year, 5,940 cfs Feb. 8 (gage height, 11.29 ft); minimum, 60 cfs Aug. 28 (gage height, 2.54 ft).
1913-66: 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 fair to June 9 and good thereafter. Diurnal fluctuation caused by powerplant a few miles above station.

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

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,070	297	323	350	305	300	547	239	249	184	199	199
2	738	297	418	330	315	318	399	426	239	180	206	204
3	644	290	295	310	340	336	401	175	189	198	203	203
4	507	292	303	280	300	386	417	192	239	351	205	202
5	466	284	303	280	255	455	313	282	352	514	207	194
6	277	284	264	280	260	471	251	264	615	323	190	201
7	526	305	310	280	310	383	254	271	300	295	208	203
8	474	331	313	265	700	342	261	259	297	282	208	207
9	234	344	321	270	4,450	318	259	269	295	248	195	205
10	282	326	310	270	4,070	308	261	269	290	229	177	203
11	316	313	329	280	1,360	308	261	274	301	260	182	200
12	396	349	415	230	858	318	256	271	343	227	192	199
13	264	391	769	180	708	344	251	271	308	292	192	198
14	290	536	755	160	561	347	249	271	295	333	193	196
15	300	423	550	165	480	339	251	271	223	319	195	196
16	313	329	477	225	431	326	254	271	295	331	198	188
17	336	344	375	280	352	326	254	279	225	290	197	184
18	334	336	350	250	294	404	249	282	232	247	196	194
19	326	336	320	300	200	507	261	295	229	269	196	176
20	334	326	320	330	180	563	334	282	229	216	175	151
21	598	323	320	330	255	585	362	264	230	215	196	192
22	450	321	320	260	240	417	373	259	228	214	197	193
23	606	313	340	320	275	493	279	277	222	212	194	178
24	490	318	355	395	290	750	284	305	226	210	189	160
25	490	318	360	380	260	497	423	334	221	208	192	198
26	313	482	350	400	275	585	297	316	238	210	192	199
27	310	326	330	420	297	453	292	282	270	213	178	197
28	308	383	316	440	295	442	274	264	265	214	79	195
29	305	431	305	450	-----	563	279	249	210	213	197	193
30	313	375	336	370	-----	507	282	249	143	213	187	190
31	303	-----	360	320	-----	525	-----	249	-----	190	153	-----
Total	12,913	10,323	11,512	9,400	18,916	13,216	9,128	8,461	7,998	7,900	5,868	5,798
Mean	417	344	371	303	676	426	304	273	267	255	189	193
Cfsm	1.05	.864	.932	.761	1.70	1.07	.764	.686	.671	.641	.475	.485
In.	1.21	.96	1.08	.88	1.77	1.23	.85	.79	.75	.74	.55	.54

Calendar year 1965: Max 2,440 Min 130 Mean 375 Cfsm .942 In. 12.78
Water year 1965-66: Max 4,450 Min 79 Mean 333 Cfsm .837 In. 11.35

BAD AXE RIVER BASIN

5-3871. North Fork Bad Axe River near Genoa, Wis.

Location.--Lat 43°33'10", long 91°08'58", in SW 1/4 sec. 36, T. 13 N., R. 7 W., at bridge on State Highway 56, 4.1 miles southeast of Genoa.

Drainage area.--80.7 sq mi.

Records available.--Annual maximum, water years 1959-65, and occasional low-flow measurements, water years 1961, 1963-64. July 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. May 21, 1958, to July 23, 1964, crest-stage gage only.

Extremes.--Maximum discharge during year, 2,400* cfs Feb. 8 (gage height, 16.79 ft); minimum recorded, 26 cfs Sept. 13 (gage height, 8.40 ft).

1958-66: Maximum discharge, that of Aug. 27, 1959.

1964-66: Minimum recorded, 25 cfs Aug. 5, 6, 23-25, 28, 29, 1965.

Annual maxima not previously published

Water Year	Date	Discharge (cfs)	Gage Height (feet)
1958-59	8-27-59	3,500*	19.59 ^b
1959-60	7- 3-60	2,850*	18.24 ^b
1960-61	3-27-61	1,900*	16.12 ^b
1961-62	3-28-62	1,850*	16.03 ^b
1962-63	3-23-63	1,050	14.10 ^b
1963-64 ^a			
1964-65	3- 5-65	1,930*	15.91

Remarks.--Records good except Oct. 5-25, which are fair.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	35					43	36	34	32	31	27
2	44	35					42	36	34	31	31	33
3	41	35					40	34	34	31	30	36
4	40	34					40	34	34	59	29	32
5	38	34					40	34	34	46	29	30
6	37	34					40	33	38	34	29	30
7	36	36					39	32	36	36	29	29
8	35	35					39	33	35	36	30	29
9	38	34					37	33	37	37	31	29
10	36	34					37	33	36	38	29	28
11	34	35					36	37	36	88	29	28
12	32	62					34	37	42	44	29	27
13	31	44					33	37	37	46	28	27
14	31	38					33	37	35	64	28	27
15	35	38					33	37	35	47	28	27
16	33	37				39	33	36	34	41	29	26
17	35	36				42	34	36	34	39	28	26
18	32	36				97	36	36	34	37	27	26
19	31	36				51	42	36	33	36	27	26
20	31	36				44	44	36	34	35	27	26
21	37	36				42	40	34	34	34	29	27
22	44	36				52	37	34	33	34	30	27
23	40	36				158	37	48	33	33	29	27
24	38	36				66	36	50	33	33	28	27
25	37	36				52	34	40	32	32	28	29
26	36	44				49	36	38	33	32	28	27
27	36	39				47	36	36	32	33	27	27
28	36	38				46	35	36	33	31	27	28
29	36	37				45	36	35	33	31	27	29
30	36	36				44	39	34	32	31	27	28
31	35					44		34		30	27	
Total	1,131	1,118					1,121	1,122	1,034	1,211	885	845
Mean	36.5	37.3					37.4	36.2	34.5	39.1	23.5	28.2
Cfsm	.452	.462					.463	.449	.428	.485	.353	.359
In.	.52	.52					.52	.52	.48	.56	.41	.39

* Discharge determined from rating curve extended above 1,100 cfs by logarithmic plotting.

a Stage did not reach bottom of crest gage, datum 11.70 ft.

b Gage height on crest gage upstream.

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 1966.

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.--30 years, 32,210 cfs (23,320,000 acre-ft per year).

Extremes.--Maximum daily discharge during year, 112,000 cfs Mar. 29; maximum gage height, 15.81 ft Mar. 28, 29; minimum daily discharge, 13,900 cfs Sept. 27; minimum gage height, 6.11 ft Sept. 10.
1936-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58,800	36,700	25,400	36,500	20,000	40,000	105,000	74,000	42,900	23,900	14,700	25,700
2	59,200	34,100	28,600	37,000	20,000	37,500	102,000	74,000	39,800	29,000	14,300	23,500
3	57,200	34,100	33,100	33,000	20,000	36,000	99,800	74,400	39,400	29,100	13,200	26,600
4	54,900	33,500	34,200	29,500	20,000	38,500	98,100	73,500	40,500	29,600	20,700	29,700
5	54,500	31,800	34,400	22,500	20,000	42,000	96,700	73,600	41,400	23,700	20,900	29,300
6	56,500	31,400	33,600	18,000	20,000	52,000	96,300	72,700	42,000	24,800	19,700	22,000
7	59,400	31,400	32,100	17,000	21,500	58,500	96,900	71,500	42,100	20,900	19,400	17,700
8	59,100	31,300	31,800	19,500	29,000	62,000	97,500	70,500	41,800	21,400	22,300	16,500
9	58,600	30,100	31,500	23,500	42,000	63,000	98,400	69,200	42,000	21,700	20,300	17,400
10	58,800	27,800	30,500	28,000	56,000	64,000	97,600	67,300	42,100	21,800	13,700	18,400
11	59,400	27,100	31,800	35,500	64,000	64,000	96,000	64,800	42,100	25,000	13,300	18,100
12	53,200	29,300	32,900	37,000	68,000	64,000	93,700	62,700	43,700	29,600	19,300	16,600
13	56,400	32,300	36,600	35,000	67,000	64,000	92,000	59,400	43,900	31,200	21,100	16,400
14	55,300	33,200	39,900	32,500	66,000	62,000	90,000	56,600	43,300	35,600	21,500	16,900
15	54,900	30,900	44,100	28,500	65,000	61,800	87,200	55,000	41,100	30,400	21,800	16,800
16	54,000	27,800	48,300	26,000	63,000	58,800	85,100	54,800	39,200	26,800	25,600	15,000
17	53,600	25,700	51,200	26,000	62,000	57,700	83,800	53,700	35,800	25,800	30,800	14,000
18	51,200	28,200	56,500	26,000	60,000	60,400	82,900	51,200	32,400	23,500	29,200	14,200
19	47,300	30,800	60,300	26,000	58,000	67,400	80,400	47,700	31,100	21,500	26,500	14,600
20	42,900	32,100	56,000	25,500	55,000	68,300	78,700	47,800	27,500	20,200	26,300	16,400
21	42,700	33,200	52,000	25,000	52,000	70,800	76,600	49,400	26,700	20,000	25,600	13,000
22	42,800	33,200	49,000	25,000	48,000	76,300	74,400	49,800	24,300	13,800	27,600	13,000
23	42,000	32,000	50,200	25,000	46,500	86,800	72,700	49,500	23,400	15,900	23,100	13,500
24	42,600	31,000	53,100	23,000	42,000	94,300	72,300	51,700	24,000	15,100	23,000	17,100
25	42,000	30,300	45,000	23,000	41,000	99,700	71,900	50,900	24,700	15,900	27,700	15,800
26	40,100	31,800	37,500	22,000	40,000	105,000	72,400	50,600	25,900	16,100	27,800	15,200
27	39,200	32,900	34,500	22,000	40,000	109,000	73,000	49,900	23,300	17,100	23,400	13,900
28	38,400	31,400	31,000	22,000	40,500	111,000	74,300	49,400	23,800	16,900	23,400	14,200
29	38,200	24,400	29,500	22,000	-----	112,000	74,200	49,000	23,800	15,900	23,300	14,300
30	35,400	21,600	33,000	21,000	-----	111,000	74,300	43,500	29,000	15,500	23,300	14,200
31	37,600	-----	36,000	20,000	-----	109,000	-----	47,500	-----	16,000	23,000	-----
Total	1,551,200	921,400	1,223,600	812,500	1,246,500	2,206,800	2,594,200	1,820,600	1,058,000	708,700	735,800	545,000
Mean	50,040	30,710	39,470	26,210	44,520	71,190	86,470	58,730	35,270	22,860	23,740	18,170
Cfsm	.741	.455	.585	.388	.660	1.05	1.28	.870	.523	.339	.352	.269
In.	.85	.51	.67	.45	.69	1.22	1.43	1.00	.58	.39	.41	.30

Calendar year 1965: Max 276,000 Min 11,300 Mean 51,570 Cfsm .764 In. 10.37
Water year 1965-66: Max 112,000 Min 13,900 Mean 42,260 Cfsm .626 In. 8.50

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 1966 (fragmentary).

Gage.--Staff gage read almost weekly. Datum of gage is 90.00 ft above datum assumed by Public Service Commission of Wisconsin; 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, 93.29 ft Apr. 21; minimum observed, 92.55 ft Aug. 2.
1936-66: 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 Dec. 1 to early May.

Elevation, in feet, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											2.59	
2										2.89	2.55	
3												
4												2.93
5									3.09			
6				2.97								
7											2.89	
8										2.85		
9												
10												2.99
11												
12												
13												
14		2.60							3.11		2.97	
15												2.89
16					2.92							
17										2.69		
18												2.87
19	2.60								3.03			
20												
21							3.29					
22												
23									3.03			
24								2.93		2.63		
25										2.69	3.03	
26												
27									2.95			
28												
29											3.01	
30								2.99				2.73
31	2.56	-----			-----		-----		-----			-----

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

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 1966. Prior to October 1955, published as "at Rainbow Reservoir, near Lake Tomahawk."

Gage.--Water-stage recorder. Datum of gage is 1,570.05 ft above mean sea level (Public Service Commission of Wisconsin bench mark).

Average discharge.--30 years, 687 cfs.

Extremes.--Maximum discharge during year, 1,280 cfs Apr. 28 (gage height, 3.83 ft); minimum, 174 cfs Mar. 19, 20, Aug. 2.

1936-66: 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. 120).

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	323	534	853	844	926	916	318	1,010	571	678	513	686
2	375	534	888	844	921	903	259	980	575	698	473	662
3	392	531	905	849	921	894	243	876	586	764	470	523
4	383	552	919	849	921	782	243	650	586	702	482	444
5	349	574	923	844	921	702	289	710	530	593	523	397
6	291	570	923	867	916	698	322	898	764	568	491	298
7	226	570	923	908	912	782	330	876	612	608	361	572
8	202	574	959	912	908	858	330	772	612	682	325	777
9	237	577	995	908	822	826	330	738	988	710	322	726
10	303	581	995	903	589	822	330	662	1,040	702	301	662
11	354	581	1,000	930	631	643	339	616	772	662	334	639
12	372	600	1,000	966	710	497	351	550	894	604	250	604
13	359	363	1,000	966	706	612	339	530	966	620	366	579
14	354	386	955	966	772	686	303	523	872	682	417	631
15	341	454	872	962	858	631	284	523	840	718	368	662
16	320	503	867	962	903	530	294	564	750	722	310	654
17	316	486	862	957	903	453	303	654	662	698	332	658
18	320	570	858	952	898	291	318	662	631	670	455	670
19	336	806	858	957	898	188	332	635	631	662	530	674
20	346	1,030	854	957	894	279	334	608	616	670	530	690
21	351	1,000	858	952	885	310	389	604	608	666	439	750
22	333	810	854	952	916	266	482	662	593	678	371	738
23	318	739	858	952	912	241	612	750	612	670	476	738
24	386	764	849	948	880	318	674	742	620	658	540	759
25	457	822	854	948	912	439	631	643	620	650	550	813
26	363	835	858	944	939	482	826	639	627	635	579	944
27	470	840	854	948	934	476	1,110	666	582	593	647	1,020
28	517	835	854	944	921	439	1,160	718	650	540	612	916
29	534	831	854	939	-----	391	1,070	831	702	501	582	831
30	534	840	849	939	-----	381	1,060	650	686	488	620	718
31	534	-----	854	930	-----	361	-----	601	-----	482	662	-----
Total	11,296	19,692	27,805	28,699	24,229	17,097	14,205	21,543	20,798	19,974	14,231	20,435
Mean	364	656	897	926	865	552	474	695	693	644	459	681

Calendar year 1965: Max 2,340 Min 100 Mean 656

Water year 1965-66: Max 1,160 Min 188 Mean 658

WISCONSIN RIVER BASIN

5-3923.5 Bearskin Creek near Harshaw, Wis.

Location--Lat 45°38'43", long 89°41'12", in SW 1/4 sec. 36, T. 37 N., R. 6 E., upstream from twin corrugated culverts on County Trunk K, 2 1/8 miles southwest of Harshaw, and 13 miles west of Rhinelander.

Drainage area--32.4 sq mi.

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

Gage--Water-stage recorder and crest-stage gage. Aug. 18, 1957, to June 18, 1964, crest-stage gage only.

Extremes--Maximum discharge during year, 73 cfs Aug. 7 (gage height, 9.55 ft). Minimum recorded, 18 cfs July 27 (gage height, 8.55 ft).
1958-66: Maximum discharge, 115 cfs May 22, 1965 (gage height, 10.15 ft). 1964-1966: Minimum recorded, that of July 27, 1966.

Remarks--Records good.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	28	30					37	26	25	29	30
2	43	28	30					35	25	25	38	34
3	43	28						33	27	25	27	34
4	39	28						32	29	26	24	33
5	36	28						35	32	27	24	33
6	34	28						35	46	27	28	32
7	31	27						34	41	26	64	31
8	30	28						33	36	25	56	31
9	30	28						32	33	28	43	31
10	30	28						32	32	27	37	30
11	29	28						32	31	27	34	30
12	29	29						32	33	27	32	30
13	29	30						33	32	27	32	31
14	29	31						51	31	26	39	35
15	30	31						44	30	25	41	34
16	29	31						38	30	25	41	32
17	30	31						36	30	25	36	31
18	30	31						36	30	24	34	31
19	30	31						33	28	24	32	31
20	30	31						32	27	23	32	30
21	29	31					55	32	27	22	35	30
22	29	31					43	31	27	22	38	30
23	29	30					33	30	27	22	37	30
24	28	30					32	31	27	22	35	30
25	28	31					31	29	26	21	34	29
26	28	31					33	28	26	23	34	28
27	28	31					37	28	26	19	33	28
28	28	31					39	27	26	22	33	26
29	28	30					38	27	25	22	32	29
30	28	30					40	27	25	20	31	35
31	28	---					---	27	---	20	31	---
Total	959	889						1,022	891	749	1,036	929
Mean	30.9	29.6						33.0	29.7	24.2	35.4	31.0
Cfsm	.954	.914						1.02	.917	.747	1.09	.957
In.	1.10	1.02						1.17	1.02	.86	1.26	1.07

Note--Stage-discharge relation affected by ice Nov. 12-14, 16-19, Nov. 26 to Dec. 2.

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 1966. Prior to October 1951, published as "at Tomahawk".

Gage--Lake staff gage read once daily, supplemented by frequent readings of tainter-gate 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--36 years, 529 cfs.

Extremes--Maximum discharge during year, 953 cfs June 2; minimum, 35 cfs Oct. 1-10.

1930-66: 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. 120).

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

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	493	179	487	869	882	83	444	527	637	675	644
2	35	471	180	486	869	877	84	391	732	678	546	645
3	35	471	180	484	869	871	84	323	708	727	554	580
4	35	484	181	482	889	762	84	301	662	740	640	549
5	35	490	182	480	904	696	85	282	620	658	687	456
6	35	519	236	507	903	691	86	271	384	738	696	349
7	35	532	268	552	900	836	86	271	234	766	314	270
8	35	532	268	567	900	909	87	271	419	805	63	682
9	35	548	324	565	865	892	87	253	540	741	209	691
10	71	556	358	606	568	801	87	242	469	690	174	686
11	216	586	357	689	406	486	88	336	417	652	248	681
12	319	517	394	720	478	166	89	416	323	639	409	665
13	318	213	413	715	519	280	89	415	264	609	413	640
14	188	158	413	709	624	290	90	415	224	682	485	632
15	211	337	413	703	709	221	90	415	235	723	138	630
16	101	305	412	697	727	118	92	415	380	720	111	628
17	75	285	411	756	752	67	92	415	393	673	243	626
18	236	286	410	738	836	69	180	415	436	660	423	625
19	316	211	410	833	874	71	315	416	498	713	516	623
20	230	134	470	867	866	72	308	417	573	624	530	621
21	196	174	505	820	901	74	380	417	608	673	440	632
22	273	175	503	813	929	75	445	416	608	706	365	594
23	273	175	457	803	929	76	445	448	607	703	297	600
24	377	176	397	844	894	77	445	417	657	700	322	566
25	441	176	377	863	894	78	336	358	762	683	350	541
26	494	176	376	885	902	79	272	315	760	673	410	643
27	453	178	473	898	896	79	272	425	617	601	582	733
28	437	178	540	889	889	80	272	452	731	657	632	641
29	515	178	538	884	-----	80	272	488	847	688	642	620
30	527	179	536	878	-----	81	379	398	706	683	591	662
31	531	-----	506	875	-----	81	-----	345	-----	722	619	-----
Total	7,113	9,893	11,667	22,095	22,561	10,917	5,804	11,603	15,941	21,364	13,324	18,155
Mean	229	330	376	713	806	352	193	374	531	689	430	605

Calendar year 1965: Max 1,560 Min 34 Mean 497

Water year 1965-66: Max 929 Min 35 Mean 467

WISCONSIN RIVER BASIN

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 1966.

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--24 years, 79.9 cfs.

Extremes--Maximum discharge during year, about 2,000 cfs Mar. 18 (gage height, 7.59 ft, backwater from ice); minimum discharge observed, 2.5 cfs Aug. 1 (gage height, 1.03 ft).
1942-65: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	346	23	140	110	8	15	213	175	20	7.5	2.5	12
2	213	22	120	105	8	15	310	140	19	7.5	15	17
3	156	20	100	100	8	16	260	116	19	7.5	9.9	41
4	117	20	86	90	9	40	240	97	20	6.6	5.8	39
5	90	18	70	80	9	150	224	86	33	8.7	5.4	30
6	75	18	58	72	10	145	173	82	175	10	5.8	25
7	69	17	52	66	10	140	147	75	330	8.7	49	18
8	69	20	50	58	11	130	117	69	183	7.2	103	18
9	82	22	50	50	14	120	128	62	108	6.6	48	15
10	71	23	52	45	40	110	158	56	77	10	32	12
11	63	20	54	40	160	115	198	61	62	8.4	24	12
12	50	23	90	35	140	130	265	69	57	9.6	22	9
13	50	159	200	31	90	180	286	65	56	14	16	8.1
14	41	97	450	28	70	220	301	61	42	10	30	7.5
15	47	84	400	25	54	280	282	59	36	8.4	94	7.8
16	46	72	280	22	40	380	279	64	29	7.5	107	7.2
17	45	62	200	20	35	450	263	67	25	5.8	74	7.2
18	54	54	160	18	30	1,400	274	71	23	5.8	41	6.9
19	51	50	130	16	28	978	346	76	21	5.6	32	6.6
20	47	43	115	15	25	586	430	75	18	4.2	24	6.0
21	50	38	105	14	23	556	412	69	16	3.8	23	5.4
22	38	34	96	13	21	488	344	60	15	3.7	40	6.0
23	37	30	105	12	20	272	327	54	13	3.7	107	6.0
24	36	26	115	11	18	222	260	63	11	3.4	69	5.6
25	33	50	115	10	17	210	217	61	11	3.4	55	5.4
26	31	47	105	10	16	175	175	53	9.9	3.2	41	5.8
27	30	70	84	9	15	155	159	45	9.3	3.6	30	5.6
28	27	150	75	9	15	140	147	42	8.4	3.4	23	6.0
29	25	200	74	9	-----	125	134	35	7.8	3.4	19	8.4
30	23	180	78	9	-----	140	159	29	7.8	3.4	16	11
31	23	-----	86	9	-----	169	-----	24	-----	2.8	14	-----
Total	2,135	1,692	3,895	1,141	944	8,252	7,228	2,161	1,462.2	197.4	1,177.4	370.5
Mean	68.9	56.4	126	36.8	33.7	266	241	69.7	48.7	6.37	38.0	12.4
Cfsm	.840	.688	1.54	.449	.411	3.24	2.94	.850	.594	.078	.463	.151
In.	.97	.77	1.77	.52	.43	3.74	3.28	.98	.66	.09	.53	.17

Calendar year 1965: Max 1,230 Min 5.2 Mean 105 Cfsm 1.28 In. 17.35
Water year 1965-66: Max 1,400 Min 2.5 Mean 84.0 Cfsm 1.02 In. 13.91

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 1966. 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.--44 years (1914-31, 1939-66), 179 cfs.

Extremes.--Maximum discharge during year, 1,100 cfs Mar. 18 (gage height, 4.60 ft, from graph based on gage heights); minimum, 70 cfs Sept. 17-30 (gage height, 1.66 ft).

1914-31, 1939-66: 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 good except those for winter months, which are fair.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	465	99	200	125	76	80	294	312	121	84	72	84
2	380	97	170	125	78	80	282	282	128	84	72	82
3	271	94	145	120	80	82	254	254	139	84	72	82
4	218	94	125	120	80	260	254	254	139	84	72	82
5	203	94	110	120	81	190	203	228	139	84	72	82
6	203	94	110	120	82	145	203	203	228	84	99	82
7	171	94	110	120	86	130	203	179	568	84	150	82
8	232	94	110	115	90	115	203	179	377	78	196	82
9	232	94	110	115	100	115	203	158	254	78	191	82
10	243	94	110	115	120	130	228	158	228	86	173	82
11	196	94	125	115	350	150	254	158	179	86	133	82
12	173	140	180	110	300	240	282	158	158	102	116	82
13	152	324	300	110	160	268	312	139	158	102	99	82
14	148	277	400	110	125	277	343	148	139	92	116	82
15	140	265	370	105	110	334	377	158	139	86	99	82
16	140	254	310	105	100	337	377	158	139	82	99	82
17	140	228	210	100	98	384	377	179	121	75	116	70
18	140	232	160	100	100	872	377	282	121	75	116	70
19	140	190	145	98	91	1,020	377	254	104	75	99	70
20	137	158	140	96	85	708	640	228	104	75	82	70
21	137	158	140	92	80	654	762	228	104	75	82	70
22	137	158	140	90	75	616	608	203	104	75	99	70
23	137	146	150	86	72	504	528	179	104	75	116	70
24	123	146	160	84	72	265	450	179	99	75	116	70
25	123	146	160	80	72	228	377	158	99	75	94	70
26	119	166	150	78	72	254	312	158	84	75	82	70
27	114	180	145	78	72	203	282	158	84	78	99	73
28	99	260	135	76	76	203	254	150	84	73	99	70
29	99	255	125	76	-----	203	282	121	86	73	82	70
30	99	230	125	76	-----	205	312	121	84	73	82	70
31	99	-----	130	76	-----	250	-----	104	-----	73	86	-----
Total	5,410	4,955	5,200	3,136	2,983	9,502	10,210	5,828	4,615	2,500	3,281	2,297
Mean	.175	.165	.168	.101	.107	.307	.340	.188	.154	.80.6	.106	.76.6
Cfsm	.967	.912	.928	.558	.591	1.70	1.88	1.04	.851	.445	.586	.423
In.	1.11	1.02	1.07	.64	.61	1.95	2.10	1.20	.95	.51	.67	.47

Calendar year 1965: Max 2,020 Min 67 Mean 204 Cfsm 1.13 In. 15.31
 Water year 1965-66: Max 1,020 Min 70 Mean 164 Cfsm .906 In. 12.30

WISCONSIN RIVER BASIN

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 1966.

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.--63 years (1903-66), 2,669 cfs.

Extremes.--Maximum discharge during year, 12,100 cfs Mar. 18 (gage height, 9.73 ft); minimum, 809 cfs Aug. 27 (gage height, 3.86 ft).
1902-66: 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 periods, which are good. Flow regulated by 20 reservoirs (see p. 120) and 9 powerplants above station.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.040	1.630	3.200	3.000	2.500	2.450	3.590	4.420	1.900	2.180	1.540	1.700
2	2.600	1.810	3.050	2.600	2.550	2.450	3.740	4.220	1.900	1.950	1.950	2.060
3	2.270	1.750	2.560	2.400	2.500	2.500	3.910	3.800	2.260	1.860	1.500	1.800
4	2.170	1.720	2.410	2.500	2.500	3.800	3.530	3.360	2.160	1.840	1.440	1.800
5	1.820	1.650	2.500	2.600	2.500	3.200	3.060	2.800	2.580	2.300	1.560	1.710
6	1.670	1.630	2.550	2.500	2.500	2.550	2.750	2.750	4.140	1.890	1.750	1.760
7	1.810	1.810	2.320	2.390	2.500	2.450	2.410	2.600	5.310	2.040	2.600	1.790
8	2.080	1.800	2.620	2.450	2.550	2.450	2.340	2.480	4.120	1.820	2.780	1.700
9	1.750	1.770	2.210	3.000	2.750	2.500	2.660	2.580	3.590	2.020	2.080	1.740
10	1.700	1.540	2.620	2.500	4.200	2.700	2.350	2.240	3.100	1.970	1.820	1.770
11	1.760	1.850	2.740	2.250	3.500	3.100	2.590	2.350	2.880	2.030	1.950	1.770
12	1.870	2.360	4.300	2.500	2.700	3.700	2.860	2.060	2.630	2.230	1.830	1.800
13	1.820	3.330	5.570	2.800	2.300	3.100	3.150	2.430	2.780	1.940	1.690	1.720
14	1.740	2.800	5.530	2.800	2.450	3.000	3.190	2.310	2.240	1.890	1.700	1.700
15	1.770	2.300	4.550	2.750	2.500	3.660	3.260	2.340	1.790	1.870	1.720	1.660
16	1.710	2.300	4.100	2.750	2.350	3.850	3.480	2.640	2.350	1.900	1.780	1.580
17	1.670	2.400	3.700	2.750	2.350	4.160	3.470	2.290	2.080	1.820	1.650	1.620
18	1.640	2.070	3.400	2.800	2.350	8.320	3.500	2.720	1.930	1.770	1.650	1.600
19	1.510	2.340	3.100	2.750	2.300	10.500	3.930	2.920	1.920	1.890	1.610	1.820
20	1.700	2.390	2.850	2.700	2.200	8.200	6.380	2.660	1.930	1.900	1.590	1.740
21	1.850	2.120	2.690	2.700	2.300	5.780	6.340	2.680	1.920	1.890	1.790	1.810
22	1.620	2.340	2.930	2.700	2.350	5.200	6.030	2.700	2.110	1.790	2.350	1.760
23	1.680	2.780	3.070	2.650	2.400	4.600	5.470	2.280	1.920	1.750	1.870	1.700
24	1.680	2.270	3.190	2.600	2.500	3.600	5.010	2.420	1.940	1.860	1.840	1.710
25	1.700	2.030	2.600	2.550	2.550	2.900	5.030	2.390	1.880	1.690	1.740	1.700
26	1.620	2.330	2.600	2.550	2.450	2.600	4.650	2.360	1.830	1.660	1.700	1.630
27	1.680	2.650	2.550	2.500	2.350	2.650	4.630	1.980	2.000	1.750	1.670	1.670
28	1.650	2.900	2.500	2.500	2.400	2.800	3.290	2.110	1.980	1.690	1.890	1.850
29	1.650	3.000	2.400	2.500	-----	2.800	3.690	2.160	1.900	1.590	1.810	1.830
30	1.670	2.600	2.200	2.500	-----	2.700	5.280	1.940	1.930	1.590	1.820	1.810
31	1.820	-----	3.100	2.500	-----	3.090	-----	2.150	-----	1.470	1.740	-----
Total	56,720	66,270	95,710	81,040	71,350	117,360	115,570	81,140	73,000	57,840	56,410	52,310
Mean	1,830	2,209	3,087	2,614	2,548	3,786	3,852	2,617	2,433	1,866	1,820	1,744

Calendar year 1965: Max 10,500 Min 1,240 Mean 2,773
 Water year 1965-66: Max 10,500 Min 1,440 Mean 2,533

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 1966.

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.--39 years, 245 cfs.

Extremes.--Maximum discharge during year, 1,500 cfs Nov. 28 (gage height, 6.44 ft, backwater from ice); minimum, 33 cfs Sept. 16 (gage height, 1.00 ft).

1914-26, 1939-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,090	125	820	400	96	150	613	522	123	66	57	65
2	817	120	700	320	96	165	655	472	121	61	68	85
3	566	120	620	270	100	180	558	403	143	58	69	96
4	419	118	530	230	105	240	540	346	161	59	68	93
5	336	112	460	205	110	400	516	305	376	69	62	87
6	286	112	420	185	130	540	485	282	1,040	75	62	79
7	276	125	390	170	160	580	445	259	921	73	102	76
8	320	122	360	161	200	540	404	241	599	67	126	70
9	365	125	350	150	270	500	392	224	436	68	124	67
10	354	125	340	145	340	510	415	209	301	75	102	64
11	317	120	360	140	380	540	472	202	203	104	107	62
12	279	229	540	135	360	620	526	203	193	101	112	61
13	247	698	840	130	320	800	545	197	200	114	116	60
14	218	605	1,350	125	280	886	535	192	188	106	101	70
15	215	487	1,250	120	250	900	545	192	173	90	98	80
16	208	463	1,120	115	220	900	541	218	161	75	97	55
17	208	455	1,000	110	200	920	533	236	150	70	95	63
18	215	401	920	110	189	1,000	552	299	145	66	89	61
19	208	345	840	105	170	1,100	706	376	138	62	78	60
20	198	313	780	105	155	1,000	904	352	127	59	73	59
21	198	278	760	100	145	820	997	318	115	55	74	58
22	184	268	730	98	130	800	928	279	112	53	82	58
23	184	267	680	96	125	760	742	249	104	52	89	58
24	172	247	660	94	125	820	619	236	96	51	87	57
25	159	237	620	94	125	940	527	227	87	51	82	57
26	150	250	560	94	130	900	467	208	82	55	77	57
27	145	370	480	92	135	800	438	187	77	68	72	57
28	139	960	420	92	140	700	435	167	75	57	68	59
29	133	1,060	400	92	-----	323	435	140	72	53	66	69
30	128	940	430	92	-----	435	473	140	70	50	72	71
31	128	-----	430	94	-----	537	-----	129	-----	49	68	-----
Total	8,862	10,197	20,160	4,469	5,186	20,306	16,943	8,010	6,789	2,112	2,643	2,014
Mean	286	340	650	144	185	655	565	258	226	68.1	85.3	67.1
Cfsm	.877	1.04	1.99	.442	.567	2.01	1.73	.791	.693	.209	.262	.206
In.	1.01	1.16	2.30	.51	.59	2.32	1.93	.91	.77	.24	.30	.23

Calendar year 1965: Max 6,420 Min 45 Mean 365 Cfsm 1.16 In. 15.74
 Water year 1965-66: Max 1,350 Min 49 Mean 295 Cfsm .905 In. 12.29

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-28	2400	-	1,500				

5-3980. Wisconsin River at Rothschild, Wis.

Location.--Lat 44°53'10", long 89°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 1966.

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.--22 years, 3,218 cfs.

Extremes.--Maximum discharge during year, 23,200 cfs Mar. 19 (gage height, 12.43 ft); minimum daily, 1,290 cfs July 31.

1944-66: Maximum discharge, 49,200 cfs Apr. 12, 1965 (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.120) and 12 powerplants above station.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,230	2,240	4,520	4,100	3,000	2,500	7,310	5,800	2,380	2,170	1,730	2,080
2	5,650	2,380	4,850	3,500	3,100	2,700	9,180	5,200	2,290	2,020	1,910	2,690
3	3,930	2,270	3,840	3,200	3,000	2,940	7,700	4,800	2,380	1,640	1,830	1,860
4	3,660	2,140	3,720	3,100	3,000	7,340	7,030	4,200	2,440	1,450	1,580	1,900
5	3,370	2,210	3,340	3,100	2,900	9,150	6,270	3,600	3,070	2,320	1,390	1,630
6	2,710	1,660	3,230	3,000	2,900	5,340	5,290	3,400	6,480	2,380	1,430	2,210
7	2,740	1,580	2,960	2,900	2,900	3,800	4,680	3,200	10,100	2,120	2,380	2,220
8	3,220	2,510	3,090	2,800	3,100	3,100	4,340	3,200	7,220	2,170	2,960	2,070
9	3,170	2,410	3,350	2,900	4,000	3,000	4,530	3,200	5,030	1,750	2,640	1,900
10	2,710	2,060	3,070	3,300	12,500	3,500	4,650	3,000	4,010	1,650	2,080	1,650
11	2,800	1,970	3,320	3,000	8,520	6,160	4,800	3,120	3,420	2,350	2,160	1,580
12	2,830	2,830	7,820	2,700	5,930	7,170	4,920	2,740	3,580	2,520	2,210	2,040
13	2,660	6,840	17,000	3,000	4,000	6,610	5,240	2,900	3,150	2,430	1,790	2,170
14	2,510	5,580	13,000	3,300	2,900	6,310	5,140	2,670	3,370	2,200	1,490	2,100
15	2,670	3,900	8,730	3,000	2,900	6,680	5,380	2,680	2,680	2,220	2,210	1,970
16	2,210	4,160	7,070	2,700	2,900	6,910	5,530	3,100	2,620	1,700	2,060	1,920
17	1,980	4,440	6,090	3,100	2,800	7,420	5,670	3,200	2,680	1,700	2,080	1,570
18	2,560	3,590	5,400	3,200	2,800	15,900	5,710	3,880	2,300	2,160	1,940	1,470
19	2,470	3,380	4,490	3,200	2,500	21,100	7,120	4,350	1,930	1,800	1,800	1,870
20	2,230	3,360	3,930	3,100	2,200	14,200	10,300	3,760	2,500	2,020	1,470	1,940
21	2,500	2,890	4,010	2,900	2,500	9,330	10,600	3,500	2,360	2,140	1,590	1,940
22	2,490	3,190	3,590	2,800	2,600	11,000	9,870	3,480	2,360	2,060	2,650	2,030
23	1,930	3,390	3,800	2,700	2,500	10,300	8,120	3,320	2,300	1,580	2,350	2,040
24	1,810	3,420	4,000	3,100	2,600	6,190	7,190	2,900	2,240	1,500	2,280	1,510
25	2,510	3,130	3,400	3,000	2,700	5,410	6,390	3,150	1,910	1,830	2,150	1,510
26	2,280	3,280	3,200	2,900	2,400	4,880	6,110	2,950	1,660	2,070	2,040	1,890
27	2,130	7,160	3,200	2,800	2,100	4,090	5,800	2,740	2,020	2,090	1,620	1,900
28	2,260	5,560	3,000	3,100	2,300	4,300	4,500	2,010	2,140	2,060	1,700	2,090
29	2,010	5,680	2,960	2,800	-----	4,500	5,000	2,240	2,060	1,940	2,180	2,270
30	1,530	4,350	3,250	2,600	-----	4,690	6,400	2,210	2,070	1,360	2,180	2,050
31	1,690	-----	3,800	2,900	-----	6,240	-----	2,420	-----	1,290	2,130	-----
Total	86,450	103,560	151,030	93,800	97,550	212,760	190,770	102,920	94,750	60,690	62,010	58,070
Mean	2,789	3,452	4,872	3,026	3,484	6,863	6,359	3,320	3,158	1,958	2,000	1,936
Cfsm												
In.												

Calendar year 1965: Max 44,300 Min 1,230 Mean 4,149
 Water year 1965-66: Max 21,100 Min 1,290 Mean 3,601

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 1966. Monthly discharge only for some periods, published in WSP 1308.

Gage.--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.

Average discharge.--40 years (1914-25, 1937-66), 167 cfs.

Extremes.--Maximum discharge during year, 8,350 cfs Dec. 12 (gage height, 15.30 ft); minimum, 2.5 cfs Sept. 29 (gage height, 2.48 ft). 1914-25, 1937-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	394	26	202	350	12	15	3,200	121	12	5.1	14	9.4
2	220	23	171	190	12	18	2,080	101	9.8	4.5	14	14
3	142	21	132	110	12	36	1,170	79	11	4.2	12	45
4	103	21	98	72	12	1,800	740	64	17	4.5	9.8	96
5	79	20	82	52	12	1,500	482	57	64	5.4	7.9	74
6	67	20	70	43	13	1,200	361	48	2,980	8.9	7.9	55
7	66	20	62	37	18	900	276	41	1,080	10	11	37
8	75	23	54	33	30	700	226	36	386	10	88	26
9	93	26	46	31	400	600	218	32	196	11	106	14
10	97	26	43	29	1,050	540	230	29	114	12	53	13
11	83	26	100	27	400	1,400	239	29	75	12	38	8.9
12	67	396	4,580	26	240	1,000	451	33	62	30	45	7.4
13	57	833	4,260	25	140	600	176	34	50	81	41	6.5
14	52	294	1,040	25	90	520	155	37	41	41	35	7.4
15	49	183	430	24	60	629	152	38	39	23	32	6.5
16	46	157	250	23	40	722	154	41	35	14	37	6.0
17	46	150	150	22	30	1,240	150	50	29	9.8	37	4.8
18	44	110	110	21	24	5,820	169	223	25	7.9	32	4.2
19	43	90	90	21	21	1,550	492	127	20	7.0	24	4.2
20	43	82	82	20	19	610	815	86	18	5.7	19	3.9
21	59	78	76	19	18	833	531	67	16	5.7	18	3.6
22	79	76	73	19	17	1,310	354	53	14	5.1	20	3.6
23	66	84	71	18	17	589	230	44	12	4.2	22	3.3
24	52	93	180	17	16	200	169	42	10	3.6	36	3.3
25	42	81	250	16	15	140	132	37	8.9	3.3	31	3.0
26	38	214	160	15	14	110	110	30	7.9	3.3	23	2.6
27	33	1,320	110	15	14	96	99	26	6.0	20	19	2.6
28	30	557	92	14	14	86	92	21	6.0	73	16	2.6
29	27	371	82	13	-----	100	83	18	5.7	49	11	2.6
30	26	278	94	13	-----	400	97	16	5.4	26	9.4	2.6
31	26	-----	600	12	-----	1,050	-----	14	-----	16	10	-----
Total	2,344	5,699	13,840	1,352	2,760	26,314	13,833	1,674	5,355.7	516.2	879.0	473.0
Mean	75.6	190	446	43.6	98.6	849	461	54.0	179	16.7	28.4	15.8
Cfsm	.338	.848	1.99	.195	.440	3.79	2.06	.241	.799	.075	.127	.071
In.	.39	.95	2.30	.22	.46	4.37	2.30	.28	.89	.09	.15	.08

Calendar year 1965: Max 11,100 Min 0.5 Mean 268 Cfsm 1.20 In. 16.27
 Water year 1965-66: Max 5,820 Min 2.6 Mean 206 Cfsm .920 In. 12.48

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-12	2100	15.30	8,350	4-1	2000	11.57	3,970
3-18	0400	14.34	6,980	6-6	1300	12.95	5,350

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 1966.

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 Dept.). Prior to April 1960 staff gage at same site at datum 0.26 ft higher.

