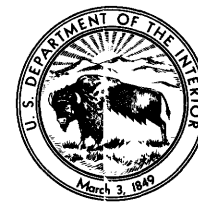
Magnitude and Frequency of Floods in the United States

Part 5. Hudson Bay and Upper Mississippi River Basins

By JAMES L. PATTERSON *and* CHARLES R. GAMBLE

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1678



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PART 5. HUDSON BAY AND UPPER MISSISSIPPI RIVER BASINS

By JAMES L. PATTERSON and CHARLES R. GAMBLE

ABSTRACT

The magnitude and frequency of floods of any recurrence interval between 1.1 and 50 years can be determined for most streams in the Hudson Bay and Upper Mississippi River basins by methods outlined in this report.

Flood-frequency curves were defined by flood data collected at many gaging stations. Composite frequency curves were drawn showing the relation of the mean annual flood to floods having recurrence intervals from 1.1 to 50 years. Other curves show the relation of the mean annual flood to basin characteristics. In that part of the report area in Montana, North Dakota and extreme northwestern Minnesota, only drainage basin size was used an independent variable in determining the magnitude of the mean annual flood. Both drainage basin size and area of lakes were found to be important factors influencing the magnitude of the mean annual flood for the remainder of the report area. A flood reduction curve was used to adjust the mean annual flood for the effect of lakes.

By combining data from the composite frequency curves, curves showing the relation of the mean annual flood to drainage area, and (where applicable) the flood reduction curve, flood-frequency curves can be drawn for streams in the report area whose peak flows are not materially affected by manmade changes. The curves should not be extrapolated beyond the range defined by base data. The regional curves are not applicable to some of the large rivers, which are given special treatment in this report.

INTRODUCTION

PURPOSE AND SCOPE

This report is one of a series covering flood-frequency in the conterminous United States. The purpose of this report is (1) to present methods by which the magnitude and frequency of floods for streams in the report area can be estimated and (2) to present all known significant peak flood data.

The area covered by this report (fig. 1) is the Hudson Bay and upper Mississippi River basins, and includes parts of Montana, North Dakota, South Dakota, Minnesota, Wisconsin, Indiana, Iowa, Illinois, and Missouri. Flood-frequency reports have been published for parts of the report area by all of these States except Montana. A list

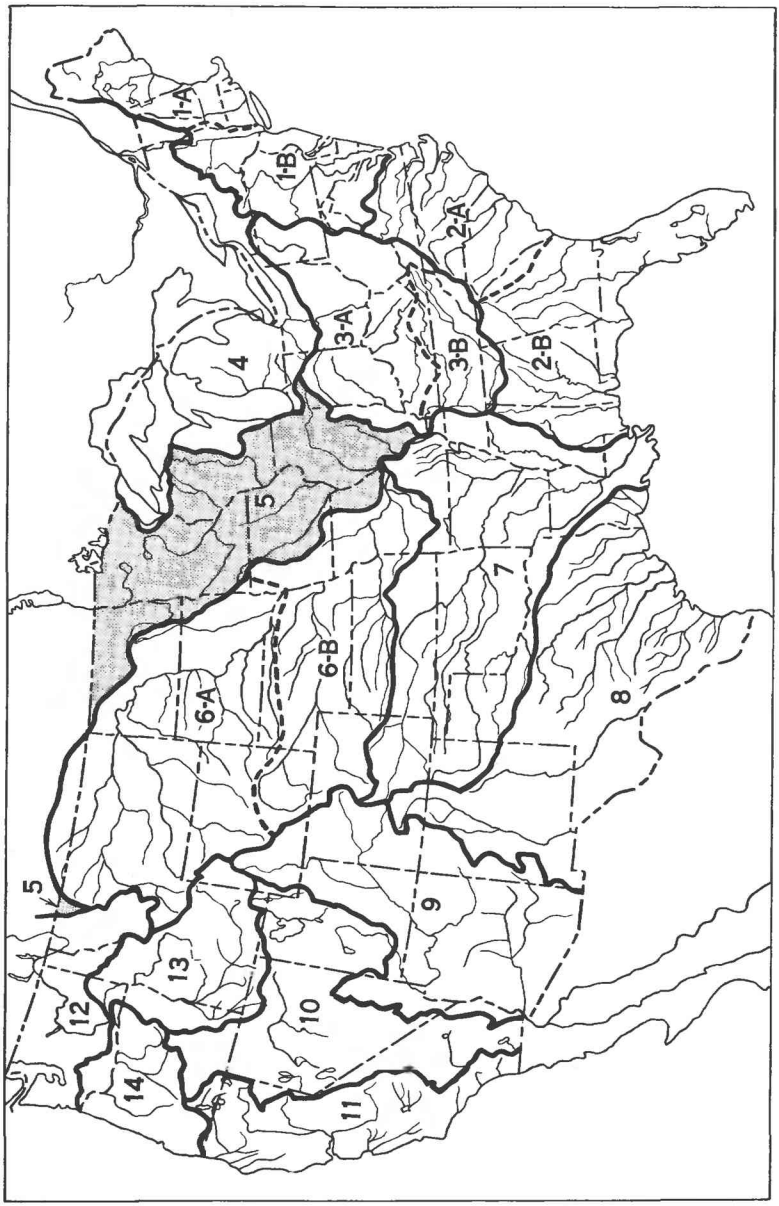

FIGURE 1.—Conterminous United States. The area covered by this report is shaded.

of the publications of these States is included in the section "Selected references."

This report was prepared under the general supervision of Francis J. Flynn, chief, Basic Records Section, Surface Water Branch, Water Resources Division, U.S. Geological Survey. Part of the data analysis and technical guidance was provided by A. Rice Green, hydraulic engineer, U.S. Geological Survey. Basic data were compiled by Geological Survey personnel in the district offices of the Surface Water Branch under the supervision of their respective district engineers.

ACKNOWLEDGMENTS

Unless otherwise noted in individual station descriptions, the data were collected by the U.S. Geological Survey with the assistance of many Federal and State agencies, municipalities, corporations, and private individuals. Credit has been given for assistance in the annual series of water-supply papers of the Geological Survey entitled "Surface Water Supply of the United States" and, since 1960, in the annual Geological Survey surface-water reports of the various States.

APPLICATION OF FLOOD-FREQUENCY DATA

The method of analysis used in this report is described by Dalrymple (1960), and Benson (1962). A brief description of the method used is given in section entitled "Method of analysis."

The report area was divided into four flood-frequency regions (A–D) and 11 hydrologic areas (1–11) as outlined on plate 1. Separate composite curves have been defined for each of the flood-frequency regions (fig. 2) showing as ordinate the ratio of peak discharges to an index flood (mean annual flood) and as abscissa the recurrence interval, in years. Mean annual flood curves (figs. 3–5) have been defined for each of hydrologic areas and show the relation of the mean annual flood to size of the drainage basin. In hydrologic areas 4–11, peak flows are reduced by natural storage in numerous lakes in many of the drainage basins. A flood reduction curve (fig. 6) was defined showing the relation of flood reduction factor to percentage of drainage basin covered by lakes. The flood reduction curve is applicable only in areas 4–11.

The magnitude of floods having recurrence intervals from 1.1 to 50 years can be estimated from appropriate composite regional curves and mean annual flood curves for streams in hydrologic areas 1–3. The flood reduction curve must be used in conjunction with mean annual flood curves in hydrologic areas 4–11 when the areas of lakes amounts to as much as about 0.2 percent of the total area of the drainage basin. Results based on extrapolation of the curves be-

yond the indicated range in drainage basin size and beyond recurrence intervals of 50 years are not dependable.

In North Dakota much of the area in some drainage basins does not contribute to direct surface runoff. Only the contributing area should be used in determining flood-frequency relations from this report.

Flood-frequency relations are shown for streams having natural drainage conditions or subject to only slight control. Data for many streams used in the analysis were affected to a minor degree by regulation or diversions.

REGIONAL APPLICATION

The following procedure is not applicable to some of the large streams in the report area nor to streams whose peak flows are materially affected by manmade changes. Streams given separate treatment are listed in the section entitled "Special application." The general procedure for application of flood-frequency data is as follows:

1. If the selected site is not in the excepted category, determine from plate 1 the flood-frequency region (A–D) and the hydrologic area (1–11) in which the site is located.
2. Determine the size of the drainage area from the best available map.
3. For hydrologic areas 4–11, determine the area of lakes in the drainage basin above the site from the best available map. Compute the percentage of lakes by dividing the lake area by the total drainage area and multiplying by 100.
4. Determine the discharge of the mean annual flood from the appropriate mean annual flood curve (figs. 3–5).
5. If the site is in hydrologic areas 4–11 and the area of lakes is 0.2 percent or greater, determine the flood reduction factor from the flood reduction curve (fig. 6). Apply this factor to the mean annual flood as determined in step 4.
6. From the appropriate composite frequency curve (fig. 2) determine the ratio of the flood of the selected recurrence interval to the mean annual flood.
7. Multiply the ratio obtained in step 6 by the mean annual flood (step 4 or 5).

A complete flood-frequency curve up to 50-year recurrence interval can be defined by repeating steps 6 and 7 for several selected recurrence intervals.

ILLUSTRATIVE PROBLEM

A bridge is to be built across Big Fork River at the village of Big Falls, Minn., that will pass a flood having a recurrence interval of 50 years. What discharge must the bridge be designed to pass?

1. Big Fork River is not in the excepted category listed in the section entitled "Special application" nor are peak flows materially affected by regulation or diversion. Regional curves are applicable.
2. The site is in hydrologic area 4 and region C (pl. 1).
3. The drainage area measured from the best available map is 1,460 square miles.
4. The area of lakes in the drainage basin above the site is 77 square miles, or $^{77}/_{1,460} \times 100 = 5.3$ percent of the total drainage area.
5. The discharge of the mean annual flood for a drainage area of 1,460 square miles in hydrologic area 4 is 14,400 cfs (cubic feet per second) (fig. 4). The flood-reduction factor for a drainage basin having 5.3 percent of the area covered by lakes is 0.45 (fig. 6). The discharge for the adjusted mean annual flood is $0.45 \times 14{,}400 = 6{,}480$ cfs.
6. The ratio of the 50-year flood to the mean annual flood is 2.47 (fig. 2).
7. The discharge of the 50-year flood is $6{,}480 \times 2.47 = 16{,}000$ cfs.

If the recurrence interval of a known flood is desired for the above site, compute the ratio of the discharge of the flood to that of the mean annual flood (6,480 cfs) and, using the computed ratio as ordinate, read the recurrence interval from the abscissa scale, figure 2, curve C.

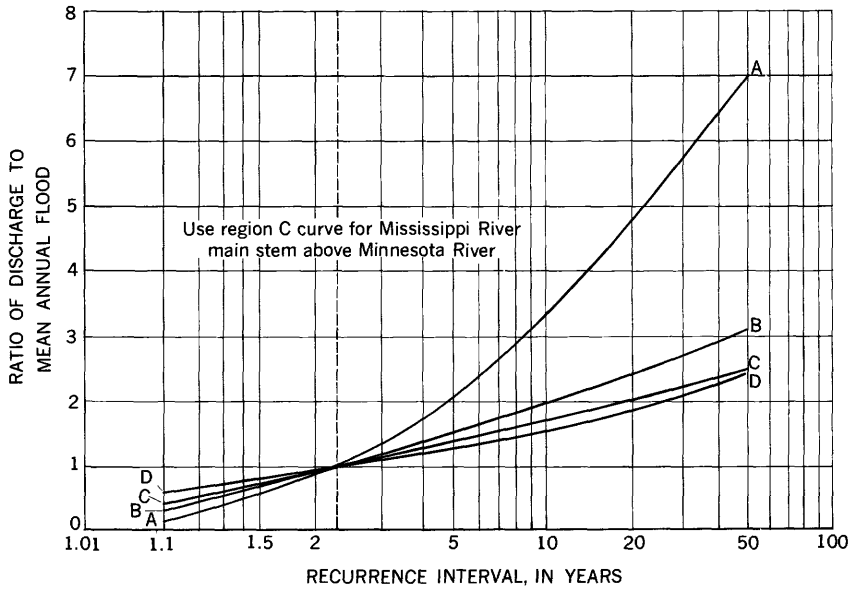

FIGURE 2.—Composite frequency curves for regions A–D.

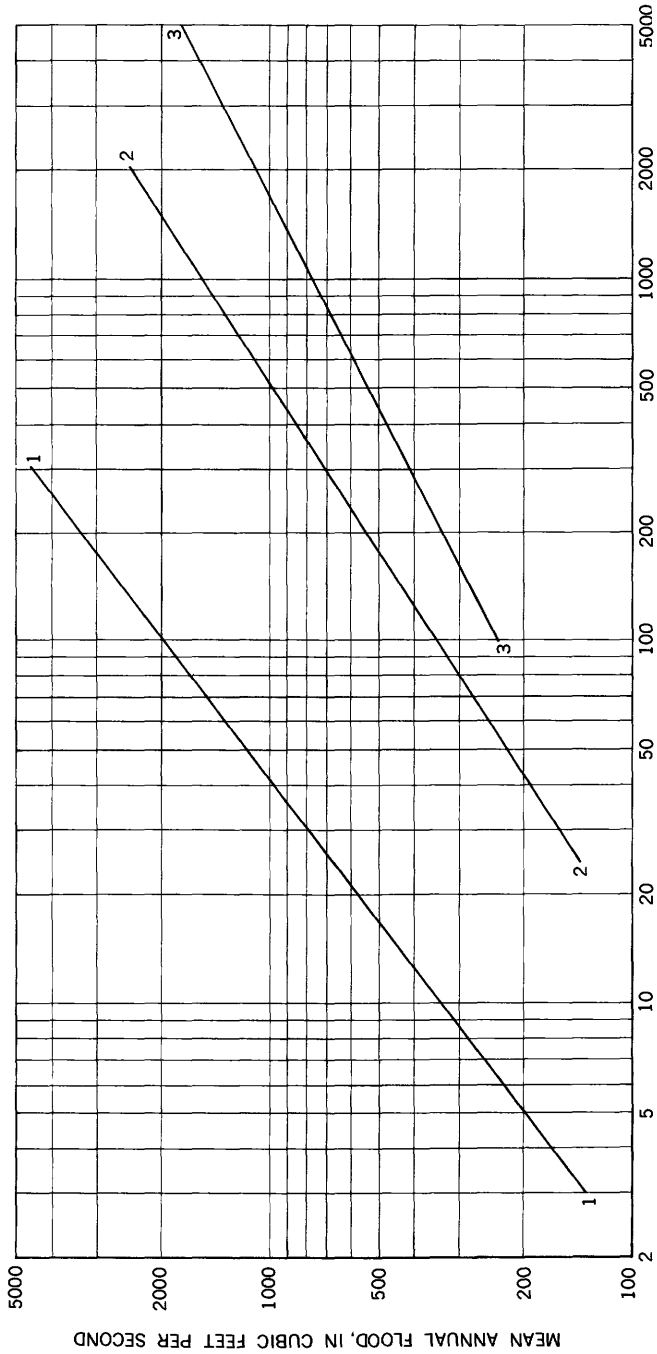

FIGURE 3.—Variation of mean annual flood with drainage area in hydrologic areas 1–3.

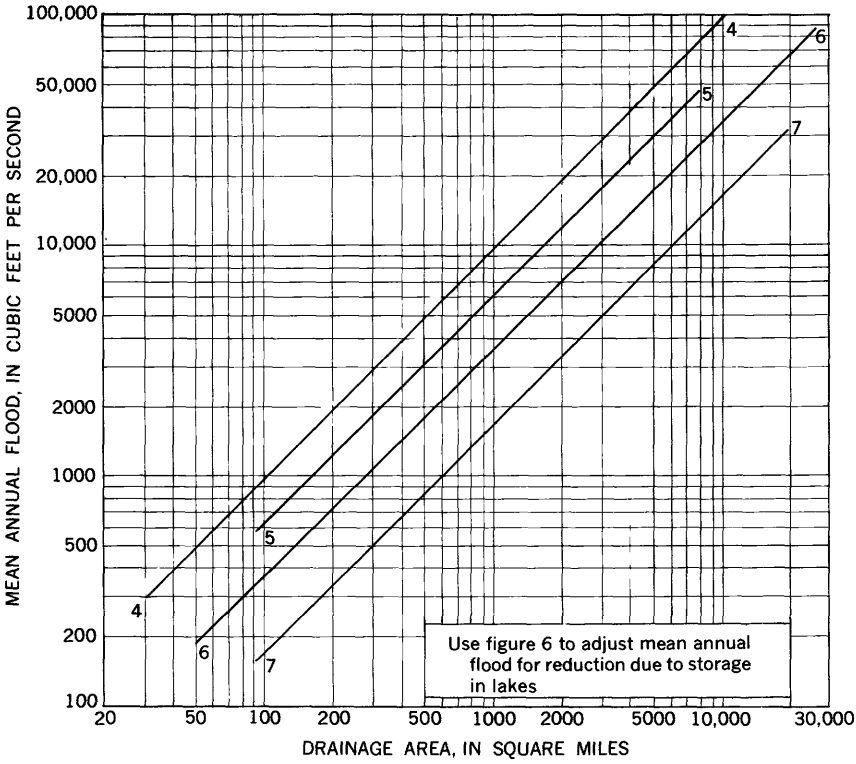

FIGURE 4.—Variation of mean annual flood with drainage area in hydrologic areas 4–7.

SPECIAL APPLICATION

Some of the large streams in the report area traverse more than one hydrologic area or flood-frequency region. These streams integrate flood-flow characteristics of each of the areas through which they flow and have flood-frequency relations that are not compatible with those of smaller tributary streams. Curves defined on the basis of flood-frequency regions and hydrologic areas are not applicable to these streams, and separate treatment is necessary. The streams fall into two categories: those for which composite frequency curves (fig. 2) are applicable, whereas mean annual flood curves (figs. 3–5) are not, and those for which neither composite nor mean annual flood curves are applicable.

Streams in the first category are Chippewa River, Rock River below Yahara River, Iowa River above Cedar River, and Fox River below Sugar Creek. Individual curves (fig. 7) showing the relation between mean annual flood and drainage area were drawn for each of these

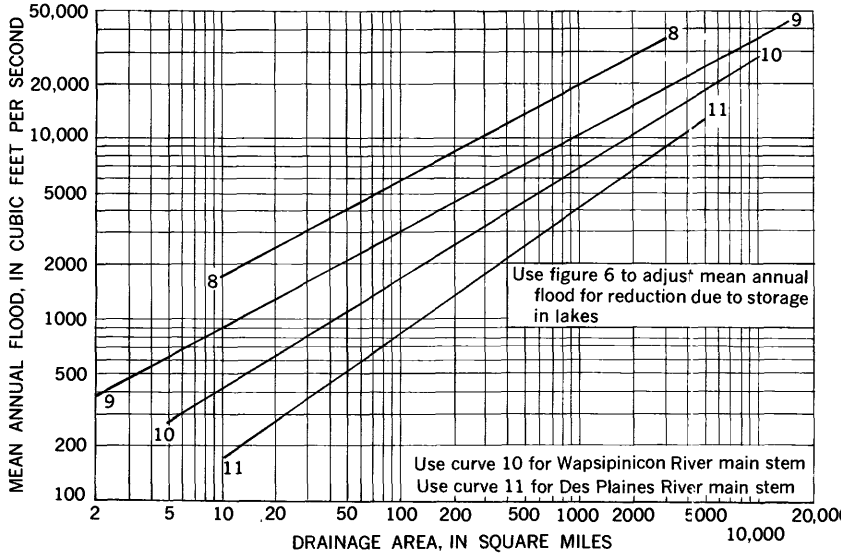

FIGURE 5.—Variation of mean annual flood with drainage area in hydrologic areas 8–11.

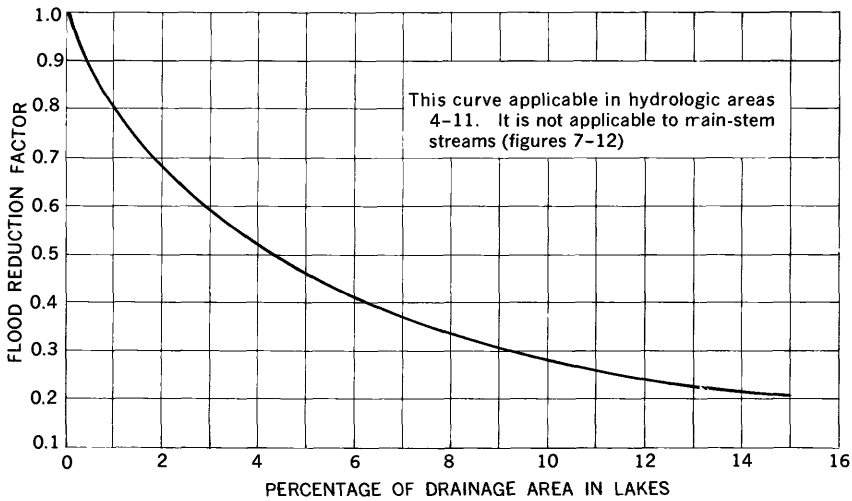

FIGURE 6.—Flood reduction curve.

streams. Flood magnitudes for sites lying within the stream reaches described above can be determined as described under "Regional application," except that values of the mean annual flood are taken from figure 7. The flood reduction curve (fig. 6) should not be used to adjust mean annual flood values.

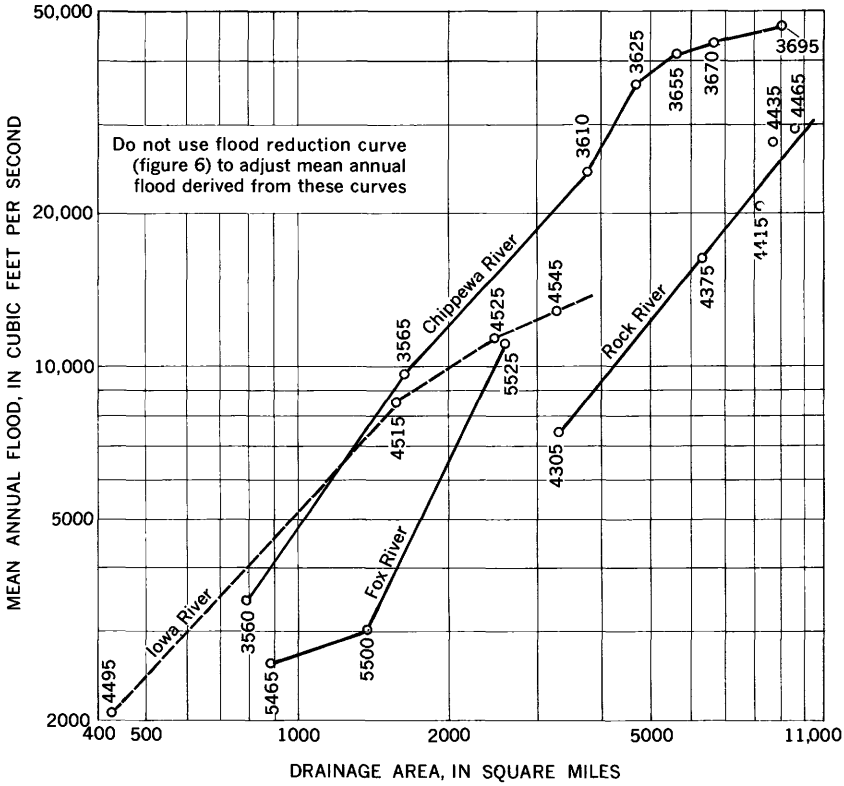

FIGURE 7.—Variation of mean annual flood with drainage area on main stems of Chippewa River, Rock River below Yahara River, Iowa River above Cedar River, and Fox River below Sugar Creek. Numbers refer to gaging stations in table 1 and on plate 1.

Streams in the second category are Red River of the Nortl , Minnesota River below Chippewa River, Mississippi River below Minnesota River, Wisconsin River, and Kankakee and Illinois Rivers. Families of curves (figs. 8–12) showing the relation of discharge for selected flood frequencies to drainage area were drawn for each of these streams. Flood magnitudes for selected flood frequencies at sites on these streams can be taken directly from the appropriate curve by first determining the drainage area for the site.

EFFECTS OF REGULATION AND DIVERSION

Peak-flow records used to regionalize flood-frequency relations should ideally be unaffected by regulation or diversion, which cannot be evaluated on a regional basis. A strict adherence to these criteria would preclude the use of records for many streams; therefore, records for streams whose peak flows are affected only to a minor degree have been used in the analysis. Records for many other streams could

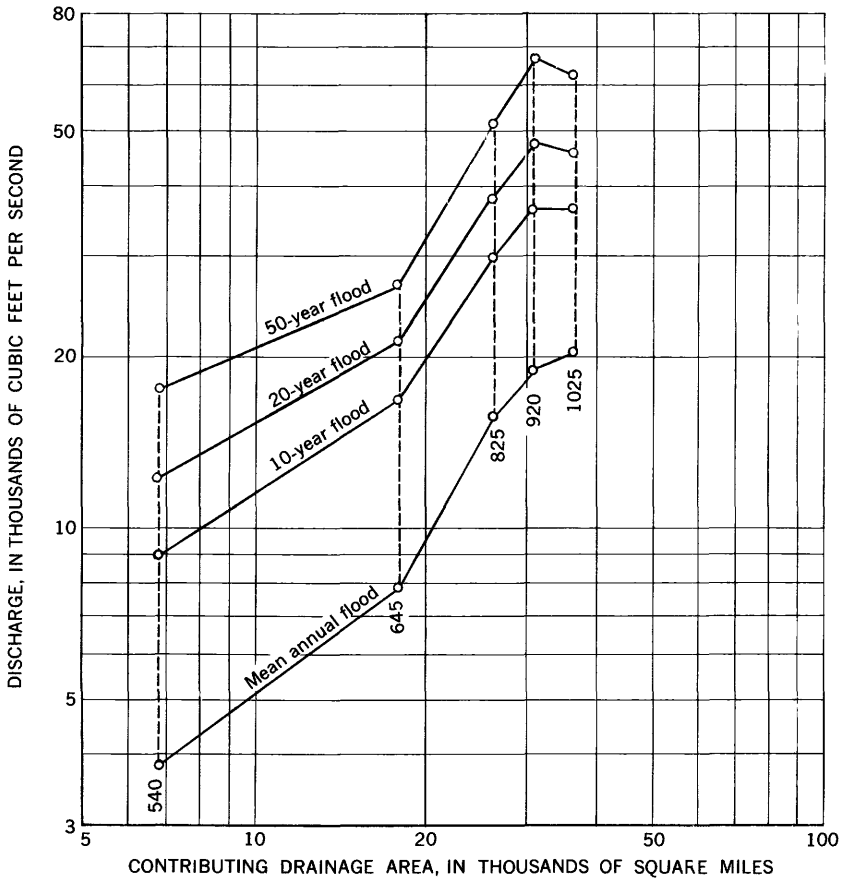

FIGURE 8.—Relation of discharge for selected flood frequencies to drainage area, Red River of the North main stem. Numbers refer to gaging stations in table 1 and on plate 1.

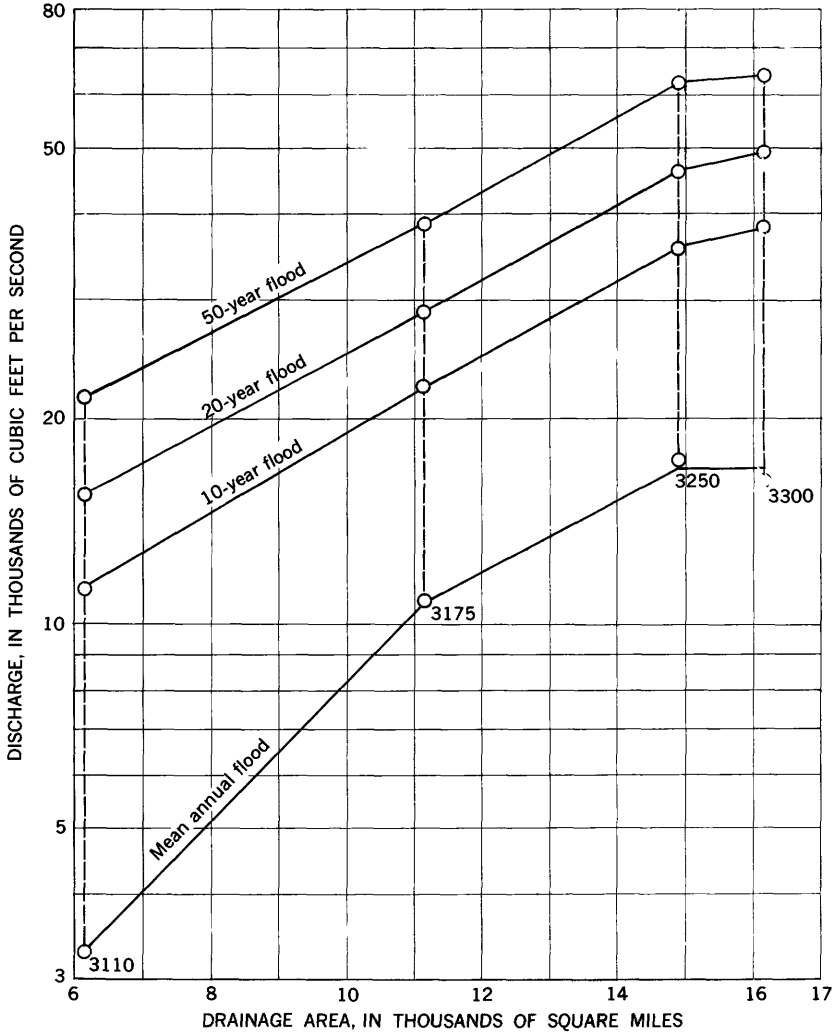

FIGURE 9.—Relation of discharge for selected flood frequencies to drainage area, Minnesota River main stem below Chippewa River. Numbers refer to gaging stations in table 1 and on plate 1.

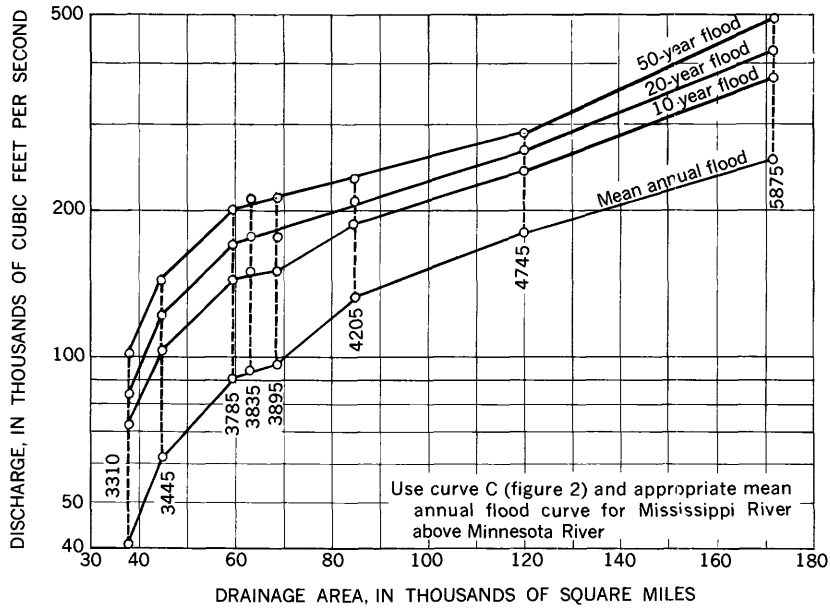

FIGURE 10.—Relation of discharge for selected flood frequencies to drainage area, Mississippi River main stem below Minnesota River. Numbers refer to gaging stations in table 1 and on plate 1.

not be used because of the large effect of regulation and diversion nor could regional frequency curves be used to predict probable peak flows on streams similarly affected without making allowances for manmade changes. Regulation due to storage in natural lakes is not subject to operational procedures of man and its effect on peak flow has been evaluated and is expressed by a flood reduction curve (fig. 6).

Peak flows for most of the large streams listed in the section entitled "Special application" are affected in varying degrees by manmade changes. Unless the effect on peak flows changes materially after the date of this analysis (1961), the curves of relation shown in figures 7–12 can be used in estimating peak flows for recurrence intervals up to 50 years.

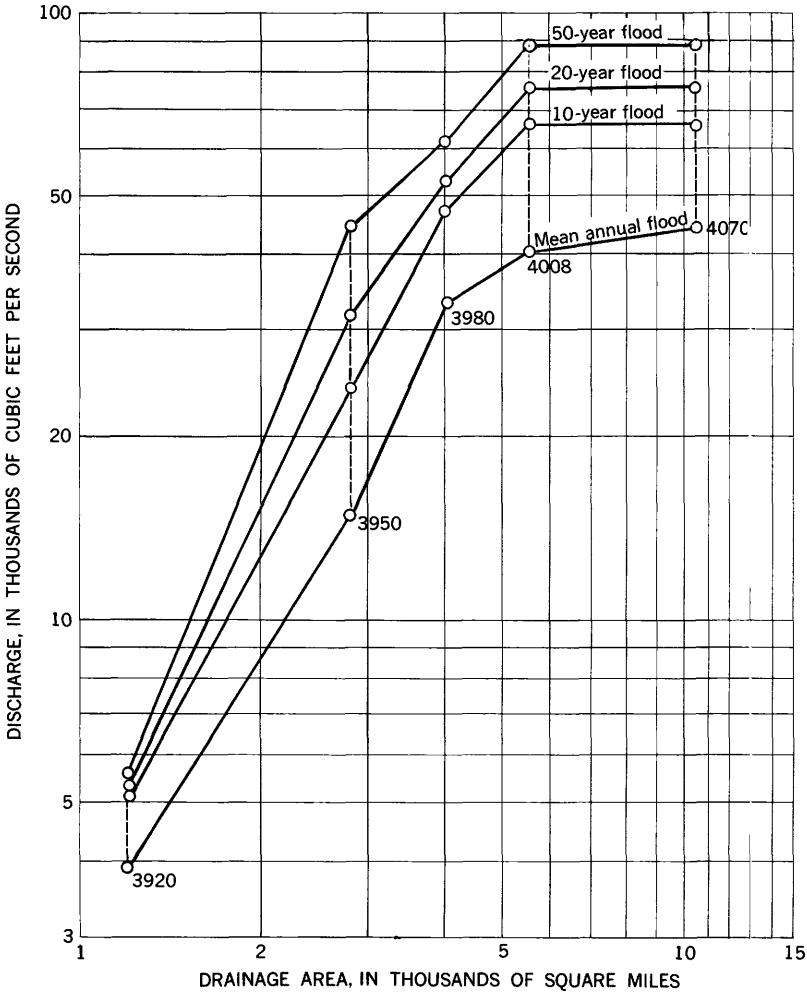

FIGURE 11.—Relation of discharge for selected flood frequencies to drainage area, Wisconsin River main stem. Numbers refer to gaging stations in table 1 and on plate 1.

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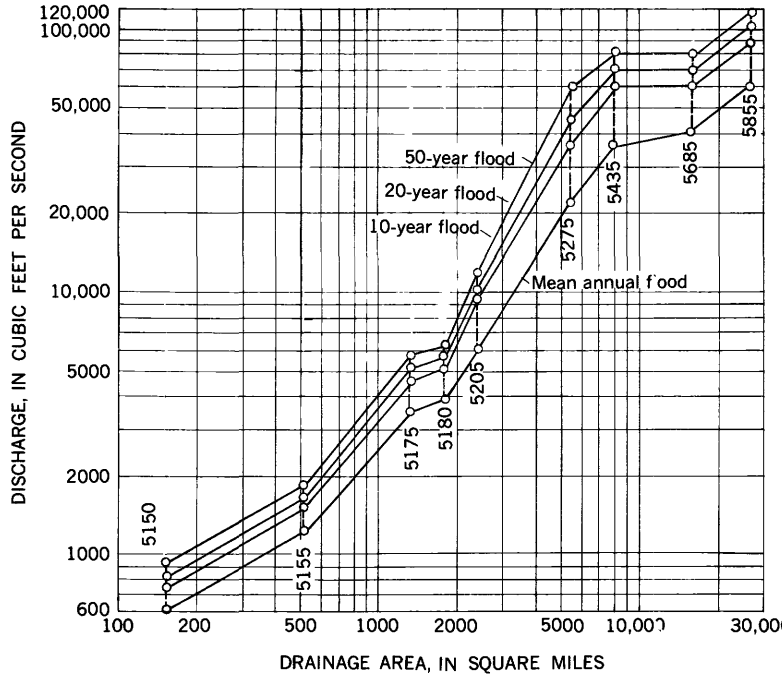

FIGURE 12.—Relation of discharge for selected flood frequencies to drainage area, Kankakee and Illinois Rivers main stems. Numbers refer to gaging stations in table 1 and on plate 1.

DESCRIPTION OF THE AREA

RIVER BASINS

The area covered by this report includes that part of the Hudson Bay drainage in the United States and the Mississippi River basin above the Missouri River. Eastern tributaries of the Mississippi River between the Missouri and the Ohio Rivers are also included. Streams in the Hudson Bay basin are the Saskatchewan River tributaries east of the continental divide in northwestern Montana and the Red River of the North and Lake of the Woods basins in northeastern South Dakota, eastern and northern North Dakota, and northwestern Minnesota. The Mississippi River in the report area drains parts of South Dakota, Minnesota, Wisconsin, Iowa, Illinois, Indiana and Missouri. Principal eastern tributaries of the Mississippi River are the Wisconsin and the Illinois Rivers. Principal western tributaries are the Minnesota, Iowa, and Des Moines Rivers.

TOPOGRAPHY

Except in Montana, the topography of the report area does not vary greatly. Altitudes range from less than 400 feet along the Missis-

sippi River in the vicinity of Alton, Ill., to about 2,000 feet in northern North Dakota. Altitudes in the Montana part of the report area range from about 4,000 feet along the Canadian border to about 10,000 feet in Glacier National Park. Fenneman (1931) gives a detailed description of the physiographic divisions of the basins.

The most unusual feature of the topography affecting peak flows is the thousands of natural lakes located principally in Minnesota and Wisconsin.

CLIMATE

Annual precipitation in the Montana part of Hudson Bay basin ranges sharply from about 20 inches in the east to about 55 inches in the west. For the remainder of the report area, annual precipitation ranges from about 14 inches in northwestern North Dakota to about 44 inches in the vicinity of Alton, Ill. Precipitation ranges fairly uniformly, increasing in a northwest to southeast direction.

Most flood peaks in the report area are caused by snowmelt and generally occur during the period April through June. In the southern part of the area, floods are frequently the result of general rains or intense thunderstorms over small areas. Some of the greatest floods have been caused by sharply rising temperatures and heavy rainfall on snow and frozen ground. Such a situation caused the great flood of June 1964 in Montana and that of April 1965 in the upper Mississippi River basin.

During the spring breakup, ice jams frequently result in peak stages, with consequent flooding, at times when the discharge is not particularly great.

FLOOD-FREQUENCY ANALYSIS

METHOD OF ANALYSIS

The method of analysis used in this report is explained in detail in Water-Supply Paper 1543–A (Dalrymple, 1960). Peak discharge data collected at a point on a stream (a gaging station) are used to define flood-frequency relations at the gaging station. The frequency relations defined at many gaging stations are then combined to define regional frequency relations that can be applied to both gaged and ungaged sites over a large area. Using peak-flow data collected at gaging stations on many streams of various types and sizes of drainage basins in the report area, two basic frequency relations were defined: (1) a composite curve showing the relation between the magnitude of floods of various recurrence intervals to that of the mean annual flood, and (2) a curve showing the relation of the mean annual flood to the drainage area. A flood reduction curve, showing the relation between the percentage of area of lakes and a flood reduction factor,

was defined for that part of the Upper Mississippi River basin where many natural lakes are found.

FLOOD FREQUENCY AT A GAGING STATION

TYPES OF FLOOD SERIES

Peak-flow data can be analyzed as either an annual flood series or a partial-duration flood series. In the annual flood series, only the greatest flood occurring during each water year (Oct. 1 to Sept. 30) is used. In the partial-duration series, all peaks above a selected base are used. Although the annual flood series does not define relations for floods occurring on the average of more than once a year and does not take into consideration some large floods which are not the highest for the year, it has the advantage of being a complete duration series and is adaptable to mathematical analysis. The annual series has been used in this report.

Langbein (1949) has shown by statistical principles that the two methods give practically the same results for recurrence intervals greater than 10 years. The relation between recurrence interval as computed for the two series is shown, in years, in the following table:

Annual flood series	*Partial-duration flood series*	*Annual flood series*	*Partial-duration flood series*
1.16	0.5	10.5	10
1.58	1.0	20.5	20
2.00	1.45	50.5	50
2.54	2.0	100.5	100
5.52	5.0		

The preceding table can be used to convert recurrence intervals obtained from curves shown in this report to those for the partial-duration series. There is a distinction in the meaning of "recurrence interval" between the two series. In the annual flood series, the recurrence interval is the average interval of time within which a given flood will be equaled or exceeded once as an annual maximum. In the partial-duration series, the recurrence interval is the average interval of time within which a given flood will be equaled or exceeded once without regard to the water year or any other period of time.

FLOOD-FREQUENCY CURVES

A flood-frequency curve for a stream shows the relation between the annual peak discharge and the recurrence interval. Any suitable plotting paper can be used. A special form, based on the theory of extreme values (Powell, 1943), was used in this analysis. Recurrence interval is computed by the formula $T=(n+1)/m$, where T is the recurrence interval in years, n is the number of years of record, and m is the order number, beginning with the largest flood as number 1. A frequency curve for Little Fork River at Little Fork, Minn., is shown in figure 13.

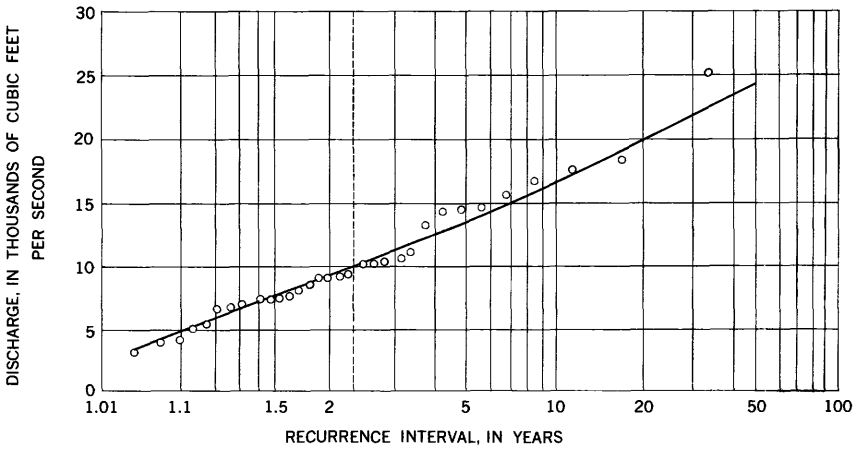

FIGURE 13.—Flood-frequency curve for Little Fork River at Little Fork, Minn.

Annual peak flows for the period 1929–61 (33 yr) were used in defining the frequency curve. The greatest flood during this period was 25,000 cfs. The recurrence interval was computed by substituting the order number for this discharge in the formula given above as $T=\frac{33+1}{1}=34$ years. The recurrence interval for each of the other annual peaks was computed in the same manner and plotted against the corresponding discharge. A smooth curve was fitted to the plotted points by visual inspection.

From the definition of recurrence interval given above, it is apparent that the probability of occurrence of a flood of a given magnitude is the inverse of the recurrence interval. Thus a 20-year flood has a 5-percent chance of occurring in any year and a 100-year flood has a 1-percent chance of occurring in any year; however, this does not imply that a 20-year flood will occur once every 20 years or that a 100-year flood will occur once every 100 years. The relations between selected recurrence intervals and probability of occurrence during selected time periods are shown below.

Recurrence interval of flood (years)	Probability of a flood of indicated recurrence interval being exceeded one or more times during indicated time period (years)			
	10	25	50	100
10	0.65	0.928	0.9948	0.9997
25	.34	.64	.87	.983
50	.18	.40	.64	.87
100	.10	.22	.40	.63

REGIONAL FLOOD FREQUENCY

Flood-frequency relations defined at individual gaging sites have been combined to obtain two basic relations. First, the records were combined on the basis of similarity of the slope of the individual station frequency curves to give curves showing the relation of floods of any frequency to an index flood (the mean annual flood). Second, the mean annual flood was related to significant basin characteristics.

MEAN ANNUAL FLOOD

The mean annual flood has been used as a basis for determining the magnitude and frequency of floods in this report. By definition, the mean annual flood is a flood having a recurrence interval of 2.33 years in the annual flood series. According to the theory of extreme values, the arithmetic means of all annual floods has a value corresponding to the flood of 2.33-year recurrence interval. Several advantages of using the mean annual flood as an index are as follows: It is not seriously affected by floods of extreme magnitude, it is largely determined from floods of average magnitude, and it can be defined from a shorter period of record than can floods having a longer recurrence interval.

The index flood for each of 383 gaging stations having 10 or more years of record not materially affected by manmade changes was used in the analysis. These data were graphically correlated with contributing drainage basin size as an independent variable. It was found that the correlation was improved considerably by using the area of lakes as a second variable. On the basis of these correlations, 11 hydrologic areas were defined. These areas are outlined on plate 1 and curves of relation are shown in figures 3–5. A flood reduction curve was defined and used to adjust mean annual flood values for hydrologic areas 4–11. The flood reduction curve is shown in figure 6.

COMPOSITE FREQUENCY CURVES

Using the slope of the individual frequency curves as a guide, the report area was divided into four homogeneous regions. The four regions (A–D) are outlined on plate 1 and curves of relation are shown in figure 2. Before combining a group of stations into a region, a homogeneity test was made to determine if the slope of the frequency curves differed more than might be expected in random sampling. The composite frequency curves in figure 2 show the relation of flood peaks to the mean annual flood in each of the four regions. These curves were derived by first computing ratios of floods having recurrence intervals of 1.1, 1.5, 5, 10, 20, and 50 years to the mean annual flood and then computing the median ratio for each recurrence interval for each region.

SUMMARY

Curves presented in this report can be used to estimate the magnitude of floods having recurrence intervals between 1.1 and 50 years for gaged or ungaged streams in the Hudson Bay and Upper Mississippi River basins in the United States. Flood-frequency relations shown are based on records for virtually natural conditions and are not applicable to streams whose peaks are materially affected by diversion or regulation by man. The composite frequency curves (fig. 2) should not be extrapolated to recurrence intervals greater than 50 years nor should mean annual flood curves (figs. 3–5) be extended below or above ranges in drainage basin size indicated.

Drainage basin size has been used as an independent variable in hydrologic areas 1–3. Both basin size and area of lakes have been used as independent variables in hydrologic areas 4–11. Effects of other variables are indirectly recognized by division of the report area into flood-frequency regions and hydrologic areas.

Flood-frequency relations for some of the large streams that do not conform to the regional analysis are defined by individual curves shown in figures 7–12.

FLOOD RECORDS AT GAGING STATIONS AND MISCELLANEOUS SITES

A summary of maximum known stages and discharges for the 713 gaging stations for which records are included in this report are contained in table 1. Table 2 contains similar data for outstanding floods at miscellaneous sites and at gaging stations having less than 5 years peakflow record through 1961. The data are listed in the downstream order currently being used by the U.S. Geological Survey. The station numbers shown in table 1 are permanent reference numbers used in Geological Survey water-supply papers since 1958. The station number and location of stations included in table 1 are shown on plate 1. Because all stations are in Part 5, the prefix denoting the "Part" has been omitted. Sites for data listed in table 2 have been numbered consecutively beginning with number 1 as the most upstream site. The period of known floods is the period, in water years, during which the listed peak is believed to be the maximum and does not necessarily indicate that all the annual floods are known for the period.

Following the tables of maximum known floods is a compilation of flood peaks for the 713 gaging stations given in table 1. A brief descrip-

tion of each gaging station is given and is accompanied by a tabulation of peaks. Both peak stages and discharges are usually given, but in some places only peak stage or discharge is given. Frequently the peak stage for the year is caused by backwater from ice and occurs on a different day than the peak discharge. For such events, both peak stage and discharge are given with date of corresponding occurrence. For gaging stations where the relation between stage and discharge is materially affected by ice cover or ice jams, the amount of ice effect is also given.

Peak discharges, unless otherwise noted, are instantaneous peaks expressed in cubic feet per second. The peaks are arranged by the water year which begins October 1 and ends September 30 and is identified by the year in which it ends; thus, a peak occurring in October, November, or December 1949 would be given in the 1950 water year. Peaks are given for period of record through 1961.

Underlines in the tables of peak stages and discharges have the following significance:

1. Line in "Water year" column means a discontinuous record.
2. Line beginning at "Date" column and continuing through "Discharge" column means a change in site and datum.
3. Line in "Date" and "Discharge" column means a change in site only.
4. Line in "Gage height" column means a change in datum.
5. No underlines are used for changes in site or datum if records have been adjusted to present conditions.

Gaging-station records of less than 5 years in length, records on irrigation or diversion ditches, and records for gaging stations just downstream from major reservoirs that are completely regulated are not included in this report.

MAXIMUM KNOWN FLOODS

Table 1.--Maximum floods at gaging stations

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Hudson Bay basin									
	Saskatchewan River basin:									
100	Belly River at international boundary.....	74.8	-	D1	1,600	1948-64	June 8, 1964	10.16	12,000	*2.58
105	North Fork Belly River at international boundary.	10.1	-	D1	340	1948-55	June 3, 1953	4.52	416	5
110	Belly River near Mountain View, Alberta....	121	-	D1	2,300	1908-64	June 1908	12	-	-
						1912-64	June 8, 1964	11.40	16,400	*2.87
115	Waterton River near international boundary.	61.0	-	D1	1,370	1948-64	June 8, 1964	11.55	12,400	*3.73
120	Street Creek at international boundary.....	6.0	-	D1	230	1948-64	June 8, 1964	13.6	5,740	*10.3
125	Boundary Creek at international boundary...	21.0	-	D1	600	1948-64	June 8, 1964	-	5,930	*4.09
130	Waterton River near Waterton Park, Alberta.	238	-	D1	3,900	1908-64	June 9, 1964	9.22	25,700	*2.72
137	St. Mary River above Swiftcurrent Creek, near Babb, Mont.	177	-	D1	3,100	1902-15	June 5, 1908	9.4	7,980	*1.07
140	Grinnel Creek near Many Glacier, Mont.....	3.47	-	D1	152	1950-64	June 8, 1964	4.88	536	*1.46
145	Swiftcurrent Creek at Many Glacier, Mont...	31.4	-	D1	820	1913-64	June 8, 1964	10.00	6,700	*3.38
150	Canyon Creek near Many Glacier, Mont.....	7.2	-	D1	260	1918-37	May 16, 1922	3.34	-	-
							June 8, 1934	-	720	*1.15
160	Swiftcurrent Creek at Sherburne, Mont.....	64.3	-	-	-	1913-1964	June 11, 1964	8.37	2,360	-
165	Swiftcurrent Creek near Babb, Mont.....	100	-	D1	2,000	1902-9	June 4, 1902	7.0	5,000	*1.03
							June 5, 1908	-	(a)	-
175	St. Mary River near Babb, Mont.....	278	-	D1	4,400	1902-64	June 9, 1964	12.96	16,500	*1.56
	Red River of the North basin:									
300	Otter Tail River near Detroit Lakes, Minn..	270	11.4	C6	236	1937-64	June 26, 1943	4.78	371	8
							Jan. 27, 1950	b6.96	-	-
305	Otter Tail River at German Church near Fergus Falls, Minn.	1,230	-	B6	-	1904-6, 1908-17	June 23, 1904	4.2	1,075	-
400	Pelican River near Detroit Lakes, Minn.....	123	-	C6	-	1943-53	May 19, 1950	5.10	-	-
							June 20, 1953	-	229	-
405	Pelican River near Fergus Falls, Minn.....	482	13.3	B6	372	1910-12, 1943-64	Mar. 29, 1943	5.53	756	12
							Mar. 28, 1950	b5.60	-	-
460	Otter Tail River below Orwell Dam, near Fergus Falls, Minn.	1,830	-	-	-	1931-64	June 17, 1953	5.60	1,710	-
475	Mustinka ditch above West Branch Mustinka River, near Charlesville, Minn.	-	-	-	-	1944-54	Apr. 9, 1952	14.19	1,550	-
485	West Branch Mustinka River below Mustinka ditch, near Charlesville, Minn.	-	-	-	-	1944-55	Apr. 9, 1952	13.73	13,700	-
490	Mustinka River above Wheaton, Minn.....	834	1.5	A7	1,000	1916-17, 1919-24, 1931-58	Apr. 10, 1952	16.56	7,320	*1.04
500	Bois de Sioux River near White Rock, S. Dak.	1,160	-	-	-	1942-64	Aug. 6, 1962	11.52	1,620	-
505	Bois de Sioux River near Fairmount, N. Dak.	1,540	-	B3	970	1916-44	1916	c19.5	-	-
						1920-44	Apr. 4, 1943	-	1,430	5

510	Rabbit River at Campbell, Minn.....	266	0.8	A6	783	1943-52	April 1952	16.4	7,000	*1.28
515	Red River of the North at Wahpeton, N. Dak.	4,010	-	-	-	1897-1964	1897	17.0	-	-
						1942-64	Apr. 12, 1952	14.99	7,130	-
517	Wild Rice River near Cayuga, N. Dak.....	565	-	A3	580	1952-64	April 1952	12	-	-
						1956-64	July 6, 1962	8.95	1,080	5
520	Wild Rice River near Mantador, N. Dak.....	807	-	A3	690	1943-61	Spring 1943	b12.8	-	-
							Apr. 12, 1952	10.74	2,200	10
525	Antelope Creek at Dwight, N. Dak.....	278	-	A3	400	1943-47, 1949-61	Apr. 8, 1952	16.31	3,670	*1.30
530	Wild Rice River near Abercrombie, N. Dak...	1,492	-	A3	950	1897-1964	1897	27.5	-	-
						1933-64	Apr. 2, 1943	21.02	5,500	31
540	Red River of the North at Fargo, N. Dak....	6,800	-	-	3,800	1882-1964	Apr. 7, 1897	40.1	25,000	*1.43
545	Sheyenne River above Harvey, N. Dak.....	154	-	-	-	1956-64	Apr. 11, 1956	8.92	224	-
							Mar. 23, 1960	b9.50	-	-
550	Sheyenne River near Harvey, N. Dak.....	174	-	A3	313	1943,1946-56	Apr. 17, 1950	b6.95	-	-
							Apr. 18, 1950	-	1,430	18
552	Big Coulee near Maddock, N. Dak.....	90	-	A3	-	1957-64	Mar. 27, 1960	2.50	262	-
555	Sheyenne River at Sheyenne, N. Dak.....	660	-	A3	625	1930-31, 1933,1940-51	Apr. 18, 1948	8.51	-	-
							Apr. 18, 1950	-	3,940	39
560	Sheyenne River near Warwick, N. Dak.....	760	-	A3	670	1950-64	Apr. 18, 1956	7.83	4,250	39
560.2	Mauvais Coulee tributary near Bisbee, N. Dak.	2.83	-	A3	-	1955-64	Apr. 18, 1956	3.98	220	-
560.4	Mauvais Coulee tributary No. 2 near Cando, N. Dak.	8.48	-	A3	-	1955-61	Apr. 20, 1956	-	180	-
							Apr. 4, 1960	3.0	180	
560.6	Mauvais Coulee tributary No. 3 near Cando, N. Dak.	60.2	-	A3	-	1955-64	Apr. 19, 1956	7.0	850	-
560.8	Mauvais Coulee tributary No. 4 near Bisbee, N. Dak.	24.4	-	A3	-	1955-64	Apr. 18, 1956	3.09	450	-
561	Mauvais Coulee near Cando, N. Dak.....	377	-	A3	470	1954-64	Apr. 20, 1956	10.71	-	-
						1957-64	Apr. 10, 1960	b8.14	570	3
562	Edmore Coulee near Edmore, N. Dak.....	282	-	A3	400	1956-64	Apr. 22, 1956	b6.32	-	-
							Apr. 23, 1956	-	875	5
563	Little Coulee at Leeds, N. Dak.....	140	-	-	-	1956-64	Apr. 15, 1956	7.2	515	-
564	Big Coulee near Churchs Ferry, N. Dak.....	1,820	-	-	-	1950-64	June 6, 1950	-	620	-
							June 30, 1954	4.42	-	-
570	Sheyenne River near Cooperstown, N. Dak....	1,270	-	A3	880	1945-64	Apr. 17, 1950	18.69	7,830	*1.26
572	Baldhill Creek near Dazey, N. Dak.....	351	-	A3	450	1950-64	April 1950	10	-	-
						1956-64	Apr. 12, 1956	b6.75	767	4
580	Sheyenne River below Baldhill Dam, N. Dak..	1,910	-	-	-	1948-64	Apr. 27, 1948	-	4,600	-
585	Sheyenne River at Valley City, N. Dak.....	2,110	-	A3	1,130	1882-1964	April 1882	a20.0	-	-
						1919,1938-64	Apr. 28, 1948	17.51	4,580	15
587	Sheyenne River at Lisbon, N. Dak.....	2,490	-	A3	1,230	1950-64	May 5-10,1950	13.8	-	-
						1957-64	July 7, 1962	10.55	2,400	5
590	Sheyenne River near Kindred, N. Dak.....	3,020	-	A3	1,380	1947 or 1948-61	1947 or 1948	22.1	3,600	7
595	Sheyenne River at West Fargo, N. Dak.....	3,090	-	A3	1,380	1903-6,1919, 1930-64	May 11, 1950	d20.61	-	-
							May 22, 1950	-	2,810	5
597	Maple River near Enderlin, N. Dak.....	796	-	A3	680	1956-64	Aug. 11, 1962	9.54	1,630	6
598	Swan Creek near Absaraka, N. Dak.....	22	-	A3	-	1955-64	Apr. 2, 1962	b3.77	110	-
598.5	Swan Creek tributary near Ayr, N. Dak.....	2	-	A3	-	1955-64	June 22, 1957	-	85	-
							March 1960	4.90	-	-

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal $Q_{2.33}$ (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Hudson Bay basin--Continued									
	Red River of the North basin--Continued									
599	Swan Creek near Casselton, N. Dak.	30	-	A3	-	1955-64	Apr. 4, 1962	-	340	-
599.5	Swan Creek tributary near Casselton, N. Dak.	2.5	-	A3	-	1955-61	July 10, 1959	6.00	100	-
600	Maple River near Mapleton, N. Dak.	1,379	-	A3	920	1944-64	Apr. 6, 1952	b18.91	-	-
							June 17, 1953	18.62	4,840	25
605	Rush River at Amenia, N. Dak.	116	-	A3	252	1947-64	Apr. 14, 1947	8.90	1,230	21
							Mar. 31, 1962	b11.8	-	-
610	Buffalo River near Hawley, Minn.	322	3.2	B6	643	1921-64	Spring 1921	c11.3	-	-
						1945-64	Aug. 5, 1955	9.31	1,590	22
615	South Branch Buffalo River at Sabin, Minn.	522	.9	B2	1,030	1945-64	June 9, 1962	17.04	6,340	*2.00
620	Buffalo River near Dilworth, Minn.	1,040	1.5	B2	1,610	1931-64	June 11, 1962	23.56	6,140	*1.24
622	Elm River near Kelso, N. Dak.	194	-	A3	330	1925-63	1950	a14	-	-
						1956-63	Apr. 8, 1962	9.51	440	3
625	Wild Rice River at Twin Valley, Minn.	888	3.8	B2	1,460	1909-17, 1931-64	July 22, 1909	20.0	9,200	*2.05
630	Wild Rice River near Ada, Minn.	-	-	-	-	1948-53	June 26, 1950	-	1,720	-
							Apr. 9, 1952	10.32	-	-
635	South Branch Wild Rice River near Borup, Minn.	254	-	B2	640	1944-49	Mar. 19, 1946	13.60	-	-
							Apr. 13, 1947	-	1,150	8
640	Wild Rice River at Hendrum, Minn.	1,600	-	-	-	1944-64	Apr. 15, 1947	e27.70	-	-
							Apr. 14, 1956	24.26	4,660	-
645	Red River of the North at Halstad, Minn.	18,000	-	-	7,900	1897-1964	1897	38.5	-	-
						1936,1937, 1942-64	Apr. 16, 1947	f34.00	24,500	35
655	Goose River near Portland, N. Dak.	407	-	A3	485	1940-64	May 9, 1950	22.98	8,090	*2.38
665	Goose River at Hillsboro, N. Dak.	1,093	-	A3	810	1882,1897, 1904,1916, 1931-61	Apr. 19, 1950	14.94	9,420	*1.66
670	Marsh River below Ada, Minn.	-	-	-	-	1948-52	June 27, 1950	14.57	1,850	-
675	Marsh River near Shelly, Minn.	151	-	-	-	1944-64	May 11, 1950	18.96	4,660	-
680	Sandhill River at Beltrami, Minn.	324	-	-	-	1943-58	Apr. 19, 1950	5.97	291	-
685	Sandhill ditch at Beltrami, Minn.	-	-	-	-	1943-58	Apr. 19, 1950	b21.59	-	-
							Apr. 20, 1950	-	2,460	-
690	Sandhill River at Climax, Minn.	405	-	B2	860	1943-64	Apr. 22, 1950	16.31	3,040	*1.15
745	Red Lake River near Red Lake, Minn.	1,950	-	-	-	1933-64	June 25, 1950	9.19	3,600	-
750	Red Lake River at High Landing, near Goodridge, Minn.	2,300	20.3	B6	1,620	1930-64	May 11, 1950	13.42	3,720	17
760	Thief River near Thief River Falls, Minn.	959	2.7	B3	2,080	1909-17, 1919-26, 1929-64	May 13, 1950	17.38	5,610	31
765	Red Lake River at Thief River Falls, Minn.	3,450	-	B6	-	1910-30	Apr. 16, 1916	15.0	8,000	-

770	Clearwater River near Pinewood, Minn.....	132	-	B6	-	1940-45	Apr. 7, 1943	4.82	386	-
775	Clearwater River near Leonard, Minn.....	153	-	-	-	1935-47	Apr. 21, 1947	3.19	655	-
780	Clearwater River at Plummer, Minn.....	512	3.1	B6	1,040	1939-64	June 9, 1962	11.90	3,640	*1.14
785	Clearwater River at Red Lake Falls, Minn...	1,370	2.1	B6	3,210	1910-17, 1935-64	Apr. 5, 1913 May 6, 1950	b17.5 -	- 9,310	- 40
790	Red Lake River at Crookston, Minn.....	5,280	9.9	B6	5,180	1897-1964	May 7, 1950	25.70	27,400	*1.72
825	Red River of the North at Grand Forks, N. Dak.	26,300	-	-	15,700	1882-1964	Apr. 10, 1897	50.2	80,000	*1.57
826	English Coulee tributary near Grand Forks, N. Dak.	4.68	-	A2	-	1955-64	Apr. 16, 1956	5.68	100	-
826.8	Saltwater Coulee tributary near Emerado, N. Dak.	22.0	-	A2	-	1955-64	1955 Apr. 6, 1962	b4.93 -	- 230	- -
827	Saltwater Coulee near Emerado, N. Dak.....	110	-	A2	370	1955-64	Apr. 6, 1962	7.68	420	3
829	Freshwater Coulee near Emerado, N. Dak.....	31.0	-	A2	162	1955-64	Sept. 1, 1957	5.00	375	6
830	Turtle River at Manvel, N. Dak.....	556	-	A2	1,060	1946-64	Apr. 19, 1950	21.5	28,000	*3.78
835	Red River of the North at Oslo, Minn.....	27,400	-	-	17,000	1936-37, 1942-43, 1945-60	May 10, 1950	31.83	63,000	*1.15
840	Forest River near Fordville, N. Dak.....	336	-	A2	770	1940-64	Apr. 18, 1950	14.48	16,400	*3.04
845	Forest River near Minto, N. Dak.....	484	-	A2	980	1932-33, 1935-42, 1944	Apr. 5, 1942	14.87	1,610	4
850	Forest River at Minto, N. Dak.....	620	-	A2	1,140	1882, 1897, 1907, 1916, 1944-64	Apr. 18, 1950	11.80	16,600	*2.08
875	Middle River at Argyle, Minn.....	265	-	B6	926	1945, 1950-64	April 1950	15.25	2,790	48
880	South Branch Park River near Park River, N. Dak.	214	-	A2	580	1940-43, 1945-50	Apr. 18, 1948	11.80	11,000	*2.72
890	South Branch Park River below Homme Dam, N. Dak.	226	-	-	-	1950-64	Apr. 24, 1950	37.52	g13,000	-
892	North Branch Park River at Gardar, N. Dak..	35.7	-	A2	177	1955-61	Apr. 24, 1956	5.86	1,600	*1.29
895	Cart Creek at Mountain, N. Dak.....	16.9	-	A2	-	1954-64	June 18, 1964	9.18	1,300	-
897	Cart Creek at Crystal, N. Dak.....	74.0	-	A2	286	1955-64	Apr. 19, 1956	10.40	2,700	*1.35
898	Cart Creek tributary near Crystal, N. Dak..	3.77	-	A2	-	1955-64	Apr. 19, 1956	6.86	187	-
900	Park River at Grafton, N. Dak.....	695	-	A2	1,220	1882, 1897, 1916, 1932-37, 1939-64	Apr. 19, 1950	20.13	12,600	*1.47
920	Red River of the North at Drayton, N. Dak..	31,000	-	-	19,000	1860-1964	May 12, 1950	41.58	86,500	*1.31
925	Two Rivers near Hallock, Minn.....	131	-	B2	415	1932-38	Apr. 19, 1932 May 30, 1933	- b6.06	265 -	1.4 -
930	South Branch Two Rivers at Pelan, Minn.....	281	-	B2	690	1929-38, 1954-55	July 10, 1956	10.90	2,040	44
940	South Branch Two Rivers at Lake Bronson, Minn.	444	-	B2	920	1929-37, 1941-47, 1954-64	June 13, 1962	12.82	2,960	*1.05
950	Two Rivers at Hallock, Minn.....	625	-	B2	1,150	1912-14, 1930, 1941-43	Apr. 2, 1942	18.96	3,380	43
955	Two Rivers below Hallock, Minn.....	644	.2	B2	1,190	1945-55	May 13, 1950	e25.78	3,690	50
960	North Branch Two Rivers near Lancaster, Minn.	32	-	B2	165	1930-38, 1941-55	May 20, 1950	6.25	912	*1.80
965	State ditch 85 near Lancaster, Minn.....	95	-	-	-	1929-38, 1942-55	Mar. 29, 1942 May 20, 1950	b6.30 5.90	- 1,480	- -

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Hudson Bay basin--Continued									
	Red River of the North basin--Continued									
970	North Branch Two Rivers at Lancaster, Minn.	209	-	-	-	1941-42, 1954-56	Mar. 26, 1942 Apr. 21, 1956	b8.94 7.44	- 1,000	- -
975	North Branch Two Rivers near Northcote, Minn.	386	-	-	-	1941-42, 1945-51	May 13,17,1950 May 13, 1950	- e26.54	2,600 -	- -
990	Pembina River near Manitou, Manitoba.....	2,300	-	A3	1,190	1921-23, 1925,1927-57	Apr. 17, 1949	101.68	5,030	16
994	Little Pembina River near Walhalla, N. Dak.	172	-	A2	500	1956-64	Apr. 11, 1960	13.28	4,160	*1.19
995	Pembina River near Walhalla, N. Dak.....	3,330	-	A3	1,460	1940,1942-64	Apr. 18, 1950	19.2	20,400	*2.00
1000	Pembina River at Neche, N. Dak.....	3,410	-	A3	1,470	1904-8, 1910-15, 1919-64	Apr. 20, 1950	b21.58	10,700	*1.04
1005	Herzog Creek near Concrete, N. Dak.....	18.9	-	A2	-	1955-64	Apr. 2, 1955	9.74	260	-
1010	Tongue River at Akra, N. Dak.....	162	-	A2	480	1860-1964	Apr. 18, 1950	48.7	11,800	*3.50
1025	Red River of the North at Emerson, Manitoba	36,400	-	-	20,400	1861,1882, 1897,1913-64	May 13, 1950	790.89	95,500	*1.54
1030	Roseau River near Malung, Minn.....	252	.2	B6	837	1929-46	May 11, 1938	12.44	1,780	14
1040	South Fork Roseau River near Malung, Minn..	312	-	B2	735	1912-14, 1929-46	Apr. 8, 1942 Mar. 28, 1942	- 17.50	1,890 -	26 -
1045	Roseau River below South Fork, near Malung, Minn.	573	-	B2	1,100	1929-64	Apr. 24, 1950	22.51	3,650	*1.08
1050	Roseau River at Roseau, Minn.....	-	-	-	-	1919,1940-47	July 1919	h1,048	-	-
1055	Roseau River near Roseau, Minn.....	-	-	-	-	1919,1930-60	Apr. 24, 1950	h1,037	-	-
1060	Sprague Creek near Sprague, Minn.....	169	-	B2	490	1929-64	Sept. 1, 1942	15.31	2,070	*1.38
1065	Roseau River at Roseau Lake, Minn.....	-	-	-	-	1919,1940-61	May 13, 1950	h1,036.86	-	-
1070	Pine Creek near Pine Creek, Minn.....	74.6	-	B2	290	1929-53	Sept.25, 1941 Apr. 24, 1950	- 10.18	706 -	21 -
1075	Roseau River at Ross, Minn.....	1,220	-	B2	1,790	1896-1964 1929-64	1896 May 12, 1950	19 18.25	- 6,560	- *1.21
1080	Roseau River near Badger, Minn.....	-	-	-	-	1896-1964	1896	h1,034	-	-
1090	Badger Creek near Badger, Minn.....	2.2	-	B2	-	1929-30, 1932-38	Apr. 8, 1932 May 1, 1937	b6.2 5.64	- 236	- -
1095	Roseau River near Haug, Minn.....	-	-	-	-	1919,1932-64	May 15, 1950	h1,024.54	-	-
1105	Roseau River at head of State ditch 51, near Oak Point, Minn.	-	-	-	-	1919,1933-42	July 1919	(1)	-	-
1110	Roseau River at Oak Point, Minn.....	-	-	-	-	1919,1933-60	May 19, 1950	h1,019.64	-	-
1120	Roseau River below State ditch 51, near Caribou, Minn.	1,570	-	B2	2,100	1917,1920-64	May 19, 1950	11.81	4,080	10
1125	Roseau River at international boundary, near Caribou, Minn.	-	-	-	-	1933-61	Apr. 14, 1960	h1,007.43	-	-
1135	Long Creek near Crosby, N. Dak.....	780	-	A3	680	1904-64	Apr. 23, 1948	16.10	6,240	*1.31
1140	Souris River near Sherwood, N. Dak.....	3,250	-	A3	1,430	1927-64	Apr. 28, 1948	23.80	7,400	24

1160	Souris River near Foxholm, N. Dak.....	3,500	-	A3	1,480	1937-64	May 16, 1948	14.79	3,040	5
1162	Des Lacs River tributary near Donnybrook, N. Dak.	3.82	-	A3	-	1956-64	August 1963	6.40	135	-
1163	Fuller Coulee at Foxholm, N. Dak.....	5.9	-	A3	-	1955-64	Mar. 29, 1955	4.73	132	-
1165	Des Lacs River at Foxholm, N. Dak.....	539	-	A3	560	1886-1964	1939	18.8	-	-
						1946-64	Apr. 4, 1949	b18.04	2,000	12
1175	Souris River above Minot, N. Dak.....	4,200	-	A3	1,610	1904-64	Apr. 20, 1904	c23	12,000	*1.06
1200	Souris River at Verendrye, N. Dak.....	4,600	-	-	-	1937-64	Apr. 8, 1949	b17.7	4,200	-
1202	Wintering River near Bergen, N. Dak.....	126	-	-	-	1957-64	Mar. 22, 1960	b5.1	-	-
							Mar. 27, 1960	4.71	360	-
1205	Wintering River near Karlsruhe, N. Dak.....	285	-	-	-	1937-64	Apr. 7, 1949	12.0	3,000	-
1215	Souris River near Towner, N. Dak.....	4,800	-	-	-	1933-41	Apr. 1, 1939	12.53	1,150	-
1220	Souris River near Bantry, N. Dak.....	4,900	-	-	-	1937-64	Apr. 13, 1949	13.76	4,760	-
1225	Willow Creek at Dunseith, N. Dak.....	91	-	A3	-	1954-64	Apr. 5, 1955	b15.30	-	-
							Apr. 17, 1960	14.6	410	-
1231	Oak Creek at Lake Metigoshe Outlet, near Bottineau, N. Dak.	59.0	-	-	-	1954-64	May 7-10, 1955	-	j85	-
							May 30, 1960	9.01	-	-
1234	Willow Creek near Willow City, N. Dak.....	730	-	A3	660	1956-64	Apr. 9, 1960	14.03	1,190	4
1235.2	Egg Creek near Glenburne, N. Dak.....	7.0	-	A3	-	1955-64	Apr. 1, 1956	-	93	-
							Mar. 22, 1960	b4.90	-	-
1235.4	Egg Creek near Ruthville, N. Dak.....	26.4	-	A3	-	1955-64	June 1963	2.62	250	-
1235.6	Egg Creek tributary near Deering, N. Dak...	3.50	-	A3	-	1955-64	June 1963	-	25	-
1235.8	Egg Creek near Deering, N. Dak.....	40.8	-	A3	-	1955-64	Mar. 26, 1960	5.37	118	-
1236	Egg Creek near Granville, N. Dak.....	139	-	A3	280	1957-64	Mar. 28, 1960	5.44	258	2
1237	Cut Bank Creek at North Lake Outlet, near Granville, N. Dak.	244	-	-	-	1957-61	Apr. 13, 1960	.62	1.0	-
1240	Souris River near Westhope, N. Dak.....	6,900	-	-	-	1930-64	Apr. 18, 1949	-	6,400	-
							Apr. 20, 1949	16.9	-	-
	Lake of the Woods basin:									
1245	Isabella River near Isabella, Minn.....	341	4.0	C4	1,760	1953-61	May 4, 1954	9.31	3,550	21
1250	South Kawishi River near Ely, Minn.....	-	-	C4	-	1952-61	May 4, 1954	7.25	5,130	-
1255	Stony River near Isabella, Minn.....	180	3.9	C4	926	1953-64	Apr. 27, 1957	10.60	2,040	30
1260	Dunka River near Babbitt, Minn.....	53.0	-	C4	525	1952-62	Apr. 16, 1954	7.84	691	4
1265	Bear Island River near Ely, Minn.....	68.5	8.4	C4	225	1953-61	May 3, 1954	-	423	15
							Apr. 24, 1961	7.20	-	-
1270	Kawishi River near Winton, Minn.....	1,200	-	C4	-	1906-7, 1913-19, 1924-64	May 18, 1950	-	j16,000	-
1275	Basswood River near Winton, Minn.....	1,740	17.7	C4	3,440	1926-27, 1930-64	May 24, 1950	6.94	15,600	*1.84
1280	Namakan River at outlet of Lac la Croix, Ontario.	5,165	18.1	C4	10,200	1922-64	May 31 to June 2, 1950	h1,193.30	28,200	*1.12
1285	Pike River near Embarrass, Minn.....	115	.4	C4	1,040	1950-64	May 1950	11.3	2,400	36
1290	Vermilion River below Vermilion Lake, near Tower, Minn.	483	16.6	C4	956	1912-17, 1929-64	May 23, 1950	4.68	2,710	*1.15
1305	Sturgeon River near Chisholm, Minn.....	187	3.4	C4	1,030	1943-64	May 7, 1950	6.41	3,630	*1.42
1310	Dark River near Chisholm, Minn.....	50.6	4.0	C4	260	1943-61	May 7, 1950	7.10	1,170	*1.83
1315	Little Fork River at Little Fork, Minn.....	1,730	2.2	C4	11,300	1910-17, 1929-64	Apr. 13, 1918	37.00	25,000	31
							May 11, 1950	37.00	25,000	-
1320	Big Fork River at Big Falls, Minn.....	1,460	5.3	C4	6,480	1910-12, 1929-64	May 8, 1950	17.08	14,800	34
1335	Rainy River at Manitou Rapids, Minn.....	19,400	-	C4	-	1929-64	May 12, 1950	21.04	71,600	-

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (water)
	Hudson Bay basin--Continued									
	Lake of the Woods basin--Continued									
1342	Rapid River near Baudette, Minn.	543	0.1	C4	5,240	1950-64	May 11, 1950	21.1	8,500	7
1395	Warroad River near Warroad, Minn.	110	.1	C4	1,060	1946-64	Aug. 7 1962	9.61	1,460	5
1400	Bulldog Run near Warroad, Minn.	14.2	-	C4	-	1946-51	June 10, 1947	6.91	420	-
1405	E. Br. Warroad River near Warroad, Minn.	102	.1	C4	970	1946-54	June 11, 1947	9.36	1,340	5
	Upper Mississippi River basin									
	Mississippi River main stem:									
2110	Mississippi River at Grand Rapids, Minn.	3,370	10	C6	3,370	1884-1964	Sept. 3, 1948	15.2	k12,500	*1.50
	Swan River basin:									
2170	Swan River near Warba, Minn.	254	-	-	-	1950-64	May 1950	11.5	-	-
						1954-64	Apr. 13, 1954	9.02	1,000	-
	Mississippi River main stem:									
2180	Mississippi River above Sandy River, near Libby, Minn.	4,560	9.5	C6	4,800	1897-1915, 1927	Sept.20, 1900	-	9,570	19
2205	Mississippi River below Sandy River, near Libby, Minn.	5,060	9	C6	5,590	1930-65	May 17, 1950	20.02	16,000	*1.16
2275	Mississippi River at Aitkin, Minn.	6,140	8.1	C6	7,320	1945-65	May 20, 1950	19.49	20,000	*1.11
	Rabbit River basin:									
2415	Rabbit River near Crosby, Minn.	8.38	-	C6	-	1946-61	June 27, 1946	7.54	94	-
	Crow Wing River basin:									
2427	Little Sand Lake Outlet near Dorset, Minn.	74	-	-	-	1932-41	Apr. 8, 1934	2.66	74	-
2440	Crow Wing River at Nimrod, Minn.	1,010	6.3	C6	1,410	1910-14, 1931-65	Apr. 20, 1950	b7.64	-	-
							Apr. 13, 1965	b7.57	2,890	22
2445	Crow Wing River at Motley, Minn.	2,140	3	C6	4,430	1913-17,1931	Apr. 5, 1916	11.7	9,820	31
							Apr. 5, 1917	b13.2	-	-
2455	Long Prairie River near Motley, Minn.	973	-	C6	3,400	1910-17,1931	Apr. 5, 1916	b15.0	4,280	4
2460	Crow Wing River at Pillager, Minn.	3,230	2.0	C6	7,690	1910-12, 1927-50	Apr. 19, 1950	-	j10,900	5
	Mississippi River main stem:									
2670	Mississippi River near Royalton, Minn.	11,600	7.0	C6	15,000	1924-65	Apr. 16, 1965	-	j37,700	*1.02
	Platte River basin:									
2680	Platte River at Royalton, Minn.	338	-	C6	-	1929-36	May 3, 1936	6.36	1,450	-
	Sauk River basin:									
2705	Sauk River near St. Cloud, Minn.	925	4.3	B6	1,620	1910-12, 1930-65	Apr. 13, 1965	10.68	9,100	*1.82
	Elk River basin:									
2750	Elk River near Big Lake, Minn.	615	1.3	B6	1,630	1911-17, 1931-65	Apr. 16, 1965	10.86	7,360	*1.47
	Mississippi River main stem:									
2755	Mississippi River at Elk River, Minn.	14,500	6.3	C6	20,300	1916-56,1965	Apr. 16, 1965	17.20	62,000	*1.23
	Crow River basin:									
2760	North Fork Crow River near Regal, Minn.	215	.9	B6	616	1944-54,1965	Apr. 6, 1951	b6.73	-	-
							Apr. 9, 1965	6.68	2,630	*1.39

2780	Middle Fork Crow River near Spicer, Minn...	179	9.7	B6	182	1949-65	June 29, 1953	-	408	16
							June 25, 1957	6.67	-	-
2785	South Fork Crow River at Cosmos, Minn.....	221	8.6	B6	248	1945-65	Apr. 11, 1965	13.05	2,130	*2.80
2790	South Fork Crow River near Mayer, Minn.....	1,170	3.9	B6	2,130	1910-11, 1934-65	Apr. 13, 1965	19.23	16,100	*2.46
2800	Crow River at Rockford, Minn.....	2,520	4.6	B6	4,230	1910-17, 1930-65	Apr. 16, 1965	19.27	22,400	*1.72
	Mississippi River main stem:									
2835	Mississippi River at Anoka, Minn.....	17,100	6.5	C6	23,400	1897,1905-13	Apr. 5, 1897	9.66	49,100	24
	Rum River basin:									
2860	Rum River near St. Francis, Minn.....	1,360	2.7	B6	2,960	1905-6, 1910-13, 1930-65	Apr. 20, 1965	11.57	10,100	*1.11
	Mississippi River main stem:									
2885	Mississippi River near Anoka, Minn.....	19,100	6.7	C6	25,800	1931-65	Apr. 17, 1965	19.53	91,000	*1.43
	Minnehaha Creek basin:									
2895	Minnehaha Creek at Minnetonka Mills, Minn..	130	-	-	-	1954-64	May 23, 1962	6.66	235	-
							Mar. 23, 1963	b6.97	-	-
	Minnesota River basin:									
2900	Little Minnesota River near Peever, S. Dak.	447	1.7	A6	1,120	1940-65	Mar. 25, 1943	b13.35	-	-
							Apr. 8, 1952	12.16	4,730	16
2910	Whetstone River near Big Stone City, S. Dak.	389	1.0	A6	1,090	1910-65	June 1919	c26	-	-
						1910-12, 1931-65	Apr. 11, 1947	b13.95	-	-
							Apr. 8, 1952	13.64	5,710	25
2920	Minnesota River at Ortonville, Minn.....	1,160	-	-	-	1938-65	Apr. 13, 1952	12.92	3,060	-
2925	Minnesota River near Odessa, Minn.....	1,340	-	-	-	1910-12, 1944-63	Apr. 13, 1952	14.06	3,070	-
2930	Yellow Bank River near Odessa, Minn.....	398	-	A6	1,390	1940-65	Mar. 25, 1943	b17.98	-	-
							Apr. 4, 1952	17.06	6,260	18
2940	Pomme de Terre River at Appleton, Minn.....	905	5.4	A7	651	1931-65	Apr. 8, 1952	10.13	5,050	*1.11
3000	Lac qui Parle River near Lac qui Parle, Minn.	983	.9	A7	1,310	1911-14, 1931-65	Apr. 6, 1952	-	11,100	*1.21
							Apr. 9, 1965	19.37		
3010	Minnesota River near Lac qui Parle, Minn...	4,050	-	-	-	1943-65	Apr. 10, 1952	37.98	19,700	-
3040	Shakopee Creek near Benson, Minn.....	352	-	-	-	1950-54	Apr. 10, 1952	14.04	2,680	-
3045	Chippewa River near Milan, Minn.....	1,870	5.2	A7	1,400	1937-65	Apr. 7, 1952	b12.29	-	-
							Apr. 9, 1952	12.12	6,930	22
3050	Chippewa River near Watson, Minn.....	2,050	5	A7	1,520	1910-17, 1931-36	Apr. 4, 1917	17.86	9,700	40
3110	Minnesota River at Montevideo, Minn.....	6,180	-	-	3,300	1910-65	Apr. 10, 1952	20.02	24,500	*1.14
3135	Yellow Medicine River near Granite Falls, Minn.	653	.5	A6	2,300	1919-65	June 1919	17.5	-	-
						1931-38, 1940-65	June 18, 1957	12.41	11,800	24
3145	Hawk Creek near Maynard, Minn.....	474	-	A6	-	1950-54,1957	June 18, 1957	16.1	6,970	-
3150	Redwood River at Marshall, Minn.....	307	1.7	A6	770	1940-65	Apr. 6, 1951	11.05	-	-
							June 17, 1957	-	5,370	50
3165	Redwood River near Redwood Falls, Minn.....	697	.4	A6	2,180	1910-14, 1931-65	June 18, 1957	15.92	19,700	*1.29
3170	Cottonwood River near New Ulm, Minn.....	1,280	.7	B6	3,810	1910-13, 1931-65	Apr. 8, 1965	b20.86	26,000	*2.22
3175	Minnesota River at Judson, Minn.....	11,200	-	-	10,900	1939-50	May 8, 1944	82.43	16,100	5
3180	East Branch Blue Earth River near Bricelyn, Minn.	132	1.7	B6	332	1951-65	Apr. 7, 1951	10.68	1,320	*1.29
							Apr. 7, 1965	11.70	-	-

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Minnesota River basin--Continued									
3195	Watonwan River near Garden City, Minn.....	812	-	B6	-	1940-45, 1953-65	Apr. 7, 1965	18.89	19,000	-
3200	Blue Earth River near Rapidan, Minn.....	2,430	1.2	B6	6,540	1910,1940-45, 1950-65	Apr. 9, 1965	21.36	43,100	*2.15
3205	Le Sueur River near Rapidan, Minn.....	1,100	2.6	B6	2,430	1940-45, 1950-65	May 22, 1960	22.72	-	-
							Apr. 8, 1965	-	24,700	*3.30
3250	Minnesota River at Mankato, Minn.....	14,900	-	-	17,000	1881-1965	Apr. 26, 1881	29.9	-	-
							Apr. 10, 1965	-	94,100	*1.49
3300	Minnesota River near Carver, Minn.....	16,200	-	-	17,000	1935-65	Apr. 11, 1965	34.37	117,000	*1.83
	Mississippi River main stem:									
3310	Mississippi River at St. Paul, Minn.....	36,800	-	-	41,000	1851-1965	Apr. 16, 1965	26.01	171,000	*1.68
	St. Croix River basin:									
3325	Namekagon River near Trego, Wis.....	503	3.4	C5	1,690	1914-65	Sept. 2, 1941	-	j5,200	*1.25
3335	St. Croix River near Danbury, Wis.....	1,588	4.2	C5	4,760	1914-65	May 6, 1950	8.22	10,200	26
3360	St. Croix River near Grantsburg, Wis.....	2,820	4.0	C5	8,780	1923-65	May 7, 1950	15.06	26,300	*1.21
3365	Kettle River near Sandstone, Minn.....	825	-	C5	-	1909-16	Apr. 24, 1916	7.7	10,600	-
3375	Snake River at Mora, Minn.....	422	-	C5	-	1909-13	May 6, 1912	16.7	4,170	-
3385	Snake River near Pine City, Minn.....	958	1.0	C5	4,600	1914-17,1950, 1952-65	May 9, 1950	-	12,500	*1.10
3395	St. Croix River near Rush City, Minn.....	5,120	2.8	C5	18,700	1923-65	May 8, 1950	19.04	60,600	*1.31
3400	Sunrise River near Stacy, Minn.....	167	7.6	C5	350	1949-65	Apr. 12, 1952	7.88	806	36
							May 11, 1965	8.20	-	-
3405	St. Croix River at St. Croix, Falls, Wis...	5,930	2.9	C5	21,400	1888-1965	May 8, 1950	25.19	54,900	*1.03
3415	Apple River near Somerset, Wis.....	555	5.1	C5	1,530	1905-65	Apr. 13, 1965	-	j2,510	9
3420	Kinnikinnic River near River Falls, Wis....	167	-	C5	-	1917-21	Mar. 15, 1920	7.98	4,760	-
	Mississippi River main stem:									
3445	Mississippi River at Prescott, Wis.....	44,800	-	-	62,000	1929-65	Apr. 18, 1965	93.11	228,000	*1.57
	Vermillion River basin:									
3460	Vermillion River at Hastings, Minn.....	195	-	B9	-	1942-47	Mar. 14, 1945	b,c9.10	-	-
							Mar. 16, 1945	c7.98	1,710	-
	Cannon River basin:									
3552	Cannon River at Welch, Minn.....	1,320	2.4	B9	7,660	1911-13, 1931-65	Apr. 8, 1965	14.01	36,100	*1.54
	Chippewa River basin:									
3555	West Fork Chippewa River at Lessards, near Winter, Wis.	577	-	-	-	1912-16	Apr. 22, 1916	7.7	2,360	-
3560	Chippewa River at Bishops Bridge, near Winter, Wis.	787	-	C	3,400	1912-65	Sept. 4, 1941	11.05	7,520	30
3565	Chippewa River near Bruce, Wis.....	1,630	-	C	9,700	1914-65	Sept. 1, 1941	20.46	25,800	*1.08
3575	Flambeau River at Flambeau Flowage, Wis.....	666	-	-	-	1928-61	May 28, 1939	-	3,440	-
							July 22-27, 1952	8.40	3,440	-
3580	Flambeau River near Butternut, Wis.....	737	-	-	-	1915-38	Apr. 22, 1916	9.1	5,530	-