Average discharge.--7 years, 3.09 cfs.

Extremes.--Maximum discharge during year, 29 cfs Dec. 12 (gage height, 2.30 ft); minimum, 1.8 cfs Jan. 2 (gage height, 0.60 ft), result of freezeup; minimum daily, 2.8 cfs Nov. 4.

1959-66: 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 water years 1965 and 1966 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	3.0	3.4	4.0	3.0	3.9	12	5.7	4.6	3.9	4.4	3.2
2	4.4	3.1	3.2	3.9	3.0	3.9	9.2	5.6	4.6	3.8	3.8	3.8
3	4.1	3.1	3.3	3.6	3.0	4.3	7.5	5.4	5.1	3.8	3.5	3.6
4	3.9	2.8	3.2	3.6	3.0	17	7.0	5.3	5.5	4.0	3.4	3.5
5	3.9	3.0	3.2	3.5	3.0	6.0	6.8	5.4	6.5	4.2	3.4	3.4
6	3.9	3.0	2.9	3.5	3.0	4.6	6.7	5.2	7.4	4.0	3.4	3.2
7	4.2	3.0	2.9	3.4	3.1	4.3	6.5	5.2	6.0	3.8	3.4	3.1
8	4.1	3.1	2.9	3.2	5.5	4.2	6.2	5.2	5.4	3.7	4.1	3.1
9	3.8	3.0	3.0	3.3	20	4.2	6.0	5.0	5.4	4.1	3.6	3.1
10	3.5	3.0	3.0	3.0	16	6.6	6.0	5.0	5.1	4.0	3.5	3.1
11	3.4	3.0	4.9	2.9	6.6	8.8	6.1	5.6	5.3	4.4	3.8	3.1
12	3.4	5.7	17	3.0	5.5	7.0	6.2	5.6	5.4	4.0	3.6	3.0
13	3.4	5.0	11	3.1	5.2	5.3	6.3	5.6	5.0	4.0	3.5	3.0
14	3.6	3.9	6.2	3.2	4.7	5.3	6.3	5.5	5.0	3.9	3.5	3.3
15	3.6	4.2	5.2	3.2	4.4	5.2	6.2	5.6	5.1	3.6	4.8	3.1
16	3.4	4.4	4.6	3.2	4.4	5.8	6.2	5.6	4.9	3.6	4.4	3.1
17	4.0	3.8	4.4	3.2	4.0	6.5	6.2	5.4	4.8	3.5	3.9	3.0
18	3.6	3.5	4.1	3.2	3.9	16	6.0	5.4	4.7	3.5	3.6	3.0
19	3.5	3.5	3.9	3.1	3.7	8.6	6.4	5.3	4.6	3.4	3.5	3.0
20	3.6	3.6	4.0	3.1	3.6	7.0	8.4	5.2	4.5	3.2	3.5	3.0
21	4.3	3.5	3.9	3.1	3.6	7.1	7.4	5.1	4.4	3.2	3.8	3.1
22	3.9	3.6	3.8	3.1	3.6	11	6.4	5.0	4.4	3.2	3.8	3.0
23	3.8	3.4	4.4	3.1	3.6	16	6.2	5.6	4.3	3.1	3.6	3.0
24	3.4	3.4	4.8	3.0	3.8	11	6.0	5.6	4.2	3.1	3.5	3.0
25	3.4	3.8	4.2	3.0	3.9	8.0	5.8	5.2	4.1	3.1	3.5	3.0
26	3.2	5.6	3.8	3.0	3.8	7.0	6.1	5.0	4.1	4.3	3.5	3.0
27	3.2	6.0	3.5	3.0	3.8	6.5	6.2	5.0	4.1	3.9	3.4	3.0
28	3.1	4.1	3.4	3.0	3.9	6.2	6.1	4.8	4.1	3.5	3.4	3.0
29	3.1	3.6	3.6	3.0	-----	8.3	5.8	4.7	4.0	3.3	3.3	3.3
30	3.2	3.4	4.6	3.0	-----	9.2	6.3	4.6	3.9	3.2	3.2	3.0
31	3.2	-----	5.2	3.0	-----	8.6	-----	4.6	-----	3.2	3.2	-----
Total	114.0	111.1	141.5	99.5	138.6	233.4	200.5	163.0	146.5	113.5	112.8	94.1
Mean	3.68	3.70	4.56	3.21	4.95	7.53	6.68	5.26	4.88	3.66	3.64	3.14

Calendar year 1965: Max 26 Min 0.88 Mean 3.15
 Water year 1965-66: Max 20 Min 2.8 Mean 4.57

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 1966.

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 Dept.). Prior to May 1960 staff gage at same site at datum 0.88 ft lower.

Average discharge.--7 years, 9.41 cfs.

Extremes.--Maximum discharge during year, 79 cfs Feb. 9 (gage height, 2.95 ft); minimum, 6.6 cfs Sept. 26, result of temporary dam at flume entrance; minimum daily, 7.8 cfs Sept. 22-24, 26, 27.

1959-66: Maximum discharge, that of Feb. 9, 1966; minimum; 2.4 cfs May 23, 1965; minimum daily, 4.3 cfs Aug. 19, 20, 1959.

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

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14.3	10.3	11.6	12.6	9.3	11.6	22.4	15.8	12.6	10.2	10.2	8.2
2	13.5	10.3	11.4	12.4	9.4	11.6	20.8	15.4	12.6	10.0	9.5	8.9
3	12.9	10.3	11.6	11.8	9.4	11.9	19.0	15.2	13.3	10.0	8.9	9.1
4	12.4	10.2	11.4	11.8	9.4	4.5	18.2	15.0	13.6	10.3	8.8	8.8
5	12.4	10.2	11.4	11.6	9.4	17.1	18.0	15.2	16.2	10.6	8.6	8.5
6	12.4	10.2	11.3	11.6	9.5	13.6	17.8	14.7	16.2	10.3	8.6	8.3
7	12.8	10.2	11.0	11.0	9.8	12.9	17.5	14.7	14.3	9.7	8.6	8.2
8	12.6	10.3	11.1	11.0	12.9	12.8	17.1	14.7	13.6	9.7	9.8	8.0
9	12.3	10.2	11.1	11.4	4.7	12.8	16.7	14.5	13.5	10.5	9.2	8.0
10	11.9	10.2	11.1	10.8	4.4	14.7	16.5	14.5	13.1	10.0	8.9	8.0
11	11.8	10.2	13.1	10.5	17.3	18.0	16.5	15.0	12.9	11.0	9.2	7.9
12	11.6	13.5	21.6	10.8	14.7	17.5	16.2	15.4	13.5	10.0	9.2	7.9
13	11.4	13.5	23.7	10.7	14.3	14.7	16.0	14.7	12.9	9.8	8.9	7.9
14	11.6	11.8	16.7	10.6	13.5	14.3	15.8	14.7	12.8	9.7	8.9	8.5
15	11.6	11.8	15.0	10.5	12.9	14.2	16.0	14.7	12.8	9.4	10.6	7.9
16	11.4	12.1	14.3	10.4	12.8	15.2	16.0	14.9	12.6	9.2	10.8	7.9
17	12.3	11.4	14.0	10.2	12.1	16.0	16.0	14.3	12.3	9.1	9.7	7.9
18	11.8	11.1	13.6	10.0	12.1	28	16.2	14.2	12.3	9.1	9.1	7.9
19	11.6	11.0	13.3	9.8	11.6	19.6	16.5	14.0	11.9	8.9	8.8	7.9
20	11.4	11.0	13.3	9.7	11.3	17.3	19.2	14.0	11.9	8.8	8.6	7.9
21	12.4	11.0	13.1	9.6	11.3	17.3	18.0	13.8	11.8	8.8	9.1	7.9
22	11.9	11.0	12.9	9.5	11.4	20.8	16.7	13.6	11.6	8.6	9.4	7.8
23	11.6	10.8	13.6	9.4	11.6	28	16.3	14.3	11.4	8.6	9.1	7.8
24	11.3	10.8	14.2	9.4	11.6	23.1	16.2	14.3	11.3	8.5	8.8	7.8
25	11.1	11.1	13.3	9.3	11.8	19.6	15.8	14.0	11.1	8.3	8.8	7.9
26	11.0	4.3.5	12.6	9.3	11.4	18.4	16.2	13.6	11.0	9.2	8.6	7.8
27	10.8	15.2	12.1	9.2	11.4	17.6	16.5	13.5	11.0	10.3	8.5	7.8
28	10.6	12.6	11.8	9.2	11.6	17.3	16.2	13.1	10.8	8.9	8.5	7.9
29	10.6	11.9	12.1	9.2	-----	18.6	15.8	12.9	10.8	8.6	8.3	8.3
30	10.6	11.6	13.1	9.2	-----	20.4	16.5	12.9	10.3	8.5	8.3	8.0
31	10.6	-----	14.0	9.2	-----	19.6	-----	12.8	-----	8.3	8.3	-----
Total	366.5	339.3	414.4	321.7	394.8	559.5	512.6	444.4	376.0	292.9	280.6	242.6
Mean	11.8	11.3	13.4	10.4	14.1	18.0	17.1	14.3	12.5	9.45	9.05	8.09

Calendar year 1965 : Max 37 Min 4.9 Mean 9.85

Water year 1965-66 : Max 47 Min 7.8 Mean 12.5

Peak discharge (base, 18.0 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-13	0130	2.10	32	3-18	1200	2.27	36
12-29	1700	1.61	21	3-23	0600	2.00	29
2-9	1900	2.95	79	4-1	1630	1.70	23
3-4	1400	2.86	70	4-20	0600	1.59	21
3-11	2400	1.56	20	6-5	0300	1.48	18

WISCONSIN RIVER BASIN

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 1966.

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.--44 years (1914-49, 1957-66), 4,844 cfs.

Extremes.--Maximum discharge during year, 33,200 cfs Dec. 14; minimum daily, 881 cfs July 4.

1914-50, 1957-66: 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. 120) 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 1965 to September 1966, were as follows:

May	28	96	June	6	4	July	5	100	Aug.	8	96	Aug.	16	100	Sept.	15	100	Sept.	23	100
	29	100		28	50		6	100		9	100		17	100		16	100		24	100
	30	100		29	98		7	100		10	83		18	100		17	100		25	100
	31	100		31	100		8	100		11	100		19	100		18	100		26	100
June	1	100	July	1	50		9	100		12	100		20	100		19	100		27	100
	2	100		2	96		10	100		13	100		21	100		20	100		28	100
	3	100		3	50		11	90		14	100		22	4		21	100		29	100
	4	100		4	92		12	38		15	100	Sept.	14	96		22	100		30	100
	5	100																		

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14,000	2,760	6,530	7,460	3,980	3,980	13,400	8,870	3,940	2,610	2,650	2,370
2	8,770	3,190	3,080	7,220	4,000	4,000	19,600	8,160	3,930	2,800	2,250	2,730
3	5,030	3,040	6,580	4,900	3,980	4,200	18,700	5,230	3,390	1,300	2,120	3,680
4	4,830	3,080	5,100	5,060	3,930	9,220	12,500	5,000	3,660	881	2,080	936
5	4,790	2,970	4,450	4,820	3,910	12,800	9,810	5,150	4,220	1,290	2,070	882
6	4,270	2,500	4,650	5,030	3,860	11,600	9,800	4,320	6,700	3,200	2,090	2,390
7	4,520	2,220	4,730	4,640	3,980	6,230	8,160	4,120	11,600	3,150	2,280	2,350
8	4,530	2,630	4,660	4,110	4,200	6,480	6,840	3,670	13,100	2,780	2,810	2,580
9	4,510	2,850	4,480	4,040	5,920	5,240	6,090	3,680	4,950	3,160	2,410	2,480
10	3,920	3,070	4,420	3,970	12,000	6,390	5,230	4,150	5,440	2,560	2,330	2,340
11	3,630	2,910	5,160	4,000	17,200	8,780	5,330	4,520	5,750	2,450	2,300	2,220
12	4,200	3,550	13,500	4,020	13,100	10,700	5,270	4,320	6,880	2,780	2,260	2,620
13	3,650	6,400	25,700	4,000	9,270	10,400	5,920	3,990	5,220	3,170	2,200	2,520
14	3,580	8,180	31,900	4,160	5,920	7,130	7,750	4,080	4,170	2,740	2,240	2,410
15	3,830	7,000	19,100	4,580	5,880	7,380	7,600	4,070	4,350	2,370	2,670	2,230
16	3,610	5,130	8,230	4,800	5,450	10,100	6,550	3,770	3,860	2,400	2,230	2,170
17	3,490	5,390	10,000	4,530	4,860	11,900	6,820	3,790	3,770	2,130	2,160	2,130
18	3,440	4,810	8,940	4,050	4,810	18,600	6,750	3,900	3,760	2,040	2,260	1,880
19	3,170	5,090	6,530	4,000	4,610	29,300	7,960	3,780	3,240	2,260	2,290	2,160
20	3,360	4,190	4,980	3,960	4,080	29,100	13,300	4,430	3,140	2,020	2,190	2,270
21	3,410	4,280	6,260	4,120	4,280	18,000	16,100	4,570	3,040	2,030	2,000	2,370
22	3,710	4,360	5,350	4,180	4,110	16,000	16,100	4,320	2,850	2,010	2,330	2,550
23	3,390	3,630	7,230	4,140	3,820	21,700	13,300	4,440	2,960	2,030	2,230	2,410
24	2,490	4,760	7,200	4,260	3,800	16,000	10,200	4,430	3,220	2,070	2,630	2,150
25	3,300	4,970	4,610	4,220	3,920	9,220	8,690	4,550	2,850	2,120	2,680	1,910
26	3,000	6,000	3,380	4,220	3,960	8,620	8,760	4,590	2,260	2,220	2,870	2,330
27	2,890	8,820	4,890	4,010	3,980	6,650	7,520	4,490	2,510	2,570	2,720	2,390
28	3,180	9,030	4,750	4,050	4,020	5,490	5,560	4,490	2,500	2,680	2,320	2,300
29	2,870	9,130	4,360	3,900	-----	5,550	5,930	1,640	2,520	2,580	2,200	2,210
30	2,680	9,010	4,780	3,840	-----	6,550	7,690	1,940	2,490	2,210	2,360	2,000
31	2,430	-----	5,250	3,960	-----	8,610	-----	3,780	-----	1,980	2,380	-----
Total	128,480	144,950	245,780	138,250	156,830	335,920	283,230	136,240	132,270	72,591	72,610	67,968
Mean	4,145	4,832	7,928	4,460	5,601	10,840	9,441	4,395	4,409	2,342	2,342	2,266

Calendar year 1965: Max 53,100 Min 920 Mean 6,065
 Water year 1965-66: Max 31,900 Min 881 Mean 5,247

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 1966.

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, 193 cfs Feb. 10 (gage height, 4.11 ft); minimum, 20 cfs July 30, 31 (gage height, 1.36 ft). 1964-66: Maximum discharge, that of Feb. 10, 1966; minimum, 8.7 cfs Feb. 19, 1965 (gage height, 0.96 ft), result of freezeup.

Remarks.--Records good except those for winter months, which are fair. Approximately 17 miles of drainage ditches 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. Records of water temperatures for the period June 1965 to September 1966 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	133	56	66	69	31	52	118	79	43	25	23	28
2	118	54	63	68	31	52	128	74	42	25	26	31
3	105	53	62	62	31	54	119	72	42	24	26	33
4	96	51	62	64	31	90	110	70	42	25	26	32
5	92	50	61	62	31	95	105	67	46	26	25	30
6	89	50	60	60	32	75	102	64	50	26	24	29
7	87	49	58	53	34	69	98	62	48	25	24	28
8	86	48	58	55	40	66	95	60	46	24	27	27
9	85	48	56	56	76	64	91	58	44	25	26	26
10	82	48	55	51	165	66	89	56	43	26	25	26
11	78	47	62	46	165	73	87	58	42	32	26	25
12	76	57	85	46	118	78	84	61	42	31	26	25
13	74	68	118	47	101	78	82	60	40	30	25	24
14	72	70	117	46	89	76	80	58	38	28	24	24
15	74	60	108	44	81	76	79	58	38	27	28	24
16	72	66	98	43	76	77	78	58	38	26	40	24
17	72	65	92	43	64	82	78	57	36	24	36	24
18	74	61	86	42	61	102	78	56	38	24	34	24
19	72	58	80	42	58	118	81	55	36	23	32	24
20	70	56	78	41	56	109	94	54	35	23	31	23
21	70	56	74	40	55	104	99	53	34	22	31	23
22	74	56	72	39	57	111	96	52	32	22	32	23
23	71	54	73	38	57	144	89	54	32	22	32	22
24	68	54	80	37	58	158	84	54	31	21	30	22
25	65	56	80	35	54	138	80	52	30	21	30	22
26	63	64	76	34	52	125	78	50	29	21	28	22
27	61	84	67	32	52	114	85	48	28	23	28	22
28	60	87	61	31	52	110	85	46	28	22	26	22
29	59	76	70	30	-----	105	79	46	27	21	26	24
30	58	70	64	30	-----	111	80	45	26	21	26	23
31	57	-----	68	30	-----	114	-----	44	-----	21	26	-----
Total	2,413	1,778	2,310	1,416	1,808	2,886	2,731	1,781	1,126	756	869	756
Mean	77.8	59.3	74.5	45.7	64.6	93.1	91.0	57.4	37.5	24.4	28.0	25.2

Calendar year 1965: Max 187 Min 14 Mean 55.5

Water year 1965-66: Max 165 Min 21 Mean 56.5

WISCONSIN RIVER BASIN

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 1966.

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, 247 cfs Feb. 10 (gage height, 8.39 ft); minimum, 8.7 cfs Aug. 12 (gage height, 5.46 ft), result of regulation; minimum daily, 12 cfs July 31.

1964-66: Maximum discharge, that of Feb. 10, 1966; minimum recorded, 3.2 cfs Jan. 28 (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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	60	73	69	24	48	138	74	38	22	13	17
2	111	58	71	64	24	50	134	70	36	21	14	18
3	101	57	69	63	25	51	133	68	38	20	13	19
4	93	56	67	62	25	91	115	66	39	20	13	19
5	88	55	65	60	25	126	110	65	42	20	13	18
6	86	55	62	58	25	85	106	62	43	20	13	18
7	86	54	60	56	25	75	102	61	40	18	13	18
8	85	54	60	50	31	68	99	60	38	18	14	18
9	84	53	59	54	95	65	94	57	37	18	14	18
10	81	52	60	54	222	68	92	56	36	18	14	17
11	77	52	66	51	174	76	90	56	36	24	14	17
12	76	64	99	46	123	85	87	60	36	23	14	16
13	74	83	129	46	108	82	84	57	35	21	14	16
14	74	78	119	46	91	80	83	56	33	20	14	16
15	78	74	109	45	85	80	82	55	33	20	15	15
16	75	75	102	45	80	80	80	55	33	19	22	15
17	80	73	97	43	75	88	79	54	32	18	30	15
18	81	70	89	42	69	124	80	53	31	19	26	14
19	77	67	84	42	64	124	84	52	30	18	24	14
20	75	67	81	42	60	111	90	51	29	17	23	14
21	83	66	78	41	55	110	92	50	28	16	22	14
22	83	65	75	40	51	131	85	48	28	15	22	14
23	79	64	78	38	50	174	82	48	28	15	22	14
24	74	64	88	37	50	161	80	49	26	15	21	14
25	72	64	84	35	49	139	77	47	26	15	21	14
26	69	76	77	33	49	128	77	45	26	14	20	15
27	66	98	69	31	49	121	84	44	25	14	20	15
28	64	88	64	29	49	117	79	42	25	13	19	15
29	64	83	65	27	-----	119	75	40	24	13	18	15
30	63	77	66	26	-----	129	78	39	23	13	18	16
31	61	-----	69	25	-----	121	-----	38	-----	12	17	-----
Total	2,485	2,002	2,434	1,400	1,852	3,107	2,771	1,678	974	549	550	478
Mean	80.2	66.7	78.5	45.2	66.1	100	92.4	54.1	32.5	17.7	17.7	15.9

Calendar year 1965: Max 212 Min 4.0 Mean 51.0

Water year 1965-66: Max 222 Min 12 Mean 55.6

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 1966.

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, 138 cfs Feb. 9 (gage height, 4.27 ft); minimum daily, 2.6 cfs Sept. 23. 1964-66: Maximum discharge, that of Feb. 9, 1966; minimum, 2.0 cfs Aug. 15, 1964 (gage height, 0.81 ft).

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 June 1965 to September 1966 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	8.8	11	11	6.4	8.5	17	8.5	7.1	4.5	3.6	3.2
2	14	8.8	10	11	6.5	8.3	16	8.1	7.0	4.4	3.9	3.6
3	13	8.8	10	9.8	6.6	9.1	15	7.9	7.2	4.2	3.5	3.8
4	13	8.7	10	9.8	7.0	26	14	7.9	7.1	4.8	3.3	3.6
5	13	8.5	10	9.7	7.1	22	14	8.0	7.9	4.8	3.1	3.3
6	12	8.5	9.7	9.5	7.2	13	14	8.0	8.1	4.5	3.1	3.3
7	12	8.5	9.4	9.3	7.2	11	13	8.0	7.5	4.2	3.0	3.1
8	12	8.5	9.3	9.0	9.4	11	13	8.1	7.1	4.1	3.2	3.1
9	12	8.3	9.3	8.7	7.1	11	13	8.1	7.3	4.2	3.2	3.0
10	12	8.3	9.1	8.2	8.3	11	12	8.2	7.0	4.0	3.1	3.0
11	11	8.3	12	7.8	23	12	12	9.4	7.1	6.4	3.1	2.8
12	11	13	19	8.1	17	13	12	9.5	7.5	5.2	3.1	2.8
13	11	14	19	8.2	15	12	12	9.3	7.0	4.9	3.0	2.8
14	11	11	16	8.0	14	12	11	9.0	6.7	4.7	3.0	2.8
15	11	11	14	7.8	13	11	11	9.0	6.7	4.4	4.4	2.8
16	10	11	14	7.6	12	12	11	9.0	6.5	4.1	4.9	2.8
17	11	10	13	7.4	11	13	11	8.7	6.4	3.9	4.2	2.8
18	11	9.8	12	7.3	11	21	12	8.7	6.5	3.9	3.8	2.8
19	10	9.5	12	7.2	9.8	16	12	8.7	6.1	3.7	3.6	2.7
20	10	9.5	12	7.2	9.7	15	12	8.5	6.0	3.5	3.5	2.7
21	12	9.4	11	7.1	9.3	15	12	8.2	5.9	3.4	4.0	2.7
22	11	9.4	11	7.0	9.1	18	11	8.2	5.7	3.3	4.1	2.7
23	10	9.3	12	6.8	9.1	27	10	8.5	5.6	3.2	4.0	2.6
24	9.8	9.3	14	6.7	9.1	20	9.5	8.3	5.4	3.1	3.8	2.7
25	9.8	9.5	12	6.6	9.0	18	9.1	8.0	5.2	3.0	3.7	2.7
26	9.5	13	11	6.5	8.6	17	9.4	7.7	5.2	3.1	3.6	2.7
27	9.3	15	11	6.5	8.5	16	10	7.5	5.1	3.6	3.5	2.7
28	9.1	12	10	6.5	8.5	16	9.3	7.4	4.9	3.2	3.4	2.8
29	9.1	12	10	6.4	-----	16	8.8	7.3	4.9	3.1	3.3	3.3
30	9.1	11	11	6.3	-----	16	9.1	7.2	4.7	3.0	3.3	3.2
31	9.0	-----	11	6.3	-----	16	-----	7.1	-----	3.0	3.3	-----
Total	343.7	302.7	364.8	245.3	418.1	462.9	355.2	256.0	192.4	123.4	109.6	88.9
Mean	11.1	10.1	11.8	7.91	14.9	14.9	11.8	8.26	6.41	3.98	3.54	2.96

Calendar year 1965: Max 58 Min 2.7 Mean 8.53
 Water year 1965-66: Max 83 Min 2.6 Mean 8.94

WISCONSIN RIVER BASIN

5-4010.5 Temmile 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 1966.

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, 247 cfs Mar. 24 (gage height, 5.70 ft); minimum, 23 cfs Sept. 23, 24 (gage height, 3.92 ft). 1963-66: Maximum discharge, 274 cfs Apr. 12, 1965; 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	165	79	94	99	48	72	178	99	63	42	41	30
2	150	79	92	94	48	73	184	95	62	42	41	31
3	138	78	90	85	49	75	171	93	63	42	39	31
4	126	76	87	92	49	103	158	89	65	42	38	30
5	122	76	84	89	50	147	150	88	70	43	36	30
6	118	76	82	88	50	114	142	85	70	42	37	29
7	117	75	80	75	54	99	138	84	66	42	36	28
8	116	74	79	73	62	98	132	81	64	41	36	28
9	111	73	79	79	90	94	129	79	63	42	35	27
10	108	73	80	72	174	95	126	78	62	42	34	27
11	106	73	90	71	191	106	123	79	61	54	35	27
12	103	85	115	70	176	113	118	85	61	52	34	26
13	100	101	171	70	158	114	114	82	60	49	34	26
14	98	99	171	66	146	111	110	80	58	48	33	26
15	100	98	155	64	128	111	108	79	58	46	37	26
16	98	96	142	62	120	114	107	80	57	44	39	26
17	100	94	132	61	88	123	106	78	56	43	39	25
18	101	89	124	60	90	154	107	78	55	44	37	25
19	98	86	117	58	84	178	110	77	54	42	35	24
20	95	85	114	58	77	163	117	76	53	41	34	24
21	99	84	108	58	75	157	117	74	52	39	37	24
22	100	84	104	57	75	168	113	73	50	39	37	24
23	98	81	106	56	77	203	107	74	50	38	35	24
24	93	81	122	55	77	232	104	75	49	38	34	24
25	90	84	122	54	77	203	100	72	48	37	34	24
26	88	94	110	52	74	188	100	71	47	41	33	24
27	86	117	96	49	73	178	107	70	46	48	32	24
28	85	111	89	48	73	170	106	67	46	43	31	24
29	82	106	98	47	-----	166	100	66	45	41	30	26
30	82	96	95	47	-----	173	103	65	44	38	30	26
31	81	-----	98	48	-----	166	-----	64	-----	38	30	-----
Total	3,254	2,603	3,326	2,057	2,533	4,261	3,685	2,436	1,698	1,323	1,093	790
Mean	105	86.8	107	66.4	90.5	137	123	78.6	56.6	42.7	35.3	26.3

Calendar year 1965: Max 273 Min 10 Mean 69.9

Water year 1965-66: Max 232 Min 24 Mean 79.6

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 U. S. 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 1966.

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, 275 cfs Mar. 24 (gage height, 5.56 ft); maximum gage height, 6.27 ft Feb. 10 (backwater from ice); minimum daily, 15 cfs Sept. 21, 22.
1961-66: Maximum discharge, that of Mar. 24, 1966; minimum daily (March 1964 to September 1966), 7.2 cfs Aug. 12-16, 18-20, 1964.

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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	171	58	82	79	33	52	199	82	43	25	32	21
2	155	57	78	74	33	53	218	78	42	25	34	27
3	133	56	76	63	33	55	199	75	44	24	30	27
4	117	55	73	74	34	94	177	73	42	23	27	25
5	105	54	71	71	34	107	159	71	46	23	26	23
6	98	53	68	67	34	80	148	68	48	22	25	22
7	97	53	64	61	35	70	139	66	44	22	25	22
8	94	53	64	59	78	70	129	64	42	21	25	30
9	92	53	63	60	115	66	120	62	43	22	25	36
10	87	50	62	59	200	70	113	59	42	24	25	24
11	82	52	74	56	200	76	108	61	43	34	25	21
12	78	66	117	51	155	90	102	66	46	32	23	25
13	75	82	182	50	125	92	98	64	42	29	22	26
14	75	82	200	49	105	91	94	62	40	27	21	27
15	77	80	186	48	90	94	91	62	40	25	28	26
16	74	82	161	48	77	96	90	58	40	23	42	22
17	74	80	139	47	68	111	88	60	39	22	37	21
18	74	75	120	46	61	157	88	59	38	27	32	27
19	71	72	105	46	56	199	96	58	37	25	30	24
20	70	70	99	45	52	178	100	57	36	22	28	20
21	74	69	93	45	51	170	102	55	32	21	32	15
22	79	68	90	44	51	181	98	54	34	20	34	15
23	75	66	90	43	50	231	91	54	34	20	31	18
24	70	66	101	42	50	262	87	58	33	19	32	18
25	68	68	103	41	50	242	82	54	30	18	30	18
26	66	80	95	40	50	222	82	52	29	20	27	18
27	65	106	81	38	50	202	88	48	28	39	27	18
28	62	109	58	37	51	188	86	44	29	38	25	18
29	61	102	94	36	-----	182	82	43	29	34	24	20
30	61	89	78	35	-----	191	86	42	27	38	24	20
31	59	-----	78	34	-----	182	-----	43	-----	29	23	-----
Total	2,639	2,106	3,045	1,588	2,021	4,154	3,440	1,852	1,142	793	871	674
Mean	85.1	70.2	98.2	51.2	72.2	134	115	59.7	38.1	25.6	28.1	22.5

Calendar year 1965: Max 200 Min 9.0 Mean 57.0
Water year 1965-66: Max 262 Min 15 Mean 66.6

WISCONSIN RIVER BASIN

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 1966. Gage heights and discharge measurements available in files of Wisconsin Conservation Department for the period August 1957 to September 1963.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year, 70 cfs Feb. 10 (gage height, 3.48 ft); minimum daily, 6.1 cfs July 25. 1963-66: Maximum discharge, that of 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	11	13	13	9.1	11	20	14	11	7.9	8.6	8.0
2	15	11	13	13	9.2	11	19	14	11	7.9	8.9	8.9
3	14	12	13	12	9.2	12	22	13	12	8.0	8.4	9.4
4	14	12	13	13	9.2	27	19	13	11	8.2	8.2	9.4
5	13	13	13	13	9.2	23	18	13	11	8.3	8.0	8.9
6	13	13	12	13	9.2	16	18	13	12	8.3	7.6	8.3
7	13	12	12	12	9.4	14	18	13	11	8.0	7.7	8.2
8	13	12	12	12	10	13	17	13	11	7.7	7.9	7.6
9	13	11	12	12	22	13	17	13	11	8.2	7.9	7.6
10	13	11	12	11	50	14	17	13	11	8.0	7.7	7.5
11	13	11	15	11	28	15	17	13	11	9.7	7.7	7.4
12	12	16	23	11	19	16	16	14	12	9.0	7.7	7.2
13	12	17	21	11	17	15	16	14	12	8.6	7.5	7.0
14	12	14	18	11	15	14	16	14	11	9.0	7.5	7.6
15	13	14	17	11	14	14	15	14	11	8.3	10	7.1
16	12	14	16	10	14	15	15	14	11	7.9	11	6.8
17	13	13	15	10	13	15	14	14	10	7.5	9.7	7.1
18	13	12	14	9.7	13	21	14	14	9.8	7.6	9.2	7.0
19	12	12	14	9.6	13	19	14	14	9.5	7.5	8.9	6.8
20	13	12	14	9.5	12	18	15	13	9.4	7.0	8.8	6.8
21	14	12	14	9.4	12	18	15	13	9.2	6.8	9.4	6.7
22	13	12	13	9.4	12	20	14	13	9.0	6.6	9.7	7.0
23	13	11	14	9.3	12	29	14	13	8.8	6.5	9.4	6.8
24	12	11	15	9.3	11	24	14	13	8.6	6.2	9.0	7.0
25	12	12	14	9.2	11	22	14	12	8.6	6.1	8.9	7.2
26	12	14	13	9.1	11	21	14	13	8.6	7.2	8.6	7.1
27	12	14	13	9.0	11	20	14	12	8.6	9.5	8.3	7.0
28	12	13	13	9.0	11	20	14	12	8.4	8.8	8.2	7.4
29	11	13	13	9.0	-----	20	14	12	8.4	8.8	8.0	7.6
30	11	13	13	9.0	-----	20	14	12	8.2	8.4	8.0	7.5
31	11	-----	13	9.0	-----	20	-----	12	-----	8.2	8.0	-----
Total	396	378	440	328.5	395.5	550	478	407	305.1	245.7	264.4	225.9
Mean	12.8	12.6	14.2	10.6	14.1	17.7	15.9	13.1	10.2	7.93	8.53	7.53

Calendar year 1965 : Max 50 Min 4.1 Mean 10.8

Water year 1965-66 : Max 50 Min 6.1 Mean 12.1

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 1966.

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, 178 cfs Mar. 25 (gage height, 4.59 ft); minimum, 38 cfs Sept. 11-13, 19 (gage height, 1.79 ft). 1963-66: Maximum discharge, that of 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	64	81	81	54	65	125	81	60	44	48	40
2	119	64	80	78	54	66	138	78	60	42	54	44
3	104	64	79	72	54	68	138	76	62	42	48	50
4	92	62	78	75	54	94	125	75	60	44	44	46
5	87	62	77	79	54	110	115	74	60	44	44	44
6	84	62	76	77	55	95	110	73	64	44	44	42
7	84	62	73	67	58	84	106	71	60	42	44	42
8	85	62	73	70	67	77	102	71	58	42	44	40
9	83	62	73	71	92	75	98	70	59	44	44	40
10	80	60	72	64	150	78	96	69	60	45	42	40
11	77	60	80	64	162	83	94	71	58	54	44	38
12	74	71	110	64	154	90	91	77	67	52	42	38
13	73	92	134	65	135	90	88	75	62	48	42	38
14	74	90	146	65	120	88	87	72	58	52	42	40
15	78	84	134	64	114	86	86	72	57	49	52	42
16	74	84	117	63	101	87	84	74	56	46	81	40
17	74	81	106	62	91	93	84	74	55	44	62	40
18	74	78	98	63	84	113	85	73	54	50	52	40
19	72	76	80	63	77	134	88	71	52	50	47	38
20	70	76	80	62	71	130	92	70	52	46	45	39
21	80	75	81	62	67	118	92	68	50	44	48	40
22	83	75	82	62	68	116	88	67	50	42	55	40
23	78	74	85	61	69	137	84	67	48	42	50	40
24	75	68	95	61	69	169	83	71	48	42	47	40
25	72	71	98	60	67	170	81	67	47	40	46	40
26	71	83	88	58	66	156	80	65	46	40	44	40
27	69	92	83	56	65	142	85	64	46	60	42	42
28	67	96	66	55	65	134	84	62	46	56	42	42
29	66	88	84	54	-----	128	80	62	45	48	41	48
30	66	84	85	53	-----	127	83	61	44	47	40	48
31	66	-----	83	53	-----	126	-----	60	-----	46	40	-----
Total	2,481	2,222	2,777	2,004	2,337	3,329	2,872	2,181	1,644	1,431	1,460	1,241
Mean	80.0	74.1	89.6	64.6	83.5	107	95.7	70.4	54.8	46.2	47.1	41.4

Calendar year 1965 : Max 146 Min 30 Mean 61.9
 Water year 1965-66 : Max 170 Min 38 Mean 71.2

WISCONSIN RIVER BASIN

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 1966.

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.--22 years, 126 cfs.

Extremes.--Maximum discharge during year, 4,650 cfs Mar. 19 (gage height, 12.85 ft); minimum, 5.7 cfs Aug. 5 (gage height, 1.35 ft). 1944-66: 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, Aug. 6-26 and Sept. 14-30, which are fair. There is a large recreation dam about 5 miles upstream.

Discharge, in cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1,330	42	250	200	26	46	1,430	162	25	10	8.5	10
2	734	41	160	210	25	44	2,400	156	23	9.5	12	11
3	426	39	120	170	25	43	1,470	129	22	9.2	9.5	29
4	269	38	110	130	25	90	811	104	23	10	6.6	40
5	188	38	96	90	25	984	554	76	28	10	6.1	30
6	147	37	86	66	24	1,930	323	83	62	9.6	6.0	53
7	126	37	80	56	24	1,270	336	61	130	8.9	6.2	43
8	107	37	74	51	35	518	265	63	160	8.2	7.0	34
9	99	36	68	48	80	411	238	52	190	9.9	6.8	31
10	93	28	66	46	1,880	313	198	52	155	9.7	6.4	24
11	89	18	82	44	3,610	415	177	46	118	14	6.5	17
12	83	23	293	42	1,760	631	176	52	99	133	6.6	17
13	76	273	2,630	41	900	421	125	47	83	198	9.0	11
14	72	544	2,880	40	427	333	143	49	44	72	12	12
15	72	392	1,860	39	300	546	144	66	70	109	15	12
16	84	302	1,130	37	230	443	99	71	28	74	13	11
17	95	252	334	36	180	780	113	70	23	43	12	11
18	80	194	193	35	140	2,460	130	91	23	60	11	11
19	73	152	134	34	120	4,360	164	117	23	50	13	12
20	71	129	77	33	100	1,930	426	136	22	28	17	12
21	77	113	40	32	90	951	735	108	21	35	40	12
22	84	103	30	32	80	820	572	98	19	22	61	12
23	86	99	21	31	70	1,300	430	83	18	27	45	13
24	76	98	36	31	64	1,600	274	80	17	23	28	14
25	67	96	99	30	60	1,000	221	63	16	21	18	13
26	61	114	170	29	56	450	169	77	15	16	16	13
27	57	693	167	29	52	261	171	37	14	45	20	14
28	52	1,500	154	28	48	133	172	37	13	18	20	15
29	49	920	81	27	-----	213	153	36	12	11	17	12
30	46	650	27	27	-----	374	172	30	12	8.4	11	15
31	44	-----	48	26	-----	856	-----	29	-----	8.0	11	-----
TOTAL	5,013	7,038	11,596	1,770	10,456	25,926	12,791	2,361	1,508	1,110.4	477.2	564
MEAN	162	235	374	57.1	373	836	426	76.2	50.3	35.8	15.4	18.8
CFSM	.727	1.05	1.68	.256	1.67	3.75	1.91	.342	.226	.161	.069	.084
IN	.04	1.17	1.93	.30	1.74	4.32	2.13	.39	.25	.19	.08	.09

CALENDAR YEAR 1965 MAX 5,830 MIN 6.2 MEAN 236 CFSM 1.06 INCHES 14.39
 WATER YEAR 1965-66 MAX 4,360 MIN 6.0 MEAN 221 CFSM .991 INCHES 13.44

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-27	2400	9.31	1,500	3- 5	2000	10.13	1,960
12-13	1900	12.50	3,810	3-19	1600	12.85	4,650
2-11	0400	12.72	4,010	4- 2	1200	10.98	2,480

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 1966.

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.--22 years, 343 cfs.

Extremes.--Maximum discharge during year, 3,640 cfs Oct. 1 (gage height, 11.56 ft); minimum observed discharge, 56 cfs Aug. 30 Sept. 16.

1944-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,620	492	790	490	175	285	1,350	443	214	93	100	68
2	3,340	478	740	460	175	290	1,320	447	210	88	95	77
3	2,660	497	700	400	175	310	1,270	438	211	85	93	98
4	1,910	488	640	350	175	400	1,210	410	173	85	90	88
5	1,530	464	600	330	180	580	1,140	369	161	88	86	85
6	1,240	443	550	340	185	700	1,040	309	220	91	87	81
7	1,060	514	520	340	200	730	976	255	264	92	86	85
8	915	555	490	340	270	740	896	233	236	90	84	81
9	790	530	470	340	500	720	818	220	236	90	81	85
10	750	479	465	325	1,200	700	762	214	233	90	78	78
11	616	448	745	320	1,500	700	755	205	219	107	78	71
12	686	508	797	310	1,700	710	737	258	222	117	73	68
13	686	674	1,310	300	1,500	785	691	351	174	126	68	65
14	638	775	1,600	290	1,300	823	624	360	177	135	70	65
15	674	777	1,600	270	1,100	828	573	372	177	129	89	63
16	658	844	1,560	260	900	873	517	426	175	132	107	59
17	618	849	1,450	250	760	1,010	443	418	199	123	94	65
18	580	787	1,100	240	600	1,370	339	366	196	114	88	81
19	575	710	800	240	500	1,620	385	342	174	108	76	75
20	575	630	580	230	450	1,750	539	370	174	102	72	73
21	865	573	520	220	400	1,800	596	394	159	100	73	68
22	1,040	537	480	215	375	1,710	649	388	136	103	74	65
23	1,160	445	480	210	340	2,040	720	361	126	100	75	62
24	1,110	448	490	205	320	2,410	722	336	122	94	76	60
25	1,070	481	500	200	300	2,290	653	369	105	91	75	65
26	990	608	490	190	290	2,190	578	417	96	88	73	76
27	887	818	480	185	280	1,920	494	407	93	90	72	75
28	767	907	460	180	280	2,360	460	345	90	107	71	85
29	658	884	450	180	-----	1,580	435	287	92	136	68	84
30	587	833	470	175	-----	1,470	448	261	93	121	61	75
31	560	-----	480	175	-----	1,790	-----	219	-----	109	59	-----
Total	33,815	18,476	22,807	8,560	16,130	37,484	22,140	10,590	5,157	3,224	2,472	2,226
Mean	1,091	616	736	276	576	1,209	738	342	172	104	79.7	74.2
Cfsm	2.18	1.23	1.47	.552	1.15	2.42	1.48	.684	.344	.208	.159	.148
In.	2.52	1.37	1.70	.64	1.20	2.79	1.65	.79	.38	.24	.18	.17

Calendar year 1965: Max 4,620 Min 69 Mean 643 Cfsm 1.29 In. 17.44

Water year 1965-66: Max 3,620 Min 59 Mean 502 Cfsm 1.00 In. 13.63

WISCONSIN RIVER BASIN

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 1966.

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--32 years, 6,600 cfs.

Extremes--Maximum discharge during year, 33,800 cfs Mar. 24 (gage height, 15.87 ft); minimum daily, 2,000 cfs July 4.

1934-66: Maximum discharge, 72,200 cfs Sept. 14, 1938 (gage height, 23.83 ft, present datum); minimum daily, 1,060 cfs Aug. 19, 1936.

Remarks--Records good except those for winter months, which are fair. Flow regulated by 23 reservoirs above station (see p. 120).

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. 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 cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23,200	4,250	12,200	7,000	5,800	5,800	12,500	10,300	5,130	2,850	3,040	3,190
2	16,200	4,230	11,300	7,000	6,200	5,800	16,300	10,300	5,090	2,460	2,940	3,200
3	14,100	4,240	10,400	7,100	6,400	7,000	21,300	9,810	5,100	2,150	2,920	3,700
4	12,900	4,040	10,300	7,100	6,600	7,000	23,600	9,440	5,200	2,000	2,890	5,000
5	12,100	4,100	10,100	7,000	6,200	7,000	17,800	9,510	5,530	2,300	2,500	5,200
6	12,200	4,020	9,810	7,000	5,600	7,000	15,200	9,350	5,230	2,300	3,000	3,600
7	11,700	4,350	9,510	6,600	5,400	7,000	13,400	9,360	5,930	2,580	2,790	3,300
8	11,200	4,390	8,310	6,500	5,200	7,100	12,000	8,830	6,500	2,690	3,460	3,200
9	10,900	4,580	7,800	6,800	6,400	7,200	11,000	7,690	8,010	2,590	4,200	3,100
10	10,600	4,770	7,460	6,800	8,000	7,200	11,200	7,560	9,080	2,620	3,650	2,900
11	8,980	5,220	7,310	6,800	11,000	7,200	11,000	7,080	9,370	3,030	3,260	2,600
12	8,150	5,320	7,580	6,700	14,000	7,200	10,800	5,790	9,690	3,220	3,020	3,100
13	7,920	5,870	13,200	6,600	15,000	7,200	10,600	6,740	9,550	3,830	2,960	3,280
14	7,550	8,060	25,800	6,500	13,000	7,200	10,600	6,940	9,490	4,500	2,730	3,510
15	6,890	8,590	31,500	6,400	12,000	7,200	10,500	7,180	9,500	4,420	2,960	3,430
16	6,760	9,710	30,800	6,400	11,000	7,300	10,500	7,000	9,160	3,340	3,130	3,000
17	6,910	9,090	13,000	6,300	10,000	8,000	10,500	6,830	7,660	3,030	2,760	3,360
18	6,930	8,570	10,500	6,200	9,600	8,600	10,500	6,770	6,730	3,050	2,740	3,100
19	7,180	8,230	9,200	6,400	9,200	13,000	10,400	6,720	6,410	3,390	2,580	3,210
20	7,010	7,910	8,200	6,400	8,200	21,000	10,000	6,690	5,440	3,320	2,710	2,750
21	6,720	7,840	7,600	6,300	8,000	26,600	9,930	6,570	5,300	3,010	2,750	2,800
22	7,250	7,790	7,400	6,200	7,600	26,800	13,900	5,750	6,160	3,000	2,940	2,920
23	6,990	7,700	7,200	6,000	7,200	27,900	15,900	5,410	5,860	2,830	2,980	2,710
24	7,240	7,730	7,200	5,700	7,000	32,600	16,300	5,650	4,660	2,930	2,980	2,840
25	7,480	7,800	7,200	5,700	6,800	22,300	11,600	5,280	4,210	2,830	3,020	2,870
26	6,920	7,960	7,000	5,800	6,800	15,500	11,200	5,290	3,860	2,900	3,040	2,800
27	6,070	8,600	7,000	5,600	6,800	14,700	13,600	5,610	4,670	2,980	3,170	2,890
28	6,600	9,670	7,000	5,400	6,800	12,600	11,700	5,460	4,670	3,030	3,060	2,770
29	5,720	9,270	7,000	5,600	-----	12,800	10,600	4,960	4,670	2,950	3,060	2,830
30	4,680	9,420	7,000	5,600	-----	13,300	10,500	4,810	4,030	2,930	3,110	2,820
31	8,320	-----	7,000	5,600	-----	12,200	-----	3,710	-----	2,650	3,060	-----
Total	279,370	204,320	332,880	197,100	231,800	381,300	384,930	219,390	191,890	91,710	93,410	95,980
Mean	9,012	6,811	10,740	6,358	8,279	12,300	12,830	7,077	6,396	2,958	3,013	3,199

Calendar year 1965: Max 46,600 Min 2,300 Mean 8,551
 Water year 1965-66: Max 32,600 Min 2,000 Mean 7,408

5-4042. Narrows Creek at Loganville, Wis.

Location.--Lat 43°26'32", long 90°02'06", in SE 1/4 sec. 8, T. 11 N., R. 4 E., at bridge on State Highways 23 and 154, 1/4 mile north of Loganville.

Drainage area.--40.0 sq mi.

Records available.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1961-65. June 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Mar. 4, 1957, to June 10, 1964, crest-stage gage only.

Extremes.--Maximum discharge during year, 1,370 cfs Mar. 23 (gage height, 13.98 ft); minimum recorded, 3.7 cfs July 2, 3 (gage height, 6.72 ft).

1958-66: Maximum stage, 15.90 ft May 7, 1960 (discharge not determined). 1964-1966: Minimum recorded, 1.7 cfs July 28-30, 1965 (gage height, 6.55 ft).

Remarks.--Records good, except Oct. 1-21, Mar. 24 to Apr. 13, which are poor.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	7.3	8.9			9.4	15	11	4.4	4.1	4.6	4.9
2	19	7.3	8.9			11	14	9.8	4.4	3.7	5.3	5.1
3	15	7.6				25	14	8.7	7.6	3.7	4.1	6.2
4	13	7.1				102	13	7.9	5.8	5.3	3.9	5.3
5	12	7.1				16	12	7.9	5.3	4.9	3.9	4.6
6	12	7.3				13	12	6.9	5.8	5.3	3.9	4.6
7	12	9.1				12	11	6.9	5.3	4.4	3.9	4.4
8	15	8.6				9.4	11	7.3	5.3	4.1	5.1	4.4
9	12	7.6				10	10	7.9	7.6	4.1	4.9	4.4
10	10	7.6				11	9.5	7.9	5.8	4.4	4.4	4.4
11	9.3	7.8				16	9.0	11	5.0	9.8	4.4	4.4
12	8.6	33				32	8.6	13	38	5.5	4.1	4.1
13	8.2	20				20	8.8	10	13	7.3	4.1	3.9
14	8.0	12				18	9.8	10	9.0	5.3	4.1	3.9
15	13	12				18	10	8.7	7.9	12	5.3	3.9
16	11	12				20	9.8	9.0	8.9	8.3	7.6	3.9
17	11	10				24	9.4	7.9	7.3	7.3	5.1	3.9
18	10	10				127	11	8.3	8.3	6.9	4.4	3.9
19	10	11				36	18	9.0	6.5	6.2	3.9	3.9
20	10	10				25	18	7.6	5.8	5.8	3.9	3.9
21	21	11				28	17	7.3	5.8	5.3	7.9	3.9
22	10	10				50	12	6.9	5.1	5.1	6.9	3.9
23	9.4	9.4				356	11	7.9	4.9	5.3	5.5	4.1
24	8.6	9.4				82	11	9.0	4.6	4.6	5.3	4.1
25	8.1	13				31	9.4	6.5	4.4	4.6	4.6	4.6
26	8.1	38				22	11	5.5	4.4	5.1	4.4	4.6
27	7.6	22				20	11	5.3	4.1	7.3	4.4	4.6
28	7.3	14				19	10	5.1	4.9	5.1	4.4	4.6
29	7.8	9.8				18	9.0	4.6	4.6	4.4	4.1	5.3
30	7.8	9.1				17	15	4.6	4.4	4.1	4.4	5.3
31	7.6	-----				16	-----	4.4	-----	4.1	11	-----
Total	344.4	360.1				1,213.8	350.3	243.8	259.2	221.1	153.8	133.0
Mean	11.1	12.0				39.2	11.7	7.86	8.64	7.13	4.96	4.43
Cfsm	.278	.300				.980	.292	.196	.216	.178	.124	.111
In.	.32	.33				1.13	.33	.23	.24	.21	.14	.12

WISCONSIN RIVER BASIN

5-4045. Devils Lake near Baraboo, Wis.

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.Drainage area.--5.64 sq mi. Area of Devils Lake, 361 acres.Records available.--June 1922 to August 1930, June to August 1932, June 1934 to September 1966 (fragmentary).Gage.--Reference mark read about twice a week except in winter. Datum is 956.39 ft above mean sea level, unadjusted.Extremes.--Maximum gage height observed during year, 8.86 ft Mar. 29, Apr. 7; minimum observed, 6.89 ft Sept. 28.
1922-30, 1932, 1934-66: Maximum gage height observed, 10.6 ft June 1, 1927; minimum observed, 1.49 ft Feb. 8, 1965.Remarks.--Lake has no surface outlet. Lake was ice covered Dec. 20 to Mar. 18.Cooperation.--Observer services furnished by Ralph T. Tuttle, custodian, Devils Lake State Park.

Elevation, in feet, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			7.23							8.41		
2		6.99										
3	7.27			8.41	8.29							
4											7.76	
5								8.71				
6												
7			7.35				8.86		8.39	8.11		
8									8.49			
9	7.21				8.36							
10		6.97		8.41						8.01		7.11
11												
12									8.73	7.97	7.56	
13							8.81					7.00
14	7.13					8.39		8.66	8.63	8.21	7.43	
15			7.80									
16												
17		7.01									7.56	
18	7.09					8.41	8.75		8.61			
19							8.81	8.61		8.01		
20												
21	7.05				8.36				8.56			
22												6.97
23		6.99										
24											7.43	
25	7.01					8.84		8.57				
26												
27							8.76					
28											7.31	6.89
29						8.86				7.86		
30												
31								8.53				

Note.--Add 955 ft to obtain elevation above mean sea level.

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 1966.

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.--31 years (1914-21, 1942-66), 370 cfs.

Extremes.--Maximum discharge during year, about 5,900 cfs Feb. 13 (gage height, 22.68 ft, backwater from ice); minimum, 41 cfs Sept. 21 (gage height, 6.01 ft).

1913-22, 1942-66: 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, which are fair. Diurnal regulation from four powerplants at Baraboo.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,150	268	365	370	110	149	523	291	149	141	123	132
2	1,240	255	338	420	110	205	474	265	181	111	126	133
3	1,360	250	290	390	110	260	421	259	180	118	135	136
4	1,360	240	260	360	115	710	399	254	167	99	136	128
5	1,140	235	230	320	120	754	361	244	152	91	129	142
6	604	225	210	300	130	734	345	211	165	131	117	114
7	370	218	190	300	160	710	321	175	137	133	105	127
8	325	243	170	340	300	734	306	198	179	136	96	149
9	293	252	160	240	1,000	494	299	182	172	134	102	142
10	290	262	150	202	3,000	355	294	168	179	125	128	127
11	295	270	150	200	4,280	325	280	210	179	154	136	123
12	268	337	170	200	5,200	403	266	223	421	128	120	99
13	215	536	300	190	5,200	405	154	261	472	182	124	98
14	218	624	700	180	4,450	497	204	264	334	242	112	125
15	195	697	986	176	3,080	468	220	281	249	287	190	122
16	240	702	968	170	1,000	468	238	270	216	252	160	127
17	310	528	765	170	700	497	234	225	177	217	176	121
18	330	398	400	160	560	708	201	238	172	209	179	123
19	283	345	290	160	450	1,040	259	225	174	154	163	116
20	248	315	260	150	340	1,040	323	213	170	172	151	113
21	300	293	250	140	200	1,060	369	216	143	136	155	107
22	474	283	240	130	144	1,100	396	219	141	142	130	120
23	757	270	230	130	170	1,560	381	216	115	151	135	128
24	1,050	275	260	120	175	1,880	333	208	147	125	156	121
25	1,340	283	310	115	170	1,790	294	239	153	106	151	116
26	1,410	428	330	110	166	1,810	266	224	159	105	132	86
27	1,120	705	330	110	147	1,700	268	217	140	126	135	96
28	627	663	320	110	183	1,430	268	203	121	144	128	130
29	375	624	300	110	-----	1,030	257	182	144	150	110	140
30	312	533	300	110	-----	747	287	155	145	125	105	127
31	290	-----	320	110	-----	591	-----	134	-----	125	128	-----
Total	18,789	11,557	10,542	6,293	31,770	25,654	9,241	6,870	5,633	4,651	4,173	3,668
Mean	606	385	340	203	1,135	828	308	222	188	150	135	122
Cfsm	1.01	.642	.567	.338	1.89	1.38	.513	.370	.313	.250	.225	.203
In.	1.16	.72	.65	.39	1.97	1.59	.57	.43	.35	.29	.26	.23

Calendar year 1965 : Max 4,400 Min 33 Mean 513 Cfsm .855 In. 11.61
 Water year 1965-66 : Max 5,200 Min 86 Mean 380 Cfsm .633 In. 8.61

WISCONSIN RIVER BASIN

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 (revised) of which 3.6 sq mi is probably non-contributing.

Records available.--February 1954 to September 1966.

Gage.--Water-stage recorder. Datum of gage is 812.95 ft above mean sea level, datum of 1929.

Average discharge.--12 years, 29.4 cfs.

Extremes.--Maximum discharge during year, 619 cfs Feb. 9 (gage height, 5.04 ft); minimum, 13 cfs Jan. 27 (gage height, 1.64 ft), result of freezeup.

1954-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	19	18	30	20	22	28	24	21	20	18	17
2	26	19	18	36	20	22	27	23	21	20	18	23
3	26	19	18	33	20	23	27	23	21	20	17	24
4	25	18	18	29	20	53	26	22	21	20	17	21
5	25	18	18	28	20	27	26	22	22	20	16	20
6	24	18	17	26	20	24	26	23	23	20	17	18
7	24	18	17	25	20	23	25	22	22	17	18	18
8	24	18	17	24	122	23	25	22	23	17	18	18
9	23	18	17	22	463	23	24	22	23	17	18	18
10	23	18	17	21	98	23	24	22	22	17	18	18
11	23	18	32	22	46	23	23	23	22	17	17	18
12	23	22	38	22	38	23	23	24	26	16	17	18
13	22	20	36	22	34	23	23	24	23	17	16	18
14	22	19	30	22	30	23	23	24	23	26	16	18
15	22	19	27	21	29	23	23	23	23	20	18	18
16	22	18	26	21	28	23	23	23	23	17	20	18
17	26	18	24	21	26	24	23	23	22	17	17	18
18	23	18	23	21	26	27	23	22	22	17	16	18
19	22	18	22	21	24	26	24	22	22	17	17	18
20	21	17	22	21	23	26	26	21	22	17	16	18
21	26	17	21	21	22	26	26	21	22	16	23	18
22	29	17	21	20	22	30	25	20	22	17	21	18
23	25	17	22	19	22	59	24	21	22	17	19	18
24	23	17	33	20	22	40	23	25	22	17	18	17
25	23	18	30	19	22	35	23	26	22	17	17	18
26	22	23	28	19	22	32	23	25	22	18	18	17
27	21	23	26	20	22	31	23	23	22	18	16	17
28	20	20	25	19	22	30	23	21	22	18	16	17
29	20	19	24	19	-----	30	23	21	22	18	16	18
30	20	18	26	20	-----	30	26	21	20	18	16	17
31	20	-----	30	20	-----	28	-----	21	-----	17	17	-----
Total	721	559	741	704	1,303	875	731	699	665	560	542	550
Mean	23.3	18.3	23.9	22.7	46.5	28.2	24.4	22.5	22.2	18.1	17.5	18.3
Cfsm	.502	.394	.515	.489	1.00	.609	.526	.485	.478	.391	.377	.394
In.	.58	.45	.59	.56	1.04	.70	.59	.56	.53	.45	.43	.44

Calendar year 1965: Max 452 Min 12 Mean 29.6 Cfsm .638 In. 8.64
 Water year 1965-66: Max 463 Min 16 Mean 23.7 Cfsm .511 In. 6.92

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	0800	5.04	619				

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 1966. 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--53 years (1913-66), 8,446 cfs.

Extremes--Maximum discharge during year, 34,100 cfs Mar. 27 (gage height, 7.41 ft); minimum, 3,240 cfs Sept. 23 (gage height, 0.66 ft).

1902-3, 1913-66: 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. 120). 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 cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	21,400	6,860	11,100	12,300	6,600	8,400	16,300	12,700	6,220	5,810	3,700	3,770
2	24,300	6,650	10,700	12,200	7,000	8,000	12,300	12,300	5,810	5,270	4,300	4,080
3	25,400	6,240	13,500	10,500	7,500	8,700	14,900	12,100	6,830	4,360	4,530	4,460
4	21,500	6,140	13,400	9,500	7,700	9,200	17,800	12,100	6,860	4,000	4,340	4,750
5	17,700	6,290	11,800	9,800	7,800	10,000	20,300	11,400	6,830	3,720	4,220	4,290
6	15,500	5,680	11,700	10,000	7,800	11,500	22,600	10,500	6,810	3,720	3,970	5,790
7	14,900	5,810	11,600	9,400	7,600	12,000	21,000	11,100	7,010	3,620	3,800	5,880
8	14,600	6,460	11,600	8,200	8,600	12,500	17,200	10,900	7,460	3,600	3,720	4,600
9	13,300	6,270	11,300	6,200	12,000	12,500	15,500	10,600	8,320	3,530	4,270	4,360
10	12,700	6,190	9,620	6,800	17,500	12,500	13,500	10,200	9,130	3,620	4,410	4,230
11	12,600	6,610	10,000	7,800	16,500	12,500	13,500	9,410	8,830	3,880	5,120	3,740
12	12,400	6,970	10,700	7,800	15,500	13,900	13,200	10,100	10,900	4,320	4,860	3,900
13	11,800	7,970	11,500	7,600	15,500	13,000	12,500	7,780	11,900	4,560	4,360	4,000
14	9,860	8,390	12,200	7,600	16,000	12,800	12,400	9,000	11,700	6,400	4,320	3,820
15	9,620	9,230	13,500	8,000	16,000	12,700	12,300	8,860	11,500	7,940	3,950	4,020
16	9,710	9,880	17,000	8,400	15,500	12,700	12,300	8,770	11,500	6,460	4,660	3,850
17	9,230	10,500	25,200	8,200	15,000	12,800	12,300	8,360	11,400	6,030	5,150	3,860
18	9,060	10,700	30,300	8,200	14,500	13,300	12,300	8,380	9,870	4,670	4,770	3,880
19	8,730	11,300	25,300	8,400	13,500	13,500	12,500	8,810	9,090	4,820	4,260	3,830
20	9,340	10,400	15,000	8,800	13,500	15,600	12,600	8,450	8,230	4,710	4,380	4,010
21	9,070	9,840	13,400	9,290	13,500	18,900	12,500	8,800	8,350	4,600	3,960	3,910
22	10,000	9,240	12,500	9,000	13,500	22,600	12,300	8,350	7,340	4,650	4,250	3,540
23	9,760	9,210	12,000	8,400	13,500	26,800	12,500	7,690	6,830	4,590	4,180	3,380
24	9,510	9,740	12,000	8,000	13,000	31,200	14,900	7,710	6,740	4,320	4,020	3,580
25	9,800	9,540	12,000	7,500	12,000	32,200	16,200	7,630	6,600	4,480	4,200	3,710
26	8,670	9,940	11,000	7,100	11,000	32,300	16,800	7,740	6,500	4,700	4,250	3,670
27	9,370	9,900	10,000	6,800	9,600	32,200	14,300	7,220	5,950	4,290	4,490	3,790
28	9,840	10,100	9,200	6,600	8,800	23,900	12,500	6,840	6,350	5,660	4,280	3,700
29	9,570	13,000	8,200	7,000	-----	17,900	13,900	7,060	5,700	5,150	3,970	3,680
30	8,280	11,000	7,400	6,800	-----	16,300	13,500	6,810	6,030	4,990	4,550	3,760
31	7,640	-----	11,500	6,600	-----	15,800	-----	6,530	-----	4,320	4,140	-----
TOTAL	385,160	256,050	406,220	258,790	336,500	508,200	436,700	284,200	242,590	146,790	133,380	121,840
MEAN	12,420	8,535	13,100	8,348	12,020	16,390	14,560	9,168	8,086	4,735	4,303	4,061
CALENDAR YEAR 1965	MAX	46,900	MIN	3,200	MEAN	10,430						
WATER YEAR 1965-66	MAX	32,300	MIN	3,380	MEAN	9,634						

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 1966.

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.--28 years, 168 cfs.

Extremes.--Maximum discharge during year, 9,910 cfs Feb. 9 (gage height, 13.67 ft); minimum, 22 cfs Sept. 10 (gage height, 0.63 ft); minimum daily, 58 cfs Jan. 30, 31, Feb. 1.

1938-66: Maximum discharge, that of Feb. 9, 1966; 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 cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	411	164	192	150	58	140	238	167	110	100	83	81
2	304	155	169	130	60	150	226	150	116	99	99	82
3	252	149	151	150	62	190	213	146	124	94	82	131
4	220	151	140	200	66	700	190	144	120	176	78	101
5	205	146	135	180	76	180	193	137	122	134	78	85
6	199	144	130	165	98	140	193	125	131	129	75	88
7	209	319	122	150	140	135	182	142	135	113	83	82
8	220	220	150	140	800	130	177	133	121	109	93	76
9	197	166	138	130	7,730	130	183	132	132	118	87	82
10	180	164	136	130	2,000	145	179	120	136	129	79	76
11	157	160	250	120	400	171	165	140	122	135	87	75
12	137	412	563	120	280	221	164	163	153	132	76	82
13	156	493	521	125	190	220	167	145	137	122	79	77
14	169	261	265	130	170	175	149	158	126	207	80	80
15	272	223	230	138	150	177	158	142	115	153	82	85
16	191	214	197	135	140	219	156	159	155	117	94	80
17	171	197	170	130	135	329	156	145	126	107	82	79
18	172	176	145	125	130	1,370	170	163	112	106	79	77
19	157	167	135	120	130	422	218	167	114	97	75	85
20	191	174	145	110	130	252	339	151	114	100	74	83
21	1,560	158	150	105	123	246	245	136	114	92	78	74
22	644	180	160	105	125	323	203	124	98	89	84	82
23	329	163	186	100	125	1,700	185	154	107	97	83	70
24	266	160	417	96	130	569	177	214	109	93	79	90
25	230	187	180	90	130	341	170	136	113	90	85	87
26	210	282	135	84	130	301	169	129	109	80	78	86
27	193	393	130	74	130	269	177	123	97	182	79	82
28	160	202	130	66	135	245	169	119	104	110	72	77
29	189	195	160	60	-----	233	156	120	103	94	74	99
30	168	197	202	58	-----	297	190	116	102	84	73	85
31	170	-----	223	58	-----	236	-----	112	-----	85	122	-----
TOTAL	8,289	6,372	6,157	3,674	13,973	10,356	5,657	4,412	3,577	3,573	2,552	2,519
MEAN	267	212	199	119	499	334	189	142	119	115	82.3	84.0
CFSM	1.00	.797	.748	.447	1.88	1.26	.711	.534	.447	.432	.309	.316
IN	1.16	.89	.86	.51	1.95	1.45	.79	.62	.50	.50	.36	.35
CALENDAR YEAR 1965	MAX	2,980	MIN	48	MEAN	263	CFSM	.989	INCHES	13.41		
WATER YEAR 1965-66	MAX	7,730	MIN	58	MEAN	195	CFSM	.733	INCHES	9.94		

Peak discharge (base, 1,700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-21	2030	9.50	2,120	3-18	1730	8.69	1,810
2-9	1415	13.67	9,910	3-23	1600	9.56	2,150

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 1966.

Gage.--Water-stage recorder. Altitude of gage is 960 ft (from topographic map).

Average discharge.--12 years, 5.00 cfs.

Extremes.--Maximum discharge during year, 749 cfs Feb. 9 (gage height, 4.32 ft); minimum daily, 0.6 cfs Jan. 30, 31, Feb. 1.
1954-66: 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 daily, 0.6 cfs Jan. 8-10, 17-27, Jan. 30 to Feb. 1, 1959, Jan. 30 to Feb. 1, 1966.
Flood in July 1954 reached a stage of about 10.5 ft from floodmarks.

Remarks.--Records fair except those for winter months, which are poor. 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	2.7	3.1	2.6	0.6	2.3	5.5	2.7	1.5	1.1	1.5	1.1
2	7.0	2.7	3.0	2.5	1.1	2.5	4.8	2.7	1.6	1.1	1.4	1.8
3	5.2	2.7	3.0	2.5	1.6	2.5	4.5	2.5	1.7	1.2	1.2	1.8
4	4.5	2.5	2.8	2.4	1.7	2.8	3.9	2.5	1.7	7.1	1.2	1.5
5	4.2	2.7	2.3	2.4	1.6	4.0	4.2	2.5	1.8	2.5	1.2	1.4
6	4.2	3.2	2.1	2.5	1.7	3.2	3.9	2.2	2.0	2.0	1.2	1.4
7	5.8	5.2	2.2	2.2	1.9	2.8	3.6	2.2	1.7	1.7	1.4	1.2
8	5.2	3.2	2.4	2.1	120	2.7	3.2	2.2	1.7	1.6	1.6	1.4
9	4.2	2.7	2.5	2.1	336	2.7	3.2	2.0	2.2	2.0	1.5	1.4
10	3.4	2.7	2.6	2.2	46	3.2	3.1	2.0	1.7	2.0	1.5	1.2
11	3.1	2.9	1.1	2.2	3.6	4.5	2.9	3.1	2.0	3.6	1.5	1.2
12	2.9	1.4	2.8	2.2	3.5	6.4	2.7	2.7	3.1	2.0	1.4	1.2
13	2.7	1.0	9.7	2.1	3.4	3.9	2.3	2.7	2.0	3.1	1.4	1.4
14	4.8	5.8	5.6	2.0	3.0	3.6	2.3	2.7	1.8	6.1	1.4	1.6
15	4.2	5.8	4.2	1.8	2.6	3.4	2.3	2.9	2.0	2.7	1.4	1.5
16	3.6	5.5	3.3	1.3	2.4	1.7	2.3	2.7	1.7	2.2	1.4	1.5
17	4.2	3.6	3.0	1.2	2.2	4.3	2.5	2.7	1.6	1.8	1.2	1.5
18	3.2	3.6	2.8	1.2	2.0	6.4	3.1	2.7	1.5	1.7	1.1	1.4
19	3.1	3.4	2.7	1.2	1.9	8.4	6.1	2.9	1.5	1.6	1.1	1.5
20	3.9	3.6	2.9	1.2	1.9	6.4	6.1	2.5	1.6	1.4	1.2	1.5
21	4.0	3.6	2.7	1.2	1.9	6.4	4.5	2.0	1.5	1.4	1.7	1.5
22	9.0	3.6	2.5	1.1	1.9	3.4	3.6	1.8	1.4	1.4	1.8	1.5
23	7.0	3.2	6.0	1.0	1.8	4.2	3.4	4.8	1.4	1.5	1.5	1.5
24	5.8	3.4	3.5	1.0	1.8	1.1	3.2	3.2	1.4	1.4	1.4	1.5
25	4.8	3.9	2.5	1.0	1.8	8.0	2.9	2.3	1.2	1.2	1.2	1.7
26	3.6	1.4	2.4	1.0	2.1	6.4	3.6	2.2	1.2	1.4	1.1	1.6
27	3.4	4.9	2.4	1.0	2.2	5.5	3.1	1.8	1.2	1.4	1.1	1.7
28	3.1	4.0	2.5	.9	2.3	5.2	2.9	1.7	1.2	1.2	1.1	1.8
29	3.1	3.4	3.0	.8	-----	5.8	2.9	1.7	1.1	1.2	1.2	1.8
30	3.1	3.2	5.4	.6	-----	5.2	3.6	1.6	1.1	1.2	1.1	1.7
31	2.5	-----	3.5	.6	-----	5.2	-----	1.6	-----	1.1	1.0	-----
Total	173.2	135.7	135.6	50.1	554.5	371.7	106.2	55.8	49.1	62.9	41.0	44.8
Mean	5.59	4.52	4.37	1.62	19.8	12.0	3.54	2.45	1.64	2.03	1.32	1.49
Cfsm	.660	.534	.516	.191	2.34	1.42	.418	.289	.194	.240	.156	.176
In.	.76	.60	.60	.22	2.43	1.63	.47	.33	.22	.28	.18	.20

Calendar year 1965: Max 169 Min 1.0 Mean 9.09 Cfsm 1.07 In. 14.57
Water year 1965-66: Max 336 Min .6 Mean 4.93 Cfsm .582 In. 7.92

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	0230	4.32	749	3-17	2300	3.40	386

WISCONSIN RIVER BASIN

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 1966.

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.--22 years (1914-34, 1964-66), 425 cfs.

Extremes.--Maximum discharge during year, 10,600 cfs Feb. 10 (gage height, 16.00 ft, from graph based on gage readings); minimum observed, 190 cfs Sept. 25 (gage height, 3.52 ft).

1913-34, 1964-66: Maximum discharge, that of Feb. 10, 1966; 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2280	424	399	482	265	350	618	474	315	263	261	222
2	1910	400	442	400	275	370	596	432	310	261	267	284
3	1070	391	412	305	280	440	572	397	316	266	270	264
4	637	385	399	300	280	1270	541	390	324	361	264	326
5	547	358	381	320	290	1280	532	380	318	416	253	276
6	531	391	381	350	290	884	506	371	320	358	253	244
7	524	379	384	290	300	464	510	364	331	316	253	246
8	540	442	375	275	1000	444	478	358	329	285	250	226
9	526	502	381	310	8100	436	460	358	329	279	279	212
10	466	426	384	320	9790	424	464	352	329	292	266	222
11	426	398	474	315	5270	436	464	352	339	428	258	219
12	420	471	626	315	2340	576	440	395	361	377	244	214
13	406	696	973	320	1010	539	452	412	390	394	242	222
14	414	874	1030	325	470	525	432	432	355	605	247	231
15	414	414	620	325	380	460	424	410	320	545	273	230
16	469	521	490	325	360	525	414	404	331	442	267	232
17	476	492	450	330	350	596	420	387	332	340	282	230
18	438	456	430	325	330	1150	404	387	326	337	254	230
19	430	426	410	315	320	1390	420	388	304	315	240	226
20	416	417	390	305	315	1480	682	395	282	290	237	223
21	680	424	380	300	315	926	765	361	305	347	261	222
22	1080	412	390	290	310	825	600	323	366	267	246	214
23	1300	406	398	280	310	1350	512	329	279	276	256	210
24	1270	417	540	280	310	1620	502	432	288	272	250	213
25	729	403	751	270	315	1810	456	436	292	267	256	200
26	602	501	502	270	320	1290	466	371	285	256	236	224
27	552	618	370	270	330	851	458	345	282	261	239	226
28	487	721	360	270	335	739	442	339	267	276	226	239
29	463	513	390	265	-----	752	436	334	264	273	225	228
30	455	440	456	265	-----	638	460	336	266	270	232	251
31	436	-----	480	260	-----	701	-----	313	-----	253	224	-----
Total	21,394	14,118	14,848	9,572	34,560	25,541	14,926	11,757	9,455	10,188	7,811	7,006
Mean	690	471	479	309	1,234	824	498	379	315	329	252	234
Cfsm	1.12	.765	.778	.502	2.00	1.34	.808	.615	.511	.534	.409	.380
In.	1.29	.85	.90	.58	2.09	1.54	.90	.71	.57	.62	.47	.42

Calendar year 1965: Max 5,600 Min 165 Mean 591 Cfsm .959 In. 13.02

Water year 1965-66: Max 9,790 Min 200 Mean 496 Cfsm .807 In. 10.94

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 1966.

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.--33 years, 456 cfs.

Extremes.--Maximum discharge during year, 10,400 cfs Feb. 10 (gage height, 12.82 ft, backwater from ice); minimum, 258 cfs Aug. 29 (gage height, 2.85 ft).

1933-66: 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 cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,410	491	479	520	310	410	667	496	353	296	303	268
2	1,740	482	462	430	310	430	616	486	350	292	311	321
3	1,710	470	470	360	320	470	597	458	357	288	310	293
4	1,290	459	459	340	325	851	575	441	363	406	313	339
5	784	442	444	370	330	1,140	549	432	361	458	297	347
6	631	442	440	400	340	1,080	537	429	361	420	290	312
7	606	441	428	340	350	628	534	418	374	354	287	289
8	594	462	418	330	900	489	518	405	370	332	289	288
9	583	566	411	360	4,200	474	509	417	372	320	301	281
10	558	502	422	390	10,000	465	491	404	372	318	311	275
11	521	459	454	370	7,000	470	486	406	377	429	301	279
12	493	512	611	370	3,000	562	472	430	402	419	290	273
13	462	629	811	370	2,000	547	476	456	408	447	292	272
14	452	831	979	360	1,000	555	453	464	400	728	281	277
15	468	735	835	355	500	520	462	448	370	587	309	275
16	486	600	643	350	420	497	447	452	359	517	321	277
17	550	557	540	345	400	528	454	441	359	423	309	283
18	510	529	490	341	380	874	462	436	366	390	302	277
19	474	497	460	340	370	1,140	482	441	343	367	287	277
20	462	483	450	335	360	1,270	568	450	332	352	281	271
21	509	474	440	330	360	1,250	681	435	331	333	303	281
22	866	474	440	320	355	843	624	414	326	329	299	282
23	1,060	464	466	315	350	1,090	553	399	319	322	301	270
24	1,180	454	561	310	350	1,290	518	440	311	317	301	282
25	1,070	456	701	310	355	1,460	502	467	313	319	293	289
26	732	512	651	305	365	1,810	493	446	319	311	288	296
27	636	614	460	300	380	1,360	488	396	310	309	287	297
28	578	703	420	300	396	855	486	385	313	319	273	298
29	539	621	430	300	-----	721	477	373	299	397	274	304
30	512	513	460	300	-----	674	488	361	300	325	274	307
31	515	-----	542	305	-----	667	-----	355	-----	309	273	-----
Total	22,981	15,874	16,277	10,771	35,726	25,420	15,665	13,281	10,490	11,733	9,151	8,680
Mean	741	529	525	347	1,276	820	522	428	350	378	295	289
Cfsm	1.07	.767	.761	.503	1.84	1.19	.757	.620	.507	.548	.428	.419
In.	1.24	.86	.88	.58	1.93	1.37	.84	.72	.57	.63	.49	.47

Calendar year 1965 : Max 5,500 Min 206 Mean 647 Cfsm .938 In. 12.73
 Water year 1965-66 : Max 10,000 Min 268 Mean 537 Cfsm .778 In. 10.58

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1400	-	10,400	3-26	1800	8.92	1,910

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 Public Service Commission of Wisconsin).
- 5-3908. Pickrel 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 SE 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 1965 to September 1966

	Lac Vieux Desert	Twin Lakes	Buckatabon Lake	Sevenmile Lake	Lower Ninemile Lake	Burnt Rollways Reservoir	Long Lake	Deerskin Lake
Sept. 30.....	252	197	101	74	115	651	173	10
Oct. 31.....	138	117	57	40	123	701	101	5
Nov. 30.....	90	47	27	16	118	762	52	5
Dec. 31.....	64	0	12	0	106	708	16	3
Jan. 31.....	4	0	12	0	48	352	0	1
Feb. 28.....	0	0	6	0	0	39	0	2
Mar. 31.....	144	96	64	44	103	420	158	6
Apr. 30.....	286	172	105	83	124	766	239	9
May 31.....	286	182	115	87	121	752	231	13
June 30.....	337	218	114	87	116	725	238	14
July 31.....	269	200	117	86	116	698	188	9
Aug. 31.....	397	275	118	87	124	752	285	17
Sept. 30.....	348	249	118	85	124	738	256	13

	Sugar Camp Reservoir	Little St. Germain Lake	Big St. Germain Lake	Pickereel Lake	Rainbow Lake	Pelican Lake	North Pelican Lakes	Minocqua Lake
Sept. 30.....	383	59	140	274	1,148	267	149	469
Oct. 31.....	407	36	159	270	1,968	222	140	328
Nov. 30.....	463	43	162	284	2,137	175	86	233
Dec. 31.....	363	58	120	251	1,926	146	49	120
Jan. 31.....	137	38	100	222	1,511	104	27	0
Feb. 28.....	9	23	69	179	1,119	57	27	10
Mar. 31.....	296	56	165	219	1,441	165	54	151
Apr. 30.....	447	76	193	261	2,127	234	168	288
May 31.....	403	75	156	276	2,099	216	134	356
June 30.....	391	72	162	274	1,870	213	130	402
July 31.....	387	66	165	266	914	181	126	391
Aug. 31.....	407	75	158	287	2,005	178	138	544
Sept. 30.....	399	75	185	273	1,412	162	149	535

	Squirrel Lake	Willow Reservoir	Lake Nokomis	Spirit Lake Flowage	Big Eau Pleine Reservoir	Lake Dubay	Petenwell Flowage	Castle Rock Flowage
Sept. 30.....	155	990	1,372	639	4,437	4,421	18,468	6,527
Oct. 31.....	124	1,673	1,336	596	4,177	4,376	18,674	6,411
Nov. 30.....	70	1,944	1,654	737	4,499	4,472	18,908	7,043
Dec. 31.....	12	2,540	1,470	665	4,339	4,530	18,530	6,736
Jan. 31.....	11	2,296	746	212	2,648	4,318	18,081	6,309
Feb. 28.....	52	1,172	652	82	2,142	4,213	17,844	5,916
Mar. 31.....	112	2,022	1,282	568	4,352	4,737	19,565	7,569
Apr. 30.....	163	2,938	1,780	732	4,389	4,911	19,556	7,356
May 31.....	156	3,116	1,748	658	4,399	4,508	19,052	6,750
June 30.....	147	2,706	1,672	514	3,962	4,335	18,178	6,466
July 31.....	152	1,614	1,214	308	3,277	4,372	18,620	6,650
Aug. 31.....	163	1,872	1,435	492	2,920	4,274	18,728	6,700
Sept. 30.....	160	1,187	1,152	422	2,322	4,265	18,257	6,527

GRANT RIVER BASIN

5-4134. Pigeon Creek near Lancaster, Wis.

Location--Lat 42°49'00", long 90°43'20", in SW 1/4 sec. 15, T. 4 N., R. 3 W., at culvert on county road, 2 miles south of Lancaster.Drainage area--6.90 sq mi.Records available--Annual maximum, water years 1960-65, and occasional low-flow measurements 1961, 1963-64. July 1964 to September 1966, no winter records.Gage--Water-stage recorder and crest-stage gage. July 23, 1959, to July 30, 1964, crest-stage gage only.Extremes--Maximum recorded discharge during water year, 1,950 cfs Aug. 21 (gage height, 19.71 ft); minimum recorded, 0.6 cfs Aug. 3 (gage height, 9.00 ft).

1960-66: Maximum discharge from crest gage, 1,950 cfs Aug. 21, 1966 (gage height, 19.71 ft). 1964-66: Minimum recorded, 0.3 cfs Aug. 2, 3, 1965 (gage height, 8.89 ft).

Remarks--Records fair except those below 4 cfs, which are poor.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	1.4					1.1	2.9	2.9	5.0	0.9	0.8
2	3.0	1.4					1.1	2.9	3.4	5.4	.9	7.5
3	2.8	1.2					1.1	2.9	5.0	5.4	.9	5.6
4	2.8	1.7					1.1	1.9	2.9	22	.7	4.2
5	2.8	1.7					1.1	1.4	2.9	9.7	.9	3.3
6	3.2	1.7					1.1	1.4	3.4	6.2	1.1	2.4
7	3.5	1.2					1.1	1.4	2.9	5.0	1.1	1.8
8	3.2	1.2					1.1	1.9	2.9	5.4	1.9	1.4
9	2.8	1.2					1.1	1.4	8.1	4.2	1.9	1.0
10	2.6	1.2					1.1	1.4	3.8	4.6	1.9	.8
11	2.6	1.4					1.1	5.0	2.9	10	1.9	.8
12	2.6	4.6					1.1	3.8	17	6.5	2.4	.8
13	2.8	1.2					1.1	3.8	5.8	4.4	2.4	.8
14	2.8	.8					1.9	3.4	4.2	92	2.9	2.0
15	3.0	1.0					1.4	3.4	4.6	22	3.4	1.5
16	3.0	1.2					1.4	2.4	4.6	16	2.9	1.1
17	2.6	1.7					1.4	1.9	3.4	12	2.9	.8
18	1.9						1.9	1.4	3.4	10	3.4	.8
19	1.9						3.4	1.4	3.4	8.9	3.4	.8
20	1.7						2.4	1.4	4.2	6.5	2.9	2.0
21	4.6						2.4	1.4	3.2	5.8	158	2.4
22	2.6						2.4	1.4	2.4	5.4	13	1.9
23	1.9						2.4	3.4	1.8	4.6	10	1.9
24	1.7					6.2	2.4	1.9	1.4	4.2	7.5	3.4
25	1.7					4.2	2.4	1.9	1.4	4.2	5.6	5.8
26	1.4					2.9	3.8	2.4	1.4	4.2	4.2	4.6
27	1.4					1.9	2.4	1.9	5.4	3.8	3.3	4.2
28	1.4					1.9	2.4	1.9	8.1	2.9	2.4	4.2
29	1.4				-----	1.9	3.8	1.9	5.0	1.9	1.8	4.6
30	1.4				-----	1.9	4.6	2.4	4.6	1.4	1.4	4.2
31	1.4	-----			-----	1.4	-----	2.9	-----	1.1	1.0	-----
Total	75.7						57.1	70.8	126.4	340.3	248.9	77.4
Mean	2.44						1.90	2.28	4.21	11.0	8.03	2.58
Cfsm	.354						.275	.330	.610	1.59	1.16	.374
In.	.41						.31	.38	.68	1.83	1.34	.42

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 1966. 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.--32 years, 162 cfs.