3585	Flambeau River at Babb's Island, near Winter, Wis.	1,000	-	-	-	1930-65	June 25, 1946	9.45	9,440	-
3595	South Fork Flambeau River near Phillips, Wis.	615	3.2	C9	4,560	1930-65	June 18, 1943	14.32	10,200	32
3600	Flambeau River near Ladysmith, Wis.	1,823	-	-	-	1880-1961	Apr. 11, 1922	-	20,200	-
3605	Flambeau River near Bruce, Wis.	1,897	-	-	-	1952-65	May 1, 1954	10.90	17,400	-
3610	Chippewa River near Holcombe, Wis.	3,790	-	C	24,200	1944-49	Mar. 17, 1946	13.8	32,500	5
3615	South Fork Jump River near Ogema, Wis.	328	-	C9	5,080	1944-54	June 25, 1946	14.56	9,020	12
3620	Jump River at Sheldon, Wis.	574	-	C9	6,900	1916-65	Aug. 31, 1941	18.8	46,000	*2.70
3625	Chippewa River at Holcombe, Wis.	4,700	-	C	36,000	1943-49	June 28, 1943	-	55,000	7
							Mar. 17, 1946	22.2	-	-
3640	Yellow River at Cadott, Wis.	351	.3	C9	5,580	1943-65	June 28, 1943	12.15	15,600	*1.13
							Apr. 11, 1965	b15.6	-	-
3645	Duncan Creek at Bloomer, Wis.	49.2	-	C9	-	1945-51, 1958-64	July 8, 1959	10.83	2,300	-
3650	Duncan Creek at Chippewa Falls, Wis.	114	.2	C9	3,140	1934-55	Apr. 3, 1934	15.4	-	-
						1943-55	Apr. 2, 1952	8.70	3,640	3
3655	Chippewa River at Chippewa Falls, Wis.	5,600	-	C	41,000	1838-1965	Sept.10, 1884	26.94	-	-
						1888-1965	Sept. 1, 1941	24.8	102,000	50
3660	Eau Claire River near Augusta, Wis.	500	.1	C9	7,050	1915-26	Mar. 27, 1920	12.2	8,940	4
3665	Eau Claire River near Fall Creek, Wis.	747	.1	C9	8,630	1943-55, 1958-65	May 30, 1955	16.11	17,200	20
3670	Chippewa River at Eau Claire, Wis.	6,630	-	C	43,000	1903-8, 1944-54	May 2, 1954	22.00	80,000	14
3675	Red Cedar River near Colfax, Wis.	1,100	3.0	C9	6,490	1914-65	Apr. 3, 1934	11.4	21,900	*1.37
3680	Hay River at Wheeler, Wis.	426	1.0	C9	5,240	1915-65	April 1934	16.6	-	-
						1951-65	Apr. 11, 1965	14.65	10,900	23
3690	Red Cedar River at Menomonee, Wis.	1,760	2.1	C9	9,380	1908,1913-23, 1925-65	Apr. 4, 1934	16.0	40,000	*1.73
3695	Chippewa River at Durand, Wis.	9,010	-	C	46,000	1884-1965	Sept.12, 1884	18.4	m160,000	*1.41
3700	Eau Galle River at Spring Valley, Wis.	64.8	-	B9	2,430	1894-1965	Sept.18, 1942	c8.98	m33,000	*4.43
3705	Eau Galle River at Elmwood, Wis.	91.9	-	B9	2,920	1942-53	Sept.18, 1942	18.2	39,000	*4.35
	Buffalo River basin:									
3720	Buffalo River near Tell, Wis.	406	-	C9	6,400	1933-50	Apr. 4, 1934	8.48	8,650	5
	Zumbro River basin:									
3730	South Fork Zumbro River near Rochester, Minn.	304	-	B9	5,500	1908-65	Mar. 1, 1965	19.12	19,600	*1.16
3735	Zumbro River near Zumbro Falls, Minn.	821	-	B9	9,300	1912-17	Mar. 23, 1917	14.1	12,100	4
3740	Zumbro River at Zumbro Falls, Minn.	1,130	-	B9	11,100	1888-1965	July 22, 1951	30.80	35,900	*1.05
3745	Zumbro River at Theilman, Minn.	1,320	-	B9	12,000	1938-56	July 22, 1951	43.43	33,000	33
	Whitewater River basin:									
3765	South Fork Whitewater River near Altura, Minn.	76.8	-	B9	2,620	1940-65	Aug. 31, 1947	10.61	5,460	13
							Mar. 1, 1965	b13.14	-	-
3775	Whitewater River at Beaver, Minn.	288	-	B9	5,350	1938-56	June 13, 1950	10.75	10,500	10
	Mississippi River main stem:									
3785	Mississippi River at Winona, Minn.	59,200	-	-	90,000	1880-1965	Apr. 19, 1965	20.77	268,000	*1.34
	Gilmore Creek basin:									
3790	Gilmore Creek at Winona, Minn.	8.95	-	B9	845	1940-65	July 21, 1951	9.47	5,360	*2.07
	Trempealeau River basin:									
3795	Trempealeau River at Dodge, Wis.	643	.1	C9	7,950	1876-1965	Apr. 4, 1956	10.35	17,400	29

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal $Q_{2.33}$ (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Black River basin:									
3810	Black River at Neillsville, Wis.	756	0.2	C8	16,200	1861-1965	Sept.10, 1938	23.8	48,800	*1.22
3820	Black River near Galesville, Wis.	2,120	-	C8	29,000	1932-65	Sept.11, 1938	14.31	58,000	20
	La Crosse River basin:									
3825	Little La Crosse River near Leon, Wis.	77.1	.3	C10	1,320	1934-64	Aug. 6, 1935	14.43	4,620	*1.42
3830	La Crosse River near West Salem, Wis.	398	-	C10	3,900	1914-65	Aug. 6, 1935	12.2	8,200	24
	Mississippi River main stem:									
3835	Mississippi River at La Crosse, Wis.	62,800	-	-	94,000	1880-1965	Apr. 22, 1965	17.96	278,000	*1.34
	Root River basin:									
3840	Root River near Lanesboro, Minn.	615	-	B9	8,000	1910-17, 1940-65	Mar. 29, 1962	16.11	22,100	34
							Mar. 1, 1965	b17.83	-	-
3845	Rush Creek near Rushford, Minn.	129	-	B9	3,500	1942-65	Mar. 26, 1950	13.54	11,600	*1.08
3850	Root River near Houston, Minn.	1,270	-	B9	11,700	1910-17, 1930-65	Apr. 1, 1952	13.90	37,000	*1.03
							Mar. 2, 1965	b18.32	-	-
3855	South Fork Root River near Houston, Minn.	275	-	B9	5,250	1950,1953-65	Mar. 26, 1961	b13.74	-	-
							Mar. 29, 1962	13.35	8,420	6
3860	Root River below South Fork, near Houston, Minn.	1,560	-	B9	13,300	1938-65	Apr. 1, 1952	17.58	38,700	42
							Mar. 2, 1965	b18.50	-	-
	Coon Creek basin:									
3865	Coon Creek at Coon Valley, Wis.	77.2	-	C9	2,700	1934-40	Aug. 6, 1935	12.90	8,110	*1.22
3870	Coon Creek near Stoddard, Wis.	119	-	C9	3,350	1934-40	Aug. 6, 1935	10.70	5,160	7
	Upper Iowa River basin:									
3875	Upper Iowa River at Decorah, Iowa.	511	-	B9	7,300	1951-65	Mar. 27, 1961	13.08	20,200	34
3880	Upper Iowa River near Decorah, Iowa.	568	-	B9	7,750	1913-51	May 29, 1941	15.19	28,500	*1.20
	Wexford Creek basin:									
3884	Wexford Creek near Harpers Ferry, Iowa.	11.9	-	B9	1,000	1953-65	July 2, 1962	7.03	2,290	17
	Paint Creek basin:									
3885	Paint Creek at Waterville, Iowa.	42.8	-	B9	1,950	1951-65	Aug. 5, 1951	17.35	9,100	*1.52
3886	Paint Creek near Waterville, Iowa.	56.0	-	B9	2,250	1951,1953-65	Aug. 5, 1951	17.00	10,800	*1.57
3887	Little Paint Creek tributary near Waterville, Iowa.	1.09	-	B9	-	1953-65	June 28, 1959	4.34	404	-
	Yellow River basin:									
3890	Yellow River at Ion, Iowa.	221	-	B8	8,900	1935-51	May 29, 1941	15.2	21,200	20
	Mississippi River main stem:									
3895	Mississippi River at McGregor, Iowa.	67,500	-	-	97,000	1828-1965	Apr. 24, 1965	25.38	j276,000	*1.28
	Wisconsin River basin:									
3910	Wisconsin River at Rainbow Lake, near Lake Tomahawk, Wis.	750	-	-	-	1937-64	Sept. 5, 1941	7.59	3,570	-
3920	Wisconsin River at Whirlpool Rapids, near Rhinelander, Wis.	1,200	-	-	3,900	1906-61	Sept. 6, 1941	5.91	5,590	50
3924	Tomahawk River near Bradley, Wis.	422	-	C9	-	1915-20, 1924-26	Apr. 24, 1916	6.9	2,200	-

3935	Spirit River at Spirit Falls, Wis.	82	1.3	C9	2,090	1942-64	Sept.18, 1942	10.00	4,180	20
3940	New Wood River near Merrill, Wis.	83	-	C10	1,500	1953-64	Apr. 3, 1955	b8.40	-	-
							July 9, 1959	6.00	1,370	1.8
3945	Prairie River near Merrill, Wis.	181	1.5	C10	1,760	1914-31, 1940-65	Aug. 31, 1941	9.45	5,800	*1.33
3950	Wisconsin River at Merrill, Wis.	2,780	-	-	14,900	1884-1965	Aug. 31, 1941	18.26	49,400	*1.09
3960	Rib River at Rib Falls, Wis.	309	.3	C8	9,760	1925-57	Aug. 31, 1938	16.2	23,800	48
3970	Eau Claire River near Antigo, Wis.	75	-	C10	-	1949-55	July 4, 1949	2.1	-	-
							Mar. 22, 1953	-	347	-
3975	Eau Claire River at Kelly, Wis.	326	1.2	C10	2,620	1914-26, 1940-65	Aug. 21, 1926	8.4	8,300	*1.28
3980	Wisconsin River at Rothschild, Wis.	4,000	-	-	33,000	1941-64	Sept. 1, 1941	22.3	75,000	*1.23
3985	Bull Creek Jr. near Rothschild, Wis.	26.4	-	C10	740	1944-51	May 18, 1945	4.20	671	1.8
3990	Big Eau Pleine River near Colby, Wis.	79	-	C8	5,100	1942-54 1957-65	June 27, 1943	11.05	9,370	14
3995	Big Eau Pleine River near Stratford, Wis.	224	-	C8	8,900	1914-25, 1937-65	Sept. 9, 1938	24.5	41,000	*1.86
4000	Wisconsin River at Knowlton, Wis.	4,520	-	-	35,300	1921-42	Sept. 2, 1941	20.5	54,300	12
4005	Plover River near Stevens Point, Wis.	136	-	C10	2,020	1914-19, 1944-51	June 5, 1914	4.8	1,610	1.7
4008	Wisconsin River at Wisconsin Rapids, Wis.	5,400	-	-	40,300	1914-49, 1958-65	Sept.12, 1938	19.10	70,400	15
4015	Wisconsin River near Necedah, Wis.	5,860	-	-	40,600	1903-14, 1944-50	June 10, 1905	17.2	96,400	*1.08
4020	Yellow River at Babcock, Wis.	223	-	C9	4,700	1944-65	Apr. 2, 1952	17.38	11,600	50
4025	Yellow River at Sprague, Wis.	420	-	C9	6,400	1927-40	Sept.17, 1928	14.0	7,060	3
4030	Yellow River at Necedah, Wis.	526	1.0	C9	5,920	1941-57	Apr. 3, 1952	17.10	12,800	27
4035	Lemonweir River at New Lisbon, Wis.	500	1.3	C10	3,340	1944-65	May 8, 1960	12.94	6,880	22
4040	Wisconsin River near Wisconsin Dells, Wis.	7,830	-	-	42,200	1909-65	Sept.14, 1938	18.83	72,200	18
4050	Baraboo River near Baraboo, Wis.	600	.1	C11	2,910	1914-21, 1935,1943-65	Mar. 26, 1917	m17.5	7,900	*1.10
4060	Wisconsin River at Prairie du Sac, Wis.	8,950	-	-	43,000	1944-53	Apr. 13, 1951	17.10	67,700	12
4065	Black Earth Creek at Black Earth, Wis.	45.9	-	C11	485	1954-64	July 3, 1954	6.58	1,750	*1.46
4070	Wisconsin River at Muscoda, Wis.	10,300	-	-	44,000	1881,1914-65	Sept.16, 1938	11.48	80,800	30
4080	Kickapoo River at La Farge, Wis.	266	-	C10	3,030	1939-65	Mar. 8, 1950	b12.90	-	-
							May 26, 1961	12.70	7,040	37
4085	Knapp Creek near Bloomingdale, Wis.	8.47	-	C9	830	1955-64	July 1954	10.5	-	-
							Aug. 26, 1959	8.76	3,710	*1.81
4100	Kickapoo River at Gays Mills, Wis.	616	-	C10	5,040	1913-34	1913	b15.2	-	-
							Mar. 24, 1917	15.05	9,800	18
4105	Kickapoo River at Steuben, Wis.	690	.1	C10	5,240	1934-65	July 22, 1951	13.66	-	-
							Mar. 28, 1961	-	10,800	22
	Mississippi River main stem:									
4115	Mississippi River at Clayton, Iowa.	79,200	-	-	120,000	1930-36	Apr. 2, 1936	15.36	137,000	4
	Turkey River basin:									
4116	Turkey River at Spillville, Iowa.	177	-	B9	4,150	1947,1956-65	June 1947	18.4	10,000	20
4116.5	Crane Creek tributary near Saratoga, Iowa.	4.06	-	B9	560	1953-65	Aug. 31, 1962	6.56	1,830	*1.06
4117	Crane Creek near Lourdes, Iowa.	75.8	-	B9	2,620	1953-65	Aug. 31, 1962	15.70	11,900	*1.48
4120	Turkey River at Elkader, Iowa.	891	-	B9	9,800	1916,1933-42	June 1, 1916	34.3	j30,000	50
4125	Turkey River at Garber, Iowa.	1,545	-	B9	13,200	1890-1965	Feb. 23, 1922	28.06	32,300	22

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Grant River basin:									
4135	Grant River at Burton, Wis.	267	-	B8	9,800	1935-64	July 16, 1950	24.82	25,000	25
	Platte River basin:									
4140	Platte River near Rockville, Wis.	139	-	B8	6,820	1876-1965	July 16, 1950	17.26	43,500	*2.08
	Little Maquoketa River basin:									
4143.5	Little Maquoketa River near Graf, Iowa.	41.5	-	B8	3,620	1951-65	July 8, 1951	15.78	7,200	11
4144	Middle Fork Little Maquoketa River near Rickardsville, Iowa.	30.0	-	B8	3,060	1951-62	July 8, 1951	22.46	8,160	30
4144.5	North Fork Little Maquoketa River near Rickardsville, Iowa.	22.8	-	B8	2,650	1952-65	Oct. 30, 1961	11.43	4,320	6
4145	Little Maquoketa River near Durango, Iowa.	130	-	B8	6,700	1925-65	June 15, 1925	22.1	29,000	*1.41
4146	Little Maquoketa River tributary at Dubuque, Iowa.	1.51	-	B8	-	1952-65	July 31, 1957	7.98	1,120	-
	Galena River basin:									
4150	Galena River at Buncombe, Wis.	128	-	B8	6,600	1937-65	February 1937	17.1	18,000	32
4155	East Fork Galena River at Council Hill, Ill.	20.1	-	B8	2,490	1940-64	Apr. 29, 1947	15.3	16,600	*2.17
	Maquoketa River basin:									
4170	Maquoketa River near Manchester, Iowa.	305	-	B9	5,500	1925-65 1928-30, 1933-65	June 15, 1925 June 13, 1947	- 21.4	25,400 -	*1.50 -
4175	Maquoketa River near Delhi, Iowa.	347	-	B9	5,900	1929,1933-40	Mar. 4, 1929	89.82	7,360	3
4185	Maquoketa River near Maquoketa, Iowa.	1,553	-	B9	13,100	1903,1914-65	June 27, 1944	24.70	48,000	*1.19
	Apple River basin:									
4188	Mill Creek near Scales Mound, Ill.	.795	-	C9	-	1956-65	Sept.20, 1965	18.30	862	-
4190	Apple River near Hanover, Ill.	244	-	C9	4,900	1935-65	Jan. 5, 1946	b26.12	12,000	48
	Plum River basin:									
4195	Plum River near Savanna, Ill.	164	-	C9	4,000	1935-41	Feb. 21, 1937	28.03	5,800	6
4200	Plum River below Carroll Creek, near Savanna, Ill.	231	-	C9	4,800	1941-65	Jan. 6, 1946	28.74	11,600	46
	Mississippi River main stem:									
4205	Mississippi River at Clinton, Iowa.	85,600	-	-	133,000	1874-1965	Apr. 28, 1965	24.65	j307,000	*1.30
	Wapsipinicon River basin:									
4206	Little Wapsipinicon River tributary near Riceville, Iowa.	.90	-	B9	-	1953-65	Aug. 31, 1962	5.03	703	-
4206.2	Little Wapsipinicon River near Acme, Iowa.	7.76	-	B9	780	1953-65	Aug. 31, 1962	9.02	2,380	50
4206.4	Little Wapsipinicon River at Elma, Iowa.	37.3	-	B9	1,820	1953-65	Aug. 31, 1962	12.53	5,700	50
4209.6	Harter Creek near Independence, Iowa.	6.17	-	B9	700	1952-65	May 5, 1962	9.96	2,280	*1.06
4210	Wapsipinicon River at Independence, Iowa.	1,048	-	B10	7,000	1901-65	June 14, 1947	18.74	21,500	50
4211	Pine Creek tributary near Winthrop, Iowa.	.334	-	B9	-	1952-61	June 24, 1959	8.67	304	-
4212	Pine Creek near Winthrop, Iowa.	28.3	-	B9	1,570	1950-65	Sept.21, 1950	21.70	14,500	*3.01
4213	Pine Creek tributary No. 2 at Winthrop, Iowa	.704	-	B9	-	1953-65	June 24, 1959	7.12	443	-

4214	Wapsipinicon River at Central City, Iowa...	1,263	-	B10	7,800	1929,1941-50	June 15, 1947	19.3	22,500	40
4215	Wapsipinicon River at Stone City, Iowa.....	1,324	-	B10	8,100	1892,1903-13	July 1892	28.0	32,000	*1.29
4215.5	Buffalo Creek above Winthrop, Iowa.....	68.2	-	B9	2,500	1957-65	Mar. 30, 1960	18.59	5,350	14
4220	Wapsipinicon River near DeWitt, Iowa.....	2,330	-	B10	11,400	1935-65	June 27, 1944	12.07	26,000	17
	Rock River basin:									
4230	West Branch Rock River near Waupun, Wis....	41.4	-	C11	450	1949-64	Mar. 27, 1950	6.56	949	25
4235	South Branch Rock River at Waupun, Wis.....	62.8	-	C11	600	1949-64	Apr. 3, 1959	7.97	1,500	50
4240	East Branch Rock River near Mayville, Wis..	179	.1	C11	1,190	1950-64	Apr. 3, 1959	b11.02	3,400	*1.15
4255	Rock River near Watertown, Wis.....	971	1.9	C11	2,800	1932-64	Apr. 4, 1959	6.32	5,030	13
4260	Crawfish River at Milford, Wis.....	732	2.2	C11	2,150	1932-64	Apr. 6, 1959	11.15	6,140	*1.16
4265	Whitewater Creek near Whitewater, Wis.....	7.2	-	-	-	1926-28,	May 28, 1927	-	24.8	-
						1947-54	June 13, 1950	2.2	-	-
4270	Whitewater Creek at Whitewater, Wis.....	16.7	-	-	-	1927-28,	June 13, 1950	5.1	451	-
						1947-54				
4295	Yahara River near McFarland, Wis.....	351	7.0	C11	732	1931-64	July 23, 1950	6.33	-	-
							Apr. 10, 1959	-	867	3
4301	Badfish Creek near Stoughton, Wis.....	43.5	-	C11	470	1957-64	Jan. 13, 1960	4.60	871	14
4305	Rock River at Afton, Wis.....	3,300	2.7	C	7,400	1914-64	Feb. 5, 1916	b,c13.05	-	-
							Mar. 23, 1949	c11.81	13,000	11
4315	Turtle Creek near Clinton, Wis.....	186	.4	C10	2,230	1838-1964	February 1938	12.09	10,700	*1.94
4325	Pecatonica River at Darlington, Wis.....	274	-	C9	5,200	1937-64	July 16, 1950	20.71	22,000	*1.71
4330	East Branch Pecatonica River near Blanchardville, Wis.	221	-	C10	2,700	1915-64	Feb. 28, 1948	15.74	11,700	*1.76
4335	Yellowstone River near Blanchardville, Wis.	29.1	-	C10	800	1955-64	Mar. 29, 1960	10.47	2,240	*1.13
4340	Pecatonica River at Dill, Wis.....	951	-	C10	6,600	1914-19	Mar. 27, 1916	19.1	13,100	19
4345	Pecatonica River at Martintown, Wis.....	1,040	-	C10	7,000	1916,1940-64	Apr. 3, 1959	20.23	14,200	21
4350	Cedar Creek near Winslow, Ill.....	1.29	-	C10	-	1951-65	Mar. 20, 1959	b5.50	120	-
4355	Pecatonica River at Freeport, Ill.....	1,330	-	C10	8,100	1914-65	Mar. 16, 1929	19.76	18,400	34
4360	Mount Vernon Creek near Mount Vernon, Wis..	16.1	-	C10	550	1954-64	Apr. 1, 1959	6.32	940	10
							Jan. 12, 1960	b7.00	-	-
4365	Sugar River near Brodhead, Wis.....	527	-	C10	4,650	1914-64	Sept.13, 1915	11.40	14,800	*1.29
4370	Pecatonica River at Shirland, Ill.....	2,540	-	C10	12,000	1916,1937, 1940-58	Jan. 8, 1946	-	15,400	4
4375	Rock River at Rockton, Ill.....	6,290	1.9	C	16,200	1904-8, 1915-19, 1940-65	Mar. 30, 1916	13.06	32,500	20
4385	Kishwaukee River at Belvidere, Ill.....	525	-	C10	4,600	1938,1940-65	Jan. 24, 1938	b16.9	-	-
							Mar. 16, 1943	13.10	10,300	32
4388.5	Middle Branch of South Branch Kiswaukee River near Malta, Ill.	1.15	-	C10	-	1956-65	Apr. 28, 1959	14.63	399	
4390	South Branch Kishwaukee River at De Kalb, Ill.	70	-	C10	1,340	1926-33	June 12, 1929	8.93	978	1.6
4395	South Branch Kishwaukee River near Fairdale, Ill.	386	-	C10	3,800	1937-65	March 1937	11.9	-	-
						1940-65	Jan. 5, 1946	-	6,840	13
							Feb. 24, 1949	b10.00	-	-
4400	Kishwaukee River near Perryville, Ill.....	1,090	-	C10	7,200	1938-65	January 1938	23.85	-	-
						1940-65	Jan. 6, 1946	19.50	16,400	34
4405	Killbuck Creek near Monroe Center, Ill.....	114	-	C10	1,820	1940-65	July 9, 1951	11.41	6,100	*1.35
							Oct. 10, 1954	-	6,100	-
4409	Leaf River tributary near Forreston, Ill...	.162	-	C9	-	1956-65	June 8, 1958	17.45	213	-
4410	Leaf River at Leaf River, Ill.....	102	-	C9	3,100	1938-65	Feb. 4, 1938	15.9	-	-
						1940-65	Feb. 27, 1948	14.44	6,510	24

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal $Q_{2.33}$ (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Rock River basin--Continued									
4415	Rock River at Oregon, Ill.	8,120	1.5	C	22,500	1937-49	February 1937	18.7	-	-
						1940-49	Jan. 6, 1946	15.00	45,500	21
4420	Kyte River near Flagg Center, Ill.	125	-	C10	1,920	1937-51	February 1937	8.5	-	-
						1940-51	Feb. 20, 1951	7.70	2,630	5
4435	Rock River at Como, Ill.	8,700	1.4	C	24,300	1915-61	Feb. 22, 1937	-	51,000	24
							Feb. 7, 1938	b17.51	-	-
4440	Elkhorn Creek near Penrose, Ill.	153	-	C9	3,850	1938-65	June 1938	19.6	-	-
						1940-65	Jan. 5, 1946	17.75	5,980	7
4455	Rock Creek near Morrison, Ill.	143	-	C9	3,700	1937-65	June 1937	17.7	-	-
						1940-65	Jan. 6, 1946	16.04	5,770	7
4465	Rock River near Joslin, Ill.	9,520	1.3	C	27,500	1892-1965	Mar. 3, 1948	b16.23	-	-
							Mar. 22, 1948	14.46	46,200	9
4470	Green River at Amboy, Ill.	199	-	C10	2,520	1940-65	Oct. 10, 1954	12.26	6,120	46
4472	Normandy ditch at Normandy, Ill.	5.90	-	C10	300	1956-65	Mar. 17, 1965	14.36	90	-
4475	Green River near Geneseo, Ill.	958	-	C10	6,600	1936-65	Oct. 11, 1954	14.69	8,900	5
							Jan. 24, 1965	b16.65	-	-
4480	Mill Creek at Milan, Ill.	62.5	-	C9	2,400	1936-65	Apr. 24, 1965	11.53	9,060	*1.52
4480.5	Sand Creek near Milan, Ill.	.198	-	C9	-	1956-65	Mar. 4, 1963	19.20	73	-
	Iowa River basin:									
4485	West Branch Iowa River near Klemme, Iowa.	112	-	B11	900	1948-58	June 21, 1954	14.97	1,920	14
4486	East Branch Iowa River above Hayfield, Iowa	2.23	-	B11	-	1953-65	Apr. 6, 1965	7.31	250	-
4487	East Branch Iowa River near Hayfield, Iowa.	7.94	-	B11	-	1952-65	June 18, 1954	13.01	457	-
4488	East Branch Iowa River near Garner, Iowa.	45.1	-	B11	480	1952-65	Mar. 26, 1961	12.81	1,120	19
							Apr. 6, 1965	b12.89	-	-
4489	East Branch Iowa River tributary near Garner, Iowa.	5.98	-	B11	-	1952-65	June 17, 1954	-	206	-
							Apr. 6, 1965	b9.15	-	-
4490	East Branch Iowa River near Klemme, Iowa.	133	-	B11	1,000	1944-65	June 19, 1954	11.2	5,960	*1.94
4495	Iowa River near Rowan, Iowa.	429	-	B	2,070	1941-65	June 21, 1954	14.88	8,460	*1.33
4512	South Fork Iowa River near New Providence, Iowa.	223	-	B10	2,700	1950-56	Sept.20, 1950	-	3,750	4
4512.5	Beaver Creek near Eldora, Iowa.	69.8	-	B10	1,340	1950-56	Sept.21, 1950	9.09	3,280	22
4513.5	Honey Creek at Bangor, Iowa.	95.6	-	B10	1,620	1950-56	June 11, 1954	9.60	3,350	12
4514.5	Minerva Creek near Clemons, Iowa.	148	-	B10	2,100	1950-56	June 2, 1954	9.50	-	-
							June 10, 1954	-	5,700	32
4515	Iowa River at Marshalltown, Iowa.	1,564	-	B	8,500	1903,1915-27, 1929-30, 1933-65	June 4, 1918	17.74	42,000	*1.61
4517	Timber Creek near Marshalltown, Iowa.	118	-	B9	3,300	1947-65	June 1947	16.8	-	-
						1950-65	June 18, 1950	15.77	4,940	5

4518	Deer Creek at Toledo, Iowa.....	76.4	-	B9	2,650	1950-55	June 2, 1961	-	3,250	3
							Feb. 20, 1953	9.51	-	-
4519	Richland Creek near Haven, Iowa.....	56.1	-	B9	2,250	1918	June 1918	14.3	-	-
						1950-61	Mar. 30, 1960	12.39	3,650	6
4520	Salt Creek near Elberon, Iowa.....	201	-	B9	4,450	1944-65	June 16, 1944	19.9	-	-
							June 13, 1947	-	35,000	*2.56
4522	Walnut Creek near Hartwick, Iowa.....	70.9	-	B9	2,540	1947-65	June 1947	17.7	-	-
						1950-65	Sept. 3, 1958	15.67	4,930	10
4525	Iowa River near Belle Plaine, Iowa.....	2,445	-	B	11,400	1902-59	June 5, 1918	17.85	43,000	*1.23
4530	Bear Creek at Ladora, Iowa.....	189	-	B9	4,400	1946-65	Mar. 30, 1960	14.60	10,500	20
4531	Iowa River at Marengo, Iowa.....	2,794	-	B	13,800	1957-65	Mar. 31, 1960	19.21	30,800	16
4536	Rapid Creek below Morse, Iowa.....	7.84	-	B9	790	1951-65	May 23, 1965	25.48	2,750	*1.14
4537	Rapid Creek tributary No. 4 near Oasis, Iowa.	1.55	-	B9	-	1951-65	July 20, 1953	18.23	956	-
4537.5	Rapid Creek southwest of Morse, Iowa.....	14.8	-	B9	1,100	1951-65	May 23, 1965	29.42	4,260	*1.26
4538.5	Rapid Creek tributary No. 3 near Oasis, Iowa.	1.51	-	B9	-	1951-65	July 14, 1962	23.29	3,050	-
							Sept.21, 1965	24.16	-	-
4539	Rapid Creek tributary near Oasis, Iowa.....	.93	-	B9	-	1951-65	July 18, 1956	18.32	809	-
4539.5	Rapid Creek tributary near Iowa City, Iowa.	3.38	-	B9	510	1951-65	Sept.21, 1965	26.40	-	-
4540	Rapid Creek near Iowa City, Iowa.....	24.6	-	B9	1,450	1938-65	May 23, 1965	14.10	6,100	*1.37
4543	Clear Creek near Coralville, Iowa.....	98.1	-	B9	3,050	1953-65	May 29, 1962	-	5,390	8
							Sept.21, 1965	13.47	-	-
4545	Iowa River at Iowa City, Iowa.....	3,271	-	B	12,800	1850-1965	June 1851	24	70,000	*1.78
4550	Ralston Creek at Iowa City, Iowa.....	3.01	-	B9	480	1925-65	July 18, 1956	9.06	1,690	*1.15
4551	Old Mans Creek near Iowa City, Iowa.....	201	-	B9	4,500	1951-65	May 29, 1962	14.52	12,000	30
4551.5	North Fork English River near Montezuma, Iowa.	34.0	-	B9	1,720	1953-65	May 24, 1953	13.25	4,240	22
4552	North Fork English River near Guernsey, Iowa.	68.7	-	B9	2,500	1953-65	May 24, 1953	-	7,000	35
							Mar. 30, 1960	13.63	-	-
4552.8	South Fork English River tributary near Barnes City, Iowa.	2.51	-	B9	440	1953-61	July 18, 1959	-	793	8
							July 27, 1961	8.81	-	-
4553	South Fork English River near Barnes City, Iowa.	11.5	-	B9	960	1953-65	July 27, 1961	13.43	1,780	9
4553.5	South Fork English River tributary No. 2 near Montezuma, Iowa.	.523	-	B9	-	1953-65	July 27, 1961	13.65	344	-
4555	English River at Kalona, Iowa.....	573	-	B9	7,700	1930-65	Sept.21, 1965	21.45	20,000	27
4557	Iowa River near Lone Tree, Iowa.....	4,293	-	B	14,200	1944-65	Sept.21, 1965	20.27	31,200	15
						1957-65	Apr. 1, 1960	17.90	28,100	10
4570	Cedar River near Austin, Minn.....	425	.7	B9	5,610	1910-14,	Mar. 26, 1950	17.81	-	-
						1945-64	Mar. 29, 1962	-	9,530	7
4575	Cedar River at Mitchell, Iowa.....	826	-	B9	9,400	1934-42,1961	Mar. 27, 1961	93.6	20,500	14
4577	Cedar River at Charles City, Iowa.....	1,054	-	B9	10,600	1946-61	Mar. 27, 1961	21.53	29,200	33
4580	Little Cedar River near Ionia, Iowa.....	306	-	B9	5,500	1954-65	Mar. 27, 1961	15.58	10,800	11
4585	Cedar River at Janesville, Iowa.....	1,661	-	B9	13,600	1905-6,	Mar. 28, 1961	16.33	37,000	32
						1915-65				
4589	West Fork Cedar River at Finchford, Iowa...	846	-	B10	6,200	1929-65	June 27, 1951	17.28	31,900	*1.68
4590	Shell Rock River near Northwood, Iowa.....	300	2.8	B11	1,080	1946-65	Apr. 8, 1965	12.07	3,400	*1.03
4595	Winnebago River at Mason City, Iowa.....	526	1.4	B10	3,470	1933-65	Mar. 30, 1933	c15.7	10,800	50
4605	Shell Rock River at Marble Rock, Iowa.....	1,318	1.3	B9	9,100	1933-53	Apr. 7, 1951	9.35	22,700	23

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Iowa River basin--Continued									
4615	Shell Rock River near Clarkesville, Iowa...	1,626	-	B9	13,400	1915-27, 1933-34,1961	Mar. 28, 1961	-	33,400	23
4620	Shell Rock River at Shell Rock, Iowa.....	1,746	-	B9	14,000	1856-1965	1856	m17.7	a45,000	*1.05
4630	Beaver Creek at New Hartford, Iowa.....	347	-	B10	3,550	1946-65	June 13, 1947	13.5	18,000	*1.65
4635	Blackhawk Creek at Hudson, Iowa.....	303	-	B10	3,300	1952-65	Mar. 31, 1960	b16.93	9,000	32
4640	Cedar River at Waterloo, Iowa.....	5,146	-	B9	24,800	1929-65	Mar. 29, 1961	21.86	76,700	50
4645	Cedar River at Cedar Rapids, Iowa.....	6,510	-	B9	28,100	1851-1965	June 1851	a20	-	-
							Mar. 18, 1929	20.0	-	-
							Mar. 31, 1961	-	73,000	27
4650	Cedar River near Conesville, Iowa.....	7,785	-	B9	30,800	1929-65	Apr. 2, 1961	16.62	70,800	17
4655	Iowa River at Wapello, Iowa.....	12,499	-	C9	40,000	1903-65	June 18, 1947	-	94,000	40
							Apr. 5, 1960	17.02	-	-
	Edwards River basin:									
4660	Edwards River near Orion, Ill.....	163	-	C10	2,240	1924-65	August 1924	20.2	-	-
						1941-65	Feb. 19, 1951	13.41	8,910	*1.61
4665	Edwards River near New Boston, Ill.....	434	-	C10	4,100	1935-65	Apr. 26, 1950	-	7,280	12
							May 12, 1951	-	7,280	-
							Oct. 13, 1954	21.46	-	-
	Pope Creek basin:									
4670	Pope Creek near Keithsburg, Ill.....	171	-	C10	2,330	1935-65	Feb. 21, 1937	b28.0	-	-
							Mar. 12, 1939	26.24	4,230	13
	Henderson Creek basin:									
4675	Henderson Creek near Little York, Ill.....	151	-	B10	2,150	1924-65	June 28, 1924	23.2	-	-
						1941-58, 1960-65	Apr. 25, 1950	17.65	8,250	*1.24
4680	North Henderson Creek near Seaton, Ill.....	66.4	-	B10	1,310	1935-51	May 1935	15.7	-	-
						1941-51	Apr. 24, 1950	14.27	1,740	5
4685	Cedar Creek at Little York, Ill.....	128	-	B9	3,500	1924-65	June 1924	18.1	-	-
						1941-65	July 9, 1956	17.04	8,260	19
4690	Henderson Creek near Oquawka, Ill.....	428	-	B9	6,600	1924-65	Apr. 25, 1950	28.17	16,500	23
4695	South Henderson Creek at Biggsville, Ill...	81.4	-	B9	2,740	1924-65	1924	19	-	-
						1940-65	June 12, 1946	18.50	6,700	22
	Ellison Creek basin:									
4697.5	Ellison Creek tributary near Roseville, Ill.	.260	-	B9	-	1956-65	July 2, 1958	16.23	178	-
	Skunk River basin:									
4700	Skunk River near Ames, Iowa.....	315	-	B10	3,380	1921-27, 1930,1933-65	May 20, 1944	13.90	-	-
							June 10, 1954	-	8,630	25
4705	Squaw Creek at Ames, Iowa.....	204	-	B10	2,600	1918-27,1965	June 4, 1918	14.5	6,900	29
4710	Skunk River below Squaw Creek, near Ames, Iowa.	556	-	B10	4,740	1944-65	May 19, 1944	-	10,000	13
							Mar. 30, 1960	13.2	-	-

4715	Skunk River near Oskaloosa, Iowa.....	1,635	-	B10	9,200	1944-65	May 1944	25.8	37,000	*1.31
4725	North Skunk River near Sigourney, Iowa.....	730	-	B10	5,600	1944-65	Mar. 31, 1960	25.33	27,500	*1.60
4730	Skunk River at Coppock, Iowa.....	2,916	-	B10	13,100	1881-1950	May 24, 1944	22.27	41,500	*1.03
4735	Big Creek near Mount Pleasant, Iowa.....	106	-	B10	1,720	1948-65	Aug. 3, 1948	27	-	-
							Sept.21, 1965	18.22	6,150	*1.16
4740	Skunk River at Augusta, Iowa.....	4,303	-	B9	22,500	1903,1915-65	Apr. 3, 1960	25.00	51,000	16
	Mississippi River main stem:									
4745	Mississippi River at Keokuk, Iowa.....	119,000	-	-	182,000	1851,	June 6, 1851	21.0	360,000	*1.24
						1878-1965	May 1, 1965	22.04	327,000	-
	Des Moines River basin:									
4750	Heron Lake Outlet near Heron Lake, Minn....	457	-	-	-	1931-43	Sept. 6, 1942	8.56	1,880	-
4760	West Fork Des Moines River at Jackson, Minn.	1,220	3.1	B6	2,520	1909-13, 1931-65	Apr. 6, 1965	b18.62	-	-
							Apr. 9, 1965	-	9,530	*1.23
4765	West Fork Des Moines River at Estherville, Iowa.	1,372	3.0	B6	2,830	1952-65	June 8, 1953	-	10,800	*1.24
							Apr. 10, 1965	15.61	-	-
4767.5	West Fork Des Moines River at Humboldt, Iowa.	2,256	2	B11	4,900	1940-61,1965	Apr. 8, 1965	13.90	14,400	43
4780	East Fork Des Moines River near Burt, Iowa.	462	-	B6	1,620	1952-65	Apr. 6, 1965	14.21	5,000	50
4785	East Fork Des Moines River near Hardy, Iowa	1,268	-	B11	4,800	1938-54	September 1938	17.4	22,000	*1.49
4790	East Fork Des Moines River at Dakota City, Iowa.	1,308	-	B11	4,950	1954-65	June 21, 1954	16.95	18,800	*1.24
4800	Lizard Creek near Clare, Iowa.....	257	.5	B10	2,670	1940-65	June 23, 1947	16.0	10,000	*1.22
4805	Des Moines River at Fort Dodge, Iowa.....	4,190	.3	B10	15,100	1905-6, 1914-27 1947-65	June 23, 1947	19.62	-	-
							Apr. 8, 1965	-	35,600	17
4810	Boone River near Webster City, Iowa.....	844	-	B10	6,200	1896-1965	June 10, 1918	19.1	21,500	*1.13
4815	Des Moines River near Boone, Iowa.....	5,511	.2	B10	18,200	1903-65	June 22, 1954	25.35	57,400	*1.03
4820	Des Moines River at Des Moines, Iowa.....	6,245	-	B10	20,800	1892-1961	June 24, 1954	30.16	60,200	40
4825	North Raccoon River near Jefferson, Iowa...	1,619	.5	B10	8,100	1940-65	June 23, 1947	22.3	29,100	*1.17
4826	Hardin Creek at Farnhamville, Iowa.....	43.7	-	B10	1,000	1952-65	Aug. 26, 1954	10.48	2,000	11
4828	Happy Run at Churdan, Iowa.....	7.58	-	B10	350	1951-65	Mar. 25, 1962	8.57	150	1.2
4829	Hardin Creek near Farlin, Iowa.....	101	-	B10	1,680	1951-65	Mar. 29, 1951	-	2,270	4
							Mar. 29, 1960	13.32	-	-
4830	East Fork Hardin Creek near Churdan, Iowa..	24.0	-	B10	700	1952-65	May 5, 1960	8.92	413	1.3
4840	South Raccoon River at Redfield, Iowa.....	988	-	B10	6,750	1940-65	July 2, 1958	29.04	35,000	*1.68
4845	Raccoon River at Van Meter, Iowa.....	3,441	-	B10	14,400	1915-65	June 13, 1947	-	41,200	38
							July 3, 1958	21.77	-	-
4855	Des Moines River below Raccoon River, at Des Moines, Iowa.	9,879	-	B10	27,500	1893-1965	June 26, 1947	21.6	77,000	35
4860	North River near Norwalk, Iowa.....	349	-	B10	3,530	1940-65	June 13, 1947	25.3	32,000	*2.95
4864.9	Middle River near Indianola, Iowa.....	506	-	B9	7,200	1940-62	June 13, 1947	26.40	34,000	*1.54
4873	South Otter Creek near Woodburn, Iowa.....	2.26	-	B9	410	1953-65	Apr. 22, 1963	11.14	-	-
4873.5	South Otter Creek tributary near Woodburn, Iowa.	.71	-	B9	-	1955-65	May 21, 1959	13.21	-	-
4874.7	South River near Ackworth, Iowa.....	474	-	B9	7,000	1930,1940-61	June 5, 1947	24.6	34,000	*1.58
4876	South Whitebreast Creek near Osceola, Iowa.	28.0	-	B9	1,560	1953-65	Sept. 6, 1964	13.51	1,790	3
4878	Whitebreast Creek at Lucas, Iowa.....	128	-	B9	3,500	1953-65	May 22, 1959	16.98	11,900	*1.11
4880	Whitebreast Creek near Knoxville, Iowa.....	380	-	B9	6,220	1945-62	June 6, 1947	19.6	14,000	16
4885	Des Moines River near Tracy, Iowa.....	12,479	-	B9	40,000	1851-1965	June 14, 1947	26.5	155,000	*1.26

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal $Q_{2.33}$ (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Des Moines River basin--Continued									
4890	Cedar Creek near Bussey, Iowa	374	-	B9	6,200	1946-65	June 1946	28.05	31,500	*1.66
4895	Des Moines at Ottumwa, Iowa	13,374	-	B9	41,500	1850-1965	May 31, 1903	-	m140,000	*1.10
							June 7, 1947	20.2	135,000	-
4905	Des Moines River at Keosauqua, Iowa	14,038	-	B9	42,400	1851-1965	June 1, 1903	27.85	146,000	*1.12
4910	Sugar Creek near Keokuk, Iowa	105	-	B9	3,150	1905-65	June 9, 1905	20.6	k 33,000	*3.42
	Fox River basin:									
4941	South Fox Creek tributary near West Grove, Iowa.	.55	-	B9	-	1953-65	Mar. 4, 1963	8.40	-	-
4943	Fox River at Bloomfield, Iowa	87.7	-	B9	2,850	1953-65	May 6, 1960	24.02	8,600	48
4945	Fox River at Cantril, Iowa	161	-	B9	3,980	1920-51	June 18, 1946	18.94	16,500	*1.35
4950	Fox River at Wayland, Mo	400	-	B9	6,400	1909,1922-64	June 29, 1933	21.53	25,000	*1.28
4951	Big Branch tributary near Wayland, Mo	.70	-	B9	-	1955-64	June 10, 1958	8.68	360	-
	Bear Creek basin:									
4952	Little Creek near Breckenridge, Ill	1.48	-	B8	-	1956-65	July 15, 1958	19.04	1,150	-
4955	Bear Creek near Marcelline, Ill	348	-	B8	11,200	1944-65	July 22, 1951	26.07	21,200	9
	Wyaconda River basin:									
4956	South Wyaconda River near West Grove, Iowa.	4.69	-	B9	610	1953-65	Aug. 5, 1959	9.64	1,970	*1.05
4956.5	South Wyaconda River near Bloomfield, Iowa.	19.1	-	B9	1,270	1953-62	Aug. 5, 1959	13.11	-	-
4960	Wyaconda River above Canton, Mo	393	-	B9	6,350	1922-64	June 30, 1933	30.00	17,700	34
	Frazier Creek basin:									
4969	Homan Creek tributary near Quincy, Ill	.674	-	B8	-	1956-65	July 12, 1960	26.80	604	-
	Fabius River basin:									
4970	North Fabius River at Monticello, Mo	452	-	B9	6,800	1874-1964	June 30, 1933	30.8	17,400	26
4975	Middle Fabius River near Baring, Mo	185	-	B9	4,250	1875,1931-64	July 1875	a27	-	-
							June 16, 1945	-	9,540	16
4977	Bridge Creek Branch near Baring, Mo	2.54	-	B9	-	1955-64	June 23, 1960	15.20	800	
4980	Middle Fabius River near Monticello, Mo	393	-	B9	6,350	1946-64	(n)	26.6	16,800	29
							June 7, 1947	26.28	16,200	-
4985	North Fabius River at Taylor, Mo	930	-	B9	10,000	1929,1931-42	Nov. 19, 1928	23.5	-	-
							June 30, 1933	-	30,300	48
5000	South Fabius River near Taylor, Mo	620	-	B9	8,050	1929-64	June 8, 1947	19.5	19,700	22
	North River basin:									
5005	North River at Bethel, Mo	58	-	B9	2,300	1875-1964	Apr. 5, 1947	20.9	6,930	46
5010	North River at Palmyra, Mo	373	-	B8	11,700	1935-64	(n)	28	-	-
							Apr. 11, 1944	-	27,400	19
							May 28, 1955	24.42	-	-
	South River basin:									
5012	Nichols Branch near Palmyra, Mo	2.58	-	B8	-	1949,1955-64	July 21, 1949	-	3,700	-
							May 8, 1961	19.60	-	-

	Bear Creek basin:									
5020	Bear Creek at Hannibal, Mo.	31.0	-	B8	3,110	1937,1939-42, 1948-64	Aug. 3, 1957	c14.05	6,500	13
	Salt River basin:									
5025	Salt River near Shelbina, Mo.	481	-	B9	7,050	1909-64	June 7, 1947	27.4	23,000	*1.06
5030	Douglas Creek near Emden, Mo.	2.69	-	B9	450	1956-64	June 20, 1956	7.86	1,200	30
5035	Salt River near Hunnewell, Mo.	626	-	B9	8,100	1931-40	July 1, 1933	21.20	15,400	10
5050	South Fork Salt River at Santa Fe, Mo.	298	-	B9	5,440	1940-64	Apr. 23, 1944	21.10	13,100	20
5060	Youngs Creek near Mexico, Mo.	67.4	-	B9	2,480	1930-64	(n)	15.1	-	-
							July 31, 1958	12.52	6,530	28
5065	Middle Fork Salt River at Paris, Mo.	356	-	B9	6,000	1940-64	Aug. 1, 1958	29.94	23,100	*1.25
5070	Elk Fork Salt River near Paris, Mo.	262	-	B9	5,100	1875-1958	July 31, 1958	21.03	22,300	*1.42
5075	Salt River near Monroe City, Mo.	2,230	-	B8	30,300	1928-64	June 1928	36	-	-
							Aug. 1, 1958	34.81	71,100	19
5080	Salt River near New London, Mo.	2,480	-	B8	32,000	1858,1922-64	Aug. 2, 1958	29.92	64,700	12
	The Sny basin:									
5100	Hadley Creek near Barry, Ill.	40.6	-	B8	3,600	1956-65	Apr. 29, 1956	11.31	8,000	16
5105	Hadley Creek at Kinderhook, Ill.	72.7	-	B8	4,900	1939-65	Aug. 17, 1939	15.93	-	-
						1940-65	Apr. 23, 1944	13.91	15,000	50
5116.25	Kiser Creek tributary near Barry, Ill.	.748	-	B8	-	1956-65	Apr. 21, 1964	18.82	1,190	-
5125	Bay Creek at Pittsfield, Ill.	39.6	-	B8	3,530	1926-65	Sept. 8, 1926	18.4	-	-
						1940-65	Sept.16, 1965	14.77	12,600	*1.16
5130	Bay Creek at Nebo, Ill.	162	-	B8	7,550	1916,1940-65	Aug. 16, 1946	19.31	23,500	50
	Salt Spring Creek basin:									
5132	Salt Spring Creek near Gilead, Ill.	1.20	-	B8	-	1956-65	June 30, 1960	19.74	1,280	-
	Bryant Creek basin:									
5134	Knox Branch near Elsberry, Mo.	1.17	-	B8	-	1955-61	June 30, 1960	4.20	580	-
	Kings Lake basin:									
5134.5	Lost Creek tributary near Elsberry, Mo.	.33	-	B8	-	1955-61	June 14, 1957	4.26	335	-
5134.7	North Fork Lost Creek near Elsberry, Mo.	2.23	-	B8	-	1955-61	Aug. 5, 1959	3.51	1,220	-
5135	Lost Creek at Elsberry, Mo.	12.2	-	B8	1,900	1955-61	June 30, 1960	11.48	3,880	12
5136	Camp Creek near Elsberry, Mo.	1.50	-	B8	-	1955-64	May 21, 1957	4.77	950	-
5136.5	Hurricane Creek near Elsberry, Mo.	3.06	-	B8	-	1955-64	June 14, 1957	9.56	1,620	-
	Cuivre River basin:									
5142	Reid Branch near Bowling Green, Mo.	.54	-	B8	-	1955-64	May 25, 1960	8.15	498	-
5145	Cuivre River near Troy, Mo.	903	-	B8	18,800	1888-1964	Oct. 5, 1941	33.4	120,000	*2.08
	Peruque Creek basin:									
5147	Dry Branch near Wentzville, Mo.	.97	-	B8	-	1955-64	June 15, 1957	15.42	753	-
	Illinois River basin:									
5150	Kankakee River near North Liberty, Ind.	152	-	-	600	1951-64	Oct. 10, 1954	-	686	6
							Oct. 12, 1954	8.64	-	-
5155	Kankakee River at Davis, Ind.	508	-	-	1,210	1926-64	Dec. 15, 1927	9.50	1,700	25
5160	Yellow River near Bremen, Ind.	132	-	C11	1,000	1956-64	May 13, 1956	-	1,380	5
							Mar. 30, 1960	13.07	-	-
5165	Yellow River at Plymouth, Ind.	284	0.3	C11	1,580	1949-64	Oct. 12, 1954	17.13	5,390	*1.38
5170	Yellow River at Knox, Ind.	425	.4	C11	2,040	1944-64	Oct. 15, 1954	13.75	5,660	*1.12
5175	Kankakee River at Dunns Bridge, Ind.	1,308	-	-	3,500	1949-64	Oct. 22, 1954	13.20	5,300	23
5180	Kankakee River at Shelby, Ind.	1,753	-	-	4,100	1923-64	Dec. 21, 1927	11.40	7,200	*1.14
5190	Singleton ditch at Schneider, Ind.	122	1.3	C11	721	1944-64	Dec. 22, 1949	10.5	-	-
							Feb. 14, 1959	-	1,120	7
5195	West Creek near Schneider, Ind.	54.5	-	C11	545	1949-51, 1954-64	Oct. 10, 1954	8.06	1,840	*1.37

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal $Q_{2.33}$ (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Illinois River basin--Continued									
5200	Singleton ditch at Illinoi, Ill	219	0.7	C11	1,220	1945-65	Feb. 14, 1959	-	2,040	9
							Mar. 4, 1963	b10.11	-	-
5205	Kankakee River at Momence, Ill	2,340	-	-	6,200	1915-65	Jan. 25, 1930	b8.09	-	-
							Apr. 25, 1950	-	10,100	18
5210	Iroquois River at Rosebud, Ind	30.3	-	C11	364	1949-64	Apr. 4, 1950	-	422	3
							Feb. 10, 1959	8.86	-	-
5220	Iroquois River near North Marion, Ind	134	-	C11	1,010	1949-64	June 10, 1958	15.09	2,040	20
5225	Iroquois River at Rensselaer, Ind	194	1.1	C11	1,030	1910,1949-64	June 10, 1958	16.54	2,550	50
5230	Bice ditch near South Marion, Ind	22.6	-	C11	296	1949-64	June 13, 1958	12.02	780	*1.07
5235	Big Slough Creek near Collegeville, Ind	84.1	-	C11	735	1913,1927, 1949-64	June 13, 1958	13.7	2,030	*1.12
							Mar. 5, 1963	b16.46	-	-
5240	Carpenter Creek at Egypt, Ind	48.1	-	C11	500	1949-51, 1953-64	June 10, 1958	11.66	3,720	*3.00
5245	Iroquois River near Foresman, Ind	452	.5	C11	2,080	1949-64	June 14, 1958	24.42	5,930	*1.15
5250	Iroquois River at Iroquois, Ill	682	-	C11	3,120	1945-65	June 13, 1958	26.31	10,400	*1.35
5250.5	Iroquois River tributary near Sheldon, Ill.	10.0	-	-	-	1956-65	July 13, 1957	21.16	1,950	-
5255	Sugar Creek at Milford, Ill	430	-	B9	6,640	1949-65	Feb. 21, 1951	20.90	22,900	*1.12
							Feb. 10, 1959	b23.74	-	-
5260	Iroquois River near Chebanse, Ill	2,120	-	C10	10,800	1913-65	Spring 1913	19.6	34,000	*1.27
5261.5	Kankakee River tributary near Bourbonnais, Ill.	.192	-	C10	-	1956-65	July 13, 1957	18.21	233	-
5265	Terry Creek near Custer Park, Ill	12.0	-	C10	460	1950-65	July 13, 1957	11.15	545	3
5270.5	Prairie Creek near Frankfort, Ill	.830	-	C10	-	1956-65	July 13, 1957	17.22	784	-
5275	Kankakee River near Wilmington, Ill	5,250	-	-	22,500	1883-1961	1883,1887	16.73	-	-
							July 13, 1957	-	75,900	*1.24
5280	Des Plaines River near Gurnee, Ill	215	-	C11	1,400	1946-58, 1960-65	Apr. 3, 1960	10.64	4,070	*1.18
5285	Buffalo Creek near Wheeling, Ill	19.4	-	C11	268	1953-65	July 12, 1957	6.26	-	-
							Mar. 29, 1960	-	457	11
5290	Des Plaines River near Des Plaines, Ill	359	-	C11	2,000	1938,1941-65	July 4, 1938	9.0	5,000	50
5295	McDonald Creek near Mount Prospect, Ill	7.52	-	C11	-	1953-65	July 13, 1957	8.04	430	-
5300	Weller Creek at Des Plaines, Ill	13.1	-	C11	205	1951-65	July 13, 1957	12.37	668	*1.32
5305	Willow Creek near Park Ridge, Ill	19.6	-	C11	220	1951-58	July 13, 1957	9.40	1,300	*2.21
5308	Des Plaines River at Forest Park, Ill	470	-	C11	2,420	1954-61	July 14, 1957	9.25	4,080	7
5310	Salt Creek near Arlington Heights, Ill	32.5	-	C11	390	1951-65	July 13, 1957	9.82	-	-
							Mar. 30, 1960	-	721	14
5311	Meachum Creek at Medinah, Ill	3.12	-	C11	-	1956-65	Mar. 16, 1960	12.77	-	-
5315	Salt Creek at Western Springs, Ill	114	-	C11	950	1946-65	Mar. 20, 1948	-	1,920	21
							Oct. 11, 1954	8.27	-	-
5320	Addison Creek at Bellwood, Ill	18.2	-	C11	255	1951-65	Oct. 11, 1954	9.48	598	38
5325	Des Plaines River at Riverside, Ill	635	-	C11	3,000	1887-1965	Mar. 18, 1919	22.2	7,450	50

5330	Flagg Creek near Willow Springs, Ill.....	16.2	-	C10	550	1951-65	Sept.14, 1961	9.98	2,680	*1.97
5335	Des Plaines River at Lemont, Ill.....	687	-	C11	3,130	1915-44	Mar. 18, 1919	6.50	5,520	12
5345	North Branch Chicago River at Deerfield, Ill.	20.7	-	C11	280	1953-65	Apr. 28, 1954	9.63	292	3
5350	Skokie River at Lake Forest, Ill.....	12.8	-	C11	200	1952-65	Nov. 13, 1951	7.16	321	8
5355	West Fork of North Branch Chicago River at Northbrook, Ill.	11.5	-	C11	190	1953-65	July 13, 1957	9.65	930	*1.98
5360	North Branch Chicago River at Niles, Ill...	102	-	C11	840	1951-65	July 13, 1957	9.28	1,850	30
5363.5	Stony Creek (East) at Chicago Ridge, Ill...	-	-	C11	-	1954-63	May 1959	4.42	-	-
5364	Stony Creek (East) at Blue Island, Ill.....	18.1	-	C11	255	1954-64	Oct. 10, 1954	5.88	432	10
5365	Tinley Creek near Palos Park, Ill.....	11.3	-	C10	445	1951-65	Oct. 10, 1954	10.30	1,120	*1.02
5375	Long Run near Lemont, Ill.....	20.8	-	C10	640	1951-65	Oct. 10, 1954	9.91	3,160	*2.00
5380	Des Plaines River at Joliet, Ill.....	762	-	C11	3,400	1915-32	May 5, 1919	9.03	21,800	*2.60
5383	Marley Creek near Mokena, Ill.....	8.38	-	C10	370	1954-65	Oct. 10, 1954	10.8	501	5
5385	Spring Creek at Joliet, Ill.....	19.7	-	C10	620	1926-33	June 11, 1926	6.80	1,160	15
5390	Hickory Creek at Joliet, Ill.....	107	-	C10	1,730	1902-65	1902	-	16,700	*3.90
						1945-65	July 13, 1957	12.77	15,200	-
5405	Du Page River at Troy, Ill.....	325	-	C10	3,450	1941-65	Oct. 11, 1954	11.06	12,000	*1.41
5420	Mazon River near Coal City, Ill.....	470	-	B9	7,000	1924-65	Aug. 8, 1924	21	-	-
						1940-65	July 15, 1958	19.70	17,600	24
5435	Illinois River at Marseilles, Ill.....	7,640	-	-	38,000	1831-1965	Jan. 21, 1916	b25.4	-	-
						1920-65	July 14, 1957	15.20	93,900	*1.12
5465	Fox River at Wilmot, Wis.....	880	3.6	C	2,580	1940-63	Mar. 31, 1960	9.25	7,520	*1.18
5485	Fox River at Johnsburg, Ill.....	-	-	-	-	1940-65	Apr. 6, 1960	5.39	-	-
5490	Boone Creek near McHenry, Ill.....	15.3	-	C11	228	1949-65	Feb. 24, 1949	4.52	246	3
5495	Fox River near McHenry, Ill.....	-	-	C11	-	1942-65	Apr. 5, 1960	4.29	-	-
5499	Fox River tributary near Cary, Ill.....	.070	-	C11	-	1956-65	July 29, 1957	15.12	31	-
5500	Fox River at Algonquin, Ill.....	1,364	3.3	C	3,000	1916-65	Apr. 1, 1916	4.50	-	-
							Apr. 6, 1960	-	6,610	30
5505	Poplar Creek at Elgin, Ill.....	35.8	-	C11	410	1952-65	Feb. 23, 1959	b3.96	-	-
							Mar. 19, 1962	3.51	512	4
5525	Fox River at Dayton, Ill.....	2,570	1.8	C	11,100	1915-65	Oct. 11, 1954	24.63	47,100	*1.72
							Jan. 25, 1960	b36.47	-	-
5540	North Fork Vermilion River near Charlotte, Ill.	184	-	B10	2,420	1943-65	July 10, 1951	17.01	-	-
							Apr. 26, 1957	-	4,350	8
5545	Vermilion River at Pontiac, Ill.....	568	-	B10	4,850	1911-65	July 10, 1951	17.90	13,600	35
5546	Mud Creek tributary near Odell, Ill.....	.137	-	B10	-	1956-65	May 5, 1965	14.30	163	-
5550	Vermilion River at Streator, Ill.....	1,080	-	B9	10,800	1915-20, 1922-31	Apr. 20, 1920	23.5	17,100	6
5554	Vermilion River tributary at Lowell, Ill...	.126	-	B9	-	1956-65	July 14, 1958	16.22	177	-
5555	Vermilion River at Lowell, Ill.....	1,230	-	B9	11,600	1931-65	July 15, 1958	15.30	33,500	40
5565	Bureau Creek at Princeton, Ill.....	186	-	C9	4,300	1937-65	Jan. 24, 1938	15.88	11,800	*1.11
5570	West Bureau Creek at Wyanet, Ill.....	83.3	-	C9	2,800	1932-65	Oct. 11, 1931	14.5	-	-
						1936-65	Jan. 24, 1938	12.48	-	-
							July 8, 1951	-	6,620	41
5571	Bureau Creek tributary near Wyanet, Ill....	.377	-	C9	-	1956-65	June 19, 1964	24.20	m 170	-
5575	East Bureau Creek near Bureau, Ill.....	101	-	C9	3,100	1937-65	Jan. 24, 1938	17.39	6,200	20
5580	Bureau Creek at Bureau, Ill.....	481	-	C9	7,100	1941-51	Feb. 19, 1951	b13.1	-	-
							July 9, 1951	13.00	18,000	*1.03
5580.5	Coffee Creek tributary near Florid, Ill....	.034	-	B9	-	1956-65	July 14, 1958	16.53	122	-
5580.75	Coffee Creek tributary near Hennepin, Ill..	.222	-	B9	-	1956-65	July 14, 1958	27.54	373	-

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal $Q_{2.33}$ (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Illinois River basin--Continued									
5585	Crow Creek (West) near Henry, Ill.....	55.3	-	C9	2,230	1950-65	July 9, 1951	9.04	-	-
							May 26, 1960	-	2,680	3
5590	Gimlet Creek at Sparland, Ill.....	5.42	-	C9	660	1924-65	Aug. 20, 1924	10	-	-
						1946-47, 1950-61	July 2, 1958	8.45	2,650	*1.63
5595	Crow Creek near Washburn, Ill.....	123	-	B10	1,900	1945-65	May 28, 1954	11.85	5,750	48
5600	Illinois River at Peoria, Ill.....	13,500	-	-	40,600	1844-1961	Oct. 9, 1926	-	58,300	8
						1903-6, 1911-39	May 23, 1943	28.8	-	-
5605	Farm Creek at Farmdale, Ill.....	27.6	-	-	-	1949-65	Apr. 24, 1950	7.58	-	-
5610	Ackerman Creek at Farmdale, Ill.....	11.8	-	B10	460	1954-65	Sept.13, 1961	9.25	1,310	37
5615	Fondulac Creek near East Peoria, Ill.....	5.47	-	-	-	1948-65	July 25, 1948	3.83	-	-
							June 19, 1964	-	531	-
5620	Farm Creek at East Peoria, Ill.....	60.9	-	-	-	1927-65	1927	15.6	-	-
						1943-65	Apr. 29, 1947	15.00	22,000	-
5630	Kickapoo Creek near Kickapoo, Ill.....	120	-	C9	3,380	1945-65	July 22, 1951	15.35	18,400	*2.20
5631	Kickapoo Creek tributary near Kickapoo, Ill.	.061	-	C9	-	1956-65	Apr. 26, 1959	21.52	248	-
5635	Kickapoo Creek at Peoria, Ill.....	296	-	C9	5,420	1927-65	May 1927	24.6	-	-
						1943-65	July 22, 1951	21.41	18,600	*1.40
5645	Money Creek above Lake Bloomington, Ill....	51.9	-	B10	1,130	1934-58	Apr. 30, 1947	9.16	3,900	*1.13
5650	Hickory Creek above Lake Bloomington, Ill..	10.1	-	B10	413	1939-58	July 9, 1951	7.57	1,690	*1.33
5660	East Branch Panther Creek near Gridley, Ill.	6.3	-	B10	310	1950-65	July 9, 1951	10.68	1,470	*1.54
5665	East Branch Panther Creek at El Paso, Ill..	28.8	-	B10	780	1950-65	July 9, 1951	14.21	5,300	*2.21
5670	Panther Creek near El Paso, Ill.....	95.0	-	B10	1,610	1950-65	July 9, 1951	15.15	10,900	*2.20
5675	Mackinaw River near Congersville, Ill.....	764	-	B10	5,800	1943,1945-65	July 9, 1951	19.41	36,000	*2.02
5680	Mackinaw River near Green Valley, Ill.....	1,100	-	B10	7,200	1920,1922-65	July 10, 1951	15.12	31,000	*1.40
5685	Illinois River at Kingston Mines, Ill.....	15,200	-	-	42,000	1940-65	May 23, 1943	-	83,100	50
							May 25, 1943	26.02	-	-
5686	Copperas Creek tributary at Banner, Ill....	.399	-	C9	-	1956-64	Aug. 29, 1956	13.76	194	-
5686.5	Duck Creek near Canton, Ill.....	.419	-	C9	-	1956-65	Jan. 22, 1957	11.54	-	-
							July 3, 1958	-	142	-
5695	Spoon River at London Mills, Ill.....	1,070	-	C9	10,700	1924-65	Aug. 26, 1924	27.08	-	-
						1943-65	July 22, 1951	23.73	35,300	*1.34
5698.25	Cedar Creek tributary at St. Augustine, Ill.	4.04	-	C9	560	1956-65	June 20, 1964	20.52	710	4
5700	Spoon River at Seville, Ill.....	1,600	-	C9	13,300	1883-1965	1883	b33.0	-	-
						1911,1916-17, 1919-65	Aug. 22, 1924	30.77	37,300	*1.13

5705	Illinois River at Havana, Ill.....	17,700	-	-	46,000	1840-1961	May 25, 1943	27.3	-	*1.13
5710	Sangamon River at Mahomet, Ill.....	356	-	B10	3,620	1948-65	May 28, 1956	19.96	14,600	*1.31
5715	Goose Creek near DeLand, Ill.....	47.3	-	B10	1,000	1951-59	Feb. 10, 1959	12.13	3,340	*1.09
5720	Sangamon River at Monticello, Ill.....	550	-	B10	4,720	1908-13, 1915-65	Oct. 4, 1926	18.50	19,000	*1.31
5721	Wildcat Creek tributary near Monticello, Ill.	.100	-	B10	-	1956-65	May 15, 1958	-	64	-
							May 8, 1961	14.74	-	-
5725	Sangamon River near Oakley, Ill.....	750	-	B10	5,700	1943-65	May 18, 1943	21.85	-	-
						1950-65	May 9, 1961	18.85	15,300	30
5740	South Fork Sangamon River near Nokomis, Ill.	10.8	-	B9	940	1951-65	June 28, 1957	14.84	8,600	*2.98
5745	Flat Branch near Taylorville, Ill.....	276	-	B10	3,100	1950-65	June 29, 1957	19.55	13,000	*1.37
5755	South Fork Sangamon River at Kincaid, Ill..	510	-	B10	4,500	1908-12, 1915-33, 1943-65	May 19, 1943	-	25,000	*1.81
							June 29, 1957	30.02	-	-
5760	South Fork Sangamon River near Rochester, Ill.	809	-	B10	6,000	1950-65	July 1, 1957	28.36	18,100	47
5765	Sangamon River at Riverton, Ill.....	2,560	-	B9	17,100	1883-1965	1883	32	-	-
						1908-12, 1915-27, 1929-31, 1933-65	May 19, 1943	31.52	68,700	*1.31
5775	Spring Creek near Springfield, Ill.....	107	-	B9	3,200	1948-65	Mar. 30, 1960	12.70	6,750	13
5777	Sangamon River tributary at Andrew, Ill....	1.49	-	B9	-	1956-65	June 10, 1958	16.15	530	-
5785	Salt Creek near Rowell, Ill.....	334	-	B9	5,820	1908-12, 1943-65	May 18, 1943	24.77	12,400	14
							Feb. 11, 1959	b24.84	-	-
5795	Lake Fork near Cornland, Ill.....	207	-	B10	2,600	1943-65	May 1943	23.4	29,000	*3.64
5797.5	Kickapoo Creek tributary at Heyworth, Ill..	3.06	-	B9	-	1956-65	May 27, 1956	22.00	2,400	-
5800	Kickapoo Creek at Waynesville, Ill.....	227	-	B9	4,800	1948-65	Apr. 25, 1950	15.02	-	-
							Apr. 21, 1964	-	8,420	8
5805	Kickapoo Creek near Lincoln, Ill.....	306	-	B9	5,550	1929-65	July 6, 1929	17.4	-	-
						1945-65	Apr. 26, 1950	13.66	-	-
							Apr. 21, 1964	-	7,970	4
5815	Sugar Creek near Hartsburg, Ill.....	335	-	B9	5,800	1945-65	Apr. 30, 1947	14.44	-	-
							May 28, 1956	-	10,100	8
5820	Salt Creek near Greenview, Ill.....	1,800	-	B9	14,200	1942-65	May 19, 1943	20.50	41,200	41
5822	Cabiness Creek tributary near Petersburg, Ill.	.846	-	B9	-	1956-65	June 8, 1965	16.30	1,500	-
5825	Crane Creek near Easton, Ill.....	28.7	-	B10	780	1950-65	Feb. 10, 1959	9.08	-	-
							Mar. 4, 1963	-	500	1.4
5830	Sangamon River near Oakford, Ill.....	5,120	-	B9	24,800	1907-65	May 20, 1943	25.63	123,000	*1.62
5845	La Moine River at Colmar, Ill.....	655	-	C9	8,250	1945-65	July 27, 1948	23.75	20,300	50
5850	La Moine River at Ripley, Ill.....	1,310	-	C9	12,000	1921-65	Sept.26, 1961	27.43	18,600	7
5852.2	Indian Creek tributary near Sinclair, Ill..	2.04	-	B9	390	1956-65	June 10, 1958	19.98	1,010	26
5855	Illinois River at Meredosia, Ill.....	25,300	-	-	62,000	1844-1965	May 26, 1943	28.61	123,000	*1.02
5857	Dry Fork tributary near Mount Sterling, Ill.	.108	-	C9	-	1956-65	June 30, 1961	17.30	74	-
5860	North Fork Mauvais Terre Creek near Jacksonville, Ill.	30.0	-	B9	1,620	1950-65	June 28, 1951	10.68	2,870	8
5862	Illinois River tributary at Florence, Ill..	.508	-	B8	-	1956-65	Aug. 10, 1961	23.71	746	-
5865	Hurricane Creek near Roodhouse, Ill.....	2.33	-	B9	420	1951-65	June 14, 1957	11.77	1,700	*1.32
5868.5	Bear Creek tributary near Reeders, Ill.....	.020	-	B9	-	1956-65	June 28, 1957	19.72	29A	-

See footnotes at end of table.

Table 1.--Maximum floods at gaging stations--Continued

Station No.	Gaging station	Contributing drainage area		Flood region and hydrologic area	Areal Q2.33 (cfs)	Period of known floods (water years)	Maximum flood			
		Total (sq mi)	Percent in lakes				Date	Gage height (feet)	Discharge	
									Cfs	Recurrence interval (years)
	Upper Mississippi River basin--Continued									
	Illinois River basin--Continued									
5870	Macoupin Creek near Kane, Ill.	875	-	B9	9,600	1915-65 1921-33, 1940-65	1915 May 18, 1943	29.5 28.5	- 40,000	- *1.36
	Mississippi River main stem:									
5875	Mississippi River at Alton, Ill.	171,500	-	-	258,000	1844 1845-1965	June 1844 June 1858	432.10 -	- 573,000	- *1.15
	Cahokia Creek basin:									
5878.5	Cahokia Creek tributary near Carpenter, Ill.	.452	-	B8	-	1956-65	Sept.16, 1958	6.25	747	-
5880	Indian Creek at Wanda, Ill.	37.0	-	B8	3,450	1941-65	Aug. 15, 1946	18.41	9,340	31
5895	Canteen Creek at Caseyville, Ill.	22.5	-	B8	2,620	1939-65	Aug. 16, 1946 June 15, 1957	20.54 -	- 10,200	- *1.27
	Kaskaskia River basin:									
5900	Kaskaskia River at Bondville, Ill.	12.3	-	B10	470	1924-27, 1949-65	Feb. 10, 1959	13.50	1,160	22
5905	Kaskaskia River at Ficklin, Ill.	127	-	B10	1,920	1954-64	Feb. 10, 1959	13.98	4,400	17
5910	Kaskaskia River near Arcola, Ill.	390	-	B10	3,800	1908-12	May 7, 1908	17.6	3,980	3
5915	Asa Creek at Sullivan, Ill.	7.93	-	B10	358	1951-65	June 28, 1957	10.66	1,110	50
5920	Kaskaskia River at Shelbyville, Ill.	1,030	-	B9	10,500	1908-13, 1939,1941-65	June 29, 1957	22.37	25,900	22
5920.25	Mud Creek tributary near Tower Hill, Ill.	.212	-	B9	-	1956-65	June 23, 1960	15.03	450	-
5925	Kaskaskia River at Vandalia, Ill.	1,980	-	B9	15,000	1875,1882, 1908-12, 1915-65	June 29, 1951 June 29, 1957	27.39 -	- 62,700	- *1.36
5927	Hurricane Creek tributary near Witt, Ill.	.144	-	B9	-	1956-65	Aug. 3, 1957	13.91	132	-
5930	Kaskaskia River at Carlyle, Ill.	2,680	-	B9	17,400	1882,1908-12, 1915,1930-65	May 21, 1943	33.70	54,400	*1.02
5940	Shoal Creek near Breese, Ill.	760	-	B9	9,000	1907-65	May 19, 1943	25.6	52,000	*1.88
5942	Williams Creek near Cordes, Ill.	1.84	-	B9	-	1956-65	Aug. 8, 1958 Aug. 10, 1961	- 17.64	733 -	- -
5945	Silver Creek near Lebanon, Ill.	335	-	B9	5,800	1908-12	May 7, 1908	15.9	5,240	2
5950	Kaskaskia River at New Athens, Ill.	5,200	-	B9	25,000	1898,1908-13, 1915-21, 1935-65	May 23, 1943	39.35	83,000	*1.08
	Marys River basin:									
5955	Marys River near Sparta, Ill.	17.8	-	B9	1,220	1949-65	Aug. 12, 1958	15.04	5,320	*1.42
	Big Muddy River basin:									
5960	Big Muddy River near Benton, Ill.	498	-	B9	7,200	1946-65	May 9, 1961	24.94	38,600	*1.75
5961	Andy Creek tributary at Valier, Ill.	1.00	-	B9	-	1956-65	Aug. 17, 1959	15.75	564	-

5970	Big Muddy River at Plumfield, Ill.....	753	-	B9	8,950	1909-12, 1915-65	May 10, 1961	29.67	42,900	*1.56
5975	Crab Orchard Creek near Marion, Ill.....	31.9	-	B9	1,650	1952-65	May 7, 1961	11.62	3,500	13
5990	Beaucoup Creek near Matthews, Ill.....	291	-	B9	5,400	1946-65	May 9, 1961	23.41	18,800	*1.13
5995	Big Muddy River at Murphysboro, Ill.....	2,170	0.6	B9	13,600	1916-65	May 11, 1961	f37.97	33,300	22
	Sexton Creek basin:									
5996.4	Green Creek tributary near Jonesboro, Ill..	.438	-	B9	-	1956-65	July 3, 1965	17.44	605	-
	Cache River basin:									
6000	Big Creek near Wetaug, Ill.....	32.2	-	B9	1,680	1942-65	Mar. 19, 1943	-	7,200	*1.40
							Mar. 6, 1945	16.32	-	-

* Ratio of peak discharge to that of 50-year flood.
a Maximum flood of record; discharge not determined.
b Backwater from ice.
c Present site and datum.
d Backwater from downstream tributary.
e Backwater from Red River of the North.
f Occurred on following day.
g Due to failure of emergency embankment at Homme Dam.
h Elevation above mean sea level.
i Between 1,020.4 and 1,020.9 ft above mean sea level.
j Maximum daily discharge.
k Result of dam failure.
m Estimated.
n At bridge 400 ft downstream.
p Prior to beginning of record; date unknown.