Extremes.--Maximum discharge during year, about 12,500 cfs Feb. 8 (gage height, 23.05 ft, backwater from ice); minimum, 47 cfs Nov. 28 (gage height, 4.60 ft), result of freezeup.

1934-66: 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.--Five discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	65	76	99	54	80	120	91	65	73	81	78
2	91	64	72	98	56	81	115	81	66	70	81	105
3	87	64	70	97	59	94	113	78	74	70	81	124
4	83	63	72	92	68	229	107	76	73	122	79	84
5	82	61	70	86	80	117	106	76	68	162	79	77
6	82	62	68	78	90	78	104	74	73	124	78	74
7	85	63	66	70	110	72	101	73	77	85	76	73
8	85	63	66	78	1,000	72	98	74	70	76	78	71
9	86	61	66	80	4,500	72	96	75	88	76	78	70
10	81	60	66	80	500	76	93	72	93	76	76	70
11	78	61	81	76	180	79	92	80	75	91	75	69
12	75	101	110	72	140	85	90	113	433	104	73	69
13	75	118	106	67	110	86	85	103	184	285	72	68
14	74	81	93	64	98	82	84	98	121	2,850	70	68
15	75	74	86	62	86	80	84	89	115	549	70	67
16	77	76	81	61	76	80	82	90	129	279	68	67
17	85	74	79	60	71	84	82	87	106	218	67	66
18	88	67	76	58	71	171	84	83	98	186	64	65
19	76	69	77	58	71	152	93	79	91	163	62	65
20	75	69	77	58	71	110	91	77	88	141	63	63
21	176	69	77	58	72	107	89	75	87	128	1,550	60
22	103	68	77	58	74	128	84	73	83	120	228	60
23	87	66	78	58	76	465	82	75	80	115	138	60
24	79	66	100	58	77	250	82	82	78	110	117	59
25	76	67	115	57	77	198	80	78	76	103	106	66
26	74	82	90	56	76	178	79	71	78	99	96	64
27	71	112	82	55	76	159	85	70	82	96	91	63
28	70	67	80	54	77	145	82	68	96	93	88	63
29	68	80	92	54	-----	137	79	66	85	88	84	63
30	67	80	96	54	-----	133	96	66	76	85	82	62
31	67	-----	98	54	-----	124	-----	66	-----	83	79	-----
Total	2,574	2,173	2,543	2,110	8,096	4,004	2,758	2,459	3,008	6,920	4,130	2,113
Mean	83.0	72.4	82.0	68.1	289	129	91.9	79.3	100	223	133	70.4
Cfsm	.311	.271	.307	.255	1.08	.483	.344	.297	.375	.835	.498	.264
In.	.36	.30	.36	.29	1.13	.56	.38	.34	.42	.96	.58	.29

Calendar year 1965: Max 5,000 Min 40 Mean 174 Cfsm .652 In. 8.85
 Water year 1965-66: Max 4,500 Min 54 Mean 118 Cfsm .442 In. 5.97

Peak discharge (base, 2,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-8	1800	23.05	12,500	8-21	1245	20.03	3,700
7-14	1200	20.92	5,300				

PLATTE RIVER BASIN

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 1966. Monthly discharge only for October and November 1934, published in WSP 1308.

Gage.--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.

Average discharge.--32 years, 94.8 cfs.

Extremes.--Maximum discharge during year, 5,940 cfs Aug. 21 (gage height, 11.13 ft); minimum, 38 cfs Jan. 8 (gage height, 3.08 ft) result of freezeup.

1934-66: 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.--Five discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	50	52	73	47	59	92	69	54	52	64	57
2	66	50	52	71	47	58	87	65	54	51	64	57
3	63	50	53	66	48	66	83	64	59	51	62	73
4	61	48	52	62	50	263	81	62	56	181	61	61
5	59	47	52	58	51	83	79	62	54	84	61	57
6	60	48	50	54	52	66	78	61	58	81	60	56
7	62	47	47	52	56	58	77	59	56	63	61	54
8	65	47	48	51	2,300	61	74	62	54	60	61	54
9	61	46	47	53	2,640	59	73	61	68	59	61	54
10	58	45	48	56	364	59	71	58	66	59	60	54
11	56	46	64	58	152	69	70	66	59	85	60	53
12	54	61	83	61	108	74	69	82	285	70	58	52
13	53	69	91	63	92	69	66	73	98	295	57	52
14	53	54	78	63	74	66	65	71	76	1,280	58	53
15	53	51	73	61	68	65	65	68	73	298	56	53
16	54	52	69	58	60	64	65	69	72	185	56	52
17	63	48	66	54	53	66	65	66	66	144	54	52
18	59	47	60	60	51	148	67	65	64	121	53	51
19	54	47	58	58	50	103	73	63	61	105	52	50
20	53	47	56	61	50	84	80	61	60	91	52	50
21	77	48	55	62	50	84	74	61	59	83	1,280	50
22	72	48	56	62	52	96	67	60	57	80	132	50
23	64	47	58	57	56	419	66	61	56	79	83	49
24	60	47	91	56	59	200	66	64	54	74	73	49
25	59	48	83	55	60	157	64	61	54	72	68	53
26	57	61	60	54	58	141	65	59	56	72	65	51
27	56	69	56	53	58	123	69	58	56	72	63	51
28	54	49	54	51	59	111	65	56	76	70	61	51
29	53	50	58	48	-----	107	64	55	59	67	60	52
30	53	51	68	47	-----	101	77	55	54	66	59	50
31	52	-----	89	47	-----	95	-----	54	-----	64	58	-----
Total	1,834	1,518	1,927	1,785	6,865	3,274	2,157	1,951	2,074	4,214	3,173	1,601
Mean	59.2	50.6	62.2	57.6	245	106	71.9	62.9	69.1	136	102	53.4
Cfsm	.426	.364	.447	.414	1.76	.763	.517	.453	.497	.978	.734	.384
In.	.49	.41	.52	.48	1.84	.88	.58	.52	.55	1.13	.85	.43

Calendar year 1965: Max 1,600 Min 21 Mean 91.6 Cfsm .659 In. 8.95
 Water year 1965-66: Max 2,640 Min 45 Mean 88.7 Cfsm .638 In. 8.68

Peak discharge (base, 2,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2- 9	0900	10.47	4,510	8-21	0700	11.13	5,940
7-14	0700	10.15	3,940				

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 1966.

Gage.--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.

Average discharge.--27 years, 74.4 cfs.

Extremes.--Maximum discharge during year, 4,000 cfs Feb. 8 (gage height, 12.90 ft, backwater from ice); minimum discharge, 21 cfs Feb. 17 (gage height, 2.66 ft) result of freezeup.

1939-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	34	37	65	30	53	71	50	43	39	36	27
2	72	32	37	64	29	44	70	46	41	39	35	27
3	66	33	37	62	29	46	67	43	51	36	35	37
4	63	32	36	62	29	90	65	43	45	54	31	32
5	61	35	33	58	29	54	62	43	43	50	34	28
6	61	41	32	50	29	39	62	42	44	44	31	27
7	62	41	31	45	29	39	61	39	42	39	34	27
8	62	43	31	44	1,500	39	57	43	41	36	35	27
9	55	40	31	44	1,290	41	56	43	104	38	31	26
10	51	39	31	42	225	39	54	38	86	36	29	26
11	51	42	40	40	104	43	54	50	63	48	33	26
12	45	59	60	39	84	47	53	75	145	40	28	27
13	45	58	66	39	68	46	49	59	89	112	28	25
14	46	44	51	38	60	44	47	53	69	987	28	35
15	47	44	48	38	52	43	47	50	70	152	31	46
16	47	44	45	38	46	43	47	54	66	98	27	30
17	59	40	44	38	41	45	50	46	60	84	27	28
18	49	40	41	38	39	78	56	45	55	73	27	27
19	42	41	39	38	38	66	58	43	51	62	28	27
20	42	42	38	36	37	56	54	41	50	57	28	27
21	44	41	39	35	37	77	57	43	46	52	73	27
22	57	40	40	34	37	120	49	41	44	52	64	27
23	49	38	41	34	38	241	47	222	43	50	40	27
24	43	38	56	33	48	123	47	114	41	45	33	27
25	42	39	68	32	49	104	44	63	38	44	33	32
26	40	59	56	32	44	98	43	55	41	43	31	31
27	39	52	47	31	43	90	45	54	43	51	30	27
28	38	37	47	31	44	84	44	53	75	42	28	30
29	36	35	54	30	-----	84	44	47	51	41	28	32
30	36	36	67	30	-----	84	65	45	42	38	28	30
31	37	-----	82	30	-----	77	-----	44	-----	36	27	-----
Total	1,567	1,239	1,405	1,270	4,128	2,177	1,625	1,727	1,722	2,618	1,031	872
Mean	50.5	41.3	45.3	41.0	147	70.2	54.2	55.7	57.4	84.5	33.3	29.1
Cfsm	.394	.323	.354	.320	1.15	.548	.423	.435	.448	.660	.260	.227
In.	.46	.36	.41	.37	1.20	.63	.47	.50	.50	.76	.30	.25

Calendar year 1965 : Max 2,210 Min 9.4 Mean 76.9 Cfsm .601 In. 8.16
 Water year 1965-66 : Max 1,500 Min 26 Mean 58.6 Cfsm .458 In. 6.21

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-8	-	-	4,000				

GALENA RIVER BASIN

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 1966.

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--27 years, 12.6 cfs.

Extremes--Maximum discharge during year, 2,540 cfs May 23 (gage height, 8.52 ft); minimum 2.7 cfs Nov. 28 (result of freezeup). 1939-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	11	7.4	6.3	12	5.2	7.9	14	9.4	11	8.5	4.9	4.9
2	9.1	8.0	6.4	12	5.2	8.0	11	8.8	11	7.9	4.9	5.2
3	8.0	7.4	6.6	12	5.1	13	11	7.4	15	7.9	5.2	5.4
4	7.4	7.4	6.2	11	5.1	12	10	7.4	11	32	5.2	5.4
5	8.0	7.4	5.6	10	5.1	9.0	12	7.4	11	11	5.2	5.2
6	8.0	8.0	5.4	8.6	5.1	7.8	13	6.4	12	9.7	5.2	5.4
7	9.1	7.4	5.4	8.0	5.1	7.2	14	6.9	11	8.5	5.4	4.0
8	9.1	7.0	5.3	7.8	350	7.1	14	8.1	10	8.5	5.4	4.3
9	8.0	8.0	5.4	8.1	106	7.2	13	6.9	51	8.5	5.2	4.9
10	7.0	7.4	5.4	7.8	35	7.6	13	6.4	18	7.9	5.2	3.8
11	6.6	7.4	9.6	7.2	18	8.2	12	18	16	14	4.9	3.8
12	7.0	13	13	7.6	14	8.4	9.4	24	48	7.9	4.6	3.5
13	7.4	9.6	12	8.0	13	8.2	9.4	17	21	27	4.6	3.8
14	8.0	7.4	9.8	7.7	11	8.0	9.4	14	17	50	4.6	4.3
15	8.5	8.0	9.1	7.4	10	8.0	7.4	14	22	14	4.6	4.0
16	8.5	8.0	8.5	7.0	9.0	8.0	6.4	13	17	11	4.9	4.0
17	10	7.0	7.5	6.8	7.8	8.0	6.5	11	14	11	4.6	3.8
18	7.4	7.0	7.1	6.7	7.1	8.0	8.8	11	14	10	4.6	3.8
19	7.4	7.0	7.0	6.7	6.7	8.1	11	9.4	12	9.7	4.6	4.0
20	7.4	7.4	6.8	6.6	6.6	8.4	12	9.4	12	8.5	4.6	4.0
21	11	8.0	6.8	6.4	6.6	50	11	8.8	11	9.7	11	4.0
22	10	7.4	7.0	6.1	6.6	70	8.8	8.1	10	8.5	5.4	4.3
23	9.1	7.4	7.6	5.9	6.8	93	9.4	254	11	8.5	5.2	4.6
24	8.0	8.0	20	5.8	7.1	29	8.8	39	10	6.6	5.2	4.9
25	8.0	8.5	15	5.7	7.0	24	7.4	25	9.7	6.6	5.2	5.4
26	8.0	23	11	5.6	6.6	23	7.4	20	11	6.6	4.6	4.9
27	8.0	7.4	9.6	5.4	7.4	21	7.4	17	9.7	5.7	4.9	5.2
28	8.5	6.8	9.4	5.4	7.6	19	7.4	15	16	5.7	4.9	5.4
29	8.0	6.3	10	5.3	-----	19	9.4	14	11	6.0	4.9	5.7
30	8.0	6.2	19	5.3	-----	17	16	12	8.5	5.7	4.9	6.0
31	8.0	-----	21	5.2	-----	14	-----	12	-----	4.9	4.9	-----
Total	257.5	246.2	284.8	231.1	685.8	547.1	310.7	640.8	461.9	348	159.5	137.9
Mean	8.31	8.21	9.19	7.45	24.5	17.6	10.4	20.7	15.4	11.2	5.15	4.60
Cfsm	.413	.408	.457	.371	1.22	.876	.517	1.03	.766	.557	.256	.229
In.	.48	.46	.53	.43	1.27	1.01	.57	1.19	.85	.64	.30	.26

Calendar year 1965: Max 814 Min 2.4 Mean 18.2 Cfsm .905 In. 12.32
 Water year 1965-66: Max 254 Min 3.5 Mean 11.8 Cfsm .587 In. 7.99

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-8	1430	7.30	777	5-23	1700	8.52	2,540

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 1966.

Gage.--Water-stage recorder. Datum of gage is 870.53 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 21.0 cfs.

Extremes.--Maximum discharge during year, about 850 cfs Feb. 9 (gage height, 6.88 ft, backwater from ice); minimum, 0.4 cfs Sept. 28 (gage height, 1.64 ft).

1949-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	37	29	80	13	25	96	32	8.3	3.4	1.8	1.6
2	68	35	30	96	14	26	99	27	7.9	3.2	2.1	2.4
3	59	33	32	80	14	45	88	24	8.3	3.2	2.1	3.9
4	50	32	33	62	13	150	78	21	8.3	3.2	2.0	3.9
5	43	29	34	56	13	142	71	18	7.7	3.4	1.8	3.0
6	39	29	34	49	13	100	66	16	7.3	3.6	1.7	2.3
7	33	60	28	29	15	82	62	15	6.9	3.4	1.6	2.1
8	33	54	24	26	200	60	57	15	6.5	3.2	1.7	1.9
9	31	48	23	24	660	54	54	13	7.7	3.6	1.6	1.9
10	29	44	25	25	735	68	50	13	9.1	3.7	1.7	1.8
11	26	33	55	24	385	92	48	14	8.9	4.5	1.7	1.7
12	24	60	120	24	248	112	43	17	16	4.7	1.6	1.6
13	21	68	174	23	196	113	38	17	19	5.1	1.6	1.6
14	21	56	150	22	105	107	36	17	13	5.1	1.6	1.6
15	36	48	100	21	95	107	33	17	11	4.9	2.3	1.6
16	33	40	83	20	54	97	32	16	11	3.9	4.7	1.6
17	31	35	62	18	50	92	30	15	9.5	3.2	3.9	1.6
18	29	30	52	18	32	105	33	15	8.5	3.0	2.6	.8
19	28	28	48	17	26	108	48	14	8.1	2.6	2.0	1.4
20	35	26	44	17	20	91	53	13	7.3	2.4	1.9	1.2
21	68	27	41	18	17	84	58	12	6.9	2.2	2.2	1.4
22	135	28	40	19	16	90	47	11	6.5	2.1	2.2	1.2
23	105	28	52	19	15	167	41	19	5.9	2.0	2.4	1.3
24	86	30	80	19	15	170	37	73	5.3	2.0	2.2	1.2
25	74	33	62	18	16	128	33	41	4.7	1.8	2.0	.8
26	70	46	56	18	17	121	32	26	4.5	1.8	1.9	.8
27	64	73	46	17	24	108	33	17	4.3	1.8	1.8	.6
28	54	54	39	16	25	99	32	13	4.1	1.8	1.7	.4
29	48	42	35	15	-----	93	29	10	4.1	1.8	1.7	1.5
30	42	35	61	14	-----	93	34	9.5	3.9	1.7	1.7	1.4
31	40	-----	99	14	-----	84	-----	8.9	-----	1.6	-----	-----
Total	1,529	1,221	1,791	918	3,046	3,013	1,491	589.4	240.5	93.9	63.4	50.1
Mean	49.3	40.7	57.8	29.6	109	97.2	49.7	19.0	8.02	3.03	2.05	1.67
Cfsm	1.19	.983	1.40	.715	2.63	2.35	1.20	.459	.194	.073	.050	.040
In.	1.37	1.10	1.61	.82	2.74	2.71	1.34	.53	.22	.08	.06	.05

Calendar year 1965: Max 240 Min 0 Mean 25.0 Cfsm .603 In. 8.18
 Water year 1965-66: Max 735 Min .4 Mean 38.5 Cfsm .930 In. 12.63

Peak discharge (base, 250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	1700	6.88	850				

ROCK RIVER BASIN

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 1966. Monthly discharge only for October 1948, published in WSP 1308.

Gage.--Water-stage recorder. Datum of gage is 683.46 ft above mean sea level, datum of 1929.

Average discharge.--18 years, 25.0 cfs.

Extremes.--Maximum discharge during year, 1,280 cfs Feb. 10 (gage height, 7.85 ft); minimum, 0.5 cfs on Sept. 26 (gage height, 1.37 ft).

1948-66: 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. Occasional regulation at dam two-thirds of a mile upstream.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	39	50	102	18	23	107	34	13	6.8	2.5	1.5
2	92	36	50	96	19	27	119	31	13	5.5	2.5	6.1
3	68	35	49	86	19	53	99	28	14	4.8	2.4	6.1
4	54	33	48	72	18	256	84	26	13	6.5	2.1	7.3
5	46	32	47	58	18	151	75	24	12	6.5	1.8	6.1
6	42	32	44	48	18	90	68	22	12	5.8	1.6	5.2
7	39	80	41	41	19	70	65	21	11	4.8	1.1	4.5
8	39	64	39	37	50	56	61	19	11	3.4	1.2	3.4
9	39	54	38	34	400	53	57	18	16	5.2	1.6	2.8
10	35	47	38	32	1,020	75	55	17	15	6.4	1.7	2.2
11	32	47	94	32	384	116	53	19	17	9.2	1.8	1.2
12	31	89	219	31	290	142	46	22	28	7.7	1.6	1.3
13	28	97	281	30	181	126	43	22	27	7.3	1.6	1.5
14	35	73	189	30	99	118	40	22	23	8.2	1.2	1.5
15	67	64	117	28	72	106	38	22	22	7.7	1.2	1.4
16	51	63	87	27	51	93	36	21	20	7.3	7.3	1.4
17	46	54	80	26	40	87	35	20	17	6.1	7.3	1.3
18	43	47	70	25	29	114	39	19	16	6.1	4.8	1.0
19	39	46	63	23	22	103	59	18	14	6.1	3.5	1.0
20	54	45	58	24	19	81	62	17	13	5.8	4.2	1.2
21	133	47	54	25	18	78	65	15	13	4.8	8.7	1.1
22	199	49	55	25	19	91	49	13	12	4.2	6.1	1.1
23	136	47	67	25	20	266	43	30	11	3.1	5.2	1.1
24	101	47	105	24	20	172	40	87	11	2.1	3.8	1.0
25	83	51	82	23	20	132	35	39	5.5	2.9	3.1	.7
26	70	86	64	23	20	119	33	30	9.2	4.8	2.5	.6
27	60	121	52	22	22	99	35	24	9.2	6.1	2.0	1.1
28	53	58	47	21	22	92	34	21	8.7	3.8	1.8	1.1
29	47	52	45	20	-----	91	31	17	8.2	2.4	2.4	1.8
30	44	50	71	19	-----	90	38	15	8.2	1.9	2.7	1.2
31	42	-----	136	18	-----	81	-----	14	-----	1.2	2.0	-----
Total	1,968	1,685	2,480	1,127	2,947	3,251	1,644	727	423	164.5	101.1	68.8
Mean	63.5	56.2	80.0	36.4	105	105	54.8	24.1	14.1	5.31	3.36	2.29
Cfsm	1.01	.895	1.27	.58	1.67	1.67	.873	.384	.225	.085	.054	.036
In.	1.17	1.00	1.47	.67	1.75	1.93	.97	.44	.25	.10	.06	.04

Calendar year 1965: Max 291 Min .1 Mean 33.7 Cfsm .537 In. 7.28
 Water year 1965-66: Max 1,020 Min .6 Mean 45.5 Cfsm .725 In. 9.85

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0200	7.85	1,280				

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 1966.

Gage.--Water-stage recorder. Datum of gage is 857.20 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 87.4 cfs.

Extremes.--Maximum discharge during year, 1,330 cfs Feb. 10 (gage height, 7.59 ft); minimum, 5.8 cfs June 28 (gage height, 2.35 ft). 1949-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	250	114	142	261	46	62	222	106	78	7.6	21	26
2	242	106	152	240	46	75	238	105	64	12	30	28
3	189	96	126	220	47	102	234	93	56	13	29	46
4	184	60	112	200	47	380	224	85	52	16	25	49
5	174	80	108	175	45	280	224	73	48	16	24	53
6	163	78	99	150	44	243	189	65	46	16	22	50
7	142	149	37	105	48	270	186	54	44	14	22	42
8	92	203	50	92	200	237	178	55	40	14	25	36
9	110	186	64	81	900	197	170	52	50	15	26	29
10	111	173	78	79	1120	198	157	50	62	15	26	25
11	102	163	163	77	902	240	146	50	75	24	26	22
12	92	170	484	75	728	240	140	56	89	21	24	21
13	85	182	556	72	600	240	150	62	99	25	22	19
14	84	162	398	70	340	250	98	68	95	30	19	18
15	95	157	359	66	290	253	62	72	86	27	24	16
16	102	152	275	63	220	242	105	70	80	25	28	15
17	108	155	230	60	180	226	95	68	70	22	24	14
18	105	144	200	61	140	237	99	68	58	22	24	14
19	99	77	170	62	115	229	116	65	47	20	24	13
20	106	77	155	62	96	226	134	61	41	18	23	14
21	158	104	145	62	86	232	186	58	36	18	34	12
22	294	105	135	62	77	246	168	53	33	15	48	12
23	237	102	154	63	70	468	152	103	29	14	44	12
24	237	99	200	62	65	342	141	632	26	13	42	11
25	250	96	190	61	62	331	130	359	24	12	41	10
26	254	134	171	58	60	386	122	356	22	17	38	10
27	248	382	150	57	59	374	117	328	20	32	36	11
28	219	87	120	54	58	336	111	266	14	27	34	11
29	170	132	115	50	-----	296	93	203	17	20	33	14
30	149	200	150	48	-----	259	104	132	14	18	32	12
31	128	-----	317	46	-----	240	-----	86	-----	18	30	-----
Total	4,979	4,125	5,805	2,894	6,691	7,834	4,491	3,954	1,515	576.6	900	665
Mean	161	138	187	93.4	239	253	150	128	50.5	18.6	29.0	22.2
Cfsm	.899	.771	1.04	.522	1.34	1.41	.838	.715	.282	.104	.162	.124
In.	1.03	.86	1.21	.60	1.39	1.63	.93	.82	.31	.12	.19	.14

Calendar year 1965: Max 1,600 Min 3.8 Mean 138 Cfsm .771 In. 10.48
 Water year 1965-66: Max 1,120 Min 7.6 Mean 122 Cfsm .682 In. 9.23

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-12	2330	6.97	1,000	3-23	1430	6.20	685
2-10	0130	7.59	1,330	5-24	0600	6.69	876

ROCK RIVER BASIN

5-4255. Rock River at Watertown, Wis.

Location.--Lat 43°11'25", long 88°43'35", in sec. 4, T. 8 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 1966.

Gage.--Digital water-stage recorder. Datum of gage is 792.58 ft above mean sea level, datum of 1929. Prior to Sept. 25, 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.--35 years, 426 cfs.

Extremes.--Maximum discharge during year, 2,140 cfs Oct. 1 (gage height, 4.44 ft, secondary peak for rise at end of 1965 water year); maximum peak discharge during year, 2,020 cfs Mar. 7 (gage height, 4.16 ft); minimum, 14 cfs Sept. 23 (gage height, 0.70 ft). 1931-66: Maximum discharge, 5,030 cfs Apr. 4, 1959 (gage height, 6.32 ft); minimum daily, 0.9 cfs Oct. 15, 1939, Sept. 9, 1944.

Remarks.--Records good except those for winter months, 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 cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2,130	922	674	1,540	300	1,390	1,440	437	604	248	64	60
2	2,100	944	895	1,300	305	1,410	1,520	519	581	244	56	66
3	2,050	964	898	1,050	310	1,450	1,490	588	568	229	61	58
4	2,030	986	888	980	315	1,760	1,460	623	568	127	61	47
5	1,990	1,000	850	920	320	1,710	1,460	622	555	129	66	56
6	1,940	1,010	780	840	330	1,640	1,470	616	535	118	67	62
7	1,890	1,020	710	720	350	1,550	1,450	606	527	107	64	62
8	1,820	1,010	680	630	380	1,720	1,470	491	518	98	55	73
9	1,750	1,010	700	800	800	1,660	1,470	371	539	88	48	121
10	1,660	998	760	978	1,670	1,840	1,470	308	561	81	46	151
11	1,540	988	904	1,030	1,390	1,860	1,460	292	584	94	46	154
12	1,450	1,020	1,100	1,070	1,340	1,820	1,440	313	614	83	46	144
13	1,390	986	1,200	1,050	1,370	1,770	1,390	358	645	89	45	134
14	1,330	981	1,170	1,010	1,380	1,760	1,350	448	669	120	45	106
15	1,240	968	1,140	920	1,250	1,750	1,290	517	684	114	60	73
16	1,180	947	1,120	860	1,180	1,720	1,200	532	708	118	64	50
17	1,170	941	780	830	1,100	1,690	1,080	563	716	112	64	34
18	1,130	932	710	740	1,050	1,630	906	552	739	109	57	32
19	1,090	915	760	600	1,050	1,540	619	508	762	99	64	28
20	1,110	898	900	500	1,070	1,450	486	461	770	91	92	27
21	1,150	894	1,010	450	1,100	1,310	466	407	770	81	155	26
22	1,290	876	1,120	410	1,150	1,290	444	326	770	67	139	22
23	1,290	855	1,260	410	1,250	1,590	415	286	755	54	127	15
24	1,240	849	1,320	400	1,350	1,470	394	455	739	48	136	18
25	1,190	833	1,000	330	1,480	1,330	390	611	723	42	157	23
26	1,150	883	920	320	1,440	1,290	363	664	708	42	134	24
27	1,110	880	840	300	1,420	1,300	326	682	645	60	115	24
28	1,070	843	800	300	1,400	1,320	328	656	504	62	101	25
29	1,030	651	900	300	-----	1,360	340	642	351	61	86	25
30	984	732	1,100	300	-----	1,400	374	634	271	63	75	26
31	947	-----	1,490	300	-----	1,420	-----	624	-----	65	69	-----
TOTAL	44,441	27,736	29,439	22,188	27,850	48,200	29,761	15,712	18,683	3,143	2,465	1,766
MEAN	1,434	925	950	716	995	1,555	992	507	623	101	79.5	58.9
CFSM	1.48	.953	.978	.737	1.02	1.60	1.02	.522	.642	.104	.082	.061
IN	1.70	1.06	1.13	.85	1.07	1.85	1.14	.60	.72	.12	.09	.07
CALENDAR YEAR 1965	MAX	2,130		MIN	20	MEAN	615	CFSM	.633	INCHES	8.60	
WATER YEAR 1965-66	MAX	2,130		MIN	15	MEAN	744	CFSM	.766	INCHES	10.39	

Peak discharge (base, 1,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-13	1800	3.32	1,210	3-7	1830	4.16	2,020
1- 1	0445	3.71	1,570	4-1	2045	3.67	1,530
2-10	0830	3.89	1,750				

ROCK RIVER BASIN

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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 1966.

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--35 years, 335 cfs.

Extremes--Maximum discharge during year, 2,560 cfs Feb. 14 (gage height, 7.02 ft); minimum, 24 cfs Aug. 13 (gage height, 1.55 ft). 1931-66: 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 fair to July 28, good thereafter. Some diurnal fluctuation at low flow possible, due to small dams upstream.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1750	678	500	1140	265	580	1220	441	859	197	87	166
2	1700	639	485	1130	255	700	1200	432	762	175	117	155
3	1640	582	476	964	255	900	1160	419	678	163	85	162
4	1600	582	460	860	255	1200	1120	392	643	131	81	159
5	1500	520	430	800	255	1350	1100	348	582	111	81	142
6	1400	472	370	720	250	1450	1060	319	494	124	72	132
7	1320	445	300	660	255	1580	1010	302	423	121	69	123
8	1280	423	315	620	300	1550	929	270	401	114	75	120
9	1190	357	350	620	600	1450	907	270	392	100	64	113
10	1100	323	350	630	1350	1360	850	239	379	103	62	108
11	1050	315	360	620	1790	1300	819	235	370	114	70	100
12	964	400	463	620	2120	1210	749	232	383	114	62	85
13	841	327	661	580	2470	1180	705	239	392	141	43	81
14	775	331	718	540	2560	1150	626	247	432	163	48	93
15	718	348	907	500	1800	1110	617	247	450	186	59	76
16	661	362	934	430	1350	1080	590	254	458	190	94	61
17	626	379	996	370	1100	1020	507	262	436	186	73	60
18	595	353	1020	355	860	964	498	247	410	182	91	60
19	564	353	990	350	740	925	485	232	384	178	86	60
20	538	370	910	350	540	938	502	201	357	163	83	63
21	520	366	840	350	470	916	524	194	353	148	118	53
22	630	362	780	350	450	960	542	182	340	141	155	57
23	683	383	770	340	460	1100	560	175	323	134	175	57
24	709	375	790	330	480	1160	564	392	302	124	175	42
25	744	392	800	330	510	1330	546	604	274	111	172	50
26	815	414	760	320	530	1350	533	859	262	103	179	44
27	810	419	700	315	540	1370	520	947	254	128	187	51
28	810	470	660	305	560	1350	511	987	232	121	184	44
29	749	500	640	295	-----	1330	489	1060	220	110	181	58
30	714	490	660	280	-----	1280	476	1040	205	103	183	55
31	700	-----	840	275	-----	1220	-----	947	-----	91	181	-----
Total	29,696	12,730	20,235	16,349	23,370	36,363	21,919	13,215	12,450	4,270	3,392	2,630
Mean	958	424	653	527	835	1,173	731	426	415	138	109	87.7
Cfsm	1.31	.579	.892	.720	1.14	1.60	.999	.582	.567	.189	.149	.120
In.	1.51	.65	1.03	.83	1.19	1.85	1.11	.67	.63	.22	.17	.13

Calendar year 1965: Max 1,890 Min 12 Mean 448 Cfsm .612 In. 8.32
 Water year 1965-66: Max 2,560 Min 42 Mean 539 Cfsm .736 In. 9.99

Peak discharge (base, 1,250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-14	0900	7.02	2,560	3-27	0900	4.86	1,370
3-7	0900	5.24	1,580				

ROCK RIVER BASIN

5-4278. Token Creek near Madison, Wis.

Location.--Lat 43°10'52", long 89°19'28", in SW 1/4 sec. 4, T. 8 N., R. 10 E., at culvert on U. S. Highway 51, 8 miles northeast of State Capitol Building in Madison.

Drainage area.--24.4 sq mi.

Records available.--Annual maximum and occasional low-flow measurements, water years 1961-65. July 1964 to December 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Oct. 25, 1960, to July 27, 1964, crest-stage gage only.

Extremes.--Maximum discharge during water year, 488 cfs Feb. 9 (gage height, 13.69 ft, from crest gage); minimum, 7.8 cfs May 27 (gage height, 8.98 ft).

1961-66: Maximum discharge, that of Feb. 9, 1966. 1964-66: Minimum recorded, that of May 27, 1966.

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	14	13				19	16	10	14	14	16
2	19	14	13				19	16	11	14	16	18
3	16	14	14				18	15	12	14	14	20
4	16	13	14				17	16	12	13	14	17
5	15	14	14				18	15	11	14	14	16
6	15	13	14				18	14	14	14	14	16
7	15	14	13				18	14	16	13	14	15
8	16	14	13				17	14	16	14	14	15
9	15	14	13				17	14	19	13	14	14
10	15	14	14				16	14	18	13	14	14
11	15	14	23				16	15	16	15	14	14
12	14	16	26				16	16	22	14	13	13
13	14	15	23				16	15	18	16	13	13
14	14	15	18				17	15	16	25	14	13
15	13	14	16				17	14	16	19	16	13
16	14	14	15				17	14	16	16	18	12
17	15	14	15				16	14	15	15	16	13
18	15	14					17	14	16	16	15	14
19	14	14					19	13	15	16	15	14
20	15	14					20	13	15	14	14	13
21	19	14					19	13	14	14	26	13
22	21	14					17	13	14	14	27	13
23	17	14					17	84	16	14	18	13
24	15	14					16	254	15	14	16	13
25	15	14					16	100	14	14	16	14
26	15	18					16	26	13	16	15	14
27	14	17					16	11	13	16	15	14
28	14	15					16	11	14	15	15	14
29	14	14					16	11	14	16	14	14
30	13	14					18	11	14	14	14	14
31	14					17		11		14	14	
Total	479	430					515	836	445	463	480	429
Mean	15.5	14.3					17.2	27.0	14.8	14.9	15.5	14.3
Cfs/m	.635	.586					.705	1.11	.607	.611	.635	.586
In.	.73	.66					.78	1.27	.68	.71	.73	.65

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 1966 (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, 2.60 ft Oct. 1, 2; minimum observed, 1.55 ft Mar. 17.
1916-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.60	2.08	1.89				1.85	2.04	2.38	1.98	2.00	2.04
2	2.60	2.08						2.02	2.38	1.98	2.00	2.04
3	2.55	2.06				1.83		2.00	2.34	1.96	1.98	2.06
4	2.50					1.85		1.98	2.30	1.96	1.96	2.08
5	2.46							1.98	2.32	1.96	1.96	2.06
6	2.42						1.86	1.96	2.34	1.95	1.94	2.04
7	2.40				1.78	1.82	1.84	1.96	2.32	1.96	1.92	2.02
8	2.38						1.84	1.96	2.28	1.92	1.92	1.98
9	2.36						1.84	1.96	2.32	1.92	1.90	1.98
10	2.32						1.84	1.96	2.34	1.90	1.86	1.98
11	2.30						1.84	1.96	2.30	1.96	1.88	1.98
12	2.28				2.53		1.84	2.02	2.38	1.94	1.86	1.96
13	2.24				2.52		1.84	2.00	2.34	1.94	1.82	1.96
14	2.20			1.73	2.48		1.88	2.04	2.32	2.04	1.82	1.94
15	2.20						1.88	2.02	2.28	2.08	1.82	1.94
16	2.18		2.10					2.06	2.26	2.08	1.95	1.94
17	2.24					1.55		2.06	2.24	2.08	1.95	1.92
18	2.22				2.40		1.98	2.08	2.20	2.08	1.94	1.90
19	2.20						1.94	2.08	2.18	2.08	1.92	1.88
20	2.24		2.10				1.96	2.10	2.14	2.08	1.90	1.88
21	2.24		2.05		2.21		2.00	2.10	2.10	2.04	1.96	1.86
22	2.30						2.00	2.10	2.08	2.04	2.12	1.86
23	2.20						2.02	2.12	2.02	2.00	2.10	1.86
24	2.18			1.80			2.00	2.46	2.02	2.00	2.10	1.86
25	2.18						2.00	2.46	2.02	1.98	2.08	1.86
26	2.16	1.98				1.85	2.00	2.50		1.98	2.06	1.84
27						1.80	2.02	2.50	2.00	2.06	2.06	1.82
28					1.95	1.80	2.04	2.48	2.00	2.06	2.04	1.80
29					-----	1.84	2.00	2.48	2.00		2.02	1.84
30			1.97		-----	1.85	2.04	2.46	2.00			1.82
31		-----			-----	1.85	-----	2.40	-----			-----

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 1966 (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, 2.02 ft June 15; minimum observed, 0.41 ft Feb. 1.
1915-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.80	1.17	0.90		0.41	1.43				1.62		1.52
2			.89			1.44	0.75	1.32	1.84	1.59	1.40	1.49
3		1.15	.86	1.00	.43	1.51					1.39	1.51
4		1.11		1.00	.47		.73				1.36	
5	1.65	1.06		1.00			.73			1.50	1.36	
6		1.03	.70				.73					1.39
7			.70	.99	.54	1.51	.75		1.88			1.38
8	1.55	1.01	.68			1.50	.78		1.86	1.34	1.36	1.38
9	1.49	.98	.64	.97	1.00	1.50	.76	1.31			1.34	1.37
10		.96	.63		1.22				1.93		1.32	
11	1.42					1.50				1.32	1.30	
12	1.37			.95						1.32	1.29	1.34
13	1.33		.71		1.49				2.00	1.32		
14	1.31		.69			1.48		1.36	2.00	1.55		
15	1.29						.80		2.02	1.50	1.27	1.30
16			.63		1.47	1.50	.82	1.36	2.01	1.48	1.43	1.28
17	1.27	.81	.64			1.47		1.40	1.99		1.42	
18	1.24	.80			1.48			1.40		1.44	1.41	
19		.79						1.39				1.25
20	1.25		.63	.68				1.37	1.99	1.38		1.23
21	1.31				1.50				1.98	1.34	1.55	1.22
22	1.35	.77			1.47				1.98	1.31	1.57	1.20
23	1.35	.74	.69		1.47	1.20			1.98	1.30	1.55	1.18
24			.76	.58	1.47	1.10		1.83	1.96		1.52	
25				.55		1.07	1.09	1.87	1.89	1.30		
26	1.29		.86			1.03		1.87		1.30	1.49	1.16
27	1.26							1.86	1.79	1.41		1.16
28	1.25					.93			1.73	1.39		
29		.84	.86		-----	.91	1.19		1.69		1.49	1.16
30		.88	.90		-----				1.66			1.14
31		-----	.91	.45	-----	.81	-----	1.82	-----			-----

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 1966.

Gage.--Water-stage recorder. Datum of gage is 840.40 ft above mean sea level, datum of 1929 (levels by Public Service Commission of Wisconsin). Prior to Dec. 23, 1934, chain gage at same site and datum.

Average discharge.--36 years, 150 cfs.

Extremes.--Maximum discharge during year, 333 cfs Mar. 5 (gage height, 4.40 ft); minimum, 10 cfs Apr. 7, 9, 14.

1930-66: 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 Jan. 21 to May 14, and poor Oct. 1 to Jan. 20, May 15 to Sept. 30. Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. See record for Badfish Creek near Stoughton, Wis., (p. 136) for mean monthly pumpage into that basin; this flow was included in the Yahara records prior to December 1958.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	299	149	170	185	119	308	107	35	216	142	16	19
2	291	144	188	180	119	305	105	37	216	134	19	34
3	283	136	184	177	117	308	55	40	219	123	16	70
4	274	126	177	166	119	325	19	45	219	119	15	99
5	264	119	170	166	119	330	14	44	216	113	14	87
6	256	117	121	166	123	330	12	42	214	109	14	77
7	254	115	142	166	130	327	12	46	214	99	13	46
8	254	113	138	164	151	322	12	46	212	85	13	36
9	251	107	140	161	224	319	11	44	214	85	14	35
10	246	101	130	159	280	319	12	44	221	73	12	32
11	244	97	138	157	294	322	13	48	212	57	12	31
12	234	95	144	159	310	322	14	56	214	44	12	29
13	228	91	151	170	320	322	12	56	221	41	12	28
14	226	87	144	168	325	322	12	59	224	64	12	27
15	226	146	132	168	330	325	13	61	209	70	12	26
16	221	195	128	166	330	325	12	68	212	73	20	22
17	219	188	126	164	330	316	14	66	209	77	22	22
18	170	172	126	164	330	313	14	68	219	73	21	23
19	107	168	121	159	330	299	19	71	216	70	15	41
20	107	166	121	155	327	283	19	73	214	68	19	41
21	142	164	121	153	327	267	24	68	212	66	36	39
22	216	161	119	149	325	267	28	70	212	50	66	36
23	209	164	121	142	322	269	27	64	212	24	66	32
24	195	157	132	138	319	283	30	202	202	14	62	29
25	188	157	146	136	316	261	25	221	193	16	61	30
26	181	166	146	132	308	246	25	209	184	15	56	29
27	172	188	146	128	311	234	28	212	175	22	46	29
28	168	132	155	126	311	219	21	221	166	23	25	27
29	159	87	170	123	-----	212	26	226	157	21	22	27
30	155	179	180	121	-----	207	29	226	149	18	20	23
31	155	-----	190	117	-----	149	-----	236	-----	16	19	-----
Total	6,594	4,187	4,517	4,785	7,266	8,956	764	3,004	6,173	2,004	782	1,126
Mean	213	140	146	154	260	289	25.5	96.9	206	64.6	25.2	37.5
Cfsm	.607	.399	.416	.439	.741	.823	.073	.276	.587	.184	.072	.107
In.	.70	.44	.48	.51	.77	.95	.08	.32	.65	.21	.08	.12

Calendar year 1965: Max 495 Min 8.5 Mean 151 Cfsm .430 In. 5.84
 Water year 1965-66: Max 330 Min 11 Mean 137 Cfsm .390 In. 5.31

5-4301. Badfish Creek near Stoughton, Wis.