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations

Site No.	Station No.	Stream and vicinity	Location	Contributing drainage area (sq mi)	Flood region and hydrologic area	Maximum flood			
						Date	Gage height (feet)	Discharge	
								Cfs	Cfs per sq mi
		Hudson Bay basin							
		Saskatchewan River basin							
1	200	Kennedy Creek near Babb, Mont....	Lat 48°55'00", long 113°26'10"	60.6	D1	June 8, 1964	-	a15,000	248
2	205	St. Mary River at international boundary.	Lat 49°00'10", long 113°18'50"	469	D1	June 5, 1908	12.75	40,000	85.3
3	-	Lee Creek at Cardston, Alberta...	Lat 49°12'00", long 113°17'45"	117	D1	June 8, 1964	12.59	b11,400	97.4
		Red River of the North basin							
4	614	Hay Creek above Downer, Minn.....	NW¼NW¼ sec.30, T.138 N., R.45 W.	5.81	B2	June 8, 1962	13.46	382	65.7
5	737.5	South Branch Cormorant River tributary near Blackduck, Minn.	NW¼NW¼ sec.32, T.150 N., R.30 W.	4.45	B6	May 23, 1962	16.54	346	77.8
6	992	Pembina River near Kaleida, Manitoba.	Lat 49°03'30", long 98°27'50"	2,880	A3	Apr. 24, 1960	9.22	c2,660	0.9
7	1133.6	Long Creek at western crossing of international boundary.	Lat 49°00'01", long 103°21'08"	750	A3	Mar. 27, 1960	8.61	d1,330	1.8
8	1136	Long Creek near Noonan, N. Dak...	Lat 48°58'32", long 103°04'34"	880	A3	Mar. 27, 1960	14.4	e3,200	3.6
9	1138	Short Creek below international boundary near Roche Percee, Saskatchewan.	Lat 49°01'42", long 102°51'00"	480	A3	Mar. 28, 1960	14.39	f1,360	2.8
		Upper Mississippi River basin							
		Platte River basin							
10	2679	Hillman Creek near Pierz, Minn...	NE¼SE¼ sec.9, T.40 N., R.30 W.	52.6	C6	Apr. 13, 1965	14.68	2,560	48.7
		Johnson Creek basin							
11	2720	Johnson Creek tributary near St. Augusta, Minn.	NE¼SE¼ sec.21, T.123 N., R.28 W.	-	B6	Apr. 12, 1965	10.16	274	-
12	2723	Johnson Creek near St. Augusta, Minn.	NW¼SW¼ sec.13, T.123 N., R.28 W.	-	B6	Apr. 12, 1965	14.77	682	-
		Otsego Creek basin							
13	2737	Otsego Creek near Otsego, Minn...	SW¼NE¼ sec.13, T.121 N., R.24 W.	-	B6	Apr. 9, 1965 Apr. 11, 1965	8.19 7.48	- 202	- -
		Elk River basin							
14	2747	St. Francis River at Santiago, Minn.	Lat 45°32'30", long 93°48'50"	-	B6	Apr. 14, 1965	12.17	2,940	-
15	2749	St. Francis River near Big Lake, Minn.	Lat 45°23'07", long 93°44'02"	-	B6	Apr. 16, 1965	11.34	2,700	-
		Crow River basin							
16	-	South Fork Crow River at Hutchinson, Minn.	Lat 44°53'44", long 94°22'10"	462	B6	Apr. 11, 1965	g1,044.10	4,670	10.1
17	2787	Otter Creek near Lester Prairie, Minn.	SE¼SE¼ sec.28, T.117 N., R.27 W.	-	B6	Apr. 6, 1965 Apr. 13, 1965	h9.97 9.24	- 525	- -

18	2787.5	Otter Creek tributary near Lester Prairie, Minn.	SE¼SE¼ sec.33, T.117 N., R.27 W.	-	B6	Apr. 10, 1965	11.14	87	-
19	2790.3	South Fork Crow River tributary near Mayer, Minn.	NW¼NE¼ sec.36, T.117 N., R.26 W.	-	B6	Apr. 8, 1965	h9.06	306	-
20	2803	School Lake Creek tributary near St. Michael, Minn.	NW¼SE¼ sec.15, T.120 N., R.24 W.	2.04	B6	Apr. 11, 1965	12.68	434	213
		Rum River basin							
21	2846.2	Rum River tributary near Onamia, Minn.	E½ sec.14, T.40 N., R.27 W.	1.84	B6	June 8, 1963	13.37	172	93.5
22	-	Rum River at West Point, Minn...	Lat 45°33', long 93°24'	-	B6	Apr. 16, 1965	29.38	10,800	-
23	-	Rum River at Isanti, Minn.....	Lat 45°29', long 93°16'	-	B6	Apr. 19, 1965	16.33	9,400	-
		Bassett Creek basin							
24	-	Bassett Creek at Golden Valley, Minn.	Lat 45°00'05", long 93°21'16"	-	B6	Apr. 6, 1965	h4.73	-	-
25	-	Bassett Creek at Fruen Mill, Minneapolis, Minn.	Lat 44°58'45", long 93°18'52"	-	B6	Apr. 11, 1965	2.57	360	-
		Minnehaha Creek basin							
26	-	Minnehaha Creek at 50th Street, Edina, Minn.	Lat 44°54'45", long 93°20'32"	-	B6	May 31, 1965	g885.90	368	-
27	-	Minnehaha Creek at Minnehaha Avenue, Minneapolis, Minn.	Lat 44°54'56", long 93°12'44"	-	B6	May 31, 1965	g804.43	500	-
		Minnesota River basin							
28	2991	Lazarus Creek tributary near Canby, Minn.	N½ sec.6, T.114 N., R.45 W.	3.4	A7	July 26, 1963	18.49	1,000	294
29	-	Chippewa River below diversion dam, near Watson, Minn.	Lat 45°01', long 95°48'	-	A7	Apr. 12, 1952	43.55	3,180	-
30	3052	Spring Creek at Montevideo, Minn.	SW¼SW¼ sec.32, T.118 N., R.40 W.	16.3	A7	July 19, 1962	18.22	492	30.2
31	3114	South Branch Yellow Medicine River near Minneota, Minn.	Lat 44°33'50", long 95°59'50"	111	A6	July 27, 1963	10.66	1,660	15.0
32	3167	Spring Creek near Sleepy Eye, Minn.	NE¼SE¼ sec.24, T.111 N., R.33 W.	30.0	B6	Apr. 10, 1965	17.79	930	31.0
33	3169	Dry Creek near Jeffers, Minn....	NE¼NE¼ sec.31, T.108 N., R.36 W.	3.24	B6	July 19, 1963 Apr. 6, 1965	9.96 h10.64	508 -	157 -
34	3181	East Branch Blue Earth River tributary near Blue Earth, Minn.	W½SE¼ sec.24, T.102 N., R.27 W.	-	B6	July 19, 1963	8.57	406	-
35	3183	North Fork Watonwan River near Delft, Minn.	E½ sec.11, T.106 N., R.36 W.	13.1	B6	Apr. 4, 1965	h18.42	810	61.8
36	3203	Cobb River tributary near Mapleton, Minn.	SW¼NE¼ sec.4, T.106 N., R.26 W.	5.75	B6	May 21, 1960	22.24	526	91.5
37	3204	Maple River tributary near Mapleton, Minn.	SW¼ sec.1, T.105 N., R.27 W.	5.75	B6	May 21, 1960	23.26	445	77.4
38	3204.4	Maple River tributary near Amboy, Minn.	NW¼ sec.19, T.105 N., R.27 W.	13.8	B6	May 21, 1960	19.51	1,110	80.4
39	3301.5	Sand Creek tributary near Montgomery, Minn.	NE¼ sec.18, T.111 N., R.22 W.	.29	B6	Apr. 6, 1965	h10.50	43	148
40	3302	Rice Lake tributary near Montgomery, Minn.	N½ sec.13, T.111 N., R.23 W.	2.49	B6	May 21, 1960	13.72	279	112
41	3303	Sand Creek near New Prague, Minn.	NE¼NW¼ sec.1, T.112 N., R.23 W.	65	B6	May 21, 1960	14.84	1,100	16.9

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and vicinity	Location	Contributing drainage area (sq mi)	Flood region and hydrologic area	Maximum flood			
						Date	Gage height (feet)	Discharge	
								Cfs	Cfs per sq mi
		Upper Mississippi River basin--Continued							
		Minnesota River basin--Continued							
42	3305.5	Raven Stream tributary near New Prague, Minn.	NW¼ sec.28, T.113 N., R.23 W.	23	B6	May 21, 1960	17.34	929	40.4
43	-	Porter Creek near Lydia, Minn...	North line sec.6, T.113 N., R.22 W.	58.6	B6	May 21, 1960	17.96	727	12.4
44	-	Sand Creek at Jordan, Minn.....	NE¼NW¼ sec.19, T.114 N., R.23 W.	238	B6	May 21, 1960	13.71	8,650	36.3
45	3309	Nine Mile Creek at Bloomington, Minn.	Lat 44°48'46", long 93°18'07"	-	B6	Apr. 8, 1965	-	535	-
46	-	Minnesota River at Interstate Highway 35 W at Bloomington, Minn.	Lat 44°47'30", long 93°17'19"	-	B6	Apr. 15, 1965	g718.20	120,000	-
		St. Croix River basin							
47	3331	Little Frog Creek near Minong, Wis.	NW¼ sec.29, T.42 N., R.11 W.	13.6	C5	May 15, 1961	15.06	230	16.9
48	3353.8	Bashaw Brook near Shell Lake, Wis.	SW¼ sec.8, T.38 N., R.14 W.	28.2	C5	Apr. 11, 1965	14.90	600	21.3
49	3362	Glaisby Brook near Kettle River, Minn.	Lat 46°27'19", long 92°51'34"	-	C5	Apr. 18, 1965	8.42	2,330	-
50	3365.5	Wolf Creek tributary near Sandstone, Minn.	NE¼SE¼ sec.33, T.43 N., R.20 W.	-	C5	Apr. 15, 1965	19.20	200	-
51	-	St. Croix River at Prescott, Wis.	Lat 44°44'56", long 92°48'12"	-	C5	Apr. 17, 1965	g693.11	43,700	-
		Trimbelle Creek basin							
52	3466	Little Trimbelle Creek near Bay City, Wis	S½ sec.21, T.25 N., R.18 W.	19.9	B9	Apr. 7, 1965	12.74	1,700	85.4
		Mississippi River main stem							
53	-	Mississippi River at lock and dam 3 near Red Wing, Minn	Lat 44°37', long 92°37'	-	M5	Apr. 18, 1965	1688.22	228,000	-
		Cannon River basin							
54	-	Turtle Creek near Owatonna, Minn.	On west line of sec.34, T.107 N., R.20 W.	-	B9	May 31, 1961	14.20	2,930	-
55	-	Straight River at Owatonna, Minn.	SE¼NW¼ sec.16, T.107 N., R.20 W.	-	B9	May 31, 1961	19.86	2,080	-
56	3551	Little Cannon River tributary near Kenyon, Minn.	SE¼ sec.9, T.110 N., R.18 W.	2.02	B9	June 23, 1960	18.51	714	353
		Chippewa River basin							
57	-	Eau Claire River tributary near Thorp, Wis.	Sec.1, T.28 N., R.4 W.	.68	C9	June 4, 1958	-	453	666
		Mississippi River main stem							
58	-	Mississippi River at lock and dam 4, near Alma, Wis.	Lat 44°20', long 91°56'	-	M5	Apr. 19, 1965	1676.45	256,000	-

		Zumbro River basin							
59	-	Willow Creek near Rochester, Minn.	SE¼ sec.23, T.106 N., R.14 W.	17.6	B9	July 1951	1,051.0	-	-
						June 4, 1958	-	6,240	354
60	-	Zumbro River at Kellogg, Minn...	S½ sec.22, T.110 N., R.10 W.	1,400	B9	Mar. 30, 1962	-	23,200	16.6
		Mississippi River main stem							
61	-	Mississippi River at lock and dam 5 near Minneiska, Minn.	Lat 44°10', long 91°50'	-	M5	Apr. 19, 1965	1668.73	263,000	-
		Garvin Brook basin							
62	3783	Straight Valley Creek near Rollingstone, Minn.	SE¼NE¼ sec.12, T.107 N., R.9 W.	5.16	B9	June 26, 1959	17.28	1,200	233
		Trempealeau River basin							
63	3794	Trempealeau River at Arcadia, Wis.	Lat 44°15'15", long 91°30'25"	552	C9	Mar. 2, 1965	h8.04	-	-
						Apr. 6, 1965	-	9,740	17.6
		Black River basin							
64	-	North Fork Poplar River near Owen, Wis.	SE¼ sec.32, T.29 N., R.1 W.	56	C8	June 5, 1958	-	5,830	104
		Root River basin							
65	3836	North Branch Root River tributary near Stewartville, Minn.	Near center sec.36, T.105 N., R.14 W.	.73	B9	July 2, 1960	13.47	328	449
66	3837	Mill Creek tributary near Chatfield, Minn.	SW¼NW¼ sec.14, T.105 N., R.12 W.	2.36	B9	July 2, 1960	15.46	703	298
67	3838.5	Bear Creek near Grand Meadow, Minn.	NE¼SE¼ sec.14, T.103 N., R.15 W.	13.6	B9	Mar. 28, 1962	21.18	3,730	274
68	-	South Branch Root River at Lanesboro, Minn.	Lat 43°44', long 91°58'	297	B9	Mar. 26, 1950	19.2	21,000	70.7
69	3842	Whalan Creek near Whalan, Minn..	SE¼ sec.21, T.103 N., R.9 W.	7.85	B9	July 2, 1960	22.17	4,880	622
70	-	Root River near Rushford, Minn..	Lat 43°47'52", long 91°48'16"	1,010	B9	Mar. 31, 1952	-	34,600	34.3
		Bad Axe River basin							
71	-	North Fork Bad Axe River near Genoa, Wis.	Lat 43°33'10", long 91°08'58"	80.7	C9	Aug. 29, 1959	18.62	-	-
		Upper Iowa River basin							
72	-	Dry Run near Decorah, Iowa.....	SW¼ sec.20, T.98 N., R.8 W.	20.1	B9	May 29, 1941	-	14,000	697
73	-	Dry Run at Decorah, Iowa.....	Highway 52 at Decorah	21.0	B9	Mar. 15, 1919	-	16,000	762
74	-	Trout Creek near Decorah, Iowa..	NE¼ sec.27, T.98 N., R.8 W.	37.6	B9	May 29, 1941	-	20,000	532
75	-	East Branch Trout Creek near Decorah, Iowa.	NW¼ sec.26, T.98 N., R.8 W.	11.6	B9	May 29, 1941	-	10,300	888
76	-	Upper Iowa River near Dorchester, Iowa.	NW¼ sec.1, T.99 N., R.6 W.	770	B9	May 30, 1941	-	30,400	39.5
		Mississippi River main stem							
77	-	Mississippi River at Lansing, Iowa.	NE¼ sec.29, T.99 N., R.3 W.	66,280	M5	Apr. 22, 1965	20.4	272,000	4.1
		Cato Creek basin							
78	-	Cato Creek tributary near Harpers Ferry, Iowa.	Near west line sec.23, T.97 N., R.3 W.	.78	B9	Aug. 5, 1951	-	336	431
		Paint Creek basin							
79	-	Paint Creek at Waukon, Iowa.....	At dam in city park at south edge of Waukon	1.83	B9	Aug. 5, 1951	-	757	414
80	-	Paint Creek tributary near Waterville, Iowa.	NE¼ sec.23, T.97 N., R.4 W.	3.42	B9	Aug. 5, 1951	-	1,500	439

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and vicinity	Location	Contributing drainage area (sq mi)	Flood region and hydrologic area	Maximum flood			
						Date	Gage height (feet)	Discharge	
								Cfs	Cfs per sq mi
		Upper Mississippi River basin--Continued							
		Wisconsin River basin							
81	3961	Scotch Creek tributary near Edgar, Wis.	SE¼ sec.31, T.29 N., R.5 E.	7.1	C8	Apr. 11, 1965	16.67	1,380	194
82	4006.5	Little Plover River at Plover, Wis.	Lat 44°28'20", long 89°30'10"	-	C9	Sept.13, 1962	2.82	67	-
83	4037	Dell Creek near Lake Delton, Wis.	Lat 43°33'05", long 89°51'55"	44.9	C11	Mar. 2, 1965	8.38	992	22.1
84	4074	Morris Creek tributary near Norwalk, Wis.	NW¼ sec.21, T.16 N., R.2 W.	4.67	C10	Oct. 24, 1959	13.10	950	203
		Turkey River basin							
85	-	Little Volga River near Maynard, Iowa	Near north ¼ corner sec.36, T.92 N., R.9 W.	17.5	B9	May 5, 1962	-	4,520	258
86	-	Little Volga River at Maynard, Iowa	Near NW corner sec.23, T.92 N., R.9 W.	25.5	B9	May 5, 1962	-	5,270	207
87	-	Honey Creek at Littleport, Iowa.	NE¼ sec.36, T.92 N., R.5 W.	13.0	B9	May 31, 1958	-	12,000	923
88	-	Wayman Creek at Garber, Iowa....	SW¼ sec.36, T.92 N., R.4 W.	6.98	B9	May 31, 1958	-	15,500	2,220
		Little Maquoketa River basin							
89	-	Middle Fork Little Maquoketa River near Richardsville, Iowa	SE¼ sec.32, T.90 N., R.1 E.	30.0	B8	July 8, 1951	-	8,160	272
90	-	Union Park Creek near Dubuque, Iowa	NE¼ sec.11, T.89 N., R.2 E.	1.07	B8	July 9, 1919	-	3,000	2,800
		Mississippi River main stem							
91	-	Mississippi River at Dubuque, Iowa	Lat 42°29', long 90°38'	81,600	M5	Apr. 26, 1965	26.71	304,000	3.7
		Catfish Creek basin							
92	-	Granger Creek tributary near Dubuque, Iowa	Near center sec.23, T.88 N., R.2 E.	.65	B8	July 4, 1961	-	903	1,390
93	-	Catfish Creek near Dubuque, Iowa	NE¼ sec.1, T.88 N., R.2 E.	40.5	B8	Aug. 16, 1918	-	28,000	691
		Maquoketa River basin							
94	4177	Bear Creek near Monmouth, Iowa..	Lat 42°02'30", long 90°53'00"	61.3	B9	June 1944	21.5	-	-
						Sept.21, 1965	13.76	7,340	120
95	-	Deep Creek near Delmar, Iowa....	SW¼ sec.28, T.83 N., R.3 E.	9.71	B9	Aug. 18, 1954	-	1,570	162
96	-	Williams Creek near Charlotte, Iowa	Near SE corner sec.6, T.82 N., R.4 E.	2.04	B9	Aug. 18, 1954	-	1,960	961
97	-	Deep Creek near Charlotte, Iowa.	SE¼ sec.27, T.83 N., R.4 E.	41.9	B9	Aug. 18, 1954	-	4,370	104
		Wapsipinicon River basin							
98	4205.6	Wapsipinicon River near Elma, Iowa	Lat 43°14'35", long 92°31'50"	95.2	B10	Mar. 29, 1962	h14.84	5,700	59.9

99	-	Wapsipinicon River near Fredericksburg, Iowa	NE¼ sec.15, T.94 N., R.13 W.	296	B9	Mar. 29, 1962	-	9,800	33.1
100	-	East Fork Otter Creek near Oelwein, Iowa	Near W½ corner sec.34, T.92 N., R.9 W.	6.62	B9	Apr. 29, 1951	-	2,590	391
101	-	Otter Creek near Hazelton, Iowa	At south line sec.21, T.90 N., R.9 W.	64.2	B9	Apr. 29, 1951	-	9,900	154
102	-	Malone Creek at Independence, Iowa	SW¼ sec.35, T.89 N., R.9 W.	9.32	B9	Sept.21, 1950	-	4,910	527
		Mississippi River main stem							
103	-	Mississippi River at Davenport, Iowa	Lat 41°31'10", long 90°33'55"	88,500	M5	Apr. 28, 1965	22.48	-	-
		Rock River basin							
104	-	Willow Creek near Loves Park, Ill.	Lat 42°21'20", long 89°02'40"	18.5	C10	July 19, 1952	-	890	48.1
105	-	Kent Creek at Rockford, Ill.....	Lat 42°15'50", long 89°06'00"	43.7	C10	July 19, 1952	-	4,500	103
106	-	Keith Creek at Alpine Dam, at Rockford, Ill.	Lat 42°16'20", long 89°01'35"	7	C10	July 18, 1952	-	750	107
107	-	Pelley Road Creek near Riverside School, near Rockford, Ill.	Lat 42°12'50", long 89°06'50"	4.3	C10	July 18, 1952	-	5,300	1,230
		Blackhawk Creek basin							
108	-	Blackhawk Creek at Davenport, Iowa	SW¼ sec.33, T.78 N., R.3 E.	6.73	B9	Aug. 4, 1965	-	1,590	236
		Mad Creek basin							
109	-	Mad Creek at Muscatine, Iowa....	SE¼ sec.26, T.77 N., R.2 W.	16.5	B9	June 30, 1961	-	8,460	513
		Iowa River basin							
110	-	Beaver Creek near Eldora, Iowa..	At E¼ corner sec.11, T.87 N., R.20 W.	52.6	B10	Sept.21, 1950	-	2,850	54.2
111	-	South Branch Ralston Creek tributary at Iowa City, Iowa	At culvert, at Friendship St. in east Iowa City	.39	B9	July 14, 1962	-	298	764
112	-	South Branch Ralston Creek at 1st Avenue, Iowa City, Iowa	At culvert, at 1st Avenue in east Iowa City	3.02	B9	July 14, 1962	-	872	289
113	4550.1	South Branch Ralston Creek at Iowa City, Iowa	Lat 41°38'50", long 91°30'30"	3.20	B9	Apr. 24, 1965	6.57	652	204
114	-	South Branch Ralston Creek at College Street, Iowa City, Iowa	At College St., in east Iowa City	4.42	B9	July 14, 1962	-	1,150	260
115	-	Ralston Creek at Gilbert Street, in Iowa City, Iowa	Upstream from Gilbert St. bridge, in Iowa City	8.1	B9	Sept.21, 1965	-	2,080	257
116	-	Bulgers Run near Riverside, Iowa	SE¼ sec.11, T.77 N., R.7 W.	5.86	B9	Sept.21, 1965	-	3,080	526
117	-	Rose Creek near Elkton, Minn....	NE¼NE¼ sec.6, T.102 N., R.16 W.	-	B9	Mar. 25, 1961	18.16	2,470	-
118	-	Little Cedar River at New Haven, Iowa	Near SE corner sec.19, T.98 N., R.15 W.	193	B9	Mar. 26, 1961	-	10,200	52.8
119	-	West Fork Cedar River near Dumont, Iowa	Near SE corner sec.27, T.92 N., R.18 W.	299	B10	June 19, 1954	-	19,500	65.2
120	-	Boylan Creek tributary near Aredale, Iowa	SE¼ sec.17, T.93 N., R.18 W.	.75	B10	Apr. 25, 1960	-	908	1,210
121	-	Boylan Creek near Bristow, Iowa.	Near W¼ corner sec.24, T.92 N., R.18 W.	56.5	B10	Apr. 29, 1951	-	10,900	193
122	-	Daily Creek near Allison, Iowa..	On S line sec.32, T.92 N., R.17 W.	16.0	B10	June 26, 1951	-	13,600	850
123	-	Feddeke Creek near Allison, Iowa	Near SE corner sec.35, T.92 N., R.17 W.	3.05	B10	June 25, 1951	-	2,690	882

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and vicinity	Location	Contributing drainage area (sq mi)	Flood region and hydrologic area	Maximum flood			
						Date	Gage height (feet)	Discharge	
								Cfs	Cfs per sq mi
		Upper Mississippi River basin--Continued							
		Iowa River basin--Continued							
124	-	Feddeke Creek at State Highway 14, near Allison, Iowa	Near E¼ corner sec.1, T.91 N., R.17 W.	5.21	B10	June 25, 1951	-	4,970	954
125	-	Feddeke Creek tributary near Allison, Iowa	Near SW corner sec.29, T.92 N., R.16 W.	.30	B10	June 25, 1951	-	798	2,660
126	-	McClure Creek tributary near Allison, Iowa	Near SW corner sec.27, T.92 N., R.16 W.	.026	B10	June 26, 1951	-	46.3	1,780
127	-	Willow Creek at Mason City, Iowa	At 1st Ave. Northwest in Mason City	79	B10	Mar. 27, 1961	-	2,820	35.7
128	-	Winnebago River at Rockford, Iowa	NW¼ sec.15, T.95 N., R.18 W.	700	B9	Mar. 27, 1961	-	16,500	23.6
129	-	Flood Creek near Rockford, Iowa.	SW¼ sec.10., T.95 N., R.17 W.	57.9	B9	May 10, 1963	-	3,980	68.7
130	-	Flood Creek near Marble Rock, Iowa	NW corner sec.28, T.94 N., R.16 W.	120	B9	May 10, 1963	-	6,120	51.0
131	-	Blackhawk Creek near Grundy Center, Iowa	NE¼ sec.14, T.87 N., R.18 W.	13.5	B10	Aug. 13, 1957	-	1,340	99.3
132	4633	Blackhawk Creek at Reinbeck, Iowa	SW¼ sec.21, T.87 N., R.15 W.	135	B10	Mar. 30, 1960	-	4,040	29.9
133	4641.33	Half Mile Creek near Gladbrook, Iowa	Lat 42°12'40", long 92°36'40"	1.33	B9	July 9, 1965	9.24	307	231
134	-	Lime Creek near Independence, Iowa	Near S¼ corner sec.11, T.88 N., R.9 W.	7.92	B9	June 2, 1951	-	1,450	183
135	-	Lime Creek at Brandon, Iowa.....	SE¼ sec.27, T.87 N., R.10 W.	37.6	B9	June 2, 1951	-	14,800	394
136	-	Bear Creek tributary near Independence, Iowa	NE¼ sec.18, T.88 N., R.9 W.	.38	B9	June 2, 1951	-	365	961
137	-	Bear Creek near Independence, Iowa	Near E line sec.17, T.88 N., R.9 W.	2.57	B9	June 2, 1951	-	2,750	1,070
138	-	Cedar River at Vinton, Iowa.....	State Highway 101 bridge at Vinton	6,038	B9	Mar. 30, 1961	781.42	74,100	12.3
139	-	Cedar River near Rochester, Iowa	SE¼ sec.13, T.79 N., R.3 W.	7,245	B9	Apr. 1, 1961	652.08	71,700	9.9
140	-	North Fork Long Creek near Ainsworth, Iowa	SW¼ sec.22, T.75 N., R.6 W.	30.2	B9	Sept.21, 1965	-	2,050	67.9
141	-	South Fork Long Creek near Washington, Iowa	SE¼ sec.14, T.75 N., R.7 W.	16.4	B9	Aug. 25, 1951	-	2,720	166
		Skunk River basin							
142	-	Skunk River near Randall, Iowa..	Near SE corner sec.24, T.86 N., R.23 W.	163	B10	June 10, 1954	-	13,600	83.4
143	-	Drainage ditch No. 5 near Ellsworth, Iowa	SW¼ sec.27, T.87 N., R.23 W.	5.27	B10	June 10, 1954	-	501	95.1
144	4712	Indian Creek near Mingo, Iowa...	Lat 41°48'20", long 93°18'25"	276	B10	May 20, 1944 May 7, 1960	21.4 15.07	- 5,860	- 21.2

145	-	Spring Creek tributary near Oskaloosa, Iowa	On west line of sec.21, T.75 N., R.15 W.	0.75	B10	July 3, 1957	-	396	528
146	-	Coal Creek tributary near What Cheer, Iowa	Near S¼ corner sec.28, T.77 N., R.13 W.	3.28	B10	July 3, 1951	-	1,080	329
147	-	Coal Creek at What Cheer, Iowa..	Near E¼ corner sec.9, T.76 N., R.13 W.	11.7	B10	July 3, 1951	-	3,100	265
148	-	Rock Creek tributary near Sigourney, Iowa	Near SE corner sec.29, T.76 N., R.12 W.	.2	B10	July 2, 1951	-	169	845
149	-	Dutch Creek near Keota, Iowa....	Near E¼ corner sec.36, T.76 N., R.10 W.	2.97	B10	Apr. 19, 1955	-	965	325
150	-	Crooked Creek at Keota, Iowa....	Near E¼ corner sec.24, T.76 N., R.10 W.	19.3	B10	Apr. 19, 1955	-	2,760	143
		Big Devil Creek basin							
151	4743	Big Sugar Creek near Viele, Iowa	SE¼ sec.9, T.67 N., R.5 W.	109	B9	June 10, 1905	-	60,000	550
152	-	Panther Creek near Viele, Iowa..	NE¼ sec.16, T.67 N., R.5 W.	15.6	B9	June 10, 1905	-	7,300	468
153	-	Little Devil Creek near Fort Madison, Iowa	SW¼ sec.2, T.67 N., R.5 W.	20.3	B9	Aug. 6, 1959	-	9,260	456
154	-	Little Devil Creek at mouth, near Fort Madison, Iowa	NE¼ sec.15, T.67 N., R.5 W.	25.7	B9	June 10, 1905	-	10,700	416
155	-	Big Devil Creek near Fort Madison, Iowa	SW¼ sec.15, T.67 N., R.5 W.	151	B9	Aug. 6, 1959	-	13,600	90.1
156	-	Big Devil Creek at Santa Fe Railroad bridge, near Fort Madison, Iowa	NE¼ sec.22, T.67 N., R.5 W.	152	B9	June 10, 1905	-	80,000	526
		Des Moines River basin							
157	-	West Fork Des Moines River below Talcott Dam, near Dundee, Minn.	Lat 43°53'10", long 95°26'11"	-	B6	Apr. 7, 1965	11.51	4,700	-
158	-	Nelson Creek at Jackson, Minn...	NE¼NE¼ sec.26, T.102 N., R.35 W.	6.8	B6	May 30, 1959	1318.95	2,690	396
159	4761	Story Brook near Petersburg, Minn.	SW¼NW¼ sec.24, T.101 N., R.35 W.	-	B6	July 4, 1962	12.77	2,110	-
160	4769	East Fork Des Moines River tributary near Dunnell, Minn.	SW¼NW¼ sec.2, T.101 N., R.33 W.	7.88	B6	July 4, 1962	16.15	2,200	279
161	-	West Fork Des Moines River at Emmetsburg, Iowa	NW¼ sec.26, T.96 N., R.33 W.	1,672	B11	Apr. 11, 1965	-	12,000	7.2
162	-	West Fork Des Moines River near Ottosen, Iowa	SE¼ sec.1, T.93 N., R.31 W.	2,018	B11	Apr. 12, 1965	-	14,000	6.9
163	-	East Fork Des Moines River at Algona, Iowa	NW¼ sec.2, T.95 N., R.29 W.	882	B11	Apr. 9, 1965	-	11,400	12.9
164	-	Boone River tributary No. 1 near Britt, Iowa	Near SE corner sec.14, T.96 N., R.26 W.	.056	B11	June 19, 1954	-	62.2	1,110
165	-	Boone River near Hutchins, Iowa.	Near W¼ corner sec.11, T.95 N., R.26 W.	12.6	B11	June 19, 1954	-	1,100	87.3
166	-	Boone River tributary No. 2 near Britt, Iowa	Near S¼ corner sec.22, T.96 N., R.26 W.	.94	B11	June 19, 1954	-	579	616
167	-	Boone River near Goldfield, Iowa	SW¼ sec.32, T.92 N., R.26 W.	443	B10	June 21, 1954	-	16,600	37.5
168	4816.5	Des Moines River near Saylorville, Iowa	Lat 41°41'50", long 93°40'05"	5,841	B10	June 24, 1954	24.5	60,000	10.3
169	-	North Raccoon River tributary near Storm Lake, Iowa	Near SW corner sec.28, T.91 N., R.36 W.	2.11	B10	June 1, 1954	-	433	205
170	-	Outlet Creek tributary No. 1 near Storm Lake, Iowa	Near S¼ corner sec.18, T.90 N., R.36 W.	.22	B10	June 1, 1954	-	226	1,030

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and vicinity	Location	Contributing drainage area (sq mi)	Flood region and hydrologic area	Maximum flood			
						Date	Gage height (feet)	Discharge	
								Cfs	Cfs per sq mi
		Upper Mississippi River basin--Continued							
		Des Moines River basin--Continued							
171	-	Outlet Creek tributary No. 2 near Storm Lake, Iowa	Near SE corner sec.18, T.90 N., R.36 W.	0.038	B10	June 1, 1954	-	53.8	1,420
172	-	Outlet Creek near Storm Lake, Iowa	SW¼ sec.17, T.90 N., R.36 W.	6.58	B10	June 1, 1954	-	1,460	222
173	4821.7	Big Cedar Creek near Varina, Iowa	Lat 42°41'21", long 94°47'55"	80.0	B10	Aug. 31, 1962	13.68	2,080	26.0
174	4823	North Raccoon River near Sac City, Iowa	Lat 42°20'20", long 94°59'10"	713	B10	Sept. 1, 1962	18.12	10,800	15.1
175	-	Hardin Creek near Jefferson, Iowa	Sec.10, T.83 N., R.30 W.	162	B10	Mar. 29, 1951	-	3,200	19.8
176	-	Storm Creek near Breda, Iowa....	SE¼ sec.23, T.85 N., R.35 W.	11.2	B10	May 1, 1951	-	637	56.9
177	4836	Middle Raccoon River at Panora, Iowa	Lat 41°41'15", long 94°22'15"	440	B10	June 10, 1953	14.3	14,000	31.8
178	-	South Raccoon River and Bear Grove Creek at Guthrie Center, Iowa	Near center sec.7, T.79 N., R.31 W.	111	B10	July 2, 1958	-	52,000	468
179	-	Walnut Creek near Grimes, Iowa..	Near SW corner sec.35, T.80 N., R.26 W.	4.81	B10	June 27, 1952	-	699	145
180	-	Walnut Creek near Dallas Center, Iowa	On south line near SW corner sec.2, T.79 N., R.26 W.	12.4	B10	June 27, 1952	-	1,650	133
181	-	Walnut Creek near Des Moines, Iowa	At NW corner sec.30, T.79 N., R.25 W.	48.3	B10	June 27, 1952	-	1,850	38.3
182	-	Four Mile Creek tributary near Berwick, Iowa	NE¼ sec.7, T.79 N., R.23 W.	.79	B10	June 27, 1952	-	186	235
183	-	Muchikinock Creek at Berwick, Iowa	NE¼ sec.8, T.79 N., R.23 W.	11.9	B10	June 27, 1952	-	1,290	108
184	-	Cedar Creek tributary No. 1 near Winterset, Iowa	Near NE corner sec.32, T.76 N., R.28 W.	.31	B10	June 21, 1952	-	271	874
185	-	Cedar Creek tributary No. 2 near Winterset, Iowa	Near SW corner sec.35, T.76 N., R.28 W.	1.02	B10	June 21, 1952	-	440	431
186	-	Cedar Creek near Winterset, Iowa	Near S½ corner sec.23, T.76 N., R.28 W.	11.4	B10	June 21, 1952	-	2,060	181
187	-	Cedar Creek near Patterson, Iowa	Near SE corner sec.23, T.76 N., R.27 W.	25.6	B10	June 21, 1952	-	4,000	156
188	-	South Fork Middle River at Casey, Iowa	Near N¼ corner sec.2, T.77 N., R.32 W.	35.5	B9	Sept. 5, 1958	-	23,900	673
189	4879.8	Whitebreast Creek near Dallas, Iowa	Lat 41°14'45", long 93°15'50"	342	B9	June 11, 1962	28.87	12,000	35.1
190	-	English Creek near Knoxville, Iowa	Near center sec.10, T.75 N., R.19 W.	92.5	B9	June 11, 1962	-	9,710	105

191	-	South Avery Creek near Blakesburg, Iowa	Near N¼ corner sec.30, T.72 N., R.15 W.	33.1	B9	Sept.21, 1965	-	10,300	311
192	-	Bear Creek near Bidwell, Iowa...	NW¼ sec.29, T.72 N., R.14 W.	19.5	B9	Sept.21, 1965	-	6,710	344
193	-	Bear Creek near Ottumwa, Iowa...	NW¼ sec.27, T.72 N., R.14 W.	22.9	B9	Sept.21, 1965	-	4,000	175
194	-	Village Creek near Ottumwa, Iowa	Near NW corner sec.18, T.71 N., R.13 W.	22.9	B9	June 11, 1962	-	1,370	59.8
195	-	Soap Creek near Bloomfield, Iowa	NE¼ sec.7, T.70 N., R.13 W.	182	B9	May 6, 1960	-	23,900	131
196	-	Little Soap Creek near Ottumwa, Iowa	Near S¼ corner sec.24, T.71 N., R.14 W.	28.2	B9	May 6, 1960	-	9,270	329
		Fox River basin							
197	-	Middle Fork Honey Creek near Kahoka, Mo.	Lat 40°24'20", long 91°46'40"	1.7	B9	June 14, 1950	-	690	406
198	-	Little Honey Creek near Kahoka, Mo.	Lat 40°22'00", long 91°43'15"	3.0	B9	June 14, 1950	-	2,140	713
		South River basin							
199	-	Todd Branch near Palmyra, Mo....	Lat 39°44'30", long 91°33'25"	.99	B8	July 21, 1949	-	1,200	1,210
		Salt River basin							
200	5027	Easdale Branch near Shelbyville, Mo.	SE¼ sec.22, T.58 N., R.10 W.	.71	B9	July 10, 1960	8.75	770	1,080
201	5045	Davis Creek near Mexico, Mo.....	Lat 39°10'45", long 91°54'50"	59	B9	May 19, 1931	14.40	2,820	47.8
202	5047	Bean Creek near Mexico, Mo.....	Lat 39°15'30", long 91°49'50"	3.02	B9	May 5, 1961 May 12, 1964	10.00 10.38	950 -	315 -
203	5090	Peno Creek at Frankford, Mo.....	Lat 39°28'50", long 91°18'15"	54.2	B8	Aug. 1, 1932	13.64	6,050	112
		The Sny basin							
204	-	Pigeon Creek near Hull, Ill.....	Lat 39°44'45", long 91°14'00"	28	B8	Aug. 10, 1961	-	15,300	546
205	-	McCraney Creek near Kinderhook, Ill.	Lat 39°43'00", long 91°10'20"	50	B8	Aug. 10, 1961	17.10	13,300	266
206	-	Kiser Creek at New Canton, Ill..	Lat 39°38'00", long 91°05'30"	60	B8	Aug. 10, 1961	16.28	12,700	212
		Kings Lake basin							
207	-	Lost Creek near Elsberry, Mo....	Lat 39°08'50", long 90°49'10"	8.86	B8	June 10, 1950	-	3,000	339
		Cuivre River basin							
208	5137	Hams Slough Creek near Wellsville, Mo.	NW¼NW¼ sec.35, T.51 N., R.7 W.	5.08	B8	Apr. 5, 1965	12.21	840	165
		Illinois River basin							
209	-	Hickory Creek near Joliet, Ill..	Lat 41°31'45", long 88°02'00"	84.0	C10	July 13, 1957	581.9	11,700	139
210	-	South Fork Vermilion River at Forrest, Ill.	Lat 40°44'55", long 88°25'00"	60.9	B10	Aug. 4, 1943	-	10,000	164
211	5735	Sangamon River at Lake Decatur, Ill.	Lat 39°49'38", long 88°57'21"	906	B10	May 18, 1943	9.1	22,000	24.3
212	-	Horse Creek near Cotton Hill, Ill.	Lat 39°41'50", long 89°34'35"	127	B10	May 1943	-	26,000	205
213	-	Sugar Creek at Lake Springfield, Ill.	Lat 39°45'35", long 89°35'55"	265	B10	May 18, 1943	-	25,000	94.3
214	-	Spring Creek near Farmingdale, Ill.	Lat 39°47'40", long 89°48'00"	60.1	B9	May 1943	-	8,100	135
215	-	Prairie Creek near Salisbury, Ill.	Sangamon County	38.9	B9	May 1943	-	3,900	100
216	-	Richland Creek near Salisbury, Ill.	Lat 39°52'55", long 89°47'25"	41.5	B9	May 1943	-	7,400	178
217	-	Sugar Creek at Bloomington, Ill.	Lat 40°29'40", long 88°59'00"	7.5	B9	Aug. 3, 1943	-	2,800	373
218	-	Sugar Creek at Normal, Ill.....	Lat 40°29'55", long 88°59'50"	14.5	B9	Aug. 3, 1943	-	4,100	283
219	5844	Drowning Fork at Bushnell, Ill..	Lat 40°33'45", long 90°31'23"	25.9	C9	Sept.24, 1960	13.26	1,650	63.7

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and vicinity	Location	Contributing drainage area (sq mi)	Flood region and hydrologic area	Maximum flood			
						Date	Gage height (feet)	Discharge	
								Cfs	Cfs per sq mi
		Illinois River basin--Continued							
220	-	Mauvaise Terre Creek near Markham, Ill.	Morgan County	121	B9	May 20, 1943	-	16,000	132
221	-	Seminary Creek near Whitehall, Ill.	Lat 39°24'50", long 90°23'50"	16.8	B9	May 1943	-	7,200	429
222	-	Honey Creek near Carlinville, Ill.	Lat 39°14'40", long 89°52'00"	25.4	B9	May 1943	-	2,000	78.7
223	-	Otter Creek near Palmyra, Ill...	Lat 39°22'42", long 89°56'50"	61.6	B9	Mar. 21, 1962	11.20	18,000	292
224	-	Massa Creek near Palmyra, Ill...	Macoupin County	26.9	B9	May 1943	-	9,600	357
		Kaskaskia River basin							
225	-	Mud Creek near Tower Hill, Ill..	Lat 39°28'45", long 88°57'20"	7.5	B9	June 28, 1957	-	4,530	604
226	-	Opossum Creek near Oconee, Ill..	Lat 39°18'15", long 89°05'05"	10.4	B9	June 28, 1957	-	7,670	738
227	-	Wolf Creek near Beecher City, Ill.	Lat 39°11'15", long 88°44'30"	28.6	B9	June 28, 1957	-	7,010	245
228	-	Centralia Reservoir Creek near Centralia, Ill.	Lat 38°33'35", long 89°00'25"	7	B9	May 19, 1943	-	1,500	214
229	-	Silver Creek near Troy, Ill.....	Lat 38°42'50", long 89°49'55"	154	B9	May 1943	-	20,000	130
230	-	East Fork Silver Creek near Highland, Ill.	Lat 38°45'54", long 89°41'56"	48.3	B9	June 15, 1957	483.32	5,580	116

a Areal mean annual flood, 1,300 cfs; ratio of peak discharge to that of 50-year flood, 4.56.
b Areal mean annual flood, 2,270 cfs; ratio of peak discharge to that of 50-year flood, 2.10.
c Areal mean annual flood, 1,330 cfs; recurrence interval, 5 years.
d Maximum daily discharge; areal mean annual flood, 670 cfs; recurrence interval, 5 years.
e Areal mean annual flood, 730 cfs; recurrence interval, 17 years.
f Areal mean annual flood, 540 cfs; recurrence interval, 7 years.
g Mean sea level datum.
h Backwater from ice.
i Pool elevation.
j Estimated.

100. Belly River at international boundary (International gaging station)

Location.--Lat 48°59'50", long 113°40'50", in NW¼ sec.2, T.37 N., R.16 W. (unsurveyed), on right bank 200 ft upstream from international boundary, 11 miles southeast of Waterton Park, Alberta, and 15 miles northwest of Babb, Mont.

Drainage area.--74.8 sq mi. Area of lakes and ponds, 2.09 sq mi. Glacier area, about 0.5 sq mi.

Gage.--Recording. Altitude of gage is 4,500 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs and extended above.

Bankfull stage.--Not subject to overflow.

Remarks.--This is one of a number of stations that are maintained jointly by the United States and Canada. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	June 17, 1948	5.52	1,810	1956	May 22, 1956	5.60	1,740
1949	May 28, 1949	4.22	972	1957	May e, 1957	4.90	1,320
1950	June 23, 1950	5.57	1,770	1958	June 10, 1958	4.77	1,240
				1959	June 6, 1959	5.31	1,570
1951	June 24, 1951	5.28	1,570	1960	June 4, 1960	4.80	1,270
1952	Oct. 3, 1951	3.92	751				
1953	June 4, 1953	6.66	2,450	1961	May 28, 1961	5.42	1,630
1954	May 20, 1954	5.56	1,720				
1955	June 25, 1955	5.26	1,540				

105. North Fork Belly River at international boundary (International gaging station)

Location.--Lat 48°59'20", long 113°45'50", in S½ sec.2, T.37 N., R.17 W. (unsurveyed), on left bank three-quarters of a mile south of international boundary, 5½ miles upstream from mouth, 8 miles southeast of Waterton Park, Alberta, and 17½ miles northwest of Babb, Mont.

Drainage area.--10.1 sq mi. Area of lakes and ponds, 0.08 sq mi. Glacier area, 0.17 sq mi.

Gage.--Recording. Altitude of gage is 5,100 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and extended above by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--This is one of a number of stations that are maintained jointly by the United States and Canada. Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Oct. 19, 1947	3.73	262	1951	May 24, 1951	3.57	201
	May 22, 1948	4.06	342		June 15, 1951	3.71	228
	June 4, 1948	3.87	295		June 24, 1951	3.37	165
	June 16, 1948	4.23	386		June 11, 1951	3.52	192
	July 20, 1948	3.00	114		Aug. 30, 1951	2.96	110
	July 29, 1948	3.46	201				
				1952	Oct. 1, 1951	3.00	117
1949	May 17, 1949	3.06	121		May 20, 1952	2.95	110
	May 22, 1949	2.96	106		June 6, 1952	2.96	111
	May 28, 1949	3.22	146		June 12, 1952	3.17	141
					June 30, 1952	2.95	110
1950	May 14, 1950	2.96	106		Aug. 10, 1952	3.08	128
	May 28, 1950	3.06	119				
	June 21, 1950	3.84	254	1953	May 19, 1953	2.99	111
	June 30, 1950	3.57	201		June 3, 1953	4.52	416
					June 13, 1952	4.14	319
1951	May 12, 1951	3.29	152		July 14, 1953	3.52	180
	May 18, 1951	3.28	151				

Peak stages and discharges of North Fork Belly River at international boundary--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 19, 1954	3.73	230	1955	May 20, 1955	3.09	132
	June 5, 1954	3.14	131		June 13, 1955	3.55	209
	June 13, 1954	3.28	151		June 25, 1955	3.86	271
	June 23, 1954	3.58	201		July 12, 1955	3.37	155
	July 5, 1954	3.58	201				
	Aug. 27, 1954	2.97	107				

110. Belly River near Mountain View, Alberta
(International gaging station)

Location.--Lat 49°06', long 113°42', in NE¼ sec.5, T.2, R.28 W., fourth meridian, in Alberta, on right bank 2 miles downstream from intake of Mountain View Irrigation District Canal, 5 miles southwest of Mountain View, and 7 miles north of international boundary.

Drainage area.--121 sq mi. Area of lakes and ponds, 2.28 sq mi. Glacier area, about 0.5 sq mi.

Gage.--Nonrecording prior to Apr. 6, 1949; recording thereafter. Datum of gage is 4,344.90 ft above mean sea level (Irrigation Surveys datum).

Stage-discharge relation.--Defined by current-meter measurements below 2,500 cfs and extended to 4,500 cfs on basis of slope-area measurement.

Bankfull stage.--11 ft.

Remarks.--Peaks listed are natural flow of stream. Recorded peaks are adjusted for diversion in Mountain View Irrigation District Canal since 1935. Gage heights are not listed after 1934 if flow in the canal exceeded 3 percent of the combined discharge. Records prior to Oct. 1, 1948, furnished by Water Resources Branch, Department of Northern Affairs and National Resources, Canada. Station has been maintained jointly by the United States and Canada since that time. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	June 1908	12.1	-	1936	May 15, 1936	-	1,340
				1937	June 13, 1937	6.22	4,010
1912	May 17, 1912	3.45	1,030	1938	May 26, 1938	4.53	2,070
1913	May 29, 1913	4.69	2,070	1939	May 30, 1939	-	1,050
1914	June 13, 1914	3.89	1,370	1940	May 12, 1940	-	1,130
1915	June 3, 1915	3.92	1,372				
				1941	June 29, 1941	3.32	942
1916	June 21, 1916	5.23	2,729	1942	June 6, 1942	5.03	2,510
1917	June 11, 1917	-	a3,100	1943	June 18, 1943	4.40	1,920
1918	June 12, 1918	4.27	1,643	1944	June 27, 1944	4.43	1,060
1919	May 29, 1919	4.38	1,934	1945	June 4, 1945	4.10	1,700
1920	June 16, 1920	4.37	1,925				
				1946	May 28, 1946	4.02	1,580
1921	June 8, 1921	4.23	1,730	1947	May 3, 1947	3.89	1,430
1922	June 6, 1922	4.50	2,040	1948	June 17, 1948	5.68	3,260
1923	June 2, 1923	4.69	2,230	1949	May 28, 1949	3.81	1,330
1924	June 16, 1924	3.93	1,500	1950	June 22, 1950	4.67	2,240
1925	May 23, 1925	4.40	2,030				
				1951	June 24, 1951	5.33	3,030
1926	Apr.18, May 1, 1926	2.95	644	1952	June 12, 1952	-	1,080
				1953	June 4, 1953	6.64	4,500
1927	June 11, 1927	5.13	2,670	1954	May 20, 1954	4.82	2,470
1928	May 25, 1928	4.49	2,040	1955	June 25, 1955	4.53	2,150
1929	June 3, 1929	3.82	1,400				
1930	May 22, 1930	3.81	1,360	1956	May 22, 1956	4.58	2,180
				1957	May 14, 1957	-	2,090
1931	May 16, 1931	3.75	1,300	1958	June 10, 1958	-	2,000
1932	May 22, 1932	4.16	1,800	1959	June 6, 1959	4.44	1,960
1933	June 17, 1933	4.27	1,920	1960	June 4, 1960	3.99	1,550
1934	June 7, 1934	5.30	2,900				
1935	May 24, 1935	4.03	1,640	1961	May 27, 1961	4.40	1,960

a Estimated.

115. Waterton River near international boundary
(International gaging station)

Location.--Lat 48°57'20", long 113°54'00", in NW¼ sec.23, T.37 N., R.18 W. (unsurveyed), on right bank 100 ft downstream from Olson Creek, 3 miles south of international boundary, and 7 miles south of Waterton Park, Alberta.

Drainage area.--61.0 sq mi. Area of lakes and ponds, 0.54 sq mi. Glacier area, about 0.5 sq mi.

Gage.--Recording. Altitude of gage is 4,200 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,900 cfs and extended above.

Bankfull stage.--Not subject to overflow.

Remarks.--This is one of a number of stations that are maintained jointly by the United States and Canada. Base for partial-duration series, 1,100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Oct. 19, 1947	5.34	1,650	1954	June 23, 1954	5.68	1,970
	May 23, 1948	6.30	2,510		July 2, 1954	5.47	1,790
	May 27, 1948	6.05	2,280		July 6, 1954	6.25	2,460
	June 3, 1948	5.81	2,070				
	June 9, 1948	6.06	2,290	1955	June 14, 1955	5.78	2,050
	June 17, 1948	4.96	1,350		June 23, 1955	6.02	2,260
					July 12, 1955	4.82	1,270
1949	May 15, 1949	5.27	1,600				
	May 28, 1949	5.61	1,890	1956	May 21, 1956	5.98	2,220
	June 7, 1949	5.23	1,560		June 2, 1956	6.13	2,360
	June 11, 1949	5.09	1,450		June 11, 1956	5.68	1,970
					June 20, 1956	5.01	1,430
1950	May 28, 1950	5.07	1,360		June 29, 1956	4.60	1,130
	June 6, 1950	5.78	2,050				
	June 13, 1950	5.62	1,920	1957	May 8, 1957	5.46	1,780
	June 22, 1950	6.36	2,560		May 14, 1957	4.99	1,400
	July 1, 1950	5.97	2,210		May 21, 1957	5.21	1,580
					June 4, 1957	5.57	1,870
1951	May 12, 1951	5.13	1,510		June 9, 1957	5.23	1,590
	May 18, 1951	4.93	1,350		June 12, 1957	4.86	1,300
	May 24, 1951	5.60	1,900				
	June 16, 1951	5.94	2,190	1958	May 24, 1958	5.54	1,850
	June 24, 1951	5.74	2,020		June 10, 1958	5.53	1,840
	July 6, 1951	5.24	1,600				
	July 15, 1951	4.84	1,280	1959	June 6, 1959	6.17	2,390
					June 15, 1959	5.91	2,160
1952	Oct. 2, 1951	4.90	1,330		June 22, 1959	5.78	2,050
	Apr. 28, 1952	4.73	1,200		July 3, 1959	4.89	1,320
	May 20, 1952	4.98	1,390				
	May 25, 1952	4.76	1,220	1960	Oct. 25, 1959	4.64	1,140
	June 6, 1952	5.14	1,520		June 1, 1960	5.14	1,520
					June 4, 1960	5.71	1,990
1953	June 4, 1953	6.29	2,500		June 7, 1960	4.98	1,390
	June 8, 1953	5.57	1,870		June 14, 1960	5.09	1,480
	June 13, 1953	6.31	2,520		June 17, 1960	5.74	2,020
	July 1, 1953	4.70	1,180		June 26, 1960	4.75	1,220
	July 14, 1953	5.20	1,570				
				1961	May 27, 1961	6.31	2,520
1954	May 20, 1954	6.51	2,710		June 6, 1961	6.06	2,290
	June 5, 1954	4.81	1,260		June 18, 1961	5.68	1,970
	June 14, 1954	5.18	1,550				

120. Street Creek at international boundary (International gaging station)

Location.--Lat 48°59'20", long 113°52'40", in NE¼ sec.11, T.37 N., R.18 W. (unsurveyed), on left bank half a mile upstream from mouth, three-quarters of a mile south of international boundary, and 5 miles south of Waterton Park, Alberta.

Drainage area.--6.0 sq mi, approximately. Area of lakes and ponds, 0.02 sq mi.

Gage.--Recording. Altitude of gage is 4,400 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 140 cfs and extended to 437 cfs on basis of slope-area measurement.

Bankfull stage.--Not subject to overflow.

Remarks.--This is one of a number of stations that are maintained jointly by the United States and Canada. Base for partial-duration series, 80 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Oct. 19, 1947	2.63	142	1951	June 26, 1951	2.38	112
	May 23, 1948	-	a125		July 1, 1951	2.39	113
	June 15, 1948	2.50	113				
	July 29, 1948	2.42	98	1952	Oct. 1, 1951	-	a80
					May 20, 1952	-	a80
1949	May 12, 1949	2.33	86				
	May 16, 1949	2.33	84	1953	May 6, 1953	2.21	86
	May 27, 1949	2.40	94		May 19, 1953	2.17	82
					May 26, 1953	2.25	90
1950	May 14, 1950	2.39	92		June 3, 1953	4.5	437
	May 27, 1950	2.33	100				
	June 4, 1950	2.55	132	1954	May 19, 1954	3.0	187
	June 13, 1950	-	a140		June 5, 1954	2.35	81
	June 21, 1950	3.7	310		June 23, 1954	2.49	87
	July 1, 1950	-	a107		July 5, 1954	2.50	81
1951	May 12, 1951	-	a85	1955	May 19, 1955	2.41	86
	May 18, 1951	2.35	106		June 13, 1955	2.45	97
	May 22, 1951	2.37	110		June 24, 1955	3.0	180
	June 15, 1951	2.46	98				

a Daily mean discharge.

125. Boundary Creek at international boundary (International gaging station)

Location.--Lat 48°59'50", long 113°54'20", in NE¼ sec.3, T.37 N., R.18 W. (unsurveyed), on right bank a quarter of a mile upstream from mouth, a quarter of a mile south of international boundary, and 4 miles south of Waterton Park, Alberta.

Drainage area.--21.0 sq mi. Area of lakes and ponds, 0.49 sq mi. Glacier area, about 0.1 sq mi.

Gage.--Recording. Altitude of gage is 4,300 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 480 cfs and extended above by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--This is one of a number of gaging stations that are maintained jointly by the United States and Canada. Base for partial-duration series, 270 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Oct. 19, 1947	-	a500	1949	May 28, 1949	4.25	396
	May 22, 1948	4.60	504				
				1950	May 27, 1950	4.12	309
1949	May 11, 1949	3.85	282		June 5, 1950	4.48	407
	May 17, 1949	3.98	317		June 12, 1950	4.26	350

a About.

Peak stages and discharges of Boundary Creek at international boundary--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	June 21, 1950	5.34	772	1955	June 14, 1955	4.53	496
	July 1, 1950	4.63	511		June 23, 1955	4.58	542
1951	May 11, 1951	4.42	470	1956	May 21, 1956	4.57	586
	May 23, 1951	4.43	475		June 1, 1956	4.51	560
	June 15, 1951	4.78	635		June 11, 1956	4.22	433
	June 24, 1951	4.60	526		June 20, 1956	3.96	336
	July 5, 1951	4.25	360	1957	May 7, 1957	4.35	470
1952	Oct. 1, 1951	4.15	366		May 14, 1957	4.40	474
	Apr. 28, 1952	3.96	309		May 20, 1957	4.32	442
	May 15, 1952	4.10	351		June 6, 1957	4.35	454
	May 20, 1952	4.13	360	1958	May 12, 1958	4.2	395
	June 5, 1952	3.98	315		May 24, 1958	4.29	430
1953	May 8, 1953	3.93	290		June 4, 1958	4.05	342
	May 20, 1953	4.01	318		June 9, 1958	4.20	395
	May 26, 1953	4.16	374	1959	June 6, 1959	4.74	625
	June 4, 1953	5.24	904		June 14, 1959	4.52	526
	June 8, 1953	4.42	479		July 2, 1959	3.82	273
	June 13, 1953	4.78	645	1960	Oct. 25, 1959	3.95	311
	July 1, 1953	4.03	346		June 3, 1960	4.43	488
	July 13, 1953	4.03	363		June 16, 1960	4.22	403
1954	May 19, 1954	4.50	555	1961	May 27, 1961	4.50	517
	June 5, 1954	3.98	343		June 5, 1961	4.43	524
	June 14, 1954	4.11	389				
	June 22, 1954	4.33	478				
	July 2, 1954	4.12	393				
	July 5, 1954	4.20	425				

130. Waterton River near Waterton Park, Alberta
(International gaging station)

Location.--Lat 49°07', long 113°50', in NE¼ sec.8, T.2, R.29 W., fourth meridian, in Alberta, on right bank 300 ft downstream from highway bridge, a quarter of a mile upstream from Crooked Creek, and 5 miles northeast of Waterton Park.

Drainage area.--238 sq mi. Area of lakes and ponds, 8.26 sq mi. Glacier area, about 0.6 sq mi.

Gage.--Nonrecording prior to Mar. 18, 1949; recording thereafter. Prior to Feb. 7, 1917, at various sites and datums within 200 ft of present site. Feb. 7, 1917, to Aug. 26, 1933, and Mar. 19, 1948, to Mar. 18, 1949, on downstream side of bridge 200 ft upstream, at present datum. Datum of gage is 4,154.19 ft above mean sea level (Irrigation Surveys datum).

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs and extended above by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Records prior to Oct. 1, 1948, furnished by Water Resources Branch, Department of Northern Affairs and National Resources, Canada. Station has been maintained jointly by the United States and Canada since that time. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	June 6, 1908	9.5	24,000	1920	June 17, 1920	4.65	4,575
1909	June 3,21,1909	5.6	6,414				
1910	June 1, 1910	4.5	2,925	1921	May 28,June 8, 1921	4.67	4,688
1911	June 15, 1911	4.89	4,102	1922	June 5, 1922	4.80	5,090
1912	May 18, 1912	4.47	2,535	1923	June 2, 1923	4.96	5,490
1913	May 29, 1913	5.45	5,185	1924	June 14, 1924	4.47	4,270
1914	June 4, 1914	4.64	2,908	1925	May 23, 1925	4.54	4,020
1915	June 6, 1915	4.44	2,142	1926	May 2, 1926	3.39	1,710
1916	June 19, 1916	6.10	7,260	1927	June 10, 1927	5.14	5,820
1917	May 26, 1917	4.75	4,585	1928	May 26, 1928	4.69	4,640
1918	June 13, 1918	4.70	4,480	1929	May 25, 1929	4.43	4,050
1919	May 24, 1919	4.45	4,075	1930	May 22, 1930	3.89	2,820

Peak stages and discharges of Waterton River near Waterton Park, Alberta--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	June 17, 1933	5.06	5,510	1955	June 25, 1955	4.04	4,500
1948	June 18, 1948	5.23	6,050	1956	May 22, 1956	4.16	4,890
1949	May 17, 1949	3.59	3,320	1957	May 15, 1957	4.01	3,990
1950	June 22, 1950	4.28	5,220	1958	May 25, 1958	3.90	3,790
				1959	June 6, 1959	4.29	4,970
1951	June 16, 1951	3.94	4,360	1960	June 4, 1960	3.83	3,910
1952	May 21, 1952	3.28	2,580				
1953	June 4, 1953	5.06	7,570	1961	May 27, 1961	4.37	5,300
1954	May 21, 1954	4.32	5,310				

137. St. Mary River above Swiftcurrent Creek near Babb, Mont.
(Published as "near St. Mary" 1902-4, and as "near Babb" 1905-15)

Location.--Lat 48°51' 00", long 113°24'50", in NE¼ sec.27, T.36 N., R.14 W., half a mile downstream from Lower St. Mary Lake, 1 mile southeast of Babb, and 2 miles upstream from Swiftcurrent Creek.

Drainage area.--177 sq mi. Area of lakes and ponds, 11.1 sq mi. Glacier area, about 0.9 sq mi.

Gage.--Nonrecording. Altitude of gage is 4,460 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 3,700 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	July 5, 1902	6.60	4,360	1908	June 5, 1908	9.4	7,980
1903	June 19, 1903	6.00	3,640	1909	June 21, 1909	5.8	3,900
1904	June 21, 1904	4.90	2,300	1910	June 3, 1910	3.95	1,710
1905	June 6-10,17, 1905	4.5	1,890				
				1911	June 16, 1911	4.9	2,460
				1912	May 21-23,1912	4.0	1,680
1906	June 16, 1906	4.3	1,720	1913	June 5, 1913	6.0	3,580
1907	June 29-July1, 1907	5.6	2,980	1914	June 6, 1914	4.1	1,760
				1915	July 3, 1915	3.5	1,330

140. Grinnell Creek near Many Glacier, Mont.

Location.--Lat 48°46'20", long 113°41'50", in SE¼ sec.21, T.35 N., R.16 W. (unsurveyed) on right bank 500 ft upstream from trail crossing, 1,000 ft downstream from Grinnell Lake, a quarter of a mile upstream from mouth, 3 miles southwest of Many Glacier, and 13½ miles southwest of Babb.

Drainage area.--3.47 sq mi. Area of lakes and ponds, 0.12 sq mi. Glacier area, about 0.3 sq mi.

Gage.--Recording. Altitude of gage is 5,000 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 120 cfs and extended above by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	June 5, 1950	2.52	113	1951	July 6, 1951	2.52	119
	June 15, 1950	2.61	123				
	June 22, 1950	3.45	242	1952	Oct. 1, 1951	2.73	138
	July 1, 1950	2.74	139				
				1953	June 4, 1953	2.54	109
1951	June 15, 1951	2.83	155		June 8, 1953	2.66	124

Peak stages and discharges of Grinnell Creek near Many Glacier, Mont.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 13, 1953	3.16	196	1957	May 8, 1957	2.44	107
	July 15, 1953	2.77	146		May 20, 1957	2.47	111
					June 6, 1957	2.46	110
1954	May 20, 1954	2.64	131				
	June 13, 1954	2.51	115	1958	May 26, 1958	2.63	130
	June 23, 1954	2.62	128				
	July 8, 1954	2.73	142	1959	June 5, 1959	2.70	138
	July 18, 1954	2.56	121		June 15, 1959	2.58	124
					Sept. 6, 1959	2.63	130
1955	June 18, 1955	2.61	127				
	June 25, 1955	3.02	179	1960	June 4, 1960	2.63	130
	July 13, 1955	2.68	136		June 16, 1960	3.13	194
1956	Oct. 10, 1955	-	a135	1961	May 27, 1961	2.68	134
	May 21, 1956	2.62	123		June 5, 1961	2.92	164
	June 2, 1956	2.87	154		June 16, 1961	2.82	153
	June 11, 1956	2.46	106				
	June 17, 1956	2.45	104				

a Daily mean discharge.

145. Swiftcurrent Creek at Many Glacier, Mont. (International gaging station)

Location.--Lat 48°48'10", long 113°39'20", in SE¼ sec.11, T.35 N., R.16 W. (unsurveyed), on right bank 100 ft upstream from outlet of Swiftcurrent Lake at Many Glacier, Glacier National Park, and 11 miles southwest of Babb.

Drainage area.--31.4 sq mi. Area of lakes and ponds, 0.95 sq mi. Glacier area, about 0.6 sq mi.

Gage.--Nonrecording prior to June 16, 1918; recording thereafter. Altitude of gage is 4,860 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above.

Remarks.--Station maintained jointly by the United States and Canada since Oct. 1, 1920. Base for partial-duration series, 680 cfs. Only annual peaks are shown prior to June 16, 1918.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	May 28, 1913	4.25	1,150	1925	June 22, 1925	4.27	869
1914	June 4, 1914	3.40	690				
1915	May 8, 1915	3.1	600	1926	May 5, 1926	3.41	491
1916	June 17, 1916	4.75	1,550	1927	May 17, 1927	4.55	932
1917	June 9, 1917	4.20	1,220		June 8, 1927	4.91	1,100
					June 15, 1927	4.68	982
1918	June 10, 1918	4.30	1,280		June 24, 1927	4.70	990
1919	May 23, 1919	3.88	1,030	1928	May 13, 1928	4.07	797
	May 28, 1919	4.00	1,100		May 23, 1928	4.92	1,120
					July 1, 1928	4.08	767
1920	June 8, 1920	3.72	932				
	June 16, 1920	3.86	1,020	1929	May 24, 1929	4.24	884
	July 2, 1920	3.47	784		June 2, 1929	3.95	792
1921	May 26, 1921	3.97	1,100	1930	May 20, 1930	4.44	885
	June 7, 1921	3.92	1,070				
	June 23, 1921	3.47	778	1931	May 17, 1931	4.61	1,110
1922	May 20, 1922	3.54	868	1932	May 14, 1932	4.28	938
	June 6, 1922	3.30	700		May 22, 1932	5.05	1,360
	June 14, 1922	3.42	772		June 2, 1932	3.96	796
					June 15, 1932	4.01	799
1923	May 26, 1923	4.10	728				
	June 1, 1923	4.38	815	1933	May 31, 1933	4.75	1,210
	June 11, 1923	4.30	790		June 9, 1933	4.92	1,310
					June 17, 1933	5.00	1,360
1924	May 16, 1924	4.00	a771				
				1934	Oct. 29, 1933	4.37	1,010
1925	May 22, 1925	4.76	1,040		Apr. 28, 1934	3.85	734

a Backwater from bridge at lake outlet.

Peak stages and discharges of Swiftcurrent Creek at Many Glacier, Mont.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	May 5, 1934	4.53	1,090	1950	May 28, 1950	3.93	732
	May 8, 1934	4.30	969		June 6, 1950	4.53	994
	May 16, 1934	4.17	902		June 14, 1950	4.22	857
	May 28, 1934	3.93	782		June 22, 1950	5.01	1,210
	June 7, 1934	4.87	1,280		July 1, 1950	4.29	888
1935	May 23, 1935	4.49	1,070	1951	May 12, 1951	3.97	736
	June 1, 1935	3.80	719		May 18, 1951	3.88	696
					May 24, 1951	4.31	888
1936	May 5, 1936	3.96	796		June 16, 1951	4.57	1,010
	May 16, 1936	4.43	1,040		June 24, 1951	4.27	870
	June 1, 1936	4.26	948		Sept.26, 1951	3.91	709
1937	May 27, 1937	3.80	719	1952	Oct. 2, 1951	4.14	811
	June 3, 1937	3.77	705				
	June 13, 1937	a6.89	2,250	1953	May 20, 1953	3.95	738
	June 22, 1937	3.98	806		June 4, 1953	4.89	1,160
					June 8, 1953	4.30	895
1938	Apr. 18, 1938	4.23	928		June 13, 1953	5.29	1,320
	May 27, 1938	4.61	1,130		July 15, 1953	3.78	685
	June 5, 1938	4.02	819				
	June 17, 1938	3.85	735	1954	May 20, 1954	5.25	1,280
					June 14, 1954	3.99	741
1939	Apr. 30, 1939	3.88	695		June 23, 1954	4.38	901
	May 30, 1939	4.76	1,060		July 6, 1954	4.20	826
1940	May 12, 1940	3.88	695	1955	June 14, 1955	4.10	793
					June 25, 1955	4.51	955
1941	May 18, 1941	3.37	500				
				1956	Oct. 10, 1955	4.19	822
1942	June 6, 1942	4.65	1,040		May 21, 1956	4.84	1,100
					June 2, 1956	4.39	905
1943	May 23, 1943	4.19	862		June 11, 1956	3.90	706
	May 28, 1943	4.10	816				
	June 18, 1943	5.46	1,630	1957	May 8, 1957	4.11	821
					May 20, 1957	4.10	805
1944	May 17, 1944	3.38	506		June 7, 1957	4.12	801
1945	June 1, 1945	4.31	845	1958	May 10, 1958	4.25	834
	June 22, 1945	4.31	845		May 26, 1958	3.99	741
1946	May 18, 1946	3.95	695	1959	June 6, 1959	4.62	1,010
	May 29, 1946	4.20	798		June 15, 1959	4.29	822
	June 5, 1946	4.08	748		June 21, 1959	4.17	765
					Sept. 8, 1959	3.88	701
1947	May 3, 1947	3.78	683				
	May 9, 1947	3.84	708	1960	May 13, 1960	4.40	909
					June 4, 1960	4.39	909
1948	Oct. 19, 1947	4.80	1,140		June 17, 1960	4.53	968
	May 23, 1948	4.80	1,140				
	June 4, 1948	5.02	1,250	1961	May 27, 1961	4.62	1,010
	June 17, 1948	4.39	948		June 7, 1961	4.43	926
					June 17, 1961	3.98	737
1949	May 15, 1949	3.87	692				
	May 28, 1949	4.02	758				

a Backwater from bridge at lake outlet.

150. Canyon Creek near Many Glacier, Mont.
(International gaging station)

Location.--Lat 48°47'30", long 113°37'40", near center of west line of sec.18, T.35 N., R.15 W. (unsurveyed), half a mile upstream from mouth and 1½ miles southeast of Many Glacier.

Drainage area.--7.2 sq mi. Area of lakes and ponds, 0.06 sq mi. Glacier area, about 0.1 sq mi.

Gage.--Recording. Altitude of gage is 4,900 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and extended above by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Station maintained jointly by the United States and Canada since Oct. 1, 1920. Only annual peaks are shown.

Peak stages and discharges of Canyon Creek near Many Glacier, Mont.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	-	-	(a)	1928	-	-	(a)
1919	May 28, 1919	2.00	181	1929	May 24, 1929	2.38	340
1920	-	-	(a)	1930	May 21, 1930	1.92	171
1921	May 26, 1921	2.00	166	1931	May 17, 1931	1.84	124
1922	May 19, 1922	b3.34	287	1932	-	-	(a)
1923	June 1, 1923	2.33	315	1933	-	-	(a)
1924	June 15, 1924	1.97	172	1934	June 8, 1934	2.95	720
1925	June 21, 1925	1.86	136	1935	-	-	(a)
1926	Sept. 1, 1926	1.40	62	1936	June 1, 1936	1.75	109
1927	June 9, 1927	2.17	262	1937	-	-	(a)

a Annual peak occurred outside period of seasonal record.
b Occurred on May 16; backwater from debris.

160. Swiftcurrent Creek at Sherburne, Mont.
(International gaging station)

Location.--Lat 48°50'00", long 113°30'50", in SW¼ sec.36, T.36 N., R.15 W., on left bank 1,000 ft downstream from outlet of Lake Sherburne Dam at Sherburne and 4½ miles southwest of Babb.

Drainage area.--64.3 sq mi.

Gage.--Nonrecording prior to May 18, 1924. Recording thereafter. At two sites within 1,000 ft of present site at different datums prior to Aug. 10, 1920. Datum of gage is 4,720.81 ft above mean sea level (Bureau of Reclamation bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs at sites used prior to Aug. 10, 1920, and below 2,200 cfs at present site.

Remarks.--No diversion. Flow regulated by Lake Sherburne (usable capacity, 66,200 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	May 28, 1913	7.8	a1,850	1940	July 26, 1940	5.02	760
1914	June 4, 1914	6.2	a1,090				
1915	June 26, 1916	4.6	a816	1941	July 9, 1941	5.12	795
				1942	June 5, 1942	6.67	1,530
1916	June 17, 1916	7.85	a2,280	1943	June 21, 1943	7.14	1,930
1917	June9-11,1917	5.55	a1,070	1944	Aug. 6, 1944	4.85	658
1918	(b)	6.20	a1,140	1945	June 4, 1945	5.35	910
1919	May 29, 1919	5.90	a950				
1920	Aug. 3, 1920	7.45	a1,490	1946	Sept. 3, 1946	4.87	689
				1947	May 14, 1947	5.01	744
1921	May 28, 1921	6.10	1,200	1948	June 17, 1948	6.38	1,360
1922	June 7, 1922	6.10	1,240	1949	Aug. 4, 1949	4.72	622
1923	June 11, 1923	5.31	864	1950	June 24, 1950	5.84	1,090
1924	July 19, 1924	5.28	857				
1925	June 18, 1925	6.25	1,330	1951	June 16, 1951	6.69	1,420
				1952	Oct. 1, 1951	6.04	1,100
1926	Oct. 10, 1925	5.84	1,120	1953	June 14, 1952	6.76	1,270
1927	June 8, 1927	6.90	1,670	1954	Sept.15, 1954	8.10	1,920
1928	May 11, 1928	7.44	1,830	1955	June 24, 1955	6.57	1,180
1929	Oct. 14, 1928	6.50	1,360				
1930	June 12, 1930	5.64	937	1956	May 22, 1956	7.34	1,630
				1957	June 9, 1957	5.63	805
1931	July 24, 1931	4.83	643	1958	June 19, 1958	6.15	1,070
1932	May 31, 1932	7.00	1,220	1959	Sept.30, 1959	6.35	1,190
1933	June 2, 1933	5.88	1,150	1960	July 28, 1960	8.30	2,180
1934	June 7, 1934	6.98	1,770				
1935	Aug. 20, 1935	5.03	769	1961	June 30, 1961	6.47	1,190
				1962	Apr. 9, 1962	5.20	688
1936	Aug. 13, 1936	5.28	866	1963	Apr. 5, 1963	5.71	904
1937	June 15, 1937	5.82	1,120	1964	June 11, 1964	8.37	2,360
1938	May 29, 1938	5.42	a954	1965	May 16, 1965	6.54	1,560
1939	July 17, 1939	5.47	998				

a Maximum observed.
b May 5, June 14, 15, 1918.

165. Swiftcurrent Creek near Babb, Mont.
(Published as "at Henkel's Ranch, near St. Mary" in 1902; "near Wetzel" in 1903; "near St. Mary" in 1904)

Location.--Lat 48°51'30", long 113°25'40", in SW¼SW¼ sec.22, T.36 N., R.14 W., 1 mile south of Babb and 1½ miles upstream from mouth.

Drainage area.--100 sq mi. Area of lakes and ponds, 2.0 sq mi. Glacier area, about 0.6 sq mi.

Gage.--Nonrecording. Prior to July 26, 1908, at several sites within 900 ft of present site at different datums. Altitude of gage is 4,490 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,500 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	July 4, 1902	7.0	5,000	1906	June 13, 1906	4.1	1,025
1903	-	-	(a)	1907	June 22-30, 1907	5.2	1,840
1904	May 23, 1904	4.60	1,500	1908	June 5, 1908	-	(b)
1905	June 4-7, 1905	4.4	1,255	1909	June 21, 1909	6.0	3,360

a Not determined but believed to have exceeded 2,630 cfs.
b Maximum known flood occurred on this date; discharge not determined.

175. St. Mary River near Babb, Mont.
(Published as "at Main" 1901-2, and "below Swiftcurrent Creek at Babb" 1910-15)

Location.--Lat 48°50'00", long 113°25'00", in SE¼ sec.34, T.36 N., R.14 W., on right bank half a mile upstream from outlet of Lower St. Mary Lake, and 2 miles southeast of Babb.

Drainage area.--278 sq mi. Prior to Oct. 1, 1915, 303 sq mi. Area of lakes and ponds, 15.3 sq mi. Glacier area, about 1.5 sq mi.

Gage.--Nonrecording prior to Apr. 22, 1915; recording Apr. 22 to Sept. 30, 1915. Intermittent nonrecording and recording Oct. 1, 1915, to Sept. 30, 1921; recording thereafter. Prior to Oct. 1, 1915, at several sites about 3¾ miles downstream at different datums. Oct. 1, 1915, to Sept. 30, 1925, at several sites within 1½ miles downstream at different datums. Datum of present gage is 4,468.13 ft above mean sea level, datum of 1929.

Stage-discharge relation.--1901-2, defined by current-meter measurements below 2,300 cfs and extended above by logarithmic plotting; 1910-15, defined by current-meter measurements below 4,000 cfs; 1915-25, defined by current-meter measurements below 5,200 cfs; 1950-61, defined by current-meter measurements below 5,000 cfs.

Bankfull stage.--10 ft.

Historical data.--Flood of June 1908 exceeded flood of 1902; discharge not determined.

Remarks.--Swiftcurrent Creek is diverted into Lower St. Mary Lake above station. Recorded peaks are adjusted for flow in overflow channel 1912-15 and for diversion in St. Mary Canal 1922-25. Flow of Swiftcurrent Creek regulated by Lake Sherburne (capacity, 66,200 acre-ft) since 1919 and by limited storage behind a temporary dam 1915-19. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	July 4, 1902	6.50	9,300	1924	May 19, 1924	b1.92	2,790
				1925	May 25, 1925	b2.51	4,220
1911	June 14, 1911	8.0	3,560				
1912	May 21, 1912	a6.8	2,270	1951	June 18, 1951	5.88	4,090
1913	May 31, 1913	a8.4	4,610	1952	Oct. 4, 1951	4.52	2,670
1914	May 19,21, 1914	a6.9	2,470	1953	June 14, 1953	6.90	5,120
1915	June 27, 1915	a6.4	1,900	1954	May 22, 1954	6.64	4,960
				1955	June 26, 1955	5.94	4,260
1916	June 21, 1916	8.25	5,610				
1917	June 11, 1917	5.60	4,160	1956	May 24, 1956	6.76	5,110
1918	June 14, 1918	6.15	5,200	1957	June 10, 1957	5.47	3,500
1919	May 30, 1919	5.83	4,740	1958	June 12, 1958	4.93	2,880
1920	June 18, 1920	5.31	4,010	1959	June 8, 1959	6.26	4,300
				1960	June 5, 1960	5.13	3,240
1921	May 27, 1921	5.80	4,700				
1922	June 7, 1922	b2.89	4,970	1961	May 28, 1961	5.41	3,500
1923	June 11, 1923	b2.10	3,230				

a For flow in river channel only; discharge adjusted for flow in overflow channel.
b For flow in river channel only; discharge adjusted for flow in St. Mary Canal.

RED RIVER OF THE NORTH BASIN

300. Otter Tail River near Detroit Lakes, Minn.

Location.--Lat 46°50', long 95°42', in sec.23, T.139 N., R.40 W., on right bank 10 ft upstream from highway bridge, 5 miles downstream from Height of Land Lake, and 7½ miles east of city of Detroit Lakes.

Drainage area.--270 sq mi.

Gage.--Recording and concrete control. Datum of gage is 1,409.49 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow partly regulated by dams of Minnesota Department of Conservation on several lakes above station. Base for partial-duration series, 42 cfs.

Peak stages and discharges of Otter Tail River near Detroit Lakes, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	May 29, 1937	3.50	-	49	1950	Jan. 27, 1950	6.96	4.15	-
	June 20, 1937	3.53	-	54		Apr. 17, 1950	3.88	-	109
	Sept.11-13, 1937	3.52	-	53		May 29, 1950	4.71	-	332
1938	Dec. 15, 1937	4.02	1.2	-	1951	Mar. 19, 1951	5.43	1.84	-
	May 12, 1938	3.57	-	57		Mar. 24, 1951	4.62	.71	115
	May 17, 1938	3.51	-	48		June 2, 1951	4.26	-	190
	May 19, 1938	3.52	-	50		June 16, 1951	4.04	-	141
	June 3,5,1938	3.67	-	73					
	July 1, 1938	3.55	-	54	1952	Oct. 6, 1951	3.53	-	52
						Dec. 15, 1951	4.82	1.30	-
1939	Mar. 23, 1939	4.83	.43	239		Apr. 21, 1952	4.16	-	167
						July 2, 1952	3.81	-	121
1940	Apr. 6, 1940	5.30	2.01	-		July 20, 1952	3.98	-	134
	Sept.21, 1940	3.45	-	42		Aug. 3, 1952	3.82	-	123
						Aug. 14, 1952	3.89	-	117
1941	Feb. 26, 1941	4.82	1.49	-					
	May 15, 1941	3.66	-	68	1953	June 15, 1953	4.38	-	218
	June 21, 1941	3.54	-	52		Aug. 11, 1953	4.28	-	195
1942	Nov. 17, 1941	3.54	-	52	1954	Mar. 4, 1954	4.80	1.35	-
	Feb. 28, 1942	4.97	1.91	-		May 5, 11-14, 1954	4.27	-	193
	Mar. 21, 1942	3.61	-	63					
	Mar. 29, 1942	3.70	-	76	1955	May 17, 1955	3.78	-	92
	May 20, 1942	3.84	-	102		July 4, 1955	4.00	-	133
	May 30, 1942	3.84	-	102		Aug. 3, 1955	4.28	-	195
	June 16, 1942	3.88	-	112					
					1956	Jan. 16, 1956	4.34	1.39	-
1943	Oct. 6, 1942	3.85	-	105		May 3, 1956	4.07	-	139
	Nov. 24, 1942	3.70	-	76					
	Dec. 3-5,1942	3.74	-	88	1957	Apr. 19, 1957	3.84	-	102
	Feb. 16, 1943	5.60	2.28	-		May 14, 1957	4.00	-	133
	Apr. 1, 1943	3.73	-	86		June 23, 1957	3.93	-	125
	June 26, 1943	4.78	-	371		Sept. 3, 1957	3.72	-	81
	Aug. 14, 1943	3.83	-	100					
					1958	Oct. 16, 1957	3.63	-	72
1944	Aug. 20-24,1944	4.68	-	336		Dec. 19, 1957	4.11	.46	69
						Jan. 3, 1958	5.04	1.45	-
1945	Nov. 14, 1944	3.91	-	118		Apr. 5, 1958	3.57	-	51
	Dec. 12, 1944	4.00	-	139		June 30, 1958	3.60	-	62
	Jan. 4, 1945	5.09	1.54	-					
	May 12-14,1945	4.29	-	198	1959	Dec.12-18,1958	-	-	a67
	Aug. 21, 1945	3.51	-	48		Jan. 25, 1959	5.23	1.79	43
						Apr. 7, 1959	3.55	-	58
1946	Oct. 8-10,1945	3.71	-	80		Apr. 17, 1959	3.54	-	56
	Mar. 9, 1946	5.19	1.79	-		June 11, 1959	3.99	-	136
	Apr. 22, 1946	4.08	-	150		July 8, 1959	3.88	-	115
	July 20-22,1946	4.26	-	190		Aug. 25, 1959	3.78	-	103
1947	Nov. 1, 1946	3.83	-	100	1960	Jan. 7-15,1960	-	-	a42
	Dec. 16, 1946	5.35	1.86	-		Mar. 5, 1960	4.50	1.46	-
	May 2, 1947	4.35	-	212		May 3, 1960	4.34	-	214
	June 10, 1947	4.19	-	174		Aug. 25, 1960	3.48	-	48
						Sept.16, 1960	3.75	-	92
1948	Jan. 28, 1948	4.71	1.55	-					
	Apr. 30, 1948	3.93	-	119	1961	Feb. 2-10, 1961	-	-	a44
	June 4, 1948	3.77	-	90		May 15, 1961	4.12	-	151
	July 25, 1948	3.77	-	90		June 30, 1961	3.64	-	68
						July 4, 1961	3.51	-	51
1949	Apr. 23-26, 1949	3.82	-	99		July 27, 1961	3.73	-	80
	May 26, 1949	3.98	-	129					
	July 31-Aug. 3, 1949	4.00	-	133					

a Estimated daily discharge.

305. Otter Tail River at German Church, near Fergus Falls, Minn.
(Published as Otter Tail River near Fergus Falls prior to 1914)

Location.--Lat 46°22'10", long 96°01'00", on south line of sec.31, T.134 N., R.42 W., on downstream side of highway bridge 5 miles north of Fergus Falls.

Drainage area.--1,230 sq mi, approximately. Prior to Oct. 29, 1913, 1,240 sq mi, approximately.

Gage.--Nonrecording. Prior to Oct. 29, 1913, at site 5 miles downstream at datum about 14 ft lower. Altitude of gage is 1,265 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above.

Remarks.--Flow affected by natural storage in lakes above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	June 23, 1904	4.2	1,075	1911	Apr. 19, 1911	2.9	274
1905	Aug. 5-9, 1905	4.0	855	1912	July 8, 1912	3.2	402
				1913	July 5, 1913	3.85	758
1906	(a)	4.25	1,020	1914	June 27, 1914	2.4	584
				1915	July 19, 1915	2.8	837
1908	June 12-15, 1908	4.1	921				
1909	Sept. 15-23, 1909	3.55	580	1916	June 29, 1916	3.0	982
1910	(b)	3.3	449	1917	(c)	2.35	557

a Occurred during period June 25 to July 9, 1906.
b Occurred during period Apr. 15 to May 11, 1910.
c Occurred during period Apr. 25 to May 19, 1917.

400. Pelican River near Detroit Lakes, Minn.

Location.--Lat 46°43'26", long 95°54'56", in NE¼SW¼ sec.31, T.138 N., R.41 W., in upstream concrete retaining wall at highway crossing at Buck's Mill, 200 ft downstream from concrete millpond dam, and 6½ miles southwest of city of Detroit Lakes.

Drainage area.--123 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,185 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Flow regulated by ponds and lakes above gage. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 26, 1943	3.84	136	1949	Apr. 10, 1949	2.82	75
1944	Sept. 2, 1944	3.82	136	1950	May 19, 1950	5.10	210
1945	Apr. 21-24, 1945	3.54	115				
				1951	June 3, 1951	2.84	117
1946	July 18, 1946	4.07	145	1952	Aug. 15, 1952	4.40	214
1947	May 2, 1947	3.86	133	1953	June 20, 1953	4.28	229
1948	May 7, 1948	3.20	94				

405. Pelican River near Fergus Falls, Minn.

Location.--Lat 46°20'10", long 96°07'00", in NE¼ sec.17, T.133 N., R.43 W., on right downstream wingwall of bridge on U.S. Highway 52, 3 miles northwest of Fergus Falls and 7½ miles upstream from mouth.

Drainage area.--482 sq mi; June 1909 to December 1912, 486 sq mi.

Gage.--Nonrecording prior to Nov. 7, 1955; recording thereafter. Prior to 1943, at site 1 mile downstream at different datum. Altitude of present gage is 1,185 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Flow affected by storage in lakes above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Oct. 11, 1909	-	-	303	1951	Mar. 31, 1951	5.42	3.53	-
	Mar. 9, 1910	9.5	(a)	-		Apr. 7, 1951	-	-	177
1911	Mar. 7, 1911	7.00	(a)	-	1952	Apr. 9, 1952	4.85	1.89	-
	May 8, 1911	-	-	124		Apr. 14, 1952	-	-	388
1912	Feb. 20, 1912	7.6	(a)	-	1953	June 15, 1953	4.85	-	680
	May 28, 1912	-	-	230	1954	Mar. 25, 1954	4.06	1.52	-
1943	Mar. 29, 1943	5.53	-	756		July 2, 1954	-	-	242
1944	Mar. 27, 1944	3.74	2.11	-	1955	Mar. 10, 1955	4.40	2.91	-
	June 5, 1944	-	-	212		Apr. 4, 1955	-	-	250
1945	Mar. 12, 1945	4.56	2.16	-	1956	Apr. 10, 1956	4.73	1.80	-
	Mar. 17, 1945	-	-	330		Apr. 13, 1956	-	-	315
1946	Mar. 17, 1946	4.12	1.87	-	1957	Mar. 12, 1957	4.42	3.16	-
	May 16, 1946	-	-	212		Apr. 20, 1957	-	-	216
1947	Mar. 25, 1947	4.90	2.35	-	1958	Jan. 11, 1958	3.79	2.04	-
	June 7, 1947	-	-	218		July 7, 1958	-	-	125
1949	Apr. 1, 1949	4.60	2.34	-	1959	Mar. 6, 1959	5.55	3.83	-
	Apr. 3, 1949	-	-	245		May 31, 1959	-	-	164
1950	Mar. 28, 1950	5.60	3.64	-	1960	Mar. 28, 1960	4.10	2.22	-
	May 6, 1950	-	-	296		Apr. 27, 1960	-	-	206
					1961	Feb. 24, 1961	4.28	2.75	-
						Apr. 24, 1961	-	-	135

a Ice effect not determined.

460. Otter Tail River below Orwell Dam, near Fergus Falls, Minn.
(Published as "below Pelican River, near Fergus Falls" prior to 1953)

Location.--Lat 46°12'35", long 96°11'05", in NE¼ sec.34, T.132 N., R.44 W., on left bank 0.7 mile downstream from Orwell Dam, 6.1 miles downstream from Dayton Hollow Dam, 8 miles southwest of Fergus Falls, and 11.1 miles downstream from Pelican River.

Drainage area.--1,830 sq mi, approximately.

Gage.--Recording. Prior to Nov. 17, 1933, at same site at datum 2.00 ft higher; Nov. 18, 1933, to Mar. 21, 1953, at site 6.1 miles upstream at datum 40.30 ft higher. Datum of present gage is 1,029.65 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--8.5 ft.

Remarks.--Flow regulated by Orwell Reservoir beginning Mar. 21, 1953, and powerplants upstream. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1931	May 18, 1931	2.03	-	686	1933	June 18, 1933	-	-	a577
1932	Apr. 7, 1932	3.77	2.14	-	1934	May 29, 1934	2.92	-	448
	June 14, 1932	-	-	551	1935	June 26, 1935	-	-	472
1933	Apr. 1, 1933	3.33	1.98	-		July 24, 1935	3.16	-	-

a Maximum during period October 1932 to February 1933 and April to September 1933.

Peak stages and discharges of Otter Tail River below Orwell Dam, near Fergus Falls, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1936	Apr. 14, 1936	2.97	-	468	1950	May 23, 1950	-	-	1,100
1937	July 30, 1937	3.27	-	518		July 9, 1950	4.31	-	-
1938	June 16, 1938	-	-	544					
	July 7, 1938	3.56	-	-	1951	Feb. 9, 1951	4.21	1.15	-
1939	(b)	3.2	-	c603		Apr. 5, 1951	-	-	1,160
1940	Sept. 2, 1940	3.28	-	600	1952	Apr. 10, 1952	3.91	-	1,040
					1953	June 17, 1953	5.60	-	1,710
1941	Mar. 16, 1941	3.66	.51	-	1954	June 20, 1954	4.26	-	1,210
	July 2, 1941	-	-	611	1955	Aug. 6, 1955	3.53	-	730
1942	June 6, 1942	3.52	-	747					
1943	Apr. 2, 1943	4.31	-	1,150	1956	Jan. 16, 1956	4.16	1.47	-
1944	June 4, 1944	4.31	-	1,200		May 29, 1956	-	-	1,080
1945	Nov. 14, 1944	4.13	-	1,120	1957	May 23, 1957	3.70	-	794
					1958	Mar.4,5, 1958	3.19	-	534
1946	July 19, 1946	-	-	777	1959	Nov. 30, 1958	3.66	1.22	-
	Aug. 29, 1946	4.21	-	-		June 8, 1959	-	-	612
1947	June 10, 1947	4.81	-	1,370	1960	May 26, 1960	3.66	-	810
1948	Feb. 19, 1948	4.27	1.22	-					
	May 18, 1948	-	-	900	1961	May 23, 1961	3.44	-	664
1949	July 8, 1949	3.61	-	564					

b Many days; result of regulation.
c Estimated on basis of powerplant record.

475. Mustinka ditch above West Branch Mustinka River, near Charlesville, Minn.

(Published as "above Twelve Mile Creek, near Charlesville" prior to 1950)

Location.--Lat 45°53'25", long 96°21'30", in SW¼SW¼ sec.17, T.128 N., R.45 W., near right bank on upstream side of highway bridge, 0.2 mile upstream from West Branch Mustinka River, 6 miles southwest of Charlesville, and 7.8 miles northeast of Wheaton.

Gage.--Nonrecording. Prior to May 11, 1948, reference mark at same site referred to same datum. Datum of gage is 990.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 320 cfs and extended above on basis of slope-area measurement at 1,550 cfs.

Remarks.--At very high stages flow bypasses the station via the Fivemile Creek basin which crosses Mustinka ditch 0.4 mile above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	June 5, 1944	9.50	-	186	1950	Mar. 30, 1950	11.10	4.90	-
1945	Mar. 16, 1945	8.32	0.92	186		May 9, 1950	-	-	440
1946	Mar. 20, 1946	11.94	2.64	-	1951	Apr. 5, 1951	13.28	9.83	-
	Mar. 20, 1946	-	-	310		Apr. 7, 1951	-	-	534
1947	Apr. 11, 1947	12.35	1.45	431	1952	Apr. 9, 1952	14.19	-	1,550
1948	Mar. 29, 1948	11.98	11.98	-	1953	Mar. 19, 1953	11.06	8.09	-
	Apr. 3, 1948	-	-	132		June 27, 1953	-	-	77
1949	July 10, 1949	10.75	-	422	1954	June 8, 1954	8.84	-	280

485. West Branch Mustinka River below Mustinka ditch, near Charlesville, Minn.
(Published as "Twelve Mile Creek" prior to October 1949)

Location.--Lat 45°53'20", long 96°21'45", in SE¼SE¼ sec.18, T.128 N., R.45 W., on left bank 150 ft downstream from inlet from Mustinka ditch, 1¾ miles upstream from mouth, 6 miles southwest of Charlesville, and 7.8 miles northeast of Wheaton.

Gage.--Nonrecording. Datum of gage is 990.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements to 1,200 cfs and extended above 1,200 cfs on basis of slope-area determination of peak flow.

Remarks.--Prior to May 25, 1955, flow was diverted to Mustinka ditch at medium and high stages to relieve flood conditions in the West Branch Mustinka River basin. As a result of dredging in Mustinka ditch completed May 25, this became the main channel with outflow into West Branch Mustinka River only at and above medium stages. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	June 4, 1944	8.92	-	1,030	1951	Apr. 5, 1951	13.18	3.90	-
1945	Mar. 15, 1945	-	-	a490		Apr. 7, 1951	-	-	2,800
	Mar. 16, 1945	6.68	0.88	-	1952	Apr. 9, 1952	13.73	-	13,700
					1953	Mar. 21, 1953	7.30	1.92	-
1946	(b)	11.57	1.62	-		Mar. 23, 1953	-	-	c528
	Mar. 20, 1946	-	-	1,580	1954	June 8, 1954	7.91	-	794
1947	Apr. 12, 1947	10.65	-	1,720	1955	Mar. 16, 1955	4.28	3.88	-
1948	Mar. 30, 1948	10.95	.41	1,670		Apr. 1, 1955	-	-	178
1949	July 10, 1949	9.87	-	1,280					
1950	Mar. 28, 1950	10.51	1.06	1,140					

a Estimated.
b Occurred during period Mar. 17-21.
c Maximum daily discharge.

490. Mustinka River above Wheaton, Minn.
(Published as "near Wheaton" prior to 1917)

Location.--Lat 45°49'15", long 96°29'25", in SW¼ sec.8, T.127 N., R.46 W., on left bank 20 ft upstream from bridge on U.S. Highway 75, 1 mile upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 1.2 miles north of railroad depot in Wheaton, and 8 miles upstream from mouth.

Drainage area.--834 sq mi.

Gage.--Nonrecording prior to Apr. 3, 1955; recording thereafter. March 1917 to September 1924, at site 100 ft upstream at different datum. March 1931 to June 30, 1954, in vicinity of present site at datum 4.00 ft higher. Datum of present gage is 973.30 ft above mean sea level, datum of 1929 (levels by Minnesota Highway Department).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Some diversion to Rabbit Creek basin about 10 miles upstream during periods of very high flow. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1916	(a)	17.4	-	2,980	1923	Apr. 15, 1923	-	-	746
1917	Apr. 1, 1917	14.73	-	2,250	1924	Apr. 5, 1924	2.65	-	45
1919	June 5, 1919	7.37	-	b559	1931	June 10, 1931	1.80	-	41
1920	May 11, 1920	9.50	-	970	1932	Apr. 8, 1932	4.50	1.10	300
					1933	Mar. 2, 1933	4.84	1.80	78
1921	Apr. 2, 1921	5.5	-	287	1934	Apr. 10, 1934	1.36	-	9.1
1922	Mar. 22, 1922	13.08	2.00	1,330	1935	Mar. 8, 1935	6.46	3.5	-
1923	Apr. 14, 1923	10.20	2.00	-		Mar. 17, 1935	-	-	120

a Occurred in late March or early April.

Peak stages and discharges of Mustinka River above Wheaton, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1936	Mar. 23, 1936	10.51	2.5	354	1948	Mar. 29, 1948	14.87	0.95	-
1937	Apr. 5, 1937	11.87	5.1	-		Apr. 1, 1948	-	-	2,080
	May 1, 1937	-	-	400	1949	July 12, 1949	12.98	-	1,770
1938	July 4, 1938	6.42	-	267	1950	Mar. 30, 1950	13.82	5.32	-
1939	Mar. 25, 1939	13.62	-	1,420		May 11, 1950	-	-	1,690
1940	Apr. 2, 1940	8.08	1.3	349	1951	Apr. 7, 1951	15.57	1.77	-
1941	Mar. 30, 1941	6.66	1.00	-		Apr. 8, 1951	-	-	3,180
	June 23, 1941	-	-	240	1952	Apr. 10, 1952	16.56	-	7,320
1942	May 17, 1942	14.08	-	1,480	1953	Mar. 23, 1953	10.47	4.00	-
1943	Apr. 1, 1943	16.28	2.25	-		Mar. 26, 1953	-	-	572
	Apr. 4, 1943	-	-	1,940	1954	June 9, 1954	6.61	-	393
1944	June 6, 1944	13.29	-	1,520	1955	July 13, 1955	5.58	-	484
1945	Mar. 15, 1945	10.54	1.6	-					
	Mar. 16, 1945	-	-	892	1956	Apr. 7, 1956	6.66	.61	-
						May 29, 1956	-	-	655
1946	Mar. 21, 1946	14.56	-	2,460	1957	Apr. 21, 1957	10.68	-	1,610
1947	Apr. 13, 1947	14.68	-	2,710	1958	Apr. 8, 1958	6.84	-	690

500. Bois de Sioux River near White Rock, S. Dak.

Location.--Lat 45°51'45", long 96°34'25", in SW¼SW¼ sec.27, T.128 N., R.47 W., on left bank just downstream from Big Slough Outlet, 300 ft downstream from White Rock Dam, 4 miles south of White Rock, and 5 miles northwest of Wheaton, Minn.

Drainage area.--1,160 sq mi, approximately.

Gage.--Nonrecording prior to Jan. 14, 1943; recording thereafter. Datum of gage is 959.89 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--21 ft.

Remarks.--Except for small inflow from Big Sioux Outlet, flow regulated by Lake Traverse-Bois de Sioux Flood Control and Water Conservation project (available capacity for flood control, 137,000 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1942	July 11, 1942	-	-	845	1952	June 3, 1952	10.36	-	1,410
1943	May 24, 1943	8.95	-	1,120	1953	Mar. 18, 1953	6.45	2.27	-
1944	June 23, 1944	9.28	-	-		May 27, 1953	-	-	187
	June 23-26, 1944	-	-	1,080	1954	Sept.17, 1954	4.67	-	124
1945	Apr. 4, 1945	8.10	-	900	1955	July 11, 1955	6.01	-	152
1946	Apr. 8, 1946	7.89	-	850	1956	Aug. 8, 1956	6.94	-	303
1947	May 1, 1947	8.67	-	975	1957	June 22, 1957	9.09	-	610
1948	Apr. 27, 1948	8.20	-	1,020	1958	Apr. 16, 1958	7.05	-	418
1949	Mar. 29, 1949	8.84	5.09	-	1959	Mar. 13, 1959	5.82	2.82	-
	July 14, 1949	-	-	210		July 5, 1959	-	-	43
1950	July 8, 1950	9.16	-	1,060	1960	June 11, 1960	7.31	-	131
1951	Apr. 7, 1951	9.34	5.22	-	1961	Sept.14, 1961	5.16	-	125
	May 16, 1951	-	-	959					

505. Bois de Sioux River near Fairmount, N. Dak.
(Published as "near Tenney, Minn." prior to October 1930)

Location.--Lat 46°03'00", long 96°33'25", on line between secs. 22 and 27, T.130 N., R.47 W., at bridge on Minnesota Highway 55 and North Dakota Highway 11, three-quarters of a mile upstream from Minneapolis, St. Paul & Sault Ste. Marie Railway bridge, 2 miles east of Fairmount, 5 miles west of Tenney, Minn., and 15 miles downstream from Lake Traverse.

Drainage area.--1,540 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 952.13 ft above mean sea level, adjustment of 1912. Apr. 1, 1920, to Sept. 30, 1939, at site three-quarters of a mile downstream at datum 8.95 ft higher. Oct. 1, 1939, to Dec. 5, 1940, at present site at datum 10.00 ft higher.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow affected by natural storage in Lake Traverse until November 1941. Since December 1941, flow regulated by Lake Traverse-Bois de Sioux Flood Control and Water Conservation project (available capacity for flood control, 137,000 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1916	-	a19.5	-	-	1933	-	5.7	-	0
					1934	-	5.7	-	0
1920	Apr. 2, 1920	5.0	-	250	1935	-	5.7	-	0
1921	Apr. 2, 1921	-	-	67					
1922	Apr.20-22,1922	5.7	-	390	1936	Apr. 13, 1936	5.7	-	e2.5
1923	Apr. 14, 1923	3.65	-	80	1937	May 1, 1937	3.15	-	20
1924	-	-	-	0	1938	-	5.7	-	0
1925	-	-	-	0	1939	Mar. 26, 1939	5.9	4.7	-
						Mar. 27, 1939	5.9	3.0	-
1926	Mar. 8, 1926	3.5	1.5	-		Mar. 29, 1939	-	-	105
	Mar.18,19, 1926	-	-	32					
1927	Apr. 2, 1927	3.50	-	70	1941	Mar.12-23,1941	5.94	(f)	-
1928	(b)	3.5	.6	40		June 21, 1941	-	-	130
1929	(c)	3.9	-	53	1942	June 7, 1942	11.72	-	1,180
1930	(d)	3.9	.5	64	1943	Apr. 4, 1943	16.40	-	1,430
					1944	June 4, 1944	14.25	-	-
1931	-	5.7	-	0		June 23, 1944	-	-	1,180
1932	-	5.7	-	0					

a Datum used 1941-44; prior to dredging of channel. b Occurred during period Mar. 24 to Apr. 5, 1928. c Occurred during period Apr. 19 to May 1, 1929. d Occurred during period Mar. 5-15, 1930. e Maximum daily. f Backwater variable.

510. Rabbit Creek at Campbell, Minn.

Location.--Lat 46°05'40", long 96°24'40", in SE¼SE¼ sec.2, T.130 N., R.46 W., near center of span on upstream side of highway bridge in Campbell, 1 mile downstream from South Fork and 10 miles upstream from mouth.

Drainage area.--266 sq mi.

Gage.--Nonrecording. Altitude of gage is 970 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,900 cfs and extended above on basis of contracted-opening measurement at 7,000 cfs.

Remarks.--During periods of very high flow some water is diverted from Mustinka basin. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Apr. 2, 1943	15.07	3.58	-	1948	Apr. 3, 1948	10.82	3.92	734
	Apr. 3, 1943	-	-	1,850	1949	July 9, 1949	9.53	-	1,300
1944	June 4, 1944	11.88	-	1,860	1950	Apr. 1, 1950	11.40	5.35	-
1945	Mar. 15, 1945	-	-	495		May 9, 1950	-	-	1,430
1946	Mar. 20, 1946	9.00	2.80	-	1951	Apr. 4, 1951	14.90	6.97	-
	Mar. 21, 1946	-	.70	674		Apr. 7, 1951	-	-	1,940
1947	Apr. 11, 1947	10.05	-	1,410	1952	April 1952	16.4	-	7,000

515. Red River of the North at Wahpeton, N. Dak.

Location.--Lat 46°15'55", long 96°35'40", in NE¼ sec.8, T.132 N., R.47 W., on left bank in Wahpeton, 800 ft downstream from confluence of Bois de Sioux and Otter Tail Rivers and at mile 548.6.

Drainage area.--4,010 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 28, 1950; recording thereafter. Prior to Aug. 6, 1943, Weather Bureau gage 800 ft upstream at different datum. Datum of gage is 942.97 ft above mean sea level, datum of 1929. Gage heights given herein converted to present datum.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Historical data.--Maximum stage known, 17.0 ft in spring of 1897.

Remarks.--Flow regulated by several powerplants and numerous controlled lakes and ponds, of which Lake Traverse (the largest) has 137,000 acre-ft capacity available for flood control. Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1897	Spring 1897	17.0	-	-	1952	Apr. 12, 1952	14.99	-	7,130
1942	June 7, 1942	10.49	-	3,280	1953	June 21, 1953	9.87	-	3,150
1943	Apr. 2, 1943	14.75	1.6	-					
	Apr.2-6, 1943	-	-	a5,000	1954	June 9, 1954	7.59	-	1,860
1944	June 6, 1944	12.11	-	4,360					
1945	Mar. 17, 1945	11.44	-	3,910	1955	Apr. 2, 1955	6.99	0.9	1,150
1946	Mar. 22, 1946	9.74	-	3,110	1956	Apr. 14, 1956	7.88	-	1,980
1947	Apr. 12, 1947	11.90	-	4,610					
					1957	Apr. 22, 1957	8.82	-	2,290
1948	Apr. 6, 1948	8.58	.2	2,300					
					1958	Apr. 15, 1958	5.59	-	866
1949	July 10, 1949	9.24	-	2,290					
					1959	May 27, 1959	6.17	-	1,050
1950	Apr. 2, 1950	11.62	-	4,190					
	May 10, 1950	11.49	-	4,110	1960	Apr. 7, 1960	8.89	.3	2,370
1951	Apr. 7, 1951	14.01	-	6,090	1961	June 8, 1961	4.72	-	548

a About.

517. Wild Rice River near Cayuga, N. Dak.

Location.--Lat 46°07'30", long 97°21'40", on line between secs. 29 and 30, T.131 N., R.53 W., on left bank 20 ft downstream from county highway bridge, 1¼ miles downstream from Shortfoot Creek, 2½ miles downstream from Crooked Creek, and 3½ miles northwest of Cayuga.

Drainage area.--955 sq mi, approximately, of which about 390 sq mi is probably noncontributing.

Gage.--Nonrecording at site three-quarters of a mile upstream at different datum prior to Oct. 9, 1957; recording thereafter. Datum of present gage is 1,095.64 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Some regulation by Fish and Wildlife Service wildfowl refuges, of which Lake Tewaukon is the largest. Small diversions for irrigation. Only annual peaks are shown.

Peak stages and discharges of Wild Rice River near Cayuga, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1952	April 1952	a12	-	-	1959	June 12, 1959	3.51	-	54
					1960	Mar. 18, 1960	4.48	1.8	-
1956	July 14, 1956	3.57	-	-		Apr. 19, 1960	4.40	-	123
1957	Apr. 19, June 25, 1957	b6.07	-	a150	1961	Feb. 20, 1961	3.56	1.0	-
1958	Apr. 15, 1958	5.08	-	131		Mar. 12, 1961	-	-	1.2

a About.
b Occurred Apr. 19.

520. Wild Rice River near Mantador, N. Dak.

Location.--Lat 46°10'20", long 97°00'35", on south half of east line of sec.12, T.131 N., R.51 W., on downstream side of county highway bridge, 1½ miles west of Mantador.

Drainage area.--1,357 sq mi, of which 550 sq mi is probably noncontributing.

Gage.--Nonrecording. Crest-stage gage installed Nov. 19, 1954. Datum of gage is 997.78 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to shifting channel.

Bankfull stage.--8 ft.

Remarks.--Some regulation by Fish and Wildlife Service wildfowl refuges, of which Lake Tewauken is the largest. Some small diversions for irrigation. Maximum discharges for 1953 and 1954 probably occurred during periods of no gage-height record. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Spring 1943	12.8	(a)	-	1951	Apr. 4, 1951	-	-	275
1944	July 19, 1944	7.68	-	476	1952	Apr. 12, 1952	10.74	-	2,200
1945	Mar. 20, 1945	9.57	-	938	1953	June 25, 1953	5.09	-	129
					1954	May 30, 1954	3.45	-	75
1946	Mar. 20, 1946	7.28	1.1	-	1955	Apr. 2, 1955	4.49	0.69	99
	Mar. 23, 1946	-	-	300					
1947	Apr. 21, 1947	8.84	-	554	1956	Apr. 12, 1956	5.32	.6	156
1948	Apr. 6, 1948	5.75	1.38	150	1957	Apr. 22, 1957	5.55	.77	160
1949	Mar. 28, 1949	4.9	.6	105	1958	Apr. 22, 1958	6.18	.3	250
1950	Mar. 29, 1950	8.75	3.7	-	1959	Mar. 26, 1959	2.06	-	10
	Apr. 14, 1950	-	-	485	1960	Apr. 8, 1960	5.05	.6	138
1951	Apr. 4, 1951	7.15	1.10	-	1961	Mar. 9, 1961	3.20	1.0	34

a Magnitude of ice effect not known.

525. Antelope Creek at Dwight, N. Dak.

Location.--Lat 46°18'50", long 96°44'05", in SE¼SE¼ sec.20, T.133 N., R.48 W., on downstream side of bridge on former U.S. Highway 81, half a mile north of Dwight and 7 miles upstream from mouth.

Drainage area.--294 sq mi, of which 16 sq mi is probably noncontributing.

Gage.--Nonrecording. Crest-stage gage since Nov. 19, 1954. Altitude of gage is 920 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to shifting channel.

Bankfull stage.--15 ft.

Remarks.--Maximum stage and discharge for 1948 not available owing to lack of sufficient gage readings to define peak. Only annual peaks are shown.

Peak stages and discharges of Antelope Creek at Dwight, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	April 1943	a16	(b)	-	1952	Apr. 8, 1952	16.31	-	3,670
1944	July 5, 1944	6.98	-	460	1953	May 30, 1953	8.53	-	578
1945	Mar. 19, 1945	9.5	-	868	1954	June 11, 1954	4.39	-	111
					1955	Mar. 31, 1955	6.58	-	341
1946	Mar. 21, 1946	12.33	-	1,360					
1947	Apr. 12, 1947	11.34	-	1,160	1956	Apr. 11, 1956	5.88	-	237
					1957	Apr. 20, 1957	4.70	-	134
1949	Mar. 31, 1949	5.8	-	270	1958	Apr. 7, 1958	3.22	-	50
	July 8, 1949	6.3	-	-	1959	Mar. 18, 1959	2.62	(b)	2
1950	Apr. 2, 1950	12.9	3.2	-	1960	Apr. 7, 1960	4.08	-	78
	May 9, 1950	9.9	-	893					
					1961	Mar. 5, 1961	3.26	-	10
1951	Apr. 4, 1951	13.26	-	1,700					

a About; from information obtained in 1944.
b Magnitude of effect of backwater from ice not known.

530. Wild Rice River near Abercrombie, N. Dak.

Location.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., on right bank 420 ft upstream from bridge on county highway, three-quarters of a mile upstream from rubble masonry dam which serves as control, 3¼ miles northwest of Abercrombie, and 7 miles downstream from Antelope Creek.

Drainage area.--2,082 sq mi, of which 590 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Nov. 24, 1952; recording thereafter. Prior to Dec. 7, 1939, at site 420 ft downstream at datum 5.0 ft lower. Dec. 7, 1939, to Nov. 24, 1952, at site three-quarters of a mile downstream at present datum. Gage heights given herein adjusted to present site and datum. Datum of present gage is 907.94 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; affected by changing slope above a stage of 3 ft (present datum). Stage-discharge relation below 700 cfs altered by construction of a rubble masonry dam in fall and winter of 1936.

Bankfull stage.--16 ft, present datum.

Historical data.--Flood in spring of 1897 reached a stage of 27.5 ft, present site and datum, and a stage of 26.9 ft, present datum at site three-quarters of a mile downstream, from floodmarks pointed out by local residents.

Remarks.--Some regulation by Fish and Wildlife Service wildfowl refuges, of which Lake Tewauken is the largest. Owing to the slope of the water surface, there is a difference in elevation of water surfaces between the two gage sites varying from near zero at low flows to 0.6 ft for the extremely high stage of 1897. Base for partial-duration series, 300 cfs. Only annual peaks are shown prior to 1953.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1897	Spring 1897	27.5	-	-	1946	Mar. 24, 1946	13.4	-	2,320
					1947	Apr. 12, 1947	a13.9	-	2,450
1933	Mar. 13, 1933	0.9	0.6	75	1948	Apr. 11, 1948	5.0	-	729
1934	Apr. 4, 1934	2.3	1.2	-	1949	Apr. 3, 1949	5.9	1.5	650
	Apr. 7, 1934	-	-	15	1950	Apr. 3, 1950	16.6	3.3	2,300
1935	Mar. 16, 1935	5.2	2.5	513					
					1951	Apr. 6, 1951	12.2	.8	1,890
1936	Mar. 22, 1936	3.0	1.0	415	1952	Apr. 12, 1952	20.9	.3	5,400
1937	Apr. 9, 1937	3.7	-	540					
1938	Mar. 17, 1938	2.3	-	318	1953	Mar. 23, 1953	4.62	1.32	390
1939	Mar. 25, 1939	10.2	1.1	1,350		May 29, 1953	b14.45	-	2,500
1940	Apr. 8, 1940	3.5	.3	300		June 16, 1953	5.22	-	685
						June 27, 1953	4.80	-	627
1941	June 11, 1941	4.2	-	608					
1942	June 10, 1942	4.1	-	579	1954	June 15, 1954	3.14	-	342
1943	Apr. 2, 1943	21.02	-	5,500		July 2, 1954	5.93	-	800
1944	July 7, 1944	6.9	-	956					
1945	Mar. 19, 1945	15.3	-	2,840	1955	Apr. 1, 1955	5.76	1.7	550

a Occurred on following day.
b Occurred at different time than peak discharge.

Peak stages and discharges of Wild Rice River near Abercrombie, N. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 6, 1956	4.39	1.35	320	1959	June 17, 1959	2.84	-	222
	Apr. 12, 1956	6.17	-	750	1960	Apr. 6, 1960	5.00	-	640
1957	Apr. 19, 1957	3.47	-	408					
	June 26, 1957	3.40	-	394	1961	Mar. 3, 1961	2.20	-	36
1958	Apr. 9, 1958	3.03	-	262					

540. Red River of the North at Fargo, N. Dak.
(Published as Red River at Moorhead, Minn., in 1901)

Location.--Lat 46°51'40", long 96°47'00", in NW¼NE¼ sec.18, T.139 N., R.48 W., at city waterplant on Fourth Street S. in Fargo, 25 miles upstream from mouth of Sheyenne River, and at mile 453.

Drainage area.--6,800 sq mi, approximately.

Gage.--Nonrecording prior to Aug. 13, 1959; recording thereafter. Prior to Sept. 1, 1914, at site 1½ miles downstream, at datum 6.65 ft lower. Sept. 1, 1914, to July 31, 1928, at site 1 mile downstream, at datum 3.70 ft higher. Aug. 1, 1928, to Apr. 12, 1959, at site 1 mile downstream at present datum. Apr. 13, 1959, to June 21, 1960, at site 2 miles upstream at present datum. Datum of present gage is 867.4 ft above mean sea level, datum of 1929. Gage heights for period Sept. 1, 1914, to July 31, 1928, converted to present datum.

Stage-discharge relation.--Defined by current-meter measurements below 16,200 cfs; subject to changes owing to shifting channel or control, changing slope, and ice effect. These changes were poorly defined for some years. Discharges for floods of Apr. 11, 1882, and Apr. 7, 1897, computed on basis of recent measurements using open-water conditions.

Historical data.--Maximum stage known, 40.1 ft Apr. 7, 1897, site and datum then in use.

Remarks.--Flow regulated by several powerplants and numerous controlled lakes and ponds, of which Lake Traverse (the largest) has 137,000 acre-ft capacity available for flood control since December 1941. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1882	Apr. 11, 1882	37.8	-	20,000	1921	Apr. 6, 1921	8.4	-	1,970
					1922	Apr. 11, 1922	14.7	-	5,200
1897	Apr. 7, 1897	40.1	-	25,000	1923	June 29, 1923	11.6	-	3,960
					1924	Apr. 30, 1924	6.2	-	530
1902	May 23, 1902	10.5	-	1,180	1925	June 21, 1925	7.0	-	940
1903	Apr. 6, 1903	13.9	-	2,450					
1904	Apr. 20, 1904	21.3	1.7	5,220	1926	Mar. 24, 1926	8.0	-	1,600
1905	May 17, 1905	18.4	-	4,250	1927	Mar. 19, 1927	9.1	-	2,650
					1928	Mar. 28, 1928	13.3	2.0	a3,840
1906	Apr. 9, 1906	15.5	-	3,050	1929	Mar. 20, 1929	12.8	-	4,440
1907	Mar. 21, 1907	29.8	4.0	7,000	1930	Mar. 17, 1930	10.0	-	1,340
1908	June 13, 1908	14.7	-	2,600					
1909	Mar. 30, 1909	13.04	2.1	-	1931	Apr. 3, 1931	8.55	-	365
	May 30, 1909	-	-	1,780	1932	Apr. 11, 1932	9.45	-	875
1910	Mar. 19, 1910	23.2	3.7	-	1933	Apr. 5, 1933	9.04	-	605
	Mar. 19, 1910	-	-	a5,000	1934	Apr. 10, 1934	8.55	-	323
1911	Apr. 11, 1911	8.7	-	608	1935	Mar. 20, 1935	9.72	-	942
1912	May 14, 1912	10.6	-	1,100					
1913	July 8, 1913	11.9	-	1,560	1936	Apr. 14, 1936	9.90	-	1,050
1914	June 12, 1914	16.1	-	3,140	1937	Apr. 12, 1937	10.17	-	1,390
1915	July 3, 1915	9.73	-	3,130	1938	May 2, 1938	10.02	-	1,350
					1939	Mar. 31, 1939	13.00	-	3,870
1916	Apr. 6, 1916	23.63	3.5	-	1940	Apr. 9, 1940	9.63	-	1,030
	July 11, 1916	-	-	7,740					
1917	Apr. 3, 1917	17.8	3.0	5,240	1941	Apr. 3, 1941	10.10	-	1,390
1918	Mar. 31, 1918	6.87	-	874	1942	June 11, 1942	12.27	-	3,380
1919	Apr. 6, 1919	6.5	-	680	1943	Apr. 7, 1943	28.40	-	16,000
1920	Mar. 28, 1920	17.2	-	6,200	1944	June 10, 1944	14.26	-	4,150

a About.

Peak stages and discharges of Red River of the North at Fargo, N. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	D'scharge (cfs)
1945	Mar. 22, 1945	20.70	-	7,700	1954	July 4, 1954	10.53	-	1,920
					1955	Apr. 4, 1955	11.12	-	2,760
1946	Mar. 27, 1946	17.13	-	5,970					
1947	Apr. 15, 1947	b22.93	-	9,300	1956	Apr. 16, 1956	12.54	-	3,870
1948	Apr. 10, 1948	b12.45	-	3,390	1957	Apr. 24, 1957	11.10	-	2,540
1949	July 12, 1949	11.27	-	2,660	1958	July 6, 1958	10.90	-	2,280
1950	Apr. 7, 1950	b20.88	-	7,800	1959	July 8, 1959	10.42	-	1,250
					1960	Apr. 8, 1960	12.48	0.6	3,900
1951	Apr. 11, 1951	b20.73	-	8,010					
1952	Apr. 16, 1952	28.79	-	16,300	1961	June 9, 1961	9.24	-	1,020
1953	June 1, 1953	b18.05	-	6,720					

b Occurred at different time than peak discharge.

545. Sheyenne River above Harvey, N. Dak.

Location.--Lat 47°42'10", long 99°56'55", in SW¼SE¼ sec.24, T.149 N., R.73 W., on right bank just downstream from county road, 2 miles upstream from unnamed tributary, and 4½ miles south of Harvey.

Drainage area.--424 sq mi, of which 270 sq mi is probably noncontributing.

Gage.--Recording. Datum of gage is 1,547.30 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	(a)	9.3	-	-	1959	Mar. 7, 1959	6.93	2.3	-
	Apr. 11, 1956	8.92	-	224		Mar. 28, 1959	5.70	.7	15
	June 7, 1956	8.07	-	105					
					1960	Mar. 23, 1960	9.50	1.7	-
1957	Mar. 23, 1957	8.14	2.4	26		Mar. 27, 1960	8.94	.1	209
1958	Mar. 27, 1958	8.25	2.8	-	1961	February 1961	7.70	4.0	-
	June 30, 1958	7.26	-	58		Apr. 5, 1961	5.19	.85	14

a Sometime during period Apr. 1-9.

550. Sheyenne River near Harvey, N. Dak.

Location.--Lat 47°47'25", long 99°53'25", in SE¼SW¼ sec.21, T.150 N., R.72 W., on left bank 90 ft north of Harvey Water Works, 0.4 mile upstream from small tributary, and 2¼ miles northeast of Harvey.

Drainage area.--534 sq mi, of which 360 sq mi is probably noncontributing.

Gage.--Nonrecording. Prior to June 11, 1946, at site 3 miles upstream and at altitude 1,541 ft (from topographic map). Datum of present gage is 1,520.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Sheyenne River near Harvey, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	March 1943	3.2	-	580	1951	Apr. 7, 1951	-	-	340
					1952	Apr. 3, 1952	5.30	0.23	-
1946	Mar. 21, 1946	2.26	-	132		Apr. 7, 1952	-	-	258
1947	Mar. 23, 1947	5.44	0.57	200	1953	June 30, 1953	3.60	-	60
1948	Apr. 18, 1948	6.45	-	1,220	1954	June 17, 1954	5.57	-	351
1949	Apr. 7, 1949	6.20	-	846	1955	Mar. 31, 1955	4.76	.33	120
1950	Apr. 17, 1950	6.95	.40	-					
	Apr. 18, 1950	-	-	1,430	1956	Apr. 10, 1956	5.65	-	316
1951	Apr. 6, 1951	5.95	.60	-					

552. Big Coulee near Maddock, N. Dak.

Location.--Lat 47°57'30", long 99°34'53", on line between secs. 23 and 26, T.152 N., R.70 W., on left downstream wingwall of county highway bridge, 2 miles west of Maddock, and 5 miles upstream from mouth.

Drainage area.--140 sq mi, of which 50 sq mi is probably noncontributing.

Gage.--Recording.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--2.5 ft.

Remarks.--Base for partial-duration series, 20 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1957	Mar. 21, 1957	1.95	-	33	1960	Mar. 27, 1960	2.50	0.12	262
						Apr. 6, 1960	2.31	-	220
1958	Feb. 25, 1958	2.05	0.45	21		May 26, 1960	1.74	-	64
1959	Mar. 13, 1959	2.1	-	42	1961	Mar. 15, 1961	2.15	-	145

555. Sheyenne River at Sheyenne, N. Dak.

Location.--Lat 47°50'20", long 99°07'03", in NE¼SE¼ sec.5, T.150 N., R.66 W., at recreation-pond dam, 1 mile north of Sheyenne.

Drainage area.--1,790 sq mi, approximately, of which 1,130 sq mi is probably noncontributing.

Gage.--Nonrecording. Prior to July 1932, at present site and at different datum. February to June 1933, at site 300 ft downstream at different datum. Datum of present gage is 1,412.54 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to shifting channel, ice effect, aquatic growth, and wind action in pool above control.

Bankfull stage.--7 ft.

Historical data.--Flood in 1919 reached a stage about 3 ft higher than that of April 1948.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Sheyenne River at Sheyenne, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1930	Feb. 24, 1930	8.79	0.3	990	1944	Sept. 1, 1944	4.94	-	537
					1945	Mar. 14, 1945	5.70	-	932
1931	Apr. 9, 1931	2.81	-	58					
					1946	Mar. 21, 1946	5.88	-	1,120
1933	Mar. 2, 1933	6.08	1.30	296	1947	Mar. 25, 1947	6.22	1.01	750
					1948	Apr. 18, 1948	8.51	-	3,840
1940	Apr. 16, 1940	3.92	-	63	1949	Apr. 9, 1949	7.15	-	2,080
					1950	Apr. 18, 1950	8.31	-	3,940
1941	Apr. 3, 1941	5.76	-	847					
1942	Apr. 5, 1942	6.38	-	1,140	1951	Apr. 9, 1951	6.25	.53	1,420
1943	Mar. 27, 1943	7.22	.80	1,150					

560. Sheyenne River near Warwick, N. Dak.

Location.--Lat 47°48'20", long 98°42'57", on south quarter of line between secs. 15 and 16, T.150 N., R.63 W., on left bank on downstream side of bridge on county road, 3.3 miles south of Warwick.

Drainage area.--2,070 sq mi, approximately, of which 1,310 sq mi is probably noncontributing (includes 227 sq mi in closed basins).

Gage.--Recording. Altitude of gage is 1,370 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 3,480 cfs.

Bankfull stage.--6 ft.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	Apr. 17, 1950	7.45	-	3,800	1956	Apr. 18, 1956	7.83	0.26	4,250
	May 14, 1950	5.66	-	1,650		June 5, 1956	4.50	-	955
	May 22, 1950	5.63	-	1,630					
					1957	Sept. 5, 1957	3.17	-	249
1951	Apr. 11, 1951	5.01	-	1,240					
					1958	Mar. 3, 1958	4.04	-	666
1952	Apr. 8, 1952	4.17	-	737					
					1959	Mar. 21, 1959	2.83	-	153
1953	July 3, 1953	3.08	-	204					
					1960	Apr. 7, 1960	5.57	.45	1,450
1954	Feb. 28, 1954	3.07	-	213		May 22, 1960	3.01	-	238
	June 19, 1954	4.38	-	878		May 28, 1960	3.31	-	373
	July 3, 1954	3.68	-	490					
					1961	Mar. 26, 1961	2.55	-	81
1955	Apr. 3, 1955	5.04	-	1,330					

560.2. Mauvais Coulee tributary near Bisbee, N. Dak.

Location.--Lat 48°31'00", long 99°23'10", in SE¼SE¼ sec.11, T.158 N., R.68 W., at bridge on county highway 7½ miles south of Bisbee.

Drainage area.--2.83 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 100 cfs and extended to 220 cfs on the basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Mauvais Coulee tributary near Bisbee, N. Dak.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	March 1955	a3.24	35	1959	July 27, 1959	2.16	3
				1960	Apr. 7, 1960	2.91	35
1956	Apr. 18, 1956	3.98	220				
1957	Aug. 12, 1957	2.38	13	1961	-	-	0
1958	Feb. 26, 1958	2.08	.2				

a Affected by backwater.

560.4. Mauvais Coulee tributary No. 2 near Cando, N. Dak.

Location.--Lat 48°29'10", long 99°24'20", in SW¼SW¼ sec.23, T.158 N., R.68 W., at culvert on State Highway 17, 9 miles west of Cando.

Drainage area.--8.48 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 30, 1955	a2.50	120	1959	June 1959	1.77	4
				1960	Apr. 4, 1960	3.0	180
1956	Apr. 19, 1956	-	180				
1957	Aug. 12, 1957	1.46	9	1961	-	-	0
1958	Feb. 26, 1958	1.08	3				

a Affected by backwater.

560.6. Mauvais Coulee tributary No. 3 near Cando, N. Dak.

Location.--Lat 48°27'20", long 99°12'40", in NW¼NW¼ sec.5, T.157 N., R.66 W., at bridge on U.S. Highway 281, 2¼ miles south of Cando.

Drainage area.--60.2 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	(a)	5.59	485	1959	March 1959	-	0.5
				1960	Apr. 7, 1960	b4.9	200
1956	Apr. 19, 1956	7.0	850				
1957	Aug. 12, 1957	2.32	20	1961	-	-	0
1958	Feb. 26, 1958	-	.2				

a Occurred during period Apr. 1-20, 1955.
b Affected by backwater.

560.8. Mauvais Coulee tributary No. 4 near Bisbee, N. Dak.

Location.--Lat 48°29'10", long 99°26'50", in SW¼SW¼ sec.21, T.158 N., R.68 W., at bridge on State Highway 17, 10 miles southwest of Bisbee.

Drainage area.--24.4 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 260 cfs and extended to 450 cfs on the basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 1, 1955	a2.75	300	1959	-	-	0
				1960	Apr. 7, 1960	2.65	230
1956	Apr. 18, 1956	3.09	450				
1957	Aug. 12, 1957	1.23	10	1961	-	-	0
1958	Mar. 27, 1958	1.02	.1				

a Affected by backwater.

561. Mauvais Coulee near Cando, N. Dak.

Location.--Lat 48°27', long 99°07', in NE¼SE¼ sec.1, T.157 N., R.66 W., on left bank a third of a mile upstream from highway bridge, 4 miles upstream from West Fork, 5½ miles southeast of Cando, and 7 miles northeast of Maza.

Drainage area.--387 sq mi, of which 10 sq mi is probably noncontributing.

Gage.--Nonrecording prior to July 2, 1957; recording thereafter. Datum of gage is 1,445 ft above mean sea level (unadjusted).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 25 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	June 16, 1954	9.83	-	-	1959	Mar. 22, 1959	5.06	2.2	a20
1956	Apr. 20, 1956	10.71	-	-	1960	Apr. 10, 1960	8.14	1.15	570
1957	Mar. 22, 1957	3.45	0.7	-	1961	Apr. 10, 1961	2.04	-	.3
	Apr. 15, 1957	3.00	-	3.6					
1958	Oct. 1, 1957	2.80	-	1.4					

a About.

562. Edmore Coulee near Edmore, N. Dak.

Location.--Lat 48°20'10", long 98°39'40", on line between secs. 17 and 18, T.156 N., R.62 W., on left downstream wingwall of bridge on county highway, 11 miles southwest of Edmore, and 13 miles upstream from Sweetwater Lake.

Drainage area.--382 sq mi, of which 100 sq mi is probably noncontributing.

Gage.--Nonrecording prior to June 26, 1957; recording thereafter.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 50 cfs. Only annual peaks are shown prior to 1958.

Peak stages and discharges of Edmore Coulee near Edmore, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 22, 1956	a6.32	1.2	-	1959	Apr. 3, 1959	2.64	0.66	54
	Apr. 23, 1956	-	-	875					
1957	April 1957	1.3	-	b12	1960	Apr. 7, 1960	3.5	.3	100
						Apr. 15, 1960	5.47	-	601
1958	Feb. 24, 1958	-	-	c.5		May 21, 1960	3.43	-	129
1959	Mar. 30, 1959	3.74	1.9	-	1961	Apr. 5, 1961	1.93	.51	10

a Maximum during period April to June. b About. c Maximum daily.

563. Little Coulee at Leeds, N. Dak.

Location.--Lat 48°17', long 99°27', in center of sec.31, T.156 N., R.68 W., on right downstream wingwall of left one of twin box culverts on U.S. Highway 2, a quarter of a mile west of Leeds.

Drainage area.--280 sq mi, of which 140 sq mi is probably noncontributing.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--6 ft.

Remarks.--Base for partial-duration series, 25 cfs. Only annual peaks are shown prior to 1960.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 15, 1956	7.2	-	515	1960	Apr. 4, 1960	5.58	0.05	110
1957	Mar. 23, 1957a	b5.2	-	a5					
1958	-	-	-	0	1961	-	-	-	0
1959	-	-	-	0					

a About. b Affected by backwater.

564. Big Coulee near Churchs Ferry, N. Dak.
(Published as "Mauvais Coulee" prior to 1961)

Location.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., on downstream side of right abutment of bridge on U.S. Highway 281, 1 mile downstream from Little Coulee and 6 miles south of Churchs Ferry.

Drainage area.--2,510 sq mi, approximately, of which 690 sq mi is probably noncontributing.

Gage.--Nonrecording at former bridge on U.S. Highway 281, one-eighth of a mile upstream, at datum 0.70 ft higher prior to July 18, 1956; recording thereafter at described site.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--8 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	June 6, 1950	4.4	-	a620	1957	Mar. 21, 1957	2.18	0.86	23
1951	Apr. 4, 1951	2.6	-	100	1958	Feb. 25, 1958	c1.17	-	-
1952	April 1952	-	-	b1		Feb. 26, 1958	-	-	d3
1953	-	-	-	0	1959	Mar. 17, 1959	c1.80	1.5	-
1954	June 30, 1954	4.42	-	329		Mar. 25, 1959	-	-	11
1955	Apr. 20, 1955	2.95	-	364	1960	Apr. 5, 1960	3.10	1.7	d30
1956	May 4, 1956	3.84	-	534	1961	Mar. 21, 1961	1.10	-	e.2

a Maximum during period March to September. b Estimated. c Maximum observed; backwater from ice or snow. d About. e Maximum daily.

570. Sheyenne River near Cooperstown, N. Dak.

Location.--Lat 47°26', long 98°02', in NE¼SE¼ sec.27, T.146 N., R.58 W., on right bank 150 ft downstream from county bridge and 5 miles east of Cooperstown.

Drainage area.--6,470 sq mi, approximately, of which 5,200 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording March 1945 to Aug. 2, 1950; recording thereafter. Datum of gage is 1,271.04 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Mar. 20, 1945a	a10.5	-	a1,000	1954	Feb. 20, 1954	6.43	0.83	-
						Mar. 7, 1954	6.66	.95	210
1946	Mar. 24, 1946	11.70	1.05	-		June 26, 1954	9.32	-	682
	Apr. 2, 1946	10.68	-	964		July 9, 1954	7.38	-	389
	July 28, 1946	7.05	-	382					
					1955	Apr. 11, 1955	11.41	-	1,060
1947	Apr. 8, 1947	13.89	2.18	1,150		June 7, 1955	6.92	-	346
	June 5, 1947	6.00	-	236					
					1956	Apr. 24, 1956	16.32	-	2,600
1948	Apr. 23, 1948	18.10	-	5,600		June 15, 1956	9.34	-	719
1949	Apr. 17, 1949	15.95	-	2,290	1957	Mar. 23, 1957	7.27	1.45	220
	June 1, 1949	6.80	-	338		Mar. 31, 1957	6.36	.56	216
						Sept. 4, 1957	6.68	-	280
1950	Mar. 28, 1950	9.32	3.10	251		Sept.11, 1957	6.55	-	268
	Apr. 17, 1950	18.69	-	7,830					
	May 9, 1950	17.03	-	3,460	1958	Mar. 15, 1958	7.06	1.2	220
	June 16, 1950	6.85	-	352		Apr. 7, 1958	7.04	.17	340
	June 25, 1950	7.38	-	430					
					1959	Apr. 1, 1959	7.95	.92	360
1951	Apr. 6, 1951	11.46	.80	926					
	Apr. 19, 1951	11.05	-	989	1960	Apr. 14, 1960	13.38	-	1,340
						May 24, 1960	7.35	-	384
1952	Apr. 14, 1952	13.02	.70	1,240		June 3, 1960	6.52	-	277
	July 3, 1952	6.64	-	289					
	July 21, 1952	5.83	-	226	1961	Apr. 1, 1961	6.19	1.2	-
						Apr. 3, 1961	5.13	.03	120
1953	June 22, 1953	5.95	-	240					
	July 3, 1953	6.22	-	271					

a About.

572. Baldhill Creek near Dazey, N. Dak.

Location.--Lat 47°13', long 98°07', in SW¼ sec.2, T.143 N., R.59 W., on left bank 500 ft upstream from bridge on county highway, 4½ miles northeast of Dazey, and 14 miles upstream from mouth.

Drainage area.--691 sq mi, of which 340 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Nov. 9, 1956; recording thereafter.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 60 cfs.

Peak stages and discharges of Baldhill Creek near Dazey, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	April 1950	a10	-	-	1959	Mar. 14, 1959	4.42	1.4	a30
1956	Apr. 12, 1956	6.75	0.20	b767	1960	Mar. 27, 1960	7.72	1.9	a350
						Apr. 5, 1960	6.00	.11	370
1957	Apr. 1, 1957	3.61	.05	a70					
	July 28, 1957	4.05	-	120	1961	Mar. 2, 1961	3.60	.43	40
	Sept. 3, 1957	5.07	-	248					
1958	Oct. 25, 1957	3.31	-	56					

a About.
b Maximum during period March to September.

580. Sheyenne River below Baldhill Dam, N. Dak.

Location.--Lat 47°01'50", long 98°05'00", in NW¼ sec.18, T.141 N., R.58 W., on right bank 600 ft downstream from Baldhill Dam, 8 miles northwest of Valley City, and at mile 270.5.

Drainage area.--7,470 sq mi, approximately, of which 5,560 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

Gage.--Recording. Datum of gage is 1,200.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting and control changes.

Remarks.--Regulated by Lake Ashtabula since 1949 (usable capacity at normal pool elevation, 69,100 acre-ft; capacity at maximum pool elevation, 116,500 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Apr. 27, 1948	-	4,600	1956	Apr. 26, 1956	30.25	2,070
				1957	Sept.3-5, 1957	27.50	598
1950	May 23, 1950	32.62	3,150	1958	Oct. 22, 1957	26.92	-
					July 17, 1958	-	240
1951	Apr. 19, 1951	28.00	1,270	1959	Nov. 18, 1958	26.83	190
1952	Aug. 29, 1952	-	a400	1960	Apr. 17, 1960	29.24	1,570
1953	July 16, 1953	29.41	1,900				
1954	Mar. 11, 1954	28.28	1,270	1961	Nov. 27, 1960	27.88	697
1955	Apr. 13, 1955	28.86	1,640				

a About.

585. Sheyenne River at Valley City, N. Dak.

Location.--Lat 46°54'50", long 98°00'30", in SE¼NW¼ sec.28, T.140 N., R.58 W., on left bank 100 ft downstream from College Dam in Valley City, 13 miles downstream from Baldhill Dam, and at mile 253.0.

Drainage area.--7,810 sq mi, approximately, of which 5,700 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording March to August 1919 at site half a mile upstream at different datum, March to Oct. 13, 1938, at present site and datum; recording thereafter. Datum of present gage is 1,199.91 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Flow regulated by Lake Ashtabula since August 1949 (usable capacity at normal pool elevation, 69,100 acre-ft; capacity at maximum pool elevation, 116,500 acre-ft). Base for partial-duration series, 200 cfs. Only annual peaks are shown 1919, 1938, and 1950-61.

Peak stages and discharges of Sheyenne River at Valley City, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1882	April 1882	a20.0	-	-	1945	Mar. 24, 1945	7.06	-	1,020
1897	April 1897	b15.5	-	-	1946	Mar. 26, 1946	7.56	-	1,160
						July 31, 1946	4.06	-	288
1919	Apr. 18, 1919	14.9	-	2,750					
					1947	Mar. 23, 1947	6.51	0.40	850
1938	Mar. 29, 1938	3.90	-	244		Apr. 11, 1947	10.19	-	1,910
						June 7, 1947	3.93	-	253
1939	Mar. 20, 1939	4.55	0.70	236					
	Mar. 27, 1939	4.75	.82	250	1948	Apr. 28, 1948	17.51	-	4,580
	Apr. 6, 1939	4.34	-	342					
					1949	Mar. 8, 1949	4.95	-	478
1940	Apr. 8, 1940	5.14	.09	525		Apr. 10, 1949	8.69	-	1,380
	Apr. 18, 1940	4.02	-	267		Apr. 21, 1949	10.90	-	2,120
						June 3, 1949	4.27	-	334
1941	Apr. 19, 1941	9.10	-	1,590		July 5, 1949	5.47	-	606
	May 28, 1941	4.40	-	378		July 8, 1949	5.63	-	638
	Sept. 4, 1941	4.22	-	336		July 28, 1949	6.88	-	973
1942	Apr.17,18, 1942	7.72	-	1,190	1950	May 5, 1950	14.60	-	3,050
	May 1, 1942	4.60	-	400					
	May 27, 1942	4.21	-	317	1951	Apr. 19, 1951	8.08	-	1,270
	June 3, 1942	4.08	-	289	1952	Mar. 31, 1952	6.02	-	650
	June 6, 1942	4.91	-	452	1953	July 17, 1953	8.11	-	1,230
	Aug. 30, 1942	4.97	-	461	1954	July 13, 1954	6.29	-	726
					1955	Apr. 14, 1955	9.04	-	1,490
1943	Mar. 27, 31,	-	-	1,900					
	Apr. 1, 1943				1956	Apr. 28, 1956	10.58	-	1,870
	Mar. 4, 1943	4.02	-	276	1957	Sept. 4, 1957	c6.48	-	627
	June 16, 1943	5.73	-	721	1958	July 17, 1958	c4.21	-	248
					1959	June 27, 1959	7.02	-	988
1944	June 2, 1944	4.50	-	399	1960	Apr. 17, 1960	9.52	-	1,570
	July 17, 1944	3.92	-	264					
	Aug. 25, 1944	4.00	-	290	1961	Mar. 2, 1961	4.01	-	251
	Aug. 30, 1944	4.13	-	326					
	Sept.10, 1944	3.83	-	234					

a Determined by Corps of Engineers; present site and datum.
b Present site and datum.
c Affected by backwater from construction work.

587. Sheyenne River at Lisbon, N. Dak.

Location.--Lat 46°27', long 97°41', on line between secs. 1 and 2, T.134 N., R.56 W., on left bank 150 ft downstream from dam at State fish hatchery at north edge of city of Lisbon, 3 miles upstream from Timber Coulee, and at mile 162.1.

Drainage area.--8,190 sq mi, approximately, of which 5,700 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

Gage.--Recording. Datum of gage is 1,066.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--18 ft.

Remarks.--Flow regulated by Lake Ashtabula. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	May 1950	13.8	-	-	1959	June 29, 1959	4.28	-	451
					1960	Mar. 29, 1960	9.85	1.7	-
1957	Sept. 7, 1957	5.20	-	612		Apr. 11, 1960	-	-	1,980
1958	Mar. 2, 1958	4.62	-	-					
	Apr. 7, 1958	-	-	490	1961	Mar. 6, 1961	4.61	.25	482

590. Sheyenne River near Kindred, N. Dak.

Location.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., near center of span on downstream side of Great Northern Railway bridge, 1½ miles southeast of Kindred, and at mile 68.1.

Drainage area.--8,800 sq mi, approximately, of which 5,780 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording. Datum of gage is 925.55 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting and ice effect.

Bankfull stage.--22 ft.

Remarks.--Regulated by Lake Ashtabula since 1949 (usable capacity at normal pool elevation, 69,100 acre-ft; capacity at maximum pool elevation, 116,500 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
(a)	Spring	22.1	-	b3,600	1956	May 4, 1956	10.82	-	1,460
					1957	Sept.12, 1957	5.70	-	547
1950	May 13, 1950	20.5	-	3,210	1958	Mar. 5, 1958	6.95	1.6	480
					1959	July 3, 1959	4.13	-	204
1951	Apr. 3, 1951	10.15	2.8	-	1960	Apr. 10, 1960	12.37	1.7	-
	May 5, 1951	-	-	1,010		Apr. 13, 1960	-	-	1,820
1952	Apr. 8, 1952	17.80	2.45	2,240					
1953	July 3, 1953	6.44	-	679	1961	Mar. 11, 1961	5.1	.45	350
1954	July 6, 1954	6.17	-	631					
1955	Apr. 19, 1955	8.80	-	1,120					

a Occurred in water year 1847 or 1848.
b About.

595. Sheyenne River at West Fargo, N. Dak.
Published as "at Haggart" or "near Haggart" 1902-7, 1919)

Location.--Lat 46°53'20", long 96°54'55", in sec.31, T.140 N., R.49 W., on left bank 80 ft downstream from county highway bridge, 1 mile north of West Fargo, 3 miles upstream from Maple River, and at mile 24.5.

Drainage area.--8,870 sq mi, approximately, of which 5,780 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording prior to June 28, 1933; recording thereafter. Prior to 1930, at private bridge, three-quarters of a mile upstream at different datum. Datum of gage is 877.19 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel changes, ice effect, backwater from tributary inflow below the station, possible backwater from the Red River of the North, and changing slope.

Bankfull stage.--16 ft.

Remarks.--Flow regulated by Lake Ashtabula since August 1949 (usable capacity at normal pool elevation, 69,100 acre-ft; capacity at maximum pool elevation, 116,500 acre-ft). Records do not include overbank discharge (about 500 cfs maximum in May 1950) which leaves Sheyenne River in vicinity of Horace and flows into Red River of the North above Fargo during periods of high flow. Base for partial-duration series, 400 cfs. Only annual peaks are shown prior to 1934, and 1950-61.

Peak stages and discharges of Sheyenne River at West Fargo, N. Dak.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1903	Apr. 11, 1903	14.7	-	1,570	1943	June 5, 1943	10.95	-	1,040
1904	Apr. 22, 1904	18.8	0.5	-		June 16, 1943	10.80	-	1,010
	Apr. 25, May 2, 1904	-	-	1,950		Aug. 8, 1943	7.30	-	471
1905	May 13, 1905	9.8	-	814	1944	Apr. 18, 1944	7.11	-	400
						May 22, 1944	10.10	-	861
1906	Apr. 16, 1906	11.7	-	1,060		June 9, 1944	7.61	-	467
1919	Apr. 28, 1919	16.8	-	2,220	1945	Mar. 22, 1945	13.36	-	1,360
1930	Mar. 25, 1930	15.52	2.5	-	1946	Mar. 31, 1946	15.01	-	1,690
	Apr. 5, 1930	-	-	1,780					
					1947	Apr. 18, 1947	20.53	-	2,800
1931	Apr. 7, 1931	7.84	-	390		June 13, 1947	b14.43	-	-
1932	Apr. 13, 1932	11.84	-	1,110		June 15, 1947	(b)	-	430
1933	Mar. 11, 1933	11.82	2.20	680					
					1948	May 7, 1948	18.46	-	2,650
1934	Apr. 13, 1934	7.22	-	336					
					1949	Apr. 12, 1949	14.60	-	1,440
1935	Mar. 29, 1935	7.32	.21	362		Apr. 29, 1949	16.19	-	1,980
1936	Apr. 21, 1936	9.74	-	718	1950	May 11, 1950	b20.61	-	-
						May 22, 1950	b19.99	-	2,810
1937	Apr. 18, 1937	7.40	-	485					
					1951	Apr. 5, 1951	13.25	0.94	1,020
1938	Mar. 27, 1938	5.50	-	249	1952	Apr. 9, 1952	b20.50	-	-
						Apr. 12, 1952	b20.28	-	2,510
1939	Mar. 28, 1939	9.96	2.10	-	1953	June 17, 1953	(b)	-	1,300
	Apr. 3, 1939	(a)	-	600		June 20, 1953	b18.83	-	-
					1954	July 7, 1954	9.11	-	565
1940	Apr. 18, 1940	7.88	-	555	1955	Apr. 21, 1955	11.68	-	1,110
1941	Apr. 26, 1941	12.72	-	1,340	1956	May 8, 1956	13.01	-	1,450
	June 11, 1941	7.06	-	428	1957	Sept.14, 1957	7.86	-	442
					1958	Mar. 7, 1958	8.84	.8	470
1942	Apr. 27, 1942	11.02	-	1,040	1959	June 12, 1959	6.70	-	246
	June 9, 1942	7.58	-	513	1960	Apr. 14, 1960	14.75	-	1,720
1943	Apr. 1, 1943	19.35	1.83	-	1961	Mar. 14, 1961	8.08	2.0	255
	Apr.7-10,1943	(a)	-	2,400					

a No defined peak gage height; peak discharge occurred at time of changing stage and decreasing ice effect.
b Backwater from tributary inflow below station.

597. Maple River near Enderlin, N. Dak.

Location.--Lat 46°37'10", long 97°34'20", on west line sec.2, T.136 N., R.55 W., on right bank 25 ft downstream from county highway bridge, 1 mile downstream from South Branch, and 1¼ miles east of Enderlin.

Drainage area.--843 sq mi, of which 47 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Sept. 20, 1956; recording thereafter.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--6 ft.

Remarks.--Base for partial-duration series, 40 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	June 7, 1956	4.15	-	a92	1959	Nov. 18, 1958	3.03	-	34
1957	Aug. 13, 1957	4.89	-	150	1960	Mar. 26, 1960	6.69	-	456
	Sept. 5, 1957	4.27	-	97		Apr. 1, 1960	6.57	-	426
	Sept.12, 1957	3.22	-	42		Apr. 8, 1960	7.26	-	621
1958	Feb. 28, 1958	5.68	0.8	140	1961	Dec. 1, 1960	4.44	2.4	-
	Apr. 6, 1958	5.34	-	202		Mar. 4, 1961	3.78	.25	39
	June 10, 1958	3.56	-	59					
	July 5, 1958	3.59	-	60					

a Maximum during period May to September.

598. Swan Creek near Absaraka, N. Dak.

Location.--Lat 46°58'30", long 97°21'30", on north line sec.3, T.140 N., R.53 W., at bridge on county highway 1¾ miles east of Absaraka.

Drainage area.--22 sq mi, approximately.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 30, 1955	2.20	60	1959	June 10, 1959	2.13	54
1956	Apr. 13, 1956	2.03	44	1960	March 1960	a3.11	100
1957	June 22, 1957	a2.70	80				
1958	July 1958	a1.87	20	1961	Mar. 2, 1961	a2.31	28

a Affected by backwater.

598.5. Swan Creek tributary near Ayr, N. Dak.

Location.--Lat 46°58'30", long 97°30'00", in NE¼ sec.4, T.140 N., R.54 W., at culvert on county highway 4½ miles south of Ayr.

Drainage area.--2 sq mi, approximately.

Gage.--Crest-stage gage. Datum was 0.26 ft lower prior to August 1955.

Stage-discharge relation.--Defined by current-meter measurements below 26 cfs and extended to 85 cfs on basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Control is 24-inch culvert replaced by 60-inch culvert in August 1955. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	March-April	1.86	8	1959	March 1959	2.95	5
				1960	March 1960	4.90	70
1956	Apr. 19, 1956	a4.48	-				
1957	June 22, 1957	2.60	85	1961	Mar. 2, 1961	2.19	3.8
1958	July 1958	1.78	1.1				

a Affected by backwater.

599. Swan Creek near Casselton, N. Dak.

Location.--Lat 46°55'00", long 97°15'30", in NW¼ sec.28, T.140 N., R.52 W., at bridge on county highway, 2.6 miles northwest of Casselton.

Drainage area.--30 sq mi, approximately.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 29, 1955	a7.10	260	1959	June 10, 1959	7.38	210
				1960	Apr. 6, 1960	7.32	200
1956	Apr10-14,1956	a7.63	270				
1957	June 22, 1957	5.22	70	1961	Mar. 9, 1961	4.4	8
1958	July 3, 1958	4.74	5				

a Affected by backwater.

599.5. Swan Creek tributary near Casselton, N. Dak.

Location.--Lat 46°53'10", long 97°12'40", near center sec.2, T.139 N., R.52 W., at culverts on State Highway 18, 1 mile south of Casselton.

Drainage area.--2.5 sq mi, approximately.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 60 cfs and extended to 100 cfs on basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	March-April	4.67	10	1959	July 10, 1959	6.00	100
				1960	Apr. 6, 1960	5.07	61
1956	April0-14,1956	4.05	5				
1957	June 22, 1957	5.35	15	1961	Mar.2-15,1961	3.35	3
1958	July 3, 1958	5.00	12				

600. Maple River near Mapleton, N. Dak.
(Published as "at Mapleton" prior to 1959)

Location.--Lat 46°51'40", long 97°06'10", in SW¼SE¼ sec.10, T.139 N., R.51 W., on right abutment of dam, 3 miles southwest of Mapleton, and 14 miles upstream from mouth.

Drainage area.--1,450 sq mi, of which 71 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Oct. 1, 1958; recording thereafter. Prior to Oct. 1, 1958, at site 3 miles downstream at about 11.8 ft lower datum. Altitude of present gage is 898 ft above mean sea level (estimated by comparison with gage at former site).

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifts, movement of rocks on control, and ice effect.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 300 cfs. Only annual peaks are shown prior to 1956.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	Apr. 8, 1944	8.16	-	177	1955	Apr. 2, 1955	12.4	3.6	500
1945	Apr. 12, 1945	8.59	-	373					
					1956	Apr. 14, 1956	11.51	2.1	630
1946	Mar. 21, 1946	13.15	3.40	551					
1947	Apr. 14, 1947	18.04	-	3,880	1957	June 23, 1957	8.52	-	430
1948	Apr. 7, 1948	17.28	3.56	1,500					
1949	Apr. 3, 1949	14.75	3.76	850	1958	Apr. 10, 1958	7.57	-	195
1950	Apr. 2, 1950	17.73	2.58	1,980					
					1959	June 12, 1959	5.58	-	1,160
1951	Apr. 4, 1951	14.15	3.85	-		June 18, 1959	2.46	-	308
	Apr. 7, 1951	-	-	750					
1952	Apr. 6, 1952	18.91	.77	-	1960	Mar. 30, 1960	4.60	-	854
	Apr. 6, 1952	-	-	3,850		Apr. 7, 1960	5.65	-	1,220
1953	June 17, 1953	18.62	-	4,840					
1954	Mar. 21, 1954	8.62	.77	200	1961	Mar. 10, 1961	1.42	-	49

605. Rush River at Amenia, N. Dak.

Location.--Lat 47°00'40", long 97°13'10", on line between secs. 23 and 24, T.141 N., R.52 W., near center of span on upstream side of bridge on State Highway 18, 0.4 mile north of Amenia.

Drainage area.--116 sq mi.

Gage.--Nonrecording. Prior to Oct. 1, 1956, at datum 3.00 ft higher. Datum of gage is 940 ft above mean sea level, datum of 1929 (from railroad profile).

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting and ice effect.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 150 cfs. Only annual peaks are shown prior to 1956.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1947	Apr. 14, 1947	8.90	-	1,230	1956	Apr. 11, 1956	6.80	7.4	-
1948	Apr. 8, 1948	10.20	6.95	-		Apr. 13, 1956	-	-	250
	Apr. 11, 1948	-	-	590					
1949	Mar. 29, 1949	9.63	7.6	-	1957	June 24, 1957	5.58	-	115
	Mar. 31, 1949	-	-	400					
1950	Mar. 27, 1950	10.96	8.7	-	1958	July 5, 1958	5.40	-	77
	Apr. 7, 1950	-	-	620					
					1959	Mar. 2, 1959	7.5	2.5	-
1951	Mar. 27, 1951	9.0	4.9	-		June 10, 1959	6.25	-	100
	Mar. 28, 1951	-	-	368					
1952	Apr. 1, 1952	9.7	1.9	600	1960	Mar. 27, 1960	7.40	-	278
1953	June 16, 1953	8.63	-	1,050		Apr. 6, 1960	8.09	-	437
1954	Feb. 25, 1954	6.51	4.7	-					
	Apr. 6, 1954	-	-	120	1961	Mar. 4, 1961	7.15	2.8	-
1955	Mar. 31, 1955	9.0	3.9	200		Mar. 6, 1961	6.06	1.3	25

610. Buffalo River near Hawley, Minn.

Location.--Lat 46°51'00", long 96°19'45", near center of SE¼ sec.14, T.139 N., R.45 W., near left downstream end of bridge on farm lane, 2 miles southwest of Hawley.

Drainage area.--322 sq mi.

Gage.--Nonrecording at site 1,800 ft upstream at datum 3.17 ft higher prior to Jan. 29, 1953; recording thereafter. Datum of gage is 1,111.91 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Flood in spring of 1921 is maximum stage known, from information by local resident.

Remarks.--Base for partial-duration series, 300 cfs. Only annual peaks are shown prior to 1953.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1921	Spring 1921	a11.3	-	-	1953	Mar. 24, 1953	6.72	-	426
						June 17, 1953	7.47	-	598
1945	Mar. 16, 1945	9.52	-	894		Aug. 7, 1953	6.23	-	337
1946	Mar. 19, 1946	8.49	0.56	452	1954	Apr. 12, 1954	7.36	-	630
1947	Apr. 13, 1947	9.42	-	878	1955	Apr. 5, 1955	6.11	-	358
1948	Apr. 1, 1948	8.14	2.64	-		July 12, 1955	6.43	-	409
	Apr. 13, 1948	-	-	297		Aug. 5, 1955	9.31	-	1,590
1949	Apr. 7, 1949	6.67	-	256					
1950	Apr. 7, 1950	9.32	-	841	1956	Mar. 21, 1956	7.41	2.48	-
						Apr. 11, 1956	8.50	-	1,020
1951	Apr. 7, 1951	9.00	-	792					
1952	Apr. 8, 1952	9.10	-	880	1957	Mar. 26, 1957	6.61	-	456

a From information by local resident.

Peak stages and discharges of Buffalo River near Hawley, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1957	Apr. 21, 1957	6.44	-	424	1959	July 11, 1959	7.04	-	551
	June 25, 1957	6.42	-	420					
					1960	Apr. 7, 1960	7.04	0.14	502
1958	Mar. 1, 1958	5.80	2.70	-		Apr. 15, 1960	6.54	-	435
	July 5, 1958	4.86	-	195		Apr. 27, 1960	7.54	-	660
1959	Mar. 22, 1959	7.46	3.84	-	1961	Mar. 4, 1961	5.60	1.48	-
	Mar. 30, 1959	6.20	-	381		May 16, 1961	5.28	-	246

615. South Branch Buffalo River at Sabin, Minn.

Location.--Lat 46°46'20", long 96°37'40", in SW¼SW¼ sec.9, T.138 N., R.47 W., near center of span on downstream side of highway bridge, a quarter of a mile downstream from Whiskey Creek, and 1 mile east of Sabin.

Drainage area.--522 sq mi.

Gage.--Nonrecording. Prior to Aug. 17, 1948, at site 1 mile downstream at different datum. Datum of gage is 902.39 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Mar. 18, 1945	14.69	-	1,480	1953	May 31, 1953	15.38	-	3,410
					1954	Mar. 24, 1954	10.90	1.34	390
1946	Mar. 18, 1946	a14.34	1.94	955	1955	Apr. 2, 1955	12.28	-	862
1947	Apr. 12, 1947	13.82	-	1,230					
1948	Mar. 29, 1948	15.00	4.38	-	1956	Apr. 5, 1956	15.18	.86	2,410
	Apr. 4, 1948	-	-	730	1957	Apr. 21, 1957	12.53	-	982
1949	Apr. 5, 1949	9.08	-	324	1958	July 7, 1958	b14.60	-	1,520
1950	Mar. 29, 1950	14.15	.98	-	1959	June 20, 1959	11.18	-	572
	Apr. 1, 1950	-	-	1,460	1960	Apr. 27, 1960	12.34	-	1,020
1951	Apr. 6, 1951	13.39	-	1,640	1961	May 18, 1961	9.09	-	248
1952	Apr. 8, 1952	15.37	-	3,400					

a Occurred at different time than peak discharge.
b Shifting-control adjustment, -1.28 ft.

620. Buffalo River near Dilworth, Minn.

Location.--Lat 46°57'40", long 96°39'40", in SE¼SW¼ sec.6, T.140 N., R.47 W., on left bank 4½ miles southeast of Kragnes, 6½ miles northeast of Dilworth, and 9 miles downstream from South Branch.

Drainage area.--1,040 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 5, 1937; recording thereafter. Altitude of gage is 870 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 300 cfs. Only annual peaks are shown prior to 1937.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1931	Apr. 5, 1931	3.92	1.6	-	1937	Apr. 14, 1937	9.00	2.22	390
	Apr. 10, 1931	-	-	46		May 3, 1937	6.11	-	322
1932	Apr. 12, 1932	8.83	2.0	311					
1933	Apr. 3, 1933	9.02	2.8	269	1938	Mar. 22, 1938	9.22	2.50	380
1934	Apr. 10, 1934	9.02	1.4	374		May 5, 1938	8.78	-	550
1935	Mar. 21, 1935	9.09	2.3	311					
					1939	Mar. 29, 1939	15.77	1.72	1,350
1936	Apr. 16, 1936	14.59	-	1,460					

Peak stages and discharges of Buffalo River near Dilworth, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Apr. 7, 1940	10.29	1.96	510	1952	Apr. 10, 1952	21.24	-	4,310
						July 6, 1952	10.47	-	716
1941	Apr. 4, 1941	12.71	1.76	800		July 24, 1952	12.00	-	935
						Aug. 7, 1952	7.12	-	342
1942	May 6, 1942	10.94	-	762		Aug. 18, 1952	7.12	-	342
	June 3, 1942	7.40	-	399					
	Aug. 30, 1942	6.30	-	300	1953	Mar. 30, 1953	12.05	0.18	787
						Apr. 13, 1953	8.60	-	418
1943	Apr. 2, 1943	22.60	-	4,530		May 25, 1953	8.22	-	384
	May 30, 1943	7.33	-	372		June 2, 1953	17.28	-	2,030
	June 7, 1943	10.89	-	713		June 20, 1953	18.43	-	2,430
	July 3, 1943	9.95	-	608		Aug. 12, 1953	8.02	-	366
	Aug. 10, 1943	6.36	-	306					
					1954	Mar. 28, 1954	12.08	5.32	-
1944	Apr. 11, 1944	10.21	-	522		Apr. 12, 1954	11.54	.42	686
	May 13, 1944	7.67	-	404		May 5, 1954	8.71	-	422
	June 9, 1944	9.18	-	531					
	July 18, 1944	12.36	-	934	1955	Apr. 4, 1955	14.85	.23	1,260
	Aug. 20, 1944	12.81	-	998		July 17, 1955	13.32	-	1,010
	Sept. 6, 1944	12.80	-	998		Aug. 10, 1955	13.27	-	1,010
1945	Mar. 20, 1945	19.38	.68	2,660	1956	Apr. 8, 1956	18.54	1.74	-
	Apr. 25, 1945	11.11	-	739		Apr. 12, 1956	18.37	-	2,410
						May 14, 1956	7.62	-	333
1946	Mar. 21, 1946	17.61	3.21	-					
	Mar. 22, 1946	17.05	1.14	1,670	1957	Mar. 27, 1957	13.04	7.35	760
	July 9, 1946	8.74	-	481		Apr. 24, 1957	13.70	-	1,080
						June 28, 1957	10.38	-	579
1947	Apr. 13, 1947	20.26	-	3,380		Sept. 4, 1957	8.82	-	431
	June 16, 1947	9.22	-	528		Sept. 24, 1957	9.58	-	481
1948	Apr. 2, 1948	16.0	2.63	-	1958	July 11, 1958	15.70	-	1,540
	Apr. 8, 1948	14.44	-	1,310					
					1959	Apr. 2, 1959	10.58	.46	502
1949	Apr. 8, 1949	11.17	1.09	602		June 23, 1959	11.81	-	699
						July 5, 1959	8.88	-	384
1950	Apr. 2, 1950	19.75	1.55	-		July 16, 1959	11.71	-	686
	Apr. 7, 1950	-	-	a2,600					
	May 10, 1950	15.22	-	1,610	1960	Apr. 9, 1960	15.88	.88	1,360
	May 20, 1950	12.01	-	936		Apr. 30, 1960	15.12	-	1,390
1951	Apr. 7, 1951	17.47	-	2,230	1961	May 19, 1961	9.90	-	480
	June 7, 1951	7.17	-	347					

a Maximum daily discharge.

622. Elm River near Kelso, N. Dak.

Location.--Lat 47°17', long 97°07', on west line of sec.14, T.144 N., R.51 W., on downstream side of highway bridge, 5 miles southwest of Kelso and 14 miles upstream from North Branch.

Drainage area.--194 sq mi.

Gage.--Nonrecording prior to Mar. 30, 1957; recording thereafter. Datum of gage is 887.60 ft above mean sea level, datum of 1929, Emerson-Crookston supplementary adjustment of 1941.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--6 ft.

Historical data.--The peak stage of 1950 is the maximum stage known since 1925, from information by local resident.

Remarks.--Base for partial-duration series, 70 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	-	a14	-	-	1959	Mar. 20, 1959	4.55	-	3.2
1956	Apr. 16, 1956	8.73	4.5		1960	Apr. 1, 1960	7.76	0.19	165
	Apr. 22, 1956	5.99	-	70					
	June 4, 1956	6.80	-	102	1961	Mar. 7, 1961	5.01	.7	-
1957	Mar. 24, 1957	4.75	-	3.0		Mar. 18, 1961	4.81	.06	9.9
1958	-	-	-	0					

a About.

625. Wild Rice River at Twin Valley, Minn.

Location.--Lat 47°16'00", long 96°14'40", in NE¼ sec.27, T.144 N., R.44 W., on left bank 100 ft upstream from highway bridge, three-quarters of a mile northeast of village of Twin Valley, and 2 miles upstream from a small tributary.

Drainage area.--888 sq mi.

Gage.--Nonrecording prior to Nov. 25, 1934; recording thereafter. Prior to July 23, 1930, at site a quarter of a mile downstream at different datum. Datum of gage is 1,008.16 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 3,100 cfs and extended above.

Remarks.--Flow slightly regulated by Rice Lake and many other small lakes above station. Base for partial-duration series, 340 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1909	July 22, 1909	20.0	-	9,200
1910	Apr. 26, 1910	9.6	-	1,610
1911	Apr. 22, 1911	6.7	-	473
1912	May 12, 1912	7.55	-	758
1913	Apr. 2, 1913	9.6	-	1,610
1914	June 10, 1914	8.5	-	1,120
1915	June 29, 1915	11.1	-	2,340
1916	Apr. 1, 1916	11.9	4.00	-
	June 1, 1916	-	-	1,670
1917	Mar. 31, 1917	11.2	2.05	-
	Apr. 3, 1917	-	-	719
1931	Dec. 2, 1930	1.93	.75	-
	May 21, 1931	-	-	112
1932	Apr. 9, 1932	3.59	.7	358
1933	May 23, 1933	3.27	-	450
1934	Apr. 12, 1934	2.60	-	266
1935	Mar. 16, 1935	4.53	1.99	-
	July 14, 1935	-	-	216
1936	Apr. 14, 1936	9.27	-	2,490
1937	May 3, 1937	3.32	-	301
1938	May 12, 1938	5.82	-	836
1939	Mar. 30, 1939	4.44	.20	459
1940	Apr. 9, 1940	7.28	.59	1,100
1941	Apr. 3, 1941	6.11	.35	828
	May 16, 1941	4.54	-	525
	June 9, 1941	5.77	-	828
	Sept.27, 1941	3.70	-	366
1942	Apr. 2, 1942	5.24	-	678
	May 3, 1942	8.15	-	1,550
	June 9, 1942	3.61	-	347
	Sept. 1, 1942	5.00	-	637
1943	Apr. 1, 1943	9.92	1.09	2,030
	May 2, 1943	4.82	-	622
	June 4, 1943	11.74	-	4,120
	Aug. 7, 1943	3.50	-	348
1944	June 6, 1944	5.10	-	694
	June 27, 1944	4.10	-	467
	July 8, 1944	7.86	-	1,560
	Aug. 9, 1944	6.73	-	1,110
	Sept. 4, 1944	4.93	-	646
1945	Mar. 17, 1945	10.63	3.32	-
	Apr. 2, 1945	8.15	-	1,520
	Apr. 25, 1945	7.73	-	1,360
1946	Mar. 21, 1946	11.80	4.70	-
	Mar. 24, 1946	7.60	-	1,490
	Mar. 31, 1946	6.55	-	1,140
	May 3, 1946	4.62	-	604
1947	Apr. 15, 1947	9.47	-	2,510
1947	June 12, 1947	7.70	-	1,610
1948	Apr. 5, 1948	5.95	1.52	-
	Apr. 9, 1948	5.65	-	916
1949	Apr. 7, 1949	4.33	-	547
	May 8, 1949	3.54	-	382
	May 18, 1949	3.67	-	402
	May 30, 1949	6.58	-	1,140
	June 13, 1949	4.52	-	580
	July 8, 1949	7.94	-	1,610
	July 31, 1949	6.89	-	1,170
	Aug. 18, 1949	4.34	-	520
1950	Apr. 18, 1950	10.18	-	2,940
	May 9, 1950	10.96	-	3,530
	June 26, 1950	12.02	-	4,380
	July 11, 1950	5.32	-	742
1951	Apr. 5, 1951	8.66	.86	-
	Apr. 9, 1951	8.31	-	1,820
1952	Apr. 8, 1952	8.27	-	1,810
	July 22, 1952	3.92	-	478
1953	Mar. 23, 1953	5.70	-	945
	Apr. 11, 1953	4.14	-	531
	May 23, 1953	4.22	-	550
	June 18, 1953	4.48	-	635
	July 4, 1953	6.44	-	1,170
1954	Apr. 10, 1954	7.09	-	1,390
	Apr. 28, 1954	5.29	-	826
	June 17, 1954	3.95	-	485
1955	Apr. 4, 1955	5.57	-	927
1956	Apr. 12, 1956	6.99	-	1,380
	May 11, 1956	3.95	-	502
	June 1, 1956	3.52	-	404
1957	Mar. 23, 1957	4.81	1.4	380
	Apr. 21, 1957	5.17	-	814
1958	Nov. 9, 1957	3.42	1.0	-
	July 7, 1958	3.00	-	294
1959	Mar. 28, 1959	3.93	.98	-
	May 6, 1959	3.73	-	451
1960	Mar. 29, 1960	5.96	2.56	378
	Apr. 5, 1960	5.83	1.36	630
	Apr. 15, 1960	4.80	-	716
	Apr.27,28,1960	4.52	-	643
	June 1, 1960	4.59	-	661
	July 5, 1960	3.28	-	352
1961	Apr. 27, 1961	3.61	-	424
	May 17, 1961	5.29	-	847

630. Wild Rice River near Ada, Minn.

Location.--Lat 47°15'50", long 96°30'00", in NE¼ sec.28, T.144 N., R.46 W., at left bank on downstream side of abutment of bridge on State Highway 82, 2.3 miles south of Ada.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above.

Bankfull stage.--12 ft.

Remarks.--During high stages water is diverted to Marsh River through two overflow sections, the points of divergence being 2½ and 6 miles upstream from station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1948	Apr. 8, 1948	7.57	1.1	-	1951	Apr. 6, 1951	7.26	-	735
	Apr. 9, 1948	-	-	665	1952	Apr. 9, 1952	10.3?	1.02	1,340
1949	July 8, 1949	6.75	-	662	1953	July 4, 1953	4.55	-	895
1950	June 26, 1950	10.31	-	1,720					

635. South Branch Wild Rice River near Borup, Minn.

Location.--Lat 47°11'40", long 96°34'40", in NW¼ sec.24, T.143 N., R.47 W., at highway bridge half a mile downstream from channel fork, 3½ miles upstream from Wild Rice River, and 3¾ miles northwest of Borup.

Drainage area.--254 sq mi.

Gage.--Nonrecording. Altitude of gage is 874 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 770 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	July 12, 1944	11.17	-	852	1948	Apr. 2, 1948	12.73	6.71	-
1945	Mar. 19, 1945	10.86	-	792		Apr. 5, 1948	-	-	522
					1949	Apr. 7, 1949	8.94	1.77	-
1946	Mar. 19, 1946	13.60	1.60	984		July 6, 1949	-	-	319
1947	Apr. 13, 1947	12.86	-	1,150					

640. Wild Rice River at Hendrum, Minn.

Location.--Lat 47°16'05", long 96°47'50", in SE¼ sec.19, T.144 N., R.48 W., near center of span on downstream side of highway bridge, half a mile east of Hendrum, and 4 miles upstream from mouth.

Drainage area.--1,600 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 836.75 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--A large part of the high flow is diverted into Marsh River basin at an overflow section 3½ miles east of Ada in S½N½ sec.18, T.144 N., R.45 W. Another diversion into the Marsh River basin formed in 1947, 1½ miles southeast of Ada in SW¼ sec.14, T.144 N., R.46 W., and diverted water at all stages 1947-51, after which it was closed except for small regulated flow diverted at same point. Amounts of diversion not determined. Only annual peaks are shown.

Peak stages and discharges of Wild Rice River at Hendrum, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	July 15, 1944	16.07	-	2,260	1952	Apr. 11, 1952	-	-	2,860
1945	Mar. 18, 1945	-	-	a2,200		Apr. 18, 1952	b22.35	-	-
	Mar. 22, 1945	b19.04	-	-	1953	June 18, 1953	b16.88	-	1,650
					1954	Apr. 12, 1954	15.26	-	1,940
1946	Mar. 23, 1946	b20.56	-	a2,600	1955	Apr. 5, 1955	15.99	1.11	1,850
1947	Apr.15,16, 1947	b27.70	-	a4,200					
1948	Apr. 8, 1948	b20.13	-	a2,200	1956	Apr. 14, 1956	b24.26	-	4,660
1949	Apr. 7, 1949	10.15	2.90	-	1957	Mar. 24, 1957	12.39	2.59	-
	July 11, 1949	-	-	a738		Sept. 4, 1957	-	-	1,250
1950	Apr. 8, 1950	b25.09	11.14	-	1958	July 7, 1958	8.16	-	633
	May 10, 1950	-	-	a3,000	1959	Apr. 6, 1959	8.92	1.93	540
					1960	Apr. 8, 1960	16.48	3.28	1,600
1951	Apr. 7, 1951	-	-	2,570					
	Apr. 8, 1951	b20.10	-	-	1961	May 17, 1961	10.66	-	1,080

a Maximum daily discharge.
b Affected by backwater from Red River of the North.

645. Red River of the North at Halstad, Minn.

Location.--Lat 47°21'10", long 96°50'50", on line between secs. 24 and 25, T.145 N., R.49 W., on downstream side of highway bridge, half a mile west of Halstad, 2½ miles downstream from Wild Rice River, and at mile 375.2.

Drainage area.--21,800 sq mi, approximately (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording. Datum of gage is 826.65 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting, ice effect, and changing slope.

Bankfull stage.--26 ft.

Remarks.--Some regulation by many controlled lakes and reservoirs on tributaries. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1897	-	a38.5	-	-	1950	May 11, 1950	-	-	18,700
1936	Apr. 15, 1936	16.33	-	7,670	1951	Apr. 10, 1951	22.43	-	12,900
1937	Apr. 15, 1937	9.39	0.69	2,660	1952	Apr. 18, 1952	29.78	-	20,700
					1953	June 22, 1953	22.78	-	13,600
1942	May 1942	12.86	-	5,060	1954	Apr. 13, 1954	11.44	-	4,660
1943	Apr. 11, 1943	31.31	-	21,800	1955	Apr. 6, 1955	19.28	3.7	7,200
1944	July 13, 1944	15.79	-	7,200					
1945	Mar. 23, 1945	23.6	-	13,300	1956	Apr. 15, 1956	23.67	1.2	12,900
					1957	June 24, 1957	12.20	-	4,980
1946	Mar. 29, 1946	19.5	-	10,000	1958	July 8, 1958	11.31	-	4,420
1947	Apr. 16, 1947	b34.00	-	24,500	1959	June 13, 1959	10.13	-	3,780
1948	Apr. 10, 1948	-	-	16,000	1960	Apr. 10, 1960	21.66	4.9	8,600
	Apr. 13, 1948	26.78	-	-					
1949	Apr. 7, 1949	16.53	-	7,710	1961	May 22, 1961	6.96	-	1,900
1950	Apr. 11, 1950	32.00	-	-					

a About.
b Occurred on following day.

655. Goose River near Portland, N. Dak.

Location.--Lat 47°32', long 97°27', in SE¼NE¼ sec.19, T.147 N., R.54 W., on left bank 75 ft upstream from bridge on State Highway 18, 1¼ miles upstream from unnamed tributary, 4 miles downstream from Beaver Creek, and 5 miles northwest of Portland.

Drainage area.--517 sq mi, of which 110 sq mi is probably noncontributing.

Gage.--Nonrecording at site 2 miles upstream, at datum 11.28 ft higher prior to Oct. 1, 1956; recording thereafter. Datum of gage is 967.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,700 cfs and extended to 8,100 cfs on basis of a contracted-opening measurement; subject to changes owing to channel shifting and ice effect.

Bankfull stage.--18 ft.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to Oct. 1, 1956.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Apr. 16, 1940	7.88	-	487	1953	July 4, 1953	7.77	-	367
					1954	Feb. 25, 1954	5.15	1.8	-
1941	Apr. 9, 1941	12.59	-	1,130		June 15, 1954	-	-	58
1942	Apr. 5, 1942	11.51	0.91	850	1955	Mar. 31, 1955	10.8	.8	600
1943	Mar. 26, 1943	14.90	1.8	1,200					
1944	Apr. 10, 1944	5.10	-	169	1956	Apr. 16, 1956	11.07	1.5	550
1945	Mar. 15, 1945	6.70	-	340					
					1957	Sept. 5, 1957	5.95	-	134
1946	Mar. 20, 1946	9.14	.91	530					
1947	Mar. 28, 1947	a7.84	-	b260	1958	June 27, 1958	5.47	-	95
1948	Apr. 21, 1948	21.30	-	4,700					
1949	Apr. 7, 1949	13.60	.47	1,200	1959	Apr. 3, 1959	4.94	-	72
1950	Apr. 18, 1950	22.98	-	-					
	May 9, 1950	c22.98	-	8,090	1960	Mar. 31, 1960	8.14	-	400
						Apr. 8, 1960	11.45	-	924
1951	Mar. 30, 1951	12.5	2.94	650					
1952	Apr. 3, 1952	11.45	1.42	600	1961	Mar. 10, 1961	4.13	.25	71

a Occurred 3 days earlier.
b Daily mean discharge.
c Occurred at different time than peak discharge.

665. Goose River at Hillsboro, N. Dak.

Location.--Lat 47°24'20", long 97°03'40", in NW¼ sec.5, T.145 N., R.50 W., on left bank 50 ft upstream from Foogman Dam in Hillsboro and 22 miles upstream from mouth.

Drainage area.--1,203 sq mi, of which 110 sq mi is probably noncontributing.

Gage.--Nonrecording March 1931 to Sept. 25, 1941; recording thereafter. Mar. 17, 1931, to Mar. 20, 1935, at site 1,000 ft downstream and Mar. 21, 1935, to Mar. 28, 1940, at site 600 ft downstream, both at datum 11.45 ft lower. Datum of present gage is 879.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting, changing slopes, and ice effect.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to Oct. 1, 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1882	April 1882	-	-	a6,700	1916	April 1916	-	-	a4,700
1897	April 1897	-	-	a5,700	1931	Apr. 7, 1931	4.20	1.08	100
					1932	Mar. 3, 1932	15.14	4.04	959
1904	April 1904	-	-	a5,300	1933	March 1933	10.4	5.1	b300

a Determined by Corps of Engineers.
b About.

Peak stages and discharges of Goose River at Hillsboro, N. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1934	Apr. 2, 1934	4.95	-	107	1950	Mar. 28, 1950	1.48	0.20	440
1935	June 14, 1935	8.45	-	697		Apr. 10, 1950	9.79	5.36	2,100
						Apr. 19, 1950	c14.94	-	9,420
1936	Apr. 16, 1936	13.06	-	1,660		May 10, 1950	c14.64	-	8,520
1937	Apr. 15, 1937	3.57	0.15	46					
1938	Mar. 15, 1938	4.44	.19	104	1951	Mar. 31, 1951	3.48	1.34	1,130
1939	Mar. 26, 1939	11.0	3.3	564					
1940	Apr. 17, 1940	1.66	-	710	1952	Apr. 4, 1952	3.33	.68	1,300
						July 5, 1952	1.76	-	649
1941	Apr. 11, 1941	2.26	-	1,320					
					1953	June 15, 1953	1.08	-	261
1942	Apr. 6, 1942	2.27	-	1,140		July 6, 1953	1.36	-	408
	May 3, 1942	1.02	-	233					
					1954	June 15, 1954	.99	-	231
1943	Mar. 29, 1943	8.84	-	3,480					
	June 18, 1943	.96	-	220	1955	Apr. 3, 1955	2.44	-	1,220
1944	Apr. 10, 1944	1.11	-	304	1956	Apr. 19, 1956	2.58	-	1,390
	Aug. 10, 1944	.96	-	230		June 11, 1956	1.01	-	273
1945	Mar. 17, 1945	1.09	-	293	1957	Sept. 7, 1957	1.17	-	200
1946	Mar. 22, 1946	3.22	.83	1,300	1958	July 3, 1958	.69	-	88
1947	Mar. 26, 1947	1.86	.20	680	1959	Mar. 3, 1959	1.25	1.1	-
	Apr. 13, 1947	5.30	1.61	1,700		Apr. 5, 1959	.84	-	143
1948	Apr. 16, 1948	10.63	-	4,180	1960	Apr. 1, 1960	2.35	.09	930
						Apr. 9, 1960	3.37	.45	1,360
1949	Apr. 8, 1949	3.38	-	1,640					
	June 4, 1949	1.94	-	863	1961	Mar.7,12,1961	.66	-	82

c Occurred at different time than peak discharge.

670. Marsh River below Ada, Minn.

Location.--Lat 47°17'50", long 96°33'50", in NW¼NW¼ sec.18, T.144 N., R.46 W., near center of span on downstream side of bridge on farm lane, 1.9 miles west of Ada.

Gage.--Nonrecording. Datum of gage is 877.08 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,700 cfs and extended above.

Bankfull stage.--9 ft.

Remarks.--Unknown amount of water from Wild Rice River during high stages enters Marsh River 5 miles upstream from station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Apr. 7, 1948	a 8.40	-	1951	Apr. 8, 1951	14.32	1,630
	Apr. 16, 1948	-	393	1952	Apr. 17, 1952	7.69	438
1949	June 1, 1949	10.80	683				
1950	June 27, 1950	14.57	1,850				

a Backwater from ice, 2.35 ft.

675. Marsh River near Shelly, Minn.

Location.--Lat 47°24'45", long 96°45'50", in NE¼NW¼ sec.3, T.145 N., R.48 W., near center of span on downstream truss of bridge, 3¾ miles southeast of Shelly and 10 miles upstream from mouth.

Drainage area.--151 sq mi.

Gage.--Nonrecording. Datum of gage is 844.14 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 3,700 cfs and extended above.

Remarks.--A large part of the high flow of the Wild Rice River was diverted into the Marsh River at a point 3½ miles east of Ada prior to 1947. In 1947 an additional diversion formed 1 mile south of Ada and operated at all stages through 1951, after which it was closed except for small regulated flow diverted at same point. Amounts of diversion not determined. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	July 11, 1944	8.64	-	1,030	1953	June 17, 1953	4.11	-	389
1945	Mar. 18, 1945	8.48	-	1,000	1954	Apr. 13, 1954	4.63	-	376
					1955	Apr. 5, 1955	4.10	-	289
1946	Mar. 22, 1946	12.26	1.26	-					
	Mar. 23, 1946	-	-	1,510	1956	Apr. 13, 1956	12.50	-	1,960
1947	Apr. 14, 1947	17.80	-	4,150	1957	Mar. 23, 1957	5.29	0.90	-
1948	Apr. 7, 1948	11.03	2.32	-		June 23, 1957	-	-	304
	Apr. 13, 1948	-	-	1,040	1958	July 10, 1958	1.48	-	47
1949	June 3, 1949	9.83	-	1,260	1959	Mar. 31, 1959	2.42	-	96
1950	May 11, 1950	18.96	-	4,660	1960	Apr. 7, 1960	6.04	-	492
1951	Apr. 8, 1951	12.56	-	2,100	1961	Mar. 9, 1961	3.51	1.14	100
1952	July 21, 1952	7.80	-	979					

680. Sandhill River at Beltrami, Minn.

Location.--Lat 47°32'50", long 96°32'00", in NE¼SW¼ sec.16, T.147 N., R.46 W., at left bank on upstream side of abutment of bridge on U.S. Highway 75, 150 ft upstream from Great Northern Railway bridge and a quarter of a mile north of post office in Beltrami.

Drainage area.--324 sq mi (includes that of Sandhill ditch, because the two are cross-connected).

Gage.--Nonrecording. Datum of gage is 896.80 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 250 cfs and extended above.

Bankfull stage.--6 ft.

Remarks.--Diversion through Sandhill ditch (see following station) from point 5 miles upstream from station, returns to river 4 miles downstream from station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Apr. 4, 1943	5.40	1.20	-	1951	Apr. 8, 1951	4.10	-	71
	Apr. 5, 1943	-	-	179	1952	Apr. 4, 1952	4.78	1.82	-
1944	Apr. 7, 1944	4.30	2.76	-		Apr. 9, 1952	3.20	-	46
	Aug. 12, 1944	-	-	30	1953	Mar. 15, 1953	4.8	a3.2	-
1945	Apr. 12, 1945	3.88	-	53		June 17, 1953	3.60	-	62
					1954	Apr. 9,13,1954	3.72	a1.01	-
1946	Mar. 20, 1946	4.50	2.70	-		June 16, 1954	-	-	49
	Mar. 28, 1946	-	-	42	1955	Apr. 4, 1955	4.51	1.10	54
1947	June 12, 1947	5.20	-	167					
1948	Apr. 9, 1948	4.82	1.37	-	1956	May 13, 1956	4.62	-	105
	Apr. 13, 1948	-	-	75	1957	Mar. 23, 1957	3.72	2.00	-
1949	June 2, 1949	5.00	-	163		June 23, 1957	-	-	50
1950	Apr. 19, 1950	5.97	-	291	1958	July 5, 1958	3.21	-	22

a Backwater at least this amount.

685. Sandhill ditch at Beltrami, Minn.

Location.--Lat 47°32'10", long 96°32'00", in SE¼NW¼ sec.21, T.147 N., R.46 W., near center of span on downstream side of bridge on U.S. Highway 75, 150 ft upstream from Great Northern Railway bridge and a quarter of a mile south of post office in Beltrami.

Gage.--Nonrecording. Prior to Nov. 22, 1948, at datum 12.62 ft higher, and Nov. 22, 1948, to Sept. 30, 1956, at datum 10.00 ft higher. Datum of present gage is 883.50 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Ditch diverts from Sandhill River (see preceding station) 4½ miles above station and returns to river at point 3¼ miles below station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Apr. 3, 1943	8.07	3.20	-	1952	Apr. 7, 1952	8.78	5.24	-
	Apr. 5, 1943	-	-	741		Apr. 12, 1952	-	-	a315
1944	Mar. 27, 1944	6.37	6.37	-	1953	Mar. 27, 1953	3.74	.63	-
	Aug. 15, 1944	-	-	226		Mar. 29, 1953	-	-	a190
1945	Mar. 20, 1945	6.32	3.16	-	1954	Apr. 11, 1954	7.96	5.06	-
	Apr. 1, 1945	-	-	344		Apr. 14, 1954	-	-	278
					1955	Apr. 7, 1955	10.07	5.08	551
1946	Mar. 22, 1946	7.70	4.40	-					
	Mar. 25, 1946	-	-	564	1956	Apr. 12, 1956	9.95	8.09	-
1947	Apr. 16, 1947	7.57	-	1,220		Apr. 19, 1956	-	-	480
1948	Apr. 11, 1948	7.20	-	1,050	1957	Mar. 23, 1957	14.22	3.22	-
1949	Apr. 7, 1949	8.81	4.75	-		June 28, 1957	-	-	370
	June 2, 1949	-	-	425	1958	Feb. 25, 1958	11.68	2.48	-
1950	Apr. 19, 1950	11.59	2.54	-		July 5, 1958	-	-	95
	Apr. 20, 1950	-	-	2,460					
1951	Apr. 9, 1951	8.46	2.68	823					

a Maximum daily discharge.

690. Sandhill River at Climax, Minn.

Location.--Lat 47°36'10", long 96°47'40", in SE¼SE¼ sec.29, T.148 N., R.48 W., near center of span on upstream side of highway bridge, 1 mile southeast of Climax and 4 miles upstream from mouth.

Drainage area.--405 sq mi.