Location--Lat 42°53'28", long 89°17'23", in SW 1/4 sec. 14, T. 5 N., R. 10 E., on left bank 10 ft downstream from highway bridge, 4 miles southwest of Stoughton, and 9 miles upstream from mouth.

Drainage area--43.5 sq mi.

Records available--May 1956 to September 1966 (discontinued).

Gage--Digital water-stage recorder. Datum of gage is 873.2 ft above mean sea level, unadjusted. Prior to May 25, 1956, staff gage at site 0.5 mile upstream at different datum. May 25, 1956, to June 21, 1956, wire-weight gage and June 22, 1956, to Aug. 10, 1964, graphic water-stage recorder at present site and datum.

Average discharge--7 years (1959-66), 52.5 cfs (unadjusted).

Extremes--Maximum discharge during year, 557 cfs Feb. 9 (gage height, 3.50 ft); minimum, 28 cfs Nov. 21; minimum gage height, 0.38 ft Feb. 21.

1956-66: Maximum discharge, 871 cfs Jan. 13, 1960 (gage height, 4.60 ft); minimum, 3.4 cfs Nov. 26, 1958, result of freezeup.

Remarks--Records good Feb. 14 to Apr. 1; poor otherwise. Madison Metropolitan Sewerage District discharged an average of 24.84 million gallons per day into the basin during 1966. The Sewerage District began discharging into the basin in December 1958.

Discharge, in cubic feet per second, water year October 1965 to September 1966.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	48	45	50	50	52	56	47	54	56	41	48
2	53	51	48	60	49	54	52	52	56	51	51	48
3	48	51	48	56	50	60	48	53	56	41	49	45
4	51	49	44	57	49	81	52	53	56	39	48	39
5	57	48	42	55	47	54	52	54	48	50	51	42
6	55	45	44	54	44	47	51	54	54	54	47	48
7	56	44	47	53	47	50	51	50	54	52	42	49
8	55	46	47	49	218	53	48	46	54	52	44	50
9	51	48	48	47	269	53	45	52	73	48	48	50
10	45	47	49	50	101	53	42	53	57	43	47	46
11	51	46	59	53	65	54	44	57	51	54	47	42
12	55	57	64	54	58	51	46	59	57	60	47	49
13	55	46	60	53	52	47	48	56	55	56	43	49
14	55	40	57	53	58	51	49	52	58	71	38	48
15	56	42	53	49	59	54	50	45	57	54	80	47
16	52	46	50	46	57	55	49	50	55	46	60	48
17	50	44	50	50	56	55	46	49	52	43	52	47
18	55	44	46	53	55	62	54	51	46	50	49	40
19	60	44	41	52	51	54	61	49	39	58	47	45
20	63	41	44	54	46	49	63	50	50	50	52	50
21	86	38	47	54	51	64	60	47	52	52	92	48
22	83	42	47	50	53	73	57	41	52	53	62	49
23	60	46	49	45	53	106	52	149	54	49	48	50
24	51	46	68	49	54	69	48	127	56	46	49	46
25	54	41	49	53	55	64	52	63	54	45	51	40
26	56	57	43	52	50	59	53	58	48	59	53	43
27	54	51	47	52	46	51	52	54	52	55	52	47
28	56	41	50	53	51	56	52	52	60	55	49	46
29	57	45	51	48	-----	60	54	47	58	47	45	46
30	51	47	62	45	-----	59	57	44	57	45	48	44
31	45	-----	68	48	-----	58	-----	52	-----	40	48	-----
Total	1,734	1,381	1,567	1,597	1,894	1,808	1,544	1,766	1,625	1,574	1,580	1,389
Mean	55.9	46.0	50.5	51.5	67.6	58.3	51.5	57.0	54.2	50.8	51.0	46.3
+ In.	36.9	35.7	36.3	39.2	40.9	39.2	36.5	40.0	42.7	40.3	37.3	36.5

Calendar year 1965: Max 332 Min 32 Mean 56.1 + 35.9

Water year 1965-66: Max 269 Min 38 Mean 53.3 + 38.5

Peak discharge (base, 150 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	0100	3.50	557	5-23	2200	3.56	535

+ Discharge into basin, equivalent in cfs, by disposal plant, furnished by Madison Metropolitan Sewerage District.

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 1966. 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.--52 years, 1,715 cfs.

Extremes.--Maximum discharge during year, 5,510 cfs at 0001 Oct. 1 stage falling; maximum peak discharge during year, 5,200 cfs

Mar. 28 (gage height, 7.46 ft); minimum, 185 cfs Aug. 29 (gage height, 1.93 ft).

1914-66: 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 and suspended sediment loads for the water year 1966 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,470	2,550	2,230	3,100	1,610	3,740	4,640	2,130	2,640	1,380	614	500
2	5,380	2,700	2,340	3,200	1,610	3,680	4,730	2,040	2,520	1,290	686	544
3	5,340	2,900	2,370	3,300	1,610	3,710	4,630	1,800	2,500	1,170	692	588
4	5,330	3,120	2,360	3,350	1,620	3,760	4,440	1,420	2,390	1,100	550	576
5	5,180	3,030	2,250	3,400	1,650	3,860	4,290	1,260	2,300	919	679	519
6	4,980	2,940	2,100	3,350	1,700	3,960	4,110	1,340	2,210	712	653	500
7	4,900	2,920	2,050	3,200	1,790	3,880	4,110	1,520	2,090	957	595	507
8	4,830	2,880	2,050	3,100	1,890	3,990	4,010	1,580	2,030	973	608	531
9	4,770	2,830	2,100	3,100	2,800	4,000	3,890	1,600	2,190	733	544	513
10	4,690	2,670	2,240	3,200	2,360	4,100	3,770	1,440	2,140	411	556	500
11	4,550	2,660	2,320	3,250	1,970	4,240	3,760	1,510	2,070	957	525	488
12	4,360	2,630	2,400	3,200	2,440	4,470	3,770	1,760	1,980	1,030	416	513
13	4,230	2,460	2,420	3,100	3,060	4,360	3,650	1,520	1,980	823	538	507
14	4,000	2,600	2,470	3,000	3,620	4,380	3,460	1,380	1,870	1,130	440	544
15	3,750	2,610	2,670	2,800	4,220	4,430	3,360	1,380	1,780	1,180	452	576
16	3,600	2,490	2,720	2,550	4,300	4,440	3,260	1,420	1,890	1,100	494	550
17	3,450	2,360	2,650	2,450	4,400	4,370	3,180	1,440	1,920	1,040	513	476
18	3,200	2,370	2,530	2,300	4,460	4,200	3,140	1,450	1,780	904	494	488
19	3,100	2,360	2,550	2,100	4,500	4,080	3,100	1,440	1,690	760	550	488
20	3,050	2,350	2,600	1,900	4,400	4,380	3,040	1,430	1,700	802	550	494
21	3,200	2,340	2,650	1,800	4,350	4,440	3,010	1,480	1,620	563	666	513
22	3,450	2,320	2,700	1,700	4,300	4,700	2,830	1,750	1,440	569	733	544
23	3,400	2,350	2,750	1,600	4,200	4,950	2,770	2,050	1,110	660	576	560
24	3,250	2,400	2,900	1,500	4,150	4,950	2,590	2,170	1,070	712	500	530
25	3,150	2,340	3,100	1,400	4,230	4,980	2,500	2,030	1,200	588	428	500
26	3,050	2,430	3,050	1,350	4,120	5,080	2,560	1,860	1,200	653	416	500
27	2,950	2,010	3,030	1,300	4,010	5,130	2,650	1,860	1,330	556	488	500
28	2,850	2,080	3,000	1,300	3,890	5,130	2,300	2,180	1,430	582	405	510
29	2,750	1,840	3,000	1,300	-----	5,100	2,110	2,210	1,450	627	246	450
30	2,650	2,250	3,100	1,400	-----	5,040	2,270	2,200	1,330	595	416	316
31	2,500	-----	3,100	1,560	-----	4,900	-----	2,580	-----	576	494	-----
Total	121,360	75,790	79,800	75,160	89,260	136,430	101,930	53,230	54,850	26,052	16,517	15,325
Mean	3,915	2,526	2,574	2,425	3,188	4,401	3,398	1,717	1,828	840	533	511
Cfsm	1.19	.765	.780	.735	.966	1.33	1.03	.520	.554	.255	.162	.155
In.	1.37	.85	.90	.85	1.01	1.54	1.15	.60	.62	.29	.19	.17

Calendar year 1965: Max 5,880 Min 231 Mean 2,050 Cfsm .621 In. 8.44
 Water year 1965-66: Max 5,470 Min 246 Mean 2,317 Cfsm .702 In. 9.54

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 1966.

Gage.--Water-stage recorder. Datum of gage is 817.00 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--27 years, 103 cfs.

Extremes.--Maximum discharge during year, about 2,500 cfs Feb. 9 (gage height, 9.52 ft, backwater from ice); minimum, 41 cfs Sept. 23, 24 (gage height, 2.50 ft).

1939-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	135	85	224	72	90	149	133	69	60	63	46
2	95	131	82	205	74	88	171	114	68	58	84	48
3	87	127	78	180	75	92	178	104	68	57	68	64
4	82	116	75	165	77	120	176	96	64	60	60	57
5	80	114	73	155	78	102	192	93	64	64	57	52
6	79	112	70	155	79	108	252	89	62	60	56	48
7	84	110	68	160	80	112	255	87	58	60	56	46
8	106	110	65	160	160	91	185	87	57	57	54	44
9	110	104	63	155	1,500	86	146	87	93	57	52	54
10	106	100	66	145	1,520	89	133	89	135	56	51	44
11	102	100	100	135	544	95	104	100	93	66	52	44
12	98	124	144	125	453	100	91	155	84	63	51	43
13	93	120	138	115	250	102	87	173	87	63	50	42
14	93	98	124	105	180	100	86	169	91	118	51	48
15	95	91	110	98	140	102	82	160	84	108	51	48
16	91	91	104	94	120	102	79	144	86	79	52	44
17	307	87	98	92	105	104	80	108	79	72	50	43
18	231	82	94	90	100	129	86	96	72	68	47	43
19	173	79	90	88	96	131	104	87	69	69	46	42
20	263	80	87	86	95	120	112	80	68	68	46	43
21	280	80	76	84	96	118	124	77	66	68	66	43
22	409	80	72	84	98	180	106	74	64	68	68	43
23	295	76	79	82	100	292	108	77	63	69	54	42
24	250	72	236	80	102	234	114	110	60	62	51	42
25	241	72	205	78	104	189	104	93	58	62	48	47
26	228	108	170	75	100	164	104	84	58	60	46	43
27	216	206	135	73	98	146	104	77	57	62	44	47
28	199	250	120	70	93	135	102	72	64	60	43	47
29	182	105	115	70	-----	135	95	74	66	58	43	47
30	160	90	146	70	-----	142	144	110	63	57	44	46
31	146	-----	322	70	-----	133	-----	86	-----	56	47	-----
Total	5,095	3,250	3,490	3,568	6,589	3,931	3,853	3,185	2,170	2,045	1,651	1,390
Mean	164	108	113	115	235	127	128	103	72.3	66.0	53.3	46.3
Cfsm	.882	.581	.608	.618	1.26	.683	.688	.554	.389	.355	.287	.249
In.	1.02	.65	.70	.71	1.32	.79	.77	.64	.43	.41	.33	.28

Calendar year 1965: Max 1,300 Min 26 Mean 143 Cfsm .769 In. 10.42
 Water year 1965-66: Max 1,520 Min 42 Mean 110 Cfsm .591 In. 8.05

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	1300	9.52	2,500				

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 1966.

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.--27 years, 181 cfs.

Extremes.--Maximum discharge during year, about 5,000 cfs Feb. 9 (gage height, 16.00 ft, backwater from ice); minimum, 46 cfs Dec. 7 (gage height, 2.44 ft), result of freezeup.

1939-66: 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, 19 cfs Mar. 4, 1954 (gage height, 1.92 ft), 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	80	72	168	60	92	159	120	79	69	75	73
2	134	76	75	140	60	98	151	100	79	67	77	72
3	125	75	76	120	60	112	144	93	91	65	75	85
4	114	74	74	115	60	517	139	89	92	72	70	111
5	110	70	70	110	60	281	136	88	84	86	70	79
6	109	70	64	98	61	90	134	87	85	93	69	70
7	114	72	54	91	63	88	131	84	83	77	70	66
8	126	74	60	90	300	90	126	88	81	70	70	64
9	120	72	62	88	2,000	98	125	90	144	71	69	63
10	125	70	64	85	4,140	106	122	84	142	74	68	63
11	101	71	80	82	843	114	118	96	100	93	68	63
12	93	95	197	81	241	175	114	144	229	92	66	62
13	89	117	217	80	160	147	109	134	235	191	64	61
14	89	92	170	80	130	130	106	119	131	1,050	64	71
15	93	81	142	80	110	122	104	112	115	390	63	75
16	92	82	110	80	96	120	104	119	116	178	64	65
17	122	78	92	80	86	120	104	112	107	144	62	62
18	117	72	80	78	82	186	110	119	96	128	60	62
19	99	74	74	78	81	221	123	112	90	117	58	61
20	95	74	72	76	81	156	124	100	85	104	57	62
21	104	75	72	72	82	151	125	96	83	95	688	62
22	154	74	74	70	84	188	111	92	79	93	561	60
23	125	70	78	68	88	511	103	155	76	92	150	59
24	107	69	86	67	88	401	102	135	74	90	110	59
25	99	71	125	66	88	244	96	113	71	86	95	63
26	95	98	105	65	88	221	94	100	73	84	88	64
27	89	138	92	63	88	202	103	94	74	89	81	62
28	85	67	88	61	90	185	102	91	94	85	77	62
29	82	66	94	61	-----	180	96	85	86	80	74	63
30	82	66	110	61	-----	178	120	82	74	79	74	65
31	82	-----	188	60	-----	164	-----	81	-----	76	74	-----
Total	3,320	2,363	3,017	2,614	9,470	5,688	3,535	3,214	3,048	4,180	3,411	2,009
Mean	107	78.8	97.3	84.3	338	183	118	104	102	135	110	67.0
Cfsm	.391	.288	.355	.308	1.23	.668	.431	.380	.372	.493	.401	.245
In.	.45	.32	.41	.35	1.29	.77	.48	.44	.41	.57	.46	.27

Calendar year 1965: Max 4,300 Min 24 Mean 186 Cfsm .679 In. 9.21
 Water year 1965-66: Max 4,140 Min 54 Mean 126 Cfsm .460 In. 6.22

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	1800	16.00	5,000				

ROCK RIVER BASIN

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 1966.

Gage--Digital water-stage recorder. Datum of gage is 796.8 ft above mean sea level, unadjusted. Prior to Dec. 20, 1939, 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--27 years, 138 cfs.

Extremes--Maximum discharge during year, 4,500 cfs Feb. 9 (gage height, 14.71 ft, backwater from ice); minimum daily, 60 cfs Dec. 7, result of freezeup.

1939-66: Maximum discharge, 11,700 cfs Feb. 28, 1948 (gage height, 15.74 ft); minimum, 23 cfs Nov. 28, 1940, Dec. 8, 1949.

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

Discharge, in cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	156	89	80	129	67	102	141	114	98	81	74	70
2	131	89	80	150	68	104	135	105	97	80	80	72
3	123	89	80	140	70	120	131	103	107	79	73	114
4	118	87	78	120	72	243	128	98	101	81	71	91
5	115	85	76	105	72	151	126	99	96	86	70	74
6	115	87	72	94	74	110	126	97	97	87	69	72
7	118	92	60	90	74	92	125	94	93	79	71	70
8	123	88	63	90	130	94	121	96	92	77	72	68
9	121	85	68	90	4,000	98	122	95	136	78	70	68
10	114	84	74	90	1,920	106	119	92	136	81	68	68
11	111	85	88	90	346	109	117	100	103	92	68	68
12	108	100	146	90	160	117	114	127	216	88	67	67
13	106	116	169	90	130	116	111	112	159	84	66	66
14	105	92	123	90	110	111	110	108	115	443	66	77
15	104	87	102	90	105	110	109	104	109	250	66	75
16	105	91	92	90	98	110	109	107	113	115	67	70
17	118	85	86	86	95	111	109	101	105	101	66	69
18	112	81	80	86	94	143	112	108	102	96	64	68
19	101	82	77	86	95	142	119	102	98	92	61	68
20	100	83	76	86	97	121	120	96	95	86	62	68
21	102	83	76	82	100	127	125	94	93	84	272	68
22	135	84	79	78	100	164	112	91	90	82	248	68
23	114	81	84	74	100	354	109	282	88	82	89	67
24	103	79	92	73	100	252	109	569	87	81	77	66
25	100	82	110	72	100	178	104	157	85	79	74	71
26	98	109	100	70	100	167	104	125	84	79	73	69
27	95	153	98	70	100	160	109	116	84	83	70	69
28	94	86	99	68	100	152	107	110	92	78	68	69
29	91	80	102	66	-----	149	102	105	88	76	68	70
30	92	78	107	66	-----	150	126	103	84	75	69	70
31	92	-----	138	66	-----	142	-----	100	-----	74	100	-----
TOTAL	3,420	2,692	2,855	2,767	8,677	4,405	3,511	3,910	3,143	3,129	2,579	2,150
MEAN	110	89.7	92.1	89.3	310	142	117	126	105	101	83.2	71.7
CFSM	.498	.406	.417	.404	1.40	.643	.529	.570	.475	.457	.377	.324
IN	.58	.45	.48	.47	1.46	.74	.59	.66	.53	.53	.43	.36

CALENDAR YEAR 1965 MAX 4,500 MIN 45 MEAN 167 CFSM .756 INCHES 10.23
 WATER YEAR 1965-66 MAX 4,000 MIN 60 MEAN 118 CFSM .534 INCHES 7.28

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	1600	-	4,500				

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 1966.

Gage.--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. Auxiliary wire-weight gage 1 1/4 miles downstream read several times daily during high water.

Average discharge.--27 years, 690 cfs.

Extremes.--Maximum discharge during year, 5,600 cfs Feb. 12 (gage height, 17.47 ft, backwater from ice); minimum, 256 cfs Sept. 30 (gage height, 3.13 ft).

1939-66: 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 cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	933	399	390	660	305	400	695	558	489	376	337	333
2	867	391	400	630	305	410	667	491	470	361	338	319
3	783	382	380	650	305	430	642	486	469	349	339	325
4	698	376	360	670	305	500	616	460	485	340	334	380
5	647	399	350	600	305	825	594	439	478	353	323	378
6	611	413	335	520	310	600	583	426	464	358	313	337
7	594	399	325	480	320	430	577	421	455	368	311	306
8	605	391	315	460	340	410	563	415	441	352	314	291
9	619	384	310	460	3100	415	552	415	484	333	317	288
10	597	372	320	450	3700	420	541	415	694	335	310	282
11	552	362	340	440	4800	448	535	428	711	338	304	281
12	508	408	450	430	5500	452	524	524	631	376	302	279
13	488	455	616	430	4500	493	506	611	844	413	298	276
14	469	476	686	420	3300	532	488	608	877	1380	289	281
15	467	448	622	420	2200	496	481	552	671	2040	289	304
16	479	408	460	420	1200	481	476	524	584	1750	294	344
17	588	388	380	415	800	481	479	514	554	1020	290	309
18	619	378	350	405	580	508	484	498	520	692	285	290
19	583	388	330	400	540	577	508	506	486	572	275	284
20	521	388	330	399	500	653	535	493	459	504	269	281
21	516	399	340	375	460	619	577	469	441	458	305	280
22	549	399	360	360	440	1080	569	441	425	429	684	285
23	600	402	390	350	420	1380	530	462	411	411	1150	279
24	586	397	450	340	410	1590	493	1420	397	403	672	277
25	514	384	590	330	400	1410	479	1640	382	389	405	287
26	484	424	530	320	400	1070	464	1400	376	375	350	312
27	462	544	470	320	400	900	450	966	376	373	330	316
28	443	572	460	315	400	819	452	709	409	370	319	303
29	421	400	500	310	-----	771	462	611	439	366	305	285
30	406	350	550	305	-----	753	496	558	414	353	297	264
31	406	-----	680	305	-----	732	-----	519	-----	344	303	-----
Total	17,615	12,276	13,369	13,389	36,545	21,085	16,018	18,979	15,336	16,881	11,251	9,056
Mean	568	409	431	432	1,305	680	534	612	511	545	363	302
Cfsm	.546	.393	.414	.415	1.26	.654	.513	.588	.491	.524	.349	.290
In.	.63	.44	.48	.48	1.31	.75	.57	.68	.55	.60	.40	.32

Calendar year 1965 : Max 11,000 Min 148 Mean 847 Cfsm .814 In. 11.05
 Water year 1965-66 : Max 5,500 Min 264 Mean 553 Cfsm .532 In. 7.21

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	0800	17.47	5,600				

ROCK RIVER BASIN

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 1966. 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--52 years, 335 cfs.

Extremes--Maximum discharge during year, 5,260 cfs Feb. 10 (gage height, 7.98 ft); minimum, 123 cfs Dec. 9 (gage height, 0.26 ft).
1914-66: 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 cubic feet per second, water year October 1965 to September 1966

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	348	281	240	514	170	210	340	368	244	193	180	175
2	335	320	245	483	170	210	316	312	242	188	185	195
3	320	243	236	360	170	240	305	284	237	186	186	209
4	296	234	230	330	170	369	297	246	242	186	174	199
5	277	225	227	305	170	467	292	245	235	189	169	190
6	271	229	210	270	175	310	285	240	227	195	168	176
7	268	230	180	230	180	260	282	208	230	192	167	163
8	256	244	160	205	250	250	267	222	237	186	167	161
9	270	242	150	250	800	251	277	221	266	181	165	163
10	262	236	190	440	4,020	246	275	216	318	173	164	159
11	254	230	237	420	3,840	250	270	251	401	204	165	156
12	242	252	369	390	1,730	258	262	308	318	200	166	155
13	244	305	449	500	600	269	235	355	346	200	163	153
14	235	331	462	270	370	273	257	319	376	279	161	165
15	233	297	394	235	310	270	249	319	314	323	163	189
16	237	266	285	225	280	268	230	270	297	385	177	185
17	261	253	260	220	240	270	252	268	280	332	184	164
18	371	242	240	215	220	290	257	277	261	247	174	160
19	441	231	225	210	210	333	280	255	235	219	157	166
20	381	229	215	210	210	332	308	263	232	192	154	157
21	339	230	215	210	210	320	354	230	220	200	193	154
22	385	239	220	205	210	881	345	221	213	186	259	155
23	488	230	225	200	210	960	302	265	199	187	310	153
24	428	224	336	210	210	932	293	757	203	185	236	151
25	341	224	444	195	215	794	268	982	198	177	179	155
26	308	245	310	190	220	566	203	862	195	181	178	157
27	300	290	280	185	210	389	245	526	193	181	171	157
28	277	310	270	180	210	401	271	304	216	174	167	157
29	260	250	290	180	-----	361	249	288	199	172	164	155
30	272	260	330	175	-----	350	315	266	201	174	165	152
31	249	-----	492	171	-----	320	-----	253	-----	172	166	-----
TOTAL	9,449	7,622	8,616	8,383	15,980	11,900	8,381	10,401	7,575	6,439	5,577	4,986
MEAN	305	254	278	270	571	384	279	336	253	208	180	166
CFSM	.579	.482	.528	.512	1.08	.729	.529	.638	.480	.395	.342	.315
IN	.67	.54	.61	.59	1.13	.84	.59	.73	.53	.45	.39	.35
CALENDAR YEAR 1965	MAX	4,400	MIN	99	MEAN	377	CFSM	.715	INCHES	9.72		
WATER YEAR 1965-66	MAX	4,020	MIN	150	MEAN	289	CFSM	.548	INCHES	7.43		

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 1966. 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.--34 years (1903-5, 1914-19, 1939-66), 3,712 cfs (discharge for site at Rockford adjusted for difference in drainage area).

Extremes.--Maximum discharge during year, 13,000 cfs Feb. 13 (gage height, 9.17 ft); minimum daily, 1,020 cfs Aug. 30.

1903-9, 1914-19, 1939-66: Maximum discharge, 32,500 cfs Mar. 30, 1916 (gage height, 13.06 ft, site and datum then in use); minimum daily, 501 cfs Sept. 14, 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.

Cooperation.--Two discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12,600	4,840	3,900	3,000	2,800	5,500	7,120	4,040	4,410	2,460	1,590	1,300
2	11,900	4,800	3,980	3,000	2,800	5,400	7,000	3,970	4,190	2,380	1,660	1,350
3	11,200	4,750	4,120	7,400	2,800	5,520	6,920	3,780	4,090	2,270	1,650	1,430
4	10,000	4,600	4,070	6,600	2,800	5,970	6,760	3,120	3,880	2,190	1,520	1,440
5	8,680	4,600	4,040	6,200	2,800	6,150	6,580	2,980	3,760	2,120	1,470	1,370
6	7,900	4,390	3,930	5,800	2,800	6,170	6,320	2,840	3,660	1,860	1,580	1,370
7	7,460	4,380	3,880	5,600	2,800	6,060	6,300	2,990	3,470	1,840	1,430	1,380
8	7,200	4,340	3,640	4,500	2,750	6,040	6,080	3,040	3,360	2,000	1,410	1,300
9	6,980	4,310	3,680	5,000	5,320	5,970	5,880	3,060	3,760	1,840	1,380	1,290
10	6,840	4,100	3,700	5,400	9,250	5,770	5,680	2,900	3,880	1,430	1,270	1,270
11	6,540	4,000	3,800	5,200	7,780	5,900	5,580	2,880	3,880	1,740	1,410	1,220
12	6,300	4,100	4,270	5,000	8,890	6,060	5,500	3,460	3,980	2,070	1,310	1,190
13	5,950	3,980	4,600	5,000	12,400	6,040	5,380	3,750	4,050	1,920	1,200	1,190
14	5,750	4,220	4,860	4,700	12,000	6,080	5,140	3,760	3,800	2,200	1,260	1,300
15	5,470	4,310	5,140	4,600	12,200	6,170	4,950	3,640	3,710	2,650	1,230	1,310
16	5,400	4,220	5,400	4,500	12,200	6,190	4,800	3,510	3,780	2,820	1,320	1,340
17	6,000	3,900	5,400	4,300	11,500	6,150	4,690	3,360	3,810	3,200	1,280	1,240
18	6,200	3,880	5,200	4,000	11,000	6,010	4,690	3,360	3,510	3,330	1,310	1,270
19	6,400	3,750	4,700	4,000	10,000	5,830	4,780	3,170	3,260	2,770	1,320	1,260
20	6,200	3,750	4,500	4,000	9,000	6,130	4,800	3,060	3,140	2,260	1,280	1,250
21	6,150	3,610	4,700	4,000	8,000	6,320	4,960	3,060	3,060	2,030	1,480	1,250
22	6,380	3,680	4,700	3,600	7,000	6,740	4,820	3,060	2,750	1,800	1,470	1,200
23	6,300	3,580	4,700	3,600	6,660	7,740	4,800	2,980	2,580	1,700	1,570	1,280
24	5,990	3,710	5,400	3,300	6,240	8,660	4,640	3,340	2,270	1,720	1,470	1,190
25	5,950	3,640	7,000	3,300	5,990	9,080	4,320	4,570	2,340	1,590	1,760	1,200
26	5,850	3,800	7,400	3,300	5,830	9,290	4,290	4,960	2,310	1,680	1,650	1,150
27	5,850	3,820	7,200	3,100	5,760	9,160	4,320	5,110	2,340	1,710	1,440	1,200
28	5,670	3,540	7,000	3,000	5,580	8,760	4,040	5,310	2,550	1,600	1,370	1,150
29	5,560	3,460	6,600	2,800	-----	8,160	3,560	5,090	2,690	1,580	1,110	1,140
30	5,230	3,920	7,600	2,800	-----	7,800	3,980	4,310	2,580	1,530	1,020	1,140
31	5,140	-----	7,200	2,800	-----	7,520	-----	4,380	-----	1,410	1,270	-----
Total	215,040	121,980	156,310	143,400	194,950	208,340	158,680	112,840	100,850	63,700	43,490	37,970
Mean	6,937	4,066	5,042	4,626	6,963	6,721	5,289	3,640	3,362	2,055	1,403	1,266
Cfsm	1.10	.646	.802	.736	1.11	1.07	.841	.579	.535	.327	.223	.201
In.	1.27	.72	.92	.85	1.15	1.23	.94	.67	.60	.38	.26	.22

Calendar year 1965: Max 14,400 Min 738 Mean 4,557 Cfsm .725 In. 9.83
 Water year 1965-66: Max 12,600 Min 1,020 Mean 4,267 Cfsm .678 In. 9.21

ILLINOIS RIVER BASIN

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--359 sq mi.

Records available--October 1940 to September 1966.

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--26 years, 210 cfs.

Extremes--Maximum discharge during year, 1,920 cfs Feb. 10 (gage height, 3.69 ft); minimum, 6.1 cfs Sept. 8-10, 16, 17.

1940-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	240	638	325	933	115	279	482	890	185	37	16	7.6
2	230	603	271	928	110	316	444	785	170	37	19	8.3
3	213	556	268	906	105	381	445	694	161	37	18	8.7
4	199	507	268	870	100	646	434	626	144	28	30	12
5	186	464	262	826	100	712	415	582	122	28	35	12
6	177	419	252	787	95	632	395	539	103	28	36	11
7	168	392	232	748	94	546	378	495	91	25	34	10
8	166	354	220	600	117	537	358	460	83	20	34	6.8
9	159	323	205	893	479	495	341	418	173	18	24	7.8
10	151	289	193	648	1,700	478	320	377	265	16	20	7.4
11	138	264	262	600	1,720	487	294	435	202	31	23	8.6
12	128	250	366	540	1,540	581	273	1,480	166	22	20	9.3
13	120	245	458	480	1,580	548	256	1,160	213	22	17	9.0
14	111	246	453	370	1,640	508	238	970	208	22	17	10
15	104	249	424	310	1,510	480	220	870	180	20	16	9.2
16	94	250	398	250	1,390	451	204	802	186	20	15	6.7
17	90	244	387	220	1,080	427	194	726	180	20	13	8.3
18	107	242	381	210	1,000	420	200	662	176	18	11	8.0
19	133	241	372	200	730	412	253	600	158	18	12	14
20	149	236	375	190	610	394	347	552	140	16	10	20
21	173	235	366	180	540	394	572	493	122	16	14	16
22	409	226	350	170	610	426	519	441	108	18	23	19
23	555	220	337	165	475	515	772	402	94	18	16	16
24	549	210	492	160	400	594	951	432	80	18	15	18
25	537	195	815	160	350	630	873	387	72	16	11	25
26	540	265	807	150	305	646	834	341	66	18	8.6	17
27	554	396	739	140	280	633	859	302	58	120	9.6	17
28	585	373	707	135	279	621	1,100	271	55	33	7.8	15
29	623	321	648	130	-----	608	1,000	245	49	23	7.3	17
30	653	294	732	130	-----	575	940	224	43	19	9.9	16
31	658	-----	891	120	-----	528	-----	202	-----	16	9.4	-----
Total	8,899	9,747	13,256	13,149	19,054	15,900	14,911	17,863	4,053	798	551.6	370.7
Mean	287	325	428	424	681	513	497	576	135	25.7	17.8	12.4
Cfsm	.799	.905	1.19	1.18	1.90	1.43	1.38	1.60	.376	.072	.050	.035
In.	.92	1.01	1.37	1.36	1.97	1.65	1.54	1.85	.42	.08	.06	.04

Calendar year 1965: Max 2,140 Min 11 Mean 353 Cfsm .983 In. 13.33
 Water year 1965-66: Max 1,720 Min 6.7 Mean 325 Cfsm .905 In. 12.28

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1- 9	0915	2.72	1,410	4-28	1300	2.37	1,180
2-10	1345	3.69	1,920	5-12	1315	3.13	1,640

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 1966.

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, 1,040 cfs Feb. 11 (gage height, 5.41 ft); minimum, 7.0 cfs July 1, Sept. 25.

1963-66: 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.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	143	92	280	52	118	157	136	39	15	31	14
2	145	119	94	329	49	93	159	137	40	18	18	15
3	139	116	96	313	48	124	155	121	39	18	16	17
4	134	108	90	304	48	164	148	103	33	17	14	14
5	127	99	89	258	45	182	137	99	29	22	14	12
6	122	100	87	206	45	179	132	90	31	22	12	12
7	113	113	80	168	48	146	127	79	30	18	11	10
8	108	110	83	150	59	154	121	73	31	16	12	11
9	100	106	78	130	225	132	103	75	52	14	13	10
10	94	102	76	115	709	126	111	66	34	12	14	9.5
11	89	100	116	105	915	126	110	73	32	23	15	8.6
12	83	108	155	92	832	136	105	89	35	15	15	9.0
13	80	110	186	90	596	143	97	94	39	15	12	9.5
14	79	111	212	86	347	129	94	96	39	32	10	10
15	62	111	222	80	270	139	90	94	40	23	15	10
16	73	106	208	75	222	139	85	94	41	18	15	10
17	130	102	177	70	125	136	86	90	38	18	15	8.6
18	121	96	163	68	130	136	96	85	39	17	14	8.2
19	124	90	139	67	120	139	127	80	32	13	13	8.6
20	132	86	120	67	110	134	155	73	37	18	10	10
21	205	83	110	67	100	146	164	67	33	18	41	10
22	238	83	100	65	93	172	150	64	31	15	22	9.5
23	256	82	100	64	93	310	145	96	30	12	16	8.2
24	292	80	130	63	93	423	136	92	29	13	16	7.4
25	312	66	145	62	92	441	129	105	27	15	15	7.4
26	304	86	160	61	86	366	116	97	25	19	15	8.2
27	270	94	170	60	85	282	97	83	24	15	12	9.0
28	236	100	175	59	85	214	100	68	26	12	10	9.0
29	200	100	179	58	-----	200	105	57	26	12	12	10
30	177	96	186	56	-----	184	139	51	35	12	12	8.6
31	132	-----	240	53	-----	172	-----	49	-----	10	12	-----
Total	4,825	3,006	4,258	3,721	5,722	5,685	3,676	2,676	1,016	517	472	304.3
Mean	156	100	137	120	204	183	123	86.3	33.9	16.7	15.2	10.1
Cfsm	1.23	.787	1.08	.945	1.61	1.44	.969	.680	.267	.131	.120	.080
In.	1.41	.88	1.25	1.09	1.68	1.66	1.08	.78	.30	.15	.14	.09

Calendar year 1965 : Max 1,120 Min 7.8 Mean 114 Cfsm .898 In. 12.12
 Water year 1965-66 : Max 915 Min 7.4 Mean 98.3 Cfsm .774 In. 10.51

Peak discharge (base, 250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-25	1430	3.85	335	2-11	1500	5.41	1,040
12-15	1230	3.45	258	3-3	1700	3.56	284
1-3	1530	4.18	482	3-25	1230	4.19	486

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 1966 (fragmentary). Published as Holden Lake prior to October 1958.

Extremes.--Maximum gage height observed during year, 9.18 ft Apr. 2; minimum observed, 8.00 ft Sept. 29, 30.

1937-66: 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 Nov. 27 to Mar. 17.

[illegible]

5-5453. White River near Burlington, Wis.

Location.--Lat 42°39'57", long 88°19'03", in NW 1/4 sec. 1, T. 2 N., R. 18 E., on right bank near bridge on State Highway 36, 2 1/4 miles southwest of Burlington.

Drainage area.--105 sq mi.

Records available.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1961-64. August 1964 to September 1966, no winter records.

Gage.--Water-stage recorder and crest-stage gage. Prior to Aug. 13, 1964, crest-stage gage only.

Extremes.--1965-66: Maximum discharge during year, 1,850 cfs Oct. 21 (gage height, 13.43 ft); minimum recorded, 7.2 cfs Sept. 22, 27 (gage height, 7.87 ft).

1958-66: Maximum discharge, 1,890 cfs Mar. 30, 1960 (gage height, 13.49 ft); minimum recorded since August 1954, 2.3 cfs July 4, 1965 (gage height, 7.79 ft).

Remarks.--Records good. Records for October and November 1965 as published in 1965 State Report are revised in 1966 State Report.

Discharge, in cubic feet per second, water year October 1965 to September 1966

Day	Oct.	Nov.	Dec.	-Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	80	98					115	130	33	29	29	16
2	60	92					118	106	30	31	109	16
3	49	87					116	98	30	32	57	23
4	42	81					109	90	29	32	44	22
5	39	79					105	81	29	34	36	19
6	40	79					105	76	28	35	32	15
7	39	151					108	70	25	36	29	13
8	43	106					108	66	20	32	28	12
9	43	90					106	65	40	30	26	12
10	42	81					105	64	66	33	24	12
11	38	80					101	79	54	34	24	11
12	34						95	135	48	33	22	10
13	32						87	125	71	25	31	11
14	29						91	118	76	67	36	12
15	29						85	102	63	63	37	14
16	29						81	99	60	41	41	12
17	85						71	90	55	32	38	12
18	72						88	88	49	29	34	12
19	57						129	81	46	29	30	11
20	60						134	77	42	23	23	11
21	1,010						134	71	41	19	36	11
22	1,210						111	65	38	17	48	8.1
23	402						122	64	36	17	40	9.4
24	220						116	92	35	16	33	9.9
25	151						105	77	33	16	26	11
26	142						91	65	33	16	22	11
27	135						88	61	29	26	19	9.0
28	130						94	54	28	27	18	10
29	119						81	50	30	23	20	10
30	109					128	162	47	29	19	18	10
31	104					116		46		16	20	
Total	4,674						3,161	2,532	1,226	912	1,030	375.4
Mean	151						105	81.7	40.9	29.4	33.2	12.5
Cfs/m	1.44						1.00	.778	.390	.280	.316	.119
In.	1.66						1.12	.90	.44	.32	.36	.13

ILLINOIS RIVER BASIN

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.--880 sq mi.

Records available.--October 1939 to September 1966.

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.--27 years, 453 cfs.

Extremes.--Maximum discharge during year, 3,310 cfs Feb. 11, 12 (gage height, 7.54 ft); minimum, 99 cfs June 23.