Gage.--Nonrecording. Datum of gage is 833.69 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Apr. 7, 1943	10.48	-	941	1953	Mar. 26, 1953	5.88	2.04	-
1944	Apr. 12, 1944	5.45	1.45	-		Mar. 29, 1953	-	-	219
	Aug. 18, 1944	-	-	226	1954	Apr. 13, 1954	7.52	1.20	-
1945	Apr. 11, 1945	9.18	-	767		June 15, 1954	-	-	489
					1955	Apr. 8, 1955	10.35	1.20	842
1946	Mar. 27, 1946	-	-	675					
1947	Apr. 19, 1947	13.28	-	1,840	1956	Apr. 20, 1956	10.72	-	1,370
1948	Apr. 13, 1948	13.67	.87	-	1957	June 29, 1957	7.06	-	481
	Apr. 14, 1948	-	-	1,640	1958	Mar. 1, 1958	4.45	3.19	-
1949	June 1, 1949	10.4	-	990		July 5, 1958	-	-	168
1950	Apr. 22, 1950	16.31	-	3,040	1959	Apr. 2, 1959	7.64	2.31	310
					1960	Apr. 6, 1960	8.80	1.95	460
1951	Apr. 11, 1951	11.90	1.32	1,250					
1952	Apr. 12, 1952	9.52	1.89	544	1961	Mar. 25, 1961	4.86	1.41	140

745. Red Lake River near Red Lake, Minn.

Location.--Lat 47°57', long 95°17', in NW¼ sec.28, T.152 N., R.36 W., on left bank 50 ft downstream from dam at outlet of Lower Red Lake ard 13 miles northwest of village of Red Lake.

Drainage area.--1,950 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 7, 1934; recording thereafter. Prior to Nov. 26, 1951, at datum 2.00 ft higher. Datum of gage is 1,1€7.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--2.5 ft.

Remarks.--Flow completely regulated by outlet dam on Lower Red Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1933	July 4, 1933	3.02	-	46	1949	Aug. 14, 1949	6.63	-	-
1934	May 1, 1934	2.52	-	57	1950	June 25, 1950	9.19	-	3,600
1935	June 13, 1935	3.02	-	140	1951	Oct. 6, 1950	6.57	-	2,320
1936	June 29, 1936	3.11	-	-	1952	May 17-19, 1952	-	-	1,610
	Sept.14, 1936	-	-	52		July 7-11, 1952	6.69	-	-
1937	Sept.30, 1937	3.14	-	61	1953	June 15, 1953	-	-	492
1938	July 5, 1938	5.80	-	317		Aug. 6, 1953	4.83	-	-
1939	June 16, 1939	-	-	432	1954	June 29, 1954	-	-	725
	Sept.14, 1939	6.05	-	-		July 26, 1954	5.48	-	-
1940	June 2, 1940	6.18	-	534	1955	Apr. 5, 1955	-	-	384
1941	June 7, 1941	-	-	449		July 12, 1955	4.67	-	-
	Aug. 6, 1941	5.68	-	-	1955	Oct. 12, 1955	-	-	252
1942	May 13, 1942	6.58	-	926		July 22-24, 1956	3.69	-	-
1943	June 3, 1943	-	-	1,510	1957	July 20-23, 1957	-	-	1,870
	Aug. 8, 1943	7.45	-	-		July 22, 1957	7.25	-	-
1944	June 17, 1944	-	-	1,420	1958	Oct. 1, 1957	-	-	1,360
	Aug. 9, 1944	7.15	-	-		Nov. 22, 1957	6.42	0.61	-
1945	June 1, 1945	7.27	-	1,650	1959	Nov. 18, 1958	-	-	68
						Feb. 17, 1959	3.34	1.98	-
1946	May 31, 1946	6.81	-	1,400	1960	Nov.19-24, 1959	-	-	162
1947	June 10, 1947	-	-	1,960		Mar. 21, 1960	3.72	1.97	-
	Aug. 8, 1947	7.47	-	-					
1948	Oct. 23, 1947	6.88	-	-	1961	June 24,25, 1961	-	-	b240
	May 23, 1948	-	-	1,210		June 26, 1961	3.41	-	-
1949	(a)	-	-	561					

a Occurred Apr. 24, June 1, 1949.
b Maximum daily discharge.

750. Red Lake River at High Landing, near Goodridge, Minn.
(Published as "at Kratka" prior to 1930)

Location.--Lat 48°03', long 95°48', on line between secs. 28 and 29, T.153 N., R.40 W., on left bank at upstream side of highway bridge at High Landing, 7 miles south of Goodridge and 33 miles upstream from Thief River.

Drainage area.--2,300 sq mi, approximately.

Gage.--Nonrecording prior to Dec. 9, 1938; recording thereafter. Prior to Oct. 1, 1930, at site about 10 miles downstream at different datum. Oct. 1, 1930, to Sept. 30, 1932, at datum 5.00 ft higher, and Oct. 1, 1932, to Sept. 30, 1949, at datum 4.00 ft higher. Datum of present gage is 1,141.57 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements. Affected by backwater from ice or aquatic vegetation for the larger part of most years.

Remarks.--Flow regulated by dam at outlet of Lower Red Lake. Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1939.

Peak stages and discharges of Red Lake River at High Landing, near Goodridge, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1930	Apr. 5, 1930	4.08	1.50	912	1947	June 15, 1947	8.30	-	2,660
1931	Feb. 25, 1931	2.75	1.4	-	1948	(a)	6.85	-	1,070
	Apr. 3, 1931	-	-	254		Apr. 20, 1948	9.20	-	3,390
1932	Apr. 9, 1932	3.45	1.90	241					
1933	Mar. 25, 1933	4.08	3.20	-	1949	Apr. 9, 1949	7.41	2.33	-
	Apr. 18, 1933	-	-	85		Apr. 13, 1949	5.70	-	1,360
1934	Apr. 3, 1934	2.30	1.00	-		June 1, 1949	5.51	-	1,280
	May 3, 1934	-	-	58		Aug. 16, 1949	2.75	-	735
1935	Mar. 28, 1935	3.90	2.3	-					
	Apr. 13, 1935	-	-	111	1950	Oct. 11, 1949	6.56	-	619
						(b)	7.38	2.00	550
1936	Apr. 17, 1936	3.80	1.25	248		May 11, 1950	13.42	-	3,720
1937	July 15, 1937	5.08	-	285					
1938	May 13, 1938	7.18	-	1,460	1951	Oct. 19, 1950	10.17	-	2,020
						Apr. 6, 1951	12.60	2.67	-
1939	Apr. 21, 1939	7.44	.72	1,300		Apr. 29, 1951	10.24	-	2,170
1940	Apr. 14, 1940	6.60	2.7	-	1952	Feb. 16, 1952	10.40	2.65	-
	Apr. 19, 1940	6.22	-	1,300		May 19, 1952	8.76	-	1,730
	May 2, 1940	3.99	-	549					
					1953	Mar. 23, 1953	7.46	3.41	-
1941	Apr. 10, 1941	6.20	1.69	-		June 9, 1953	5.12	-	670
	Apr. 11, 1941	5.26	.37	844					
	June 15, 1941	6.14	-	912	1954	Apr. 10, 1954	6.86	2.47	-
						June 1, 1954	4.56	-	593
1942	Nov. 17, 1942	5.12	-	716		June 23,24,1954	5.31	-	742
	Mar. 29, 1942	8.08	2.32	-					
	Apr. 2, 1942	7.81	1.21	1,800	1955	Apr. 8, 1955	8.04	1.02	1,240
	May 5, 1942	4.56	-	856		Apr. 22, 1955	4.07	-	508
	Sept.10, 1942	5.46	-	678					
					1956	Apr. 20, 1956	10.29	2.69	1,330
1943	Apr. 8, 1943	7.22	.22	2,010		May 11, 1956	5.48	-	770
	June 15, 1943	5.90	-	1,050		Aug. 31, 1956	5.51	-	590
	Aug. 9, 1943	7.07	-	900					
					1957	Apr. 21, 1957	8.70	-	1,640
1944	Apr. 11, 1944	9.20	3.55	1,320		June 28, 1957	9.91	-	1,960
	June 15, 1944	6.52	1.44	1,100		July 25, 1957	8.83	-	1,610
1945	Dec. 1, 1944	7.33	1.55	1,400	1958	Oct. 17, 1957	7.95	-	1,520
	Mar. 21, 1945	8.11	2.34	-		Nov. 27, 1957	9.78	2.66	1,280
	Mar. 27, 1945	7.91	-	2,540		Dec. 19, 1957	7.27	1.78	810
						Apr. 1, 1958	6.67	-	1,330
1946	Oct.9-11,1945	6.35	-	802		July 5, 1958	5.85	-	881
	Mar. 30, 1946	7.67	-	2,310					
	May 22 to June 4, 1946	5.22	-	1,020	1959	Mar. 31, 1959	5.44	2.67	-
						Apr. 3, 1959	5.42	2.16	326
1947	Nov. 15, 1946	5.09	-	670	1960	Apr. 6, 1960	7.45	3.10	530
	Dec. 22, 1946	5.29	1.59	520					
	Apr. 16, 1947	8.38	2.82	-	1961	Mar. 25, 1961	4.49	2.56	-
	Apr. 22, 1947	7.40	-	2,240		Apr. 20, 1961	2.92	-	282

a Occurred Oct. 13, 14, Oct. 31 to Nov. 7, 1947.
b Occurred Dec. 27, 1949, to Jan. 13, 1950.

760. Thief River near Thief River Falls, Minn.

Location.--Lat 48°11', long 96°10', in sec.3, T.154 N., R.43 W., on right bank a quarter of a mile upstream from highway bridge, 5 miles north of city of Thief River Falls, 7 miles upstream from mouth, and 9 miles downstream from Mud Lake National Wildlife Refuge.

Drainage area.--959 sq mi.

Gage.--Nonrecording prior to May 4, 1939; recording thereafter. Datum of gage is 1,112.33 ft above mean sea level datum of 1929 (levels by Minnesota Highway Department).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Some regulation by Thief and Mud Lakes. Base for partial-duration series, 250 cfs. Only annual peaks are shown prior to 1940.

Peak stages and discharges of Thief River near Thief River Falls, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1909	July 19, 1909	10.60	-	1,970
1910	Apr.3-6, 1910	9.05	-	1,440
1911	Apr. 26, 1911	5.4	-	127
1912	Sept.30, 1912	5.6	-	164
1913	Apr. 7, 1913	14.0	4.5	1,530
1914	June 11, 1914	7.42	-	795
1915	June 30, 1915	10.66	-	1,920
1916	Apr. 23, 1916	14.5	-	4,080
1917	Apr. 11, 1917	12.72	1.02	2,600
1919	July 10, 1919	16.3	-	5,040
1920	Apr. 3, 1920	14.2	6.0	-
	Apr. 8, 1920	-	-	1,780
1921	Apr. 5, 1921	9.9	1.0	-
	Apr. 6, 1921	-	-	1,700
1922	May 12, 1922	11.9	-	2,680
1923	Apr. 21, 1923	8.4	-	1,160
1924	Apr. 21, 1924	5.30	-	145
1925	June 11, 1925	9.1	-	1,420
1926	Mar. 26, 1926	11.8	4.0	-
	June 25, 1926	-	-	1,660
1929	Mar. 18, 1929	13.7	3.5	1,870
1930	Apr. 6, 1930	9.7	2.5	-
	May 12, 1930	-	-	776
1931	Mar. 24, 1931	4.9	.3	-
	Apr. 15, 1931	-	-	39
1932	Apr. 8, 1932	9.25	.33	1,340
1933	Apr. 18, 1933	6.35	-	470
1934	Apr. 7, 1934	5.72	.5	-
	Apr. 7, 1934	-	-	150
1935	Mar. 28, 1935	6.84	1.00	-
	Apr. 13, 1935	-	-	318
1936	Apr. 15, 1936	8.14	1.00	-
	Apr. 19, 1936	-	-	890
1937	Aug. 3, 1937	9.75	-	1,160
1938	Mar. 21, 1938	9.10	1.95	-
	May 19, 1938	-	-	1,130
1939	Apr. 27, 1939	4.82	-	35
1940	Apr. 14, 1940	8.34	1.03	-
	Apr. 15, 1940	7.85	-	728
1941	Apr. 10, 1941	7.70	.68	570
	May 1, 1941	6.24	-	351
	May 7, 1941	6.14	-	323
	June 12, 1941	7.82	-	822
	July 9, 1941	6.19	-	337
1942	Oct. 11, 1941	6.41	-	396
	Mar. 26, 1942	12.62	5.80	-
	Apr. 6, 1942	9.51	.10	1,380
	May 2, 1942	9.69	-	1,480
1943	Apr. 7, 1943	10.62	3.12	-
	Apr. 8, 1943	9.43	1.07	1,060
	Apr. 15, 1943	8.04	-	934
	May 8, 1943	6.13	-	350
	July 18, 1943	6.47	-	450
1944	Apr. 14, 1944	6.85	.80	253
	June 6, 1944	7.15	-	666
	July 2, 1944	7.15	-	666
	Aug. 10, 1944	6.44	-	450
	Sept. 7, 1944	6.18	-	366
1945	Nov. 29, 1945	8.77	-	1,160
	Mar. 21, 1945	10.7	3.5	-
	Mar. 27, 1945	9.14	-	1,260
	Apr. 11, 1945	10.24	-	1,650
1946	Mar. 23, 1946	9.78	3.1	-
	Apr. 6, 1946	8.77	-	1,170
	May 7, 1946	6.62	-	480
1947	Apr. 28, 1947	6.05	-	316
	May 9, 1947	7.25	-	675
	June 11, 1947	9.84	-	1,560
1948	Nov. 27, 1947	6.26	-	378
	Apr. 15, 1948	11.94	2.64	-
	Apr. 19, 1948	10.67	-	1,850
	July 5, 1948	5.92	-	313
1949	Apr. 12, 1949	7.85	-	866
	May 11, 1949	6.16	-	368
	June 1, 1949	10.00	-	1,620
	July 24, 1949	6.28	-	410
	Aug. 5, 1949	7.42	-	741
	Aug. 21, 1949	7.88	-	898
1950	May 13, 1950	17.38	-	5,610
	June 26, 1950	9.34	-	1,390
1951	Apr. 11, 1951	8.59	-	1,160
	May 2, 1951	9.61	-	1,630
1952	Apr. 8, 1952	10.72	1.24	1,500
	July 6, 1952	6.05	-	336
1953	June 2, 1953	6.37	-	429
1954	Apr. 12, 1954	7.61	.59	624
	May 7, 1954	6.41	-	441
	May 30, 1954	6.42	-	444
1955	Apr. 8, 1955	10.72	2.67	958
	June 4, 1955	7.59	-	803
1956	Apr. 21, 1956	10.57	-	1,840
	May 12, 1956	9.35	-	1,410
	July 9, 1956	8.28	-	1,050
	Sept. 1, 1956	8.54	-	1,130
1957	Nov. 7, 1956	5.86	-	285
	Nov. 25, 1956	5.85	-	307
	Dec. 4, 1956	7.07	.3	550
	Mar. 27, 1957	8.83	1.2	810
	Apr. 24, 1957	8.93	-	1,280
	June 27, 1957	9.73	-	1,550
	July 14, 1957	7.65	-	822
	Sept. 3, 1957	9.97	-	1,630
1958	Oct. 17, 1957	7.67	-	828
	Nov. 9, 1957	10.03	3.56	460
	July 15, 1958	7.42	-	748
1959	Apr. 4, 1959	9.22	1.64	-
	Apr. 5, 1959	8.48	.45	950
	Apr. 18, 1959	6.63	-	522
	May 28, 1959	6.37	-	429
1960	Apr. 6, 1960	12.11	3.65	1,100
	June 27, 1960	5.73	-	257
	July 2, 1960	5.91	-	307
1961	Mar. 24, 1961	7.49	1.08	441

765. Red Lake River at Thief River Falls, Minn.

Location.--Lat 48°06'40", long 96°10'50", in sec.33, T.154 N., R.43 W., at Thief River Falls, a third of a mile downstream from Thief River Falls dam and 1 mile downstream from Thief River.

Drainage area.--3,450 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 1,093.6 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 24, 1910	8.7	-	3,220	1920	Apr. 16, 1920	-	-	3,700
1911	June 9, 1911	10.0	-	4,550	1921	Apr. 8, 1921	8.8	-	3,300
1912	Sept.24, 1912	6.3	-	1,080	1922	Apr. 13, 1922	9.7	-	4,200
1913	Apr. 6, 1913	10.9	(a)	-	1923	Apr. 21, 1923	9.8	-	4,300
	Apr. 7, 1913	-	-	3,820	1924	Apr. 20, 1924	5.7	-	895
1914	June 11, 1914	6.3	-	1,230	1925	June 9, 1925	9.0	-	3,500
1915	June 29, 1915	8.4	-	2,880					
					1926	June 22, 1926	8.1	-	2,640
1916	Apr. 16, 1916	15.0	2.0	8,000	1927	Apr. 12, 1927	11.4	-	6,080
1917	Apr. 10, 1917	10.7	-	5,270	1928	Apr. 6, 1928	8.1	0.9	2,640
1918	Mar. 26, 1918	5.9	-	995	1929	Mar. 18, 1929	11.8	2.1	4,200
1919	July 4, 1919	12.7	-	7,600	1930	May 13, 1930	7.45	-	2,020
1920	Apr. 1, 1920	9.4	1.0	-					

a Ice effect greater than 1.6 ft.

770. Clearwater River near Pinewood, Minn.

Location.--Lat 47°39', long 95°09', in sec.8, T.148 N., R.35 W., 3½ miles northeast of Pinewood.

Drainage area.--132 sq mi.

Gage.--Nonrecording. Datum of gage is 1,322.59 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Apr. 13, 1940	4.29	300	1943	Apr. 7, 1943	4.82	386
				1944	Mar. 25, 1944	a4.40	-
1941	Apr. 13, 1941	3.86	233		June 8, 1944	-	158
1942	Mar. 31, 1942	4.00	256	1945	Mar.27,28, 1945	4.67	368

a Backwater from ice, 2.72 ft.

775. Clearwater River near Leonard, Minn.

Location.--Lat 47°44', long 95°13', in E½SW¼ sec.12, T.149 N., R.36 W., 300 ft downstream from dam at outlet of Clearwater Lake and 8 miles northeast of Leonard.

Drainage area.--153 sq mi.

Gage.--Nonrecording. Datum of gage is 1,261.80 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--19.0 ft.

Remarks.--Flow regulated by Clearwater Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	May 15, 1935	1.49	100	1942	Apr. 1, 1942	2.04	198
				1943	Apr. 8, 1943	2.57	-
1936	Apr. 19, 1936	2.06	275		Apr.7-10,1943	-	382
1937	Sept. 3, 1937	1.96	236	1944	June 8-10,1944	1.84	174
1938	May 11, 1938	2.43	347	1945	Mar.26-28,1945	2.70	435
1939	Apr. 5, 1939	1.56	115				
1940	Apr. 16, 1940	2.22	266	1946	Mar. 25, 1946	2.77	399
				1947	Apr. 21, 1947	3.19	655
1941	Apr. 15, 1941	2.06	237				

780. Clearwater River at Plummer, Minn.

Location.--Lat 47°55', long 96°03', in SE¼SW¼ sec.4, T.151 N., R.42 W., on right bank 200 ft downstream from Soo Line Railroad bridge, 300 ft downstream from bridge on U.S. Highway 59, 0.9 mile northwest of railroad depot in Plummer, and 8 miles upstream from Hill River.

Drainage area.--512 sq mi.

Gage.--Nonrecording prior to Nov. 10, 1939; recording thereafter. Datum of gage is 1,099.12 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1940.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Apr. 21, 1939	4.82	0.28	-	1946	Mar. 23, 1946	8.09	0.69	1,030
	Apr. 27, 1939	-	-	380		Apr. 7, 1946	6.74	-	852
1940	Apr. 15, 1940	8.51	2.38	-	1947	Apr. 15, 1947	7.93	.52	1,030
	Apr. 16, 1940	6.98	-	840		Apr. 26, 1947	7.46	-	1,180
	May 1, 1940	5.35	-	520		June 5, 1947	7.02	-	1,040
						June 11, 1947	8.34	-	1,420
1941	Apr. 15, 1941	5.84	-	637		July 17, 1947	5.14	-	510
	June 8, 1941	6.57	-	756					
					1948	Apr. 7, 1948	7.52	2.24	-
1942	Mar. 26, 1942	8.15	3.60	-		Apr. 25, 1948	6.80	-	929
	Apr. 3, 1942	6.12	-	722					
	May 2, 1942	5.92	-	672	1949	Apr. 14, 1949	5.14	-	512
						June 1, 1949	9.08	-	1,870
1943	Apr. 7, 1943	8.01	1.97	-		July 6, 1949	5.12	-	537
	Apr. 20-22, May 1, 1943	6.43	-	800		Aug. 19, 1949	5.12	-	537
	June 5, 1943	6.48	-	748	1950	Apr. 23, 1950	8.52	-	1,560
						May 6, 1950	11.33	-	3,630
1944	Aug. 10, 1944	8.12	-	1,160		May 20, 1950	9.90	-	2,440
						July 16, 1950	5.53	-	618
1945	Mar. 21, 1945	7.61	2.38	-					
	Mar. 28, 1945	6.76	-	952	1951	Apr. 8, 1951	8.04	2.84	-

Peak stages and discharges of Clearwater River at Plummer, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1951	Apr. 10, 1951	5.95	-	722	1956	Apr. 21, 1956	9.58	-	2,240
	May 3, 1951	7.22	-	1,110		May 12, 1956	6.72	-	1,000
						Aug. 31, 1956	5.29	-	601
1952	Apr. 15, 1952	8.10	-	1,440					
	July 3, 1952	5.70	-	689	1957	Apr. 21, 1957	10.05	-	2,550
	July 13, 1952	5.18	-	549		June 16, 1957	5.57	-	621
	July 21, 1952	7.13	-	1,090		June 27, 1957	11.84	-	3,570
1953	Mar. 23, 1953	6.85	2.25	-	1958	July 6, 1958	6.08	-	822
	July 5, 1953	6.23	-	834					
					1959	Apr. 6, 1959	6.37	0.72	702
1954	Apr. 11, 1954	8.62	.60	-					
	Apr. 13, 1954	8.52	-	1,640	1960	Apr. 7, 1960	8.18	2.50	710
	May 7, 1954	5.05	-	515		Apr. 13, 1960	5.08	-	510
1955	Apr. 6, 1955	9.64	.81	1,800	1961	Apr. 25, 1961	4.88	-	461
1956	Apr. 20, 1956	10.10	1.55	-					

785. Clearwater River at Red Lake Falls, Minn.

Location.--Lat 47°53'15", long 96°16'25", in NW¼NE¼ sec.22, T.151 N., R.44 W., on left bank 40 ft downstream from Great Northern Railroad bridge in Red Lake Falls, 1.4 miles upstream from mouth, and 3 miles downstream from Badger Creek.

Drainage area.--1,370 sq mi, approximately.

Gage.--Nonrecording prior to September 1917; recording thereafter. Prior to Sept. 12, 1911, at site half a mile upstream and Sept. 12, 1911, to Sept. 30, 1917, at site 40 ft upstream at different datum. Datum of present gage is 949.49 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The stage of the flood of July 3, 1919, was determined as 9.7 ft by E. F. Chandler (discharge 6,700 cfs, basis of determination not known).

Remarks.--Some diurnal fluctuations at low flow caused by mill 600 ft upstream. Slight regulation by Clearwater Lake and several smaller lakes. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 22, 1910	9.50	-	1,960	1940	Apr. 15, 1940	-	-	3,100
1911	June 9, 1911	7.92	-	793	1941	Apr. 9, 1941	8.22	3.75	-
1912	Apr. 7, 1912	8.7	(a)	-		June 8, 1941	-	-	3,290
	Sept.28-30,1912	-	-	1,110	1942	Mar. 27, 1942	10.04	3.99	2,200
1913	Apr. 5, 1913	17.5	12.5	-	1943	Apr. 4, 1943	9.96	4.44	-
	Apr. 8, 1913	-	-	3,320		Apr. 7, 1943	-	-	2,780
1914	June 12, 1914	4.7	-	1,340	1944	Aug. 10, 1944	7.42	-	3,210
1915	June 29, 1915	6.91	-	3,320	1945	Mar. 21, 1945	8.73	2.93	-
						Mar. 27, 1945	-	-	2,680
1916	Apr. 12, 1916	9.0	2.88	-					
	Apr. 15, 1916	-	-	3,990	1946	Mar. 21, 1946	11.59	5.2	-
1917	Apr. 9, 1917	7.9	3.7	-		Mar. 22, 1946	-	-	3,380
	Apr. 11, 1917	-	-	1,250	1947	Apr. 13, 1947	10.27	3.64	-
						Apr. 15, 1947	-	-	5,430
1935	Mar. 27, 1935	5.02	1.22	696	1948	Apr. 6, 1948	10.97	4.77	-
						Apr. 7, 1948	-	-	3,000
1936	Apr. 17, 1936	-	-	1,260	1949	June 2, 1949	7.30	-	3,360
	Apr. 18, 1936	8.50	3.84	-	1950	May 6, 1950	11.28	-	9,310
1937	Feb. 26, 1937	4.46	2.16	-					
	May 1, 1937	-	-	1,010	1951	Apr. 6, 1951	9.39	1.81	-
1938	May 14, 1938	5.95	-	2,220		Apr. 10, 1951	-	-	2,880
1939	Apr. 20, 1939	3.80	-	830	1952	Apr. 12, 1952	8.75	3.74	-
1940	Apr. 15, 1940	11.43	4.49	-		Apr. 16, 1952	-	-	2,550

a Backwater greater than 4.3 ft.

Peak stages and discharges of Clearwater River at Red Lake Falls, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1953	Mar. 24, 1953	5.95	2.24	-	1956	Apr. 21, 1956	-	-	5,560
	July 5, 1953	-	-	1,120	1957	June 28, 1957	9.93	-	6,840
1954	Apr. 14, 1954	6.16	-	2,540	1958	July 7, 1958	4.65	-	1,320
1955	Apr. 4, 1955	9.96	5.78	-	1959	Apr. 4, 1959	6.30	0.90	1,960
	Apr. 8, 1955	-	-	3,660	1960	Apr. 6, 1960	8.47	1.10	4,010
1956	Apr. 18, 1956	11.04	4.49	-	1961	Apr. 26, 1961	3.97	-	884

790. Red Lake River at Crookston, Minn.

Location.--Lat 47°46'32", long 96°36'33", in SW¼SW¼ sec.30, T.150 N., R.46 W., on right bank at downstream side of highway bridge in Crookston, 0.3 mile downstream from Interstate Power Co.'s dam and 0.6 mile downstream from bridge on State Highway 81.

Drainage area.--5,280 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 26, 1911, and Oct. 1, 1919, to Sept. 30, 1930. Recording Sept. 26, 1911, to Sept. 30, 1919, and subsequent to Sept. 30, 1930. May 18, 1901, to June 30, 1909, at site 300 ft upstream at present datum. Datum of gage is 832.72 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 25,000 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1897	Apr. 11, 1897	a25.2	-	a18,900	1931	Mar. 26, 1931	4.93	0.1	1,030
					1932	Apr. 9, 1932	9.78	-	4,390
1902	May 21, 1902	10.00	-	5,170	1933	Apr. 2, 1933	5.92	.10	1,440
					1934	Apr. 8, 1934	6.89	-	1,490
1904	Apr. 24, 1904	20.42	-	13,700	1935	Mar. 27, 1935	8.36	.41	2,490
1905	May 13, 1905	14.5	-	8,730					
					1936	Apr. 18, 1936	11.33	.40	4,540
1906	Apr. 15, 1906	21.00	-	14,600	1937	Aug. 4, 1937	10.25	.33	3,750
1907	Apr. 4, 1907	12.04	-	6,330	1938	May 10, 1938	12.62	-	5,910
1908	Apr. 10, 1908	17.00	-	10,700	1939	Apr. 24, 1939	8.92	-	3,050
1909	July 21, 1909	8.77	-	3,680	1940	Apr. 16, 1940	14.73	2.11	6,000
1910	Mar. 20, 1910	14.2	0.3	7,920					
					1941	Apr. 10, 1941	15.96	3.7	-
1911	June 10, 1911	8.45	-	3,620		June 9, 1941	-	-	6,190
1912	Apr. 8, 1912	7.1	3.0	-	1942	Mar. 28, 1942	-	-	7,090
	Sept.29, 1912	-	-	2,120		Apr. 4, 1942	16.71	5.11	-
1913	Apr. 6, 1913	15.9	7.7	-	1943	Apr. 8, 1943	16.88	-	9,420
	Apr. 8, 1913	-	-	7,170	1944	Aug. 11, 1944	12.20	-	5,770
1914	Apr. 5, 1914	7.4	.4	-	1945	Mar. 28, 1945	15.96	-	9,130
	June 12, 1914	7.4	-	2,630					
1915	June 29, 1915	14.25	-	7,860	1946	Mar. 24, 1946	20.33	4.5	-
						Mar. 24, 1946	-	-	9,020
1916	Apr. 17, 1916	21.8	-	15,900	1947	June 12, 1947	18.08	-	12,400
1917	Apr. 8, 1917	12.3	1.6	-	1948	Apr. 8, 1948	18.08	3.38	-
	Apr. 11, 1917	-	-	5,480		Apr. 19, 1948	-	-	9,520
1918	Apr. 2, 1918	6.5	-	1,950	1949	June 2, 1949	17.43	-	10,700
1919	July 5, 1919	21.1	-	14,900	1950	May 7, 1950	25.70	-	27,400
1920	Mar. 25, 1920	23.3	7.0	9,520					
					1951	Apr. 7, 1951	19.00	-	12,600
1922	May 13, 1922	13.0	-	6,910	1952	Apr. 11, 1952	12.65	-	6,320
1923	Apr. 19, 1923	13.4	2.5	-	1953	Mar. 24, 1953	8.01	.49	2,560
	Apr. 20, 1923	-	-	5,820	1954	Apr. 12, 1954	11.37	-	5,330
1924	Apr. 23, 1924	5.2	-	1,140	1955	Apr. 8, 1955	18.30	-	12,400
1925	June 9, 1925	13.50	-	7,300					
					1956	Apr. 20, 1956	19.78	-	14,000
1926	Mar. 24, 1926	12.3	-	6,500	1957	June 29, 1957	18.10	-	11,800
1927	Apr. 13, 1927	14.0	-	7,700	1958	July 7, 1958	8.62	-	3,370
1928	Mar. 24, 1928	12.0	3.5	-	1959	Apr. 5, 1959	11.72	-	5,630
	Apr. 8, 1928	-	-	3,910	1960	Apr. 6, 1960	12.56	.96	5,520
1929	Mar. 19, 1929	14.9	1.0	7,620					
1930	May 13, 1930	10.3	-	4,770	1961	Mar. 27, 1961	5.67	-	1,450

a Reported by Prof. E. F. Chandler; computations are not available, and results are therefore considered no better than an estimate.

825. Red River of the North at Grand Forks, N. Dak.

Location.--Lat 47°56'26", long 97°02'47", in SE¼NE¼ sec.33, T.152 N., R.50 W., on left bank 500 ft downstream from dam at Riverside Park, in Grand Forks, 2 miles downstream from Red Lake River and at mile 296.0.

Drainage area.--30,100 sq mi, approximately, including 3,800 sq mi in closed basins.

Gage.--Nonrecording prior to Nov. 3, 1933; recording thereafter. 1882-1892, in general vicinity of site of Northern Pacific Railway bridge, 1½ miles upstream (history not available, datum apparently the same as following gage). From 1892 to Oct. 15, 1926, on Northern Pacific Railway bridge, at datum about 5½ ft higher than present datum, but published as referred to datum only half a foot higher than present datum. Oct. 16, 1926, to Nov. 2, 1933, in vicinity of present gage, at datum 5 ft higher than present datum but published at present datum. Datum of present gage is 778.35 ft above mean sea level, datum of 1929. Gage heights given herein adjusted to present site and datum.

Stage-discharge relation.--Defined by current-meter measurements below 54,000 cfs; subject to changes owing to changing slope, channel shifts, and ice effect. As a result, the maximum discharge is poorly defined for some years.

Bankfull stage.--28 ft.

Remarks.--Flow regulated by many lakes and reservoirs on tributaries. Base for partial-duration series, 4,500 cfs. Only annual peaks are shown prior to Oct. 1, 1933.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1882	Apr. 18, 1882	48.0	-	68,800	1920	Mar. 29, 1920	41.0	3.0	-
1883	Apr. 26, 1883	42.2	-	38,600		Mar. 31, 1920	-	-	30,300
1884	Apr. 16, 1884	31.1	-	20,600					
1885	Apr. 17, 1885	23.1	-	13,040	1921	Apr. 10, 1921	20.9	-	11,500
					1922	Apr. 11, 1922	28.72	-	19,000
1886	May 3, 1886	20.6	-	10,800	1923	Apr. 21, 1923	26.60	1.0	-
1887	Apr. 15, 1887	16.3	-	7,300		Apr. 22, 1923	-	-	16,200
1888	Apr. 19, 1888	29.5	-	19,000	1924	May 2, 1924	8.2	-	2,530
1889	Apr.1,2, 1889	12.0	1.5	3,000	1925	June 12, 1925	19.0	-	9,690
1890	Apr. 15, 1890	10.6	-	3,470					
					1926	Mar. 28, 1926	18.1	1.6	7,720
1891	Apr. 13, 1891	17.7	2.7	6,000	1927	Mar. 21, 1927	21.7	3.0	-
1892	Apr. 17, 1892	33.4	-	23,000		Apr. 13, 1927	-	-	10,600
1893	Apr. 24, 1893	45.5	-	53,300	1928	Apr. 2, 1928	21.8	-	12,200
1894	Apr. 24, 1894	26.9	-	16,450	1929	Mar. 23, 1929	28.3	1.5	-
1895	Apr. 6, 1895	9.9	2.9	2,000		Mar. 24, 1929	-	-	17,100
					1930	Apr. 7, 1930	18.9	-	9,610
1896	May 30, 1896	32.0	-	21,600					
1897	Apr. 10, 1897	50.2	-	80,000	1931	Apr. 10, 1931	6.48	-	1,630
1898	Apr. 14, 1898	15.0	3.0	4,500	1932	Apr. 10, 1932	22.07	2.25	10,400
1899	Apr. 17, 1899	20.9	3.0	9,000	1933	Apr. 3, 1933	15.18	3.77	4,380
1900	Apr. 10, 1900	13.2	2.0	4,000					
					1934	Apr. 12, 1934	10.02	-	3,210
1901	Apr. 7, 1901	26.3	2.3	14,000					
1902	Mar. 30, 1902	26.0	2.0	15,000	1935	Mar. 29, 1935	13.07	4.2	2,920
1903	Apr. 11, 1903	28.0	-	18,800					
1904	Apr. 27, 1904	40.65	-	33,000	1936	Apr. 18, 1936	a25.0	-	14,500
1905	May 16, 1905	26.11	-	16,800					
					1937	May 4, 1937	11.57	-	4,180
1906	Apr. 18, 1906	36.0	-	27,600					
1907	Apr. 7, 1907	39.95	-	30,400	1938	May 12, 1938	b15.49	-	6,660
1908	Apr. 11, 1908	32.8	-	20,500					
1909	July 30, 1909	18.8	-	9,260	1939	Apr. 6, 1939	20.13	4.5	6,720
1910	Mar. 22, 1910	30.7	-	18,500					
					1940	Apr. 18, 1940	21.8	1.9	10,000
1911	June 12, 1911	10.7	-	3,520					
1912	Apr. 8, 1912	12.73	-	4,730	1941	Apr. 12, 1941	27.86	-	13,400
1913	Apr. 8, 1913	26.7	-	17,200		June 15, 1941	19.90	-	8,700
1914	June 16, 1914	17.5	-	8,240					
1915	July 3, 1915	30.8	-	21,500	1942	Apr. 5, 1942	24.10	-	11,000
						May 5, 1942	b21.31	-	10,800
1916	Apr. 17, 1916	41.0	6.0	-		June 15, 1942	13.41	-	5,540
	Apr. 23, 1916	-	-	29,000		Sept. 4, 1942	11.90	-	4,740
1917	Apr. 8, 1917	33.9	3.0	21,600					
1918	Mar. 28, 1918	11.3	-	4,480	1943	Apr. 12, 1943	38.16	-	28,200
1919	July 8, 1919	23.2	-	13,600		June 10, 1943	25.09	-	14,100

a Occurred at different time than peak discharge.
b Occurred on following day.

Peak stages and discharges of Red River of the North at Grand Forks, N. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	Apr. 16, 1944	18.60	3.4	-	1952	July 23, 1952	18.62	-	9,360
	Apr. 17, 1944	18.40	2.8	7,070					
	June 12, 1944	17.65	-	8,670	1953	Apr. 2, 1953	14.03	-	6,070
	July 15, 1944	18.91	-	9,680		June 6, 1953	17.97	-	9,150
	Aug. 13, 1944	19.79	-	10,400		June 25, 1953	24.63	-	14,600
	Sept. 6, 1944	14.87	-	6,520					
					1954	Apr. 15, 1954	18.63	-	9,620
1945	Mar. 29, 1945	b32.00	-	21,300		June 17, 1954	11.90	-	4,740
1946	Mar. 27, 1946	b33.23	-	22,000	1955	Apr. 10, 1955	26.17	-	15,400
1947	Apr. 21, 1947	b40.71	-	35,000	1956	Apr. 23, 1956	32.43	-	21,400
	June 15, 1947	b29.00	-	19,000		May 14, 1956	17.53	-	8,050
	July 20, 1947	13.30	-	5,570		June 9, 1956	13.48	-	5,540
1948	Apr. 16, 1948	41.68	-	34,200	1957	Apr. 1, 1957	13.45	0.1	5,350
						Apr. 26, 1957	20.30	-	10,800
1949	Apr. 10, 1949	a29.11	-	15,200		July 2, 1957	24.67	-	14,700
	June 4, 1949	b24.01	-	13,500		Sept. 6, 1957	18.04	-	8,830
	July 15, 1949	13.63	-	5,630					
					1958	July 9, 1958	16.03	-	7,500
1950	Apr. 25, 1950	43.97	-	43,800					
	May 12, 1950	45.61	-	54,000	1959	Apr. 6, 1959	-	-	6,300
	July 1, 1950	23.08	-	13,500		Apr. 7, 1959	16.10	.2	-
1951	Apr. 12, 1951	33.52	-	23,600	1960	Apr. 12, 1960	28.88	-	17,200
						Apr. 30, 1960	13.97	-	5,830
1952	Apr. 20, 1952	c33.60	-	23,900					
	July 7, 1952	18.57	-	9,330	1961	Mar. 28, 1961	9.75	-	3,400

a Occurred at different time than peak discharge.
b Occurred on following day.
c Occurred on Apr. 21, 1952.

826. English Coulee tributary near Grand Forks, N. Dak.

Location.--Lat 47°55'05", long 97°10'40", in SE¼SE¼ sec.4, T.151 N., R.51 W., at bridge on county highway at Powell, 7 miles west of Grand Forks.

Drainage area.--4.68 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 1, 1955	a4.92	75	1959	Mar. 25, 1959	a4.81	32
				1960	Apr. 1, 1960	a4.17	45
1956	Apr. 16, 1956	a5.68	100				
1957	Sept. 1, 1957	4.52	80	1961	Mar. 10, 1961	a4.07	1
1958	July 1958	1.45	.3				

a Affected by backwater.

826.8. Saltwater Coulee tributary near Emerado, N. Dak.

Location.--Lat 47°53'00", long 97°21'55" at west line sec.19, T.151 N., R.52 W., at bridge on county highway, 2½ miles south of Emerado.

Drainage area.--22.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Saltwater Coulee tributary near Emerado, N. Dak.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	March-April 1955	a4.93	50	1958	March 1958	a2.47	10
				1959	Mar. 25, 1959	a1.96	5
				1960	Apr. 5, 1960	2.18	145
1956	Apr. 14, 1956	a4.84	60				
1957	Sept. 1, 1957	a3.65	50	1961	Mar. 19, 1961	a1.10	.4

a Affected by backwater.

827. Saltwater Coulee near Emerado, N. Dak.

Location.--Lat 47°55'55", long 97°15'40", in NW¼NW¼ sec.1, T.151 N., R.52 W., at bridge on county highway, 0.1 mile south of U.S. Highway 2, and 5¼ miles east of Emerado.

Drainage area.--110 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	March-April 1955	a6.34	250	1958	July 1958	a1.66	10
				1959	Mar. 28, 1959	2.85	50
				1960	Apr. 5, 1960	4.94	215
1956	Apr. 15, 1956	6.73	310				
1957	Sept. 1, 1957	a5.52	200	1961	Mar.19-22,1961	a1.99	12

a Affected by backwater.

829. Freshwater Coulee near Emerado, N. Dak.

Location.--Lat 47°56'00", long 97°14'00", in SW¼ sec.31, T.152 N., R.51 W., at bridge on U.S. Highway 2, 6½ miles east of Emerado.

Drainage area.--31.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 190 cfs and extended to 375 cfs by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr.3-5, 1955	4.19	220	1959	Mar. 26, 1959	a3.68	140
				1960	April 1960	3.60	245
1956	Apr. 1, 1956	a5.28	100				
1957	Sept. 1, 1957	5.00	375	1961	Mar. 19, 1961	a2.37	15
1958	July 1958	1.84	18				

a Affected by backwater.

830. Turtle River at Manvel, N. Dak.

Location.--Lat 48°05', long 97°11', in SE¼ sec.10, T.153 N., R.51 W., on downstream side of bridge on State Highway 33, 0.3 mile west of Manvel and 10 miles upstream from mouth.

Drainage area.--613 sq mi.

Gage.--Nonrecording prior to June 29, 1959; recording thereafter. Datum of gage is 799.28 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,300 cfs and extended to 28,000 cfs on basis of contracted-opening measurement; subject to changes owing to channel changes and ice effect.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1955.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Mar. 23, 1946	14.38	3.11	700	1955	June 8, 1955	8.90	-	370
1947	Mar. 28, 1947	13.52	5.42	-					
	Apr. 13, 1947	-	-	431	1956	Apr. 20, 1956	16.20	0.87	1,500
1948	Apr. 19, 1948	17.88	-	7,130					
1949	Apr. 9, 1949	16.35	1.4	-	1957	Mar. 25, 1957	9.00	1.2	270
	Apr. 10, 1949	-	-	1,600		Sept. 5, 1957	13.15	-	900
1950	Apr. 19, 1950	21.5	-	28,000					
					1958	Oct. 9, 1957	6.04	-	135
1951	Apr. 2, 1951	14.80	4.7	-					
	Apr. 6, 1951	-	-	940	1959	Mar. 29, 1959	13.51	5.5	-
1952	Apr. 5, 1952	14.39	5.0	-		Mar. 30, 1959	13.31	4.5	370
	Apr. 7, 1952	-	-	600					
1953	June 22, 1953	7.48	-	219	1960	Apr. 2, 1960	13.90	2.4	-
1954	Mar. 9, 1954	9.84	6.7	-		Apr. 7, 1960	13.90	-	1,080
	Apr. 11, 1954	-	-	100					
					1961	Mar. 14, 1961	10.46	6.5	-
1955	Apr. 5, 1955	16.27	1.0	1,460		Mar. 24, 1961	9.53	4.73	110

835. Red River of the North at Oslo, Minn.

Location.--Lat 48°11'40", long 97°08'30", in sec.6, T.154 N., R.50 W., near center of span on downstream side of interstate highway bridge in Oslo, at mile 271.2.

Drainage area.--31,200 sq mi, approximately (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording. Prior to Apr. 2, 1948, at bridge 200 ft upstream and Apr. 3, 1948, to Sept. 8, 1959, at bridge 620 ft downstream, both at datum 5.00 ft higher. Datum of gage is 772.65 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 53,000 cfs; subject to changes owing to changing slope, channel shifts, and ice effect.

Bankfull stage.--26 ft.

Remarks.--Flow regulated by many lakes and reservoirs on tributaries. For stages above 13 ft, discharge includes flow in bypass channel 1½ miles west of Oslo. Only annual peaks are shown.

Peak stages and discharges of Red River of the North at Oslo, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Apr. 18, 1936	a18.18	15,000	1951	Apr. 12, 1951	d25.59	24,800
1937	May 4, 1937	6.47	4,070	1952	Apr.20-22,1952	e25.47	24,800
				1953	June 25, 1953	17.55	14,900
1942	Apr. 4, 1942	-	12,500	1954	Apr. 15, 1954	12.39	9,790
	Apr. 7, 1942	20.11	-	1955	Apr. 10, 1955	b19.75	16,400
1943	Apr. 13, 1943	29.16	31,500				
				1956	Apr. 24, 1956	25.50	22,500
1945	Mar. 26, 1945	-	24,000	1957	July 2, 1957	17.42	14,900
				1958	July 10, 1958	10.29	7,890
1946	Mar. 30, 1946	25.11	-	1959	Apr. 3, 1959	f11.42	-
1947	Apr. 22, 1947	a30.30	33,800		Apr. 7, 1959	g10.78	7,200
1948	Apr. 17, 1948	b31.17	41,400	1960	Apr. 12, 1960	h28.50	17,100
1949	Apr. 10, 1949	c24.08	18,700				
1950	May 10, 1950	31.83	63,000				

a Occurred on following day. b Occurred two days earlier. c Occurred at different time than peak discharge. d Occurred two days later. e Occurred on Apr. 23, 1952. f Backwater from ice, 3.3 ft. g Backwater from ice, 1.3 ft. h Occurred on preceding day.

840. Forest River near Fordville, N. Dak.

Location.--Lat 48°12', long 97°44', on line between secs. 32 and 33, T.155 N., R.55 W., on right bank 50 ft upstream from highway bridge, half a mile downstream from South Branch, and 3 miles southeast of Fordville.

Drainage area.--456 sq mi, of which 120 sq mi is probably noncontributing.

Gage.--Nonrecording prior to July 21, 1951; recording thereafter. Altitude of gage is 1,040 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 5,600 cfs and extended to 16,400 cfs on basis of contracted-opening and slope-area measurements at 15,300 and at 15,600 cfs; subject to changes owing to channel shifting and ice effect.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to Oct. 1, 1951.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Apr. 17, 1940	3.60	0.84	130	1954	June 15, 1954	4.29	-	1,020
						Aug. 21, 1954	2.41	-	240
1941	Apr. 8, 1941	8.03	.29	2,250					
1942	Apr. 4, 1942	9.73	-	3,650	1955	Mar. 31, 1955	8.46	0.93	3,000
1943	June 9,July 13, 1943	a7.28	-	1,620	1956	Apr. 15, 1956	5.40	.66	1,200
1944	Apr. 5, 1944	5.89	2.07	400		Apr. 21, 1956	6.30	-	2,070
1945	Mar. 14, 1945	7.70	5.0	-		June 6, 1956	8.14	-	3,370
	Mar. 27, 1945	-	-	243		July 19, 1956	3.12	-	444
1946	Mar. 20, 1946	6.14	.84	950	1957	Mar. 22, 1957	4.23	.65	-
1947	Mar. 23, 1947	7.40	2.75	700		Mar. 22, 1957	3.53	-	356
1948	Apr. 18, 1948	14.15	-	14,600					
1949	Apr. 7, 1949	5.64	-	1,470	1958	July 4, 1958	1.87	-	17
1950	Apr. 18, 1950	14.48	-	16,400					
					1959	Mar. 30, 1959	3.28	-	-
1951	Mar. 28, 1951	5.5	3.0	-		Apr. 4, 1959	2.91	-	321
	Mar. 29, 1951	-	-	b500					
					1960	Apr. 7, 1960	7.55	-	2,810
1952	Apr. 1, 1952	5.82	2.36	b600					
	July 1, 1952	3.94	-	825	1961	Mar. 19, 1961	2.69	.68	b65
1953	May 30, 1953	2.04	-	130					

a Occurred on Mar. 24, 1943.
b About.

845. Forest River near Minto, N. Dak.

Location.--Lat 48°16'00", long 97°24'10", on line between secs. 1 and 12, T.155 N., R.53 W., 2.5 miles southwest of Minto.

Drainage area.--604 sq mi, approximately, of which 120 sq mi is probably noncontributing.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs; subject to changes owing to channel shifting and ice effect.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1932	Apr. 9, 1932	11.4	4.2	-	1938	Mar. 16, 1938	4.96	-	166
	Apr. 10, 1932	-	-	400	1939	Mar. 28, 1939	9.44	-	-
1933	Apr. 2, 1933	12.95	3.28	700	1940	Apr. 17, 1940	6.00	0.49	244
1935	Mar. 28, 1935	8.99	1.35	442	1941	Apr. 9, 1941	13.97	-	1,430
					1942	Apr. 5, 1942	14.87	-	1,610
1936	Apr. 15, 1936	11.88	3.11	576					
1937	Apr. 13, 1937	4.08	-	112	1944	Apr. 10, 1944	12.93	5.22	450

850. Forest River at Minto, N. Dak.

Location.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., on right bank 30 ft upstream from dam in Minto, 150 ft above Great Northern Railway bridge, and 2 blocks east of U.S. Highway 81.

Drainage area.--740 sq mi, of which 120 sq mi is probably noncontributing.

Gage.--Nonrecording prior to July 15, 1954, at site 400 ft upstream; recording thereafter. Datum of gage is 806.95 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,300 cfs and extended to 11,500 cfs on basis of contracted-opening measurement, prior to April 1950; defined by current-meter measurements below 6,700 cfs and extended to 16,600 cfs on basis of contracted-opening measurements thereafter; subject to changes owing to ice effect.

Bankfull stage.--7 ft.

Remarks.--During periods of extremely high water some of the flow goes overland and there is a mingling of water from the various basins in the area. Figures listed herein are flow past the gage only. Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1955.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1882	April 1882	-	-	a2,200	1954	June 16, 1954	2.61	-	391
1897	April 1897	-	-	a1,850	1955	Apr. 2, 1955	8.56	0.6	c4,200
						June 5, 1955	3.04	-	651
1907	April 1907	-	-	a1,750	1956	Apr. 18, 1956	7.49	1.7	-
1916	April 1916	-	-	a1,600		Apr. 21, 1956	6.63	-	2,930
						June 8, 1956	5.27	-	2,020
1944	Apr. 12, 1944	5.0	2.0	650					
1345	Mar. 27, 1945	2.11	-	250	1957	Mar. 23, 1957	2.72	-	461
						Sept. 2, 1957	2.45	-	328
1946	Mar. 22, 1946	-	-	b1,000					
1947	Mar. 25, 1947	4.12	.28	1,100	1958	June 10, 1958	2.72	-	463
1948	Apr. 19, 1948	11.80	-	11,500					
1949	Apr. 7, 1949	8.19	1.55	2,020	1959	Apr. 2, 1959	2.45	-	338
1950	Apr. 18, 1950	11.80	-	16,600		Apr. 7, 1959	2.48	.10	-
1951	Apr. 1, 1951	5.1	1.8	-					
	Apr. 5, 1951	-		900	1960	Apr. 6, 1960	5.60	.28	2,050
1952	Apr. 2, 1952	2.78	.24	370					
1953	June 4, 1953	3.53	-	910	1961	Mar. 22, 1961	1.90	-	147

a Determined by Corps of Engineers. b Maximum daily. c About.

875. Middle River at Argyle, Minn.

Location.--Lat 48°20'27", long 96°49'02", in SE¼SW¼ sec.10, T.156 N., R.48 W., on left bank 20 ft upstream from bridge on U.S. Highway 75 in Argyle and 14 miles upstream from mouth.

Drainage area.--265 sq mi.

Gage.--Nonrecording at datum 1.0 ft higher prior to Sept. 19, 1952; recording thereafter. Datum of gage is 828.53 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,100 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Mar. 30, 1945	10.80	-	939	1956	July 11, 1956	13.18	-	1,390
					1957	Sept. 7, 1957	10.73	-	734
1951	Apr. 9, 1951	11.75	-	1,220	1958	July 9, 1958	11.38	-	846
1952	Apr. 11, 1952	8.89	-	612	1959	Apr. 3, 1959	11.58	2.50	-
1953	Mar. 27, 1953	7.41	3.92	-		Apr. 5, 1959	11.23	1.66	570
	Mar. 31, 1953	-	-	112	1960	Apr. 10, 1960	12.60	.96	903
1954	Apr. 13, 1954	5.86	1.49	-					
	June 18, 1954	-	-	128	1961	Mar. 27, 1961	6.77	2.24	135
1955	June 9, 1955	9.87	-	527					

880. South Branch Park River near Park River, N. Dak.

Location.--Lat 48°24'50", long 97°51'40", on line between secs. 15 and 16, T.157 N., R.56 W., at bridge on State Highway 32, half a mile upstream from small tributary and 4½ miles northwest of town of Park River.

Drainage area.--214 sq mi, approximately.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements below 3,900 cfs and extended on basis of contracted-opening measurements at 5,100 and 6,600 cfs and a partial current-meter measurement at 5,600 cfs; subject to changes owing to channel shifting, ice effect, and beaver activity.

Bankfull stage.--7 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Apr. 19, 1940	3.16	-	171	1946	Mar. 22, 1946	5.66	1.26	400
					1947	July 25, 1947	4.30	-	518
1941	Apr. 10, 1941	8.85	-	3,340	1948	Apr. 18, 1948	11.80	-	11,000
1942	Apr. 3, 1942	8.30	1.0	-	1949	Apr. 9, 1949	5.93	-	1,200
	Apr. 4, 1942	-	-	1,880	1950	Apr. 19, 1950	10.1	-	5,970
1943	Mar. 24, 1943	7.60	2.24	900					
1945	Mar. 14, 1945	6.60	1.36	800					

890. South Branch Park River below Homme Dam, N. Dak.

Location.--Lat 48°24', long 97°47', in SE¼ sec.19, T.157 N., R.55 W., on right bank half a mile downstream from Homme Dam and 2 miles west of town of Park River.

Drainage area.--226 sq mi.

Gage.--Recording. Datum of gage is 1,000.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,500 cfs; subject to changes owing to ice effect and channel shifting.

Bankfull stage.--35 ft.

Remarks.--Floodflow normally not materially affected by Homme Reservoir (usable capacity, 3,550 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	Apr. 24, 1950	37.52	-	a13,000	1957	Mar. 23, 1957	25.54	-	324
					1958	Feb. 5, 1958	24.08	0.85	-
1951	Apr. 4, 1951	28.42	1.2	900		Mar. 21, 1958	-	-	58
1952	Sept.10, 1952	24.75	-	106	1959	Apr. 3, 1959	25.48	-	368
1953	Jan. 16, 1953	24.30	1.0	-	1960	Apr. 12, 1960	29.43	-	2,580
	Aug. 28, 1953	-	-	17					
1954	June 14, 1954	25.73	-	386	1961	Jan. 5, 1961	24.05	1.1	-
1955	Apr. 1, 1955	28.50	-	1,600		Apr. 26, 1961	-	-	86
1956	Apr. 25, 1956	29.16	-	2,000					

a Result of failure of emergency embankment at site of Homme Dam.

892. North Branch Park River at Gardar, N. Dak.

Location.--Lat 48°35'30", long 97°52'50", at west line sec.16, T.159 N., R.56 W., at bridge on county highway at northwest corner of Gardar.

Drainage area.--35.7 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 500 cfs and extended to 1,600 cfs on basis of logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	April 1955	a5.52	680	1959	Apr. 4, 1959	a4.36	500
				1960	Apr. 15, 1960	a4.37	600
1956	Apr. 24, 1956	a5.86	1,600				
1957	Mar.21-25, 1957	a2.90	60	1961	Mar. 24, 1961	.62	1.0
1958	Mar. 21, 1958	a2.36	1				

a Affected by backwater.

895. Cart Creek at Mountain, N. Dak.

Location.--Lat 48°41', long 97°51', in SW¼ sec.15, T.160 N., R.56 W., on right bank 50 ft downstream from bridge on State Highway 32, and 0.7 mile south of Mountain.

Drainage area.--16.9 sq mi.

Gage.--Recording. Altitude of gage is 1,020 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--6.5 ft.

Remarks.--Base for partial-duration series, 30 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	June 20, 1954	3.14	-	39	1957	Mar. 20, 1957	4.89	1.3	120
	June 21, 1954	3.63	-	64		Sept. 2, 1957	3.83	-	146
1955	Apr. 1, 1955	6.88	-	392	1958	July 4, 1958	2.43	-	27
	Apr. 7, 1955	3.23	-	46					
	Apr. 18, 1955	2.91	-	32	1959	Apr. 2, 1959	5.63	.9	160
	Apr. 20, 1955	2.96	-	34					
					1960	Apr. 11, 1960	7.42	-	570
1956	Apr. 14, 1956	6.38	2.32	100					
	Apr. 26, 1956	5.96	-	340	1961	Mar. 14, 1961	3.33	1.7	-
	Aug. 31, 1956	2.36	-	31		Mar. 21, 1961	3.28	.36	30

897. Cart Creek at Crystal, N. Dak.

Location.--Lat 48°35'20", long 97°39'55", at east line sec.13, T.159 N., R.55 W., at bridge on county highway, 0.6 mile south of postoffice at Crystal.

Drainage area.--74.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs and extended to 2,700 cfs on basis of logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 2, 1955	a9.15	880	1959	Apr. 4, 1959	6.48	345
				1960	Apr. 7, 1960	8.67	900
1956	Apr. 19, 1956	10.40	2,700				
1957	Mar.21-25,1957	3.87	92	1961	Mar.20-25,1961	a2.10	1
1958	April 1958	a1.90	10				

a Affected by backwater.

898. Cart Creek tributary near Crystal, N. Dak.

Location.--Lat 48°34'35", long 97°41'15", at east line sec.23, T.159 N., R.55 W., at culvert on county highway, 1.6 miles southwest of Crystal.

Drainage area.--3.77 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 100 cfs and extended to 187 cfs on basis of culvert measurement.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Cart Creek tributary near Crystal, N. Dak.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 30, 1955	a3.51	40	1959	Mar. 31, 1959	3.18	28
				1960	Apr.8-11,1960	5.72	95
1956	Apr. 19, 1956	6.86	187				
1957	Mar. 20, 1957	a3.27	22	1961	March 1961	b2.96	3
1958	(a)	-	0				

a No flow during year.
b Affected by backwater.

900. Park River at Grafton, N. Dak.

Location.--Lat 48°25', long 97°24', in NE¼ sec.13, T.157 N., R.53 W., on right bank 30 ft upstream from Wakeman Avenue Bridge in Grafton and 3.5 miles downstream from South Branch.

Drainage area.--695 sq mi.

Gage.--Nonrecording April 1931 to July 25, 1952; recording thereafter. Oct. 1, 1940, to Sept. 17, 1946, at site 2 miles downstream, above masonry dam, at same datum. Datum of gage is 807.39 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 11,600 cfs prior to 1950; defined by current-meter measurements below 8,300 cfs thereafter; subject to changes owing to channel and control changes and ice effect.

Bankfull stage.--16 ft.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to Oct. 1, 1952.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1882	-	a16	-	-	1949	Apr. 9, 1949	17.25	0.94	-
					1950	Apr. 19, 1950	20.13	-	12,600
1897	Apr. 15, 1897	b18.14	-	b3,480					
					1951	Apr. 6, 1951	13.34	-	1,640
1916	April 1916	b17.64	-	b3,140	1952	Apr. 5, 1952	6.66	1.36	180
1932	Apr. 9, 1932	11.05	3.06	-	1953	June 5, 1953	5.45	-	125
	Apr. 10, 1932	-	-	750					
1933	Apr. 2, 1933	15.2	-	2,200	1954	June 16, 1954	7.24	-	478
1934	Apr. 9, 1934	6.61	.71	393					
1935	Mar. 28, 1935	8.34	2.04	443	1955	Apr. 3, 1955	16.84	2.44	2,100
						Apr. 23, 1955	7.16	-	273
1936	Apr. 14, 1936	13.68	2.58	1,200		June 5, 1955	-	-	453
1937	Apr. 10, 1937	8.2	1.5	380					
					1956	Apr. 22, 1956	-	-	a c4,200
1939	Mar. 30, 1939	7.68	2.62	150		Apr. 23, 1956	16.74	-	-
1940	Apr. 17, 1940	6.25	.80	-		June 7, 1956	9.42	-	935
	Apr. 20, 1940	-	-	210					
					1957	Sept. 3, 1957	10.96	-	1,300
1941	Apr. 13, 1941	13.04	-	1,830					
1942	Apr. 6, 1942	15.46	-	4,310	1958	Dec. 30, 1957	6.03	.65	-
1943	Mar. 28, 1943	13.15	2.15	1,430		Apr. 7, 1958	5.70	-	41
1944	Apr. 11, 1944	6.20	2.00	-					
	Apr. 12, 1944	-	-	563	1959	Apr. 6, 1959	12.29	-	1,200
1945	Mar. 16, 1945	10.88	1.50	1,180					
					1960	Apr. 7, 1960	16.55	2.4	-
1946	Mar. 22, 1946	11.45	1.80	-		Apr. 15, 1960	15.4	-	2,770
	Mar. 23, 1946	-	-	1,490					
1947	Apr. 4, 1947	9.70	2.00	520	1961	Mar. 17, 1961	8.10	.8	-
1948	Apr. 19, 1948	20.06	-	11,700		Apr. 27, 1961	7.51	-	40

a About.
b Determined by Corps of Engineers.
c Includes flow that bypasses gage during high flows.

920. Red River of the North at Drayton, N. Dak.

Location.--Lat 48°34'20", long 97°08'50", on line between secs. 24 and 25, T.159 N., R.51 W., on downstream end of the east pier of the interstate highway bridge, 1½ miles northeast of Drayton, and at mile 207.

Drainage area.--34,800 sq mi, approximately (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording prior to Nov. 30, 1954; recording thereafter. Prior to Nov. 30, 1954, at site 1½ miles upstream at datum 1.59 ft higher. Datum of present gage is 755.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to changing slope, channel shifts, and ice effect.

Bankfull stage.--28 ft.

Historical data.--The flood of May 12, 1950, is maximum known since 1860.

Remarks.--Flow regulated by many lakes and reservoirs on tributaries. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1897	April 1897	41	-	1951	Apr. 15, 1951	b30.25	24,600
				1952	Apr. 25, 1952	g28.83	23,900
1936	Apr. 19, 1936	a24.26	16,600	1953	June 26, 1953	a20.17	14,700
1937	May 5, 1937	a10.26	4,530	1954	Apr. 15, 1954	16.38	11,100
				1955	Apr. 9, 1955	h27.42	-
1941	Apr. 15, 1941	32.0	22,800		Apr. 11, 1955	-	18,000
1942	Apr. 7, 1942	b31.56	21,900				
1943	Apr. 17, 1943	c33.66	28,700	1956	Apr. 27, 1956	35.16	28,000
1944	Apr. 18, 1944	21.05	12,300	1957	July 4, 1957	22.33	14,100
1945	Apr. 2, 1945	d31.70	24,600	1958	July 12, 1958	14.53	7,850
				1959	Apr. 8, 1959	23.78	11,200
1946	Mar. 30, 1946	e29.71	23,000	1960	Apr. 14, 1960	33.71	24,700
1947	Apr. 28, 1947	a33.12	29,300				
1948	Apr. 21, 1948	a40.05	57,000	1961	Mar. 31, 1961	j12.98	3,600
1949	Apr. 12, 1949	f31.65	27,900				
1950	May 12, 1950	41.58	86,500				

a Occurred on following day. b Occurred two days later. c Occurred Apr. 17-19, 1943. d Occurred at different time than peak discharge. e Occurred on Apr. 1, 2, 1946. f Occurred three days later. g Occurred Apr. 26, 1952. h Backwater from ice, about 2 ft. j Backwater from ice, 4.33 ft.

925. Two Rivers near Hallock, Minn.
(Published as Middle Fork Two Rivers)

Location.--Lat 48°45'56", long 96°53'12", in SE¼ sec.17, T.161 N., R.48 W., 2½ miles east of Hallock and 3 miles upstream from South Branch.

Drainage area.--131 sq mi.

Gage.--Nonrecording. Altitude of gage is 810 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 170 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1932	Apr. 6, 1932	5.76	1.0	-	1935	Apr. 9, 1935	-	-	6.7
	Apr. 19, 1932	-	-	265					
1933	Mar. 30, 1933	6.06	3.75	-	1936	Apr. 14, 1936	3.88	0.50	93
	Apr. 1, 1933	-	-	67	1937	May 1, 1937	4.70	-	177
1934	Apr. 8, 1934	1.70	-	12	1938	Mar. 18, 1938	3.08	1.54	-
1935	Apr. 5, 1935	1.54	.10	-		Apr. 29, 1938	-	-	6.5

930. South Branch Two Rivers at Pelan, Minn.

Location.--Lat 48°38'45", long 96°23'15", in NW¼ sec.31, T.160 N., R.44 W., on left bank 40 ft downstream from bridge on State Highway 11 and a quarter of a mile west of Pelan.

Drainage area.--281 sq mi.

Gage.--Nonrecording prior to Sept. 30, 1938; recording thereafter. Prior to Mar. 24, 1936, at site 500 ft upstream at present datum. Datum of gage is 1,028.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Mar. 21, 1929	6.40	-	718	1936	Apr. 20, 1936	3.25	-	178
1930	May 13, 1930	10.18	-	1,810	1937	May 3, 1937	5.00	-	506
					1938	May 13, 1938	4.04	-	285
1931	Mar. 25, 1931	3.42	1.49	-					
	Apr. 7, 1931	-	-	77	1954	Apr. 10, 1954	3.77	0.56	-
1932	Apr. 9, 1932	8.02	.2	1,140		June 18, 1954	-	-	266
1933	Apr. 1, 1933	5.10	2.0	-	1955	June 7, 1955	8.07	-	1,040
	Apr. 3, 1933	-	-	242					
1934	Apr. 8,9, 1934	2.44	.25	46	1956	July 10, 1956	10.90	-	2,040
1935	Mar. 29, 1935	5.24	1.49	242					

940. South Branch Two Rivers at Lake Bronson, Minr.
(Published as South Fork Two Rivers at Bronson prior tc 1941)

Location.--Lat 48°43'50", long 96°39'50", in SW¼SW¼ sec.30, T.161 N., R.46 W., on left bank 100 ft upstream from bridge on U.S. Highway 59 at town of Lake Bronson, and 2 miles downstream from dam at outlet of Bronson Lake.

Drainage area.--444 sq mi.

Gage.--Nonrecording at site 100 ft downstream at present datum prior to Nov. 23, 1953; recording thereafter. Datum of gage is 930.46 ft above mean sea level, adjustment of 1928 (levels by Geodetic Survey of Canada).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow partly regulated since 1937 by Bronson Lake (usable capacity, 3,700 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Mar. 20, 1929	7.0	0.6	940	1944	June 12, 1944	5.46	-	820
1930	May 15, 1930	8.90	-	1,820	1945	Apr. 16, 1945	4.96	-	670
1931	Apr. 9, 1931	4.00	-	300	1946	Mar. 26, 1946	5.03	-	668
1932	Apr. 10, 1932	9.96	2.68	-	1947	June 17, 1947	7.07	-	1,290
	Apr. 11, 1932	-	-	1,310					
1933	Apr. 4, 1933	5.58	1.10	415	1954	June 16, 1954	5.03	-	567
1934	Apr. 10, 1934	3.00	.50	64	1955	June 9, 1955	6.33	-	1,020
1935	Apr. 1, 1935	a5.43	1.7	-					
	Apr. 13, 1935	-	-	565	1956	Apr. 24, 1956	10.79	-	2,650
					1957	July 8, 1957	8.52	-	1,810
1936	Apr. 19, 1936	4.64	.44	358	1958	Sept.23, 1958	4.29	-	355
1937	May 4, 1937	5.02	-	594	1959	Apr. 8, 1959	6.60	-	1,110
					1960	Apr. 6, 1960	8.06	3.16	-
1941	Apr. 11, 1941	8.09	-	1,580		Apr. 11, 1960	-	-	1,270
1942	Apr. 1, 1942	10.05	-	2,210					
1943	Apr.11,12, 1943	6.31	-	1,050	1961	Mar. 26, 1961	4.86	-	451

a First day of record; may not be maximum gage height for year.

950. Two Rivers at Hallock, Minn.
(Published as South Fork Two Rivers)

Location.--Lat 48°46'30", long 96°55'52", in SE¼SE¼ sec.12, T.161 N., R.49 W., at county highway bridge at east edge of Hallock and a quarter of a mile downstream from South Branch.

Drainage area.--625 sq mi.

Gage.--Nonrecording. Prior to Sept. 30, 1914, at site three-quarters of a mile downstream at different datum. Apr. 27, 1929, to Sept. 30, 1930, at present site at different datum. Altitude of gage is 793 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,600 cfs and extended above.

Remarks.--Flow partly regulated since 1937 by Bronson Lake (usable capacity, 3,700 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	Apr. 8, 1912	3.65	124	1941	Apr. 14, 1941	15.50	1,380
1913	Apr. 11, 1913	15.8	1,320	1942	Apr. 2, 1942	18.96	3,380
1914	Apr. 6, 1914	a8.25	-	1943	Apr. 8, 1943	14.99	1,330
	Apr. 24, 1914	-	378				
1930	May 16, 1930	17.52	1,860				

a Backwater from ice, 3.8 ft.

955. Two Rivers below Hallock, Minn.

Location.--Lat 48°46'50", long 97°02'25", in NE¼SE¼ sec.7, T.161 N., R.49 W., at highway bridge, 4 miles west of Hallock and 5 miles upstream from North Branch.

Drainage area.--644 sq mi.

Gage.--Nonrecording. Altitude of gage is 780 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs and extended above. Subject to backwater from Red River of the North.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Mar. 28, 1945	-	-	856	1951	Apr. 17, 1951	15.64	-	1,350
	Apr. 2, 1945	13.60	(a)	-	1952	Apr. 14, 1952	10.24	(a)	392
					1953	June 8, 1953	5.42	-	146
1946	Mar. 26, 1946	11.07	-	670	1954	Apr. 14, 1954	11.30	2.75	-
	Mar. 31, 1946	11.47	1.67	-		June 19, 1954	-	-	553
1947	June 19, 1947	14.74	-	1,280	1955	Apr. 5, 1955	14.01	3.09	-
1948	Apr. 26, 1948	22.84	4.34	2,270		June 13, 1955	12.97	-	902
1949	Apr. 15, 1949	14.47	-	1,040					
1950	May 13, 1950	25.78	(a)	3,690					

a Backwater from Red River of the North.

960. North Branch Two Rivers near Lancaster, Minn.

Location.--Lat 48°53'21", long 96°40'01", in NE¼ sec.1, T.162 N., R.47 W., on downstream side of highway bridge half a mile upstream from State ditch 85 and 7 miles northeast of Lancaster.

Drainage area.--32 sq mi.

Gage.--Nonrecording. Datum of gage is 963.69 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 740 cfs and extended above.

Remarks.--During periods of high flow some water has entered this stream from Roseau River basin. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1930	May 12, 1930	3.1	-	226	1944	June 6, 1944	3.52	-	203
					1945	Mar. 27, 1945	2.88	-	124
1931	Apr. 8, 1931	1.90	0.3	38					
1932	Apr. 15, 1932	1.90	-	59	1946	Mar. 20, 1946	2.38	0.28	56
1933	May 26, 1933	2.68	-	126	1947	June 11, 1947	3.40	-	217
1934	Apr. 9, 1934	1.06	-	15	1948	Apr. 18, 1948	3.68	-	281
1935	Apr. 15, 1935	-	-	12	1949	Apr. 8, 1949	2.64	1.12	-
						Apr. 13, 1949	-	-	50
1936	Apr. 14, 1936	1.20	-	7.5	1950	May 20, 1950	6.25	-	912
1937	Apr. 30, 1937	3.80	-	277					
1938	June 2-5,1938	1.20	-	7.7	1951	Apr. 30, 1951	2.91	-	173
					1952	Apr. 8, 1952	-	-	21
1941	Sept.25, 1941	4.06	-	290		Apr. 9, 1952	1.42	.31	-
1942	Mar. 26, 1942	4.69	1.46	-	1953	June 29, 1953	.75	-	3.6
	Apr. 4, 1942	-	-	253	1954	June 15, 1954	1.97	-	50
1943	Apr. 5, 1943	3.50	-	175	1955	Apr. 22, 1955	2.92	-	151

965. State ditch 85 near Lancaster, Minn.

Location.--Lat 48°52'02", long 96°40'01", in southwest corner of sec.6, T.162 N., R.46 W., on left bank at upstream side of highway bridge, 1 mile upstream from North Branch Two Rivers, and 7 miles northeast of Lancaster.

Drainage area.--95 sq mi.

Gage.--Nonrecording. Datum of gage is 969.28 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 880 cfs and extended above.

Remarks.--During periods of high flow some water enters ditch from Roseau River basin and some water is diverted from ditch above station to Two Rivers. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Apr. 8, 1929	3.28	-	102	1942	Apr. 5, 1942	-	-	298
1930	Apr. 8, 1930	4.34	1.52	-	1943	June 6, 1943	4.47	-	190
	May 19, 1930	-	-	160	1944	June 6, 1944	4.48	-	190
					1945	May 3-5, 1945	4.50	-	180
1931	Apr. 2, 1931	4.62	3.41	-					
	Apr. 9, 1931	-	-	99	1946	Mar. 22, 1946	4.00	0.30	113
1932	Apr. 18, 1932	4.90	-	202	1947	June 12-14,1947	4.74	-	218
1933	Apr. 1, 1933	4.14	3.9	-	1948	May 1-3, 1948	5.26	-	288
	Apr. 18, 1933	-	-	112	1949	Apr. 13, 1949	4.12	-	136
1934	Apr. 12, 1934	1.14	-	11	1950	May 20, 1950	5.90	-	1,480
1935	Apr. 12, 1935	2.50	1.3	-					
	Apr. 22, 1935	-	-	47	1951	Apr. 30, 1951	4.90	-	250
					1952	Apr. 7, 1952	2.28	.62	-
1936	Apr. 14, 1936	2.84	2.74	-		Apr. 8, 1952	-	-	57
	Apr. 25, 1936	-	-	22	1953	June 7, 1953	2.28	-	56
1937	May 1, 1937	-	-	a180	1954	June 17, 1954	3.70	-	124
1938	June 3, 1938	-	-	60	1955	Apr. 24, 1955	4.76	-	211
1942	Mar. 29, 1942	6.30	1.46	-					

a Daily mean discharge; estimated.

970. North Branch Two Rivers at Lancaster, Minn.

Location.--Lat 48°51'36", long 96°49'03", in NW¼ sec.13, T.162 N., R.47 W., at bridge on U.S. Highway 59, a quarter of a mile west of Lancaster, and 7½ miles downstream from State ditch 85.

Drainage area.--209 sq mi.

Gage.--Nonrecording. Datum of gage is 865.32 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--During periods of high flow some water enters this stream from the Roseau River basin. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Sept.26, 1941	7.03	548	1955	Apr. 22, 1955	5.67	524
1942	Mar. 26, 1942	a8.94	-				
	Apr. 6, 1942	-	691	1956	Apr. 21, 1956	7.44	1,000
1954	June 16, 1954	4.12	233				

a Backwater from ice, 2.84 ft.

975. North Branch Two Rivers near Northcote, Minn.

Location.--Lat 48°49'06", long 97°03'11", in NE¼NW¼ sec.31, T.162 N., R.49 W., near left bank at downstream side of highway bridge, 3 miles southwest of Northcote, and 3.8 miles upstream from mouth.

Drainage area.--386 sq mi.

Gage.--Nonrecording. Datum of gage is 769.03 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,500 cfs and extended above. Subject to backwater from Red River of the North.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1941	Apr. 8, 1941	-	-	723	1947	Apr. 5, 1947	11.56	c10.62	-
	Apr. 16, 1941	12.60	(a)	-		June 13-16, 1947	(b)	-	500
1942	Apr. 2, 1942	14.71	-	-	1948	Apr. 26, 1948	b23.52	-	850
	Apr. 2, 1942	-	1.67	1,700	1949	Apr. 15, 1949	(b)	-	645
					1950	May 13, 1950	b26.54	-	-
1945	Mar. 28, 1945	-	-	600		May 13-17, 1950	(b)	-	2,600
	Apr. 2, 1945	b13.51	-	-					
					1951	Apr. 18, 1951	11.29	-	-
1946	Mar. 22, 1946	11.00	2.81	-		Apr. 19, 1951	11.28	-	1,130
	Mar. 25, 1946	-	-	471					

a Backwater from Red River of the North, greater than 11.1 ft.
b Affected by backwater from Red River of the North.
c Backwater from Red River of the North.

990. Pembina River near Manitou, Manitoba

Location.--Lat 49°08'50", long 98°33'40", in NE¼ sec.23, T.2, R.9 W., on bridge near Lea's farm, 7 miles south of Manitou.

Drainage area.--2,300 sq mi.

Gage.--Nonrecording. Prior to Apr. 1, 1956, at datum 89.07 ft lower. Datum of gage is 1,245.0 ft above mean sea level, datum of 1929, by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements below 4,300 cfs and extended above by logarithmic plotting.

Bankfull stage.--10 ft.

Remarks.--Records furnished by Water Resources Branch, Department of Northern Affairs and National Resources, Canada. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	July 4, 1921	-	755	1941	Apr. 11, 1941	99.25	1,950
1922	Apr. 4, 1922	-	683	1942	Apr. 4, 1942	99.82	2,010
1923	Apr. 19, 1923	-	2,420	1943	Apr. 6, 1943	95.73	500
				1944	July 20-22, 1944	98.21	1,220
1925	Mar. 26, 1925	-	870	1945	Mar. 27, 1945	99.05	1,770
1927	Apr. 13, 1927	-	899	1946	Mar. 21, 1946	98.29	1,000
1928	Mar. 24, 1928	-	578	1947	Apr. 4, 1947	95.55	516
1929	Apr. 18, 1929	-	185	1948	Apr. 21, 1948	98.18	1,190
1930	Apr. 6, 1930	97.84	1,010	1949	Apr. 17, 1949	101.68	5,030
				1950	Apr. 17, 1950	100.46	2,660
1931	Apr. 6, 1931	93.39	285				
1932	Apr. 8, 1932	96.76	650	1951	Apr. 5, 1951	95.95	a642
1933	May 25, 1933	-	884	1952	Apr. 1, 1952	95.89	556
1934	Apr. 7, 1934	94.85	395	1953	June 5, 1953	93.45	286
1935	Apr. 13, 1935	-	170	1954	July 1, 1954	97.40	955
				1955	Apr. 3, 1955	99.79	1,660
1936	Apr. 14, 1936	-	900				
1937	Apr. 14, 1937	-	120	1956	May 1, 1956	10.44	2,480
1938	Mar. 22, 1938	-	223	1957	Mar. 23, 1957	6.60	450
1939	Apr. 15, 1939	90.07	21.5				
1940	Apr. 20, 1940	92.35	150				

a Maximum daily discharge.

994. Little Pembina River near Walhalla, N. Dak.

Location.--Lat 48°52', long 98°01', in SW¼ sec.10, T.162 N., R.57 W., on right bank 25 ft upstream from county bridge, 3½ miles above mouth, and 6 miles southwest of Walhalla.

Drainage area.--182 sq mi, of which 10 sq mi is noncontributing.

Gage.--Nonrecording prior to Sept. 10, 1956; recording thereafter. Datum of gage is 1,099.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 75 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 21, 1956	10.15	-	2,800	1958	July 5, 1958	6.75	-	20
	Apr. 25, 1956	9.53	-	2,040					
	June 7, 1956	6.45	-	87	1959	Apr. 2, 1959	9.92	2.5	-
						Apr. 3, 1959	9.38	-	996
1957	Mar. 22, 1957	7.92	0.4	370					
	Aug. 1, 1957	7.73	-	447	1960	Apr. 11, 1960	13.28	-	4,160
	Sept. 2, 1957	7.12	-	78					
					1961	Mar. 25, 1961	7.46	.06	300
1958	Feb. 6, 1958	7.73	2.6	-		May 31, 1961	7.35	-	283

995. Pembina River near Walhalla, N. Dak.

Location.--Lat 48°53'32", long 97°59'09", in SE¼SW¼ sec.35, T.163 N., R.57 W., on left bank 1½ miles downstream from Little Pembina River, and 3½ miles southwest of Walhalla.

Drainage area.--3,330 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 10, 1943; recording thereafter. Altitude of gage is 970 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs and extended to 20,400 cfs on basis of contracted-opening measurement; subject to change owing to ice effect and channel shifting.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 400 cfs. Only annual peaks are shown prior to Oct. 1, 1943.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Apr. 19, 1940	5.52	0.59	1,000	1951	Mar. 29, 1951	7.25	3.00	-
						Apr. 5, 1951	8.22	-	2,310
1942	Apr. 5, 1942	12.45	.5	5,000					
1943	Apr. 4, 1943	6.21	1.2	-	1952	Mar. 31, 1952	7.28	2.57	700
	June 3, 1943	-	-	1,420					
					1953	June 3, 1953	4.48	-	642
1944	Apr. 11, 1944	6.88	1.88	950		Aug. 1, 1953	4.10	-	500
	May 25, 1944	4.32	-	685					
	June 19, 1944	3.58	-	401	1954	Apr. 10, 1954	3.97	.3	-
	Aug. 4, 1944	6.28	-	1,470		June 8, 1954	4.82	-	746
	Sept. 1, 1944	4.92	-	919		June 11, 1954	3.88	-	402
						June 16, 1954	5.27	-	1,080
1945	Nov. 14, 1944	5.62	-	1,200		July 6, 1954	5.45	-	1,160
	Mar. 13, 1945	8.2	2.58	1,200		Aug. 18, 1954	4.54	-	733
	Mar. 26, 1945	9.20	-	3,020					
					1955	Feb. 18, 1955	3.90	1.64	-
1946	Mar. 19, 1946	9.24	.22	2,900		Apr. 2, 1955	11.33	1.8	-
						Apr. 2, 1955	10.75	1.0	3,400
1947	Apr. 3, 1947	5.83	-	1,280		June 4, 1955	7.41	-	2,060
	Apr. 10, 1947	5.61	-	1,190		July 6, 1955	6.01	-	1,340
	June 26, 1947	3.59	-	405					
	Aug. 17, 1947	5.57	-	1,170	1956	Apr. 25, 1956	12.89	-	5,990
						May 8, 1956	9.92	-	3,770
1948	Apr. 19, 1948	14.94	-	7,280					
	Apr. 25, 1948	8.50	-	2,590	1957	Mar. 23, 1957	6.22	1.8	725
	May 15, 1948	5.34	-	1,090		Aug. 1, 1957	3.76	-	453
	July 3, 1948	4.24	-	654					
	July 22, 1948	3.71	-	454	1958	Apr. 6, 1958	6.52	2.6	a500
1949	Apr. 12, 1949	10.82	-	4,040	1959	Mar. 30, 1959	8.20	2.5	-
	Apr. 19, 1949	13.18	-	5,840		Apr. 3, 1959	7.90	.6	a2,000
	May 30, 1949	5.73	-	1,180		June 10, 1959	4.50	-	700
1950	Apr. 18, 1950	19.2	-	20,400	1960	Apr. 12, 1960	12.50	-	5,690
	May 9, 1950	17.23	-	11,000					
	July 15, 1950	6.78	-	1,550	1961	Mar. 31, 1961	4.45	1.2	-
	July 31, 1950	4.56	-	619		Apr. 9, 1961	3.46	-	334
1951	Mar. 29, 1951	6.90	1.94	800					

a About.

1000. Pembina River at Neche, N. Dak.
(International gaging station)

Location.--Lat 48°59'20", long 97°33'05", in SE¼NW¼ sec.31, T.164 N., R.53 W., on right bank 2 blocks east of State Highway 18, at north edge of Neche.

Drainage area.--3,410 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 18, 1939; recording thereafter. Prior to May 25, 1932, at Great Northern Railway bridge 1 mile upstream at same datum. May 25, 1932, to Apr. 17, 1939, at bridge on State Highway 18, 500 ft downstream from railway bridge at same datum. Altitude of gage is 805 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 5,300 cfs; subject to changes owing to channel shifting, control deterioration and repair, and ice effect. The rating is not defined above 800 cfs between 1914 and 1935.

Bankfull stage.--18 ft.

Remarks.--At extremely high discharges, overbank flow upstream from Neche bypasses gage, some returning to Pembina River via Louden Coulee and Tongue River and some going to Red River via Plum Creek. This station is one of the international gaging stations maintained by the United States under agreement with Canada. Base for partial-duration series, 400 cfs. Only annual peaks are shown prior to Oct. 1, 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1904	May 2, 1904	20.9	-	4,300	1941	Apr. 14, 1941	18.23	-	2,830
1905	Apr. 5, 1905	9.8	-	1,372		Sept. 5, 1941	7.34	-	494
1906	Apr. 4, 1906	9.0	2.0	800	1942	Mar. 26, 1942	9.10	1.55	600
1907	May 14, 1907	13.6	-	2,190		Apr. 7, 1942	19.96	-	3,550
1908	Apr. 10, 1908	7.7	-	927		Apr. 16, 1942	18.74	-	3,060
1910	Mar. 15, 1910	6.5	-	685	1943	Mar. 27, 1943	12.82	2.07	1,400
						Apr. 6, 1943	9.56	1.25	890
1911	Mar. 23, 1911	8.9	2.2	900		June 5, 1943	8.94	-	1,030
1912	July 29, 1912	8.5	-	1,000		July 14, 1943	8.12	-	826
1913	Apr. 7, 1913	21.5	-	3,870					
1914	Apr. 4, 1914	6.0	1.2	-	1944	Apr. 12, 1944	8.74	.71	800
	Apr. 18, 1914	-	-	388		Apr. 13, 1944	9.27	2.00	-
1915	Apr. 7, 1915	6.2	1.3	180		Aug. 6, 1944	-	-	1,200
1919	Apr. 8, 1919	18.3	6.0	-	1945	Nov. 16, 1944	7.92	-	754
	Apr. 15, 1919	-	-	2,430		Mar. 16, 1945	12.5	1.75	1,400
1920	Apr. 19, 1920	7.1	1.4	361		Mar. 29, 1945	16.54	-	2,440
1921	Apr. 13, 1921	7.4	-	733	1946	Mar. 24, 1946	16.27	1.66	2,070
1922	Apr. 5, 1922	11.4	2.5	-					
	Apr. 7, 1922	-	-	1,300	1947	Apr. 5, 1947	11.06	1.56	1,200
1923	Apr. 20, 1923	17.8	-	3,120		Apr. 11, 1947	10.19	-	1,320
1924	Apr. 20, 1924	6.7	-	674		Aug. 18, 1947	7.72	-	690
1925	Mar. 28, 1925	18.3	4.0	2,350					
					1948	Apr. 21, 1948	20.36	-	3,770
1926	Mar. 23, 1926	6.9	2.5	-		May 17, 1948	9.01	-	1,130
	July 6, 1926	-	-	318		July 5, 1948	7.41	-	530
1927	May 12, 1927	17.8	-	3,110		July 23, 1948	7.27	-	435
1928	Mar. 24, 1928	11.8	2.5	-					
	Mar. 25, 1928	-	-	1,270	1949	Apr. 22, 1949	20.83	-	5,010
1929	Mar. 21, 1929	9.0	2.0	750					
1930	Apr. 8, 1930	19.0	2.2	2,900	1950	Apr. 20, 1950	21.58	.05	10,700
						May 12, 1950	20.65	-	5,320
1931	Apr. 9, 1931	13.0	2.2	1,580		July 16, 1950	8.17	-	870
1932	Apr. 9, 1932	13.6	4.2	1,240		Aug. 3, 1950	7.59	-	612
1933	Apr. 2, 1933	12.16	2.65	-					
	May 26, 1933	-	-	1,180	1951	Apr. 7, 1951	14.95	.90	2,000
1934	Apr. 9, 1934	9.76	2.4	780					
1935	Mar. 28, 1935	6.11	1.2	-	1952	Apr. 2, 1952	8.65	1.5	-
	June 18, 1935	-	-	364		Apr. 3, 1952	8.18	.74	550
1936	Apr. 15, 1936	17.34	-	2,530	1953	June 10, Aug. 3, 1953	6.74	-	250
1937	Apr. 12, 1937	5.70	1.5	-					
	June 8, 1937	-	-	237					
1938	Mar. 20, 1938	8.11	-	730	1954	June 10, 1954	7.47	-	582
						June 17, 1954	7.77	-	770
1939	Apr. 4, 1939	6.30	.20	52		July 7, 1954	7.97	-	846
1940	Apr. 20, 1940	7.97	-	816		Aug. 18, 1954	7.29	-	530

Peak stages and discharges of Pembina River at Neche, N. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1955	Apr. 5, 1955	20.11	3.4	2,700	1958	Apr. 7, 1958	7.17	-	442
	June 6, 1955	10.23	-	1,400					
	July 8, 1955	8.00	-	890	1959	Apr. 5, 1959	14.40	2.0	1,800
						June 12, 1959	7.18	-	446
1956	Apr. 24, 1956	20.99	.6	-					
	Apr. 27, 1956	20.90	.28	5,200	1960	Apr. 14, 1960	21.00	.98	4,040
1957	Mar. 25, 1957	8.49	1.0	-	1961	Apr. 3, 1961	9.49	-	372
	Mar. 27, 1957	7.63	.04	661					

1005. Herzog Creek near Concrete, N. Dak.

Location.--Lat 48°45', long 97°54', in SW¼ sec.21, T.161 N., R.56 W., on right bank 1½ miles northeast of Concrete and 1½ miles upstream from mouth.

Drainage area.--18.9 sq mi.

Gage.--Recording. Datum of gage is 1,108.95 ft above mean sea level, datum of 1929, Emerson-Crookston supplementary adjustment of 1941 (levels by Soil Conservation Service).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--6 ft.

Remarks.--Floodflow affected by temporary retention in four retarding basins above station. The farthest downstream retarding basin, located 1 mile above station, is used to regulate summer flow. Base for partial-duration series, 75 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1955	Apr. 2, 1955	9.74	-	260	1958	July 4, 1958	5.53	a2.3	-
1956	Apr. 21, 1956	8.47	0.13	240	1959	Apr. 5, 1959	5.10	.9	-
	Apr. 25, 1956	8.38	-	243		Apr. 6, 1959	4.79	-	35
	May 9, 1956	6.23	-	104					
					1960	Apr. 13, 1960	6.66	-	100
1957	Mar. 21, 1957	7.54	1.62	90					
					1961	Apr. 1, 1961	3.12	-	2.0
1958	Mar. 26, 1958	5.22	1.6	20					

a Backwater from beaver dam.

1010. Tongue River at Akra, N. Dak.
(Published as "at Cavalier" prior to October 1951)

Location.--Lat 48°46'40", long 97°42'55", in SE¼ sec.11, T.161 N., R.55 W., on right bank 0.6 mile east of Akra, and 4.2 miles west of Cavalier.

Drainage area.--162 sq mi.

Gage.--Nonrecording prior to July 10, 1954; recording thereafter. Prior to July 20, 1946, at site 8½ miles downstream at State Highway 5 in Cavalier at datum 11.74 ft lower than next gage described. July 21, 1946, to 1949, at site 8 miles downstream at Great Northern Railway in Cavalier; datum of this gage is 880.98 ft above mean sea level, datum of 1929, Emerson-Crookston supplementary adjustment of 1941. From 1950 to July 9, 1954, at site 1½ miles upstream at datum 20.90 ft lower than present datum. Datum of present gage is 920.90 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Stage-discharge relation.--Defined by current-meter measurements below 580 cfs prior to 1947 and below 1,000 cfs 1947-49. Subsequent to 1949, defined by current-meter measurements below 1,500 cfs and extended to 11,800 cfs on basis of contracted-opening measurement at site in use from 1950 to July 9, 1954. Subject to changes at all sites owing to ice effect and channel shifting.

Bankfull stage.--14 ft, present site and datum.

Historical data.--Flood of Apr. 18, 1950, is the highest known since the settlement of the region (about 1860).

Remarks.--Discharges given herein adjusted to present site. Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1955.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Apr. 1, 1939	4.10	1.35	34	1954	Apr. 6, 1954	36.22	1.2	-
1940	Apr. 20, 1940	6.77	-	280		June 12, 1954	35.53	-	187
1941	Apr. 11, 1941	12.26	-	-	1955	Apr. 2, 1955	13.23	4.0	700
1942	Apr. 5, 1942	12.4	-	-		Apr. 19, 1955	5.16	-	222
	Apr. 14, 1942	a12.3	-	-		Apr. 21, 1955	5.35	-	240
1943	Mar. 26, 1943	11.11	2.8	-		July 7, 1955	7.16	-	426
	Mar. 27, 1943	-	-	490					
1944	Apr. 11, 1944	9.09	2.0	-	1956	Oct. 6, 1955	5.99	-	341
	Apr. 12, 1944	-	-	440		Apr. 19, 1956	14.23	1.0	1,350
1945	Mar. 15, 1945	12.05	1.8	-		Apr. 25, 1956	10.53	-	948
	Mar. 27, 1945	-	-	920					
					1957	Mar. 22, 1957	6.12	1.1	340
1946	Mar. 22, 1946	10.02	.16	690		Sept. 3, 1957	4.17	-	215
1948	Apr. 21, 1948	4.38	-	-	1958	Mar. 28, 1958	4.19	2.0	-
1949	Apr. 10, 1949	3.80	-	970		July 5, 1958	2.38	-	78
1950	Apr. 18, 1950	48.7	-	11,800					
					1959	Apr. 5, 1959	9.04	1.9	485
1951	(b)	-	-	410					
1952	Apr. 1, 1952	38.48	1.6	260	1960	Apr. 12, 1960	8.71	1.0	-
	Mar.24,25,28,29, 1953	36.53	(c)	-		Apr. 14, 1960	8.67	-	654
	May 31, 1953	-	-	178	1961	Mar. 27, 1961	4.56	2.1	60

a Stage at time of maximum discharge.
b About Apr. 5, 1951.
c Variable ice effect ranging from 4.2 to 3.8 ft.

1025. Red River of the North at Emerson, Manitoba (International gaging station)

Location.--Lat 49°00'30", long 97°13'00", in sec.2, T.1, R.2 E., on right bank, 1,500 ft downstream from Canadian National Railway bridge in Emerson, three-quarters of a mile downstream from international boundary, 3.6 miles downstream from Pembina River, and at mile 154.3.

Drainage area.--40,200 sq mi, approximately (includes 3,800 sq mi in closed basins).

Gage.--Nonrecording on Canadian National Railway bridge 1,500 ft upstream at different datums prior to Apr. 11, 1953; recording thereafter. Datum of present gage is at mean sea level, datum of 1929, by Geodetic Survey of Canada. Gage heights given herein converted to present datum.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting and ice effect. For some years the discharge has been computed using the rate of change of stage as a factor so that the peak discharge occurs before the peak gage height.

Remarks.--Most of the data listed herein except for the 1950 water year are either a maximum observed discharge and elevation or maximum daily discharge and elevation. However, the rises at this station have characteristically flat crests so that there is very little difference between the momentary maximum discharge and elevation and the listed discharge and elevation. This station is one of the international gaging stations maintained by Canada under agreement with the United States. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1861	-	a95	-	-	1934	Apr. 12, 1934	55.17	0.7	-
						Apr. 13, 1934	-	-	4,800
1882	-	90	-	-	1935	Apr. 3, 1935	59.65	3.8	5,470
1897	-	91	-	-	1936	Apr. 21, 1936	68.16	-	18,000
					1937	May 7, 1937	65.55	-	5,840
1913	Apr. 11, 1913	74.52	-	25,600	1938	Mar. 27, 1938	58.77	2.8	-
1914	June 19, 1914	58.36	-	7,260		May 20, 1938	-	-	7,530
1915	July 9, 1915	69.06	-	20,121	1939	Apr. 10, 1939	60.77	4.1	6,700
					1940	Apr. 21, 1940	66.84	.5	14,600
1916	Apr. 24, 1916	85.74	-	46,180					
1917	Apr. 11, 1917	75.33	2.3	-	1941	Apr. 16, 1941	76.94	-	27,800
	Apr. 12, 1917	-	-	25,900	1942	Apr. 10, 1942	78.77	-	27,900
1918	Mar. 31, 1918	58.17	5.3	-	1943	Apr. 20, 1943	77.54	-	29,500
	Apr. 3, 1918	-	-	4,990	1944	Apr. 19, 1944	66.82	-	12,300
1919	Apr. 9, 1919	67.38	3.5	-	1945	Apr. 1, 1945	78.52	2.0	-
	July 12, 1919	-	-	13,410		Apr. 4, 1945	-	-	29,400
1920	Apr. 8, 1920	78.62	5.5	-					
	Apr. 16, 1920	-	-	26,700	1946	Apr. 3, 1946	74.27	1.5	-
						Apr. 5, 1946	-	-	24,100
1921	Apr. 13, 1921	67.80	4.4	-	1947	Apr. 28, 1947	76.07	-	28,400
	Apr. 15, 1921	-	-	12,800	1948	Apr. 27, 1948	87.62		51,800
1922	Apr. 14, 1922	69.40	-	18,900	1949	Apr. 15, 1949	77.13	-	29,200
1923	Apr. 25, 1923	74.98	-	26,000	1950	May 13, 1950	90.89	-	95,500
1924	Apr. 28, 1924	57.25	-	6,320					
1925	Apr. 1, 1925	68.00	3.4	-	1951	Apr.15-18,1951	74.55	-	26,000
	June 21, 1925	-	-	17,500	1952	Apr. 14, 1952	73.00	1.4	-
						Apr. 24, 1952	-	-	24,200
1926	Apr. 1, 1926	61.02	-	8,000	1953	June 28, 1953	63.7	-	14,500
1927	May 16, 1927	71.58	-	20,500	1954	Apr. 16, 1954	63.04	2.3	-
1928	Apr. 6, 1928	67.91	-	16,800		Apr. 17, 1954	-	-	11,500
1929	Mar. 29, 1929	73.01	4.0	-	1955	Apr. 10, 1955	72.25	-	24,000
	Apr. 1, 1929	-	-	19,200					
1930	Apr. 10, 1930	72.51	-	20,800	1956	Apr. 27, 1956	81.02	-	33,800
					1957	July 4, 1957	65.37	-	15,300
1931	Apr. 7, 1931	60.80	4.2	-	1958	July 12, 1958	57.17	-	7,940
	Apr. 10, 1931	-	-	7,940	1959	Apr. 10, 1959	-	-	b15,720
1932	Apr. 14, 1932	72.99	2.4	-	1960	Apr. 13, 1960	77.65	-	30,500
	Apr. 15, 1932	-	-	18,900					
1933	Apr. 9, 1933	-	-	11,000	1961	Mar. 31, 1961	57.26	4.1	4,320
	Apr. 10, 1933	67.52	5.6	-					

a About.
b Maximum daily discharge.
Note.--Add 700.00 ft to obtain elevation above mean sea level.

1030. Roseau River near Malung, Minn.
(Published as "at Malung" 1928-38)

Location.--Lat 48°45'45", long 95°42'05", in SE¼SE¼ sec.17, T.161 N., R.39 W., at highway bridge, three-quarters of a mile downstream from Bear Creek, 1½ miles southeast of Malung, and 3¼ miles upstream from South Fork.

Drainage area.--252 sq mi.

Gage.--Nonrecording. Prior to June 1938, at site 1.4 miles downstream at datum 1,039.98 ft above mean sea level, adjustment of 1912. Datum of gage is 1,050 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Mar. 18, 1929	7.80	1.2	-	1937	Aug. 7, 1937	9.46	-	630
	Apr. 6, 1929	-	-	348	1938	May 11, 1938	12.44	-	1,780
1930	Apr. 5, 1930	9.76	2.86	332	1940	Apr. 17, 1940	6.71	1.75	413
1931	Apr. 2, 1931	5.10	2.8	-					
	Apr. 6, 1931	-	-	65	1941	Apr. 7, 1941	10.04	2.06	-
1932	Apr. 7, 1932	9.10	1.8	-		Apr. 10, 1941	-	-	1,750
	Apr. 13, 1932	-	-	468	1942	Mar. 27, 1942	10.02	1.94	-
1933	Apr. 1, 1933	6.57	.87	-		May 2, 1942	-	-	1,410
	Apr. 1, 1933	-	-	244	1943	June 26, 1943	9.12	-	1,310
1934	Apr. 6, 1934	4.09	1.14	62	1944	June 8, 1944	8.17	-	1,060
1935	Apr. 11, 1935	6.41	1.52	178	1945	Mar. 30, 1945	7.28	-	841
1936	Apr. 19, 1936	10.32	.63	676	1946	Mar. 25, 1946	6.96	-	885

1040. South Fork Roseau River near Malung, Minn.
(Published as "West Branch Roseau River" 1911-14)

Location.--Lat 48°47', long 95°44', in center of sec.7, T.161 N., R.39 W., 0.5 mile above mouth and 1 mile northwest of Malung.

Drainage area.--312 sq mi.

Gage.--Nonrecording. Prior to March 1913, at datum 1.0 ft lower; April 1913 to September 1914, at datum 1.2 ft lower. Datum of gage is 1,032.98 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above. Affected by backwater from Roseau River at times.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1912	Apr. 7, 1912	3.55	-	52	1937	Apr. 12, 1937	7.87	1.30	-
1913	Apr. 6, 1913	12.92	0.64	-		May 1, 1937	-	-	337
	Apr. 6, 1913	-	-	872	1938	May 11, 1938	14.17	-	906
1914	Apr. 22, 1914	8.6	-	484	1940	Apr. 17, 1940	9.86	2.05	400
1929	Apr. 7, 1929	7.34	-	425					
1930	Apr. 5, 1930	-	-	405	1941	Apr. 8, 1941	-	-	1,890
	Apr. 6, 1930	10.30	4.10	-		Apr. 9, 1941	17.42	-	-
					1942	Mar. 28, 1942	17.50	-	1,800
1931	Apr. 3, 1931	5.34	2.80	-	1943	Apr. 8, 1943	11.85	-	771
	Apr. 6, 1931	-	-	52		June 27, 1943	12.80	-	-
1932	Apr. 7, 1932	12.08	3.60	690	1944	Apr. 13, 1944	9.58	.80	-
1933	Apr. 1, 1933	7.13	1.83	246		Apr. 13, 1944	-	-	448
1934	Apr. 6, 1934	3.60	.51	51	1945	Mar. 30, 1945	11.34	.44	750
1935	Apr. 11, 1935	6.62	1.59	210	1946	Mar. 24, 1946	11.48	-	812
1936	Apr. 20, 1936	9.07	2.10	465					

1045. Roseau River below South Fork, near Malung, Minn.

Location.--Lat 48°47'30", long 95°44'40", in SW¼ sec.6, T.161 N., R.39 W., on left bank a quarter of a mile downstream from South Fork and 1½ miles northwest of Malung.

Drainage area.--573 sq mi.

Gage.--Recording and concrete control. Datum of gage is 1,029.67 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements. Prior to 1947, a composite record for stations above confluence was used to obtain peak discharges.

Remarks.--Base for partial-duration series, 250 cfs. Only annual peaks are shown prior to 1947.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Apr. 7, 1929	8.4	-	765	1952	Apr. 8, 1952	9.54	2.56	-
1930	Apr. 5, 1930	8.1	-	823		Apr. 10, 1952	-	-	500
						July 7, 1952	6.88	-	451
1931	Apr. 6, 1931	3.9	-	109					
1932	Apr. 7, 1932	9.7	-	1,010	1953	Mar. 24, 1953	8.58	1.90	377
1933	Apr. 2, 1933	6.8	-	490		May 14, 1953	6.74	-	395
1934	Apr. 6, 1934	4.0	-	113		June 1, 1953	6.64	-	352
1935	Apr. 11, 1935	6.05	-	367					
					1954	Apr. 10, 1954	9.01	1.61	-
1936	Apr. 19, 1936	10.2	-	1,110		Apr. 14, 1954	8.54	-	798
1937	Aug. 7, 1937	8.2	-	740		May 3, 1954	7.75	-	648
1938	May 11, 1938	17.9	-	2,690		June 2, 1954	6.76	-	403
						June 17, 1954	7.55	-	610
1940	May 17, 1940	8.6	-	813					
					1955	Apr. 8, 1955	9.37	2.33	501
1941	Apr. 10, 1941	20.5	-	3,270		Apr. 22, 1955	6.68	-	369
1942	May 3, 1942	19.0	-	2,940		June 4, 1955	9.01	-	887
1943	June 27, 1943	14.3	-	1,920					
1944	June 8, 1944	12.1	-	1,480	1956	Apr. 20, 1956	14.74	1.62	-
1945	Mar. 30, 1945	12.6	-	1,590		Apr. 24, 1956	14.68	-	2,040
						May 14, 1956	11.37	-	1,370
1946	Mar. 26, 1946	12.7	-	1,600		June 2, 1956	6.73	-	390
						July 5, 1956	7.89	-	678
1947	Apr. 13, 1947	7.64	0.94	469		July 8, 1956	9.51	-	1,000
	May 5, 1947	6.10	-	374		July 17, 1956	6.87	-	448
	June 13, 1947	20.20	-	3,190		Sept. 3, 1956	13.35	-	1,770
1948	Apr. 21, 1948	18.39	-	2,800	1957	Mar. 26, 1957	9.75	1.90	670
	Aug. 3, 1948	7.18	-	554		Sept. 6, 1957	15.13	-	2,130
1949	Apr. 12, 1949	13.57	-	1,860	1958	July 9, 1958	7.84	-	668
1950	Apr. 24, 1950	22.51	-	3,650	1959	Apr. 1, 1959	13.37	2.97	1,180
	May 7, 1950	18.60	-	2,830		Apr. 5, 1959	11.42	.92	1,200
	May 23, 1950	11.77	-	1,410		May 7, 1959	6.97	-	481
	June 29, 1950	15.76	-	2,230					
	July 12, 1950	6.24	-	397	1960	Apr. 7, 1960	11.88	2.68	940
	Aug. 3, 1950	8.10	-	714		Apr. 15, 1960	9.42	-	984
	Sept.13, 1950	5.79	-	301		June 3, 1960	6.58	-	324
1951	Oct. 5, 1950	6.67	-	437	1961	Mar. 25, 1961	8.43	.68	610
	Apr. 9, 1951	16.76	-	2,440		Apr. 23, 1961	6.66	-	359

1050. Roseau River at Roseau, Minn.

Location.--Lat 48°51'02", long 95°45'42", in SW¼ sec.13, T.162 N., R.40 W., at at dam in Roseau, a quarter of a mile downstream from State Highway 11.

Gage.--Nonrecording. Datum of gage is 1,026.33 ft above mean sea level, adjustof 1928 of Geodetic Survey of Canada. Gage readings have been reduced to elevations above mean sea level.

Remarks.--Only annual peak stages are shown.

Peak stages of Roseau River at Roseau, Minn.

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1919	July 1919	a48	-	1944	Apr.13,June 9, 1944	36.63	-
1940	Apr. 17, 1940	37.63	-	1945	Mar. 30, 1945	38.43	-
1941	Apr. 9, 1941	44.11	-	1946	Mar. 22, 1946	38.33	-
1942	Mar. 27, 1942	43.99	-	1947	June 13, 1947	44.69	-
1943	Apr. 8, 1943	39.48	-				

a From information by local residents.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1055. Roseau River near Roseau, Minn.

Location.--Lat 48°55'24", long 95°46'02", in SW¼ sec.24, T.163 N., R.40 W., on steel highway bridge, 1½ miles upstream from Sprague Creek and 5½ miles north of Roseau.

Gage.--Nonrecording. Datum of gage is 1,023.21 ft above mean sea level, adjustment of 1928 of Geodetic Survey of Canada. Gage readings have been reduced to elevations above mean sea level.

Remarks.--At elevations above 1034.7 ft, some flow bypasses station owing to overbank flow upstream. Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1919	July 1919	37	-	1945	Mar. 30, 1945	34.51	-
1930	Apr. 6, 1930	a33.14	-	1946	Mar. 24, 1946	33.65	-
				1947	June 13, 1947	36.85	-
1931	Apr. 5, 1931	a27.66	-	1948	Apr. 22, 1948	36.85	-
1932	Apr. 9, 1932	34.86	-	1949	Apr. 12, 1949	33.96	-
1933	Apr. 2, 1933	31.43	-	1950	Apr. 24, 1950	37.68	-
1934	Apr. 6, 1934	27.26	-				
1935	Apr. 11, 1935	30.71	-	1951	Apr. 11, 1951	36.23	-
				1952	Apr. 8, 1952	31.31	-
1936	May 19, 1936	32.93	-	1953	Mar. 23, 1953	30.36	-
1937	May 1, 1937	32.83	-	1954	Apr. 10, 1954	31.29	-
1938	May 12, 1938	36.24	-	1955	Apr. 8, 1955	31.48	-
1939	Apr. 20, 1939	25.00	-				
1940	Apr.17,18, 1940	32.45	-	1956	Apr. 20, 1956	35.65	-
				1957	Sept. 3, 1957	35.11	-
1941	Apr. 9, 1941	36.89	-	1958	Oct. 17, 1957	29.77	-
1942	Mar. 29, 1942	37.49	-	1959	Apr. 1, 1959	34.83	-
1943	Apr. 8, 1943	35.29	-	1960	Apr. 9, 1960	34.11	-
1944	Apr. 14, 1944	32.66	-				

a First day of record; stage may have been higher prior to this date.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1060. Sprague Creek near Sprague, Manitoba
(Published as "Mud Creek" prior to October 1951)

(International gaging station)

Location.--Lat 48°59'33", long 95°39'43", in NE¼ sec.34, T.164 N., R.39 W., on left bank, half a mile south of international boundary, 3½ miles south of Sprague, Manitoba, 8 miles upstream from mouth, and 14 miles northeast of Roseau, Minn.

Drainage area.--169 sq mi. Prior to October 1958, 151 sq mi; change due to construction of drainage ditch into basin.

Gage.--Nonrecording prior to Mar. 15, 1929; recording thereafter. Datum of gage is 1,038.4 ft above mean sea level, adjustment of 1928, by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements below 860 cfs and extended above.

Remarks.--Base of partial-duration series, 200 cfs.

Peak stages and discharges of Sprague Creek near Sprague, Manitoba

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	May 30, 1929	6.30	-	a170
1930	Apr. 9, 1930	6.70	-	-
	May 2, 1930	8.70	-	354
	May 13, 1930	12.34	-	1,040
	July 1, 1930	12.07	-	980
	July 13, 1930	8.18	-	297
1931	Apr. 8, 1931	6.75	0.8	-
	Apr. 9, 1931	6.40	-	165
1932	Apr. 14, 1932	9.62	.5	406
	May 1, 1932	7.46	-	234
	May 7, 1932	7.66	-	251
1933	Apr. 20, 1933	10.33	-	580
	May 29, 1933	8.46	-	331
1934	Apr. 7, 1934	5.72	3.4	26
1935	Apr. 27, 1935	6.64	-	160
	May 13, 1935	6.33	-	-
1936	Apr. 20, 1936	10.90	.4	612
1937	May 1, 1937	12.02	-	820
	May 25, 1937	8.00	-	250
	June 1, 1937	7.57	-	226
	June 7, 1937	8.26	-	272
	July 17, 1937	14.70	-	1,560
	Aug. 2, 1937	7.60	-	226
1938	Apr. 27, 1938	8.77	-	312
	May 11, 1938	11.70	-	745
	June 15, 1938	6.94	-	-
1939	Apr. 21, 1939	2.91	1.15	-
	June 4, 1939	2.64	-	30
1940	Apr. 16, 1940	5.74	1.84	-
	Apr. 30, 1940	4.53	.46	72
1941	Apr. 13, 1941	9.33	-	398
	June 12, 1941	9.48	-	423
	Sept.26, 1941	14.83	-	1,880
1942	Mar. 29, 1942	11.02	-	650
	May 1, 1942	10.36	-	565
	May 26, 1942	6.61	-	-
	June 1, 1942	6.68	-	200
	Sept. 1, 1942	15.31	-	2,070
1943	Apr. 10, 1943	12.05	-	804
	May 3, 1943	9.25	-	395
	May 26, 1943	7.04	-	209
	June 5, 1943	9.69	-	452
	June 16, 1943	10.23	-	516
1944	Apr. 13, 1944	9.18	1.07	293
	May 27, 1944	7.43	-	237
	June 6, 1944	12.66	-	1,080
	June 28, 1944	7.64	-	253
	Aug. 13, 1944	6.84	-	-
	Sept. 1, 1944	9.50	-	428
1945	Nov. 16, 1944	6.98	-	209
	Mar. 28, 1945	12.57	-	1,060
1945	Apr. 12, 1945	9.65	-	461
	July 20, 1945	9.36	-	340
	Aug. 21, 1945	9.31	-	340
	Sept. 1, 1945	5.82	-	-
	Sept.11, 1945	8.56	-	301
	Sept.23, 1945	8.65	-	301
1946	Mar. 21, 1946	9.00	1.4	-
	Mar. 23, 1946	8.06	-	301
	Mar. 31, 1946	7.13	-	225
	Apr. 5, 1946	6.76	-	206
	Apr. 15, 1946	6.24	-	-
	May 5, 1946	6.40	-	-
1947	June 12, 1947	13.66	-	1,470
1948	Apr. 21, 1948	12.33	-	1,010
	May 16, 1948	6.14	-	-
	July 31, 1948	8.51	-	393
1949	Apr. 15, 1949	9.04	-	416
	May 6, 1949	6.20	-	-
	May 19, 1949	5.80	-	-
1950	Apr. 23, 1950	-	-	-
	May 12, 1950	13.69	-	1,470
	May 21, 1950	11.65	-	817
	June 27, 1950	8.68	-	346
	Sept.13, 1950	10.08	-	514
1951	Oct. 4, 1950	7.38	-	239
	Apr. 6, 1951	8.45	-	356
	May 1, 1951	8.76	-	389
1952	Apr. 7, 1952	6.32	3.00	-
	July 4, 1952	3.70	-	69
1953	June 3, 1953	7.23	-	235
1954	Apr. 30, 1954	9.96	-	514
	June 1, 1954	7.27	-	238
1955	Apr. 23, 1955	8.57	-	352
	June 6, 1955	10.29	-	557
	June 21, 1955	7.97	-	293
1956	Apr. 22, 1956	10.58	-	639
	May 12, 1956	9.84	-	528
	May 30, 1956	7.29	-	259
	July 5, 1956	11.72	-	862
	July 16, 1956	6.46	-	210
	Sept. 2, 1956	7.48	-	271
1957	Mar. 25, 1957	6.56	.15	207
	June 15, 1957	9.05	-	422
1958	July 10, 1958	5.71	-	165
1959	Apr. 9, 1959	8.49	1.51	241
	May 7, 1959	10.30	-	595
	May 29, 1959	6.23	-	202
	June 12, 1959	9.25	-	448
1960	Apr. 15, 1960	10.62	-	708
	Apr. 29, 1960	6.74	-	259
1961	Mar. 24, 1961	5.71	1.23	115

a Annual peak only.

1065. Roseau River at Roseau Lake, Minn.

Location.--Lat 48°54'22", long 95°49'55", in SW¼SW¼ sec.28, T.163 N., R.40 W., on upstream bridge piling on left bank at Roseau Lake, 3½ miles upstream from Pine Creek, 3¾ miles downstream from Sprague Creek, and 7 miles northwest of Roseau.

Gage.--Nonrecording. Datum of gage is 1,018.59 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada. Gage readings have been reduced to elevations above mean sea level.

Remarks.--Only annual peak elevations are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1919	July 1919	a34.3	-	1951	Apr. 18, 1951	33.81	-
				1952	Apr. 10, 1952	27.99	-
1940	Apr. 18, 1940	29.31	-	1953	June 4, 1953	26.63	-
				1954	May 7, 1954	29.21	-
1941	Apr. 17, 1941	33.29	-	1955	June 7, 1955	28.91	-
1942	Apr. 4, 1942	33.89	-				
1943	Apr. 13, 1943	32.40	-	1956	Apr. 28, 1956	32.88	-
1944	June 23, 1944	30.27	-	1957	July 16, 1957	31.35	-
1945	Apr. 2, 1945	32.35	-	1958	July 10, 1958	27.55	-
				1959	Apr. 6, 1959	31.15	-
1946	Mar. 29, 1946	31.23	-	1960	Apr. 17, 1960	31.07	-
1947	June 17, 1947	33.37	-				
1948	Apr. 28, 1948	34.83	-	1961	Mar. 25, 1961	28.43	-
1949	Apr. 17, 1949	31.36	-				
1950	May 13, 1950	36.86	-				

a Based on local information.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1070. Pine Creek near Pine Creek, Minn.

Location.--Lat 48°59'35", long 95°55'04", in SW¼SW¼ sec.26, T.164 N., R.41 W., on right bank, half a mile south of international boundary, 2 miles northeast of village of Pine Creek, and 6 miles upstream from mouth.

Drainage area.--74.6 sq mi.

Gage.--Nonrecording prior to Mar. 13, 1929; recording thereafter. Datum of gage is 1,038.42 ft above mean sea level, adjustment of of 1928 by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 120 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Mar. 19, 1929	6.3	2.8	-	1936	Apr. 17, 1936	8.58	-	516
	Apr. 8, 1929	5.25	1.0	115					
					1937	May 1, 1937	8.52	-	488
1930	Apr. 7, 1930	8.91	1.4	-		July 19, 1937	5.70	-	168
	Apr. 8, 1930	8.70	.60	296					
	May 3, 1930	5.01	-	125	1938	Apr. 28, 1938	5.28	-	145
	May 12, 1930	8.83	-	449		May 10, 1938	7.90	-	382
	June 29, 1930	8.78	-	449					
	July 14, 1930	5.73	-	150	1939	Apr. 20, 1939	4.50	1.8	-
						Apr. 27, 1939	4.18	-	49
1931	Apr. 7, 1931	7.33	-	229					
					1940	Apr. 15, 1940	5.88	2.7	-
1932	Apr. 10, 1932	8.67	1.0	256		May 1, 1940	4.15	.57	59
1933	Apr. 2, 1933	9.12	3.1	-	1941	Apr. 9, 1941	8.61	.70	261
	Apr. 8, 1933	8.13	.94	209		Sept.25, 1941	9.79	-	706
	Apr. 20, 1933	5.69	-	140					
	May 25, 1933	9.03	-	500	1942	Mar. 28, 1942	9.42	.81	332
						Apr. 29, 1942	9.19	-	464
1934	Apr. 8, 1934	7.4	3.8	70		Sept. 2, 1942	8.42	-	306
1935	Apr. 12, 1935	6.52	1.00	133	1943	Apr. 9, 1943	8.95	-	398
	Apr. 27, 1935	5.76	-	144		May 3, 1943	6.26	-	178

Peak stages and discharges of Pine Creek near Pine Creek, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	June 6, 1943	8.49	-	322	1948	Apr. 19, 1948	9.62	-	590
	June 17, 1943	6.48	-	188		Aug. 1, 1948	7.56	-	218
	July 16, 1943	4.96	-	125					
					1949	Apr. 10, 1949	9.10	0.08	-
1944	Apr. 13, 1944	8.64	1.62	213		Apr. 10, 1949	9.07	-	384
	June 8, 1944	7.96	-	273					
	June 22, 1944	5.05	-	125	1950	Apr. 24, 1950	10.18	-	632
	Aug. 6, 1944	6.22	-	173		May 6, 1950	9.68	-	433
	Aug. 12, 1944	6.24	-	173		May 21, 1950	8.83	-	244
	Sept. 3, 1944	4.88	-	121		June 1, 1950	7.02	-	157
						June 29, 1950	8.39	-	216
1945	Mar. 28, 1945	9.46	-	534		Sept.14, 1950	9.39	-	338
	Apr. 13, 1945	6.61	-	181					
	July 21, 1945	7.88	-	239	1951	Apr. 6, 1951	8.9	-	272
	Aug. 20, 1945	8.42	-	264		May 1, 1951	6.31	-	139
	Aug. 31, 1945	6.67	-	185					
	Sept.10, 1945	6.45	-	173	1952	Apr. 10, 1952	7.43	4.67	-
	Sept.23, 1945	6.59	-	181		July 5, 1952	4.92	-	98
1946	Mar. 22, 1946	8.54	-	265	1953	Apr. 1, 1953	6.47	2.23	-
						May 13, 1953	5.98	-	129
1947	Apr. 10, 1947	7.23	2.00	130		June 6, 1953	5.73	-	122
	June 11, 1947	9.62	-	590					

1075. Roseau River at Ross, Minn.

Location.--Lat 48°54'37", long 95°55'18", in SE¼ sec.27, T.163 N., R.41 W., on left bank, 300 ft downstream from highway bridge, a quarter of a mile north of Ross, and two-thirds of a mile downstream from Pine Creek.

Drainage area.--1,220 sq mi, approximately.

Gage.--Nonrecording prior to Mar. 13, 1929; recording thereafter. Datum of gage is 1,018.44 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Maximum stage known, about 19 ft in 1896. Other outstanding floods reached the following stages (from information by local residents): Flood in July 1919, 17.5 ft; flood in 1927, about 16 ft.

Remarks.--Flow affected by natural storage in Roseau Lake. Base for partial-duration series, 300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Mar. 19, 1929	9.6	2.3	665	1938	Mar. 24, 1938	-	-	930
	Apr. 8, 1929	8.72	-	953		May 18, 1938	14.64	-	2,290
	June 1, 1929	5.28	-	402					
					1939	June 20, 1939	3.91	-	203
1930	Apr. 10, 1930	9.53	-	1,110					
	May 17, 1930	10.74	-	1,460	1940	Apr. 18, 1940	9.47	3.07	-
	July 2, 1930	8.12	-	812		Apr. 21, 1940	8.06	-	730
	July 14, 1930	6.51	-	540					
					1941	Apr. 18, 1941	14.32	-	2,230
1931	Apr. 7, 1931	-	-	653		June 17, 1941	10.08	-	1,100
1932	Apr. 13, 1932	11.40	.44	1,550	1942	Oct. 2, 1941	12.16	-	1,380
						Apr. 4, 1942	14.91	-	2,400
1933	Apr. 8, 1933	9.22	.89	-		May 9, 1942	13.94	-	2,130
	Apr. 21, 1933	8.65	-	912		Sept. 7, 1942	9.94	-	862
	May 27, 1933	7.72	-	736					
					1943	Apr. 13, 1943	13.12	-	1,910
1934	Apr. 8, 1934	7.20	2.40	332		June 20, 1943	11.89	-	1,590
1935	Mar. 29, 1935	-	-	310	1944	Apr. 16, 1944	9.47	-	1,070
	Apr. 11, 1935	8.64	1.76	-		May 27, 1944	6.24	-	476
	Apr. 12, 1935	8.62	1.5	637		June 24, 1944	10.79	-	1,390
	Apr. 28, 1935	6.52	-	547		July 17, 1944	7.13	-	505
	May 14, 1935	5.11	-	365		Aug. 14, 1944	6.51	-	371
						Sept. 4, 1944	7.26	-	434
1936	Apr. 23, 1936	10.48	.4	1,280					
					1945	Nov. 19, 1944	6.88	-	582
1937	May 5, 1937	11.95	-	1,600		Apr. 3, 1945	13.04	-	1,800
	July 26, 1937	10.96	.88	1,120		July 22, 1945	7.35	-	566

Peak stages and discharges of Roseau River at Ross, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Aug. 22, 1945	6.86	-	395	1954	May 8, 1954	9.71	-	1,140
	Sept. 2, 1945	6.48	-	349		June 2, 1954	7.48	-	705
	Sept.27, 1945	7.90	-	550		June 18, 1954	7.9?	-	710
1946	Mar. 29, 1946	11.82	-	1,550	1955	Apr. 10, 1955	8.64	-	842
	May 7, 1946	7.42	-	664		Apr. 26, 1955	8.3?	-	795
	July 11, 1946	5.19	-	349		June 10, 1955	9.37	-	980
1947	Apr. 18, 1947	8.40	-	a850	1956	Apr. 29, 1956	13.71	-	2,150
	May 5, 1947	7.36	-	694		July 13, 1956	10.45	-	1,250
	June 18, 1947	14.38	-	2,400		Sept. 7, 1956	10.18	-	1,190
	Aug. 12, 1947	7.24	-	660	1957	Apr. 1, 1957	10.03	1.20	912
1948	Apr. 29, 1948	15.88	-	3,220		July 16, 1957	11.89	-	1,600
	Aug. 3, 1948	8.75	-	612	1958	Nov. 16, 1957	6.14	.07	485
1949	Apr. 16, 1949	11.95	-	1,730		July 18, 1958	8.06	-	786
	June 4, 1949	5.62	-	390	1959	Apr. 10, 1959	11.42	-	1,530
1950	May 12, 1950	18.25	-	6,560		May 10, 1959	8.85	-	933
	July 6, 1950	12.30	-	1,570		May 31, 1959	7.14	-	614
	Aug. 3, 1950	7.70	-	671		June 13, 1959	7.25	-	632
	Sept.15-18,1950	8.82	-	872	1960	Apr. 18, 1960	11.55	-	1,560
1951	Oct. 10, 1950	8.57	-	828		May 22, 1960	5.02	-	311
	Apr. 20, 1951	14.70	-	2,580		June 4, 1960	5.98	-	428
1952	Apr. 10, 1952	-	-	760		June 13, 1960	5.76	-	397
	July 8, 1952	6.52	-	548		June 27, 1960	5.03	-	304
1953	Mar. 24, 1953	8.12	2.21	-	1961	Mar. 25, 1961	8.91	1.95	570
	May 15, 1953	6.73	-	581		Apr. 23, 1961	6.33	-	476
	June 4, 1953	7.33	-	640					

a Maximum daily discharge.

1080. Roseau River near Badger, Minn.

Location.--Lat 48°54'42", long 96°00'24", in SW¼ sec.30, T.163 N., R.41 W., on right bank 100 ft upstream from highway bridge and 9 miles north of Badger.

Gage.--Recording. Datum of gage is 1,016.90 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada. Gage heights have been reduced to elevations above mean sea level.

Remarks.--Only annual peak elevations are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1896	-	a34	-	1944	June 23, 1944	27.43	-
				1945	Apr. 3, 1945	29.30	-
1919	July 1919	a33	-				
				1946	Mar. 29, 1946	28.28	-
1929	Mar. 19, 1929	26.30	-	1947	June 18, 1947	30.22	-
1930	May 17, 1930	27.31	-	1948	Apr. 29, 1948	31.37	-
				1949	Apr.17,18,1949	28.24	-
1931	Apr. 6, 1931	25.12	-	1950	May 13, 1950	32.65	-
1932	Apr. 14, 1932	27.97	-				
1933	Apr. 14, 1933	26.32	-	1951	Apr.20,21,1951	30.35	-
1934	Apr. 18, 1934	24.36	-	1952	Apr.7-14,1952	25.86	-
1935	Apr. 10, 1935	25.56	-	1953	June 4, 1953	24.14	-
				1954	Apr. 11, 1954	25.58	-
1936	Apr. 23, 1936	26.99	-	1955	June 10, 1955	26.19	-
1937	May 5, 1937	28.27	-				
1938	May 18, 1938	30.31	-	1956	Apr. 29, 1956	29.65	-
1939	June 20, 1939	21.45	-	1957	July 17, 1957	28.20	-
1940	Apr. 18, 1940	26.24	-	1958	Oct. 18, 1957	24.64	-
				1959	Apr.10-11,1959	27.78	-
1941	Apr. 17, 1941	30.20	-	1960	Apr. 18, 1960	28.06	-
1942	Apr. 4, 1942	30.80	-				
1943	Apr. 14, 1943	29.41	-	1961	Mar. 26, 1961	26.00	-

a From local information.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1090. Badger Creek near Badger, Minn.

Location.--Lat 48°48'15", long 96°01'44", in NE¼ sec.2, T.161 N., R.42 W., just downstream from Skunk Creek ditch and 1 mile northwest of Badger.

Drainage area.--2.2 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 1,047.5 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements below 190 cfs and extended above.

Remarks.--Discharge affected at times by interchange of flow to and from Two Rivers basin. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	Apr. 7, 1929	1.97	-	17.4	1934	Apr. 9, 1934	-	-	10
1930	May 11, 1930	4.88	-	146	1935	Mar. 26, 1935	3.50	2.2	-
						Apr. 10, 1935	-	-	51
1932	Apr. 8, 1932	6.2	2.4	-					
	Apr. 11, 1932	-	-	104	1936	Apr. 14, 1936	4.02	2.4	-
1933	Mar. 31, 1933	4.52	2.47	-		Apr. 19, 1936	-	-	28
	Apr. 3, 1933	-	-	55	1937	May 1, 1937	5.64	-	236
1934	Apr. 3, 1934	1.9	.6	-	1938	May 10, 1938	5.46	-	130

1095. Roseau River near Haug, Minn.

Location.--Lat 48°55'28", long 96°12'26", in SE¼ sec.21, T.163 N., R.43 W., on left bank 250 ft downstream from abandoned highway bridge, 5 miles south of international boundary, and 8¼ miles northwest of Haug.

Gage.--Recording. Datum of gage is 1,014.02 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada. Gage heights have been reduced to elevations above mean sea level.

Bankfull stage.--Elevation 1,021 ft.

Remarks.--Flow through ditches to south bypassing gage starts at elevation 1,019.5 ft. Only annual peak elevations are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1919	July 1919	(a)	-	1947	June 22, 1947	23.36	-
				1948	Apr. 29, 1948	23.76	-
1932	Apr. 14, 1932	23.19	-	1949	Apr. 18, 1949	22.97	-
1933	Apr. 11, 1933	22.97	-	1950	May 15, 1950	24.64	-
1934	Apr. 14, 1934	21.31	-				
1935	Apr. 12, 1935	21.99	-	1951	Apr. 24, 1951	23.52	-
				1952	Apr. 17, 1952	20.27	-
1936	Apr. 26, 1936	22.41	-	1953	June 5, 1953	20.61	-
1937	May 8, 1937	22.85	-	1954	May 2-10, 1954	22.05	-
1938	May 22, 1938	23.35	-	1955	Apr. 28, 1955	21.92	-
1939	June 21, 1939	18.01	-				
1940	Apr. 19, 1940	21.57	-	1956	May 17, 1956	23.32	-
				1957	July 21, 1957	23.13	-
1941	Apr. 22, 1941	22.93	-	1958	July 19, 1958	21.30	-
1942	Apr. 6, 1942	23.51	-	1959	Apr. 14, 1959	22.95	-
1943	Apr. 16, 1943	23.02	-	1960	Apr.12-26, 1960	23.15	-
1944	June 21, 1944	22.72	-				
1945	Apr. 18, 1945	23.08	-	1961	Mar.27 to Apr.23, 1961	22.78	-
1946	Apr. 4, 1946	22.94	-				

a Reported to have reached a stage of between 1,024 and 1,024.5 ft.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1105. Roseau River at head of State ditch 51, near Oak Point, Minn.

Location.--Lat 48°56'53", long 96°22'56", in NE¼NE¼ sec.18, T.163 N., R.44 W., at head of State ditch 51 (known locally as Caribou cutoff ditch), 2 miles southeast of Oak Point, and 2½ miles south and 3 miles east of Caribou.

Gage.--Nonrecording. Datum of gage is 1,007.88 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada. Gage readings have been reduced to elevations above mean sea level.

Remarks.--Only annual peak elevations are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1919	July 1919	(a)	-	1937	May 10, 1937	17.60	-
				1938	May 26, 1938	18.89	-
1933	Apr. 23, 1933	16.24	-	1939	Apr. 19, 1939	12.72	-
1934	Apr. 11, 1934	15.03	-	1940	Apr. 20, 1940	15.98	-
1935	Apr. 10, 1935	15.65	-				
				1941	Apr. 26, 1941	18.37	-
1936	May 1, 1936	16.11	-	1942	Apr.9,12,1942	19.36	-

a Believed to have reached an elevation of between 1,020.4 and 1,020.9 ft.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1110. Roseau River at Oak Point, Minn.

Location.--Lat 48°58'48", long 96°24'19", in SE¼SE¼ sec.36, T.164 N., R.45 W., on upstream side of highway bridge at Oak Point, 2 miles east of Caribou.

Gage.--Nonrecording. Datum of gage is 1,005.30 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada. Gage readings have been reduced to elevations above mean sea level.

Remarks.--Only annual peak elevations are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1919	July 1919	a16.8	-	1947	June 28, 1947	15.26	-
				1948	May 3, 1948	16.76	-
1933	Apr. 19, 1933	13.17	-				
1934	Apr.8,12,1934	10.92	-	1950	May 19, 1950	19.64	-
1935	Apr. 13, 1935	13.14	-				
				1951	May 2, 1951	16.18	-
1936	May 1, 1936	12.95	-	1952	Apr. 11, 1952	12.50	-
1937	May 7, 1937	14.06	-	1953	Apr. 1, 1953	12.50	-
1938	May 26, 1938	15.37	-	1954	May 13, 1954	13.43	-
1939	June 21, 1939	8.36	-	1955	June 13, 1955	13.48	-
1941	Apr. 26, 1941	15.01	-	1956	Apr. 29, 1956	16.56	-
1942	Apr. 13, 1942	16.09	-	1957	Apr. 7, 1957	15.12	-
1943	Apr.21,23, 1943	15.16	-	1958	Oct. 19, 1957	12.18	-
1944	June 26, 1944	14.10	-	1959	Apr. 19, 1959	14.52	-
1945	Apr. 11, 1945	15.22	-	1960	Apr. 27, 1960	14.74	-
1946	Apr. 6, 1946	14.57	-				

a From local information.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1120. Roseau River below State ditch 51, near Caribou, Minn.
(Published as "at Caribou," prior to October 1930, and as "below cutoff ditch, near Caribou," October 1930 to September 1936)

(International gaging station)

Location.--Lat 48°58'54", long 96°27'46", in SE¼SW¼ sec.34, T.164 N., R.45 W., on left bank, 400 ft downstream from State ditch 51 (known locally as Caribou cutoff ditch) and 0.6 mile west of Caribou.

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

Gage.--Nonrecording at site at Caribou 0.6 mile upstream at datum 0.95 ft lower prior to Sept. 30, 1930; recording thereafter. Datum of gage is 1,002.14 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Occasionally, at extremely high stages, there is some natural diversion of flow above station to headwaters of the Two Rivers basin. Base for partial-duration series, 250 cfs. Only annual peaks are shown prior to 1930. This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1917	Apr. 17, 1917	9.47	-	1,470	1941	June 20, 1941	5.90	-	860
1920	Apr. 15, 1920	11.70	1.4	1,720	1942	Oct. 9, 1941	7.62	-	1,490
						Apr. 1, 1942	9.85	2.2	-
1921	Apr. 11, 1921	a10.95	.20	1,980		Apr. 13, 1942	8.68	-	2,070
1922	May 25, 1922	9.4	-	1,360		Aug. 13, 1942	3.39	-	274
1923	May 2, 1923	12.5	-	2,980		Sept.16, 1942	5.60	-	806
1924	Apr. 29, 1924	8.9	-	1,230					
1925	July 1-9,1925	11.0	-	2,140	1943	Apr. 21, 1943	7.90	-	1,700
						July 14, 1943	7.39	-	1,400
1926	July 6-8,1926	10.5	-	1,900		Aug. 11, 1943	3.30	-	254
1927	May 24, 1927	12.8	-	3,170					
1928	Apr. 2, 1928	10.40	.35	-	1944	Apr. 21, 1944	6.12	-	970
	July 6, 1928	-	-	1,670		May 29, 1944	4.21	-	460
1929	Apr. 10, 1929	6.02	-	980		June 27, 1944	7.05	-	1,270
						Aug. 15, 1944	4.59	-	484
1930	Apr. 12, 1930	6.72	-	1,300		Sept. 5, 1944	4.94	-	556
	May 21, 1930	6.89	-	1,380					
	July 5, 1930	5.68	-	920	1945	Mar. 23, 1945	8.11	1.3	-
						Apr. 11, 1945	8.07	-	1,760
1931	Apr. 7, 1931	6.87	.76	-		July 24, 1945	4.74	-	558
	Apr. 9, 1931	6.30	-	1,140		Aug. 24, 1945	4.36	-	452
	May 12, 1931	3.27	-	296		Sept. 4, 1945	4.52	-	491
	June 1, 1931	3.18	-	274		Sept.29, 1945	5.51	-	780
1932	Apr. 13, 1932	8.80	1.2	-	1946	Apr. 14, 1946	7.50	-	1,560
	Apr.16-18, 1932	7.78	-	1,710		July 12, 1946	3.41	-	276
1933	Nov. 14, 1932	4.21	.9	296	1947	Apr. 22, 1947	5.42	-	800
	Apr. 9, 1933	7.14	1.66	-		May 7, 1947	4.99	-	680
	Apr. 17, 1933	6.93	-	1,350		June 28, 1947	7.97	-	1,780
	May 30, 1933	5.71	-	920		Aug. 15, 1947	5.04	-	695
1934	Apr. 12, 1934	5.21	1.4	-	1948	Oct. 1, 1947	3.67	-	309
	Apr. 13, 1934	5.05	1.2	424		Oct. 17, 1947	4.23	-	475
						May 4, 1948	9.23	-	2,460
1935	Apr. 13, 1935	7.98	2.3	920		July 11, 1948	3.61	-	276
	Apr. 30, 1935	4.48	-	580		Aug. 6, 1948	5.30	-	636
	May 15, 1935	3.68	-	388					
					1949	Apr. 26, 1949	7.32	-	1,480
1936	May 1, 1936	5.99	-	1,020		June 5, 1949	4.08	-	438
1937	May 11, 1937	7.12	-	1,360	1950	May 19, 1950	11.81	-	4,080
	Aug. 16, 1937	6.12	-	1,030		Sept.22, 1950	6.08	-	970
1938	Mar. 27, 1938	5.68	-	890	1951	Oct. 10, 1950	6.02	-	964
	May 27, 1938	8.05	-	1,750		May 2, 1951	8.86	-	2,200
1939	Apr. 20, 1939	3.51	-	340	1952	Apr. 12, 1952	-	-	b1,070
						July 9, 1952	4.45	-	546
1940	Apr. 22, 1940	8.08	2.62	832					
					1953	Apr. 1, 1953	6.92	1.98	687
1941	Nov. 10, 1940	4.10	.74	291		Apr. 17, 1953	4.51	-	564
	Apr. 26, 1941	7.85	-	1,660		May 16, 1953	4.52	-	566

a Occurred at different time than peak discharge.
b Maximum daily discharge.

Peak stages and discharges of Roseau River below State ditch 51, near Caribou, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1953	June 5, 1953	5.32	-	797	1958	July 20, 1958	5.59	-	877
	July 4, 1953	3.41	-	299					
					1959	Apr. 9, 1959	9.03	2.45	-
1954	Apr. 13, 1954	8.07	1.17	1,320		Apr.19-22,1959	7.54	-	1,570
	May 9-12,1954	6.43	-	1,160		May 15, 1959	6.42	-	1,160
	June 3, 1954	5.50	-	830		June 1, 1959	5.34	-	803
	June 20, 1954	-	-	b900		June 14, 1959	5.18	-	756
						July 13, 1959	3.32	-	281
1955	Apr. 30, 1955	6.33	-	1,060					
	June 13, 1955	6.52	-	1,080	1960	Oct.31 to Nov.2, 1959	3.74	-	372
	July 15, 1955	3.58	-	316		Apr. 13, 1960	8.46	2.40	-
1956	May 2, 1956	8.96	-	2,300		Apr. 27, 1960	7.73	-	1,650
	July 24, 1956	6.85	-	1,240		June 5, 1960	4.36	-	523
	Sept.13, 1956	6.34	-	1,050		June 14, 1960	4.36	-	523
						June 29, 1960	3.99	-	430
1957	Apr. 7, 1957	9.51	2.11	1,480					
	Apr. 30, 1957	7.77	-	1,660	1961	Mar. 29, 1961	5.96	1.28	611
	July 12, 1957	8.02	-	1,790		Apr. 24, 1961	4.40	-	534
	Sept.17, 1957	6.67	-	1,170		May 11, 1961	3.75	-	374
1958	Apr. 7, 1958	5.82	1.21	560					

b Maximum daily discharge.

1125. Roseau River at international boundary, near Caribou, Minn.

Location.--Lat 48°59'57", long 96°30'20", near center of sec.29, T.164 N., R.45 W., on left bank, 400 ft upstream from last international boundary crossing and 3 miles northwest of Caribou.

Gage.--Recording. Datum of gage is 1,002.59 ft above mean sea level, adjustment of 1928, by Geodetic Survey of Canada. Gage heights have been reduced to elevations above mean sea level.

Remarks.--Only annual peak elevations are shown.

Peak stages and discharges

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1933	May 29, 1933	5.30	-	1948	May 2-5, 1948	6.87	-
1934	Apr. 13, 1934	4.86	-	1949	Apr. 11, 1949	6.80	-
1935	Apr. 13, 1935	6.58	-	1950	May 20, 1950	7.02	-
1936	Apr. 20, 1936	6.79	-	1951	May 3, 1951	6.91	-
1937	May 11, 1937	6.19	-	1952	Apr. 14, 1952	6.82	-
1938	May 28, 1938	6.59	-	1953	Apr. 3, 1953	5.72	-
1939	Apr. 19, 1939	3.62	-	1954	May 10, 1954	5.98	-
1940	Apr. 22, 1940	6.78	-	1955	Apr. 9, 1955	6.48	-
1941	Apr.26-28,1941	6.55	-	1956	Apr. 20, 1956	7.30	-
1942	Apr. 18, 1942	6.77	-	1957	Apr. 7, 1957	7.29	-
1943	Apr. 22, 1943	6.69	-	1958	July 20, 1958	5.38	-
1944	Apr. 16, 1944	6.95	-	1959	Apr. 9, 1959	7.16	-
1945	Mar. 24, 1945	7.06	-	1960	Apr. 14, 1960	7.43	-
1946	Apr. 15, 1946	6.41	-	1961	(b)	5.24	-
1947	(a)	6.64	-				

a Probably occurred June 28, 1947.
b During period Mar. 28 to Apr. 6, 1961.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

1135. Long Creek near Crosby, N. Dak.

Location.--Lat 48°58'30", long 103°16'04", in NW¼ sec.3, T.163 N., R.97 W., on right bank at downstream side of county highway bridge, 1 mile downstream from small tributary, and 5 miles northeast of Crosby.

Drainage area.--2,080 sq mi, approximately, of which 1,300 sq mi is probably noncontributing.

Gage.--Nonrecording prior to June 21, 1952; recording thereafter. Altitude of gage is 1,870 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements; subject to frequent changes owing to channel shifting, ice effect, and beaver activity.

Bankfull stage.--9 ft.

Historical data.--The flood of Apr. 23, 1948, is maximum stage known. Flood in 1904 reached about the same stage, from information by local residents.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1952.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Apr. 1, 1943	13.62	-	3,150	1954	Feb. 24, 1954	5.12	0.42	121
1944	June 28, 1944	3.59	-	65					
					1955	Mar. 30, 1955	10.57	1.3	850
1946	Mar. 13, 1946	8.27	-	678		Apr. 6, 1955	9.30	-	820
1947	Mar. 23, 1947	13.05	6.0	-		Apr. 28, 1955	5.58	-	230
	Apr. 11, 1947	-	-	936		May 5, 1955	5.76	-	274
1948	Apr. 23, 1948	16.10	-	6,240		May 10, 1955	7.92	-	564
1949	Apr. 1, 1949	10.5	4.1	-					
	Apr. 3, 1949	-	-	500	1956	Mar. 20, 1956	7.4	3.5	-
1950	Apr. 16, 1950	10.65	.65	1,100		Mar. 26, 1956	7.2	1.2	230
						Apr. 11, 1956	6.8	.25	300
1951	Apr. 18, 1951	12.4	2.0	1,250					
					1957	Mar. 28, 1957	4.55	.95	40
1952	Apr. 2, 1952	9.70	1.10	550	1958	Mar. 31, 1958	9.67	-	984
	Apr. 10, 1952	8.08	-	436					
					1959	June 29, 1959	8.67	-	554
1953	June 10, 1953	9.93	-	912					
	June 20, 1953	6.28	-	251	1960	Mar. 27, 1960	13.00	1.7	1,650
	June 27, 1953	8.13	-	515					
	June 30, 1953	8.49	-	622	1961	-	-	-	0

1140. Souris River near Sherwood, N. Dak.
(International gaging station)

Location.--Lat 48°59'24", long 101°57'28", in NW¼SW¼NE¼ sec.33, T.164 N., R.87 W., on right bank, 0.8 mile downstream from international boundary and 16 miles northwest of Sherwood.

Drainage area.--9,650 sq mi, approximately, of which 6,400 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Apr. 8, 1935; recording gage and concrete control thereafter. Datum of gage is 1,604.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,000 cfs and extended to 7,400 cfs for records through 1950. Defined by current-meter measurements below 5,200 cfs after 1950. Subject to changes at high stages owing to ice effect and channel changes.

Bankfull stage.--18 ft.

Historical data.--Flood of Apr. 28, 1948, is maximum stage known.

Remarks.--This is one of the international gaging stations maintained by the United States under agreement with Canada. Base for partial-duration series, 120 cfs. Only annual peaks are shown prior to 1935.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1927	-	a22	-	-	1948	Apr. 28, 1948	23.80	-	7,400
						July 26, 1948	3.05	-	148
1930	Apr. 11, 1930	9.70	-	956		Aug. 9, 1948	4.49	-	303
1931	Apr. 14, 1931	1.17	-	19	1949	Apr. 11, 1949	20.56	-	2,720
						June 4, 1949	2.95	-	126
1933	Mar. 31, 1933	13.10	0.3	1,370					
1934	Mar. 16, 1934	7.74	3.5	344	1950	Apr. 18, 1950	14.25	-	1,610
						May 14, 1950	5.74	-	449
1935	Apr. 15, 1935	3.78	1.70	121		June 17, 1950	3.18	-	165
	Apr. 24, 1935	2.57	-	170		June 23, 1950	4.11	-	261
	July 5, 1935	2.78	-	200					
	July 8, 1935	2.10	-	130	1951	May 10, 1951	19.23	-	2,680
1936	Apr. 25, 1936	10.82	-	1,270	1952	Apr. 3, 1952	13.23	1.86	1,200
1937	Apr. 14, 1937	2.60	-	125	1953	Mar. 23, 1953	5.77	1.67	260
						Mar. 31, 1953	7.06	1.14	470
1938	Mar. 20, 1938	10.19	.80	1,040		Apr. 6, 1953	10.94	.60	1,050
	Mar. 27, 1938	9.36	-	1,040		May 19, 1953	3.43	-	192
						June 19, 1953	12.28	-	1,340
1939	Mar. 28, 1939	19.08	-	2,480		July 9, 1953	14.95	-	1,780
1940	Apr. 15, 1940	3.58	1.35	120	1954	Mar. 3, 1954	5.32	1.59	220
						Mar. 16, 1954	4.78	1.47	180
1941	Apr. 6, 1941	7.38	2.29	440		Apr. 16, 1954	5.26	.98	280
	Apr. 14, 1941	9.70	-	1,030		May 9, 1954	3.69	-	202
	May 3, 1941	3.00	-	210		June 12, 1954	8.53	-	799
						June 18, 1954	8.62	-	811
1942	Mar. 25, 1942	7.02	2.60	350					
	Apr. 5, 1942	15.54	1.10	1,700	1955	Apr. 5, 1955	23.05	-	5,210
	Apr. 20, 1942	6.11	-	563		May 14, 1955	15.24	-	1,760
	June 2, 1942	3.19	-	200		June 20, 1955	6.05	-	486
						July 9, 1955	4.35	-	288
1943	Mar. 27, 1943	4.70	1.51	200					
	Apr. 12, 1943	23.18	-	5,320	1956	Apr. 16, 1956	21.75	-	3,560
	June 21, 1943	3.68	-	222		June 25, 1956	3.78	-	201
						July 2, 1956	6.64	-	545
1944	Apr. 9, 1944	4.29	1.22	160		July 9, 1956	5.56	-	418
	June 10, 1944	2.87	-	136					
	July 5, 1944	11.7	-	1,240	1957	Mar. 25, 1957	11.28	3.2	750
1945	Mar. 28, 1945	2.88	.33	60	1958	Apr. 2, 1958	14.25	1.4	1,380
1946	Mar. 30, 1946	16.88	-	2,010	1959	Mar. 23, 1959	10.69	2.5	740
1947	Apr. 5, 1947	16.33	2.66	1,520	1960	Apr. 8, 1960	19.09	-	2,670
	Apr. 18, 1947	18.29	-	2,250					
	June 25, 1947	7.77	-	700	1961	Mar. 20, 1961	4.63	1.49	160
1948	Apr. 13, 1948	5.22	2.43	-					

a About.

1160. Souris River near Foxholm, N. Dak.

Location.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., on left bank, 30 ft upstream from county highway bridge, 3 miles east of Foxholm, 19 miles upstream from Des Lacs River, and at mile 98.3 downstream from Canadian border (Geological Survey river plan and profile).

Drainage area.--10,200 sq mi, approximately, of which 6,700 sq mi is probably noncontributing.

Gage.--Nonrecording at site 600 ft downstream at datum about half a foot higher prior to Mar. 26, 1938; recording thereafter. Datum of present gage is 1,560.73 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--8 ft.

Remarks.--Flow regulated since 1936 by Lake Darling (usable capacity, 108,500 acre-ft) and several smaller reservoirs (combined capacity, about 116,000 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	May 17, 1937	a4.51	-	202	1949	May 22, 1949	10.63	-	-
1938	Apr. 5, 1938	b7.52	-	464	1950	Apr. 26, 1950	12.14	-	1,290
1939	Apr. 17, 1939	c8.92	-	663					
1940	Oct. 20, 1939	7.81	-	504	1951	May 14, 1951	13.98	-	2,120
					1952	Apr. 24, 1952	6.52	-	325
1941	Apr. 9, 1941	7.80	1.20	-	1953	July 14, 1953	13.18	-	1,480
	Apr. 19, 1941	-	-	486	1954	June 24, 1954	6.96	-	444
1942	Oct.21-23, 1941	5.72	-	62	1955	Apr. 21, 1955	14.20	-	2,330
1943	Apr. 25, 1943	14.50	-	2,990					
1944	Feb. 18, 1944	6.22	.30	-	1956	Apr. 22, 1956	13.69	-	1,890
	Apr. 17, 1944	-	-	200	1957	Oct. 15, 1956	6.05	-	157
1945	Nov. 14, 1944	6.01	-	145	1958	Apr. 30, 1958	6.64	-	368
					1959	Apr. 22, 1959	6.53	-	329
1946	Apr. 17, 1946	6.48	-	298	1960	Apr. 14, 1960	10.25	-	926
1947	Apr. 28, 1947	12.39	-	1,350					
1948	May 16, 1948	14.79	-	3,040	1961	Apr. 4, 1961	6.13	-	186
1949	Apr. 15, 1949	-	-	690					

a Occurred two days later.
b Occurred on following day.
c Occurred at different time than peak discharge.

1162. Des Lacs River tributary near Donnybrook, N. Dak.

Location.--Lat 48°29'35", long 101°51'20", in NE¼SW¼ sec. 24, T.158 N., R.87 W., at culvert on Minneapolis, St. Paul, and Sault Ste. Marie Railroad, 1.8 miles southeast of Donnybrook.

Drainage area.--3.82 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 22 cfs and extended to 125 cfs on basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July-August 1956	3.76	58	1959	June 1959	4.01	80
				1960	Mar. 26, 1960	6.27	125
1957	Mar. 20, 1957	3.32	33				
1958	Mar. 30, 1958	3.45	39	1961	Mar. 13, 1961	a2.46	2

a Affected by backwater.

1163. Fuller Coulee at Foxholm, N. Dak.

Location.--Lat 48°21'45", long 101°34'00", in NE¼SW¼ sec.2, T.156 N., R.85 W., at culvert on U.S. Highway 52, 0.4 mile southeast of Foxholm.

Drainage area.--12.8 sq mi, of which 6.9 sq mi is noncontributing.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 29, 1955	4.73	132	1959	Aug. 22, 1959	2.29	40
				1960	Mar. 26, 1960	4.70	126
1956	Mar. 20, 1956	a2.54	25				
1957	Mar. 20, 1957	1.51	9.5	1961	March 1961	1.72	3
1958	Mar. 28, 1958	3.06	77				

a Affected by backwater.

1165. Des Lacs River at Foxholm, N. Dak.

Location.--Lat 48°22'14", long 101°34'11", in NW¼NE¼NW¼ sec.2, T.156 N., R.85 W., on left bank, 200 ft upstream from county highway bridge in Foxholm.

Drainage area.--939 sq mi, of which 400 sq mi is probably noncontributing.

Gage.--Nonrecording Oct. 1, 1945, to Aug. 30, 1948, and June 14 to Oct. 23, 1955; recording Aug. 31, 1948, to June 7, 1955, and since Oct. 24, 1955. Oct. 1, 1945, to June 7, 1955, at former bridge over former channel, 500 ft southwest of present site at present datum. June 14 to Oct. 23, 1955, at site 200 ft downstream from present gage at same datum. Datum of gage is 1,632.98 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting and ice effect.

Bankfull stage.--20 ft.

Historical data.--Flood in spring of 1939 is maximum stage known since 1886, from information by local residents.

Remarks.--Some regulation by a series of wildfowl refuge ponds, combined capacity about 64,000 acre-ft. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Spring 1939	a18.8	-	-	1953	July 2, 1953	12.32	-	775
					1954	Apr. 6, 1954	8.36	2.0	205
1946	Mar. 23, 1946	5.62	1.0	-	1955	Mar. 31, 1955	13.91	.8	900
	Mar. 28, 1946	-	-	113					
1947	Mar. 24, 1947	14.38	1.9	640	1956	Apr. 12, 1956	11.33	-	696
1948	Apr. 19, 1948	10.73	-	505	1957	Mar. 22, 1957	8.18	2.75	150
1949	Apr. 4, 1949	18.04	.5	2,000	1958	Mar. 29, 1958	9.93	1.09	430
1950	Apr. 16, 1950	13.83	-	1,010	1959	June 28, 1959	4.60	-	105
					1960	Mar. 27, 1960	14.64	.95	1,020
1951	Apr. 6, 1951	18.05	1.0	1,800					
1952	Apr. 1, 1952	14.31	1.5	850	1961	Mar. 18, 1961	3.65	.5	25

a About.

1175. Souris River above Minot, N. Dak.

(Published as Mouse River at Minot 1903-24, Souris River at Minot 1927-28, 1929-34, and Souris River near Minot 1928-29)

Location.--Lat 48°14'45", long 101°22'15", in NW¼NW¼SE¼ sec.17, T.155 N., R.83 W., on right bank, 180 ft downstream from county highway bridge, 3½ miles west of Minot, 7 miles downstream from Des Lacs River, and at mile 124.1 downstream from Canadian border (Geological Survey river plan and profile).

Drainage area.--11,300 sq mi, approximately, of which 7,100 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Oct. 1, 1934; recording gage and concrete control thereafter. May 5, 1903, to Sept. 30, 1928, and Oct. 1, 1929, to Sept. 30, 1934, at mile 135.0 in Minot at datum 12.5 ft lower. Oct. 1, 1928, to Sept. 30, 1929, at Saugstad bridge at mile 145.8, 5 miles southeast of Minot at datum 19.2 ft lower than present datum. Flood records are equivalent. Datum of present gage is 1,545.75 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,100 cfs; subject to changes owing to control moving by frost action, changes to control structure, and manmade developments in flood plain.

Bankfull stage.--16 ft at site and datum in Minot and 14 ft at present site and datum.

Historical data.--Maximum stage known at present site and datum, about 23 ft in April 1904, from information by local residents. According to the Apr. 20, 1904, issue of the Minot Daily Optic, Minot, N. Dak., the river was at least 3 ft higher in 1881 than it was in 1904.

Remarks.--Records for 1924-27 furnished by State Engineer of North Dakota. Flow almost completely regulated since 1936 by Lake Darling and several smaller reservoirs (combined capacity, about 248,000 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1904	Apr. 20, 1904	21.9	-	12,000	1932	June 8, 1932	7.20	-	260
					1933	Apr. 6, 1933	10.00	-	1,040
1906	Apr. 10, 1906	9.4	-	1,090	1934	Mar. 23, 1934	7.25	-	328
1907	May 28-30, 1907	16.0	-	2,190	1935	May 5, 1935	6.67	-	612
1908	Apr. 13, 1908	6.5	-	644					
1909	Apr. 14, 1909	9.45	-	1,090	1936	Apr. 13, 1936	6.45	0.8	-
1910	Apr. 1-4, 1910	4.85	-	207		Apr. 14, 1936	-	-	356
					1937	May 19, 1937	5.22	-	197
1911	Apr. 29, 1911	7.65	-	744	1938	Apr. 7, 1938	6.00	-	418
1912	Apr. 20, 1912	10.4	-	1,200	1939	Mar. 26, 1939	12.80	.4	1,480
1913	Apr. 4, 1913	10.5	1.0	1,080	1940	Oct. 20, 1939	6.42	-	480
	Apr. 9, 1913	9.5	-	1,080					
1914	Apr. 20, 1914	9.5	-	1,080	1941	Apr. 19, 1941	6.21	-	480
1915	June 26, 1915	4.9	-	41	1942	Apr. 5, 1942	8.66	1.84	620
					1943	Apr. 26, 1943	15.29	-	2,480
1916	May 6, 1916	19.05	-	4,260	1944	June 28, 1944	11.11	-	1,400
1917	Apr. 29, 1917	11.4	-	1,270	1945	Mar. 15, 1945	8.46	2.24	487
1919	Apr. 18-20, 1919	15.0	-	1,860	1946	Apr. 18, 1946	5.46	-	254
1920	May 5, 1920	17.1	-	2,560	1947	Apr. 3, 1947	12.54	1.44	1,360
					1948	May 17, 1948	16.34	-	2,700
1921	July 10, 1921	8.5	-	790	1949	Apr. 6, 1949	16.56	1.55	2,250
1922	Apr. 21, 1922	17.1	-	2,570	1950	Apr. 28, 1950	11.00	-	1,340
1923	Apr. 30, May 1-3, 1923	19.6	-	3,460	1951	Apr. 8, 1951	14.81	.9	-
1924	Apr. 17, 1924	9.8	-	698		May 16, 1951	-	-	2,280
1925	Apr. 18, 1925	-	-	3,450	1952	Apr. 1, 1952	11.98	2.61	1,080
					1953	July 2, 1953	15.21	-	2,320
1926	June 30, July 1, 3, 1926	-	-	194	1954	June 27, 1954	6.23	-	488
					1955	Apr. 22, 1955	14.79	-	2,200
1927	Apr. 30, 1927	20.4	-	3,900					
1928	Apr. 12, 1928	18.35	-	2,940	1956	Apr. 23, 1956	13.13	-	1,930
1929	June 7, 1929	3.00	-	430	1957	Mar. 24, 1957	6.03	.77	210
1930	Apr. 15, 1930	9.40	-	920	1958	Mar. 30, 1958	8.82	1.7	625
					1959	Apr. 24, 29, 1959	5.50	-	321
1931	May 2-5, 1931	-	-	8.0	1960	Mar. 29, 1960	12.18	2.85	1,000
	Aug. 16-23,	a5.0	-	-					
	Sept. 12-30, 1931				1961	Apr. 8, 1961	5.31	-	229

a Backwater from industrial wastes.

1200. Souris River at Verendrye, N. Dak.

Location.--Lat 48°09'35", long 100°43'45", in NW¼SW¼ sec.17, T.154 N., R.78 W., on left bank, 2.7 miles north of Verendrye, 7½ miles southwest of (19 miles upstream from) mouth of Wintering River, and at mile 210.5 downstream from Canadian border (Geological Survey river plan and profile).

Drainage area.--12,000 sq mi, approximately, of which 7,400 sq mi is probably noncontributing.

Gage.--Nonrecording at datum 1.97 ft higher prior to Mar. 4, 1938; recording thereafter. Gage heights given herein converted to present datum. Datum of present gage is 1,464.87 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,300 cfs and extended to 4,200 cfs; subject to changes owing to ice effect and channel shifting.

Bankfull stage.--17 ft.

Remarks.--Flow regulated by reservoirs on the Souris and the Des Lacs Rivers (combined capacity, about 248,000 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	May 23, 1937	4.17	-	118	1951	Apr. 12, 1951	15.55	-	2,710
	June 20, 1937	-	-	118	1952	Apr. 5, 1952	15.38	1.25	-
1938	Mar. 2, 1938	8.30	3.3	-		Apr. 6, 1952	-	1.20	2,050
	Apr. 10, 1938	-	-	342	1953	July 7, 1953	14.89	-	2,150
1939	Mar. 30, 1939	13.58	3.3	1,260	1954	Feb. 21, 1954	7.09	1.30	-
1940	Oct. 24, 1939	5.32	-	396		June 30, 1954	-	-	572
					1955	Apr. 26, 1955	13.56	-	1,970
1941	Apr. 22, 1941	5.44	-	426					
1942	Apr. 6, 1942	12.25	2.8	1,100	1956	Apr. 30, 1956	13.06	-	1,800
1943	Mar. 28, 1943	16.32	6.0	-	1957	Mar. 25, 1957	5.61	1.05	-
	May 2, 1943	-	-	2,220		Apr. 17, 1957	-	-	386
1944	July 2, 1944	11.92	-	1,450	1958	Apr. 2, 1958	10.86	1.9	960
1945	Mar. 16, 1945	9.41	2.4	660	1959	Mar. 22, 1959	5.27	.8	-
						May 1, 1959	-	-	302
1946	Mar. 24, 1946	6.57	1.4	376	1960	Apr. 2, 1960	13.35	3.0	1,180
1947	Apr. 13, 1947	14.22	2.8	1,350					
1948	May 22, 1948	14.95	-	2,300	1961	Apr. 11, 1961	4.97	-	375
1949	Apr. 8, 1949	17.7	-	4,200					
1950	May 16, 1950	14.45	-	2,150					

1202. Wintering River near Bergen, N. Dak.

Location.--Lat 47°55'50", long 100°40'15", on west line of sec.4, T.151 N., R.78 W., on left downstream wingwall of bridge, 6 miles southeast of Bergen.

Drainage area.--176 sq mi, of which 50 sq mi is probably noncontributing.

Gage.--Recording. Altitude of gage is 1,590 ft, from topographic map.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes (controlled capacity, about 850 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1957	Mar. 21, 1957	2.41	0.15	15	1960	Mar. 27, 1960	-	-	360
1958	July 2, 1958	3.52	-	121					
1959	June 27, 1959	3.86	-	225	1961	Mar. 7, 1961	2.4	0.8	-
1960	Mar. 22, 1960	5.1	1.3	-		Mar. 19, 1961	-	-	1.9

1205. Wintering River near Karlsruhe, N. Dak.

Location.--Lat 48°10'14", long 100°32'20", on line between secs. 10 and 11, T.154 N., R.77 W., on left bank, 30 ft upstream from highway bridge, 4 miles upstream from mouth, and 7 miles northeast of Karlsruhe.

Drainage area.--705 sq mi, of which 420 sq mi is probably noncontributing.

Gage.--Recording. Altitude of gage is 1,480 ft, from river-profile map.

Stage-discharge relation.--Defined by current-meter measurements below 770 cfs and extended to 3,000 cfs on basis of velocity-area study; subject to changes owing to channel shifting and ice effect.

Bankfull stage.--5 ft.

Historical data.--The peak stage of Apr. 7, 1949, is maximum gage height known (channel choked with packed snow).

Remarks.--Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes (combined capacity, about 850 acre-ft). Base for partial-duration series, 25 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	June 13, 1937	a3.82	-	37	1950	Apr. 22, 1950	5.96	-	196
						May 16, 1950	6.99	-	474
1938	Mar. 15, 1938	5.51	1.00	-		June 25, 1950	3.27	-	27
	Mar. 17, 1938	5.07	.39	66					
					1951	Apr. 5, 1951	8.03	2.43	150
1939	Mar.25-27,1939	7.01	3.3	46		Apr. 9, 1951	7.70	.77	450
						June 7, 1951	3.27	-	32
1940	Mar. 19, 1940	4.72	1.90	-		June 21, 1951	4.03	-	55
	May 15, 1940	2.92	-	11					
					1952	Apr. 7, 1952	7.80	1.09	350
1941	Mar. 31, 1941	6.31	3.5	-		July 2, 1952	4.35	-	61
	Apr. 2, 1941	5.40	2.3	26		Aug. 31, 1952	4.83	-	84
	May 4, 1941	3.17	-	29		Sept.18, 1952	3.98	-	47
1942	Apr. 5, 1942	5.89	2.8	-	1953	Mar. 30, 1953	6.31	.65	-
	Apr. 13, 1942	5.72	-	138		Apr. 3, 1953	5.71	-	141
	Apr. 19, 1942	5.31	-	113		May 11, 1953	4.66	-	73
	May 3, 1942	3.36	-	38		May 30, 1953	4.12	-	49
	May 6, 1942	3.25	-	34		July 4, 1953	4.10	-	57
1943	March 1943	8.54	1.20	472	1954	Mar. 14, 1954	4.74	1.2	36
	Apr. 2, 1943	7.48	-	530		Apr. 7, 1954	3.70	.14	37
	Apr. 27, 1943	3.80	-	51		June 8, 1954	4.41	-	65
	May 16, 1943	3.24	-	33		June 23, 1954	6.22	-	199
	June 10, 1943	6.02	-	175		Sept.16, 1954	3.37	-	28
	June 19, 1943	5.33	-	124					
	July 15, 1943	4.58	-	80	1955	Mar. 31, 1955	7.78	2.2	-
						Apr. 5, 1955	6.15	.10	176
1944	Apr. 10, 1944	5.25	2.31	-		May 16, 1955	3.35	-	27
	June 28, 1944	3.71	-	49		May 28, 1955	3.37	-	28
	July 7, 1944	3.31	-	36		June 4, 1955	3.39	-	29
						June 9, 1955	3.37	-	28
1946	Mar. 22, 1946	7.08	3.1	-					
	Mar. 30, 1946	-	-	67	1956	Apr. 6, 1956	9.25	3.0	200
1947	Mar. 24, 1947	7.30	3.0	-	1957	Mar. 10, 1957	4.76	1.0	-
	Mar. 25, 1947	7.27	2.62	80		June 8, 1957	4.10	-	22
	Mar. 31, 1947	5.92	1.09	90					
	Apr. 16, 1947	5.76	-	159	1958	Apr. 2, 1958	4.42	.5	-
	July 23, 1947	5.26	-	117		July 2, 1958	4.00	-	28
1948	Apr. 17, 1948	8.80	2.6	-	1959	Mar. 14, 1959	5.02	1.35	-
	Apr. 19, 1948	7.15	-	405		Apr. 1, 1959	4.00	-	21
	Apr. 28, 1948	6.26	-	222					
					1960	Mar. 31, 1960	7.32	1.6	-
1949	Apr. 7, 1949	b12.0	-	3,000		Apr. 1, 1960	7.29	.53	260
	June 2, 1949	3.80	-	38		May 26, 1960	4.04	-	31
1950	Apr. 6, 1950	7.70	4.3	-	1961	Mar. 16, 1961	4.79	.92	18
	Apr. 17, 1950	6.27	.55	164					

a Gage height but not discharge probably higher in March.
b Occurred at different time than peak discharge (channel choked with packed snow).

1215. Souris River near Towner, N. Dak.
(Published as "at Towner" prior to 1935)

Location.--Lat 48°18'24", long 100°27'39", in SW¼NE¼ sec.29, T.156 N., R.76 W., 150 ft upstream from former U.S. Highway 2 bridge, 2.4 miles upstream from present U.S. Highway 2 bridge, 3½ miles southwest of Towner, and at mile 248.0 downstream from Canadian border (Geological Survey river plan and profile).

Drainage area.--12,800 sq mi, approximately, of which 8,000 sq mi is probably noncontributing.

Gage.--Nonrecording at site 10 miles downstream at datum 0.68 ft higher prior to Oct. 28, 1934; recording thereafter. Datum of gage is 1,443.50 ft.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to channel shifting and ice effect.

Remarks.--Flow regulated since 1935-37 by Fish and Wildlife Service dams on Souris, Des Lacs, and Wintering Rivers (combined capacity, about 249,000 acre-ft). Diversion for irrigation of 7,000 acres at Eaton Dam 5 miles upstream since 1937. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Apr. 10, 1933	a9.02	1,080	1938	May 2, 1938	c6.73	431
1934	Apr. 3, 1934	b5.02	385	1939	Apr. 1, 1939	e12.53	1,150
1935	July 26, 1935	c5.78	334	1940	Oct. 27, 1939	5.91	311
1936	Apr. 15, 1936	d9.53	905	1941	May 6, 1941	6.58	-
1937	June 25, 1937	d4.40	226				

a Backwater from ice, 0.4 ft. b Backwater from ice, 1.0 ft. c Occurred on following day. d Occurred at different time than peak discharge. e Occurred on preceding day.

1220. Souris River near Bantry, N. Dak.

Location.--Lat 48°30'20", long 100°26'04", in SE¼NW¼SE¼ sec.14, T.158 N., R.76 W., on left bank, 200 ft upstream from Nelson Bridge, 8 miles east of Bantry, 18 miles upstream from Willow Creek, and at mile 284.8 downstream from Canadian border (Geological Survey river plan and profile).

Drainage area.--13,000 sq mi, approximately, of which 8,100 sq mi is probably noncontributing.

Gage.--Nonrecording at datum 0.17 ft lower prior to Mar. 16, 1938; recording thereafter. Gage heights given herein converted to present datum. Datum of gage is 1,427.56 ft above mean sea level, datum of 1929, Emerson-Crookston supplementary adjustment of 1941.

Stage-discharge relation.--Defined by current-meter measurements; subject to changes owing to ice effect and shifting channel.

Bankfull stage.--7 ft.

Remarks.--Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers (total capacity, about 249,000 acre-ft). Diversion for irrigation of 7,600 acres at Easton Dam 42 miles upstream. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	July 6, 1937	2.69	-	118	1950	May 23, 1950	12.22	-	1,910
1938	May 4, 1938	5.14	-	338					
1939	Apr. 2, 1939	9.19	1.8	-	1951	Apr. 23, 1951	12.55	-	2,220
	Apr. 4, 1939	-	-	866	1952	Apr. 14, 1952	11.72	-	1,550
1940	Oct. 29, 1939	4.94	-	263	1953	July 17, 1953	12.33	-	1,770
					1954	July 4, 1954	8.89	-	750
1941	May 7, 1941	6.16	-	459	1955	May 4, 1955	12.53	-	1,920
1942	Apr. 13, 1942	9.07	.6	-					
	Apr. 14, 1942	-	-	850	1956	May 10, 1956	12.23	-	1,700
1943	May 9-18, 1943	a12.25	-	1,910	1957	May 24, 1957	6.00	-	390
1944	July 5, 1944	-	-	1,600	1958	Apr. 6, 1958	6.47	0.4	400
1945	Mar. 24, 1945	8.65	-	778	1959	May 31, 1959	4.99	-	289
					1960	Apr. 3, 1960	11.23	2.6	-
1946	Apr. 1, 1946	7.17	-	607		Apr. 9, 1960	-	-	1,120
1947	Apr. 18, 1947	11.06	-	1,320					
1948	May 31, 1948	12.43	-	2,000	1961	Mar. 19, 1961	5.20	2.5	-
1949	Apr. 13, 1949	13.76	-	4,760		May 16, 1961	-	-	268

a Occurred on May 15, 1943.

1225. Willow Creek at Dunseith, N. Dak.

Location.--Lat 48°49'12", long 100°03'45", in NE¼NW¼ sec.36, T.162 N., R.73 W., on right downstream wingwall of county road bridge, 0.4 mile northwest of railway station in Dunseith.

Drainage area.--142 sq mi, of which 51 sq mi is probably noncontributing.

Gage.--Nonrecording prior to July 16, 1957; recording thereafter. Datum of gage is 1,700.00 ft above mean sea level, datum of 1929, Emerson-Crookston supplementary adjustment of 1941.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 40 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	June 21, 1954	13.87	-	214	1958	Mar. 26, 1958	13.77	2.0	-
	June 30, 1954	14.55	-	254		Apr. 7, 1958	13.25	.86	80
1955	Mar. 31, 1955	14.98	1.5	120	1959	Mar. 12, 1959	12.15	1.6	-
	Apr. 5, 1955	15.30	.88	366		Aug. 22, 1959	11.87	-	33
	June 20, 1955	12.71	-	93					
	July 9, 1955	14.35	-	354	1960	Oct. 28, 1959	12.85	-	129
						Nov. 7, 1959	13.90	.3	260
1956	Apr. 24, 1956	14.4	.25	350		Nov. 12, 1959	14.78	1.6	-
	May 11, 1956	13.57	-	252		Apr. 17, 1960	14.6	-	410
	July 4, 1956	12.62	-	109		May 29, 1960	12.80	-	159
1957	Apr. 10, 1957	13.18	.4	50	1961	Apr. 21, 1961	12.95	-	4.7
	Apr. 23, 1957	12.14	-	44					

1231. Oak Creek at Lake Metigoshe Outlet, near Bottineau, N. Dak.

Location.--Lat 48°57'56", long 100°21'47", in SE¼SE¼ sec.3, T.163 N., R.75 W., at the outlet of Lake Metigoshe, 10 miles northeast of Bottineau. Gage is located 1½ miles northeast of outlet of Lake Metigoshe.

Drainage area.--59.0 sq mi, of which 7 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Jan. 20, 1955; recording thereafter. Datum of gage is 2,130.00 ft above mean sea level, datum of 1929, Emerson-Crookston supplementary adjustment of 1941.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--9 ft.

Remarks.--Flow regulated since 1959 by dam and control works on the outlet of Sharp Lake, located on the principal tributary in Manitoba. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 19, 1954	8.72	57	1958	-	-	0
1955	Apr. 29, 1955	9.00	-	1959	-	-	0
	May 7-10,1955	-	a85	1960	May 30, 1960	9.01	74
1956	June 25, 1956	8.54	37	1961	-	-	0
1957	May 7, 1957	8.28	12				

a Maximum daily discharge.

1234. Willow Creek near Willow City, N. Dak.

Location.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., on left bank, 50 ft downstream from bridge on county road, 1½ miles upstream from Snake Creek, and 7 miles west of Willow City.

Drainage area.--1,160 sq mi, approximately, of which 430 sq mi is probably noncontributing.

Gage.--Nonrecording prior to Oct. 5, 1956; recording thereafter. Altitude of gage is 1,430 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements. Peak discharge for Apr. 20, 1956, computed from rating curve extended above 1,220 cfs.

Bankfull stage.--11.5 ft.

Remarks.--Base for partial-duration series, 50 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 9, 1956	5.50	a35	1959	Apr. 2, 1959	6.31	25
1957	Mar. 27, 1957	b8.55	-	1960	Apr. 9, 1960	14.03	1,190
	Mar. 29, 1957	c7.25	103		June 5, 1960	9.74	206
1958	Mar. 31, 1958	7.24	114	1961	Mar. 30, 1961	5.82	15

a Maximum daily during period August to September. A discharge of 1,340 cfs occurred Apr. 20, 1956, at site 1 mile downstream, below Snake Creek.
b Backwater from ice, 2.1 ft.
c Backwater from ice, 0.4 ft.

1235.2. Egg Creek near Glenburn, N. Dak.

Location.--Lat 48°29'15", long 101°24'15", in SW¼SW¼ sec.21, T.158 N., R.83 W., at culvert on county highway 8½ miles west of Glenburn.

Drainage area.--20.9 sq mi, of which 13.9 sq mi is probably noncontributing.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 35 cfs and extended to 93 cfs on basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 29, 1955	3.96	67	1959	May 1959	1.79	9.0
				1960	Mar. 22, 1960	a4.90	50
1956	Apr. 1, 1956	4.59	93				
1957	-	-	0	1961	March 1961	a1.76	.5
1958	Mar. 26, 1958	3.00	36				

a Affected by backwater.

1235.4. Egg Creek near Ruthville, N. Dak.

Location.--Lat 48°26'25", long 101°17'55", in SW¼NW¼ sec.8, T.157 N., R.82 W., at bridge on U.S. Highway 83, 4.7 miles north of Ruthville.

Drainage area.--108.4 sq mi, of which 82.0 sq mi is probably noncontributing.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--Not subject to overflow.

Remarks.--Low peaks will be affected by discharge from sewage lagoon at Minot Air Force Base. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 30, 1955	1.9	185	1959	Mar. 14, 1959	a2.02	70
				1960	Mar. 26, 1960	2.39	240
1956	April 1956	1.53	90				
1957	July 13, 1957	1.73	135	1961	Feb. 22, 1961	a1.34	6.5
1958	Mar. 26, 1958	a1.90	55				

a Affected by backwater.

1235.6. Egg Creek tributary near Deering, N. Dak.

Location.--Lat 48°22'15", long 101°09'10", in SE¼ sec.32, T.157 N., R.81 W., at culvert on county highway, 5 miles southwest of Deering.

Drainage area.--4.25 sq mi, of which 0.75 sq mi is probably noncontributing.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 9 cfs and extended to 20 cfs on basis of logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Mar. 30, 1955	3.31	20	1959	Mar. 18, 1959	2.00	1.5
				1960	Mar. 26, 1960	2.72	9
1956	June-July 1956	a1.52	5				
1957	Aug. 11, 1957	a1.94	1	1961	-	-	0
1958	Mar. 26, 1958	a2.28	3				

a Affected by backwater.