1939-66: 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 1965 to September 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	813	950	548	1,550	400	688	1,310	1,010	340	179	163	155
2	842	896	568	1,580	400	749	1,320	919	311	167	410	155
3	798	806	600	1,540	360	813	1,300	865	302	163	354	159
4	749	777	634	1,450	330	1,060	1,240	791	293	163	275	167
5	676	748	627	1,365	320	1,170	1,140	676	284	183	245	171
6	625	701	607	1,280	330	1,140	1,090	688	266	183	228	163
7	595	762	528	1,120	350	1,100	1,050	644	249	179	175	155
8	590	881	503	544	381	966	1,010	602	224	163	191	147
9	572	806	490	777	760	919	958	561	271	151	187	114
10	590	734	460	927	1,750	927	919	512	340	147	183	103
11	539	602	542	820	2,930	966	872	439	331	171	187	125
12	507	682	771	750	3,170	1,010	798	663	289	163	183	132
13	423	1,030	1,060	670	2,880	1,030	715	769	311	167	179	136
14	392	1,130	1,080	600	2,370	1,000	701	842	336	251	171	147
15	312	1,060	997	560	2,100	989	669	806	311	337	175	155
16	361	1,020	896	540	1,910	927	637	769	307	289	187	155
17	454	1,020	813	520	1,660	872	595	749	289	217	205	143
18	586	814	700	500	1,270	872	595	722	275	183	183	140
19	502	658	620	500	1,100	927	694	676	266	195	179	147
20	514	649	600	490	1,000	958	820	635	170	200	167	151
21	797	640	600	480	940	919	934	619	117	205	183	155
22	1,910	628	610	470	880	1,120	911	578	106	201	205	155
23	2,380	593	688	460	820	1,450	958	522	136	196	209	147
24	2,100	428	944	450	780	1,640	989	522	183	183	196	147
25	1,830	405	1,310	450	740	1,640	950	584	183	167	187	155
26	1,600	575	1,400	450	722	1,540	880	550	179	159	175	155
27	1,400	1,040	1,320	440	688	1,490	813	501	187	167	167	155
28	1,240	800	1,160	440	676	1,410	783	496	183	167	163	140
29	1,120	680	1,050	440	-----	1,340	749	480	179	167	159	114
30	1,020	580	1,040	420	-----	1,330	889	374	183	163	155	110
31	958	-----	1,260	410	-----	1,320	-----	371	-----	155	155	-----
Total	27,795	23,095	25,026	22,993	32,017	34,282	27,289	19,935	7,401	5,781	6,181	4,353
Mean	897	770	807	742	1,143	1,106	910	643	247	186	199	145
Cfsm	1.02	.875	.917	.843	1.30	1.26	1.03	.731	.281	.211	.226	.165
In.	1.17	.98	1.06	.97	1.35	1.45	1.15	.84	.31	.24	.26	.18

Calendar year 1965 : Max 2,820 Min 78 Mean 678 Cfsm .770 In. 10.46
 Water year 1965-66 : Max 3,170 Min 103 Mean 647 Cfsm .735 In. 9.96

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 1966

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Superior						
*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	1961-66	7-15-66	0.56
*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	1961-66	11-11-65 5- 5-66 7-14-66	8.59 19.0 9.46
*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	7-14-66	.22
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	1963-66	10-28-65	1.75
*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 1963-66	10-27-65 6-22-66 9-22-66	9.94 21.8 11.5
*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	1961 1963-66	10-26-65 6-22-66 9-14-66	1.44 1.37 .75
*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	1963-66	10-27-65 6-22-66 9-22-66	10.8 12.0 4.57
*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 1963-66	6-20-66 7-25-66 9-13-66	7.03 .28 .29
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	1962-66	6- 2-66 9-14-66	7.31 2.32
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	1962-66	10-19-65 11- 2-65 6-24-66 9-26-66	64.7 50.4 46.5 41.2
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	1962-66	6- 1-66 9-12-66	7.25 2.46
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	1962-66	6- 1-66 9-12-66	10.0 5.07

* Also 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 1966

Discharge measurements made at 106-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan--Continued						
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	11- 2-65 6-23-66 9-27-66	47.5 41.7 29.7
*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	1961-66	11- 2-65 6- 2-66 6-23-66 6-24-66 9-16-66 9-27-66	10.7 10.1 9.42 8.70 8.57 8.04
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	11- 2-65 6-23-66 9-27-66	16.5 14.3 10.1
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	11- 2-65 6-23-66 9-27-66	10.1 7.48 5.87
*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	10-29-65 11- 2-65 6-23-66 6-24-66 9-27-66	6.80 8.89 6.23 6.59 4.20
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	11- 2-65 6-24-66 9-27-66	26.0 34.2 19.7
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	11- 2-65 6-24-66 9-27-66	39.2 36.7 36.2
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	11- 3-65 6-24-66 9-28-66	15.7 13.0 6.63
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	11- 3-65 6-24-66 9-27-66	27.4 24.2 11.7
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	11- 3-65 6-24-66 9-28-66	11.4 10.8 6.56
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	11- 3-65 6-23-66 9-27-66	25.7 23.8 13.0
4-0798	Whitcomb Creek near Big Falls, Wis.	NW 1/4 sec. 9, T. 24 N., R. 13 E., at bridge on County Trunk OO, 5.3 miles southeast of Big Falls.	25.2	1962-64 1966	11- 3-65 6-23-66 9-27-66	15.0 11.0 5.68
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	11- 2-65 6-24-66 9-26-66	21.4 16.5 14.5
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	11- 3-65 6-24-66 9-26-66	24.8 25.6 20.6
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	11- 2-65 6-23-66 9-27-66	34.0 21.8 14.2
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	1962-66	11- 2-65 6-23-66 9-27-66	40.1 35.2 28.9
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# 1962-66	10-19-65 6- 1-66 9-12-66	93.9 7.82 0

* 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 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan--Continued						
4-0835	East Branch Fond du Lac River	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# 1962-66	10-19-65 6- 1-66 9-12-66	26.6 20.2 5.11
*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	1963-66	10-12-65 11- 9-65 7-20-66	.58 .24 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	1963-66	10-13-65 11-10-65 6-21-66 7-20-66	2.63 3.04 2.40 1.24
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	1962-66	6- 1-66 9-12-66	4.32 1.82
*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	1961-66	10-13-65 11-10-65 12- 3-65 6- 1-66 6-20-66 7-21-66 9-12-66	2.49 4.15 2.80 2.59 2.69 1.73 1.52
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	1962-66	6- 2-66 9-13-66	2.34 1.31
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	1962-66	6- 1-66 9-12-66	32.6 6.38
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	1962-66	6- 1-66 9-12-66	11.3 11.4
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	1962-66	6- 2-66 9-13-66	8.78 2.27
*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	1961-66	10-12-66 6- 2-66 6-20-66 7-21-66 9-13-66	2.76 2.40 .74 .55 .11
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	1962-66	6- 2-66 9-13-66	8.64 10.5
*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	1961-66	10-14-65 6- 2-66 6-21-66 9-13-66	2.36 .53 .06 0
*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	1961-66	10-14-65 6- 2-66 6-23-66 7-22-66 8-31-66 9-12-66 9-28-66	.89 .85 .47 .07 .05 d .01 .01
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	1962-66	6- 2-66 9-12-66	12.2 .92

* Also a crest-stage station.

d Estimated.

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 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
St. Croix River Basin						
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	11- 2-65 6-24-66 9-27-66	14.8 12.5 16.8
*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 1963-66	5- 7-66 9-27-66	7.33 1.32
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	11- 3-65 6-24-66 9-27-66	1.61 3.24 .57
*5-3403	Trade River near Frederic, Wis.	SW 1/4 sec. 4, T. 36 N., R. 17 W., at box culvert on State Highway 35 and 48, 2.5 miles southwest of Frederic.	5.79	1961-66	11- 2-65 5- 7-66 6-24-66 9-27-66	2.57 2.69 2.18 1.54
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	11- 2-65 6-23-66 9-27-66	14.9 12.6 9.31
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	11- 3-65 6-23-66 9-27-66	12.1 9.05 8.14
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	8-18-64 9- 8-66	6.74 7.97
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	8-18-64 9- 8-66	6.27 7.41
*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 1963-66	4-22-66 6-29-66 8- 3-66 9- 8-66 9- 8-66	1.51 1.02 .64 1.06 1.02
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	8-18-64 9- 8-66	1.40 2.50
Chippewa River Basin						
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	11- 3-65 6-23-66 9-28-66	13.8 16.0 12.5
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	11- 3-65 6-23-66 9-28-66	8.13 13.0 6.07
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	11- 2-65 6-24-66 9-28-66	7.75 6.25 4.66
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	11- 3-65 6-23-66 9-28-66	2.59 3.40 2.03
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	11- 3-65 6-23-66 9-27-66	8.95 6.38 6.90

* Also crest-stage station.

a Approximately.

Discharge measurements made at low-flow partial-record stations during water year 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Chippewa River Basin--Continued						
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	11- 2-65 6-24-66 9-26-66	3.54 1.64 1.31
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	11- 1-65 6-23-66 9-28-66	5.51 3.79 3.25
*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	1961-66	11- 2-65 5-31-66 6-24-66 8-29-66 9-26-66	4.69 3.14 2.61 3.96 1.33
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	11- 1-65 6-23-66 9-28-66	12.4 3.67 1.09
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	11- 2-65 6-23-66 9-27-66	41.0 32.2 28.7
*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	6-24-66 9-28-66	28.1 18.2
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	11- 1-65 6-24-66 9-28-66	4.86 4.77 3.62
5-3641.6	Paint Creek near Chippewa Falls, Wis.	NE 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	11- 2-65 6-24-66 9-28-66	13.0 8.62 6.76
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	11- 2-65 6-24-66 9-28-66	51.8 42.9 44.1
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	11- 2-65 6-23-66 9-27-66	8.14 4.48 1.47
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	11- 2-65 6-23-66 9-28-66	7.54 5.24 2.43
*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	6-27-66	.09
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	11- 1-65 6-24-66 9-28-66	8.19 3.49 2.34
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	11- 2-65 6-22-66 9-26-66	2.83 3.31 2.89
*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	11- 2-65 6-22-66 9-26-66	212 221 103
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	11- 2-65 6-22-66 9-26-66	20.9 17.3 16.3
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	11- 2-65 6-23-66 9-26-66	5.23 3.67 .98
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	11- 3-65 6-23-66 9-27-66	3.31 4.17 3.16

* 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 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Chippewa River Basin--Continued						
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	11- 3-65 6-24-66 9-27-66	13.2 10.2 8.60
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	11- 3-65 6-23-66 9-27-66	7.10 5.61 5.47
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	11- 3-65 6-23-66 9-27-66	12.4 14.2 9.49
*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 1963-66	11- 3-65 11- 8-65 5- 9-66 6-23-66 9- 9-66 9-27-66	1.26 1.14 1.30 1.06 1.02 1.10
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	11- 3-65 6-23-66 9-27-66	17.0 17.2 15.1
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	11- 3-65 6-23-66 9-27-66	11.7 12.2 9.38
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	11- 3-65 6-23-66 9-27-66	27.9 32.1 23.2
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	11- 3-65 6-23-66 9-27-66	3.68 3.64 3.04
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	11- 3-65 6-23-66 9-27-66	8.85 7.24 5.04
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	11- 2-65 6-23-66 9-26-66	12.5 13.3 10.7
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	8-18-64 9- 8-66	7.33 14.2
*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	1962-66	10-20-65 4-22-66 8-10-66 9- 8-66 9-13-66	1.20 1.11 1.23 1.26 .99
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	8-18-64 9- 8-66	2.58 3.87
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	8-19-64 9- 7-66	6.58 12.0
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	8-18-64 9- 8-66	23.7 41.9
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	8-18-64 9- 7-66	15.4 28.1

* Also a crest-stage station.

a Approximately.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at low-flow partial-record stations during water year 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
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	11- 3-65 6-24-66 9-27-66	8.93 2.55 .30
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	11- 2-65 6-23-66 9-27-66	3.58 1.23 .64
*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	1962-66	11- 2-65 6-23-66 9-23-66	3.38 1.73 2.06
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	11- 1-65 6-23-66 9-28-66	6.85 .96 .10
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	11- 2-65 6-23-66 9-28-66	4.13 1.71 .14
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	8-17-64 9- 7-66	5.03 9.35
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	8-17-64 9- 7-66	32.5 44.8
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		e
5-3821	South Fork Beaver 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	8-19-64 9- 8-66	4.22 6.54
*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 1963-66	10-27-65 9- 8-66 9-15-66	6.11 5.17 4.19
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	8-17-64 9- 7-66	5.77 7.57
*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# 1963-65	9- 7-66	32.0
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 1963-66	10-27-65 9- 8-66 9-15-66	14.7 10.7 11.5
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	7- 9-63 9- 8-66	16.0 16.5
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	7- 9-63 9- 8-66	6.07 6.65

* Also a crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

e No discharge measurement.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
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 1963-66	10-23-65 6- 1-66 6-28-66 8-30-66	17.4 14.9 13.7 15.1
*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	10-24-65 11- 2-65 6- 2-66 6-23-66 6-29-66 7-27-66 8-31-66 9-27-66	30.3 22.9 20.6 12.9 6.15 4.31 10.0 4.36
*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	1962-66	10-26-65 11- 1-65 6- 2-66 6-23-66 7-27-66 8-31-66 9-27-66	2.05 1.79 1.08 1.06 .83 .65 .94
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	11- 1-65 6-23-66 9-27-66	15.5 8.02 3.46
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	11- 1-65 6-23-66 9-26-66	18.2 12.2 4.70
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	11- 3-65 6-24-66 9-27-66	8.04 5.87 4.28
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	11- 3-65 6-24-66 9-27-66	60.3 40.9 20.0
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	11- 2-65 6-23-66 9-27-66	35.4 35.3 27.0
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	11- 2-65 6-23-66 9-27-66	13.9 12.7 10.6
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	11- 1-65 6-23-66 9-26-66	5.42 3.78 .69
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	11- 2-65 6-23-66 7-26-66	11.5 9.40 2.03
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	11- 3-65 6-24-66 9-27-66	2.83 .40 .20
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	11- 3-65 6-24-66 9-26-66	15.9 10.5 1.39
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	11- 3-65 6-24-66 9-26-66	141 109 82.4
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	11- 3-65 6-24-66 9-26-66	9.01 2.81 1.16
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.		1962-64 1966	11- 1-65 6-23-66 9-28-66	7.05 4.43 4.17

* Also a crest-stage station.

a Approximately.

Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at low-flow partial-record stations during water year 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Wisconsin River Basin--Continued						
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	11- 2-65 6-24-66 9-26-66	0.78 .16 .19
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	11- 2-65 6-24-66 9-26-66	2.38 1.01 1.23
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	11- 1-65 6-23-66 9-28-66	5.54 1.33 .04
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	11- 3-65 6-24-66 9-26-66	49.1 37.4 30.3
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	8-17-64 9- 7-66	3.78 5.40
*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 1963-66	10-28-65 9- 8-66	5.53 3.00
*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 1963-66	10-28-65 9- 8-66	16.3 7.43
*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	9- 8-66	16.8
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 1963-66	6- 1-66 9-14-66	9.34 5.30
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	8-17-64 9- 8-66	11.2 14.2
*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	1961-66	11- 3-65 4-12-66 6- 1-66 6- 5-66 9-12-66 9-14-66	4.36 4.54 4.48 4.75 4.03 4.65
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	1962-66	6- 1-66 9-14-66	16.6 15.4
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	7- 8-63 9- 8-66	0 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	7- 8-63 9- 7-66	9.15 8.61
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	7- 8-63 9- 7-66	34.5 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	1962-66	6- 1-66 9-12-66	15.5 14.3
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	7- 8-63 9- 7-66	38.4 38.9
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	7- 9-63 9- 7-66	30.8 25.5
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	7- 9-63 9- 7-66	21.2 21.2
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	7- 9-63 9- 8-66	50.6 50.7

* 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 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Wisconsin River Basin--Continued						
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	7- 9-63 9- 7-66	75.6 77.9
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	9- 7-66	3.38
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	9- 7-66	32.7
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	7-10-63 9- 7-66	28.8 23.5
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	9- 9-66	29.7
*5-4071	Richland Creek near Plughtown, Wis.	NW 1/4 sec. 9, T. 8 N., R. 3 W., at bridge on U. S. Highway 61, 2 miles south of Plughtown.	19.1	1961 1963-66	6-23-66 7-25-66 9- 9-66	7.26 7.89 7.83
*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 1963-66	6-27-66	7.12
*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 1963-66	10-28-65 5-17-66 9- 7-66	1.81 1.62 1.12
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	7- 9-63 8-19-64 9- 8-66	21.2 17.8 23.3
*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 1963-66	10-26-65 6-22-66 9- 8-66	4.18 3.10 2.98
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	7- 9-63 9- 8-66	16.0 15.5
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	7-10-63 9- 8-66	7.67 6.87
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	7-10-63 9- 8-66	6.93 5.23
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	7-10-63 9- 8-66	4.20 2.07
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	7-10-63 9- 7-66	16.2 12.3
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	7-10-63 9- 7-66	11.2 6.99
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	9- 7-66	5.85

* Also a crest-stage station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at low-flow partial-record stations during water year 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
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	7-11-63 9- 8-66	8.60 15.1
*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 1963-66	7-26-66 8-18-66 9- 8-66 9-21-66	2.07 1.07 1.25 1.04
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	7-10-63 9- 7-66	9.77 4.19
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	7-10-63 9- 7-66	6.03 4.95
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	1961-66	7-26-66 8-18-66 9- 8-66 9-21-66	2.25 1.42 1.32 1.41
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	1962-66	5-23-66 6- 1-66 6-23-66 7-25-66 9- 1-66 9-12-66	2.15 1.24 1.02 0 0 .10
*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	1961-66	11-10-65 12- 9-65 5-27-66 6- 2-66 6-20-66 7-21-66 9-13-66	2.86 2.70 2.89 2.67 2.54 2.32 2.33
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	1962-66	6- 2-66 9-13-66	11.8 4.03
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	1962-66	6- 2-66 9-13-66	10.6 5.92
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	1962-66	6- 2-66 9-13-66	5.31 .36
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	1962-66	6- 2-66 9-13-66	14.5 .82
5-4256	North Branch Crawford 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	1962-66	6- 1-66 9-13-66	11.6 1.58

* Also a crest-stage station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Rock River Basin--Continued						
*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	1962-66	11- 3-65 4-12-66 5-23-66 6- 1-66 6-24-66 7-25-66 9- 2-66 9-13-66	2.38 3.63 1.24 3.51 2.74 1.12 .50 .38
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	1962-66	6- 2-66 9-13-66	6.99 1.66
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	1962-66	6- 2-66 9-13-66	14.9 8.86
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	1962-66	6- 2-66 9-13-66	48.2 18.7
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	1962-66	6- 2-66 9-13-66	7.25 1.42
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	1962-66	6- 2-66 9-13-66	11.9 7.70
*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	1961-66	10-11-65 11- 4-65 6- 2-66 6- 6-66 9-12-66	1.39 1.57 1.55 1.37 .99
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	1962-66	6- 2-66 9-14-66	3.40 1.14
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	6- 2-66 9-12-66	19.5 6.28
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	1962-66	6- 2-66 9-14-66	5.87 3.00
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	1962-66	6- 1-66 9-14-66	6.58 4.73
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	1962-66	6- 1-66 9-14-66	1.60 1.45
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	6- 2-66 9-14-66	7.20 1.98
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	1962-66	6- 2-66 9-13-66	8.88 6.66
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.	57.1	1962-66	6- 2-66 9-13-66	20.5 10.6
*5-4314	Little Turtle Creek at Allens Grove, Wis. (c)	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	1961-66	11- 2-65 5- 6-66 6- 2-66 6-24-66 7-21-66 8-30-66 9-12-66 9-13-66 9-29-66	21.0 14.7 10.6 9.90 4.95 2.52 2.04 2.14 2.46
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	7-11-63 9- 8-66	14.7 17.3
*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 1963-66	8-19-66 9-22-66	.65 .83

Also a crest-stage station.

c Published as Turtle Creek tributary prior to 1966.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at low-flow partial-record stations during water year 1966

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	7-11-63 9- 7-66	6.33 10.9
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	7-11-63 9- 7-66	5.74 9.69
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	7-11-63 9- 8-66	16.7 20.6
*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	8-19-66 9-22-66	6.46 7.78
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	7-11-63 9- 7-66	4.07 7.11
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	7-11-63 9- 7-66	2.85 3.51
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	1962-66	6- 2-66 9-12-66	22.0 14.8
*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	1961-66	11- 2-65 4-11-66 5- 6-66 6- 2-66 6- 6-66 9-12-66	.71 .84 .65 .82 .72 .57
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	1962-66	6- 1-66 9-12-66	33.9 14.5
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	1962-66	6- 1-66 9-12-66	19.6 14.3
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	1962-66	6- 1-66 9-13-66	52.0 32.0
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	1962-66	6- 1-66 9-13-66	19.8 10.9
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.	24.7	1962-66	6- 1-66 9-13-66	8.75 5.20
*5-4372	Raccoon Creek tributary 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.	7.24	1961-66	11- 4-65 5- 9-66 6- 2-66 6-24-66 7-21-66 8-29-66 9-13-66 9-30-66	3.49 2.92 2.63 2.15 1.84 1.19 1.04 1.06
Illinois River Basin						
5-5277	DesPlaines 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	1962-66	6- 1-66 9-12-66	16.2 .56
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	1962-66	6- 2-66 9-12-66	19.5 4.50
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	1962-66	6- 1-66 9-12-66 9-19-66	6.68 2.59 b 2.52

* Also a crest-stage station.

a Approximately.

b Furnished by Wisconsin State Conservation Department

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 1966

Discharge measurements made at low-flow partial-record stations during water year 1966						
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Illinois River Basin--Continued						
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	1962-66	6- 1-66 9-13-66	114 43.5
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	1962-66	11- 3-65 6- 1-66 9-13-66	34.5 17.7 10.5
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	1962-66	6- 1-66	5.39
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	1961-66	10-15-65 5- 5-65 6- 1-65 6-23-65 7-22-65 8-30-65 9-12-65 9-29-65	8.73 13.6 9.40 8.57 1.34 6.14 3.89 5.28

* Also a crest-stage station.

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	1959-66	11-31-58 4-23-60 5-23-62 6-25-63 9- 7-64 9-30-65 7- 9-66	11.02 13.71 17.59 10.8 17.3 12.55 26.6	g 35 g 140 g 280 g 30 g 275 g 90 460
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	1957-66	4- 1-66	12.04	210
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	1959-66	4- -59 4-24-60 4-16-61 5-23-62 4- 2-63 4- 8-66	10.86 10.56 11.40 10.34 10.47 10.43	g 110 g 94 g 143 g 80 g 90 88
*4-0264	Spillerberg Creek near Cayuga, Wis. (c)	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	1958-66	4-19-66	11.34	53
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	1960-66	6- 6-66	10.47	/
*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	1960-66	6- 6-66	11.8	180
*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	1958-66	6- 6-66	12.83	60
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	1960-66	8- 7-66	10.32	/
*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	1958-66	4-17-66	11.62	170
*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	1960-66	4-30-66	a 10.2	12
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	1959-66	7- 3-66	10.47	/
4-0675	Menominee River near McAllister, Wis.	Sec. 17, T. 33 N., R. 23 E., 300 ft above highway bridge on County Trunk JJ, 2.9 miles east of McAllister.	a 4,020	1945-61# 1962-66	4-23-66	13.73	12,400

* Also a low-flow partial-record station.

/ Discharge not determined.

Operated as a continuous-record gaging station

a Approximately.

c Published as Spillerberg Creek prior to 1966.

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)
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	1958-66		b	f
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	1958-66	6- 4-66	11.22	75
*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	1961-66	3-23-66	13.15	520
*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	1959-66	2- 8-66	11.78	75
*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	1958-66	4-19-66	11.84	74
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	1960-66	3-29-66	11.18	19
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	1961-66	2- 9-66	13.46	670
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, 4 miles west of Eden.	1.19	1961-66	5-23-66	11.72	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	1960-66	3-22-66	14.15	770
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	1958-66	2- 8-66	11.98	260
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	1959-66	2- 8-66	13.80	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	1961-66	2- 8-66	a ^d 12.9	f
*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	1959-66	2- 8-66	11.22	f
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	1962-66	10-21-65	a 12.0	f
*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	1958-66	10-21-65	12.60	f
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	1959-66	2- 9-66	13.14	f
*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	1958-66	2- 9-66	16.09	235

* Also a low-flow partial-record station.

f Discharge not determined.

a Approximately.

b Peak did not reach bottom of the gage.

d Peak may be ice affected.

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)	Discharge (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, 3.0 miles southeast of North Cape.	3.90	1962-66	2- 9-66	e 12.49	f
*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	1960-66	10-21-65	17.47	f
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	1961-66	6- 3-66	16.30	580
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	1960-66	3-31-66	d 10.63	f
*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	1958-66	3-29-66	11.86	f
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 southeast of New Richmond.	1.40	1959-66	6- 6-66	11.95	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	1959-66	3- 4-66	11.83	f
Trimbelle Creek Basin							
*5-3466	Little Trimbelle 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	1961-66	3- 4-66	12.84	1,780
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	1960-66	4-20-66	e 10.93	<100
5-3592	S. F. 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 miles east of Park Falls.	a .7	1960-66		b	f
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 .8	1960-66	6-12-66	10.63	f.
*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	1961-66	3-18-66	f 12.67	f
*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# 1962-66	3-18-66	d 10.50	4,100
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	1962-66	12-12-65	12.82	f
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# 1958-66	2- 9-66	7.18	980
*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	1958-66	3-18-66	12.83	f

* 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 beaver dam.

f Backwater from ice.

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)	Discharge (cfs)
Chippewa River Basin-Continued							
*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# 1958-66	2- 9-66	7.74	4,150
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	1958-66	2- 8-66	11.92	/
*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	1960-66	3-27-61 3-29-62 6- 8-63 3-14-64 4-10-65 2- 9-66	13.02 11.0 10.71 11.12 13.71 13.32	g 174 g 55 g 40 g 60 g 234 198
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# 1962-66	12-14-65	6.65	9,400
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	1958-66	2- 9-66	11.76	920
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	1960-66	12-12-65	10.58	/
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	1959-66	3- 4-66	12.08	/
*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	1962-66	2- 8-66	12.63	280
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, 3.0 miles northeast of Nelson.	.28	1962-66	3- 4-66	10.07	/
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	1960-66	6- 5-66	10.45	/
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	1961-66	2- 8-66	14.06	870
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 mile south of Whittlesey.	a 4.5	1960-66	4- 1-66	12.08	/
*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	1961-66	3- 4-66	14.98	/

* Also a low-flow partial-record station.

/ Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

g Not previously published.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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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)
Black River Basin-Continued							
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	1958-66	2- 8-66	10.67	/
*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	1960-66	2- 8-66	11.32	/
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	1959-66	2- 8-66	12.72	/
*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# 1962-66	2- 9-66	9.25	2,150
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	1961-66	2- 8-66	11.35	/
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	1961-66	7-14-66	11.28	/
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	1958-66	7- -58 8-28-60 3- -61 9-16-62 3-24-63 8- 1-64 5-15-65 12-12-65	10.04 10.13 10.15 a 9.8 10.0 a 9.4 10.2 10.3	g 56 g 59 g 60 g 48 g 55 g 34 g 62 g 66
*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	1953-61# 1962-66	6- 6-66	4.72	720
*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	1961-66	11-26-65	11.56	/
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	1959-66	11-12-65	12.29	100
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	1962-66	7-26-66	14.42	560
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	1959-66	11-26-65	11.20	160
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	1959-66	6- 5-66	12.70	/

* Also a low-flow partial-record station.

/ Discharge not determined.

Operated as a continuous-record gaging station.

a Approximately.

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)	Discharge (cfs)
Wisconsin River Basin-Continued							
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	1959-66	2- 8-66	11.96	/
*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	1961-66	3-27-61 3-29-62 9-28-65 2- 8-66	13.96 13.66 14.37 14.75	g 335 g 275 g 425 520
*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	1958-66	2- 8-66	16.37	/
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	1962-66	2- 8-66	10.93	/
*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 6 miles southeast of Lake Delton.	44.9	1957-65# 1966	3-23-66	a 5.6	200
*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	1961-66	2- 8-66	13.11	350
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	1960-66	2- 8-66	a 13.4	/
*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	1958-66	2- 8-66	16.44	650
*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	1959-66	7-27-64 2- 8-66	18.21 12.70	gh 2,460 /
*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	1960-66	2- 8-66	11.71	460
*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	1959-66	2- 9-66	12.23	1,250
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	1958-66	7-13-66	11.36	170
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	1960-66	2- 8-66	d 12.72	/
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 northwest of Waupun.	11.9	1959-66	2- 8-66	d 12.15	/
*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	1960-66	2- 9-66	11.75	160

* 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.

g Not previously published.

h Computed estimate.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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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)	Discharge (cfs)
Rock River Basin-Continued							
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	1959-66	2- 8-66	d 12.65	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	1960-66	5-23-66	13.42	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	1962-66	2- 8-66	10.56	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	1958-66	3- -58 9-14-61 3-29-62 3-13-64 9-20-65 2- 8-66	11.30 10.49 10.22 9.83 9.99 10.35	g 175 g 100 g 80 g 55 g 65 g 90
5-4272.5	Koshkonong River at Sun Prairie, Wis.	SW 1/4 sec. 33, T. 9 N., R. 11 E., at culvert on U. S. Highway 151 in Sun Prairie.	.46	1961-66	5-23-66	10.25	f
*5-4314	Little Turtle Creek at Allens Grove, Wis. (i)	NE 1/4 sec. 6, T. 1 N., R. 15 E., at bridge on country road, .2 mile south of Allens Grove.	42.0	1962-66	4-30-63 2- 9-66	11.12 14.82	g 260 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	1959-66	4- -59 3-26-61 11- 2-61 3-17-63 4- 2-64 3- 1-65 2- 8-66	14.52 12.54 13.58 12.67 11.04 12.82 12.45	g 730 g 330 g 520 g 350 g 135 g 380 g 315
*5-4335	Yellowstone River near Blanchardville, Wis.	NE 1/4 sec. 34, T. 4 N., R. 4 E., .6 mile upstream from bridge on County Trunk F, and 7 miles west-southwest of Blanchardville.	29.1	1954-65# 1966	2- 8-66	9.51	1,750
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	1959-66	2- 8-66	12.16	f
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	1961-66	3-25-62 3-27-63 6-22-64 3- 1-65 2- 8-66	11.30 11.43 11.19 14.03 13.65	g 55 g 62 g 48 g 330 g 275
*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	1961-66	2- 8-66	13.62	f
*5-4372	Raccoon Creek tributary 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.	7.24	1958-66	2- 9-66	11.93	120
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	1960-66	2- 9-66	10.47	f
5-5451	Sugar Creek at Elkhorn, Wis.	SW 1/4 sec. 29, T. 3 N., R. 17 E., at culvert on State Highway 11, 2.0 miles northeast of Elkhorn.	6.33	1962-66	3-19-63 4- 5-64 9-10-65 2- 9-66	10.65 10.35 10.66 11.74	g 49 g 37 g 50 f

* 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.

i Published as Turtle Creek tributary prior to 1966.

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)
Illinois River Basin-Continued							
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	1958-66	10-21-65	13.35	/
*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, 3.0 miles west of Genoa City.	13.0	1962-66	2- 9-66	11.34	/

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 1966

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	1960	4- 2-66	3,980
Streams tributary to Lake Michigan						
Fox River	Lake Michigan	West line NW 1/4 sec. 29, T. 13 N., R. 11 E., at bridge on State Highway 44, and 5.0 miles northeast of Pardeeville, Wis.	58.8	1965	10-20-65	* 32.2
Neenah Creek	Fox River	SW 1/4 SE 1/4 sec. 31, T. 14 N., R. 9 E., at bridge on U. S. Highway 51, and 5 miles south of Endeavor, Wis.	134	1965	10-20-65	* 228
Westfield Creek	do	NE 1/4 SE 1/4 sec. 33, T. 17 N., R. 9 E., at bridge on County Trunk DD, and 1.9 miles northwest of Harrisville, Wis.	44.5		10-20-65	* 84.2
Grand River	do	SE 1/4 SW 1/4 sec. 12, T. 14 N., R. 11 E., and 0.8 mile northwest of Kingston, Wis.	106	1965	10-20-65	* 67.1
Mecan River	do	West line sec. 17, T. 16 N., R. 11 E., at bridge on County Trunk J, and 4.9 miles west of Princeton, Wis.	120	1965	10-19-65	* 16.6
White River	do	SE 1/4 NE 1/4 sec. 24, T. 18 N., R. 10 E., at bridge on County Trunk YY, and 7.6 miles west of Redgranite, Wis.	64.8	1965	10-19-65	* 103
do	do	SE 1/4 NW 1/4 sec. 28, T. 17 N., R. 12 E., at bridge on country road, 0.7 mile upstream from mouth of Sucker Creek, and 5.3 miles northeast of Princeton, Wis.	129	1965	10-19-65	* 128
Rush Creek	do	SE 1/4 NE 1/4 sec. 23, T. 18 N., R. 14 E., at bridge on County Trunk E, and 3.1 miles northeast of Eureka, Wis.	85.1		10-19-65	* 39.5
Wolf River	do	SE 1/4 NW 1/4 sec. 29, T. 36 N., R. 12 E., at bridge on State Highway 27 and 6.7 miles east of Monico, Wis.	37.0		10-20-65	* 40.0
Swamp Creek	Wolf River	NW 1/4 SW 1/4 sec. 7, T. 34 N., R. 12 E., at bridge on County Trunk K, and 1.9 miles east of Post Lake, Wis.	73.3		10-20-65	* 61.4
Huntington River	do	SE 1/4 NE 1/4 sec. 6, T. 33 N., R. 12 E., at bridge on County Trunk T at Cloverdale School, and 0.8 mile northwest of Pearson, Wis.	36.4		10-20-65	* 44.1
Lily River	do	SW 1/4 SE 1/4 sec. 27, T. 33 N., R. 13 E., at bridge on State Highways 52 and 55 in Lily, Wis.	68.2		10-20-65	* 63.1
Evergreen River	do	South line SW 1/4 sec. 17, T. 30 N., R. 15 E., at bridge on country road, and 8.2 miles south of Langlade, Wis.	55.9		10-20-65	* 53.7
West Branch Wolf River	do	East line NE 1/4 sec. 20, T. 29 N., R. 14 E., 0.6 mile below outlet of reservoir, and in Neopit, Wis.	97.2		10-19-65	* 114
do	do	NW 1/4 SW 1/4 sec. 3, T. 28 N., R. 15 E., at bridge on country road, and 4.0 miles northwest of Keshena, Wis.	161		10-19-65	* 165
South Branch Red River	Red River	East line NE 1/4 sec. 9, T. 29 N., R. 12 E., at bridge on County Trunk D, and 0.3 mile north of Matton, Wis.	17.7		10-19-65	* 23.2

* Base flow.

a Approximately.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan-Continued						
Red River	Wolf River	NE 1/4 NE 1/4 sec. 19, T. 28 N., R. 14 E., at bridge on country road and 4.3 miles northwest of Gresham, Wis.	129		10-19-65	* 157
do	do	West line SW 1/4 SW 1/4 sec. 22, T. 27 N., R. 15 E., at bridge on county road, and 3.3 miles northwest of Shawano, Wis.	194		10-19-65	* 215
East Branch Shioc River	Shioc River	West line NW 1/4 sec. 18, T. 25 N., R. 17 E., at bridge on country road, and 2.3 miles north of Navarino, Wis.	21.9		10-20-65	* 3.81
Shioc River	Wolf River	NE 1/4 SW 1/4 sec. 16, T. 23 N., R. 16 E., at bridge on State Highway 187, and 1.2 miles north of Shiocton, Wis.	230		10-20-65	* 62.0
Bear Creek	do	NW 1/4 NE 1/4 sec. 20, T. 22 N., R. 16 E., at bridge on State Highway 76 in Stephenville, Wis.	63.3		10-30-65	* 8.57
Middle Branch Embarrass River	Embarrass River	NE 1/4 NE 1/4 sec. 33, T. 28 N., R. 11 E., 0.1 mile downstream from mouth of Packard Creek, and 2.2 miles east of Eland, Wis.	63.4	1965	10-19-65	* 69.5
South Branch Embarrass River	do	West line sec. 28, T. 27 N., R. 11 E., at bridge on County Trunk M, and 2.8 miles south of Wittenberg, Wis.	52.2	1965	10-19-65	* 46.4
Embarrass River	Wolf River	SW 1/4 SW 1/4 sec. 13, T. 26 N., R. 13 E., at bridge on country road, and 0.9 mile east of Caroline, Wis.	241	1965	10-19-65	* 226
North Branch Embarrass River	Embarrass River	SE 1/4 NW 1/4 sec. 23, T. 27 N., R. 13 E., at bridge on County Trunk G, and 1.2 miles south-east of Tilleda, Wis.	68.4	1965	10-19-65	* 72.1
Pigeon River	do	SW 1/4 NW 1/4 sec. 19, T. 25 N., R. 15 E., at bridge on country road, and 1.4 miles east of Clintonville, Wis.	114	1965	10-20-65	* 145
Embarrass River	Wolf River	South line SW 1/4 sec. 6, T. 22 N., R. 15 E., at bridge on State Highway 54, and 0.7 mile north New London, Wis.	690		10-20-65	* 522
Little Wolf River	do	SW 1/4 SE 1/4 sec. 7, T. 25 N., R. 11 E., at bridge on County Trunk P, and 3.9 miles north of Northland, Wis.	51.8	1965	10-19-65	* 58.0
do	do	SW 1/4 NE 1/4 sec. 9, T. 24 N., R. 13 E., at bridge on State Highway 142, and 4.1 miles north of Symco, Wis.	221	1965	10-20-65	* 200
South Branch Little Wolf River	Little Wolf River	SW 1/4 SE 1/4 sec. 2, T. 22 N., R. 12 E., at bridge on country road, and 3.5 miles south of Ogdensburg, Wis.	170	1965	10-20-65	* 110
do	do	SE 1/4 SW 1/4 sec. 4, T. 22 N., R. 13 E., at bridge on State Highway 22, and 3.6 miles west of Royalton, Wis.	106	1965	10-20-65	* 87.9
Tomorrow River	Waupaca River	SE 1/4 NE 1/4 sec. 28, T. 23 N., R. 10 E., at bridge on U. S. Highway 10, and 0.6 mile south of Amherst, Wis.	78.4	1965	10-20-65	* 54.7
Waupaca River	Wolf River	SE 1/4 SE 1/4 sec. 3, T. 21 N., R. 13 E., at bridge on country road, and 1.5 miles east of Weyauwega, Wis.	332		10-20-65	* 217
Rat River	do	SW 1/4 SE 1/4 sec. 13, T. 20 N., R. 14 E., at bridge on County Trunk MM, and 5.5 miles northwest of Winneconne, Wis.	73.6		10-20-65	* 0+
Pine River	Lake Poygan	SW 1/4 SW 1/4 sec. 29, T. 20 N., R. 12 E., at end of private road, and 2.0 miles northwest of Pine River, Wis.	55.4	1965	10-19-65	* 58.9

* Base flow.

Measurements at Miscellaneous Sites						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan-Continued						
Pine River	Lake Poygan	SE 1/4 NW 1/4 sec. 7, T. 19 N., R. 13 E., at bridge on State Highway 49 at Poy Sippi, Wis.	86.4		10-19-65	* 19.5
Willow Creek	do	SE 1/4 SW 1/4 sec. 1, T. 18 N., R. 11 E., at bridge on County Trunk S, and 2.0 miles north-west of Redgranite, Wis.	109		10-19-65	* 38.1
do	do	West line sec. 8, T. 18 N., R. 13 E., and 0.2 mile east of Auroraville, Wis.	142	1957 1965	10-19-65	* 92.8
Sawyer Creek	Fox River	SW 1/4 NE 1/4 sec. 21, T. 18 N., R. 16 E., at bridge on County Trunk E, and 1.0 mile west of Oskosh, Wis.	15.8		10-19-65	* 2.34
Chippewa River Basin						
Yellow River	Chippewa River	SW 1/4 sec. 24, T. 32 N., R. 3 W., at bridge on County Trunk M, 4.2 miles east of Hannibal, Wis.	91.2	1962-63# 1964	11- 2-65	* 20.6
Black River Basin						
Sour Creek	Fleming Creek	NE 1/4 sec. 14, T. 18 N., R. 7 W., at bridge on County Trunk T, 0.5 mile west of Stevenstown, Wis.		1964	9- 8-66	* 1.01
Wisconsin River Basin						
Portage Canal	Wisconsin River	NW 1/4 sec. 8, T. 12 N., R. 9 E., at culvert on U. S. Highway 51 in Portage, Wis.			10-29-65 5-11-66 8-22-66	b 11.6 b 12.4 b 10.5
Baraboo River	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	2-11-66	5,180
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	2-16-66	20,100
Rock River Basin						
Little Oconomowoc River	Oconomowoc River	SW 1/4 NE 1/4 sec. 19, T. 8 N., R. 18 E., at bridge on County Trunk K, and 2 miles east of Stonebank, Wis.			6- 7-66	* 24.0
Whitewater Creek	Bark River	SE 1/4 SW 1/4 sec. 10, T. 4 N., R. 15 E., 200 ft downstream from bridge on town road (Willis Ray Road), and 1.5 miles southeast of Whitewater, Wis.			11- 2-65 9-14-66	* 18.2 * 11.1
do	do	SW 1/4 SW 1/4 sec. 33, T. 5 N., R. 15 E., 150 ft downstream from bridge on Jefferson-Walworth County line, and 0.3 mile north of Whitewater, Wis.			11- 2-65	* 33.2

* Base flow.

Regular gaging station during this period.

+ Measured at Rock Springs, 5 1/2 miles upstream.

a (Drainage area) approximately.

b Diversion from Wisconsin River to Fox River.

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)
Rock River Basin-Continued						
Whitewater Creek	Bark River	SE 1/4 SE 1/4 sec. 29, T. 5 N., R. 15 E., at bridge over County Trunk U, and 1.5 miles north of Whitewater, Wis.			9-14-66	* 15.4
Turtle Creek	Rock River	NW 1/4 NE 1/4 sec. 35, T. 3 N., R. 15 E., at bridge on island road, and 4.5 miles northwest of Delavan, Wis.			11- 1-65	* 10.8
Turtle Creek Tributary	Turtle Creek	SW 1/4 SE 1/4 sec. 19, T. 2 N., R. 16 E., 150 ft downstream from bridge on County Trunk O, and 0.8 mile south of Delavan, Wis.			11- 2-65	* 44.9
Turtle Creek	Rock River	NE 1/4 NE 1/4 sec. 13, T. 2 N., R. 15 E., 150 ft downstream from sewage outfall of sewage treatment plant just northwest of Delavan, Wis.			11- 1-65	* 62.3
do	do	NE 1/4 SW 1/4 sec. 10, T. 2 N., R. 15 E., at bridge on State Highway 11, and 3.0 miles north of Darien, Wis.			11- 1-65	* 73.1
do	do	SE 1/4 SW 1/4 sec. 17, T. 2 N., R. 15 E., at bridge on U. S. Highway 14, and 2.4 miles northwest of Darien, Wis.			11- 1-65 9-12-66	* 76.5 * 20.8
do	do	SE 1/4 SE 1/4 sec. 24, T. 2 N., R. 14 E., at bridge on Creek Road, and 2.4 miles northwest of Allens Grove, Wis.			11- 1-65	* 91.7
Little Sugar River	Sugar River	NE 1/4 NE 1/4 sec. 21, T. 3 N., R. 8 E., 1.0 mile upstream of gage, and 2.5 miles southeast of Monticello, Wis.			9-12-66	* 31.3
Piscasaw Creek	Kishwaukee River	SE 1/4 SE 1/4 sec. 36, T. 1 N., R. 15 E., at bridge on Wisconsin-Illinois state line, and 3.4 miles east of Sharon, Wis.			11- 2-65 9-12-66	* 4.82 * 3.11
Illinois River Basin						
Fox River	Illinois River	SW 1/4 NW 1/4 sec. 9, T. 8 N., R. 20 E., at bridge on State Highway 74, and 1.8 miles northeast of Lannon, Wis.			6- 9-66	a 1.20
do	do	NE 1/4 NE 1/4 sec. 29, T. 8 N., R. 20 E., at bridge on country road, 1.0 mile north of County Trunk VV, and 1.3 miles southeast of Lannon, Wis.			9-12-66	* 0
do	do	NW 1/4 SE 1/4 sec. 31, T. 8 N., R. 20 E., at bridge on County Trunk K, and 1.9 miles west of Marcy, Wis.			6- 9-66 9-19-66	a 6.08 a* 0
Fox River Tributary	Fox River	NW 1/4 SW 1/4 sec. 6, T. 7 N., R. 20 E., at bridge on country road, south of County Trunk V, and 2.9 miles southeast of Sussex, Wis.			9-12-66	* 1.16
Poplar Creek	do	SE 1/4 SE 1/4 sec. 31, T. 7 N., R. 20 E., at bridge on County Trunk SS, and 2.2 miles west of Calhoun, Wis.			6- 8-66 9-19-66	a .98 a* .10
do	do	NW 1/4 NW 1/4 sec. 29, T. 7 N., R. 20 E., at bridge on County Trunk Y, and 3.0 miles north-east of Waukesha, Wis.			9-12-66	* .64
Pewaukee Lake North Inlet (west branch)	Pewaukee Lake	NW 1/4 SE 1/4 sec. 6, T. 7 N., R. 19 E., at north-south dump fence, and 2.3 miles east of Hartland, Wis.			6- 2-66 9-19-66	a 2.16 a* 1.71
Pewaukee Lake North Inlet (east branch)	do	SE 1/4 NE 1/4 sec. 6, T. 7 N., R. 19 E., at bridge of culverts under State Highway 16, and 2.4 miles east of Hartland, Wis.			6- 2-66 9-19-66	a* .80 a* 0

* Base flow.

a Furnished by Wisconsin State Conservation Department.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Illinois River Basin-Continued						
Pewaukee Lake Inlet	Pewaukee Lake	NE 1/4 NW 1/4 sec. 24, T. 7 N., R. 18 E., at stone banked channel 100 ft east of Angela Road crossing, and 3.2 miles southwest of Pewaukee, Wis.			6- 2-66 9-19-66	a* 1.04 a* 1.35
Pewaukee Lake Outlet	do	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.			6- 2-66 9-19-66	a 8.43 a .20
Pewaukee River	Fox River	SW 1/4 NE 1/4 sec. 26, T. 7 N., R. 19 E., at bridge on State Highway 164, and 1.5 miles northeast of Waukesha, Wis.			9-12-66	* .47
Fox River	Illinois River	NE 1/4 SW 1/4 sec. 20, T. 6 N., R. 19 E., at bridge on County Trunk HI, and 4.3 miles southwest of Waukesha, Wis.			9-12-66	* 19.3
Spring Lake Outlet	Saylesville Pond	SE 1/4 SW 1/4 sec. 34, T. 6 N., R. 18 E., at bridge on County Trunk X, and 1.7 miles south of Genesee, Wis.			6- 2-66 9-22-66	a 1.20 a .45
Saylesville Pond Outlet	Fox River	SW 1/4 SW 1/4 sec. 25, T. 6 N., R. 18 E., at bridge on County Trunk X, and 1.9 miles east of Genesee, Wis.			6- 2-66 9-19-66	a 11.7 a 6.73
Fox River	Illinois River	NW 1/4 SE 1/4 sec. 31, T. 6 N., R. 19 E., 100 ft upstream from bridge on County Trunk I, and 3.6 miles southeast of Genesee, Wis.			9-13-66	* 36.3
Mill Creek	Pebble Brook	SE 1/4 NW 1/4 sec. 26, T. 6 N., R. 19 E., at bridge on County Trunk F, and 3.3 miles west of Prospect, Wis.			6- 8-66 9-19-66	a 1.60 a* .54
Pebble Brook	Fox River	NW 1/4 NE 1/4 sec. 27, T. 6 N., R. 19 E., at County Trunk I, and 2.2 miles south of Waukesha, Wis.			6- 3-66	a .62
do	do	NW 1/4 SE 1/4 sec. 33, T. 6 N., R. 19 E., at SOO Line railroad crossing, and 2.2 miles north of Vernon, Wis.			6- 2-66 9-19-66	a 3.68 a* 1.07
Mill Brook	do	SW 1/4 NW 1/4 sec. 10, T. 5 N., R. 19 E., at bridge on country road, and 2.7 miles northwest of Big Bend, Wis.			6- 8-66	a* .42
do	do	SW 1/4 SW 1/4 sec. 4, T. 5 N., R. 19 E., at bridge on County Trunk XX, and 5.2 miles northeast of Mukwonago, Wis.			6- 2-66 9-19-66	a 1.93 a* 1.16
LuLu Lake Inlet	Mukwonago River	SE 1/4 SW 1/4 sec. 2, T. 4 N., R. 17 E., 1,000 ft upstream from Lake LuLu inlet along old railroad grade line, and 4.1 miles northwest of East Troy, Wis.			5-27-66 9-22-66	a 4.18 a* 2.10
Mukwonago River at Eagle Spring Lake Outlet	Phantom Lake	SE 1/4 NW 1/4 sec. 36, T. 5 N., R. 17 E., at outlet of culvert below County Trunk E, and 1.8 miles south of Jericho, Wis.			9-13-66	6.85
Jericho 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.			6- 2-66 9-22-66	a 2.97 a* .93
Mukwonago River	Phantom Lake	NW 1/4 NE 1/4 sec. 32, T. 5 N., R. 18 E., at bridge on country road, and 3.2 miles west of Mukwonago, Wis.			9-13-66	* 12.0
Mud Lake Outlet	Mukwonago River	NE 1/4 SW 1/4 sec. 18, T. 4 N., R. 18 E., at culvert under country road, and 2.5 miles east of Troy Center, Wis.			5-27-66 9-22-66	a .23 a .02
Lake Beulah Outlet	do	SW 1/4 NW 1/4 sec. 4, T. 4 N., R. 18 E., 200 ft downstream from dam outlet near County Trunk J, and 3.1 miles southwest of Mukwonago, Wis.			9-13-66	.37

* Base flow.

a Furnished by Wisconsin State Conservation Department.

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)
Illinois River Basin-Continued						
Wood Lake Outlet	Mukwonago River	SE 1/4 NW 1/4 sec. 33, T. 5 N., R. 18 E., at bridge, and 2.5 miles southwest of Mukwonago, Wis.			9-22-66	a 0.09
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.			9-13-66	* 13.0
Fox River	Illinois River	NE 1/4 SE 1/4 sec. 24, T. 5 N., R. 18 E., at bridge on State Highway 15, and 1.6 miles northeast of Mukwonago, Wis.			9-13-66	* 33.6
Trout Pond Inlet	Fox River	SW 1/4 SE 1/4 sec. 14, T. 5 N., R. 19 E., at town road, and 0.5 mile west of Big Bend, Wis.			6- 8-66 9-19-66	a .30 a* .18
Big Bend Pond Outlet	do	NW 1/4 SW 1/4 sec. 24, T. 5 N., R. 19 E., at bridge on County Trunk F, and 0.2 mile southeast of Big Bend, Wis.			6- 8-66 9-19-66	a .83 a .30
Tichigan Creek	do	SW 1/4 SW 1/4 sec. 15, T. 4 N., R. 19 E., at southeast corner of parking lot near country road, and 3.0 miles northwest of Waterford, Wis.			6- 9-66 9-14-66	a 2.08 a* 1.60
Fox River	Illinois River	NE 1/4 SE 1/4 sec. 35, T. 4 N., R. 19 E., 400 ft downstream from bridge on State Highway 20 in Waterford, Wis.			9-13-66	* 48.7
Little Muskego Lake Tributary	Muskego Creek	SW 1/4 SE 1/4 sec. 32, T. 6 N., R. 20 E., 10 ft downstream from east side of bridge on County Trunk Y, and 0.8 mile south of Prospect, Wis.			6- 9-66 9- 9-66	a 2.59 a* .65
Muskego Creek	Little Muskego Lake	NE 1/4 NE 1/4 sec. 5, T. 5 N., R. 20 E., 150 ft downstream from bridge on County Trunk HH, and 1.2 miles southeast of Prospect, Wis.			5-19-66 9-19-66	a 4.17 a* 1.12
do	Muskego Lake	SE 1/4 SW 1/4 sec. 9, T. 5 N., R. 20 E., at bridge on County Trunk Y, and 2.7 miles southwest of Tess Corners, Wis.			5-19-66 9-19-66	a 7.65 a .19
Muskego Lake Drainage Canal	Wind Lake	SW 1/4 NE 1/4 sec. 4, T. 4 N., R. 20 E., at bridge on State Highway 36, and just northeast of Wind Lake, Wis.			9-14-66	* 0
Wind Lake Drainage Canal	Fox River	NE 1/4 NW 1/4 sec. 16, T. 4 N., R. 20 E., downstream from dam near town road, and 4.9 miles northeast of Waterford, Wis.			9-14-66	* 0
Long Lake Outlet	Waubesee Lake	NE 1/4 NE 1/4 sec. 7, T. 4 N., R. 20 E., on dam sill, and 4.8 miles northeast of Waterford, Wis.			5-19-66 9-14-66	a* 2.93 a 0
Waubesee Lake Outlet	Wind Lake Drainage Canal	SE 1/4 SW 1/4 sec. 8, T. 4 N., R. 20 E., 20 ft below outlet from private pond just off State Highway 36, and 4.5 miles northeast of Waterford, Wis.			5-19-66 9-14-66	a 4.07 a 0
Goose Lake Branch Canal	do	SW 1/4 NE 1/4 sec. 33, T. 4 N., R. 20 E., at town road, and 3.5 miles east of Waterford, Wis.			6- 8-66 9-15-66	a 1.41 a* .07
Wind Lake Drainage Canal	Fox River	NW 1/4 SW 1/4 sec. 1, T. 3 N., R. 19 E., at bridge on State Highway 20, and 1.0 mile northeast of Rochester, Wis.			9-14-66	* 0
Eagle Lake Outlet	Eagle Creek	SW 1/4 NE 1/4 sec. 21, T. 3 N., R. 20 E., at ditch 30 ft upstream from irrigation pump site, and 2.2 miles northwest of Kansasville, Wis.			5-19-66 9-14-66	a 4.93 a 0
Eagle Creek	Fox River	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.			6- 8-66 9-14-66	a 1.81 a* .26

* Base flow.

a Furnished by Wisconsin State Conservation Department.

Measurements at Miscellaneous Sites

Measurements at Miscellaneous Sites						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Illinois River Basin-Continued						
Brock Lake Outlet	Long Lake	SE 1/4 SW 1/4 sec. 16, T. 3 N., R. 19 E., at culvert on farm road between Long Lake and Brock Lake, and 2.6 miles northeast of Burlington, Wis.			9-22-66	a 0.87
Long Lake Outlet	Fox River	NE 1/4 NW 1/4 sec. 28, T. 3 N., R. 19 E., at culvert on downstream side of State Highway 83, and 1.4 miles northeast of Burlington, Wis.			9-22-66	a 1.06
Honey Creek	Honey Lake	SE 1/4 NW 1/4 sec. 36, T. 4 N., R. 16 E., 30 ft downstream from concrete dam house, and 7.9 miles south of Palmyra, Wis.			5-25-66	a 5.54
do	do	NE 1/4 NE 1/4 sec. 26, T. 4 N., R. 17 E., at bridge on country road, and 2.1 miles west of East Troy, Wis.			9-22-66	a* 4.89
do	do	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.			9-14-66	* 5.63
do,	do	NW 1/4 NW 1/4 sec. 30, T. 4 N., R. 18 E., at bridge on country road, and 1 mile west of East Troy, Wis.			11- 3-65	* 21.7
do	do	NW 1/4 SW 1/4 sec. 22, T. 4 N., R. 18 E., 200 ft downstream from culverts under country road (Carver School Road), and 2.0 miles east of East Troy, Wis.			9-14-66	* 7.19
Spring Creek	Honey Creek	NE 1/4 SW 1/4 sec. 23, T. 4 N., R. 18 E., 300 ft upstream from bridge on State Highway 20, and 3.5 miles east of East Troy, Wis.			9-22-66	a* .22
Honey Creek	Honey Lake	NW 1/4 NW 1/4 sec. 24, T. 4 N., R. 18 E., at culverts under country road, and 4.3 miles east of East Troy, Wis.			11- 3-65	* 32.0
do	do	NE 1/4 SE 1/4 sec. 1, T. 3 N., R. 18 E., at bridge on County Trunk D, and 2.0 miles north of Vienna, Wis.			9-13-66	* 10.2
Sugar Creek	Honey Creek	SW 1/4 SW 1/4 sec. 13, T. 3 N., R. 16 E., at bridge on country road, and 2.2 miles northwest of Elkhorn, Wis.			9-13-66	* 1.95
do	do	SW 1/4 SW 1/4 sec. 8, T. 3 N., R. 17 E., at bridge on State Highway 15, and 3.3 miles northeast of Elkhorn, Wis.			11- 3-65 9-13-66	* * 7.75 2.58
do,	do	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.			11- 3-65 9-13-66	* * 18.1 4.89
do	do	NW 1/4 SW 1/4 sec. 8, T. 3 N., R. 18 E., 400 ft downstream from bridge on County Trunk G, and 3.9 miles south of East Troy, Wis.			11- 3-65 9-13-66	* * 21.6 6.58
Sugar Creek Tributary	Sugar Creek	NW 1/4 SW 1/4 sec. 15, T. 3 N., R. 18 E., at culverts, and 2.5 miles west of Vienna, Wis.			9-13-66	* 1.55
Honey Creek	Ecno Lake	NW 1/4 NE 1/4 sec. 30, T. 3 N., R. 19 E., at county line, and 1.0 mile northwest of Burlington, Wis.			9-12-66	* 0
Fontana Creek	Lake Geneva	NW 1/4 SW 1/4 sec. 14, T. 1 N., R. 16 E., 60 ft upstream from second bridge in Fontana, Wis.			5-19-66 9-15-66	a 1.13 a .90
Williams Bay Creek	do	SE 1/4 NW 1/4 sec. 6, T. 1 N., R. 17 E., at timber bridge on Shell Street, and just on the north point of Williams Bay in Williams Bay, Wis.			5-19-66 9-15-66	a 1.31 a .98

* Base flow.

a Furnished by Wisconsin State Conservation Department.

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)
Illinois River Basin-Continued						
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.			9-12-66	* 1.69
do	do	SE 1/4 SW 1/4 sec. 20, T. 2 N., R. 18 E., 400 ft upstream from bridge on country road, and 1.9 miles northeast of Lake Geneva, Wis.			5-19-66 9-15-66	a 39.9 a 5.14
Como Creek Tributary	Como Creek	SE 1/4 SW 1/4 sec. 23, T. 2 N., R. 17 E., at bridge on country road, and 1.1 miles northwest of Lake Geneva, Wis.			9-22-66	a* .25
Como Creek	White River	SE 1/4 SE 1/4 sec. 23, T. 2 N., R. 17 E., at bridge on County Trunk NN, and 1.0 mile north of Lake Geneva, Wis.			5-25-66 9-15-66	a 7.46 a .19
White River	Echo Lake	NW 1/4 SW 1/4 sec. 16, T. 2 N., R. 18 E., at bridge on country road, and 2.0 miles southwest of Lyons, Wis.			11- 2-65	* 56.8
Ore Creek	White River	SW 1/4 NE 1/4 sec. 9, T. 2 N., R. 18 E., 300 ft upstream from bridge on State Highway 36, and 0.7 mile southwest of Lyons, Wis.			5-26-66 9-15-66	a 4.70 a .96
Indian Run Creek	do	SW 1/4 SE 1/4 sec. 3, T. 2 N., R. 18 E., at bridge on State Highway 36, and 0.3 mile east of Lyons, Wis.			5-26-66 9-15-66	a 1.12 a .93
Lake Ivanhoe Outlet	do	NE 1/4 SW 1/4 sec. 35, T. 2 N., R. 18 E., at culvert under State Highway 50, and 4.8 miles east of Lake Geneva, Wis.			5-26-66 9-14-66	a 3.38 a .60
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.			9-13-66	* 85.6
Spring Brook	Fox River	SE 1/4 NW 1/4 sec. 17, T. 2 N., R. 19 E., in raceway at outlet of Bohner Lake, and 2.8 miles south of Burlington, Wis.			5-27-66 9-15-66	a 2.36 a .17
do	do	SW 1/4 NW 1/4 sec. 4, T. 2 N., R. 19 E., at bridge on State Highway S3, and 0.5 mile southeast of Burlington, Wis.			9-22-66	a* .72
Browns Lake Outlet	do	NE 1/4 NW 1/4 sec. 34, T. 3 N., R. 19 E., at box elder on miniature golf range upstream from Wisconsin Highway 11, and 2.0 miles east of Burlington, Wis.			5-19-66 9-15-66	a .44 a 0
Hoosier Creek Canal	do	NW 1/4 SE 1/4 sec. 2, T. 2 N., R. 19 E., 60 ft upstream from building on corner, and 3.5 miles east of Burlington, Wis.			6- 8-66 9-14-66	a 2.09 a* .81
Hoosier Branch Canal	Hoosier Creek	NW 1/4 SW 1/4 sec. 11, T. 2 N., R. 19 E., at bridge on country road, and 3.6 miles north of Wheatland, Wis.			6- 8-66 9-14-66	a .31 a* .08
Hoosier Creek	Fox River	SW 1/4 SE 1/4 sec. 10, T. 2 N., R. 19 E., at country road bridge, 0.4 mile upstream from mouth, and 6.9 miles west of Brighton, Wis.			6- 8-66 9-14-66	a 3.66 a* .70
Fox River Tributary	do	NW 1/4 SW 1/4 sec. 15, T. 2 N., R. 19 E., at bridge on State Highway 83, and 7.5 miles west of Brighton, Wis.			6- 8-66 9-15-66	a* 1.44 a* .96
do	do	SW 1/4 NW 1/4 sec. 23, T. 2 N., R. 19 E., 4 ft from west end of culvert on country road, and 2.0 miles northwest of Wheatland, Wis.			6- 8-66 9-14-66	a .91 a* .12
Fox River	Illinois River	NW 1/4 NW 1/4 sec. 26, T. 2 N., R. 19 E., at bridge on County Trunk J, and 1.5 miles northwest of Wheatland, Wis.			9-12-66	* 103
Fox River Tributary	Fox River	NW 1/4 NE 1/4 sec. 27, T. 2 N., R. 19 E., at culvert on County Trunk KD, 0.4 mile upstream from mouth, and 1.7 miles northwest of Wheatland, Wis.			6- 8-66 9-14-66	a* .92 a* 1.12

* Base flow.

a Furnished by Wisconsin State Conservation Department.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Illinois River Basin-Continued						
New Munster Creek	Fox River	NE 1/4 SW 1/4 sec. 35, T. 2 N., R. 19 E., at bridge on State Highway 83, 0.6 mile upstream from mouth, and 0.7 mile northeast of New Munster, Wis.			5-26-66 9-14-66	a 4.90 a* 1.64
Peterson Creek	do	SW 1/4 SW 1/4 sec. 36, T. 2 N., R. 19 E., at culvert on County Trunk W, 0.2 mile upstream from mouth, and 0.7 mile south of Wheatland, Wis.			5-26-66 9-15-66	a 7.84 a* .03
Palmer Creek	do	NW 1/4 NE 1/4 sec. 2, T. 1 N., R. 19 E., at culvert on State Highways 50 and 83, 0.7 mile upstream from mouth, and 0.6 mile east of New Munster, Wis.			5-26-66 9-14-66	a 2.96 a* .91
Bassett Creek	do	NE 1/4 NW 1/4 sec. 12, T. 1 N., R. 19 E., 100 ft upstream from bridge on County Trunk W, 0.1 mile upstream from mouth, and 1.5 miles southeast of New Munster, Wis.			5-27-66 9-14-66	a 2.24 a* .58
Silver Lake Outlet	do	SE 1/4 NW 1/4 sec. 17, T. 1 N., R. 20 E., on sill of dam, just upstream from County Trunk F, and 0.5 mile southeast of Silver Lake, Wis.			5-26-66 9-14-66	a 6.54 a 0
Camp Lake Outlet	do	NW 1/4 NW 1/4 sec. 33, T. 1 N., R. 20 E., at concrete sill of dam just upstream from County Trunk C, and 1.8 miles east of Wilmot, Wis.			5-27-66 9-14-66	a 2.67 h 0
Powers Lake Outlet	Nippersink Creek	NW 1/4 SE 1/4 sec. 13, T. 1 N., R. 18 E., at west end of concrete culvert under county road, and 2.8 miles southwest of Slades Corners, Wis.			5-26-66 9-15-66	a 3.87 a 0
East Branch Nippersink Creek	Fox River	SE 1/4 SE 1/4 sec. 23, T. 1 N., R. 18 E., at bridge on County Trunk U, and 7.2 miles southeast of Lake Geneva, Wis.			9-22-66	a* .56
West Branch Nippersink Creek	do	NE 1/4 SW 1/4 sec. 26, T. 1 N., R. 18 E., 300 ft downstream from bridge on town road, 5 ft upstream from walk bridge, and 7.3 miles southeast of Lake Geneva, Wis.			9-22-66	a* 8.77
Nippersink Creek	do	SW 1/4 SE 1/4 sec. 35, T. 1 N., R. 18 E., at bridge on County Trunk B, and 8.4 miles southeast of Lake Geneva, Wis.			11- 2-65 9-22-66	* 37.3 a* 11.0
do	do	NW 1/4 NW 1/4 sec. 7, T. 46 N., R. 7 E., at bridge on country road, 0.6 mile south of Wisconsin-Illinois state line, and 2.1 miles northwest of Hebron, Illinois.			11- 2-65	* 3.95

* Base flow.

a Furnished by Wisconsin State Conservation Department.

LOW-FLOW INVESTIGATIONS

Low-flow investigations in Pine River basin of northeast Wisconsin.

During Sept. 20-23, 1966, a series of current-meter discharge measurements was made in the Pine River basin, a tributary of the Menominee River in northeast Wisconsin. These measurements and additional measurements to be made in the future, will be 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 Sept. 20. Total rainfall for September 1966 averaged about two inches for the basin. No measureable precipitation occurred during the period Sept. 20-23.

The measurements obtained should represent base flow.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Pine River	SE 1/4 NW 1/4 sec. 30, T. 39 N., R. 13 E., at bridge on country road, 4.6 miles west of State Highway 55, 9.1 miles northeast of Hiles, Wis.	—	9-21-66	2.11
Kimball Creek	SW 1/4 NW 1/4 sec. 27, T. 39 N., R. 12 E., at culvert on country road, 8.0 miles west of State Highway 55, 8.7 miles north of Hiles, Wis.	—	9-21-66	.48
Pine River	NW 1/4 NW 1/4 sec. 20, T. 39 N., R. 13 E., at bridge on country road, 3.8 miles west of State Highway 55, 9.7 miles southwest of Alvin, Wis.	—	9-21-66	5.70
McDonald Creek	NW 1/4 NE 1/4 sec. 17, T. 39 N., R. 13 E., at bridge on country road, 3.2 miles west of State Highway 55, 8.8 miles southwest of Alvin, Wis.	—	9-21-66	6.93
Pine River	SE 1/4 NE 1/4 sec. 35, T. 40 N., R. 13 E., at bridge on country road, 0.4 mile west of State Highway 55, 5.3 miles south of Alvin, Wis.	—	9-21-66	15.9
Pine 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.	—	9-21-66	22.7
Sawyer Creek	SW 1/4 SW 1/4 sec. 14, T. 39 N., R. 13 E., at culvert on country road, 1.0 mile west of State Highway 55, 8.5 miles northwest of Popple River, Wis.	—	9-21-66	.56
Pine River below mouth of Pine Creek	SE 1/4 NE 1/4 sec. 18, T. 39 N., R. 14 E., at end of country road, 2.0 miles east of State Highway 55, 6.6 miles northwest of Popple River, Wis.	—	9-20-66	28.8
Pine River	Center of sec. 12, T. 39 N., R. 14 E., at bridge on country road, 6.5 miles east of State Highway 55, 5.8 miles north of Popple River, Wis.	—	9-20-66	47.1
Lilypad Creek	SW 1/4 SE 1/4 sec. 14, T. 40 N., R. 14 E., at culvert on country road, 5.8 miles east of State Highway 55, 7.0 miles southeast of Alvin, Wis.	—	9-23-66	3.26
Stevens Creek	SE 1/4 SW 1/4 sec. 19, T. 40 N., R. 15 E., at culverts of country road, 0.6 miles west of State Highway 139, 1.6 miles northwest of Tipler, Wis.	—	9-22-66	5.81
Meadowbrook Creek	SW 1/4 SE 1/4 sec. 35, T. 40 N., R. 14 E., at bridge on country road, 4.8 miles south of State Highway 70, 3.7 miles southwest of Tipler, Wis.	—	9-23-66	2.45
Pine River	SE 1/4 SW 1/4 sec. 4, T. 39 N., R. 15 E., at bridge on country road, 1.3 miles east of State Highway 139, 2.6 miles south of Tipler, Wis.	—	9-21-66	66.6
Long Lake Outlet	NE 1/4 NW 1/4 sec. 19, T. 39 N., R. 15 E., at bridge on country road, 0.1 mile west of State Highway 139, at Long Lake, Wis.	—	9-21-66	5.11
Fay Lake Outlet	SE 1/4 NW 1/4 sec. 15, T. 39 N., R. 15 E., at bridge on country road, 2.4 miles east of State Highway 139, 3.3 miles northeast of Long Lake, Wis.	—	9-20-66	6.21
Lauterman Creek	SE 1/4 NE 1/4 sec. 32, T. 40 N., R. 16 E., at culvert on U. S. Forest Service road 2154, 1.4 miles south of State Highway 70, 6.0 miles southeast of Tipler, Wis.	—	9-21-66	2.55
Wakefield Creek	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.	—	9-21-66	.76
Sevenmile Creek	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.	—	9-21-66	.39

Low-flow investigations in Pine River basin of northeast Wisconsin--Continued.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Pine River	NE 1/4 NW 1/4 sec. 11, T. 39 N., R. 17 E., 1.4 miles west of State Highway 101, 5.0 miles southwest of Florence, Wis.	—	9-21-66	91.6
Loon Lake Outlet	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, 4.3 miles southwest of Florence, Wis.	—	9-21-66	.71
Seidel Creek	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.	—	9-21-66	.42
Pine River	SW 1/4 SE 1/4 sec. 15, T. 39 N., R. 17 E., at bridge on State Highway 101, 8.5 miles northeast of Fence, Wis.	—	9-21-66	97.5
Popple River	SW 1/4 SW 1/4 sec. 4, T. 38 N., R. 14 E., at bridge on country road, 3.1 miles east of State Highway 55, 3.4 miles west of Popple River, Wis.	—	9-21-66	3.24
Little Popple River	SE 1/4 SE 1/4 sec. 27, T. 38 N., R. 14 E., at culvert on country road, 1.0 mile west of State Highway 139, at Newald, Wis.	—	9-20-66	.52
Little Popple River	SW 1/4 NE 1/4 sec. 12, T. 38 N., R. 14 E., at culvert at Popple River, Wis.	—	9-20-66	.46
Popple River	SE 1/4 SW 1/4 sec. 6, T. 38 N., R. 15 E., at bridge on Highway 139, 3.2 miles south of Long Lake.	—	9-21-66	4.62
Riley Creek	NE 1/4 NW 1/4 sec. 10, T. 38 N., R. 15 E., at culvert on country road, 3.1 miles east of State Highway 139, 4.6 miles southeast of Long Lake, Wis.	—	9-21-66	1.84
Morgan Creek	SE 1/4 SE 1/4 sec. 18, T. 38 N., R. 16 E., at culverts on country road, 5.7 miles west of State Highway 101, 5.1 miles northwest of Fence, Wis.	—	9-20-66	1.22
Simpson Creek	NE 1/4 NW 1/4 sec. 36, T. 38 N., R. 15 E., at bridge on country road, 7.0 miles west of State Highway 101, 6.7 miles southwest of Fence, Wis.	—	9-21-66	5.25
South Branch Popple River	SW 1/4 NE 1/4 sec. 25, T. 38 N., R. 15 E., at culverts on country road, 7.1 miles west of State Highway 101, 6.6 miles west of Fence, Wis.	—	9-21-66	8.45
Rock Creek	SW 1/4 SE 1/4 sec. 29, T. 38 N., R. 16 E., at culverts on country road, 4.8 miles west of State Highway 101, 4.3 miles southwest of Fence, Wis.	—	9-21-66	2.82
Hendricks Creek	SW 1/4 SW 1/4 sec. 6, T. 38 N., R. 17 E., at small bridge off country road, 0.9 mile west of State Highway 101, 3.5 miles north of Fence, Wis.	—	9-21-66	7.86
Popple 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.	—	9-21-66	38.5
Popple River	SW 1/4 NE 1/4 sec. 4, T. 38 N., R. 17 E., 0.9 mile east of State Highway 101, 4.9 miles northeast of Fence, Wis.	—	9-22-66	36.6
Woods Creek	NE 1/4 NE 1/4 sec. 27, T. 39 N., R. 15 E., at culvert on U. S. Forest Service Road 2156, 3.7 miles east of State Highway 139, 3.5 miles east of Long Lake, Wis.	—	9-20-66	.22
Woods Creek	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.	—	9-20-66	1.38
Woods Creek	Center of sec. 23, T. 39 N., R. 16 E., at culvert on country road, 3.4 miles west of State Highway 101, 7.1 miles north of Fence, Wis.	—	9-21-66	6.68
Patten Creek tributary to 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.	—	9-21-66	2.00

LOW-FLOW INVESTIGATIONS

Low-flow investigations in Pine River basin of northeast Wisconsin--Continued.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Halls Creek	NE 1/4 NE 1/4 sec. 31, T. 39 N., R. 18 E., on country road, 5.2 miles east of State Highway 101, 7.3 miles south of Florence, Wis.	—	9-22-66	3.28
Pine River tributary	Center of sec. 8, T. 39 N., R. 18 E., at culvert on County Trunk D, 3.5 miles south of Florence, Wis.	—	9-21-66	.26
Emily Lake Outlet	NE 1/4 SW 1/4 sec. 8, T. 39 N., R. 18 E., at culvert on County Trunk D, 3.7 miles southeast of Florence, Wis.	—	9-21-66	2.07

Low-flow investigations in central sand plains of Wisconsin.

Three series of current-meter measurements were made on several streams in the central sand plains during the 1966 water year. These measurements, plus measurements made during the 1964 and 1965 water years, and some additional measurements to be made in the 1967 water year, will be used to study ground-water discharge from various parts of these basins. On Nov. 5, 1965, a series of seven current-meter measurements was made in ditch 5 of upper Tenmile Creek basin. On June 1-2, 1966, 49 current-meter measurements were made on several sand plains streams, and on Aug. 9-12, 1966, 60 additional current-meter measurements were made over this same area.

The measurements in November and June represent a condition of no overland runoff. Oct. 21, 1965, was the last day of rain prior to Nov. 5, 1965 and May 24, 1966, was the last day of rain prior to June 1, 1966. The last significant rainfall prior to the Aug. 9-12, 1966, measurements occurred on Aug. 1, 1966. However, 0.04 inch of rain fell on Aug. 6, about 0.3 inch on Aug. 8, and about 0.14 inch on Aug. 11. It is evident that the August measurements were not made under ideal conditions, but the measurements should essentially represent base flow.

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, Wis.	—	6- 2-66 8-11-66	2.54 1.42
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, Wis.	—	8-11-66	3.57
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, Wis.	—	6- 2-66 8-11-66	7.61 5.51
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, Wis.	—	6- 2-66 8-11-66	14.0 11.4
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, Wis.	—	6- 1-66 8-11-66	15.9 12.5
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, Wis.	—	6- 2-66 8-11-66	7.71 4.91
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, Wis.	—	6- 1-66 8- 9-66 8-11-66	12.4 5.52 5.66
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, Wis.	—	6- 1-66 8- 9-66 8-11-66	32.6 18.5 17.7
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, Wis.	—	6- 1-66 8-12-66	8.25 .73
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, Wis.	—	6- 1-66 8-12-66	10.5 .50
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, Wis.	—	6- 1-66 8-12-66	11.6 7.81
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, Wis.	—	6- 1-66 8-12-66	18.3 8.54
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, Wis.	—	6- 1-66 8-12-66	3.40 2.48
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, Wis.	—	6- 1-66 8-12-66	3.60 .31
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, Wis.	—	6- 1-66 8-12-66	33.1 10.4
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, Wis.	—	6- 2-66 8-11-66	1.53 .13

LOW-FLOW INVESTIGATIONS

Low-flow investigations in central sand plains of Wisconsin--Continued.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
Tennile Creek	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, Wis.	—	6- 1-66 8- 9-66 8-11-66	31.8 10.3 9.57
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, Wis.	—	6- 1-66 8- 9-66 8-11-66	40.9 15.7 17.8
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, Wis.	—	6- 1-66 8- 9-66 8-11-66	51.1 24.6 23.2
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, Wis.	—	6- 1-66 8- 9-66 8-11-66	74.2 51.6 51.8
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, Wis.	—	6- 2-66 8-12-66	.86 .09
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, Wis.	—	6- 2-66 8-12-66	3.69 1.62
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, Wis.	—	6- 2-66 8-12-66	9.81 3.45
do	NE 1/4 SE 1/4 sec. 12, T. 20 N., R. 6 E., at County Trunk D, 7.9 miles east of New Rome, Wis.	—	8-12-66	3.88
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, Wis.	—	6- 2-66 8-12-66	3.40 1.15
do	NE 1/4 NE 1/4 sec. 19, T. 20 N., R. 7 E., at check dam 9 in ditch 4, 8.7 miles east of New Rome, Wis.	—	6- 2-66 8-12-66	4.63 3.99
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, Wis.	—	6- 2-66 8-12-66	10.5 5.01
do	SE 1/4 NE 1/4 sec. 14, T. 20 N., R. 6 E., at bridge on country road, 6.8 east of New Rome, Wis.	—	6- 2-66 8-12-66	34.7 15.7
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, Wis.	—	6- 2-66 8- 9-66 8-12-66	4.35 3.05 3.07
Fourteenmile Creek	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, Wis.	—	6- 2-66 8- 9-66 8-12-66	53.4 32.5 31.0
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, Wis.	—	6- 2-66 8- 9-66 8-12-66	63.2 41.8 42.6
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, Wis.	—	8-11-66	5.03
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, Wis.	—	6- 2-66	11.0
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, Wis.	—	6- 1-66 8-11-66	18.0 12.0
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, Wis.	—	6- 1-66 8-11-66	25.4 15.6
Big Roche a Cri Creek Tributary	SW 1/4 SE 1/4 sec. 6, T. 19 N., R. 7 E., at culvert on country road, 8.9 miles west of Hancock, Wis.	—	6- 1-66	2.54
do	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, Wis.	—	6- 1-66 8-11-66	13.9 6.87

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, Wis.	—	6- 1-66 8-11-66	1.87 0
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, Wis.	—	8-12-66	.05
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, Wis.	—	6- 2-66 8-11-66	2.52 .92
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, Wis.	—	11- 5-65	1.43
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, Wis.	—	11- 5-65	7.60
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, Wis.	—	6- 2-66 8-11-66	.26 0
do	SE 1/4 SW 1/4 sec. 10, T. 21 N., R. 8 E., in ditch 5, 600 feet above mouth of north lateral, 1.0 mile west of U. S. Highway 51, and 1.5 miles west of Bancroft, Wis.	—	11- 5-65	1.12
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, Wis.	—	11- 5-65	8.89
do	NE 1/4 NE 1/4 sec. 16, T. 21 N., R. 8 E., in ditch 5, 300 feet below check dam 31, 1.8 miles west of Bancroft, Wis.	—	11- 5-65	8.83
do	NE 1/4 NE 1/4 sec. 16, T. 21 N., R. 8 E., in ditch 5, 750 feet below check dam 31, 1.9 miles west of Bancroft, Wis.	—	11- 5-65	9.47
do	NW 1/4 NW 1/4 sec. 16, T. 21 N., R. 8 E., in ditch 5, 0.8 mile below check dam 31, 2.5 miles west of Bancroft, Wis.	—	11- 5-65	10.5
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, Wis.	—	6- 1-66 8-11-66	10.5 3.04
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, Wis.	—	6- 1-66 8- 9-66 8-12-66	2.23 ** .2 ** .2
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, Wis.	—	6- 2-66 8-11-66	.03 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, Wis.	—	6- 2-66 8-12-66	4.01 1.83
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, Wis.	—	6- 2-66 8-12-66	7.58 2.61
do	NW 1/4 SE 1/4 sec. 21, T. 21 N., R. 8 E., in ditch 6 at check dam 55, 3.0 miles southwest of Bancroft, Wis.	—	6- 2-66 8-12-66	7.78 2.58
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, Wis.	—	6- 1-66 8- 9-66 8-12-66	11.2 4.83 4.48

** Field estimate.

LOW-FLOW INVESTIGATIONS

Low-flow investigations in central sand plains of Wisconsin--Continued.

Streams	Location	Drainage area (sq mi)	Measurements	
			Date	Discharge (cfs)
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, Wis.	—	6- 1-66 8-11-66	41.9 24.0
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, Wis.	—	6- 1-66 8-11-66	54.5 38.8
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, Wis.	—	6- 1-66 8-11-66	111 64.2
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, Wis.	—	6- 1-66 8-11-66	4.57 1.89
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, Wis.	—	6- 1-66 8-11-66	119 96.2

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

WATER RESOURCES DATA
FOR
WISCONSIN

1966

Part 2. Water Quality Records

Prepared in cooperation with
Wisconsin Conservation Department

CONTENTS

Symbols after station name designate type of data: c, chemical;
t, water temperature; s, sediment

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WATER RESOURCES DATA FOR WISCONSIN, 1966

Part 2: Water Quality Records

INTRODUCTION

The quality-of-water investigations of the U. S. Geological Survey are concerned with the chemical and physical characteristics of surface- and ground-water supplies of the Nation. The basic records for the 1966 water year for quality of surface waters within the State of Wisconsin are given in this report. The data were collected and computed by the Water Resources Division of the U. S. Geological Survey, under the direction of John J. Molloy, district chief, Water Resources Division, Columbus, Ohio. The records of stream discharge, some of the temperature records, and assistance in station operation were provided by C. L. R. Holt, Jr., district chief, Madison, Wisconsin.

The Geological Survey began publishing annual basic records of chemical quality, water temperatures, and suspended sediment for the 1941 through 1963 water years in the water-supply paper series, "Quality of Surface Waters of the United States." 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 series. These publications are available in most public libraries. For the 1964 water year the water-quality records for Wisconsin were released in "Water Quality Records in Michigan and Wisconsin." The records for the 1964 and 1965 water years will be published in Geological Survey Water Supply Papers, Nos. 1957 and 1958. Beginning with the 1966 water year, water-quality records will be published in Geological Survey Water-Supply Papers at 5-year intervals.

COOPERATION

The work was done under cooperative agreement between the U. S. Geological Survey and the Wisconsin Conservation Department, L. P. Voigt, director.

In addition, analyses of samples collected in conjunction with project work done in cooperation with University Extension, 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 defined 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. The term is commonly used in measuring volumes of water used or stored.

Discharge, in its simplest concept, means outflow; therefore, the use of this term is not restricted as to course or location, and it can be applied to describe the flow of water from a pipe or from a drainage basin. It is also correct to speak of the discharge of a canal or stream into a lake, a stream, or an ocean.

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 value at the time of sampling is reported instead of daily mean value, the heading of the discharge column will be "Discharge (cfs)."

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 a 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; and 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 both mineral and organic that is transported by, suspended in, or deposited by water. The amount, 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 amount 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.

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 for continuously recording variations of temperature automatically on a chart. The term "temperature recorder" is used to indicate the location of the thermograph in station descriptions in the table headings.

Tons per day is a quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

COLLECTION AND EXAMINATION OF SAMPLES

Water samples for chemical and physical analysis usually are collected at or near points on streams where gaging stations are maintained for measurement of discharge by the Geological Survey. These discharge records are in Part 1 of this volume and used in the computations of the sediment loads.

Temperature

For daily stations, the water temperatures are taken at about the same time each day in order that the data will be relatively unaffected by diurnal variations in temperature. Most large swiftly flowing streams have a small diurnal variation in water temperature, whereas sluggish or 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 are 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

For stations where daily suspended-sediment discharges are determined, suspended-sediment samples are collected daily with U. S. depth-integrating samplers from a fixed sampling point at one vertical in the cross section. Depth-integrated samples were collected periodically to determine the ratio of the cross-sectional distribution of the concentration of suspended sediment to the concentration at the daily sampling vertical. During periods of high or rapidly changing flow, samples are taken two or more times throughout the day.

During periods of inadequate sampling, daily loads of suspended sediment are estimated on the basis of water discharge, sediment concentrations observed immediately preceding and following the periods, and suspended-sediment loads for other periods of similar discharge. The estimates are further guided by weather conditions prior to and during the questionable periods, and sediment discharge for other stations.