1235.8. Egg Creek near Deering, N. Dak.

Location.--Lat 48°20'35", long 101°07'20", in SE¼SE¼ sec.7, T.156 N., R.81 W., at culvert on county highway, 5 miles southwest of Deering.

Drainage area.--132.0 sq mi, of which 91.2 sq mi is probably noncontributing.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--Not subject to overflow.

Remarks.--Considerable channel storage above the station will affect the lower peak discharges. Only annual peaks are shown.

Peak stages and discharges of Egg Creek near Deering, N. Dak.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 1, 1955	5.08	112	1958	Mar. 26, 1958	3.29	51
				1959	Mar. 18, 1959	3.12	46
1956	March-April 1956	3.84	68	1960	Mar. 26, 1960	5.37	118
1957	Aug. 12, 1957	1.12	2.8	1961	March 1961	1.2	4

1236. Egg Creek near Granville, N. Dak.

Location.--Lat 48°21'18", long 100°49'19", on west line of sec.10, T.156 N., R.79 W., on right downstream wingwall of bridge, 2 miles downstream from Hay Coulee, 3.5 miles upstream from North Lake, and 6 miles northeast of Granville.

Drainage area.--289 sq mi, of which 150 sq mi is probably noncontributing.

Gage.--Recording. Datum of gage is 1,478.14 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 20 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	-	-	0	1960	Mar. 28, 1960	5.44	258
1958	Mar. 28, 1958	5.07	99	1961	-	-	0
1959	-	-	0				

1237. Cut Bank Creek at North Lake Outlet, near Granville, N. Dak.

Location.--Lat 48°23'10", long 100°46'00", on south line of sec.29, T.157 N., R.78 W., on right downstream wingwall of bridge, 9 miles northeast of Granville, and 13.5 miles east of Deering.

Drainage area.--534 sq mi, of which 290 sq mi is probably noncontributing.

Gage.--Recording. Datum of gage is 1,477.25 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--2.5 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	-	-	0	1960	Apr. 13, 1960	0.62	1.0
1958	-	-	0				
1959	-	-	0	1961	-	-	0

1240. Souris River near Westhope, N. Dak.
(International gaging station)

Location.--Lat 48°59'47", long 100°57'29", in SW¼SE¼ sec.30, T.164 N., R.79 W., on left bank, 1,200 ft upstream from second crossing of international boundary, 1 mile downstream from Fish and Wildlife Service dam 357, 7 miles northeast of Westhope, 11 miles downstream from Boundary Creek, and at mile 358.2 downstream from international boundary (Geological Survey river plan and profile).

Drainage area.--17,600 sq mi, approximately, of which 10,700 sq mi is probably noncontributing.

Gage.--Nonrecording at site 6.3 miles upstream at datum 2.52 ft higher prior to Mar. 28, 1938; recording thereafter. Datum of gage is 1,402.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; subject to constant changing owing to flat slopes, wind action, aquatic growth, beaver activity, and ice effect.

Remarks.--Flow regulated since spring of 1936 by reservoirs on Souris River and tributaries (combined capacity, about 321,000 acre-ft). Diversion for irrigation of 7,600 acres at Eaton Dam since 1937. This station is one of the international gaging stations maintained by the United States under agreement with Canada. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1930	Mar. 31, 1930	6.98	-	1,130	1946	Apr. 4, 1946	8.04	1.27	-
						Apr.8-13,1946	-	-	a600
1931	Apr. 2, 1931	2.48	1.52	-	1947	Apr. 19, 1947	-	-	a1,800
	Apr. 6, 1931	-	-	118		Apr. 21, 1947	11.37	-	-
1932	Apr. 6, 1932	4.10	1.8	-	1948	Apr. 26, 1948	-	-	a2,900
	May 4, 1932	-	-	148		May 1948	13.63	-	-
1933	Apr. 19, 1933	7.25	-	1,130	1949	Apr. 18, 1949	b16.9	-	6,400
1934	Apr. 7, 1934	6.02	-	524	1950	May 17, 1950	-	-	2,650
1935	July 9, 1935	7.06	-	279		May 23, 1950	12.31	-	-
1936	Apr. 14, 1936	4.94	1.9	139	1951	Apr. 29,May 1, 1951	-	-	3,100
1937	Apr. 11, 1937	1.90	-	9.0					
1938	June 18, 1938	4.25	-	51		May 8, 1951	13.98	-	-
1939	Mar. 31, 1939	6.94	3.22	-	1952	Apr. 27, 1952	8.89	-	1,420
	June 16, 1939	-	-	27.5	1953	Aug. 13, 1953	9.46	-	1,550
1940	Oct. 23,25-28, 1939	-	-	29	1954	July 13, 1954	-	-	1,780
						July 17, 1954	10.52	-	-
	Aug. 5, 1940	4.35	-	-	1955	Apr. 14, 1955	13.82	-	3,500
1941	June 12, 1941	-	-	36	1956	May 21, 1956	12.35	-	3,040
	Sept. 8, 1941	4.92	-	-	1957	Nov. 9, 1956	6.74	-	367
1942	Apr. 10, 1942	8.96	2.96	-	1958	May 12, 1958	7.18	-	563
	Apr. 21, 1942	-	-	1,100	1959	June 3, 1959	6.36	-	187
1943	May 6, 1943	11.89		-	1960	Apr. 23, 1960	10.87	-	2,120
	May 22, 1943	-	-	a2,240					
1944	July 9, 1944	-	-	a2,000	1961	Oct. 1, 1960	5.86	-	30
1945	Mar. 31, 1945	-	-	a1,040					

a Maximum daily discharge.
b Occurred Apr. 20, 1949.

LAKE OF THE WOODS BASIN

1245. Isabella River near Isabella, Minn.

Location.--Lat 47°48'00", long 91°31'15", in NW¼NE¼ sec.6, T.61 N., R.9 W., on left bank, 200 ft upstream from Bald Eagle Lake, half a mile upstream from Snake River, and 14½ miles northwest of Isabella.

Drainage area.--341 sq mi.

Gage.--Recording. Datum of gage is 1,453.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,300 cfs and extended above.

Remarks.--Base for partial-duration series, 680 cfs.

Peak stages and discharges of Isabella River near Isabella, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	May 25, 1953	6.78	1,170	1958	Sept. 4, 1958	5.92	731
	June 3, 1953	7.38	1,580				
	Aug. 15, 1953	5.80	681	1959	May 8, 1959	5.72	667
	Sept. 3, 1953	5.83	693		May 23, 1959	6.03	784
					June 15, 1959	6.53	1,050
1954	May 4, 1954	9.31	3,550		Aug. 29, 1959	6.87	1,270
	June 21,22,1954	6.50	1,000				
				1960	Apr. 29, 1960	8.06	2,190
1955	Apr. 15, 1955	6.50	1,000		May 8, 1960	7.48	1,730
	June 12, 1955	6.62	1,020				
				1961	Apr. 25, 1961	7.03	1,370
1956	May 16, 1956	8.60	2,720		May 18, 1961	6.71	1,170
					June 4, 1961	5.93	742
1957	Apr. 27, 1957	9.15	3,360		Sept.16, 1961	6.05	792
	May 30, 1957	5.91	734				
	June 25, 1957	7.34	1,590				

1250. South Kawishiwi River near Ely, Minn.

Location.--Lat 47°50'24", long 91°41'43", in NE¼SW¼ sec.23, T.62 N., R.11 W., on left bank, 5 miles upstream from Birch Lake and 9 miles southeast of Ely.

Gage.--Recording. Altitude of gage is 1,430 ft (from topographic map prepared by Minnesota Power & Light Co.).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Oct. 8, 1951	-	1,160	1957	Apr. 29, 1957	6.88	4,380
	Apr. 26, 1952	5.45	2,130		June 26, 1957	5.00	1,750
	July 22, 1952	4.71	1,470				
	Aug. 11, 1952	4.87	1,610	1958	Sept.11, 1958	3.72	666
	Sept. 5, 1952	4.18	1,040				
				1959	May 26, 1959	4.19	1,070
1953	June 5, 1953	5.19	1,900		June 17, 1959	4.11	1,000
	Sept. 5, 1953	4.30	1,130		Sept.7-9,1959	4.27	1,130
1954	May 4, 1954	7.25	5,130	1960	May 8, 1960	5.74	2,670
	June 23, 1954	5.17	1,940				
				1961	Apr. 27, 1961	4.99	1,740
1955	Apr. 20, 1955	4.39	1,200		May 19, 1961	4.94	1,690
	June 14, 1955	4.47	1,270		Sept.19, 1961	3.94	788
1956	May 18, 1956	6.52	3,780				

1255. Stony River near Isabella, Minn.

Location.--Lat 47°41'10", long 91°38'20", in NW¼NW¼ sec.17, T.60 N., R.10 W., on left bank, 275 ft downstream from Slate Lake and bridge on State Highway 1, 11 miles upstream from Birch Lake, and 12¾ miles northwest of Isabella.

Drainage area.--180 sq mi.

Gage.--Recording. Datum of gage is 1,632.45 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 400 cfs.

Peak stages and discharges of Stony River near Isabella, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Apr. 29, 1953	8.82	560	1957	June 26, 1957	9.10	783
	June 3, 1953	9.16	786				
	Aug. 15, 1953	8.64	452	1958	Sept. 9, 1958	8.70	449
1954	May 4, 1954	10.46	1,750	1959	May 24, 1959	8.65	472
	June 24, 1954	8.82	560		June 14, 1959	8.63	460
1955	Apr. 18, 1955	8.83	553	1960	Apr. 29, 1960	9.38	980
	June 14, 1955	8.68	460				
				1961	Apr. 26, 1961	9.10	665
1956	May 16, 1956	10.01	1,410		May 19, 1961	8.86	523
1957	Apr. 27, 1957	10.60	2,040				

1260. Dunka River near Babbitt, Minn.

Location.--Lat 47°41'55", long 91°52'05", in NW¼NE¼ sec.9, T.60 N., R.12 W., on left bank, 1.8 miles upstream from Birch Lake and 2½ miles northeast of Babbitt.

Drainage area.--53.0 sq mi.

Gage.--Recording. Datum of gage is 1,488.98 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 180 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 22, 1952	6.68	379	1957	Apr. 22, 1957	7.66	641
					June 24, 1957	6.71	350
1953	June 1, 1953	6.12	223				
	July 3, 1953	6.01	193	1958	Sept.26, 1958	5.97	185
	Sept. 4, 1953	6.33	261				
				1959	June 13, 1959	5.98	192
1954	Apr. 16, 1954	7.84	691				
	May 2, 1954	7.76	663	1960	Apr. 26, 1960	6.76	363
	May 12, 1954	7.04	436		May 6, 1960	6.44	285
	June 20, 1954	6.64	333				
				1961	Apr. 22, 1961	7.33	487
1955	Apr. 13, 1955	6.42	281		May 17, 1961	6.45	288
					Sept.12, 1961	6.22	239
1956	May 7, 1956	6.38	272				

1265. Bear Island River near Ely, Minn.

Location.--Lat 47°49'50", long 91°50'20", in SW¼ sec.23, T.62 N., R.12 W., on right bank, 10 ft downstream from State Highway 1 and 6 miles southeast of Ely.

Drainage area.--68.5 sq mi.

Gage.--Recording. Datum of gage is 1,388.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow regulated by several lakes. Base for partial-duration series, 75 cfs.

Peak stages and discharges of Bear Island River near Ely, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1953	Apr. 16, 1953	6.19	-	136	1957	June 26, 1957	6.13	-	115
	June 1, 1953	6.37	-	182		July 21, 1957	6.60	-	134
	Sept. 6, 1953	6.78	-	157					
					1958	Nov. 19, 1957	6.24	0.48	-
1954	May 3, 1954	7.03	-	423		Apr. 28, 1958	6.07	-	52
	June 23, 1954	6.55	-	212					
					1959	May 25, 1959	6.28	-	116
1955	Apr. 3, 1955	7.12	1.72	-					
	Apr. 20, 1955	6.42	-	138	1960	May 6, 1960	6.89	-	228
	June 13, 1955	6.05	-	108		June 1, 1960	6.75	-	180
1956	May 5, 1956	6.83	-	264	1961	Apr. 24, 1961	7.20	-	242
						May 18, 1961	6.98	-	200
1957	Apr. 24, 1957	6.96	-	338					

1270. Kawishiwi River near Winton, Minn.

Location.--Lat 47°56'05", long 91°45'50", in NE¼NW¼ sec.20, T.63 N., R.11 W., at powerplant of Minnesota Power & Light Co., just upstream from Fall Lake, and 1.8 miles east of Winton.

Drainage area.--1,200 sq mi, approximately.

Gage.--Nonrecording at outlet of Garden Lake 1906-7; recording at site 400 ft downstream from present dam, 1913-19. Since September 1923, records collected by Minnesota Power & Light Co. under general supervision of Geological Survey.

Remarks.--Flow regulated by powerplant and by Camp Six, Bald Eagle, Gabbro, Little Gabbro, Birch, White Iron, South Farm, Farm and Garden Lakes. Only annual peaks are shown. Annual peak discharges are not available since 1924; figures for 1924-61 are maximum daily discharges for time of peak occurring during year. A comparison of peak discharges with the corresponding daily discharges during 1913-19 showed the mean divergence of the peaks to be +15.6 percent from the daily discharges; the differences ranged from +6.8 to +31.4 percent with the differences being smaller for the higher discharges.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	June 12, 1906	-	3,330	1938	May 8, 1938	-	8,010
1907	June 3, 1907	-	5,250	1939	May 12, 1939	-	5,690
				1940	May 29, 1940	-	4,260
1913	June 9, 1913	-	3,380				
1914	June 4, 1914	-	4,480	1941	Apr. 25, 1941	-	6,030
1915	June 20, 1915	-	3,760	1942	May 27, 1942	-	4,320
				1943	June 24, 1943	-	5,300
1916	(a)	-	5,370	1944	June 12, 1944	-	7,680
1917	June 21, 1917	-	2,440	1945	Apr. 12, 1945	-	5,740
1918	June 10, 1918	-	2,890				
1919	May 1, 1919	-	2,290	1946	May 1, 1946	-	3,740
				1947	May 12, 1947	-	6,840
1924	June 13, 1924	-	916	1948	May 3, 1948	-	11,200
1925	Oct. 16, 1924	-	2,430	1949	July 10, 1949	-	4,280
				1950	May 18, 1950	-	16,000
1926	Oct. 6, 1925	-	3,010				
1927	Apr. 26, 1927	-	6,030	1951	May 9, 1951	-	8,010
1928	Sept.20, 1928	-	4,240	1952	Apr. 29, 1952	-	4,530
1929	Oct. 10, 1928	-	2,720	1953	June 9, 1953	-	4,160
1930	May 17, 1930	-	3,860	1954	May 7, 1954	-	10,100
				1955	Apr. 27, 1955	-	2,640
1931	June 20, 1931	-	2,940				
1932	May 19, 1932	-	3,100	1956	May 16, 1956	-	7,730
1933	May 25, 1933	-	2,410	1957	May 2, 1957	-	8,520
1934	May 14, 1934	-	7,210	1958	Sept.16, 1958	-	1,830
1935	May 10, 1935	-	4,330	1959	June 11, 1959	-	2,900
				1960	May 8, 1960	-	5,780
1936	May 15, 1936	-	7,350				
1937	May 12, 1937	-	5,860	1961	May 27, 1961	-	4,300

a Apr. 30, May 7, 1916.

Note.--Maximum daily discharge for time of peak occurring within year for 1906 and 1924-61.

1275. Basswood River near Winton, Minn.
(International gaging station)

Location.--Lat 48°04'55", long 91°39'10", in sec.30, T.65 N., R.10 W., on Jackfish Bay of Basswood Lake, used to determine discharge at outlet (lat 48°06', long 91°39', in sec.19, T.65 N., R.10 W., on international boundary 14 miles northeast of Winton).

Drainage area.--1,740 sq mi, approximately (above outlet of Basswood Lake).

Gage.--Nonrecording prior to Oct. 28, 1938; recording thereafter. Prior to June 2, 1938, at site on northwest side of Jackfish Bay, Basswood Lake, 5½ miles southwest, at present datum. June 2 to Oct. 27, 1938, at site on Williams Island half a mile northeast, at present datum. Datum of gage is 1,299.80 ft above mean sea level, adjustment of 1928 by Geodetic Survey of Canada.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow affected by storage on Kawishiwi River. Only annual peaks are shown. This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	July 20, 1926	1.55	2,270	1945	Apr.19-22,1945	3.50	6,020
1927	May 12, 1927	4.07	7,150				
				1946	May 2, 1946	2.43	3,960
1930	July 23, 1930	2.46	3,820	1947	May19-25, 1947	3.61	6,230
				1948	May 10, 1948	4.82	9,230
1931	June 22, 1931	2.10	3,200	1949	July15-17,1949	2.26	3,610
1932	May 21, 1932	2.30	3,540	1950	May 24, 1950	6.94	15,600
1933	May 31, 1933	1.72	2,540				
1934	May 21, 1934	3.64	6,680	1951	May 13-17, 1951	3.85	6,730
1935	May 15, 1935	2.50	4,060	1952	May 8, 1952	2.37	3,830
				1953	June 13, 1953	2.85	4,740
1936	May 20-22,1936	3.80	6,630	1954	May 15, 1954	5.17	10,200
1937	May 18, 1937	2.96	4,950	1955	May 9, 1955	1.74	2,720
1938	May 15, 1938	4.38	7,950				
1939	May 21, 1939	2.93	4,840	1956	May 26, 1956	3.72	6,550
1940	June 6-8,1940	2.49	3,940	1957	May 9, 1957	3.77	6,660
				1958	Sept.30, 1958	.69	1,220
1941	May 6, 1941	2.90	4,740	1959	June 3, 1959	1.49	2,320
1942	May 25, 1942	2.85	4,640	1960	May 14, 1960	2.94	4,920
1943	June 24-29,1943	3.33	5,580				
1944	June 18-20,1944	4.13	7,290	1961	May 22, 1961	2.48	4,030

1280. Namakan River at outlet of Lac la Croix, Ontario
(International gaging station)

Location.--Lat 48°21'20", long 92°12'50", at Campbell's Camp, 2½ miles west of outlet of Lac la Croix.

Drainage area.--5,165 sq mi.

Gage.--Nonrecording. Prior to October 1933, at various sites on Lac la Croix. Gage readings have been reduced to elevations above mean sea level, United States and Canadian Boundary Survey datum.

Stage-discharge relation.--Defined by current-meter measurements below 25,400 cfs and extended above.

Remarks.--Only annual peaks are shown. This station is one of the international gaging stations maintained by Canada under agreement with United States.

Peak stages and discharges of Namakan River at outlet of Lac la Croix, Ontario

Water year	Date	Elevation (feet)	Discharge (cfs)	Water year	Date	Elevation (feet)	Discharge (cfs)
1922	May 1922	86.40	8,200	1941	June 19, 1941	86.52	8,180
1923	June 13-July 6, 1923	-	3,210	1942	Oct. 12-18, 1941	87.97	11,800
				1943	July 7, 1943	88.90	14,300
1924	June 17-28, 1924	-	1,620	1944	June 26-29, 1944	88.87	14,200
1925	Oct. 23-Nov. 2, 1924	-	4,810	1945	May 1, 1945	88.37	12,900
				1946	May 10-12, 1946	87.14	9,660
1926	July 8-27, 1926	-	6,040	1947	June 29, July 1, 1947	88.10	12,200
1927	May 20, 1927	89.77	16,700				
1928	July 17-19, 1928	-	7,140	1948	May 12-16, 1948	89.10	14,900
1929	Oct. 7, 1928	-	7,860	1949	July 11-14, 1949	86.40	7,900
1930	July 27, 1930	-	6,420	1950	May 31-June 2, 1950	93.30	28,200
1931	June 28-July 4, 1931	-	5,830	1951	May 22, 1951	89.05	14,700
1932	May 24-June 3, 1932	-	8,460	1952	May 10-12, 1952	86.40	7,900
				1953	June 19-21, 1953	88.10	12,200
1933	June 11, 1933	-	4,720	1954	May 22-27, 1954	90.70	19,600
1934	May 26, 1934	-	15,500	1955	May 12-19, 1955	85.36	5,570
1935	May 16-20, 1935	87.30	10,100				
				1956	June 1-3, 1956	88.37	12,900
1936	May 26, 1936	88.03	12,000	1957	May 15, 1957	87.66	11,000
1937	June 8-11, 1937	88.15	11,500	1958	July 8, 1958	83.35	2,240
1938	May 12-17, 1938	90.35	18,500	1959	June 15, 1959	85.30	5,400
1939	May 31-June 3, 1939	86.75	8,710	1960	June 10, 1960	86.89	9,050
1940	June 21-July 2, 1940	86.37	7,830	1961	May 25-29, 1961	a87.44	10,400

a Occurred May 25, 26.

Note.--Add 1,100.00 ft to obtain elevation above mean sea level, United States and Canadian Boundary Survey datum.

1285. Pike River near Embarrass, Minn.

Location.--Lat 47°39'36", long 92°18'54", in NE¼NW¼ sec.25, T.60 N., R.16 W., on left bank, 75 ft below bridge on County Road 373, 5.4 miles west of Embarrass, and 8.5 miles downstream from Sandy River.

Drainage area.--115 sq mi.

Gage.--Recording. Datum of gage is 1,410.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 250 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	May 1950	a11.3	2,400	1958	June 12, 1958	6.41	268
					July 5, 1958	6.87	337
1954	Apr. 17, 1954	10.28	1,750				
	May 3, 1954	8.40	750	1959	May 7, 1959	7.52	491
	May 12, 1954	8.28	702		May 23, 1959	7.13	404
					June 13, 1959	6.28	263
1955	Apr. 14, 1955	8.28	687		Sept. 4, 1959	6.30	266
	June 12, 1955	6.54	285				
				1960	Apr. 17, 1960	7.54	457
1956	Apr. 21, 1956	8.71	890		Apr. 27, 1960	7.98	574
					June 2, 1960	7.62	476
1957	Apr. 22, 1957	9.34	1,250				
	June 25, 1957	6.73	315	1961	Apr. 23, 1961	9.43	1,130
	July 23, 1957	7.19	396		May 17, 1961	7.92	556

a Approximately; from information by local resident.

1290. Vermilion River below Vermilion Lake, near Tower, Minn.

Location.--Lat 47°57'41", long 92°28'33", in SE¼SW¼ sec.2, T.63 N., R.17 W., on left bank, 200 ft downstream from dam at outlet of Vermilion Lake, 4.4 miles upstream from Twomile Creek, and 14.2 miles northwest of Tower.

Drainage area.--483 sq mi.

Gage.--Nonrecording prior to Apr. 11, 1939, recording thereafter. June 26, 1928, to July 8, 1931, at datum 0.05 ft higher. Datum of gage is 1,350.36 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	May 19-22, 1912	2.1	595	1941	Apr. 28, 1941	3.00	1,170
1913	June 9, 1913	3.6	1,810	1942	May 25, 1942	2.80	1,020
1914	May 11-16, 1914	3.0	1,110	1943	June 20, 1943	3.30	1,460
1915	June 27 to July 9, July 12, 1915	2.7	930	1944	(a)	3.73	1,980
				1945	Apr. 11, 1945	3.27	1,380
1916	Apr. 29-May 7, 1916	3.8	2,050	1946	Apr. 28, 1946	2.50	808
				1947	May 11,15, 1947	3.33	1,480
1917	Oct. 1-6, 1916, July 5, 1917	1.7	397	1948	May 1, 1948	3.88	2,090
				1949	May 10, June 30, 1949	2.17	616
1929	Oct. 7-12, 17-24, 1928	2.30	763	1950	May 23, 1950	4.68	2,710
1930	July 20, 1930	2.34	788	1951	May 9, 1951	2.98	1,100
				1952	May 4, 1952	2.39	727
1931	July 22-26, 1931	2.80	1,100	1953	June 20, 1953	2.81	972
1932	May 20-22, 1932	2.30	734	1954	May 15, 1954	3.84	1,840
1933	May 26, June 7, 1933	2.20	658	1955	May 4, 1955	2.01	537
1934	May 11-18, 1934	2.50	820	1956	May 11, 1956	3.27	1,310
1935	July 15-19, 1935	2.65	900	1957	May 2, 1957	2.98	1,080
				1958	July 13, 1958	1.72	418
1936	May 11-14, 1936	3.00	1,160	1959	June 9, 1959	2.26	657
1937	May 5-7, 1937	3.28	1,440	1960	June 2, 1960	2.90	1,030
1938	May 9-13, 1938	3.97	2,290				
1939	June 7, 1939	2.51	841	1961	May 21, 1961	3.08	1,160
1940	June 16, 1940	2.61	873				

a Occurred sometime during period June 27 to July 26, 1944.

1305. Sturgeon River near Chisholm, Minn.

Location.--Lat 47°40'25", long 92°54'00", in NE¼NW¼ sec.20, T.60 N., R.20 W., on left bank, 1,000 ft upstream from highway bridge, 0.6 mile downstream from East Branch Sturgeon River, and 11½ miles north of Chisholm.

Drainage area.--187 sq mi.

Gage.--Nonrecording at site 1,000 ft downstream at different datum prior to Aug. 24, 1944; recording thereafter. Datum of gage is 1,306.7 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs and extended above on the basis of a slope-area measurement at 3,630 cfs.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1945.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Apr. 10, 1943	3.82	-	983	1946	Mar. 24, 1946	3.39	-	829
1944	June 29, 1944	4.78	-	1,220		Apr. 25, 1946	2.69	-	511
						June 27, 1946	3.11	-	691
1945	Mar. 26, 1945	3.75	-	997					
	Apr. 12, 1945	2.77	-	545	1947	Oct. 8, 1946	3.12	-	700
						May 3, 1947	3.92	-	1,050
1946	Mar. 23, 1946	3.84	0.74	-		June 13, 1947	3.42	-	800

Peak stages and discharges of Sturgeon River near Chisholm, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1947	Sept.12, 1947	3.99	-	1,090	1954	May 11, 1954	3.80	-	970
1948	Apr. 21, 1948	5.30	-	2,120	1955	Apr. 13, 1955	3.59	-	826
1949	Apr. 13, 1949	2.96	-	577	1956	Apr. 22, 1956	3.75	-	972
	June 2, 1949	2.90	-	565					
	July 7, 1949	2.89	-	560	1957	Apr. 21, 1957	5.08	-	1,840
1950	Apr. 24, 1950	4.52	0.12	1,380	1958	July 1, 1958	2.76	-	459
	May 7, 1950	6.41	-	3,630					
					1959	May 22, 1959	2.90	-	515
1951	Apr. 29, 1951	4.67	-	1,420		July 11, 1959	3.19	-	646
						Sept. 9, 1959	2.90	-	515
1952	Apr. 15, 1952	3.80	.38	-					
	Apr. 17, 1952	3.78	-	928	1960	Apr. 15, 1960	3.38	-	740
	Aug. 9, 1952	3.26	-	669		Apr. 26, 1960	3.37	-	735
						May 6, 1960	3.03	-	574
1953	May 23, 1953	2.98	-	517		May 31, 1960	3.36	-	730
	Sept. 5, 1953	3.46	-	750					
					1961	Apr. 22, 1961	4.43	-	1,380
1954	Apr. 16, 1954	5.72	-	2,360		May 17, 1961	3.85	-	1,000

1310. Dark River near Chisholm, Minn.

Location.--Lat 47°41'27", long 92°49'15", in SW¼SW¼ sec.12, T.60 N., R.20 W., on right bank, 50 ft downstream from remains of abandoned highway bridge, 3½ miles upstream from mouth, and 12¼ miles northeast of Chisholm.

Drainage area.--50.6 sq mi.

Gage.--Nonrecording prior to Aug. 24, 1944; recording thereafter. Datum of gage is 1,316.8 ft above mean sea level, datum of 1929 (surveyed by Topographic Division).

Stage-discharge relation.--Defined by current-meter measurements below 770 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 140 cfs. Only annual peaks are shown prior to 1945.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 11, 1943	3.13	213	1953	May 23, 1953	2.76	153
1944	May 14, 1944	3.88	346		Sept. 5, 1953	3.22	218
1945	Mar. 27, 1945	3.50	320	1954	Apr. 16, 1954	6.05	782
					May 4, 1954	3.26	234
1946	Mar. 23, 1946	a2.81	-		May 12, 1954	3.50	270
	Mar. 24, 1946	2.71	191				
	Apr. 26, 1946	2.54	154	1955	Apr. 14, 1955	3.60	208
1947	Oct. 8, 1946	2.95	218	1956	Apr. 21, 1956	3.82	255
	May 3, 1947	4.39	367				
	June 11, 1947	3.02	185	1957	Apr. 21, 1957	5.03	542
	Sept.12, 1947	5.70	660				
				1958	July 1, 1958	3.51	189
1948	Apr. 21, 1948	6.00	790				
				1959	July 10, 1959	-	b180
1949	Apr. 14, 1949	3.26	215		Sept. 2, 1959	3.19	140
	June 2, 1949	2.72	150		Sept. 9, 1959	3.31	166
	July 8, 1949	2.90	173				
				1960	Apr. 16, 1960	3.34	179
1950	Apr. 26, 1950	3.86	314		Apr. 27, 1960	3.44	200
	May 7, 1950	7.10	1,170		May 7, 1960	3.27	165
					June 1, 1960	3.45	202
1951	Apr. 30, 1951	5.06	527				
				1961	Apr. 22, 1961	4.93	515
1952	Apr. 19, 1952	3.82	308		May 17, 1961	3.88	293
	Aug. 8, 1952	2.94	178				

a Backwater from ice, 0.41 ft.
b Estimated daily mean discharge.

1315. Little Fork River at Little Fork, Minn.

Location.--Lat 48°24', long 93°34', in NW¼ sec.9, T.68 N., R.25 W., on left bank, 100 ft downstream from bridge on State Highway 65, at town of Little Fork, and 1½ miles upstream from Beaver Creek.

Drainage area.--1,730 sq mi, approximately.

Gage.--Nonrecording prior to July 20, 1937; recording thereafter. Datum of gage is 1,073.06 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs and extended above.

Remarks.--Base for partial-duration series, 3,500 cfs. Only annual peaks are shown prior to 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Apr. 19, 1910	15.6	-	5,000	1946	Mar. 26, 1946	23.2	3.1	7,600
						Mar. 27, 1946	25.65	5.85	-
1911	Apr. 18, 1911	15.46	1.65	3,760		Apr. 11, 1946	15.57	-	4,580
1912	May 13, 1912	-	-	3,310		Apr. 25, 1946	15.03	-	4,230
	May 16, 1912	14.1	1.4	-		June 27, 1946	13.93	-	3,590
1913	Apr. 16, 1913	18.3	-	6,420					
1914	May 4, 1914	18.7	-	6,720	1947	Oct. 8, 1946	19.66	-	7,300
1915	June 29, 1915	22.6	-	10,000		Oct. 13, 1946	19.93	-	7,460
						May 4, 1947	24.44	-	11,200
1916	Apr. 18, 1916	37.0	-	25,000		June 13, 1947	24.25	-	9,130
1917	Apr. 23, 1917	16.4	1.00	4,580		Sept.13, 1947	14.89	-	4,170
1929	Apr. 8, 1929	21.7	6.8	4,220	1948	Apr. 18, 1948	31.31	5.11	-
1930	May 13, 1930	19.30	-	7,180		Apr. 18, 1948	30.56	2.46	14,500
1931	June 15, 1931	14.50	-	4,030	1949	Apr. 13, 1949	22.13	-	9,200
1932	Apr. 17, 1932	18.70	-	6,720		May 7, 1949	19.84	-	7,380
1933	Apr. 19, 1933	25.04	5.54	8,140		June 3, 1949	17.77	-	5,960
1934	May 6, 1934	18.90	-	6,880		July 9, 1949	15.79	-	4,700
1935	Apr. 16, 1935	21.22	3.42	-		Aug. 18, 1949	15.10	-	4,290
	May 1, 1935	-	-	8,080					
					1950	Apr. 26, 1950	27.20	6.50	8,080
1936	Apr. 19, 1936	23.80	2.7	-		May 11, 1950	37.00	-	25,000
	Apr. 20, 1936	-	-	9,090		June 28, 1950	17.74	-	5,300
1937	Apr. 28, 1937	31.72	-	17,500					
					1951	May 1, 1951	27.95	-	14,400
1938	Apr. 20, 1938	16.51	-	5,000		Sept.13, 1951	15.01	-	3,940
	May 1, 1938	27.20	-	13,700					
	May 8, 1938	31.63	-	18,300	1952	Apr. 17, 1952	23.36	-	10,300
	June 12, 1938	14.16	-	3,610					
					1953	Apr. 12, 1953	13.72	-	3,490
1939	Apr. 20, 1939	20.0	3.5	-		May 13, 1953	15.22	-	4,360
	Apr.21-23,1939	-	-	a5,500		May 23, 1953	15.07	-	4,270
						June 1, 1953	14.54	-	3,960
1940	Apr. 19, 1940	16.58	3.97	-		June 17, 1953	19.18	-	6,930
	May 2, 1940	28.62	-	13,300					
					1954	Apr. 19, 1954	30.30	-	16,700
1941	Apr. 12, 1941	25.67	-	12,300		May 12, 1954	23.40	-	10,300
	June 9, 1941	28.29	-	14,700		June 1, 1954	14.60	-	4,000
	Sept.23, 1941	18.98	-	6,720					
					1955	Apr. 11, 1955	20.15	-	7,740
1942	Oct. 9, 1941	18.80	-	6,580		June 11, 1955	17.10	-	5,630
	May 4, 1942	19.78	-	7,360					
	May 17, 1942	15.07	-	4,120	1956	Apr. 20, 1956	23.10	1.90	-
	Aug. 31, 1942	16.44	-	4,940		Apr. 21, 1956	22.36	-	9,410
						May 5, 1956	17.09	-	5,620
1943	Apr. 10, 1943	29.41	5.8	10,500					
	May 1, 1943	18.70	-	6,520	1957	Apr. 24, 1957	29.21	-	15,600
	May 18, 1943	13.96	-	3,500		June 24, 1957	22.76	.16	9,610
	June 5, 1943	23.81	-	10,600					
	June 24, 1943	18.55	-	6,440	1958	July 5, 1958	13.12	-	3,160
1944	May 14, 1944	19.01	-	6,800	1959	May 7, 1959	14.75	-	4,080
	June 7, 1944	23.70	-	10,500		May 23, 1959	14.81	-	4,120
	June 19, 1944	16.90	-	5,340		May 28, 1959	14.16	-	3,740
	June 29, 1944	23.42	-	10,300		July 10, 1959	16.54	-	5,140
	Aug. 11, 1944	20.69	-	8,080		Sept. 8, 1959	15.22	-	4,380
	Aug. 17, 1944	18.03	-	6,020					
					1960	Apr. 17, 1960	22.72	1.75	8,500
1945	Nov. 16, 1944	14.97	-	4,350		Apr. 29, 1960	13.98	-	3,770
	Mar. 25, 1945	29.59	6.6	-		June 1, 1960	19.80	-	7,680
	Mar. 25, 1945	27.58	4.18	10,300					
	Apr. 26, 1945	14.49	-	3,940	1961	Apr. 23, 1961	22.00	-	9,120
	June 21, 1945	15.56	-	4,580		May 17, 1961	21.98	-	9,110
	Sept.23, 1945	14.32	-	3,820					

a Estimated.

1320. Big Fork River at Big Falls, Minn.

Location.--Lat 48°12', long 93°48', in sec.35, T.155 N., R.25 W., on left bank at village of Big Falls, 700 ft downstream from falls, 0.3 mile downstream from bridge on U.S. Highway 71, and 4¾ miles upstream from Sturgeon River.

Drainage area.--1,460 sq mi, approximately.

Gage.--Nonrecording prior to Dec. 18, 1937; recording thereafter. Prior to June 1928, at railroad bridge 0.4 mile upstream at different datum. Datum of gage is 1,144.71 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,600 cfs. Only annual peaks are shown prior to 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Apr. 19, 1910	8.7	-	4,820
1911	June 12, 1911	7.4	-	1,910
1912	May 19, 1912	7.35	-	2,090
1929	Oct. 7, 1928	6.0	-	2,240
1930	May 13, 1930	8.0	-	4,470
1931	June 15, 1931	4.14	-	750
1932	Apr. 11, 1932	5.98	-	2,220
1933	Apr. 20, 1933	8.71	-	5,440
1934	Apr. 10, 1934	6.46	1.3	-
	May 5, 1934	-	-	2,340
1935	May 1, 1935	7.5	-	3,700
1936	Apr. 16, 1936	7.34	-	3,480
1937	Apr. 26, 1937	15.12	-	13,000
1938	May 7, 1938	14.05	-	11,200
	June 11, 1938	6.21	-	2,400
1939	Apr. 21, 1939	7.92	1.6	-
	Apr. 26, 1939	6.58	-	2,830
1940	May 1, 1940	9.70	-	6,320
1941	Apr. 10, 1941	11.09	-	7,900
	May 9, 1941	5.86	-	1,980
	June 9, 1941	11.65	-	8,550
	Sept.25, 1941	6.40	-	2,480
1942	Oct. 10, 1941	6.04	-	2,160
	Apr. 2, 1942	5.77	-	1,900
	May 4, 1942	7.23	-	3,260
	May 16, 1942	6.16	-	2,260
	July 1, 1942	5.87	-	2,040
	Sept. 2, 1942	5.52	-	1,740
1943	Apr. 9, 1943	10.68	-	7,440
	May 1, 1943	8.13	-	4,380
	May 18, 1943	6.76	-	2,980
	June 5, 1943	9.90	-	6,480
	June 16, 1943	6.50	-	2,680
1944	May 15, 1944	6.90	-	3,080
	June 6, 1944	7.37	-	3,610
	June 16, 1944	6.28	-	2,480
	June 29, 1944	10.89	-	7,680
	July 9, 1944	8.78	-	5,160
	Aug. 10, 1944	8.36	-	4,710
	Aug. 17, 1944	6.03	-	2,230
1945	Nov. 16, 1944	5.58	-	1,830
	Mar. 25, 1945	11.73	2.80	-
	Mar. 26, 1945	11.60	-	8,520
	Apr. 28, 1945	6.92	-	3,080
	June 21, 1945	5.50	-	1,740
1946	Mar. 26, 1946	9.54	-	6,000
	Apr. 10, 1946	7.88	-	4,160
	May 8, 1946	5.56	-	1,760
	June 17, 1946	5.52	-	1,720
	June 26, 1946	6.04	-	2,230
1947	Oct. 13, 1946	6.82	-	2,980
1947	Apr. 24, 1947	9.39	0.99	4,710
	May 4, 1947	9.31	-	5,760
	June 12, 1947	8.76	-	5,160
	Aug. 10, 1947	6.51	-	2,680
	Sept.22, 1947	5.36	-	1,620
1948	Apr. 18, 1948	12.49	-	9,600
1949	Apr. 14, 1949	6.89	.13	2,980
	May 7, 1949	7.60	-	3,830
	June 2, 1949	9.48	-	6,000
	June 18, 1949	6.18	-	2,380
	July 10, 1949	8.83	-	5,000
	July 29, 1949	5.87	-	1,980
1950	Apr. 25, 1950	9.56	-	6,030
	May 8, 1950	17.08	-	14,800
	June 29, 1950	6.70	-	2,880
	Aug. 2, 1950	6.17	-	2,350
1951	Apr. 29, 1951	13.87	-	11,000
	Sept.12, 1951	7.07	-	3,280
1952	Oct. 7, 1951	6.61	-	2,340
	Oct. 25, 1951	5.69	-	1,910
	Apr. 18, 1952	8.62	-	4,950
1953	May 13, 1953	6.69	-	2,870
	May 23, 1953	6.74	-	2,920
	May 31, 1953	6.28	-	2,460
	June 11, 1953	6.12	-	2,300
	June 17, 1953	10.84	-	7,500
	July 24, 1953	5.40	-	1,660
1954	Apr. 17, 1954	12.78	-	9,730
	May 11, 1954	9.04	-	5,430
	May 31, 1954	6.27	-	2,450
1955	Apr. 12, 1955	7.48	-	3,700
	June 11, 1955	6.34	-	2,520
1956	Apr. 21, 1956	9.74	-	6,240
	May 5, 1956	7.09	-	3,270
	June 1, 1956	6.15	-	2,330
1957	Apr. 23, 1957	12.9[illegible]	-	9,940
	June 25, 1957	9.12	-	5,520
	July 14, 1957	6.65	-	2,830
	Sept.26, 1957	5.68	-	1,900
1958	Dec. 3, 1957	5.16	1.21	-
	July 15, 1958	5.03	-	1,300
1959	May 8, 1959	5.60	-	1,830
	May 23, 1959	5.63	-	1,860
	June 12, 1959	5.37	-	1,640
	Sept. 8, 1959	5.36	-	1,630
1960	Apr. 16, 1960	8.00	-	4,270
	May 31, 1960	5.40	-	1,660
1961	Apr. 22, 1961	6.03	-	2,240
	May 17, 1961	8.02	-	4,290

1335. Rainy River at Manitou Rapids, Minn.

Location.--Lat 48°38'04", long 93°54'47", in sec.36, T.160 N., R.26 W., on left bank at Manitou Rapids, 3½ miles east of Manitou Post Office, and 4 miles west of Indus.

Drainage area.--19,400 sq mi, approximately.

Gage.--Nonrecording at site near Birchdale 7 miles downstream at different datum prior to Nov. 10, 1934; recording thereafter. Datum of gage is 1,062.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 68,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Oct. 23, 1928	7.55	30,400	1946	Mar. 28, 1946	11.32	27,300
1930	May 14, 1930	5.66	19,700	1947	June 13, 1947	17.49	54,200
				1948	Apr. 28, 1948	15.44	44,400
1931	June 17, 1931	3.45	12,200	1949	July 10, 1949	13.33	35,200
1932	Apr. 19, 1932	4.45	15,400	1950	May 12, 1950	21.04	71,600
1933	Apr. 22, 1933	8.40	33,900				
1934	June 13, 1934	7.02	26,500	1951	May 5, 1951	16.43	49,000
1935	July 9, 1935	12.30	30,500	1952	July 23, 1952	12.13	30,400
				1953	July 4, 1953	12.68	32,600
1936	Apr. 20, 1936	10.04	23,200	1954	Apr. 18, 1954	14.69	41,300
1937	Apr. 28, 1937	15.36	41,400	1955	July 5, 1955	10.44	24,500
1938	May 8, 1938	19.80	65,400				
1939	Apr. 27, 1939	8.23	17,800	1956	Apr. 22, 1956	13.41	35,700
1940	May 3, 1940	12.20	30,700	1957	June 25, 1957	15.54	45,100
				1958	Nov. 17, 1957	-	14,200
1941	Sept.27, 1941	15.52	44,900		Dec. 14, 1957	a8.00	-
1942	Oct. 10, 1941	16.38	49,000	1959	Sept.10, 1959	8.16	17,900
1943	June 7, 1943	16.11	47,600	1960	June 13, 1960	9.83	22,800
1944	June 8, 1944	16.10	47,600				
1945	Mar. 28, 1945	13.86	37,800	1961	May 18, 1961	10.65	25,400

a Backwater from ice, 2.34 ft.

1342. Rapid River near Baudette, Minn.

Location.--Lat 48°32'10", long 94°33'45", in NE¼ sec.1, T.158 N., R.31 W., on left bank, 75 ft upstream from bridge on State Highway 72, 1.2 miles downstream from North Branch Rapid River, and 12 miles south of Baudette.

Drainage area.--543 sq mi.

Gage.--Recording. Datum of gage is 1,093.92 ft above mean sea level, datum of 1929 (Minnesota Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs and extended above.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	May 11, 1950	a21.1	-	8,500	1959	Apr. 7, 1959	6.52	2.41	-
						May 7, 1959	4.90	-	603
1957	Apr. 21, 1957	14.58	-	4,080					
	June 24, 1957	8.43	-	1,680	1960	Apr. 14, 1960	7.35	2.28	-
	July 8, 1957	6.70	-	1,120		Apr. 16, 1960	5.74	.38	728
	July 14, 1957	8.10	-	1,560		Apr. 22, 1960	5.11	-	660
						June 28, 1960	5.73	-	831
1958	Oct. 10, 1957	4.89	-	600					
	Oct. 17, 1957	5.39	-	736	1961	Mar. 27, 1961	7.82	1.62	967
	Nov. 4, 1957	4.93	-	611		Apr. 21, 1961	7.44	-	1,340
	July 8, 1958	7.92	-	1,500					
	July 15, 1958	7.18	-	1,260					

a Approximately; from information by local residents and Minnesota Highway Department.

1395. Warroad River near Warroad, Minn.

Location.--Lat 48°52'00", long 95°21'20", in SE¼NE¼ sec.12, T.162 N., R.37 W., on upstream handrail of bridge near center of span, half a mile upstream from Bulldog Run, and 2¼ miles south of Warroad.

Drainage area.--110 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 1,070.74 ft above mean sea level, datum of 1929 (levels by Stanley Johnson, consulting engineer and instructor at University of North Dakota).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Mar. 24, 1946	7.54	0.21	-	1954	Apr. 15, 1954	7.28	-	427
	Mar. 25, 1946	-	-	492	1955	Apr. 5, 1955	6.24	2.25	-
1947	June 11, 1947	9.50	-	1,410		Apr. 22, 1955	-	-	185
1948	Apr. 19, 1948	8.67	-	1,210					
1949	Apr. 13, 1949	7.15	-	408	1956	Apr. 22, 1956	8.86	-	1,060
1950	Apr. 24, 1950	8.86	-	1,170	1957	Apr. 23, 1957	6.98	-	333
					1958	July 8, 1958	5.05	-	123
1951	Apr. 22, 1951	8.01	-	776	1959	Apr. 7, 1959	6.97	-	331
1952	July 5, 1952	7.40	-	473	1960	Apr. 14, 1960	6.25	-	230
1953	Apr. 6, 1953	5.16	.91	-					
	Apr. 12, 1953	-	-	138	1961	Apr. 22, 1961	4.58	.30	93
1954	Apr. 13, 1954	7.34	.17	-					

1400. Bulldog Run near Warroad, Minn.

Location.--Lat 48°51'30", long 95°20'20", in SE¼ sec.7, T.162 N., R.36 W., on downstream side of county road bridge, three-quarters of a mile upstream from mouth, and 3 miles south of Warroad.

Drainage area.--14.2 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,090 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 270 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Mar. 20, 1946	a5.62	-	1949	Apr. 9, 1949	5.64	41
	Mar. 22, 1946	-	32	1950	Apr. 23, 1950	6.69	292
1947	June 10, 1947	6.91	420				
1948	Apr. 17, 1948	5.98	204	1951	Apr. 10, 1951	6.10	228

a Backwater from ice, 1.62 ft.

1405. East Branch Warroad River near Warroad, Minn.

Location.--Lat 48°51'30", long 95°18'40", in SE¼SE¼ sec.8, T.162 N., R.36 W., on downstream side of highway bridge, 2 miles upstream from mouth, and 3 miles south of Warroad.

Drainage area.--102 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,080 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 640 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Mar. 24, 1946	7.70	-	215	1951	Apr. 28, 1951	8.20	-	476
1947	June 11, 1947	9.36	-	1,340	1952	July 4, 1952	8.37	-	614
1948	Apr. 22, 1948	8.12	-	480	1953	Mar. 23, 1953	5.26	2.26	-
1949	Apr. 14, 1949	6.72	0.44	142		May 31, 1953	-	-	52
1950	June 27, 1950	8.29	-	554	1954	Apr. 16, 1954	7.50	.09	238

2110. Mississippi River at Grand Rapids, Minn.
(Published as "at Pokegama Dam, near Grand Rapids," 1942-44)

Location.--Lat 47°13'56", long 93°31'48", in SW¼NW¼ sec.21, T.55 N., R.24 W., in machine room of Blandin Paper Mill in Grand Rapids, 400 ft upstream from bridge on State Highway 169, 2.5 miles upstream from Prairie River, and at mile 1,182 upstream from Ohio River.

Drainage area.--3,370 sq mi, approximately.

Gage.--Nonrecording prior to Feb. 17, 1945, at Pokegama Dam, 3½ miles upstream at datum 22.89 ft higher (operated by Corps of Engineers), Sept. 9, 1948, to Jan. 6, 1949, at site 400 ft downstream at present datum, and Jan. 7, 1949, to Jan. 16, 1951, at present site and datum; recording Feb. 17, 1945, to Sept. 3, 1948, at site 300 ft upstream, within 0.10 ft of present datum, and since Jan. 17, 1951, at present site and datum. Datum of present gage is 1,242.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Discharge figures for 1884-1944, and 1959-61 are computed flow over Pokegama Dam and discharge 1945-58, from stage-discharge relation defined by current-meter measurements below 4,500 cfs and extended above on basis of logarithmic plotting.

Bankfull stage.--Banks not subject to overflow.

Remarks.--Records 1884-1944, and 1959-61 furnished by Corps of Engineers; those for 1884-1944 are maximum daily discharges. Flow completely regulated by Pokegama Lake. Backwater from Prairie River occurs at times in most years during 1945-58. Only annual peaks are shown subsequent to 1944.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1884	May 5, 1884	-	-	1,860	1926	Mar. 22, 1926	-	-	511
1885	Sept.24, 1885	-	-	3,290	1927	Aug. 28, 1927	-	-	2,070
					1928	Sept.15, 1928	-	-	1,920
1886	Sept.6,7,1886	-	-	2,660	1929	Aug.2,3, 1929	-	-	2,580
1887	Aug. 27, 1887	-	-	2,230	1930	Sept.30, 1930	-	-	1,880
1888	June 11, 1888	-	-	4,590					
1889	Oct. 21, 1888	-	-	3,360	1931	Oct. 18, 1930	-	-	1,610
1890	Oct. 12, 1889	-	-	2,000	1932	Oct. 23, 1931	-	-	427
					1933	July 8,12, 1933	-	-	409
1891	Sept.28, 1891	-	-	1,780	1934	(b)	-	-	400
1892	Sept.14, 1892	-	-	1,960	1935	Aug. 25, 1935	-	-	430
1893	Sept. 8, 1893	-	-	2,960					
1894	Oct. 7, 1893	-	-	2,960	1936	July 13, 1936	-	-	1,080
1895	Nov. 1, 1894	-	-	2,440	1937	July 24,25,1937	-	-	552
					1938	June 4, 1938	-	-	1,980
1896	May 24,25,1896	-	-	2,790	1939	Mar. 26, 1939	-	-	1,620
1897	Sept.22, 1897	-	-	2,850	1940	Oct. 21, 1939	-	-	1,440
1898	Sept. 1, 1898	-	-	3,440					
1899	June 16, 1899	-	-	4,370	1941	Nov. 4, 1940	-	-	1,800
1900	Oct. 16, 1899	-	-	4,600	1942	Mar. 20, 1942	-	-	1,876
					1943	Mar. 5, 1943	-	-	1,978
1901	Apr. 21, 1901	-	-	5,220	1944	Jan. 30, 1944	-	-	1,877
1902	Nov. 3, 1901	-	-	3,790	1945	Apr. 2, 1945	9.63	0.53	-
1903	Nov. 18, 1902	-	-	3,740		Apr. 16, 1945	-	-	4,070
1904	Oct. 9,10, 1903	-	-	2,360					
1905	Sept. 8, 1905	-	-	5,250	1946	Apr.9-11,1946	6.83	-	2,260
					1947	Jan. 29, 1947	7.04	.60	-
1906	Apr. 22, 1906	-	-	5,100		May 4, 1947	-	-	2,220
1907	Aug. 9,10, 1907	-	-	3,560	1948	Sept. 3, 1948	15.2	-	c12,500
1908	Sept.29,30,1908	-	-	2,550	1949	Aug. 20, 1949	6.70	-	2,190
1909	Nov. 10, 1908	-	-	2,050	1950	May 13, 1950	14.76	-	4,320
1910	Sept. 5, 1910	-	-	3,010					
					1951	May 14, 1951	9.38	-	3,870
1911	Oct. 29, 1910	-	-	2,560	1952	Dec. 20, 1951	9.84	3.03	-
1912	Sept.26, 1912	-	-	3,030		Aug. 19, 1952	8.43	-	3,320
1913	July 5, 1913	-	-	1,530	1953	Sept.16, 1953	9.45	-	3,390
1914	Aug. 22, 1914	-	-	2,330	1954	Dec. 1, 1953	-	-	3,170
1915	July 10, 1915	-	-	4,020		Jan. 28, 1954	8.96	2.06	-
					1955	Dec. 2, 1954	6.18	-	2,280
1916	Aug. 4, 1916	-	-	3,010					
1917	(a)	-	-	3,510	1956	May 11, 1956	5.83	-	-
1918	May 3-6, 1918	-	-	3,010		June 1, 1956	-	-	1,840
1919	Aug. 25, 1919	-	-	1,650	1957	July 20, 1957	-	-	3,250
1920	Sept.11, 1920	-	-	1,860		July 22, 1957	8.66	-	-
					1958	Oct. 30, 1957	-	-	2,490
1921	July 22, 1921	-	-	2,580		Feb. 16, 1958	6.77	1.57	-
1922	Aug. 24, 1922	-	-	1,770	1959	July 11, 1959	-	-	1,840
1923	Oct. 9, 1922	-	-	1,570	1960	Apr. 28, 1960	-	-	1,860
1924	Oct. 25, 1923	-	-	1,570					
1925	Sept.23, 1925	-	-	1,850	1961	May 15, 1961	-	-	1,340

a Occurred Sept. 7, 8, 10, 14, 17, 20, 27, 1917.
b Occurred Apr. 15, 29, May 12, 1934.
c Result of dam failure at gage.
Note.--Figures of discharge for 1884-1944 are maximum daily discharges.

2170. Swan River near Warba, Minn.

Location.--Lat 47°06'40", long 93°15'50", in SE¼ sec.33, T.54 N., R.23 W., on left bank, 75 ft upstream from highway bridge, 1¼ miles south of Warba, and 3¾ miles northwest of Swan River.

Drainage area.--254 sq mi.

Gage.--Recording. Datum of gage is 1,259.80 ft above mean sea level (Minnesota State Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 450 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	May 1950	a11.5	-	1957	June 24, 1957	6.42	454
					July 21, 1957	8.14	722
1954	Apr. 13, 1954	b9.02	-				
	Apr. 13, 1954	9.00	1,000	1958	June 11, 1958	5.30	316
					July 2, 1958	5.92	390
1955	Apr. 10, 1955	c7.69	-				
	Apr. 11, 1955	7.65	627	1959	May 20, 1959	7.30	559
	May 4, 1955	6.52	467		June 1, 1959	7.14	532
	June 8, 1955	6.51	465				
	Aug. 1, 1955	6.44	456	1960	Apr. 27, 1960	7.04	521
					May 6, 1960	6.99	508
1956	Apr. 14, 1956	8.61	853		June 1, 1960	8.10	721
1957	Apr. 22, 1957	8.75	905	1961	May 17, 1961	7.36	570

a About; from information by local residents. b Backwater from ice, 0.06 ft.
c Backwater from ice, 0.08 ft.

MISSISSIPPI RIVER MAIN STEM

2180. Mississippi River above Sandy River, near Libby, Minn.

Location.--Lat 46°50', long 93°20', in SE¼ sec.2, T.50 N., R.24 W., just upstream from Libby Creek, 4 miles north of Libby, 7 miles (revised) upstream from Sandy River, and at mile 1,113 upstream from Ohio River.

Drainage area.--4,560 sq mi, approximately.

Gage.--Nonrecording at site 7 miles downstream prior to 1927; recording thereafter. Datum of gage is 1,200.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 2,500 cfs and extended above.

Remarks.--Records prior to 1927 furnished by Corps of Engineers. Flow regulated by powerplants and Winnibigoshish, Leech, and Pokegama Lakes. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1897	July 18, 1897	-	7,790	1907	Apr. 27, 1907	-	5,350
1898	June 9, 1898	-	4,630	1908	June 13, 1908	-	4,200
1899	June 18, 1899	-	8,160	1909	Aug. 25, 1909	-	5,000
1900	Sept.20, 1900	-	9,570	1910	Mar. 25, 1910	-	3,790
1901	June 30, 1901	-	8,820	1911	July 19, 1911	-	2,900
1902	May 27, 1902	-	6,290	1912	Sept.30, 1912	-	2,540
1903	Nov. 23, 1902	-	7,080	1913	July 18, 1913	-	3,450
1904	Oct. 12, 1903	-	5,040	1914	June 11, 1914	-	2,960
1905	Aug. 9, 1905	-	8,300	1915	June 30, 1915	-	4,980
1906	Apr. 27, 1906	-	7,580	1927	Apr. 24, 1927	27.2	5,180

2205. Mississippi River below Sandy River, near Libby, Minn.

Location.--Lat 46°47', long 93°20', in sec.25, T.50 N., R.24 W., on right bank, 600 ft downstream from Sandy River and three-quarters of a mile northwest of Libby.

Drainage area.--5,060 sq mi, approximately.

Gage.--Nonrecording at site 600 ft upstream at datum 3.16 ft higher prior to July 28, 1931; recording thereafter. Datum of gage is 1,204.55 ft above mean sea level, adjustment of 1912.

State-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow regulated by powerplants and Winnibigoshish, Leech, Pokegama, and Sandy Lakes. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	May 16, 1930	7.45	2,890	1947	May 6, 1947	12.27	6,000
				1948	Apr. 28, 1948	15.70	8,060
1931	June 14, 1931	7.36	2,840	1949	July 16, 1949	8.60	3,550
1932	May 9, 1932	6.24	2,420	1950	May 17, 1950	20.02	16,000
1933	May 23, 1933	8.74	3,690				
1934	Apr. 20, 1934	5.80	2,100	1951	May 6, 1951	12.20	5,840
1935	May 17, 1935	7.13	2,830	1952	Apr. 28, 1952	12.26	5,880
				1953	Aug. 6, 1953	13.57	6,730
1936	May 12, 1936	11.01	5,150	1954	May 5, 1954	13.92	6,960
1937	May 2, 1937	10.43	4,760	1955	Apr. 11, 1955	10.77	4,910
1938	May 13, 1938	15.43	8,000				
1939	Apr. 4, 1939	9.80	4,190	1956	Apr. 21, 1956	11.58	5,440
1940	May 8, 1940	7.08	2,770	1957	July 23, 1957	12.49	6,030
				1958	Nov. 1, 1957	-	2,650
1941	Apr. 21, 1941	13.49	6,350		Dec. 6, 1957	a7.45	-
1942	May 19, 1942	10.39	4,520	1959	June 2, 1959	10.27	4,660
1943	June 17,18,1943	13.34	6,210	1960	May 5, 1960	11.92	5,660
1944	June 7, 1944	14.14	6,830				
1945	Apr.6-12,1945	14.45	7,080	1961	May 19, 1961	9.91	4,450
1946	Apr. 9, 1946	11.16	4,950				

a Backwater from ice, 2.0 ft.

2275. Mississippi River at Aitkin, Minn.

Location.--Lat 46°32'26", long 93°42'26", in W½ sec.24, T.47 N., R.27 W., on upstream side of highway bridge at north edge of Aitkin, 1 mile downstream from Mud River and at mile 1,055.9 upstream from Ohio River.

Drainage area.--6,140 sq mi, approximately.

Gage.--Nonrecording prior to Mar. 14, 1961; recording thereafter. Datum of gage is 1,185.41 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Slight regulation by powerplants and Winnibigoshish, Leech, Pokegama, and Sandy Lakes. Water diverted at medium and high stages into Aitkin diversion channel 6½ miles above station, bypasses station, and returns to river 15½ miles below station. Diversion began Apr. 2, 1955. Records include flow in diversion. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Mar. 26, 1945	14.51	-	9,220	1954	May 6,7, 1954	14.73	-	9,480
					1955	Aug. 4, 1955	9.62	-	7,890
1946	Apr. 10, 1946	11.15	-	6,680					
1947	Apr.16-18,1947	13.6	2.13	-	1956	Apr. 17, 1956	11.27	-	9,850
	May 7, 1947	-	-	7,780	1957	Apr. 28, 1957	10.82	-	9,340
1948	Apr.27,28,1948	15.77	-	12,000	1958	Mar. 31, 1958	4.88	2.17	-
1949	July 16,17,1949	7.7	-	4,770		July 5, 1958	-	-	3,110
1950	May 20, 1950	19.49	-	20,000	1959	June 3, 1959	8.90	-	7,180
					1960	May 6, 1960	10.13	-	8,650
1951	May 8, 1951	13.23	-	8,600					
1952	Apr. 13, 1952	14.73	3.02	-	1961	May 20, 1961	-	-	5,980
	Apr. 15, 1952	-	-	10,100		May 21, 1961	7.54	-	-
1953	Aug. 14, 1953	15.13	-	10,800					

2415. Rabbit River near Crosby, Minn.

Location.--Lat 46°30'55", long 93°57'35", in NE¼ sec.35, T.47 N., R.29 W., on right bank, a third of a mile downstream from Clinker Lake control dam, and 2 miles north of Crosby.

Drainage area.--8.38 sq mi.

Gage.--Recording. Datum of gage is 1,190.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 30 cfs and extended above.

Bankfull stage.--8 ft.

Remarks.--Some regulation by Clinker Lake. Flow affected by pumping from Rabbit Lake and underground mine. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	June 27, 1946	7.54	-	94	1955	July 13, 1955	-	-	15
1947	June 11, 1947	5.95	-	23					
1948	Apr. 10, 1948	5.59	-	11	1956	Apr. 19, 1956	6.00	-	22
1949	Apr. 7, 1949	5.27	0.03	3.0	1957	Mar. 15, 1957	6.28	1.00	-
1950	May 9, 1950	7.15	-	53		Apr. 28, 1957	-	-	21
					1958	Jan. 9, 1958	5.91	1.66	-
1951	May 26, 1951	-	-	29		Apr. 7, 1958	-	-	4.6
	Aug. 30, 1951	6.61	-	-	1959	May 31, 1959	6.13	-	23
1952	July 20, 1952	7.12	-	59	1960	Dec. 28, 1959	6.05	.90	-
1953	Aug. 11, 1953	6.79	-	36		May 5, 1960	-	-	16
1954	May 3, 1954	5.92	-	25					
1955	Feb. 21, 1955	6.58	1.28	-	1961	May 7, 1961	6.04	-	18

CROW WING RIVER BASIN

2427. Little Sand Lake Outlet near Dorset, Minn.
(Published as Sand Lake Outlet prior to 1931)

Location.--Lat 46°59', long 94°55', in NE¼ sec.36, T.141 N., R.34 W., at county highway bridge half a mile downstream from Little Sand Lake, 1 mile upstream from Claussen's Lake, and 3 miles northeast of Dorset.

Drainage area.--74 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,427 ft (by barometer). Prior to Apr. 12, 1933, at different datum.

Stage-discharge relation.--Defined by current-meter measurements below 40 cfs and extended above.

Remarks.--Flow regulated by Little Sand Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1932	June 9, 1932	5.30	-	24	1938	(a)	2.07	-	42
1933	May 23, 1933	2.12	-	42	1939	Mar. 19, 1939	2.56	1.06	-
1934	Apr. 8, 1934	2.66	0.10	74		Apr. 6, 1939	1.68	-	30
1935	Feb. 25, 1935	2.52	1.23	-	1940	Apr. 11, 1940	1.99	.48	-
	Mar. 16, 1935	2.07	.02	43		Apr. 29, 1940	1.71	-	30
1936	Apr. 1, 1936	1.66	-	27	1941	Feb. 27, 1941	1.92	.52	-
1937	Apr. 24, 1937	2.16	-	58		June 11, 1941	1.88	-	33
	Aug. 8, 1937	2.17	-	-					

a May 31 to June 3, 1938.

2440. Crow Wing River at Nimrod, Minn.

Location.--Lat 46°39', long 94°53', in sec.32, T.137 N., R.33 W., on right bank, 200 ft upstream from highway bridge, 0.2 mile north of Nimrod, and 0.7 mile upstream from Cat River.

Drainage area.--1,010 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 5, 1949; recording thereafter. At datum 2.2 ft lower prior to July 28, 1930. Datum of gage is 1,313.27 ft above mean sea level, datum of 1929 (levels by Wadena County Highway Department from Minnesota Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow affected by natural storage in many lakes. Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	May 29, 1910	-	-	1,090
	June 2, 1910	6.4	-	-
1911	Sept.22, 1911	5.82	-	958
1912	Apr. 5, 1912	6.40	1.2	-
	May 8, 1912	-	-	641
1913	Apr. 8, 1913	6.25	1.3	-
	July 17, 1913	-	-	859
1914	June 9, 1914	7.25	-	1,850
1931	Nov. 7, 1930	3.18	.76	-
	June 12, 1931	-	-	440
1932	May 9, 1932	3.00	-	552
1933	Apr. 1, 1933	4.98	1.3	-
	May 29, 1933	-	-	1,150
1934	Apr. 9, 1934	4.30	1.4	-
	Apr. 12, 1934	-	-	480
1935	Apr. 3, 1935	3.30	.6	-
	May 11-14,1935	-	-	547
1936	Apr. 13, 1936	5.86	2.7	622
1937	Apr. 14, 1937	3.90	.7	-
	Apr. 24, 1937	3.80	-	879
1938	May 9, 1938	4.32	-	1,220
1939	Apr. 3, 1939	5.42	1.7	900
1940	Apr. 7, 1940	5.64	2.55	-
	Apr. 13, 1940	-	.70	1,070
1941	Apr. 5, 1941	6.24	2.00	1,150
1942	May 14, 1942	4.48	-	1,330
1943	Apr. 3-5, 1943	5.88	2.28	-
	Apr. 7, 1943	-	-	2,330
1944	Aug. 9, 1944	5.80	-	2,330
1945	Mar. 19, 1945	5.80	1.7	-
	Mar. 20, 1945	-	-	1,290
1946	Mar. 20, 1946	5.11	1.41	-
	June 27, 1946	-	-	1,530
1947	Apr. 8, 1947	6.44	1.24	1,960
1948	Apr.7-9,11, 1948	4.40	-	1,370
	May 15, 1948	3.75	-	922
	June 8, 1948	3.52	-	622
	June 23, 1948	4.17	-	1,060
1949	Apr. 16, 1949	3.52	-	724
	May 2, 1949	3.52	-	724
	July 8-10,1949	5.00	-	1,700
1950	Apr. 20, 1950	7.64	2.24	2,150
	May 7, 1950	5.46	-	2,200
1951	Oct. 7, 1950	3.23	-	539
	Apr. 11, 1951	5.46	1.76	-
	Apr. 15, 1951	3.96	-	982
	June 3, 1951	3.76	-	856
1951	Sept.10, 1951	3.34	-	534
1952	Oct. 31, 1951	3.38	-	628
	Dec. 4-8, 1951	4.20	0.50	820
	Apr. 8, 1952	6.90	2.44	-
	Apr. 9, 1952	5.74	1.14	1,460
	May 28, 1952	-	-	a640
	July 3, 1952	3.87	-	935
	July 20, 1952	-	-	a1,800
	Sept. 1, 1952	-	-	a720
1953	Apr. 10, 1953	3.72	-	882
	Apr. 26, 1953	3.54	-	755
	May 30, 1953	4.60	-	1,540
	June 21, 1953	5.17	-	1,730
	Aug. 4, 1953	4.84	-	1,080
1954	Apr. 10, 1954	5.94	1.96	-
	Apr. 15, 1954	4.55	-	1,510
1955	Apr. 6, 1955	6.26	2.36	-
	Apr. 7, 1955	5.92	1.92	1,040
	June 9, 1955	3.30	-	610
	July 12, 1955	3.39	-	660
	Aug. 10, 1955	4.44	-	975
1956	Apr. 11, 1956	5.73	1.90	-
	Apr. 13, 1956	4.84	.84	1,040
	May 31, 1956	3.28	-	560
1957	Apr. 3, 1957	5.76	2.33	-
	Apr. 25, 1957	3.80	-	905
	June 23, 1957	4.16	-	1,120
	July 20, 1957	3.69	-	660
	Sept.19, 1957	3.79	-	571
1958	Oct. 25, 1957	3.34	-	498
	Nov. 29, 1957	4.41	1.40	-
1959	Mar. 15, 1959	4.72	2.02	-
	May 5, 1959	3.47	-	705
	June 1, 1959	3.59	-	772
	July 8, 1959	4.04	-	833
	Sept. 2, 1959	4.11	-	655
1960	Nov. 7, 1959	3.80	-	532
	Apr. 10, 1960	5.64	2.28	-
	May 4, 1960	4.28	-	1,260
	June 1, 1960	3.70	-	839
	Sept. 5, 1960	3.62	-	588
1961	Nov. 20, 1960	3.30	-	520
	Mar. 15, 1961	4.35	1.52	-
	Apr. 26, 1961	3.34	-	576
	May 15, 1961	3.82	-	839

a Maximum daily discharge.

2445. Crow Wing River at Motley, Minn.

Location.--Lat 46°20'30", long 94°38'30", in SW¼ sec.7, T.133 N., R.31 W., at bridge on U.S. Highway 210 at Motley, 2 miles upstream from Long Prairie River.

Drainage area.--2,140 sq mi, approximately.

Gage.--Nonrecording. At different datum prior to 1931. Altitude of gage is 1,209 ft (from river-profile survey).

Stage-discharge relation.--Defined by current-meter measurements below 6,300 cfs and extended above.

Remarks.--Flow affected by natural storage in many lakes above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	July 18, 1913	7.30	1,810	1917	Apr. 5, 1917	a13.2	3,770
1914	June 11, 1914	10.3	6,940				
1915	June 29, 1915	8.75	4,780	1931	June 14, 1931	4.76	1,250
1916	Apr. 5, 1916	11.7	9,820				

a Backwater from ice, 4.8 ft.

2455. Long Prairie River near Motley, Minn.

Location.--Lat 46°19'10", long 94°38'50", in NW¼ sec.19, T.133 N., R.31 W., at bridge on U.S. Highway 10, 1½ miles south of Motley, and 3¼ miles upstream from mouth.

Drainage area.--973 sq mi.

Gage.--Nonrecording. Prior to Aug. 9, 1916, at site 300 ft upstream at different datum and Aug. 9, 1916, to Sept. 30, 1917, at described site at different datum. Altitude of gage is 1,205 ft, approximately (from river profile).

Stage-discharge relation.--Defined by current-meter measurements below 1,750 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 19, 1910	7.8	-	1,590	1916	Apr. 5, 1916	15.0	4.0	4,280
					1917	Apr. 3, 1917	11.3	3.7	-
1911	May 17, 1911	5.35	-	195		Apr. 6, 1917	-	-	2,540
1912	May 6, 1912	10.00	-	3,000					
1913	May 22-25,1913	6.0	-	480	1931	Apr. 4, 1931	4.81	.90	163
1914	July 1, 1914	8.1	-	1,720					
1915	July 1,3,1915	8.5	-	1,980					

2460. Crow Wing River at Pillager, Minn.

Location.--Lat 46°18'58", long 94°28'52", on line between SE¼ and SW¼ sec.20, T.133 N., R.30 W., at plant of Minnesota Power & Light Co., 1 mile southwest of Pillager and 1.9 miles upstream from Pillager Creek.

Drainage area.--3,230 sq mi, approximately.

Gage.--Nonrecording gage at highway bridge 0.8 mile downstream from powerplant June 1909 to June 1913. Altitude of gage 1,170 ft (from topographic map).

Remarks.--Records for 1927-50 furnished by Minnesota Power & Light Co. Only annual maximum daily discharges are shown.

Maximum daily discharges of Crow Wing River at Pillager, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Mar. 19, 1910	-	4,580	1937	Apr. 14, 1937	-	3,320
				1938	May 10, 1938	-	5,780
1911	Sept.23, 1911	-	1,070	1939	Mar. 31, 1939	-	6,350
1912	May 6, 1912	-	6,920	1940	Apr. 10, 1940	-	6,530
1927	Mar. 18, 1927	-	3,390	1941	Apr. 7, 1941	-	6,370
1928	Mar. 28, 1928	-	4,270	1942	May 17, 1942	-	7,110
1929	Mar. 19, 1929	-	4,620	1943	Apr. 4, 1943	-	10,400
1930	Mar. 15, 1930	-	3,170	1944	June 7, 1944	-	6,080
				1945	Mar. 20, 1945	-	7,620
1931	June 14, 1931	-	1,350				
1932	Apr. 9, 1932	-	2,020	1946	June 30, 1946	-	9,480
1933	May 24, 1933	-	1,960	1947	Apr. 10, 1947	-	8,560
1934	Apr. 9, 1934	-	1,790	1948	Apr. 10, 1948	-	4,790
1935	June 18, 1935	-	1,840	1949	Apr. 5, 1949	-	3,520
				1950	Apr. 19, 1950	-	10,900
1936	Apr. 14, 1936	-	1,800				

MISSISSIPPI RIVER MAIN STEM

2670. Mississippi River near Royalton, Minn.

Location.--Lat 45°51'04", long 94°21'30", in lot 2, sec.20, T.39 N., R.22 W., at plant of Minnesota Power &Light Co., 4 miles northwest of Royalton, 4.5 miles downstream from Swan River, and at mile 956 upstream from Ohio River.

Drainage area.--11,600 sq mi, approximately.

Stage-discharge relation.--Discharge computed on basis of powerplant records.

Remarks.--Records collected by Minnesota Power & Light Co. under general supervision of Geological Survey. Flow partly regulated by powerplants above station. Only annual maximum daily discharges are shown.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Aug. 7, 1924	-	6,380	1943	Apr. 5, 1943	-	24,000
1925	June 16, 1925	-	5,230	1944	June 14, 1944	-	19,200
				1945	Mar. 21, 1945	-	17,100
1926	Mar. 26, 1926	-	5,910				
1927	Apr. 22, 1927	-	12,600	1946	July 1, 1946	-	19,600
1928	Mar. 28, 1928	-	7,790	1947	May 5, 1947	-	15,300
1929	Mar. 20, 1929	-	8,690	1948	Apr. 29, 1948	-	18,800
1930	May 15, 1930	-	9,610	1949	July 17, 1949	-	6,820
				1950	May 9, 1950	-	28,000
1931	June 16, 1931	-	6,710				
1932	May 12, 1932	-	5,380	1951	Apr. 17, 1951	-	14,900
1933	June 2, 1933	-	9,200	1952	Apr. 15, 1952	-	29,400
1934	Apr. 18, 1934	-	4,090	1953	Aug. 13, 1953	-	20,700
1935	May 16, 1935	-	5,470	1954	May 8, 1954	-	19,300
				1955	Apr. 5, 1955	-	12,100
1936	May 12, 1936	-	9,380				
1937	May 3, 1937	-	10,300	1956	Apr. 14, 1956	-	18,400
1938	May 10, 1938	-	19,200	1957	June 28, 1957	-	17,700
1939	Apr. 1, 1939	-	13,900	1958	July 5, 1958	-	5,510
1940	Apr. 11, 1940	-	9,080	1959	June 2, 1959	-	16,000
				1960	May 7, 1960	-	14,900
1941	Apr. 20, 1941	-	15,900				
1942	May 18, 1942	-	14,700				

2680. Platte River at Royalton, Minn.

Location.--Lat 45°49'50", long 94°17'12", in E½ sec.35, T.39 N., R.32 W., on downstream side of highway bridge at east edge of Royalton, 6 miles upstream from mouth.

Drainage area.--338 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,060 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1929	May 18, 1929	2.37	-	132	1934	Apr. 7, 1934	3.70	0.8	272
1930	May 14, 1930	5.75	-	1,280	1935	Mar. 23, 1935	5.50	1.00	-
						Mar. 25, 1935	-	-	228
1931	May 30, 1931	5.90	-	1,330					
1932	Apr. 10, 1932	4.00	-	543	1936	May 3, 1936	6.36	-	1,450
1933	Apr. 1, 1933	2.60	0.20	167					

SAUK RIVER BASIN

2705. Sauk River near St. Cloud, Minn.

Location.--Lat 45°33'35", long 94°14'00", in SE¼SW¼ sec.8, T.124 N., R.28 W., on right bank, half a mile northwest of Waite Park, 3 miles west of St. Cloud, and 5 miles upstream from mouth.

Drainage area.--925 sq mi.

Gage.--Nonrecording prior to Nov. 22, 1934, on highway bridge 1 mile downstream at datum 6.77 ft lower; recording thereafter. Datum of gage is 1,034.95 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow regulated by powerplants and reservoirs above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 15, 1910	8.95	1.6	-	1945	Mar. 20, 1945	5.72	1.5	-
	Mar. 19, 1910	-	-	1,030		Mar. 21, 1945	-	-	1,730
1911	Mar. 31, 1911	6.95	-	475	1946	Mar. 21, 1946	5.67	1.3	-
1912	May 11, 1912	8.80	-	1,700		Mar. 22, 1946	-	-	1,910
					1947	Apr. 12, 1947	4.96	-	2,050
1930	May 16, 1930	4.30	-	914	1948	Mar. 29, 1948	6.09	1.75	-
						Mar. 30, 1948	-	-	1,900
1931	Mar. 25, 1931	3.76	-	678	1949	Mar. 30, 1949	5.17	1.22	1,380
1932	Apr. 5, 1932	3.91	.9	-	1950	Apr. 5, 1950	6.60	1.37	-
	Apr. 6, 1932	-	-	546		Apr. 8, 1950	-	-	2,940
1933	May 16, 1933	2.86	-	284					
1934	Mar. 24, 1934	2.60	1.1	-	1951	Apr. 13, 1951	7.89	-	5,580
	Sept.25, 1934	-	-	62	1952	Apr. 15, 1952	7.78	-	5,410
1935	Aug. 25, 1935	3.47	-	708	1953	June 20, 1953	5.91	-	2,740
					1954	May 4, 1954	4.23	-	1,460
1936	May 6, 1936	4.90	-	1,950	1955	Apr. 3, 1955	4.72	1.84	-
1937	Apr. 11, 1937	3.50	1.2	-		Apr. 6, 1955	-	-	790
	May 12, 1937	-	-	840					
1938	June 14, 1938	-	-	909	1956	Aug. 8, 1956	5.23	-	2,010
	July 8, 1938	3.21	-	-	1957	Mar. 27, 1957	6.22	2.47	-
1939	Mar. 29, 1939	4.48	-	1,710		June 22, 1957	6.08	-	2,920
1940	Apr. 9, 1940	3.65	.5	-	1958	Dec. 27, 1957	4.08	1.10	-
	Apr. 11, 1940	-	-	1,080		Apr. 11, 1958	-	-	1,060
					1959	June 6, 1959	3.36	-	973
1941	June 29, 1941	5.57	-	2,610	1960	Apr. 1, 1960	4.90	1.55	-
1942	June 3, 1942	3.25	-	968		Apr. 5, 1960	-	-	1,480
1943	Apr. 2, 1943	7.67	2.0	-					
	Apr. 4, 1943	-	-	4,700	1961	Feb. 12, 1961	2.74	2.04	-
1944	June 11-17,1944	4.63	-	1,720		May 21, 1961	-	-	275

2750. Elk River near Big Lake, Minn.

Location.--Lat 45°20', long 93°40', in sec.23, T.33 N., R.27 W., on right bank at upstream side of highway bridge, 4 miles east of town of Big Lake, and 4 miles downstream from St. Francis River.

Drainage area.--615 sq mi.

Gage.--Nonrecording prior to July 27, 1934; recording thereafter. Datum of gage is 899.60 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 260 cfs. Only annual peaks are shown prior to 1935.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1911	May 23, 1911	1.15	-	264
1912	May 7, 1912	10.1	-	5,180
1913	Mar. 18, 1913	1.85	0.9	-
	May 24, 1913	-	-	426
1914	July 6, 1914	3.3	-	925
1915	Mar. 27, 1915	2.7	.2	720
1916	Apr. 5, 1916	8.6	-	4,130
1917	Apr. 6, 1917	7.05	-	2,930
1931	Apr. 1, 1931	2.12	-	a493
1932	Apr. 11, 1932	1.96	-	a436
1933	Mar. 16, 1933	1.44	.5	-
	May 31, 1933	-	-	178
1934	Sept.26, 1934	1.74	-	144
1935	Mar. 20, 1935	2.96	.30	-
	Mar. 21, 1935	2.80	-	690
1936	Mar. 29, 1936	6.92	1.3	2,000
	Apr. 16, 1936	3.04	-	760
	May 7, 1936	2.74	-	640
1937	Apr. 13, 1937	3.60	-	1,160
	May 30, 1937	2.27	-	495
1938	Mar. 21, 1938	4.35	1.4	740
	Apr. 22, 1938	2.06	-	384
	May 12, 1938	6.90	-	2,740
	June 21, 1938	2.18	-	432
	July 9, 1938	2.21	-	444
	Aug. 24, 1938	1.89	-	316
	Sept.17, 1938	2.32	-	444
1939	Nov. 4, 1938	1.88	-	312
	Mar. 28, 1939	7.15	-	2,920
	Apr. 26, 1939	3.85	-	1,110
	May 29, 1939	1.92	-	352
	June 29, 1939	1.74	-	280
1940	Apr. 6, 1940	5.55	2.55	-
	Apr. 10, 1940	4.09	-	1,240
1941	Apr. 9, 1941	4.46	-	1,450
	June 13, 1941	3.18	-	890
	Sept.20, 1941	2.07	-	421
1942	Nov. 5, 1941	2.11	-	437
	Mar.27-29,1942	2.02	-	440
	May 7, 1942	2.49	-	608
	May 19, 1942	4.78	-	1,560
	May 30, 1942	2.55	-	624
	Aug. 14, 1942	1.72	-	327
	Sept.23, 1942	2.13	-	429
1943	Apr. 4, 1943	8.04	-	3,500
	June 6, 1943	4.92	-	1,600
1944	Apr. 15, 1944	2.96	-	752
	May 8, 1944	5.15	-	1,740
	May 24, 1944	3.55	-	975
	June 20, 1944	4.76	-	1,540
	July 2, 1944	3.71	-	1,040
1944	July 13, 1944	3.49	-	955
	Aug. 13, 1944	2.63	-	655
1945	Mar. 20, 1945	7.48	-	3,150
	Apr. 27, 1945	2.03	-	435
	June 19, 1945	2.55	-	620
	June 30, 1945	2.68	-	672
	July 28, 1945	1.73	-	301
	Aug. 15, 1945	1.74	-	305
	Sept.28, 1945	1.75	-	326
1946	Nov. 16, 1945	1.59	-	265
	Mar. 22, 1946	5.60	-	1,960
	May 29, 1946	1.95	-	405
	June 10, 1946	2.04	-	439
	June 25, 1946	1.76	-	333
	July 11, 1946	1.75	-	329
1947	Oct. 12, 1946	1.75	-	329
	Nov. 16, 1946	1.81	0.03	340
	Nov. 26, 1946	3.62	2.08	-
	Apr. 16, 1947	3.42	-	950
	Apr. 29, 1947	3.25	-	890
	June 15, 1947	2.18	-	503
1948	Mar. 30, 1948	7.05	-	2,800
1949	Apr. 1, 1949	5.22	-	1,750
1950	Apr. 2, 1950	8.45	2.80	1,990
	May 9, 1950	6.88	-	2,730
1951	Apr. 11, 1951	7.68	-	3,280
	July 5, 1951	3.18	-	866
	Sept.17, 1951	2.54	-	626
1952	Oct. 28, 1951	1.96	-	411
	Nov. 6, 1951	2.87	.92	408
	Nov. 20, 1951	2.96	.42	626
	Dec. 9, 1951	2.16	-	485
	Apr. 10, 1952	10.36	-	5,330
	May 31, 1952	1.74	-	342
	July 2, 1952	5.70	-	2,020
	July 28, 1952	2.42	-	590
	Sept. 6, 1952	2.93	-	776
1953	Mar. 27, 1953	4.19	-	1,320
	May 5, 1953	2.00	-	485
	May 28, 1953	2.96	-	840
	June 25, 1953	3.92	-	1,200
	Aug. 16, 1953	2.24	-	538
1954	May 1, 1954	7.45	-	3,120
	June 6, 1954	4.84	-	1,610
	June 16, 1954	2.15	-	512
	July 9, 1954	4.92	-	1,650
	Sept.22, 1954	1.65	-	322
1955	Oct. 18, 1954	1.92	-	425
	Apr. 6, 1955	4.52	-	1,470
	July 12, 1955	1.60	-	303
	Sept. 4, 1955	3.55	-	1,070

a Maximum during period April to September.

Peak stages and discharges of Elk River near Big Lake, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 8, 1956	7.43	-	3,100	1958	Dec. 1, 1957	2.04	0.49	284
	May 15, 1956	1.76	-	364		Apr. 12, 1958	2.14	-	543
	Aug. 11, 1956	3.56	-	1,070		Sept.11, 1958	1.71	-	366
1957	Mar. 29, 1957	3.93	-	1,220	1959	Feb. 26, 1959	2.18	1.40	-
	June 2, 1957	2.69	-	726		May 10, 1959	1.62	-	330
	June 27, 1957	6.50	-	2,500		June 4, 1959	1.48	-	274
	July 21, 1957	1.69	-	318					
	Aug. 18, 1957	1.68	-	333	1960	Apr. 3, 1960	4.72	-	1,580
	Sept. 8, 1957	2.52	-	658		Aug. 30, 1960	1.68	-	354
	Sept.24, 1957	2.25	-	552					
					1961	May 19, 1961	2.01	-	486
1958	Dec. 1, 1957	2.17	0.63	-					

MISSISSIPPI RIVER MAIN STEM

2755. Mississippi River at Elk River, Minn.

Location.--Lat 45°18', long 93°34', in SE¼ sec.34, T.33 N., R.26 W., fourth principal meridian, on left bank in town of Elk River, 50 ft downstream from bridge on State Highway 101, 2,500 ft downstream from Elk River, and at mile 884.6 upstream from Ohio River.

Drainage area.--14,500 sq mi, approximately.

Gage.--Nonrecording prior to July 18, 1932; recording thereafter. Datum of gage is 847.92 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow slightly regulated, except during extreme floods, by six reservoirs on headwaters (total usable capacity, 1,640,610 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1916	Apr. 7, 1916	11.0	-	27,700	1938	May 12, 1938	11.31	-	31,300
1917	Apr. 5, 1917	-	-	a34,000	1939	Mar. 26, 1939	10.50	3.20	-
1918	June 5, 1918	6.27	-	11,800		Apr. 2, 1939	-	-	23,300
1919	Apr. 15, 1919	7.23	-	14,800	1940	Apr. 11, 1940	8.31	-	18,100
1920	Mar. 25, 1920	11.0	2.8	-					
	Mar. 28, 1920	-	-	23,500	1941	Apr. 21, 1941	10.4	-	26,100
					1942	May 19, 1942	9.69	-	23,300
1921	June 15, 1921	6.66	-	12,900	1943	Apr. 6, 1943	12.63	-	37,700
1922	Apr. 9, 1922	10.10	-	24,800	1944	June 15, 1944	10.99	-	29,400
1923	Apr. 23, 1923	5.76	-	10,200	1945	Mar. 21, 1945	13.80	3.3	-
1924	Aug. 7, 1924	4.70	-	6,700		Mar. 21, 1945	-	-	29,400
1925	June 14, 1925	4.56	-	6,280					
					1946	July 3, 1946	10.78	-	28,500
1926	Mar. 27, 1926	6.90	-	13,700	1947	Apr. 14, 1947	9.62	-	23,200
1927	Apr. 9, 1927	7.8	-	16,700	1948	Apr. 2, 1948	9.81	2.74	-
1928	Mar. 27, 1928	7.46	-	15,700		Apr. 30, 1948	-	-	23,200
1929	Mar. 21, 1929	9.92	-	23,900	1949	Mar. 30, 1949	7.85	2.48	-
1930	May 16, 1930	7.13	-	14,300		Apr. 3, 1949	-	-	12,300
					1950	May 10, 1950	13.00	-	39,000
1931	June 17, 1931	5.73	-	9,290					
1932	May 13, 1932	5.30	-	8,050	1951	Apr. 14, 1951	10.76	-	28,300
1933	June 3, 1933	6.51	-	11,800	1952	Apr. 12, 1952	14.49	-	49,200
1934	Apr. 11, 1934	4.26	-	5,160	1953	June 25, 1953	10.19	-	26,700
1935	Mar. 21, 1935	5.71	-	9,290	1954	May 5, 1954	9.71	-	24,700
					1955	Apr. 2, 1955	8.42	-	19,400
1936	May 8, 1936	7.35	-	15,000					
1937	May 4, 1937	7.40	-	15,000	1956	Apr. 15, 1956	9.09	-	23,700

a From powerplant record.

2760. North Fork Crow River near Regal, Minn.

Location.--Lat 45°22'55", long 94°47'40", in S½ sec.11, T.122 N., R.33 W., 12 ft upstream from highway bridge, and 3 miles southeast of Regal.

Drainage area.--215 sq mi.