For some streams, samples are collected on a monthly or intermittent basis, and only instantaneous rates of sediment discharge are given.

For many of the sediment stations in Wisconsin, samples are collected periodically, mostly during periods of high streamflow. For these stations, the instantaneous sediment discharge data are given, and no attempt is made to determine the daily sediment discharges.

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", temperature recorder at gaging station on left bank, 20 feet upstream from U.S. Forest Service Road 2159, 1.8 miles downstream 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 1966.

EXTREMES, 1965-66.--Water temperatures: Maximum, 78°F July 1; minimum, freezing point Dec. 3 to Apr. 4.

EXTREMES, 1964-66.--Water temperatures: Maximum, 83°F July 24, 1964; minimum, freezing point on many days during winter months.

REMARKS.--Flow affected by ice Feb. 16.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	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
														Calcium	Non-carbonate			
Oct. 27, 1965.....	77	11		16	10	2.2	0.6	90	8.4	0.0	0.1	0.6	144	81	7	165	7.0	60
Dec. 2.....	133	10		12	7.6	1.8	.3	58	12	.0	.1	1.1	118	61	14	127	6.5	70
Feb. 16, 1966.....	51	15		18	13	1.5	.6	114	8.8	.0	.0	1.1	144	98	5	199	6.9	22
Apr. 27.....	459	4.8		6.7	4.1	.6	.5	32	5.2	.0	.1	.9	88	34	8	72	6.2	90
May 24.....	143	6.4		13	7.8	1.5	.6	70	6.4	.0	.1	.6	120	64	7	126	6.5	90
June 22.....	57	--		--	--	--	--	102	2.8	1.0	--	1.2	146	85	2	169	7.1	--
Aug. 3.....	63	10		24	13	1.5	.7	133	8.4	1.0	.1	.7	138	114	4	213	7.0	--

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued
 4-0637. POPPLE RIVER NEAR FENCE, WIS.--Continued
 Temperature (°F) of water, water year October 1965 to September 1966
 (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	50	51	50	47	45	48	48	48	48	50	48	46	44	43	45	46	49	53	54	54	52	47	44	44	42	43	44	42	38	38	41	42	46
	48	48	48	44	43	44	48	48	47		46	44	42	42	43	44	46	49	51	52	47	44	41	40	39	42	38	36	34	38	42	44	
	November	42	43	45	43	43	43	43	40	38	38	41	40	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	37
December	39	39	41	40	39	40	42	40	39	38	38	38	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35	38	
	35	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	35	35	32	32	32	32	32	32	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	33	33	33	33	34	35	37	36	38	39	41	41	42	41	41	42	41	40	39	41	41	42	44	47	47	45	38	40	40	42	42	40	40
	32	32	32	32	33	33	33	33	35	35	36	37	38	37	38	38	39	39	39	39	38	38	42	42	44	40	37	37	37	39	39	37	
	42	41	43	45	51	51	49	47	44	46	44	48	45	45	45	52	50	56	54	52	55	61	57	62	63	68	66	62	57	60	62	52	52
May	39	39	38	40	44	48	47	44	41	40	42	41	44	43	44	44	45	45	52	51	48	52	56	54	56	60	61	57	53	52	52	47	
	65	66	70	70	66	64	62	62	61	63	61	65	67	64	63	64	65	65	68	72	73	75	75	75	75	75	75	72	75	77	77	68	
	54	58	62	64	61	61	59	58	58	56	59	59	62	63	61	58	59	59	60	64	67	69	75	75	75	69	65	68	69	71	63	63	
June	78	77	73	73	70	69	69	69	74	75	74	74	72	70	68	68	70	75	75	71	68	69	67	69	72	73	68	70	68	69	68	71	
	71	72	67	67	66	63	63	66	67	67	67	68	66	62	62	64	67	68	69	62	62	62	63	63	66	66	65	64	63	63	64	65	
	67	64	64	66	65	60	60	60	57	59	55	58	58	58	57	60	64	65	60	59	56	52	53	55	59	62	64	65	67	66	67	61	
July	61	58	58	60	60	58	59	58	55	53	54	51	53	56	55	54	57	58	58	55	51	51	51	55	52	55	59	61	63	63	63	56	
	68	64	59	59	55	56	56	57	58	60	60	61	61	60	61	60	62	61	62	60	58	56	55	53	53	49	48	48	48	51	48	54	
	64	59	57	54	52	51	51	52	53	55	58	56	56	56	51	55	56	56	57	59	56	55	53	53	49	48	48	48	51	48	51	54	

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN

Chemical analyses, in parts per million, water year October 1965 to September 1966

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)	Col- or pH
STREAMS TRIBUTARY TO LAKE MICHIGAN																			
PINE RIVER NEAR ALVIN, WIS. (455436N 0884917)																			
Sept. 20, 1966	22.7									88	7.6	1.0		0.4	111	74	2	144	7.3
PINE RIVER NEAR TIPLER, WIS. (455337N 0883331)																			
Sept. 20, 1966	81.2									114	8.4	1.0		0.6	128	97	4	185	7.2
PINE RIVER NEAR FLORENCE, WIS. (455112N 0882100)																			
Sept. 22, 1966	97.5									128	8.8	2.0		0.5	148	109	4	204	7.5
POPPLE RIVER NEAR FENCE, WIS. (NORTHWEST) (454526N 0883148)																			
Sept. 20, 1966	16.2									126	7.4	2.0		0.7	142	110	7	201	7.1
SOUTH BRANCH POPPLE RIVER NEAR FENCE, WIS. (454513N 0883154)																			
Sept. 21, 1966	14.5									136	8.2	1.0		0.5	134	114	2	215	7.2
PINE RIVER NEAR SPREAD EAGLE, WIS. (455024N 0880824)																			
Sept. 23, 1966										134	16	1.5		0.2	146	118	8	228	7.6
GRAND RIVER AT KINGSTON, WIS. (1 MILE NW OF COUNTY HWY. "H") (434301N 0890940)																			
May 10, 1966..		7.1	40.96	56	42	9.2	2.2	286	75	16	0.2	2.1	356	312	78			601	7.6
4-0734.05. WEST BRANCH WHITE RIVER NEAR WAUTOMA, WIS. (440255N 0891740)																			
May 11, 1966..	11	0.12	0.00	36	21	1.8	0.6	196	8.8	2.5	0.2	7.1	177	177	16			322	8.2
SHIOTON RIVER NEAR SHIOTON, WIS. (3 MILES NE ON COUNTY HWY. "P") (442930N 0883141)																			
May 10, 1966..		5.2	41.2	83	32	18	3.6	308	80	25	0.3	1.3	C436	339	86			659	7.7
SOUTH BRANCH EMBARRASS RIVER NEAR WITTENBERG, WIS. (3 MILES S ON HWY. 153) (444700N 0891013)																			
May 10, 1966..	10		40.29	36	19	3.4	0.8	190	11	4.0	0.4	2.3	187	168	12			316	8.0

A Total iron (Fe).

B Total manganese (Mn).

C Loss on ignition 115 ppm.

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--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 (micro-mhos at 25°C)	Col- or pH	
																Calcium	Non-carbonate magnesium				
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued																					
TOMORROW RIVER AT AMHERST, WIS. (ON HIGHWAY 10) (442633N 0891710)																					
May 10, 1966.		11		0.05	0.00	43	22	3.7	0.8	A192	11	3.0	0.4	5.4	208	198	16		353	8.6	15
RAT RIVER NEAR WINCHESTER, WIS. (4.8 MILES WEST ON HWY. 110) (441248N 0884542)																					
May 10, 1966.		4.2				76	38	7.4	0.8	330	71	8.0	0.4	1.1	B412	346	75		607	7.6	120
4-0835. EAST BRANCH FOND DU LAC RIVER AT FOND DU LAC, WIS. (434515N 0882710)																					
May 10, 1966.		5.4		CO.29	DO.22	78	50	12	2.5	367	84	20	0.3	3.3	457	400	99		724	8.2	40

A Also includes 14 ppm carbonate (CO₃).

B Loss on ignition .122 ppm.

C Total iron (Fe).

D Total manganese (Mn).

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1965 to September 1966

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	

STREAMS TRIBUTARY TO LAKE SUPERIOR

4-0255. BOIS BRULE RIVER AT BRULE, WIS. (463215N 0913545)

Oct. 1, 1965.....	1605			244	6	4.0											
Oct. 30.....	1650			151	6	2.4											
Mar. 1, 1966.....	1100			125	4	1											
Apr. 1.....	1400			298	14	11											
May 2.....	0910			234	4	3											
June 1.....	1310			143	2	.8											
July 1.....	1035			119	5	2											
July 31.....	1645			125	4	1											
Sept. 1.....	0950			143	4	2											

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0610. BRULE RIVER NEAR FLORENCE, WIS. (455731N 0881557)

Apr. 7, 1966.....	1400			374	12	12											
Apr. 22.....	0915			1020	14	39											
May 12.....	0930			330	20	18											
June 6.....	1000			636	26	45											
June 8.....	1000			506	26	36											
July 6.....	0830			255	17	12											
July 26.....	1430			230	8	5											
Aug. 2.....	1430			230	10	6.2											

4-0660. MENOMINEE RIVER NEAR PEMBINE, WIS. (453525N 0874635)

Oct. 26, 1965.....	1000			2230	8	48											
Oct. 27.....	1000			1440	5	19											

4-0665. PIKE RIVER AT AMBERG, WIS. (452950N 0875940)

Sept. 21, 1965.....	0800			209	12	6.8											
Sept. 27.....	0730			204	6	3											
Sept. 28.....	0800			215	7	4											
Oct. 17.....	1100			215	3	2											
Oct. 20.....	0700			209	2	1											
Nov. 12.....	0700			279	8	6											
Nov. 13.....	0800			346	12	11											

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN ST. LAWRENCE RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1965 to September 1966--Continued

Date of collection	Time (24 hour)	Water tem- per- ature point (°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	

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

4-0665. PIKE RIVER AT AMBERG, WIS. (452950N 0875940)--Continued

Mar. 23, 1966.....	0730			553	3	4						
Mar. 25.....	0900			556	4	6						
Apr. 2.....	1050			298	4	3						
Apr. 18.....	0730			361	7	7						
Apr. 20.....	0720			448	14	17						
Apr. 18.....	0800			274	6	4						
May 24.....	0700			269	11	8						
June 4.....	0900			218	18	11						
June 5.....	0930			232	17	11						
June 6.....	0630			288	16	13						
June 6.....	0830			229	5	3						
July 4.....	0800			118	10	3.2						
July 5.....	0730			172	8	4						
Aug. 1.....	0655			150	3	1						
Aug. 7.....	0700			207	13	7.3						
Aug. 15.....	0700			180	10	4.9						
Aug. 23.....	0700			180	6	3						
Sept. 2.....	0700			109	14	4.1						
Sept. 29.....	0650			92	4	1						

4-0735. FOX RIVER AT BERLIN, WIS. (435715N 0885710)

Oct. 11, 1965.....	1100			2440	15	99						
May 24, 1966.....	1000			1030	54	150						

4-0810. WAUPACA RIVER NEAR WAUPACA, WIS. (441950N 0885945)

Nov. 12, 1965.....	1200			189	4	2						
June 20, 1966.....	1600			176	10	4.8						

4-0860. SHEBOYGAN RIVER AT SHEBOYGAN, WIS. (434425N 0874535)

Mar. 23, 1966.....	1105			2900	1420	11100						
Apr. 19.....	1245			356	51	49						
Apr. 21.....	1530			407	38	42						
May 23.....	1900			156	388	163						
May 24.....	1100			673	528	959						
June 3.....	1000			196	31	16						
June 10.....	0845			158	32	14						

4-0872.4. ROOT RIVER AT RACINE, WIS. (424505N 0874925)

Oct. 14, 1965.....	1440			35	44	4.2						
Feb. 11, 1966.....	1530			2480	306	2050						

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 Arnett, 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 1966; April 1960 to October 1964, unpublished.

EXTREMES, 1964-66.--Water temperatures: Maximum, 76°F July 22, 23, 1965; minimum, freezing point on several days during December 1964 and in March 1966.

REMARKS.--No temperature record available during most of winter months. Maximum temperature observed at this station was 82°F June 30, 1964.

Temperature (°F) of water, water year October 1964 to September 1965
(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	61	59	59	55	52	50	50	48	50	50	50	55	53	58	59	60	60	54	50	47	47	49	50	52	57	57	54	54	51	52	50	53	
	48	52	46	47	42	41	40	42	38	36	38	46	44	43	44	45	47	42	40	41	42	41	38	38	43	44	44	44	41	39	42	43	
November	52	56	60	53	52	48	54	52	54	50	56	56	52	52	54	47	45	43	42	35	35	35	36	40	42	39	38	38	34	34	--	46	
	44	48	50	47	41	40	44	44	44	48	48	46	43	42	47	39	38	37	35	34	34	34	34	34	36	34	34	33	33	--	40		
December	34	34	35	36	34	34	36	36	36	38	39	40	37	34	34	34	33	34	34	34	35	36	36	37	36	36	35	37	38	38	37	36	
	34	33	33	33	32	32	34	33	33	36	38	36	33	33	33	32	32	33	33	33	34	34	34	34	34	32	32	34	36	34	33	34	
January	39	40	39	40	41	40	43	41	34	34	35	35	--	--	--	--	--	--	37	38	38	34	37	38	37	39	36	41	37	38	38	38	
	35	34	34	35	37	36	40	34	34	34	34	34	--	--	--	--	--	--	--	34	34	34	34	36	36	34	34	34	34	35	34	--	
February	35	36	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	34	34	34	34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
March	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
April	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
May	60	62	56	59	58	70	72	62	67	54	68	68	68	68	67	54	64	65	66	65	66	58	56	68	73	64	55	54	60	64	59	63	
	46	46	48	45	46	50	54	52	50	47	48	47	46	48	52	49	48	50	46	45	46	48	48	48	54	55	44	43	40	44	48	48	
June	62	64	62	67	58	68	67	68	68	69	70	70	68	68	66	66	67	71	70	72	70	62	71	68	70	67	74	74	62	71	--	68	
	51	51	52	50	52	54	51	53	49	50	50	50	48	48	48	49	48	48	50	55	50	53	55	50	50	51	54	56	52	53	--	51	
July	70	71	72	72	73	57	72	70	72	70	72	74	68	72	71	73	68	66	70	72	70	76	76	74	72	67	72	68	68	66	63	70	
	48	57	52	53	55	50	54	54	56	50	50	54	60	54	51	55	56	55	51	50	56	57	60	58	54	52	53	51	50	54	56	54	
August	65	68	68	71	73	70	68	59	66	67	69	72	73	75	72	64	68	64	68	66	60	68	68	66	66	65	62	62	54	54	64	66	
	54	48	53	55	54	58	58	57	54	51	53	56	56	58	56	55	57	57	54	52	53	54	50	51	54	56	51	46	45	51	52	54	
September	61	66	66	62	61	52	56	60	64	60	60	62	61	54	54	56	58	59	63	58	58	56	52	52	56	52	48	52	52	57	--	58	
	50	48	53	53	52	50	52	51	54	50	48	50	50	50	50	47	50	53	55	53	52	52	48	48	46	44	44	48	50	51	--	50	

WISCONSIN RIVER BASIN--Continued

5-4006. LITTLE PLOVER RIVER NEAR ARNOTT, WIS.--Continued

Temperature (°F) of water, water year October 1965 to September 1966
(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																																
Maximum	56	58	54	52	50	55	54	51	52	56	53	50	52	50	54	53	60	62	60	56	53	51	45	49	52	51	50	47	47	52	49	53
Minimum	50	48	45	42	43	47	50	49	48	44	43	42	40	45	44	48	50	52	51	53	45	42	43	40	42	44	40	37	38	42	43	45
November																																
Maximum	50	52	54	48	50	50	48	46	44	42	44	46	40	40	42	42	40	40	42	42	41	46	42	39	42	41	39	36	39	38	--	44
Minimum	39	42	43	39	40	42	44	39	37	38	42	41	35	34	38	37	34	34	36	38	37	39	37	34	39	38	34	34	35	34	--	38
December																																
Maximum	40	42	40	40	42	39	39	42	43	41	39	38	38	38	37	38	37	38	36	39	40	40	40	41	40	40	36	37	40	42	42	39
Minimum	34	36	36	37	36	34	34	37	39	39	38	35	34	36	35	36	34	35	33	34	36	36	38	37	36	36	34	34	38	38	35	36
January																																
Maximum	38	35	34	39	40	37	35	--	--	--	--	--	--	--	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	33	33	33	34	34	34	33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	44	43	43	40	44	43	44	40	50	42	41	45	52	52	48	45	55	42	40	48	50	44	37	38	43	47	48	47	52	50	42	45
Minimum	38	39	39	34	34	34	34	36	36	39	39	39	38	38	40	40	40	38	36	36	38	35	32	34	34	36	35	34	39	38	37	37
April																																
Maximum	43	46	50	46	46	46	47	47	48	50	54	53	56	51	54	53	51	49	53	49	55	56	47	60	60	47	46	55	54	55	--	51
Minimum	38	38	38	38	40	39	37	38	38	40	40	39	39	39	42	41	42	45	45	44	38	40	44	43	43	39	38	41	40	44	--	40
May																																
Maximum	56	56	56	57	63	60	60	55	54	55	43	55	46	56	53	62	57	58	56	59	64	61	56	62	65	68	66	62	57	61	63	58
Minimum	40	41	40	40	46	45	44	43	39	40	41	41	42	43	45	45	49	50	48	44	45	48	50	46	46	50	53	47	45	45	49	45
June																																
Maximum	64	63	66	60	64	63	60	57	58	63	57	60	65	57	56	63	65	66	64	68	67	66	--	--	--	--	--	--	--	--	--	--
Minimum	46	49	53	54	53	54	50	49	49	47	50	52	52	52	48	46	49	50	51	54	56	54	--	--	--	--	--	--	--	--	--	--
July																																
Maximum	68	66	68	60	58	64	67	65	67	71	69	66	64	66	65	65	68	68	65	67	66	64	66	68	68	68	66	67	64	62	64	66
Minimum	54	54	55	55	55	53	57	53	56	55	56	59	55	55	51	50	52	57	56	51	51	52	52	54	56	59	58	55	53	51	53	54
August																																
Maximum	57	64	62	--	--	--	--	--	--	--	--	61	60	63	57	63	65	64	62	60	55	56	56	58	60	62	64	63	65	64	65	--
Minimum	53	53	51	--	--	--	--	--	--	--	--	48	51	54	53	52	53	55	52	52	54	52	51	49	52	51	52	53	54	55	55	--
September																																
Maximum	64	58	57	60	56	59	59	60	62	62	64	64	64	61	58	59	59	60	60	60	58	58	56	52	54	52	54	55	52	51	--	59
Minimum	54	56	56	53	50	48	48	50	52	54	57	54	54	53	48	48	50	50	49	49	48	48	46	45	46	43	47	48	48	43	--	50

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.--Not determined.
 RECORDS AVAILABLE.--Water temperatures: June 1965 to September 1966.
 EXTREMES, 1965-66.--Water temperatures: Maximum, 72°F June 30, July 10; minimum, freezing point on many days during November to March.

EXTREMES, June 1965 to September 1966.--Water temperatures: Maximum, 72°F June 30, July 10, 1966; minimum, freezing point on many days during winter months.
 REMARKS.--A continuous recording thermometer with a mercury-sensing element was in operation from June 1965 to August 1966, and a thermometer with a bimetallic coil-sensing element was in operation during September 1966.

Temperature (°F) of water, June to September 1965
 (Continuous recording thermometer 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			
June	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	58	58	59	61	63	61	60	62	61	60	60	60	63	67	62	61	---	---	
Maximum	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	58	58	59	61	63	61	60	62	61	60	60	60	63	67	62	61	---	---	
Minimum	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	55	55	56	56	59	58	57	57	58	57	58	57	58	62	57	56	---	---	
July	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Maximum	60	64	63	65	66	61	63	64	66	63	63	64	63	64	63	65	63	62	62	62	63	67	70	68	66	63	64	62	62	60	60	64	64	
Minimum	56	58	59	59	61	57	57	61	61	58	58	59	60	60	59	60	60	60	58	57	59	60	64	65	62	60	60	58	57	58	58	59	59	
August	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Maximum	61	60	62	64	65	65	64	62	62	63	63	66	67	69	67	63	63	63	60	60	58	60	59	59	60	60	59	56	53	52	56	61	61	
Minimum	58	56	57	60	58	62	62	60	59	59	59	61	63	63	63	61	60	60	58	58	57	57	56	56	57	58	56	53	51	52	52	58	58	
September	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Maximum	56	56	58	58	58	56	54	54	58	58	55	54	56	55	52	51	54	57	60	59	56	56	55	50	50	50	47	50	51	53	---	---	55	
Minimum	54	53	54	57	55	52	52	54	54	55	52	52	54	52	50	50	50	54	57	57	55	55	50	48	47	47	46	46	50	50	---	---	52	

WISCONSIN RIVER BASIN--Continued

5-4008.53. BUENA VISTA CREEK NEAR KELNER, WIS.--Continued

Temperature (°F) of water, water year October 1965 to September 1966
 (Continuous recording thermograph with mercury-sensing element, June 1965 to August 1966;
 bimetallic coil-sensing element thereafter)

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	52	53	51	49	47	50	52	52	50	50	50	48	47	48	50	50	55	58	57	55	54	49	46	44	46	48	46	44	44	46	48	50	
	50	51	49	46	45	46	50	50	49	48	48	46	44	46	46	49	50	56	54	54	49	45	44	42	43	46	44	42	40	43	46	47	
	Maximum	46	46	48	46	45	48	48	48	44	41	44	46	45	38	41	43	40	38	40	42	42	44	42	39	40	42	40	34	35	36	42	
November	43	44	45	43	42	44	47	44	40	40	41	44	38	35	37	40	36	35	37	40	41	42	39	38	38	40	34	32	33	34	40	40	
	Maximum	37	39	39	38	38	48	36	38	40	40	40	38	37	36	35	36	36	35	37	38	37	40	40	38	36	36	34	40	42	42	38	
	Minimum	35	37	38	36	36	44	34	36	38	40	40	38	37	36	34	34	35	35	33	35	37	36	37	38	34	34	32	40	37	36	36	
December	37	35	34	33	--	--	--	32	37	32	32	32	32	32	33	--	--	--	--	--	--	33	32	--	--	--	--	--	--	--	32	--	
	Maximum	35	33	32	32	--	--	32	32	32	32	32	32	32	32	32	--	--	--	--	--	32	32	--	--	--	--	--	--	--	32	--	
	Minimum	32	34	33	32	33	35	34	34	34	32	32	34	37	34	36	36	33	33	33	35	34	34	34	34	38	39	41	--	--	--	35	
January	32	32	32	32	32	32	32	33	32	32	32	32	34	32	33	33	32	32	32	32	32	32	32	32	32	34	34	36	38	--	33	33	
	Maximum	42	42	40	39	37	37	37	38	42	44	42	44	44	45	45	43	49	49	42	41	45	45	40	35	38	41	41	41	46	46	42	
	Minimum	39	39	39	33	32	34	33	36	36	42	42	42	40	42	43	42	42	38	36	40	40	34	32	32	37	36	36	41	42	41	38	
February	43	44	44	45	44	43	42	44	44	44	47	47	48	48	49	48	48	47	52	52	48	50	50	54	54	53	42	49	48	51	--	47	
	Maximum	41	41	42	42	42	41	40	41	41	42	42	43	43	45	46	46	46	46	47	45	41	44	47	46	50	41	39	42	44	48	43	
	Minimum	50	51	51	52	57	58	55	53	49	51	49	48	48	52	52	58	57	60	57	57	60	61	59	58	61	64	65	60	56	58	56	
March	45	46	46	46	50	53	50	48	45	44	43	42	45	45	50	49	54	53	55	51	52	56	55	53	54	58	59	55	52	50	51	50	
	Maximum	62	63	64	63	63	64	60	60	57	58	57	59	62	59	56	57	61	62	63	65	66	66	67	67	70	69	67	69	70	72	--	63
	Minimum	53	56	59	60	59	60	58	56	54	53	56	56	58	56	52	51	55	58	59	60	62	62	62	63	64	64	62	63	64	66	--	59
April	71	70	70	66	64	66	66	66	64	72	71	71	69	66	65	66	67	69	66	63	62	65	66	68	69	67	68	70	64	66	66	67	
	Maximum	65	64	65	63	62	61	60	60	62	64	66	68	65	62	60	57	60	62	63	58	57	58	58	60	63	63	64	60	58	59	62	62
	Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
May	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Maximum	66	64	62	60	60	58	59	61	61	62	63	62	61	56	56	56	57	58	59	57	58	56	54	52	51	53	54	54	54	--	58	
	Minimum	60	62	60	58	56	56	56	57	58	59	60	60	61	55	53	53	53	55	55	56	55	56	54	51	50	48	50	51	54	51	--	55

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 country road, 1.2 miles west of U. S. Highway 51, and 1.8 miles southwest of Bancroft.

DRAINAGE AREA.--Not determined.

RECORDS AVAILABLE.--Water temperatures: June 1965 to September 1966.

EXTREMES, 1965-66.--Water temperatures: Maximum, 72°F July 10; minimum, freezing point Feb. 9, 10.

EXTREMES, June 1965 to September 1966.--Water temperatures: Maximum, 72°F July 10, 1966; minimum, freezing point Feb. 9, 10, 1966.

Temperature (°F) of water, June to September 1965
(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	
June																																
Maximum	60	61	60	62	58	63	64	64	65	65	65	67	65	64	61	60	62	64	64	63	64	60	64	64	64	64	64	69	69	64	66	—
Minimum	53	53	54	53	54	56	55	57	53	55	55	56	54	54	51	52	51	52	54	58	53	55	58	55	56	56	58	61	57	56	—	64
July																																
Maximum	66	68	68	66	68	60	68	65	68	65	67	66	64	67	66	69	65	64	65	66	65	69	71	70	68	63	66	66	64	62	61	66
Minimum	55	60	58	57	59	55	56	58	60	52	51	54	62	60	57	60	61	59	56	56	59	60	62	63	59	58	58	56	56	58	59	58
August																																
Maximum	63	64	66	66	68	67	64	62	65	63	66	68	67	68	66	63	64	61	61	61	59	61	60	59	60	60	59	56	53	53	58	62
Minimum	57	54	57	58	58	62	61	58	57	56	56	60	60	62	60	59	60	59	56	55	55	55	53	54	56	56	55	51	49	53	53	57
September																																
Maximum	57	59	61	59	58	55	54	53	57	57	53	55	55	54	53	52	55	55	59	59	55	53	51	49	48	46	46	49	49	52	—	54
Minimum	53	52	55	55	55	53	53	52	53	53	49	51	53	53	52	50	52	54	55	55	53	51	49	48	46	46	46	49	49	—	—	51

WISCONSIN RIVER BASIN--Continued

5-4010.2. TENMILE CREEK DITCH 5, NEAR BANCROFT, WIS.--Continued

Temperature (°F) of water, water year October 1965 to September 1966
(Continuous ethyl alcohol-actuated thermograph)

CONVULSIONS COMMENCEMENT ACTUATED BY TEMPERATURE																																
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	51	51	50	48	47	50	50	50	49	50	50	48	47	48	50	50	55	55	54	54	52	47	47	45	47	47	46	44	45	48	48	49
	48	48	47	45	45	47	50	49	48	46	46	46	44	46	44	47	48	50	52	52	47	44	44	43	44	45	42	40	41	44	46	46
November	48	49	51	49	48	50	50	49	45	44	46	47	46	42	45	45	42	42	43	44	44	46	44	42	44	44	44	39	40	40	---	45
	44	46	48	44	44	47	48	46	43	44	44	46	42	40	42	42	40	40	40	41	42	43	44	42	40	41	43	38	39	---	43	
December	41	41	41	40	40	40	38	40	41	41	41	41	41	41	40	40	40	39	39	40	40	40	41	41	40	39	38	36	40	42	40	40
	38	39	40	39	39	37	37	38	40	40	41	40	40	40	40	39	39	39	37	38	40	39	40	39	37	37	36	35	40	39	39	39
January	39	37	36	38	38	38	35	34	36	36	34	34	35	35	35	35	34	34	34	35	35	35	34	34	34	34	34	34	33	33	33	35
	37	35	35	35	36	36	34	34	34	34	33	33	34	35	35	35	34	34	34	34	34	35	34	34	34	34	34	34	33	33	33	34
February	34	35	35	34	35	36	37	37	36	33	38	40	40	38	39	39	34	34	34	34	34	34	37	38	39	39	40	40	43	---	---	37
	33	34	34	34	34	35	35	36	32	32	33	37	37	35	36	34	34	34	34	34	34	34	37	36	36	35	37	40	---	---	---	35
March	42	41	41	41	39	39	40	39	46	44	43	44	46	48	45	43	53	49	41	40	47	45	39	40	44	44	45	45	48	47	43	44
	38	40	40	34	34	35	35	37	38	42	42	42	40	40	41	41	42	41	38	39	41	39	37	36	37	39	38	38	42	41	40	39
April	44	45	48	45	44	43	45	46	46	46	49	48	51	49	50	49	47	47	51	51	52	53	50	56	56	52	44	52	51	51	---	49
	41	41	42	41	42	41	40	41	41	42	42	41	41	42	45	44	45	46	47	44	42	43	46	45	45	45	42	41	43	42	45	43
May	52	53	52	54	60	57	56	52	51	54	50	51	52	54	52	59	57	59	58	60	62	62	59	60	64	66	63	58	55	58	60	57
	42	43	43	43	48	48	46	46	42	42	43	44	46	46	48	49	52	51	52	49	50	52	54	52	52	52	54	49	46	46	46	48
June	62	58	64	60	62	61	57	58	56	60	56	58	61	58	54	60	61	63	62	63	63	64	65	66	69	67	66	67	69	69	---	62
	48	50	54	55	54	56	52	51	50	48	51	53	53	52	49	48	50	52	53	54	56	56	56	56	58	59	55	57	57	59	---	53
July	69	67	69	65	61	66	66	67	70	72	71	68	66	66	66	67	69	70	66	65	66	64	66	68	69	66	66	68	64	66	66	67
	58	57	58	59	59	58	57	57	59	62	62	63	60	58	56	55	57	60	58	52	54	54	55	57	58	59	60	59	57	55	56	58
August	58	62	54	56	57	57	58	56	53	53	54	52	54	58	55	56	56	59	55	55	56	56	53	52	53	54	56	56	58	58	57	55
	62	65	64	66	65	63	64	61	62	60	64	66	61	64	60	62	66	64	61	60	58	57	57	58	60	62	63	65	64	64	62	62
September	64	61	59	59	55	56	56	58	59	59	60	60	60	57	52	53	55	55	55	55	55	53	52	49	50	49	51	52	52	48	---	55
	57	58	56	55	51	50	50	51	52	52	53	54	54	52	47	47	48	49	49	52	48	50	47	46	46	44	47	47	48	45	---	50

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.--Water temperatures: September 1954 to September 1966.
EXTREMES, 1965-66.--Water temperatures: Maximum, 86°F June 30 to July 3; minimum, 33°F Jan. 13, Feb. 2, 6-9.
EXTREMES, 1954-66.--Water temperatures: Maximum, 89°F July 27-30, Aug. 4, 1955, July 26, 28, 1964; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1965 to September 1966
(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	57	56	56	55	54	53	53	53	52	52	53	53	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	56	55	55	54	53	53	53	52	52	51	52	52	51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
November	—	—	—	—	47	47	48	48	48	46	44	44	44	44	43	41	41	41	39	38	37	37	38	39	40	40	40	41	41	38	35	34	—	
	—	—	—	—	47	46	46	47	48	46	44	44	44	43	41	41	39	38	37	37	37	38	39	40	40	40	41	41	38	34	34	—	42	
December	34	34	35	35	35	35	35	34	35	35	37	38	37	39	39	37	36	34	34	34	34	34	34	34	35	35	34	34	34	34	34	36	35	
	34	34	34	35	35	35	35	34	34	35	37	38	37	38	37	36	34	34	34	34	34	34	34	34	35	34	34	34	34	34	34	35	35	
January	36	35	35	34	34	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	—	—	—	35	34	
	35	35	34	34	34	34	34	34	34	34	34	34	33	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	—	—	—	34	34	
February	34	34	34	34	34	34	33	33	34	34	35	35	35	35	35	36	36	35	34	34	34	34	34	35	35	35	35	35	35	35	35	35	34	34
	34	33	34	34	34	34	33	33	33	34	34	34	34	34	35	35	35	34	34	34	34	34	34	34	35	35	35	35	35	35	35	35	34	34
March	36	38	38	38	38	36	36	36	37	38	39	39	40	40	41	41	43	44	44	44	42	42	42	42	42	40	38	39	39	39	40	40	40	39
	35	36	38	38	36	35	35	35	36	37	38	39	39	39	39	39	40	40	40	40	40	40	40	40	40	38	37	38	39	39	39	40	39	
April	41	42	42	42	43	43	42	42	42	43	44	46	47	49	50	51	51	52	54	54	54	55	54	55	54	57	56	52	52	52	52	52	49	49
	40	43	42	42	43	42	42	42	42	42	43	44	45	46	48	49	50	51	52	52	52	52	52	54	54	55	56	50	49	49	51	51	47	
May	54	54	56	56	61	62	62	60	56	56	54	50	48	51	51	58	60	64	64	65	68	69	68	69	69	72	73	72	69	68	68	62	62	57
	50	50	51	52	54	55	58	56	54	51	50	48	47	47	49	51	55	60	61	62	63	64	66	66	64	66	69	68	66	65	64	64	57	
June	68	68	71	73	74	75	75	73	70	67	67	68	69	70	69	69	71	74	76	77	78	79	79	80	82	81	83	81	84	86	86	75	75	
	65	66	68	69	71	72	71	70	65	63	63	65	66	67	67	66	66	68	70	72	74	74	75	75	76	78	78	79	81	81	71	71		
July	86	86	86	85	83	84	83	79	77	83	84	83	82	79	78	78	80	82	82	79	80	80	80	82	83	83	83	83	81	79	81	79	82	
	81	82	83	82	80	77	76	76	75	81	75	78	79	75	73	72	73	74	76	76	72	71	72	73	74	76	77	78	75	72	72	76	76	
August	77	77	79	77	78	80	76	78	77	73	75	74	74	73	76	76	78	76	76	75	73	74	71	71	72	73	74	74	74	74	76	75	75	
	73	72	71	70	71	72	72	72	70	70	69	68	68	68	68	69	70	72	70	69	70	70	68	65	65	66	67	69	66	69	70	69	69	
September	78	76	76	75	72	72	72	72	72	72	73	72	73	71	68	69	68	67	66	66	67	67	66	64	65	63	63	62	62	60	60	69	69	
	72	72	72	72	68	66	66	65	65	65	66	66	68	65	63	62	63	62	62	62	61	62	62	60	61	59	60	60	59	57	57	64	64	

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN

Chemical analyses, in parts per million, water year October 1965 to September 1966

WATER QUALITY RECORDS, 1966																						
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Alum-inum (Al)	Iron (Fe)	Man-ga-nese (Mn)	Cal-cium (Ca)	Mag-nesium (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 acid-ity as H ⁺	Specific conduct-ance (micro-mhos at 25°C)	pH	Col- or	
																Cal-cium	Non-carbon-ate					
WISCONSIN RIVER BASIN																						
CRANBERRY CREEK NEAR PORT EDWARDS, WIS. (7 MILES WEST) (441915N 0900024)																						
May 26, 1966.	1									32		6.0					32	6		88	7.2	
CRANBERRY CREEK NEAR FINLEY, WIS. (4 MILES EAST) (441246N 0900415)																						
May 26, 1966 ^A	81	11	B1.8	B0.00	10	3.8	4.7	1.1	42	9.8	4.0	0.2	1.1		C81	40	6		95	6.8	65	

A Includes 0.10 ppm phosphorus as PO₄.

B Samples for iron and manganese filtered clear when collected.

C Loss on ignition 25 ppm.

WATER QUALITY RECORDS, 1966

Periodic determinations of suspended-sediment discharge, water year October 1965 to September 1966

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								
							0.0075	0.004	0.008	0.016	0.031	0.062	0.125	0.250	

CHIPPEWA RIVER BASIN

5-3680. HAY RIVER AT WHEELER, WIS. (450250N 0915440)

Oct. 12, 1965.....	1430	181	19	9.3					
Apr. 6, 1966.....	1545	402	8	8.7					
1333	270	6	4.4						
Apr. 29.....	1333	189	10	5.1					
June 3.....	1015	374	48						
June 6.....	1635								
June 21.....	1640	198	14	7.5					
June 27.....	1430	185	8	4					
July 26.....	1100	157	19	8.1					
Aug. 16.....	1300	175	22	10					
Sept. 5.....	1500	159	17	7.3					

TREMPEALEAU RIVER BASIN

5-3795. TREMPLEAU RIVER AT DODGE, WIS. (440755N 0913310)

	Aug. 9, 1965.....	1030	585	551	870					
	Sept. 17.....	1130	306	46	38					
	" ".....	1130	306	46	38					
	Apr. 28, 1966.....	1400	365	26	26					
	" ".....	1830	326	28	26					
	May 14.....	1830	326	28	26					
	May 24.....	1435	292	19	15					
	" ".....	1435	292	19	15					
	June 14.....	1030	304	248	204					
	" ".....	1030	304	248	204					
	June 21.....	1230	239	231	149					
	" ".....	1230	239	231	149					

BLACK RIVER BASIN

5-3810. BLACK RIVER AT NEILLSVILLE, WIS. (443335N 0903650)

Mar. 16, 1966.....	1045	2500	94	634					
Mar. 18.....	1500	1360	270	991					

BAD AXE RIVER BASIN

5-3871. NORTH FORK BAD AXE RIVER NEAR GENOA, WIS. (433310N 0910858)

[illegible]

Periodic determinations of suspended-sediment discharge, water year October 1965 to September 1966--Continued

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	
WISCONSIN RIVER BASIN--Continued																	
5-4050. BARABOO RIVER NEAR BARABOO, WIS. (432855N 0893800)																	
July 14, 1966.....	2030			275	68	50											
Aug. 16.....	1915			145	66	26											
Sept. 30.....	1600			124	20	6.7											
5-4105. KICKAPOO RIVER AT STEUBEN, WIS. (431125N 0905230)																	
Feb. 9, 1966.....	1600			3020	292	2380											
June 13.....	0130			420	169	192											
June 20.....	1700			313	135	114											
July 7.....	--			339	234	214											
July 14.....	0910			755	700	1430											
Sept. 8.....	--			288	66	51											
GRANT RIVER BASIN																	
5-4135. GRANT RIVER AT BURTON, WIS. (424310N 0904910)																	
Oct. 3, 1965.....	1000			84	56	13											
Oct. 28.....	1205			70	64	12											
July 4, 1966.....	0930			79	290	62											
July 5.....	1730			149	362	146											
July 17.....	1515			460	304	378											
Aug. 13.....	1500			82	62	14											
PLATT RIVER BASIN																	
5-4140. PLATT RIVER NEAR ROCKVILLE, WIS. (424355N 0903825)																	
Oct. 3, 1965.....	1300			56	14	2.1											
Nov. 4.....	1500			48	20	2.6											
June 20, 1966.....	1515			60	132	21											
July 4.....	1020			589	255	406											
July 5.....	1410			73	187	37											
July 17.....	1600			139	59	22											
ROCK RIVER BASIN																	
5-4240. EAST BRANCH ROCK RIVER NEAR MAYVILLE, WIS. (433145N 0883400)																	
Oct. 15, 1965.....	1000			93	18	4.5											
Mar. 30, 1966.....	1310			253	40	27											
Apr. 21.....	1310			218	68	40											
May 12.....	1020			60	28	4.5											

Periodic determinations of suspended-sediment discharge, water year October 1965 to September 1966--Continued

WATER QUALITY RECORDS, 1966

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	
ROCK RIVER BASIN--Continued																
5-4240. EAST BRANCH ROCK RIVER NEAR MAYVILLE, WIS. (433145N 0883400)--Continued																
May 24, 1966.....	1645			636	254	436										
June 16.....	1310			82	10	2.2										
July 13.....	1040			26	4	3										
Aug. 5.....	1240			21	4	.2										
Sept. 9.....	1030			27	2	.1										
5-4260. CRAWFISH RIVER AT MILFORD, WIS. (430600N 0885100)																
Mar. 31, 1966.....	1500			1220	26	86										
Apr. 2.....	1650			1160	36	113										
Apr. 8.....	1600			925	10	25										
May 21.....	1700			194	62	32										
June 15.....	1740			467	58	73										
July 12.....	1650			114	51	16										
Aug. 2.....	1740			108	77	22										
Aug. 17.....	1620			59	82	13										
5-4330. EAST BRANCH PECATONICA RIVER NEAR BLANCHARDVILLE, WIS. (424710N 0895140)																
Sept. 21, 1965.....	1100			1270	632	2170										
Feb. 12, 1966.....	0900			204	459	253										
Mar. 8.....	1000			110	1010	300										
June 20.....	1310			95	122	31										
July 13.....	0900			83	58	13										
Aug. 21.....	1400			347	213	200										
5-4365. SUGAR RIVER NEAR BRODHEAD, WIS. (423640N 0892350)																
Sept. 22, 1965.....	1100			2030	2580	14100										
Feb. 12, 1966.....	0800			1610	86	370										
Mar. 28.....	0900			361	17	17										
June 20.....	1120			255	71	49										
July 13.....	0800			200	171	92										
Aug. 21.....	1300			208	48	27										

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