Gage.--Nonrecording prior to July 14, 1948; recording thereafter. Datum of gage is 1,195.92 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 900 cfs and extended above.

Remarks.--At high stages a part of flow bypasses gage from a point 1 mile upstream, and returns to the main channel at a point two-thirds of a mile below gage. This flow is included in the station record. Base for partial-duration series, 380 cfs. Only annual peaks are shown prior to 1949.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	Apr. 8, 1944	5.08	1.18	-	1951	Apr. 6, 1951	6.73	1.52	1,400
	Apr. 8, 1944	-	-	a698		May 2, 1951	4.35	-	886
1945	Mar. 16, 1945	4.26	.76	-					
	Mar. 18, 1945	-	-	a723	1952	Apr. 7, 1952	6.65	2.06	-
						Apr. 11, 1952	6.11	-	2,120
1946	Mar. 14, 1946	5.86	3.74	-		June 26, 1952	4.95	-	1,290
	Mar. 18, 1946	-	-	a576		June 28, 1952	4.95	-	1,290
1947	Apr. 11, 1947	4.74	-	1,030					
1948	Mar. 23, 1948	5.31	2.47	-	1953	Mar. 22, 1953	5.04	2.49	-
	Mar. 26, 1948	-	-	899		Mar. 24, 1953	3.36	-	391
						June 16, 1953	4.31	-	896
1949	Mar. 28, 1949	4.70	1.34	-		June 26, 1953	3.53	-	466
	Mar. 28, 1949	-	-	a444		Aug. 8, 1953	4.13	-	788
1950	Mar. 27, 1950	-	-	a953	1954	March 1954 b	3.66	.66	-
	Mar. 28, 1950	5.73	1.73	-		Mar. 2, 1954	3.17	-	329

a Maximum daily discharge.
b Maximum stage occurred during period Mar. 20-27, 1954.

2780. Middle Fork Crow River near Spicer, Minn.

Location.--Lat 45°15'45", long 94°48'10", in NE¼ sec.27, T.121 N., R.33 W., on right bank, 75 ft upstream from highway bridge, 1½ miles downstream from Lake Calhoun, 3 miles downstream from Green Lake, and 6.8 miles northeast of Spicer.

Drainage area.--179 sq mi.

Gage.--Nonrecording at bridge 75 ft downstream prior to July 19, 1950; recording gage and concrete and steel V-notch sharp-crested weir thereafter. Datum of gage is 1,147.93 ft above mean sea level, datum of 1929 (Kandiyohi County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow affected by natural storage and some regulation from lakes above station. Base for partial-duration series, 100 cfs. Only annual peaks are shown prior to 1951.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1949	Mar. 10, 1949	3.83	2.98	-	1953	June 29, 1953	6.52	-	408
	Apr. 25, 1949	-	-	46					
1950	May 20, 1950	4.46	-	195	1954	Mar. 13, 1954	3.85	-	154
						May 3, 1954	3.29	-	117
1951	Mar. 19, 1951	4.32	.23	164					
	May 7, 1951	5.60	-	269	1955	Mar. 21, 1955	3.34	1.32	-
	Sept.12, 1951	3.54	-	128		Apr. 21, 1955	2.70	-	79
1952	Nov. 14, 1951	3.29	-	113					
	Dec. 8, 1951	3.42	-	119	1956	Aug. 19, 1956	3.95	-	120
	Apr. 26, 1952	5.79	-	318					
	July 7, 1952	5.31	-	265	1957	Apr. 21, 1957	3.87	-	107
						May 26, 1957	4.01	-	113
1953	May 21, 1953	4.62	-	211		June 25, 1957	6.67	-	387

Peak stages and discharges of Middle Fork Crow River near Spicer, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1957	Aug. 2, 1957	5.38	-	248	1959	Feb. 24, 1959	3.11	1.97	-
	Aug. 14, 1957	5.24	-	234		May 12, 1959	2.33	-	30
	Sept. 3, 1957	5.17	-	227					
	Sept.20, 1957	5.50	-	260	1960	May 27, 1960	3.19	-	75
1958	Apr. 17, 1958	3.87	-	124	1961	May 25, 1961	3.42	-	73

2785. South Fork Crow River at Cosmos, Minn.

Location.--Lat 44°56'05", long 94°40'20", in SW¼ sec.14, T.117 N., R.32 W., on downstream side of bridge on State Highway 7, 1 mile east of Cosmos, 2½ miles upstream from small tributary, and 3¼ miles west of Corvuso.

Drainage area.--221 sq mi.

Gage.--Nonrecording. Prior to June 13, 1959, at datum 3.00 ft higher. Datum of gage is 1,079.09 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Mar. 15, 1945	4.53	1.18	-	1953	Mar. 22, 1953	6.58	-	461
	Mar. 16, 1945	-	-	123	1954	Mar. 19, 1954	3.86	2.44	-
						May 1, 1954	-	-	140
1946	Mar. 16, 1946	6.60	2.39	-	1955	July 11, 1955	5.60	-	240
	Mar. 23, 1946	-	-	256					
1947	Apr. 23, 1947	5.50	-	277	1956	Mar. 26, 1956	5.50	3.35	-
1948	Mar. 23, 1948	7.45	1.26	-		Apr. 3, 1956	-	-	259
	Mar. 24, 1948	-	-	400	1957	June 17, 1957	9.62	-	1,890
1949	Apr. 5, 1949	4.95	-	230	1958	Apr. 6, 1958	6.10	-	356
1950	Mar. 27, 1950	7.11	2.2	-	1959	Mar. 4, 1959	2.50	2.30	-
	May 5, 1950	-	-	268		May 5, 1959	-	-	27
					1960	Mar. 28, 1960	10.60	2.06	-
1951	Apr. 7, 1951	8.21	1.94	-		Mar. 30, 1960	-	-	760
	Apr. 14, 1951	-	-	a590					
1952	Apr. 8, 1952	8.75	-	958	1961	May 17, 1961	4.75	-	86

a Maximum daily discharge.

2790. South Fork Crow River near Mayer, Minn.
(Published as South Fork Crow River near Rockford, 1910-11)

Location.--Lat 44°54'20", long 93°53'05", in SW¼SW¼ sec.30, T.117 N., R.25 W., near center of span on downstream side of bridge on State Highway 7, 1.3 miles north of Mayer, 4.3 miles southwest of Watertown, and 16 miles upstream from confluence with North Fork.

Drainage area.--1,170 sq mi, approximately; at site used 1910-11, 1,250 sq mi, approximately.

Gage.--Nonrecording. At site 14 miles downstream at different datum, 1910-11. Datum of gage is 926.00 ft above mean sea level (levels by Hennepin County Park Board Survey).

Stage-discharge relation.--Defined by current-meter measurements below 9,700 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of South Fork Crow River near Mayer, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 15, 1910	-	-	2,830	1946	Mar. 21, 1946	-	-	2,050
					1947	Apr. 16, 1947	6.66	-	1,400
1911	May 23,24,1911	-	-	157	1948	Mar. 27, 1948	12.11	-	4,620
					1949	Apr. 1, 1949	8.08	-	2,070
1934	Apr. 7, 1934	1.20	-	28	1950	Apr. 1, 1950	9.34	1.23	-
1935	May 17, 1935	4.70	-	770		Apr. 2, 1950	-	-	2,280
1936	Mar. 24, 1936	9.34	-	2,470	1951	Apr. 12, 1951	12.15	-	5,070
1937	Apr. 14, 1937	4.94	-	860	1952	Apr. 10, 1952	15.70	-	11,000
1938	May 23, 1938	6.46	-	1,360	1953	June 30, 1953	11.01	-	3,900
1939	Mar. 24, 1939	7.96	-	1,960	1954	July 3, 1954	6.60	-	1,440
1940	Mar. 31, 1940	4.66	1.80	-	1955	July 17, 1955	7.08	-	1,500
	Apr. 5, 1940	-	-	461					
					1956	June 22, 1956	9.58	-	2,850
1941	Apr. 3, 1941	8.96	-	2,400	1957	June 23, 1957	16.00	-	9,660
1942	May 31, 1942	5.80	-	920	1958	Apr. 10, 1958	6.80	-	1,490
1943	Mar. 30, 1943	10.68	-	3,490	1959	May 7, 1959	2.99	-	344
1944	May 8, 1944	10.88	-	4,120	1960	Apr. 3, 1960	10.62	-	3,550
1945	Mar. 16, 1945	9.84	-	3,300					
					1961	May 19, 1961	3.71	-	457
1946	Mar. 17, 1946	8.39	1.76	-					

2800. Crow River at Rockford, Minn.

Location.--Lat 45°05'15", long 93°44'00", in sec.29, T.119 N., R.24 W., on right bank, at Rockford, 150 ft downstream from bridge on State Highway 55, and 1 mile downstream from confluence of North and South Forks.

Drainage area.--2,520 sq mi, approximately.

Gage.--Nonrecording at site 600 ft downstream prior to Aug. 22, 1934; recording thereafter. At different datum prior to Apr. 23, 1929. Datum of gage is 893.65 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 600 cfs. Only annual peaks are shown prior to 1935.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 15, 1910	10.7	-	4,300	1939	Apr. 24, 1939	4.90	-	1,440
						May 8, 1939	3.94	-	694
1911	May 24, 1911	5.92	-	566					
1912	May 10, 1912	10.2	-	3,850	1940	Apr. 6, 1940	5.09	0.49	-
1913	July 19, 1913	7.78	-	1,790		Apr. 6, 1940	5.00	.38	1,200
1914	July 2, 1914	9.35	-	3,080					
1915	Mar. 31, 1915	10.40	-	4,030	1941	Apr. 5, 1941	8.15	-	3,950
						Apr. 26, 1941	6.43	-	2,500
1916	Apr. 3, 1916	15.92	-	10,600		June 4, 1941	3.96	-	784
1917	Apr. 8, 1917	14.53	-	8,500		June 17, 1941	4.31	-	996
1930	Mar. 4, 1930	3.20	-	1,120	1942	Mar. 28, 1942	3.92	-	760
						June 2, 1942	6.96	-	2,730
1931	Mar. 27, 1931	1.50	-	354		June 30, 1942	4.09	-	870
1932	Apr. 8, 1932	4.20	-	1,710		Aug. 10, 1942	3.99	-	736
1933	Mar. 4, 1933	2.56	-	678		Sept. 5, 1942	3.82	-	678
1934	Apr. 9, 1934	1.02	-	107		Sept.21, 1942	4.68	-	127
1935	Mar. 20, 1935	4.33	0.10	750	1943	Apr. 3, 1943	9.78	-	5,190
	May 17, 1935	4.18	-	715		May 18, 1943	4.21	-	932
						June 18, 1943	9.89	-	5,270
1936	Mar. 25, 1936	10.40	1.7	4,480		Aug. 2, 1943	3.78	-	679
	Apr. 13, 1936	5.58	-	1,880					
					1944	Mar. 6, 1944	5.61	.5	1,550
1937	Apr. 15, 1937	4.68	-	1,180		May 10, 1944	10.20	-	5,570
	May 29, 1937	4.17	-	770		June 21, 1944	10.24	-	5,570
1938	Mar. 19, 1938	6.25	.75	1,750	1945	Mar. 16, 1945	10.04	1.6	-
	May 10, 1938	5.09	-	1,470		Mar. 18, 1945	8.78	-	4,620
	May 24, 1938	6.19	-	2,240		Apr. 18, 1945	4.54	-	1,230
	July 12, 1938	4.23	-	918		June 18, 1945	5.20	-	1,720
						Aug. 16, 1945	3.80	-	710
1939	Mar. 24, 1939	8.23	1.7	-					
	Mar. 27, 1939	7.60	-	3,440	1946	Mar. 18, 1946	8.52	1.0	-

Peak stages and discharges of Crow River at Rockford, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Mar. 23, 1946	7.61	-	3,610	1954	Mar. 25, 1954	4.78	-	1,510
	May 28, 1946	4.16	-	943		May 5, 1954	6.27	-	2,620
	June 26, 1946	3.91	-	786		June 1, 1954	3.79	-	813
						June 22, 1954	4.49	-	1,300
1947	Nov. 18, 1946	3.64	-	632		July 5, 1954	4.74	-	1,480
	Apr. 29, 1947	6.28	-	2,570					
	June 15, 1947	5.21	-	1,720	1955	Mar. 21, 1955	4.68	0.62	1,000
						Apr. 2, 1955	5.15	-	1,780
1948	Mar. 29, 1948	11.45	-	7,190		July 18, 1955	5.92	-	2,360
1949	Apr. 2, 1949	6.98	-	3,180	1956	Apr. 8, 1956	5.42	-	1,980
						May 16, 1956	3.52	-	639
1950	Apr. 3, 1950	a10.78	0.98	5,680		June 24, 1956	6.83	-	3,040
	May 12, 1950	7.67	-	3,670		July 22, 1956	3.50	-	627
						Aug. 10, 1956	7.15	-	3,280
1951	Apr. 16, 1951	12.13	-	7,720					
	July 3, 1951	6.35	-	2,650	1957	Mar. 28, 1957	6.27	-	2,620
	July 21, 1951	6.13	-	2,420		May 28, 1957	4.42	-	1,250
	Aug. 9, 1951	4.47	-	1,240		June 26, 1957	16.14	-	13,500
	Sept. 2, 1951	3.88	-	857		Aug. 19, 1957	6.64	-	2,910
	Sept.15, 1951	5.61	-	2,050		Sept. 7, 1957	8.28	-	4,190
1952	Oct. 3, 1951	4.07	-	980	1958	Apr. 12, 1958	6.12	-	2,510
	Oct. 31, 1951	3.61	-	691		June 7, 1958	4.62	-	1,390
	Nov. 15, 1951	3.86	-	844					
	Dec. 8, 1951	4.56	-	1,310	1959	May 8, 1959	3.31	-	524
	Apr. 13, 1952	16.24	-	13,900					
	July 21, 1952	6.97	-	3,080	1960	Apr. 5, 1960	8.78	-	4,800
						May 23, 1960	5.27	-	1,970
1953	Mar. 29, 1953	6.67	-	2,850		Sept. 3, 1960	3.58	-	656
	May 8, 1953	7.48	-	3,460					
	June 13, 1953	5.45	-	1,980	1961	May 20, 1961	4.25	-	1,200
	July 3, 1953	9.61	-	5,160					
	Aug. 10, 1953	6.96	-	3,070					

a Occurred at different time than peak discharge.

MISSISSIPPI RIVER MAIN STEM

2835. Mississippi River at Anoka, Minn.

Location.--Lat 45°11'30", long 93°23'40", in NE¼ sec.12, T.31 N., R.25 W., fourth principal meridian, on downstream side of bridge on U.S. Highways 52 and 169 at Anoka, 0.25 mile upstream from Rum River, and at mile 871.6 upstream from Ohio River.

Drainage area.--17,100 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 825 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 27,000 cfs and extended above.

Remarks.--Flow slightly regulated, except during extreme floods, by six reservoirs on headwaters (total usable capacity, 1,640,600 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1897	Apr. 5, 1897	9.66	49,100	1909	June 6, 1909	3.1	15,500
				1910	Mar. 21, 1910	3.6	17,800
1905	July 9, 1905	8.9	44,900				
				1911	May 24, 1911	1.07	6,930
1906	June 10, 1906	7.35	36,600	1912	May 8, 1912	6.5	32,300
1907	Mar. 31, 1907	7.6	37,900	1913	May 26, 1913	2.2	11,600
1908	June 12, 1908	7.9	39,500				

2860. Rum River near St. Francis, Minn.
(Published as "near Anoka" 1905-6, and "at Cambridge" 1910-13)

Location.--Lat 45°19'40", long 93°22'20", in SE¼ sec.19, T.33 N., R.24 W., on left bank at upstream side of highway bridge, 4 miles south of St. Francis, and 15¾ miles upstream from mouth.

Drainage area.--1,360 sq mi, approximately; at site used 1905-6, 1,430 sq mi; and at site used 1910-13, 1,160 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 9, 1933; recording thereafter. May 1905 to June 1906, at site 5½ miles downstream at different datum; July 1909 to March 1914, at site 24 miles upstream at datum about 33 ft higher. Datum of present gage is 861.12 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 7,900 cfs and extended above for site used since 1930. For sites used 1905-6 and 1910-13, ratings are defined by current-meter measurements below 5,000 cfs.

Remarks.--Flow regulated occasionally by Ogechie, Mille Lacs, and Onamia Lakes. Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1935.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1905	July 13, 1905	17.45	-	4,840	1942	June 6, 1942	4.24	-	1,170
1906	June 12, 1906	21.3	-	7,560		Sept.22, 1942	3.64	-	585
1910	Mar. 18, 1910	7.45	-	1,340	1943	Apr. 6, 1943	8.46	-	5,100
						May 22, 1943	4.36	-	1,250
1911	May 22,June 8, 1911	5.00	-	625		June 7, 1943	7.98	-	4,620
1912	May 9, 1912	16.3	-	4,950	1944	Mar. 31, 1944	3.77	0.22	620
1913	May 26, 1913	7.62	-	1,420		Apr. 15, 1944	5.37	-	2,110
						May 9, 1944	8.58	-	5,230
1930	May 17, 1930	6.56	-	3,910		June 13, 1944	7.11	-	3,770
						June 19, 1944	9.35	-	6,780
1931	Mar. 30, 1931	4.15	-	1,140		July 10, 1944	7.55	-	4,240
1932	Apr. 12, 1932	4.56	-	1,520		Aug. 10, 1944	4.82	-	1,610
1933	May 12, 1933	3.52	-	600		Sept. 3, 1944	3.67	-	708
1934	Apr. 10, 1934	2.80	-	260					
					1945	Mar. 22, 1945	9.03	-	5,800
1935	Mar. 25, 1935	4.86	-	1,760		Apr. 29, 1945	5.16	-	1,920
	May 17, 1935	3.44	-	574		June 14, 1945	5.70	-	2,440
	June 23, 1935	3.34	-	514		Aug. 1, 1945	3.93	-	914
						Sept.29, 1945	4.81	-	1,610
1936	Apr. 1, 1936	-	-	a2,500					
	Apr. 18, 1936	6.11	-	3,180	1946	Nov. 17, 1945	3.64	.13	592
	May 8, 1936	4.92	-	1,810		Dec. 7, 1945	3.92	.44	573
						Mar. 23, 1946	7.66	-	4,300
1937	Apr. 10, 1937	4.33	-	1,200		May 29, 1946	4.30	-	1,070
	May 17, 1937	4.21	-	1,080		June 16, 1946	4.23	-	1,030
	May 30, 1937	4.21	-	1,080		July 3, 1946	6.23	-	2,920
						Sept.11, 1946	3.46	-	546
1938	Mar. 23, 1938	5.04	-	1,700					
	Apr. 23, 1938	4.19	-	1,020	1947	Oct. 15, 1946	3.83	-	798
	May 14, 1938	8.80	-	5,550		Nov. 6, 1946	4.28	-	1,180
	June 19, 1938	3.91	-	782		Apr. 18, 1947	6.29	-	3,010
	July 14, 1938	4.66	-	1,340		Apr. 29, 1947	6.16	-	2,920
	Aug. 1, 1938	3.93	-	831		May 22, 1947	5.00	-	1,780
	Sept.14, 1938	4.50	-	1,220		June 18, 1947	5.61	-	2,340
1939	Nov. 6, 1938	3.49	-	562	1948	Mar. 31, 1948	8.27	-	4,910
	Mar. 31, 1939	8.45	-	5,000		June 26, 1948	3.43	-	543
	Apr. 27, 1939	6.48	-	3,200					
	May 31, 1939	5.45	-	2,200	1949	Apr. 2, 1949	5.90	-	2,520
	June 27, 1939	3.89	-	882		May 12, 1949	4.87	-	1,620
						June 7, 1949	3.42	-	522
1940	Apr. 12, 1940	5.94	-	2,630		June 25, 1949	3.68	-	691
	May 5, 1940	3.66	-	700					
	May 20, 1940	3.88	-	874	1950	Apr. 8, 1950	6.84	-	3,770
						Apr. 23, 1950	6.67	-	3,570
1941	Apr. 12, 1941	7.89	-	4,530		May 11, 1950	9.45	-	7,540
	June 7, 1941	5.19	-	1,960					
	June 19, 1941	5.06	-	1,820	1951	Apr. 16, 1951	8.30	-	5,650
	Sept. 7, 1941	4.42	-	1,290		May 24, 1951	3.95	-	900
	Sept.20, 1941	4.29	-	1,210		July 3, 1951	4.81	-	1,630
						July 24, 1951	5.72	-	2,630
1942	Nov. 1, 1941	4.32	-	1,210		Sept. 5, 1951	4.41	-	1,350
	Mar. 27, 1942	4.21	-	1,130		Sept.18, 1951	5.25	-	2,150
	May 4, 1942	3.86	-	858					
	May 21, 1942	6.42	-	3,100	1952	Oct. 10, 1951	4.12	-	1,150

a Maximum daily discharge.

Peak stages and discharges of Rum River near St. Francis, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1952	Oct. 30, 1951	4.65	-	1,620	1956	Apr. 11, 1956	9.48	-	7,560
	Nov. 19, 1951	5.83	0.98	2,100		May 18, 1956	4.01	-	1,070
	Apr. 13, 1952	11.03	-	9,260		June 23, 1956	3.39	-	594
	July 5, 1952	6.39	-	3,370		Aug. 9, 1956	4.75	-	1,740
	July 27, 1952	6.74	-	3,770					
	Sept. 6, 1952	4.78	-	1,740	1957	Mar. 29, 1957	5.63	-	2,630
						Apr. 26, 1957	4.17	-	1,210
1953	Mar. 28, 1953	6.41	-	3,390		June 2, 1957	4.89	-	1,880
	May 6, 1953	4.73	-	1,700		June 28, 1957	8.89	-	6,580
	May 16, 1953	4.57	-	1,550		July 21, 1957	4.43	-	1,440
	May 28, 1953	6.36	-	3,340		Aug. 17, 1957	3.54	-	724
	June 9, 1953	4.13	-	1,160		Sept. 8, 1957	4.94	-	1,920
	June 26, 1953	6.73	-	3,760		Sept.24, 1957	3.96	-	1,040
	Aug. 13, 1953	6.39	-	3,370					
					1958	Nov. 8, 1957	3.37	-	582
1954	Nov. 24, 1953	3.65	-	740		Apr. 14, 1958	4.57	-	1,570
	Dec. 4, 1953	3.55	-	665		Apr. 26, 1958	3.81	-	898
	Feb. 28, 1954	4.07	.45	716		June 9, 1958	3.69	-	802
	Mar. 26, 1954	3.69	-	812					
	May 2, 1954	9.86	-	8,200	1959	May 12, 1959	3.51	-	721
	June 6, 1954	6.00	-	2,940		June 6, 1959	3.93	-	1,000
	July 8, 1954	8.58	-	6,100					
	Sept.21, 1954	4.09	-	1,130	1960	Apr. 5, 1960	5.60	-	2,600
						Apr. 17, 1960	3.78	-	874
1955	Oct. 17, 1954	4.29	-	1,320		May 3, 1960	3.64	-	765
	Apr. 7, 1955	6.39	-	3,500		May 25, 1960	3.82	-	907
	June 10, 1955	3.24	-	521		June 29, 1960	3.81	-	898
	Aug. 11, 1955	3.39	-	820		Aug. 31, 1960	3.27	-	522
	Sept. 3, 1955	5.47	-	2,460					
					1961	Apr. 23, 1961	3.51	-	681
1956	Oct. 10, 1955	3.49	-	660		May 19, 1961	4.23	-	1,270

MISSISSIPPI RIVER MAIN STEM

2885. Mississippi River near Anoka, Minn.
(Published as "at Coon Rapids, near Anoka," 1931)

Location.--Lat 45°07'36", long 93°17'48", in SW¼ sec.12, T.119 N., R.21 W., on right bank, half a mile downstream from Coon Creek, 1½ miles downstream from hydroelectric plant of Northern States Power Co. at Coon Rapids, 6½ miles downstream from Anoka, and at mile 864.8 upstream from Ohio River.

Drainage area.--19,100 sq mi, approximately.

Gage.--Nonrecording at site 1¼ miles upstream at different datum prior to June 14, 1932; recording thereafter. Datum of gage is 805.02 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow regulated, except during extreme floods, by six reservoirs on headwaters (total usable capacity, 1,640,600 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1931	June 16, 1931	4.93	-	9,300	1947	Apr. 16, 1947	9.29	-	27,000
1932	Apr. 10, 1932	-	-	a9,310	1948	Mar. 26, 1948	12.45	5.43	-
1933	June 5, 1933	5.56	-	12,500		Apr. 2, 1948	-	-	32,800
1934	Apr. 11, 1934	3.34	-	5,970	1949	Mar. 31, 1949	9.47	3.14	-
1935	Mar. 22, 1935	7.10	-	17,600		Apr. 3, 1949	-	-	17,800
					1950	May 11, 1950	13.82	-	50,700
1936	Mar. 27, 1936	8.60	3.18	-					
	May 7, 1936	-	-	b17,100	1951	Apr. 9, 1951	12.34	.90	-
1937	May 2, 1937	6.75	-	16,700		Apr. 15, 1951	-	-	41,800
1938	May 13, 1938	11.96	-	35,800	1952	Apr. 14, 1952	17.51	-	75,900
1939	Mar. 26, 1939	13.15	-	b40,800	1953	June 27, 1953	10.59	-	34,500
1940	Apr. 10, 1940	11.55	-	b34,200	1954	May 5, 1954	10.90	-	36,000
					1955	Apr. 2, 1955	9.06	-	27,700
1941	Apr. 4, 1941	10.66	-	30,600					
1942	May 19, 1942	9.41	-	25,800	1956	Apr. 11, 1956	9.55	-	30,000
1943	Apr. 6, 1943	14.11	-	47,000	1957	June 27, 1957	12.50	-	44,500
1944	June 18, 1944	12.34	-	39,000	1958	Apr. 12, 1958	5.20	-	12,200
1945	Mar. 21, 1945	13.46	-	44,300	1959	June 5, 1959	-	-	a20,400
					1960	Apr. 3, 1960	11.13	-	38,400
1946	Mar. 20, 1946	12.70	5.30	-					
	July 3, 1946	-	-	30,100	1961	May 23, 1961	5.88	-	16,400

a Maximum daily discharge. b Affected by regulation.

2895. Minnehaha Creek at Minnetonka Mills, Minn.

Location.--Lat 44°56'30", long 93°26'45", near center of E½ sec.15, T.117 N., R.22 W., on left bank, 40 ft upstream from bridge on county highway at Minnetonka Mills, 2.2 miles downstream from outlet of Minnetonka Lake, and 2.9 miles northwest of Hopkins.

Drainage area.--130 sq mi.

Gage.--Recording. Datum of gage is 916.11 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 180 cfs.

Bankfull stage.--7.0 ft.

Remarks.--Discharge affected by storage in Minnetonka Lake controlled by fixed-crest dam. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	May 4, 1954	6.44	-	172	1958	Dec. 12, 1957	6.78	1.79	-
1955	Feb. 16, 1955	6.50	1.93	-	1959	June 25, 1959	4.79	-	4.7
	Apr. 21, 1955	-	-	39	1960	May 22, 1960	5.34	-	31
1956	Aug. 11, 1956	5.51	-	46	1961	Dec. 20, 1960	5.84	1.28	-
1957	July 4, 1957	6.47	-	198		May 20, 1961	-	-	15
1958	Oct. 1, 1957	-	-	76					

MINNESOTA RIVER BASIN

2900. Little Minnesota River near Peever, S. Dak.

Location.--Lat 45°36'05", long 96°52'18", in SW¼ sec.13, T.125 N., R.50 W., on right bank, 2 miles northwest of town of Browns Valley, Minn., 3½ miles upstream from proposed Lake Traverse diversion, 5.3 miles northeast of Peever, 7¼ miles downstream from Jorgenson River, and 8 miles upstream from Big Stone Lake.

Drainage area.--447 sq mi.

Gage.--Nonrecording prior to Aug. 28, 1940; recording thereafter. Altitude of gage is 1,000 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs. Fairly stable except for small shifts due to accumulation of debris on control.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 450 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Mar. 30, 1940	5.65	1.00	442	1945	Mar. 13, 1945	7.49	2.9	-
						Mar. 17, 1945	6.42	-	1,040
1941	June 23, 1941	5.72	-	714		June 1, 1945	6.60	-	1,120
						Aug. 17, 1945	4.71	-	457
1942	May 2, 1942	8.00	-	1,750					
	May 14, 1942	9.39	-	2,650	1946	Mar. 20, 1946	7.58	1.4	-
	May 18, 1942	6.40	-	990		Mar. 21, 1946	6.35	-	1,040
	June 7, 1942	9.80	-	2,960					
	June 12, 1942	5.55	-	672	1947	Apr. 5, 1947	8.25	-	1,870
						Apr. 11, 1947	9.51	-	2,780
1943	Mar. 25, 1943	13.35	1.85	4,320					
	Mar. 30, 1943	10.57	-	3,660	1948	Mar. 24, 1948	8.84	1.65	1,410
	June 3, 1943	5.20	-	605		Apr. 5, 1948	4.94	-	514
	June 15, 1943	4.87	-	500					
					1949	Mar. 5, 1949	5.64	2.8	-
1944	Apr. 6, 1944	6.40	2.4	-		Apr. 2, 1949	4.69	-	395
	Apr. 7, 1944	4.81	-	486					
	May 4, 1944	4.89	-	515	1950	Apr. 1, 1950	13.05	-	(a)
	July 18, 1944	4.76	-	472		Apr. 8, 1950	-	-	(a)

a Backwater from ice; discharge not known.

Peak stages and discharges of Little Minnesota River near Peever, S. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1951	Apr. 4, 1951	7.10	0.70	-	1957	Mar. 22, 1957	7.30	3.52	-
	Apr. 4, 1951	6.95	-	1,320		May 22, 1957	5.77	-	697
						May 29, 1957	5.54	-	622
1952	Apr. 8, 1952	12.16	-	4,730					
					1958	Feb. 28, 1958	7.63	3.56	-
1953	Mar. 18, 1953	5.64	2.61	-		Apr. 9, 1958	5.55	-	625
	June 16, 1953	5.57	-	818					
					1959	June 27, 1959	4.51	-	340
1954	May 27, 1954	8.55	-	2,300					
	May 31, 1954	7.48	-	1,710	1960	Mar. 28, 1960	6.45	-	930
						Apr. 7, 1960	6.74	-	1,050
1955	Mar. 31, 1955	4.56	1.37	-		Apr. 13, 1960	6.10	-	790
	Apr. 2, 1955	3.95	.40	156					
					1961	Mar. 4, 1961	3.93	1.08	-
1956	Apr. 6, 1956	4.32	1.52	-		May 19, 1961	3.10	-	64
	Apr. 15, 1956	3.82	-	226					

2910. Whetstone River near Big Stone City, S. Dak.

Location.--Lat 45°17'32", long 96°29'14", in SE¼NW¼ sec.18, T.121 N., R.46 W., on right bank, 20 ft downstream from highway bridge, 1½ miles west of Big Stone City, and 4½ miles upstream from Big Stone Lake.

Drainage area.--389 sq mi.

Gage.--Nonrecording prior to May 4, 1939; recording thereafter. Mar. 16, 1910, to Nov. 30, 1912, at site 2 miles downstream at different datum. Datum of present gage is 996.96 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs.

Bankfull stage.--10 ft.

Historical data.--The flood of June 1919, reached maximum stage known, from information by local residents.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 8, 1910	11.6	-	2,070	1942	May 18, 1942	7.26	-	1,250
						June 1, 1942	7.54	-	1,340
1911	Mar. 19, 1911	1.85	-	52		June 7, 1942	11.50	-	3,740
1912	Apr. 15, 1912	5.2	-	507		June 12, 1942	5.89	-	693
						June 27, 1942	4.72	-	331
1919	June 1919	a26	-	-		Sept. 2, 1942	4.76	-	344
1931	May 28, 1931	7.10	-	1,320	1943	Feb. 23, 1943	8.92	2.92	728
1932	Mar. 1, 1932	5.70	1.6	244		Mar. 25, 1943	13.50	-	5,140
1933	Mar. 2, 1933	3.84	1.6	-		Mar. 30, 1943	9.67	-	2,650
	June 6, 1933	2.84	-	45		June 2, 1943	9.81	-	2,710
1934	Mar. 19, 1934	4.60	2.3	-		June 13, 1943	5.86	-	834
	June 9, 1934	3.32	-	90		June 15, 1943	5.91	-	852
1935	Mar. 5, 1935	7.65	3.5	-					
	June 18, 1935	4.6	-	391	1944	Mar. 25, 1944	8.08	2.31	796
						Apr. 7, 1944	5.31	.56	454
1936	Mar. 10, 1936	5.96	2.2	-		Apr. 16, 1944	4.36	-	320
	Mar. 22, 1936	5.18	.5	422		Apr. 25, 1944	5.84	-	831
1937	May 21, 1937	10.10	-	2,900		May 4, 1944	6.28	-	1,010
1938	Mar. 14, 1938	6.00	1.80	234		June 2, 1944	6.31	-	1,010
1939	Mar. 23, 1939	8.70	1.10	1,500		June 5, 1944	5.62	-	736
1940	Mar. 30, 1940	7.95	1.80	-		June 14, 1944	4.23	-	287
	Mar. 31, 1940	7.89	1.29	1,040		July 18, 1944	5.78	-	812
1941	Mar. 12, 1941	5.05	1.8	-	1945	Mar. 12, 1945	7.07	.82	990
	Apr. 10, 1941	4.24	-	244		May 24, 1945	4.28	-	299
	Apr. 21, 1941	4.21	-	236		June 2, 1945	9.87	-	2,770
						June 12, 1945	4.54	-	408
1942	Apr. 27, 1942	4.25	-	246					
	Apr. 30, 1942	4.83	-	405	1946	Mar. 15, 1946	7.94	1.74	970
	May 2, 1942	7.68	-	1,440		Mar. 22, 1946	7.28	.60	1,160
	May 14, 1942	11.03	-	3,390		Apr. 6, 1946	3.78	-	215

a About; from information by local residents.

Peak stages and discharges of Whetstone River near Big Stone City, S. Dak.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	June 27, 1946	3.90	-	263	1954	Apr. 7, 1954	3.82	0.10	214
	July 20, 1946	4.43	-	408		Apr. 28, 1954	4.64	-	432
						May 6, 1954	3.68	-	206
1947	Apr. 5, 1947	9.25	1.25	1,780		May 31, 1954	6.13	-	962
	Apr. 11, 1947	13.95	-	5,500		June 7, 1954	10.46	-	3,330
	Apr. 18, 1947	5.58	-	742					
	Apr. 25, 1947	4.97	-	524	1955	Mar. 11, 1955	6.98	2.18	-
						Mar. 12, 1955	6.62	1.52	570
1948	Mar. 25, 1948	10.87	-	3,370					
	Mar. 30, 1948	5.79	-	815	1956	Apr. 5, 1956	5.33	1.48	-
	Apr. 5, 1948	4.67	-	434		Apr. 6, 1956	5.22	.59	429
	June 24, 1948	3.83	-	238		Apr. 12, 1956	-	-	200
	July 20, 1948	4.89	-	508		June 19, 1956	4.21	-	322
	July 22, 1948	4.98	-	539					
					1957	Mar. 22, 1957	-	-	-
1949	Mar. 5, 1949	6.71	4.4	-		Apr. 21, 1957	6.89	-	1,300
	Mar. 29, 1949	4.75	.50	332		May 15, 1957	5.88	-	882
	July 9, 1949	4.31	-	344		May 21, 1957	10.94	-	3,680
						May 26, 1957	9.34	-	2,540
1950	Mar. 27, 1950	9.49	3.74	796		June 14, 1957	5.33	-	636
	Apr. 1, 1950	7.35	.43	1,250		June 23, 1957	4.50	-	365
	Apr. 16, 1950	5.70	-	778		Sept. 1, 1957	4.18	-	280
1951	Apr. 4, 1951	9.19	3.00	-	1958	Oct. 25, 1957	4.03	-	242
	Apr. 4, 1951	8.94	2.62	1,100		Nov. 4, 1957	3.98	-	230
	Apr. 15, 1951	3.70	-	211		Feb. 28, 1958	6.92	2.10	461
	June 4, 1951	3.78	-	227		Mar. 26, 1958	4.96	-	506
						Apr. 7, 1958	6.27	-	998
1952	Apr. 4, 1952	12.07	-	4,530					
	Apr. 8, 1952	13.64	-	5,710	1959	Mar. 15, 1959	3.84	1.62	-
	Apr. 14, 1952	7.20	-	1,400		Mar. 23, 1959	3.69	.63	70
	June 29, 1952	6.75	-	1,200					
					1960	Mar. 29, 1960	8.25	2.63	738
1953	Mar. 19, 1953	6.94	3.16	-		Apr. 6, 1960	8.00	-	1,560
	Mar. 20, 1953	6.24	2.41	238					
	Apr. 22, 1953	3.71	-	212	1961	Feb. 22, 1961	4.68	2.93	-
	May 2, 1953	4.73	-	457		May 19, 1961	4.26	-	300
	June 24, 1953	6.56	-	1,110					

2920. Minnesota River at Ortonville, Minn.

Location.--Lat 45°17'44", long 96°26'38", in NE¼NW¼ sec.16, T.121 N., R.46 W., on left bank, 400 ft downstream from bridge on U.S. Highway 12, and 1,300 ft downstream from dam at outlet of Big Stone Lake, at Ortonville.

Drainage area.--1,160 sq mi, approximately.

Gage.--Nonrecording prior to Mar. 31, 1939, on downstream side of dam 1,300 ft upstream at datum 1.31 ft higher; recording thereafter. Datum of gage is 956.38 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,100 cfs and extended above.

Bankfull stage.--12 ft.

Remarks.--Some regulation by Big Stone Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1938	Mar. 8, 1938	4.30	2.5	-	1949	Apr. 17, 1949	6.14	-	418
	Mar. 31, 1938	-	-	245	1950	May 5, 1950	9.02	-	930
1939	Mar. 23, 1939	6.40	4.35	-					
	Mar. 30, 1939	-	-	385	1951	Apr. 9, 1951	9.27	-	956
1940	Mar. 31, 1940	5.80	3.55	-	1952	Apr. 13, 1952	12.92	-	3,060
	Apr. 11, 1940	-	-	228	1953	Apr. 15, 1953	7.65	-	632
					1954	June 8, 1954	9.39	-	905
1941	July 28, 1941	3.27	-	108	1955	Apr. 20, 1955	6.67	-	357
1942	June 12, 1942	10.45	-	1,200					
1943	Apr. 4, 1943	10.52	-	1,480	1956	Apr. 7, 1956	5.32	-	299
1944	May 3, 1944	9.37	-	1,060	1957	May 22, 1957	9.70	-	939
1945	June 12, 1945	8.22	-	664	1958	Apr. 28, 1958	9.68	-	932
					1959	Apr. 28, 1959	4.50	-	206
1946	Apr. 1, 1946	10.21	-	1,210	1960	Mar. 30, 1960	8.91	0.60	618
1947	Apr. 16, 1947	11.00	-	1,660					
1948	Apr. 8, 1948	9.13	-	841	1961	Apr. 16, 1961	5.27	-	230

2925. Minnesota River near Odessa, Minn.

Location.--Lat 45°15'22", long 96°20'20", in SW¼SW¼ sec.29, T.121 N., R.45 W., near center of span on upstream side of highway bridge, 0.6 mile southwest of Odessa, and 5.0 miles upstream from Yellow Bank River.

Drainage area.--1,340 sq mi, approximately.

Gage.--Nonrecording. Prior to July 19, 1948, at site 250 ft upstream. Prior to 1944, at datum 0.45 ft lower. Datum of gage is 940.76 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Some regulation by Big Stone Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 9, 1910	11.6	-	850	1952	Apr. 13, 1952	14.06	-	3,070
					1953	June 28, 1953	9.47	-	544
1911	Mar. 27, 1911	5.34	-	238	1954	June 8, 1954	-	-	1,000
1912	Apr. 1, 1912	6.9	-	a355	1955	Mar. 13, 1955	9.60	3.20	-
						Apr. 7, 1955	-	.45	274
1944	June 6, 1944	9.78	-	603					
1945	June 14, 1945	9.71	-	592	1956	Mar. 27, 1956	6.72	2.24	-
						May 15, 1956	-	-	151
1946	Apr. 4, 1946	12.02	-	1,020	1957	June 14, 1957	10.90	-	703
1947	Apr.19-23,1947	b13.25	-	1,540	1958	Apr. 13, 1958	10.37	-	636
1948	Mar. 25, 1948	11.68	1.16	-	1959	Mar. 3, 1959	5.50	3.77	-
	Apr. 8-10,1948	-	-	845		Apr. 8, 1959	-	-	83
1949	Mar. 5, 1949	8.50	3.06	-	1960	Mar. 31, 1960	10.29	.50	567
	Apr.15,18, 1949	-	-	262					
1950	Apr. 11, 1950	10.97	-	813	1961	Apr. 17, 1961	6.24	-	139
1951	Apr. 11, 1951	11.47	-	945					

a May have been exceeded prior to Apr. 1.
b Occurred Apr. 20, 1947.

2930. Yellow Bank River near Odessa, Minn.

Location.--Lat 45°13'35", long 96°21'12", in SE¼SE¼ sec.1, T.120 N., R.46 W., on left bank, 150 ft downstream from highway bridge, 2½ miles southwest of Odessa, and 4½ miles upstream from mouth.

Drainage area.--398 sq mi.

Gage.--Nonrecording at site 150 ft upstream prior to Aug. 28, 1940; recording thereafter. Datum of gage is 953.34 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 460 cfs and extended above on basis of computations by conveyance and area-velocity curve methods.

Remarks.--Base for partial-duration series, 300 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Apr. 1, 1940	9.46	-	1,140	1944	Mar. 26, 1944	8.28	3.50	392
						Apr. 7, 1944	-	-	425
1941	Apr. 21, 1941	4.35	-	298		Apr. 25, 1944	6.09	-	662
						May 5, 1944	6.92	-	846
1942	May 1, 1942	5.22	-	470					
	May 3, 1942	4.86	-	402	1945	Mar. 12, 1945	8.13	2.2	-
	May 15, 1942	6.45	-	728		Mar. 13, 1945	7.55	-	1,020
	May 31, 1942	8.99	-	1,400		June 3, 1945	5.12	-	450
	June 8, 1942	7.72	-	1,050					
					1946	Mar. 16, 1946	10.56	3.66	846
1943	Feb. 23, 1943	11.6	5.1	750		May 24, 1946	9.64	-	1,580
	Mar. 25, 1943	17.98	4.48	3,000		July 7, 1946	7.62	-	1,020
	June 13, 1943	6.91	-	846		July 11, 1946	6.63	-	774
	July 30, 1943	4.75	-	382					

Peak stages and discharges of Yellow Bank River near Odessa, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1947	Apr. 6, 1947	9.36	-	1,660	1953	June 26, 1953	10.71	-	2,230
	Apr. 11, 1947	16.61	-	5,890		Aug. 2, 1953	7.49	-	1,100
	Apr. 18, 1947	6.87	-	869					
	Apr. 25, 1947	5.45	-	532	1954	Mar. 24, 1954	7.07	2.83	313
	June 12, 1947	4.78	-	421		Apr. 7, 1954	5.17	-	488
	June 19, 1947	4.38	-	349		May 6, 1954	4.32	-	328
						June 1, 1954	6.90	-	869
1948	Mar. 24, 1948	15.25	3.70	-		June 8, 1954	10.78	-	2,190
	Mar. 25, 1948	14.40	-	3,460					
	Apr. 26, 1948	4.16	-	328	1955	Mar. 12, 1955	6.85	1.75	475
	June 27, 1948	4.09	-	318					
	Aug. 16, 1948	5.30	-	570	1956	Apr. 7, 1956	5.60	.50	-
						Apr. 7, 1956	5.30	-	513
1949	Mar. 6, 1949	6.42	4.0	-		Apr. 11, 1956	4.23	-	311
	Mar. 31, 1949	5.43	.83	419		June 18, 1956	4.62	-	382
1950	Mar. 28, 1950	14.59	1.99	3,100	1957	May 22, 1957	9.99	-	1,870
	Apr. 2, 1950	10.87	3.22	1,170		May 27, 1957	9.66	-	1,750
	Apr. 17, 1950	5.07	-	484					
	May 7, 1950	4.37	-	330	1958	Mar. 2, 1958	5.42	2.25	-
						Apr. 9, 1958	4.65	-	382
1951	Apr. 5, 1951	15.55	.91	-					
	Apr. 5, 1951	15.25	-	4,080	1959	Mar. 5, 1959	4.24	1.93	-
						May 31, 1959	2.92	-	89
1952	Apr. 4, 1952	17.06	-	6,260					
	June 29, 1952	6.72	-	931	1960	Mar. 30, 1960	8.98	.42	1,370
						Apr. 7, 1960	9.24	-	1,600
1953	Mar. 22, 1953	7.23	1.02	769					
	May 2, 1953	5.02	-	498	1961	Feb. 24, 1961	4.35	2.30	-
	June 17, 1953	7.75	-	1,180		May 20, 1961	3.77	-	209
	June 21, 1953	7.06	-	984					

2940. Pomme de Terre River at Appleton, Minn.
(Published as "near Appleton," prior to October 1953)

Location.--Lat 45°12'10", long 96°01'20", in SW¼NW¼ sec.14, T.120 N., R.43 W., on left bank at Appleton, 60 ft upstream from bridge on U.S. Highway 59 and State Highway 119, and 8 miles upstream from mouth.

Drainage area.--905 sq mi.

Gage.--Nonrecording at site 4 miles upstream at datum 25.17 ft higher prior to Dec. 22, 1952; recording thereafter. Datum of gage is 978.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow affected by lakes above station. Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1953.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1931	Mar. 26, 1931	-	-	67	1944	Mar.24,26, 1944	3.12	2.20	-
	Mar. 28, 1931	1.08	0.11	-		June 5, 1944	-	-	461
1932	Feb. 29, 1932	3.66	1.66	212	1945	Mar. 15, 1945	4.10	2.55	-
1933	Feb. 25, 1933	3.38	1.48	195		Mar. 20, 1945	-	-	473
1934	Mar. 14, 1934	3.04	2.6	-					
	Apr. 7, 1934	-	-	130	1946	Mar. 19, 1946	8.40	3.20	1,200
1935	Mar. 6, 1935	5.46	3.26	-	1947	Apr. 12, 1947	7.22	.50	1,800
	Mar. 16, 1935	-	-	380	1948	Mar. 26, 1948	8.11	-	2,440
					1949	Mar. 7, 1949	4.98	4.47	-
1936	Mar. 21, 1936	6.42	2.75	-		Apr. 3, 1949	-	-	538
	Mar. 22, 1936	-	-	720	1950	Mar. 28, 1950	7.76	4.70	-
1937	Mar. 9, 1937	5.98	4.18	-		Mar. 31, 1950	-	-	980
	Apr. 11, 1937	-	-	540					
1938	Mar. 4, 1938	4.44	2.22	-	1951	Apr. 5, 1951	9.30	4.75	-
	Mar. 16, 1938	-	-	286		Apr. 8, 1951	-	-	1,580
1939	Mar. 23, 1939	6.02	1.22	862	1952	Apr. 8, 1952	10.13	-	5,050
1940	Apr. 2, 1940	5.34	1.94	531					
					1953	June 27, 1953	6.52	-	755
1941	Mar. 15, 1941	4.86	3.46	-					
	Apr. 6, 1941	-	-	272	1954	Mar. 20, 1954	5.35	-	210
1942	June 8, 1942	4.22	-	819		Apr. 8, 1954	5.39	-	224
1943	Mar. 30, 1943	9.52	6.07	-		Apr. 29, 1954	6.69	-	840
	Mar. 31, 1943	-	-	3,470		July 5, 1954	5.54	-	287

Peak stages and discharges of Pomme de Terre River at Appleton, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1955	Apr. 3, 1955	5.40	-	236
	July 13, 1955	6.16	-	565
1956	Apr. 6, 1956	5.96	-	423
	Apr. 11, 1956	6.08	-	479
	June 6, 1956	5.58	-	270
1957	Mar. 23, 1957	5.77	-	351
	May 27, 1957	5.53	-	259
	June 25, 1957	6.11	-	516
	Aug. 14, 1957	5.84	-	383
	Sept. 1, 1957	5.78	-	355
	Sept.20, 1957	5.51	-	252
1958	Oct. 25, 1957	5.69	-	317
1958	Nov. 4, 1957	5.92	-	421
	Mar. 1, 1958	5.38	-	212
	Mar. 6, 1958	5.46	-	237
	Mar. 24, 1958	5.36	-	209
	Apr. 8, 1958	6.11	-	538
1959	June 2, 1959	6.25	-	595
1960	Apr. 1, 1960	6.55	-	720
	Apr. 7, 1960	7.56	-	1,270
	June 23, 1960	5.55	-	254
1961	Apr. 20, 1961	5.22	-	148

3000. Lac qui Parle River near Lac qui Parle, Minn.

Location.--Lat 45°00', long 95°55', in SW¼SW¼ sec.27, T.118 N., R.42 W., on right bank, 40 ft downstream from highway bridge and half a mile southwest of village of Lac qui Parle.

Drainage area.--983 sq mi.

Gage.--Nonrecording prior to Mar. 10, 1937; recording thereafter. Prior to 1931, at site 2 miles downstream at different datum. Datum of gage is 951.98 ft above mean sea level (Minnesota Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 9,100 cfs and extended above.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1911	Mar. 12, 1911	4.50	-	500
1912	May 5, 1912	7.7	-	1,590
1913	Apr. 15, 1913	5.8	-	732
1914	June 10, 1914	5.7	-	714
1931	May 28, 1931	2.46	-	220
1932	Mar. 1, 1932	4.17	-	830
1933	May 19, 1933	3.11	-	360
1934	-	-	-	0
1935	Mar. 12, 1935	3.20	0.50	250
1936	Mar. 23, 1936	3.03	-	293
1937	Apr. 15, 1937	7.89	-	2,060
	May 2, 1937	7.03	-	1,700
	June 17, 1937	4.62	-	825
	June 21, 1937	6.51	-	1,620
1938	Mar. 15, 1938	8.2	3.9	-
	Mar. 16, 1938	7.37	2.2	1,100
1939	Mar. 23, 1939	12.84	5.09	-
	Mar. 24, 1939	11.41	3.06	2,240
1940	Apr. 2, 1940	11.14	-	3,230
1941	Mar. 16, 1941	5.02	2.83	-
	Apr. 1, 1941	4.62	1.2	458
1942	May 4, 1942	4.17	-	672
	May 16, 1942	6.28	-	1,490
	June 1, 1942	7.96	-	2,230
1942	June 9, 1942	5.16	-	1,050
1943	Feb. 25, 1943	7.58	2.22	1,130
	Mar. 29, 1943	13.94	4.30	-
	Mar. 30, 1943	13.72	2.86	3,510
1944	Mar. 28, 1944	6.73	2.71	626
	Apr. 9, 1944	5.19	.08	1,010
	Apr. 26, 1944	5.20	-	1,060
	May 6, 1944	7.35	-	1,970
	May 14, 1944	7.03	-	1,790
	May 21, 1944	5.88	-	1,330
	Aug. 29, 1944	4.22	-	728
1945	Mar. 15, 1945	5.44	1.8	-
	Mar. 16, 1945	4.50	-	820
	June 4, 1945	3.44	-	507
	June 17, 1945	4.27	-	743
1946	Mar. 7, 1946	6.96	2.86	698
	Mar. 18, 1946	12.93	3.70	-
	Mar. 19, 1946	11.90	2.02	3,070
	May 26, 1946	5.42	-	1,060
	July 10, 1946	5.70	-	1,170
1947	Apr. 13, 1947	10.62	-	3,620
	June 13, 1947	6.89	-	1,750
	July 2, 1947	3.83	-	623
1948	Mar. 24, 1948	18.52	5.32	-
	Mar. 25, 1948	17.30	2.10	7,490
	Apr. 29, 1948	3.76	-	594
	June 28, 1948	4.40	-	788
1949	Apr. 8, 1949	6.16	-	1,520
1950	Mar. 30, 1950	14.02	6.35	-
	Apr. 2, 1950	10.10	.94	2,800
	Apr. 19, 1950	4.04	-	678

Peak stages and discharges of Lac qui Parle River near Lac qui Parle, Minn.--Con.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	May 11, 1950	4.23	-	733	1956	Apr. 4, 1956	5.66	1.82	-
						Apr. 5, 1956	4.32	-	751
1951	Apr. 8, 1951	18.38	4.40	-		June 23, 1956	4.02	-	768
	Apr. 8, 1951	18.00	3.85	6,500		July 3, 1956	3.42	-	569
						July 10, 1956	3.45	-	579
1952	Apr. 6, 1952	18.18	-	11,100		Aug. 6, 1956	4.28	-	862
	July 1, 1952	7.90	-	2,210		Aug. 12, 1956	4.92	-	1,120
1953	Mar. 22, 1953	9.42	4.32	-	1957	Mar. 25, 1957	9.95	2.41	-
	Mar. 23, 1953	8.52	-	2,660		Mar. 26, 1957	9.05	3.52	1,400
	May 4, 1953	-	-	[a]1,050		May 28, 1957	5.49	-	1,370
	June 18, 1953	5.44	-	1,210		June 20, 1957	4.07	-	786
	June 28, 1953	6.67	-	1,730		Sept.21, 1957	3.40	-	569
	Aug. 4, 1953	7.48	-	2,130					
					1958	Mar. 26, 1958	4.69	1.47	-
1954	Mar. 24, 1954	10.97	3.97	1,890		Mar. 27, 1958	4.47	-	953
	Apr. 8, 1954	4.16	-	818		Apr. 9, 1958	4.42	-	934
	Apr. 28, 1954	4.65	-	1,000					
	May 4, 1954	4.82	-	1,080	1959	Mar. 9, 1959	2.86	1.84	-
1955	Mar. 13, 1955	8.00	4.17	-	1960	Mar. 31, 1960	9.50	.50	3,110
	Mar. 14, 1955	7.96	3.44	953		Apr. 9, 1960	8.13	-	2,680
	June 13, 1955	3.56	-	615					
	July 11, 1955	5.04	-	1,180	1961	May 20, 1961	2.84	-	413

[a] Maximum daily discharge.

3010. Minnesota River near Lac qui Parle, Minn.

Location.--Lat 45°01'17", long 95°52'05", in NW¼NE¼ sec.24, T.118 N., R.42 W., on left bank, 200 ft downstream from dam at Lac qui Parle Outlet, 2.4 miles northeast of village of Lac qui Parle, and 3.5 miles west of Watson.

Drainage area.--4,050 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 10, 1944, at datum 0.20 ft lower; recording thereafter. Datum of gage is 900.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Part of flow from 2,050 sq mi of Chippewa River basin is at times diverted into Minnesota River above station. Some regulation by Big Stone Lake since Apr. 17, 1927, Lac qui Parle Lake since January 1938, and Marsh Lake since Nov. 1, 1939. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 4, 1943	36.54	7,950	1952	Apr. 10, 1952	37.98	19,700
1944	May 15, 1944	33.56	3,680	1953	June 30, 1953	35.41	7,800
1945	Mar. 17, 1945	29.14	1,620	1954	Mar. 29, 1954	29.19	1,960
				1955	July 15, 1955	27.44	1,290
1946	Mar. 28, 1946	34.75	5,440				
1947	Apr. 16, 1947	35.80	7,440	1956	Apr. 18, 1956	27.88	1,440
1948	Mar.31,Apr. 7, 1948	35.58	6,960	1957	June 29, 1957	32.79	3,800
				1958	Apr. 17, 1958	30.82	2,750
1949	Apr. 17, 1949	29.71	2,010	1959	June 2, 1959	23.94	600
1950	Apr. 25, 1950	32.77	3,280	1960	Apr. 9, 1960	34.01	5,230
1951	Apr. 10, 1951	36.45	9,760	1961	May 25, 1961	25.55	950

3040. Shakopee Creek near Benson, Minn.

Location.--Lat 45°12'50", long 95°38'10", in SE¼ sec.11, T.120 N., R.40 W., on downstream side of county highway bridge, 1½ miles upstream from mouth and 7 miles southwest of Benson.

Drainage area.--352 sq mi.

Gage.--Nonrecording. Datum of gage is 1,002.33 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,800 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 28, 1950	a8.84	-	1952	Apr. 10, 1952	14.04	2,680
	Mar. 30, 1950	-	345	1953	June 27, 1953	11.84	1,720
				1954	Mar. 2, 1954	b7.35	-
1951	Apr. 9, 1951	10.99	1,030		Mar. 25, 1954	-	120

a Backwater from ice, 1.23 ft.
b Backwater from ice, 5.07 ft.

3045. Chippewa River near Milan, Minn.

Location.--Lat 45°06'39", long 95°47'57", in SE¼SE¼ sec.16, T.119 N., R.41 W., on right bank, 800 ft upstream from bridge on State Highway 40, 2.0 miles upstream from small tributary, and 5½ miles east of Milan.

Drainage area.--1,870 sq mi, approximately.

Gage.--Nonrecording at site 800 ft downstream at same datum prior to June 14, 1942; recording thereafter. Datum of gage is 959.69 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,400 cfs and extended above.

Remarks.--Flow regulated by several small lakes above station. Base for partial-duration series, 400 cfs. Only annual peaks are shown prior to 1942.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	Apr. 7, 1937	2.82	1.04	-	1946	Mar. 20, 1946	6.98	2.22	-
	Apr.12,May 2-6, 1937	-	-	405		Mar. 22, 1946	6.39	-	2,390
1938	Mar.13-15,1938	3.26	1.8	-	1947	Apr. 16, 1947	5.93	-	2,040
	Mar. 21, 1938	-	-	412		June 17, 1947	4.21	-	1,040
1939	Mar. 24, 1939	4.50	1.03	1,100					
1940	Apr. 1, 1940	4.60	1.80	651	1948	Mar. 25, 1948	8.46	4.34	-
						Mar. 26, 1948	5.47	-	1,770
1941	Apr. 3, 1941	3.37	.67	-					
	Apr.11,20, 1941	-	-	651	1949	Apr. 2, 1949	a6.88	2.58	1,510
1942	May 15, 1942	3.03	-	617	1950	Apr. 3, 1950	8.13	3.59	-
	May 31, 1942	4.72	-	1,950		Apr. 4, 1950	7.82	3.12	1,280
	Aug. 2, 1942	3.37	-	578		May 13, 1950	4.78	-	1,340
	Aug. 15, 1942	3.23	-	540					
	Sept. 3, 1942	3.20	-	522	1951	Apr. 9, 1951	9.90	.30	-
	Sept.29, 1942	3.36	-	578		Apr. 9, 1951	9.73	-	5,020
						July 6, 1951	3.48	-	732
1943	Mar. 31, 1943	9.95	.6	-					
	Apr. 1, 1943	9.93	.07	5,170	1952	Dec. 10, 1951	3.30	.28	500
	June 2, 1943	5.08	-	1,540		Apr. 7, 1952	12.29	4.46	-
						Apr. 9, 1952	12.12	-	6,930
1944	Mar. 24, 1944	4.14	1.64	-		July 1, 1952	7.44	-	3,180
	Apr. 15, 1944	3.30	-	582					
	Apr. 25, 1944	3.32	-	582	1953	Mar. 27, 1953	5.32	-	1,760
	May 13, 1944	4.03	-	938		May 10, 1953	4.21	-	1,130
	June 5, 1944	3.96	-	888		June 15, 1953	5.66	-	1,960
						June 25, 1953	10.37	-	5,530
1945	Mar. 15, 1945	5.38	2.5	-		July 31, 1953	3.65	-	824
	Mar. 20, 1945	3.92	-	864		Aug. 11, 1953	4.12	-	1,080

a Occurred at different time than peak discharge.

Peak stages and discharges of Chippewa River near Milan, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	Mar. 26, 1954	4.85	1.43	698	1957	June 27, 1957	7.67	-	3,370
	Apr. 6, 1954	3.13	-	549		July 22, 1957	4.21	-	1,060
	May 3, 1954	3.71	-	846		Aug. 13, 1957	4.27	-	1,090
	May 31, 1954	2.95	-	466		Sept. 9, 1957	4.06	-	974
						Sept.25, 1957	4.76	-	1,370
1955	Apr. 2, 1955	3.33	.94	-					
	Apr. 4, 1955	2.81	-	404	1958	Mar. 9, 1958	4.08	0.83	577
	July 14, 1955	3.32	-	592		Apr. 13, 1958	4.02	-	1,030
1956	Apr. 5, 1956	5.17	1.90	-	1959	June 1, 1959	2.96	-	476
	Apr. 13, 1956	3.92	-	899					
					1960	Mar. 30, 1960	-	-	b1,500
1957	Mar. 29, 1957	7.82	.96	2,720		Apr. 4, 1960	6.98	-	2,820
	Apr. 29, 1957	3.04	-	477					
	May 27, 1957	3.70	-	782	1961	May 19, 1961	2.64	-	320
	June 17, 1957	6.93	-	2,780					

b About.

3050. Chippewa River near Watson, Minn.

Location.--Lat 45°01'20", long 95°47'28", on line between secs. 22 and 15, T.118 N., R.41 W., 1½ miles northeast of Watson, 2.4 miles downstream from Dry Weather Creek, and 10 miles upstream from mouth.

Drainage area.--2,050 sq mi, approximately.

Gage.--Nonrecording. Apr. 10, 1910, to Sept. 30, 1917, at datum 1.96 ft lower. Datum of gage is 931.82 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs and extended above on basis of area-velocity curves.

Remarks.--Flow regulated by several small lakes above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Apr. 22, 1910	8.0	-	670	1931	Mar. 31, 1931	4.50	-	179
					1932	Feb. 29, 1932	6.85	2.07	223
1911	June 4, 1911	6.02	-	228	1933	Mar. 2, 1933	4.64	.79	86
1912	May 8, 1912	11.1	-	1,420	1934	Apr. 14, 1934	3.14	-	20
1913	May 26, 1913	6.4	-	304	1935	Mar. 18, 1935	5.62	.20	174
1914	July 2, 1914	13.5	-	2,660					
1915	July 18, 1915	12.9	-	2,260	1936	Mar. 20, 1936	6.44	1.57	-
						Apr. 12, 1936	-	-	318
1916	Mar. 29, 1916	15.1	-	4,750					
1917	Apr. 4, 1917	17.86	-	9,700					

3110. Minnesota River at Montevideo, Minn.
(Published as "near Montevideo," prior to Oct. 1, 1939)

Location.--Lat 44°56'00", long 95°44'00", in NW¼NW¼ sec.19, T.117 N., R.40 W., on right bank, 100 ft upstream from bridge on U.S. Highway 212 across from Montevideo, and 400 ft downstream from Chippewa River.

Drainage area.--6,180 sq mi, approximately.

Gage.--Nonrecording at site 600 ft downstream prior to Feb. 5, 1932, and at site 100 ft downstream Feb. 5, 1932, to Nov. 26, 1934; recording thereafter. Datum of gage is 910.87 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Regulation from Big Stone Lake since Apr. 17, 1937, Lac qui Parle Lake since January 1938, and Marsh Lake since Nov. 1, 1939. Only annual peaks are shown.

Peak stages and discharges of Minnesota River at Montevideo, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 17, 1910	9.88	-	2,470	1937	May 9, 1937	10.80	-	2,440
					1938	Mar. 19, 1938	9.79	2.16	-
1911	Mar. 15, 1911	3.98	-	405		Mar. 24, 1938	-	-	1,270
1912	May 7, 1912	14	-	6,300	1939	Mar. 29, 1939	9.38	-	2,020
1913	Apr. 16, 1913	6.3	-	1,100	1940	Apr. 5, 1940	11.11	1.95	-
1914	July 4, 1914	12.6	-	3,810		Apr. 10, 1940	-	-	2,220
1915	July 22, 1915	11.1	-	3,160					
					1941	Mar. 28, 1941	7.57	3.43	-
1916	Apr. 3, 1916	14.41	-	7,570		Apr.23, May 1, 1941	-	-	1,240
1917	Apr. 4, 1917	15.16	-	10,200					
1918	Mar. 21, 1918	9.05	-	a2,160	1942	June 7, 1942	14.23	-	4,540
1919	June 25, 1919	17.45	-	22,000	1943	Apr. 4, 1943	16.24	-	9,200
1920	July 13, 1920	15.05	-	8,930	1944	May 16-18, 21-23, 1944	12.65	-	3,560
1921	Apr. 9, 1921	8.12	-	1,760	1945	Mar. 15, 1945	9.51	.16	1,950
1922	Mar. 25, 1922	14.08	-	6,530					
1923	Apr.17,27, 1923	6.05	-	982	1946	Mar. 28, 1946	14.75	-	5,510
1924	Apr. 9, 1924	5.30	-	759	1947	Apr. 16, 1947	15.95	-	8,500
1925	June 27, 1925	7.07	-	1,340	1948	Mar. 31, 1948	15.43	-	6,900
					1949	Mar. 9, 1949	9.56	1.91	-
1926	Mar. 23, 1926	6.50	-	1,130		Apr. 10, 1949	-	-	1,840
1927	Mar. 18, 1927	9.1	-	2,180	1950	Apr. 10, 1950	11.58	-	2,910
1928	Apr. 8, 1928	6.30	-	1,060					
1929	Mar. 19, 1929	11.10	-	3,180	1951	Apr. 11, 1951	16.80	-	12,200
1930	Feb. 21, 1930	7.32	0.20	-	1952	Apr. 10, 1952	20.02	-	24,500
	May 16, 1930	-	-	1,200	1953	June 30, 1953	16.08	-	9,770
					1954	Mar. 29, 1954	9.95	-	2,400
1931	Nov. 22, 1930	-	-	324	1955	July 15, 1955	9.52	-	2,180
	Feb. 5, 1931	4.20	.85	-					
1932	Mar. 1, 1932	7.45	1.95	765	1956	Apr. 16, 1956	9.22	-	2,040
1933	May 20, 1933	4.19	-	430	1957	June 17, 1957	14.62	-	5,500
1934	Dec.6-9, 1933	-	.10	27	1958	Apr. 19, 1958	11.22	-	3,050
	Dec. 19, 1933	1.88	.60	-	1959	June 3, 1959	6.22	-	1,030
1935	Mar. 10, 1935	5.90	1.6	-	1960	Apr. 11, 1960	14.74	-	6,010
	Mar. 18, 1935	-	-	662					
					1961	May 25, 1961	6.73	-	1,170
1936	Apr. 2, 1936	7.31	1.71	750					

3135. Yellow Medicine River near Granite Falls, Minn.

Location.--Lat 44°43', long 95°31', in sec.35, T.115 N., R.39 W., on right bank, 50 ft downstream from highway bridge, 6 miles upstream from mouth, and 8 miles south of town of Granite Falls.

Drainage area.--653 sq mi.

Gage.--Nonrecording prior to Nov. 30, 1952; recording thereafter. Oct. 12, 1939, to Nov. 30, 1952, at site 500 ft downstream at present datum. Datum of gage is 971.59 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 100 cfs. Only annual peaks are shown prior to 1953.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1919	June 1919	a17.5	-	-	1944	May 21, 1944	6.70	-	3,250
					1945	Mar. 15, 1945	4.07	0.39	750
1931	June 14, 1931	2.74	-	67					
1932	Mar. 1, 1932	4.20	-	476	1946	Mar. 17, 1946	4.95	-	1,690
1933	Feb. 25, 1933	2.88	0.20	56	1947	Apr. 13, 1947	4.90	-	1,580
1934	Sept.24, 1934	2.57	-	41	1948	Mar. 23, 1948	7.00	1.45	-
1935	Mar. 12, 1935	2.84	-	85		Mar. 25, 1948	-	-	3,510
					1949	Apr. 8, 1949	5.03	-	1,740
1936	Apr. 15, 1936	3.10	-	147	1950	Apr. 4, 1950	4.03	-	1,060
1937	Apr. 14, 1937	6.70	-	2,330					
1938	Mar. 16, 1938	5.56	-	1,150	1951	Apr. 7, 1951	9.85	-	7,470
					1952	Apr. 9, 1952	10.50	-	9,610
1940	Apr. 3, 1940	5.28	-	1,740					
					1953	Mar. 22, 1953	5.11	-	1,210
1941	Apr. 15, 1941	3.96	-	891		May 5, 1953	5.23	-	1,290
1942	May 16, 1942	3.75	-	778		June 11, 1953	3.22	-	202
1943	Mar. 27, 1943	7.00	2.3	1,310		June 17, 1953	3.33	-	240

a From information by local residents.

Peak stages and discharges of Yellow Medicine River near Granite Falls, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1953	June 23, 1953	3.74	-	404	1957	Apr. 22, 1957	3.37	-	274
	June 27, 1953	3.71	-	391		May 24, 1957	3.77	-	447
	Aug. 4, 1953	5.61	-	1,560		May 28, 1957	4.12	-	662
						June 18, 1957	12.41	-	11,800
1954	Mar. 24, 1954	6.35	-	2,140		July 22, 1957	3.63	-	382
	Apr. 8, 1954	3.56	-	338		Aug. 17, 1957	3.35	-	244
	May 5, 1954	3.33	-	246		Aug. 25, 1957	3.56	-	326
	June 6, 1954	2.89	-	106					
	July 27, 1954	3.28	-	228	1958	Feb. 28, 1958	3.41	0.33	171
						Mar. 27, 1958	4.31	.06	700
1955	Mar. 13, 1955	4.13	0.38	424		Apr. 8, 1958	4.40	-	790
	Apr. 3, 1955	2.87	-	104		July 11, 1958	3.70	-	396
	May 1, 1955	2.93	-	119					
	July 2, 1955	2.94	-	122	1959	May 30, 1959	3.46	-	310
	July 5, 1955	3.07	-	159		Aug. 28, 1959	3.92	-	520
	July 7, 1955	4.32	-	742					
					1960	Apr. 1, 1960	7.44	-	3,500
1956	Apr. 6, 1956	3.56	-	352		Apr. 9, 1960	7.22	-	3,090
	Apr. 13, 1956	3.16	-	198		May 29, 1960	2.92	-	114
	June 20, 1956	4.38	-	778		June 28, 1960	3.37	-	277
	June 28, 1956	3.60	-	369		July 3, 1960	2.91	-	120
	July 11, 1956	2.91	-	120					
	Aug. 12, 1956	2.91	-	117	1961	Mar. 19, 1961	3.18	.12	165
						May 20, 1961	3.69	-	374
1957	Mar. 24, 1957	5.21	.23	1,160		July 4, 1961	2.97	-	136

3145. Hawk Creek near Maynard, Minn.

Location.--Lat 44°52'10", long 95°28'50", at west edge of sec.7, T.116 N., R.38 W., on downstream handrail of bridge on county highway, 2½ miles southwest of Maynard.

Drainage area.--474 sq mi.

Gage.--Nonrecording. Datum of gage is 995.50 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 29, 1950	a10.48	-	1953	(c)	11.90	2,260
	Mar. 30, 1950	b10.26	1,060	1954	Mar. 21, 1954	5.60	404
1951	Apr. 7, 1951	12.13	2,380	1957	June 18, 1957	16.1	6,970
1952	Apr. 10, 1952	13.56	3,130				

a Backwater from ice, 2.49 ft.
b Backwater from ice, 1.60 ft.
c Occurred during period June 26-28.

3150. Redwood River at Marshall, Minn.

Location.--Lat 44°27'05", long 95°47'13", in SE¼NW¼ sec.4, T.111 N., R.41 W., on upstream side of highway bridge on Fourth Street in Marshall, 10 miles upstream from Threemile Creek.

Drainage area.--307 sq mi.

Gage.--Nonrecording. Datum of gage is 1,144.88 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Redwood River at Marshall, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Mar. 30, 1940	8.0	0.8	1,040	1952	Apr. 4, 1952	10.22	1.28	-
						Apr. 8, 1952	-	-	1,800
1941	Mar. 26, 1941	6.11	2.4	-	1953	Mar. 19, 1953	5.32	1.62	-
	Mar. 27, 1941	-	-	382		Mar. 21, 1953	-	-	628
1942	July 1, 1942	4.54	-	437	1954	Mar. 21, 1954	7.80	4.98	-
1943	Mar. 26, 1943	8.42	2.79	-		Mar. 22, 1954	-	-	890
	June 3, 1943	-	-	891	1955	Mar. 10, 1955	3.54	2.78	-
1944	May 20, 1944	8.97	-	1,640		Mar. 14, 1955	-	.78	162
1945	Mar. 13, 1945	6.10	2.68	-					
	Mar. 15, 1945	-	-	320	1956	Mar. 22, 1956	2.60	1.45	-
						June 26, 1956	-	-	47
1946	Mar. 7, 1946	6.63	2.93	-	1957	June 17, 1957	10.14	-	5,370
	Mar. 16, 1946	-	-	623	1958	Apr. 9, 1958	2.93	-	388
1947	June 10, 1947	9.64	-	1,800	1959	Mar. 2, 1959	2.30	1.42	-
1948	Mar. 22, 1948	9.1	1.1	1,250		Mar. 23, 1959	1.48	.45	24
1949	Apr. 7, 1949	7.44	-	1,080	1960	Apr. 1, 1960	6.65	-	1,410
1950	Mar. 27, 1950	8.40	6.11	-					
	Apr. 3, 1950	-	.48	578	1961	May 19, 1961	-	-	a190
1951	Apr. 6, 1951	11.05	-	2,740					

a Maximum daily mean discharge.

3165. Redwood River near Redwood Falls, Minn.

Location.--Lat 44°31'25", long 95°10'20", in SE¼NE¼ sec.9, T.112 N., R.36 W., on right bank, 20 ft upstream from highway bridge, 3 miles west of town of Redwood Falls, and 8.5 miles upstream from mouth.

Drainage area.--697 sq mi.

Gage.--Nonrecording prior to Oct. 26, 1949; recording thereafter. Prior to 1931, at datum 0.22 ft lower. Datum of gage is 972.33 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 14,200 cfs and extended above.

Remarks.--Base for partial-duration series, 75 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 21, 1910	2.86	-	224	1948	Mar. 23, 1948	-	-	2,740
					1949	Apr. 9, 1949	4.63	-	1,360
1911	Mar. 12, 1911	2.65	-	158					
1912	May 7, 1912	2.74	-	186	1950	Apr. 3, 1950	5.03	1.63	-
1913	Apr. 19, 1913	2.62	-	150		Apr. 5, 1950	3.88	-	910
1914	June 21, 1914	3.35	-	402		Apr. 21, 1950	2.74	-	283
						May 8, 1950	2.95	-	368
1931	Nov. 22, 1930	-	-	39					
	Nov. 28, 1930	1.92	0.21	-	1951	Apr. 6, 1951	12.68	4.38	-
1932	Mar. 4, 1932	3.16	-	387		Apr. 7, 1951	8.34	-	4,860
1933	Mar. 2, 1933	2.38	.10	110		Apr. 30, 1951	4.32	-	1,260
1934	Apr. 3, 1934	1.82	-	30		May 15, 1951	4.42	-	1,340
1935	Feb. 5, 1935	2.13	.42	-		June 6, 1951	2.35	-	168
	Mar. 20, 1935	-	-	66		June 27, 1951	3.51	-	716
						Aug. 23, 1951	2.26	-	141
1936	Mar. 28, 1936	4.23	1.08	387		Sept.12, 1951	2.16	-	113
1937	Apr. 15, 1937	4.84	-	1,400					
1938	Mar. 16, 1938	4.47	.39	-	1952	Apr. 5, 1952	11.84	-	6,790
	Mar. 17, 1938	-	-	1,120		June 15, 1952	2.84	-	321
1939	Mar. 24, 1939	3.42	-	550		June 24, 1952	3.97	-	955
1940	Apr. 5, 1940	4.84	1.14	705		June 28, 1952	4.99	-	1,620
						July 14, 1952	2.67	-	258
1941	Apr. 1, 1941	4.97	.67	1,120		Aug. 10, 1952	2.06	-	83
1942	May 20, 1942	3.05	-	383					
1943	Mar. 29, 1943	7.01	1.81	1,830	1953	Mar. 20, 1953	4.97	.41	1,340
1944	May 21, 1944	6.56	-	2,800		May 6,7, 1953	3.78	-	833
1945	Mar. 17, 1945	3.76	-	828		June 14, 1953	2.72	-	248
						June 23, 1953	2.94	-	354
1946	Mar. 9, 1946	4.13	1.53	-		June 27, 1953	2.84	-	321
	Mar. 20, 1946	-	-	845		Aug. 6, 1953	3.71	-	791
1947	June 14, 1947	6.24	-	2,400					
1948	Mar. 23, 1948	8.05	2.75	-	1954	Feb. 20, 1954	2.90	.81	89

Peak stages and discharges of Redwood River near Redwood Falls, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	Mar. 25, 1954	4.76	-	1,470	1958	Nov. 6,7,1957	2.23	-	107
	May 4, 1954	2.44	-	173		Dec. 25, 1957	2.25	0.37	112
	May 29, 1954	2.17	-	76		Feb. 28, 1958	2.59	-	105
	June 20, 1954	2.54	-	208		Mar. 29, 1958	2.72	-	266
	Aug. 28, 1954	2.04	-	78		Apr. 12, 1958	3.59	-	719
1955	Mar. 14, 1955	2.87	0.01	329	1959	Mar. 7, 1959	3.16	1.21	-
	Apr. 2, 1955	2.22	-	121		June 25, 1959	2.76	-	302
	May 1, 1955	2.15	-	106		Aug. 24, 1959	2.07	-	80
	Aug. 9, 1955	2.06	-	83	1960	Mar. 31, 1960	10.95	-	7,660
1956	Apr. 5, 1956	2.58	-	213		Apr. 9, 1960	5.32	-	1,850
	June 17, 1956	3.19	-	485		May 22, 1960	2.32	-	130
	June 23, 1956	2.52	-	191		May 29, 1960	2.44	-	141
	June 26, 1956	2.33	-	132		June 30, 1960	2.90	-	341
						July 13, 1960	3.40	-	635
1957	Mar. 28, 1957	4.15	.50	755		Aug. 29, 1960	2.83	-	311
	Apr. 24, 1957	2.17	-	94		Sept.21, 1960	2.19	-	98
	May 25, 1957	2.41	-	155					
	June 18, 1957	15.92	-	19,700	1961	May 20, 1961	2.63	.16	174
	July 25, 1957	3.25	-	518		Apr. 21, 1961	2.15	-	90
	Aug. 15, 1957	3.02	-	397		May 9, 1961	2.20	-	116
	Aug. 29, 1957	2.88	-	332		May 20, 1961	3.02	-	400
	Sept.23, 1957	2.55	-	213		June 13, 1961	2.08	-	87
						June 20, 1961	2.06	-	83
1958	Oct. 10, 1957	2.13	-	86		July 20, 1961	2.46	-	189
	Oct. 24, 1957	2.11	-	82		July 31, 1961	2.37	-	162

3170. Cottonwood River near New Ulm, Minn.

Location.--Lat 44°17'40", long 94°26'40", in N½ sec.33, T.110 N., R.30 W., on left bank, 600 ft upstream from highway bridge, 1.8 miles south of New Ulm, and 2 miles upstream from mouth.

Drainage area.--1,280 sq mi, approximately.

Gage.--Nonrecording prior to June 26, 1948; recording thereafter. Prior to Mar. 15, 1931, at site 2.7 miles upstream at different datum. Mar. 15, 1931, to Mar. 31, 1938, at site 2¼ miles upstream at datum 11.41 ft higher. Datum of gage is 799.09 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 9,000 cfs and extended above.

Remarks.--Some regulation by dam at Cottonwood Lake and several other small lakes above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 11, 1910	8.68	-	3,250	1943	June 1, 1943	11.70	-	4,670
					1944	May 5, 1944	12.90	-	7,310
1911	Mar. 12, 1911	3.32	-	391	1945	Mar. 14, 1945	9.60	-	3,020
1912	Oct. 9, 1911	-	-	692					
	Apr. 1, 1912	4.9	2.75	-	1946	Mar. 4, 1946	7.67	0.95	-
1913	Mar. 13, 1913	5.6	-	-		Mar. 5, 1946	-	-	2,060
	Apr. 17, 1913	-	-	1,010	1947	July 9, 1947	16.94	-	a13,800
					1948	Mar. 21, 1948	15.25	3.35	6,140
1931	Apr.6-8, 1931	3.20	-	141	1949	Apr. 8, 1949	12.57	-	7,000
1932	Feb. 29, 1932	11.20	.10	4,580	1950	Mar. 29, 1950	9.11	-	3,320
1933	Feb. 27, 1933	8.50	.70	2,010					
1934	Apr. 6, 1934	3.80	-	146	1951	Apr. 7, 1951	15.44	-	11,500
1935	Mar. 27, 1935	6.92	1.4	680	1952	Apr. 5, 1952	14.30	-	10,500
					1953	May 27, 1953	9.50	-	3,750
1936	Mar. 19, 1936	11.67	3.27	-	1954	Mar. 21, 1954	8.19	-	2,950
	Mar. 22, 1936	-	-	4,160	1955	Mar. 12, 1955	5.75	.31	1,330
1937	June 15, 1937	10.45	-	3,540					
1938	Mar. 13, 1938	16.15	6.75	-	1956	June 24, 1956	7.17	-	2,210
	Mar. 17, 1938	-	2.80	4,380	1957	June 25, 1957	11.81	-	5,380
1939	Mar. 24, 1939	6.70	-	1,440	1958	May 30, 1958	8.77	-	2,760
1940	Apr. 1, 1940	7.69	-	1,900	1959	June 1, 1959	6.17	-	1,480
					1960	Mar. 30, 1960	12.16	-	5,920
1941	May 31, 1941	11.68	-	3,400					
1942	May 15, 1942	10.10	-	3,050	1961	Feb. 28, 1961	5.79	-	1,300

a Result of dam failure.

3175. Minnesota River at Judson, Minn.

Location.--Lat 44°12'00", long 94°11'36", in E½ sec.33, T.109 N., R.28 W., on highway bridge, a quarter of a mile northeast of Judson and 11 miles upstream from Blue Earth River.

Drainage area.--11,200 sq mi, approximately.

Gage.--Nonrecording. Prior to Oct. 1, 1939, at datum 0.43 ft higher. Datum of gage is 700.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Mar. 26, 1939	70.61	3,150	1945	Mar. 16, 1945	-	6,860
1940	Apr. 11, 1940	71.04	3,460				
				1946	Apr. 2-6, 1946	75.85	7,070
1941	Apr. 5, 1941	a73.96	-	1947	Apr. 26, 1947	80.78	14,000
	Apr. 25, 1941	-	4,690	1948	Mar. 29, 1948	79.98	14,000
1942	June 19-23, 1942	72.73	4,240	1949	Apr. 9, 1949	80.66	15,400
1943	June 18, 1943	79.72	11,300	1950	Mar. 31, 1950	c75.38	-
1944	May 8, 1944	82.43	16,100		Apr. 4, 1950	-	7,600
1945	Mar. 15, 1945	b76.60	-				

a Affected by backwater from debris.
b Backwater from ice, 3.65 ft.
c Backwater from ice, 2.49 ft.

3180. East Branch Blue Earth River near Bricelyn, Minn.
(Published as East Fork Blue Earth River prior to October 1957)

Location.--Lat 43°37'50", long 93°47'25", in NE¼NE¼ sec.23, T.102 N., R.25 W., in center of span on downstream side of highway bridge, 2 miles upstream from Brush Creek, 3 miles downstream from South Walnut Lake, and 5 miles northeast of Bricelyn.

Drainage area.--132 sq mi.

Gage.--Nonrecording. Datum of gage is 1,131.86 ft above mean sea level, datum of 1929 (Minnesota State Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 955 cfs and extended above.

Remarks.--Some regulation caused by South Walnut Lake 3 miles upstream. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Apr. 7, 1951	10.68	1,320	1958	Mar. 3, 1958	a5.62	-
1952	Apr. 1, 1952	9.57	776		Apr. 27, 1958	-	56
1953	Mar. 21, 1953	7.15	231	1959	June 3, 1959	-	81
1954	June 24, 1954	8.04	274		July 3, 1959	6.89	-
1955	July 8, 1955	7.12	196	1960	May 23, 1960	10.36	935
1956	Apr. 1, 1956	7.04	207	1961	Mar. 28, 1961	9.08	502
1957	June 30, 1957	5.57	62				

a Backwater from ice, 1.46 ft.

3195. Watonwan River near Garden City, Minn.

Location.--Lat 44°02'45", long 94°11'38", in SW¼NE¼ sec.28, T.107 N., R.28 W., on upstream side of highway bridge, 1.5 miles west of Garden City, 5 miles downstream from Perch Creek, and 7.3 miles upstream from mouth.

Drainage area.--812 sq mi.

Gage.--Nonrecording. Altitude of gage is 907 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 31, 1940	a3.05	-	1943	June 17, 1943	8.56	4,380
	Apr. 3, 1940	-	331	1944	May 21, 1944	9.84	5,620
1941	June 14, 1941	5.27	1,490	1945	June 16, 1945	6.96	3,050
1942	Sept.22, 1942	5.45	1,530	1953	June 9, 1953	18.6	17,700

a Backwater from ice, 1.05 ft.

3200. Blue Earth River near Rapidan, Minn.

Location.--Lat 44°05'44", long 94°06'33", in SE¼SE¼ sec.6, T.107 N., R.27 W., on left bank, 0.2 mile downstream from powerplant of Northern States Power Co., 2 miles west of Rapidan, 3½ miles downstream from Watonwan River, and 7¾ miles upstream from Le Sueur River.

Drainage area.--2,430 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 15, 1939; recording thereafter. At site a quarter of a mile upstream at different datum July 20, 1909, to Apr. 28, 1910, and at site 800 ft upstream at different datum Apr. 29 to Nov. 12, 1910. Datum of gage is 808.80 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 16,000 cfs and extended above on basis of logarithmic plotting.

Remarks.--Flow regulated by Rapidan Reservoir (capacity, 2,980 acre-ft). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Mar. 12, 1910	11.50	15,600	1952	Apr. 1, 1952	11.17	14,700
				1953	June 9, 1953	12.91	19,700
1940	June 7, 1940	3.97	1,710	1954	June 25, 1954	7.12	6,230
				1955	Mar. 12, 1955	5.44	3,550
1941	Mar. 31, 1941	6.13	4,390				
1942	Mar. 29, 1942	5.02	2,790	1956	June 18, 1956	6.80	5,670
1943	June 16, 1943	7.85	6,940	1957	May 28, 1957	5.39	3,440
1944	May 22, 1944	9.41	11,000	1958	Apr. 8, 1958	3.59	1,270
1945	June 15, 1945	9.01	9,500	1959	June 6, 1959	5.53	3,670
				1960	May 24, 1960	11.52	16,600
1950	Mar. 30, 1950	6.07	4,390				
				1961	Mar. 28, 1961	9.35	11,200
1951	Apr. 8, 1951	14.97	26,100				

3205. Le Sueur River near Rapidan, Minn.

Location.--Lat 44°06'40", long 94°02'28", in SW¼ sec.35 T.108 N., R.27 W., on right bank, 600 ft downstream from highway bridge, 1.8 miles northeast of Rapidan, and 2.3 miles upstream from mouth.

Drainage area.--1,100 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 15, 1939; recording thereafter. Datum of gage is 775.76 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,700 cfs and extended above.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	June 8, 1940	8.20	-	1,600	1952	June 26, 1952	-	-	a1,500
1941	Mar. 14, 1941	11.51	3.81	1,500	1953	Mar. 21, 1953	9.62	-	3,350
	Mar. 31, 1941	10.70	-	2,840		May 3, 1953	8.83	-	2,740
						May 25, 1953	11.75	-	5,120
1942	June 7, 1942	7.92	-	1,360		June 10, 1953	6.54	-	1,400
	Sept.18, 1942	8.11	-	1,440		June 15, 1953	7.15	-	1,700
						Aug. 5, 1953	9.62	-	3,350
1943	Mar. 29, 1943	13.70	-	5,950					
	May 31, 1943	9.29	-	2,150	1954	June 23, 1954	7.01	-	1,610
	June 12, 1943	7.80	-	1,490					
	June 15, 1943	9.27	-	2,150	1955	Mar. 12, 1955	8.24	1.84	-
	July 24, 1943	8.00	-	1,570		Mar. 13, 1955	7.19	-	1,760
1944	Apr. 26, 1944	8.57	-	1,770	1956	June 18, 1956	10.50	-	3,990
	May 6, 1944	11.34	-	3,270		June 26, 1956	9.22	-	2,920
	May 25, 1944	12.68	-	4,230					
	June 5, 1944	9.86	-	2,440	1957	May 28, 1957	7.47	-	1,790
	June 14, 1944	11.96	-	3,740		July 22, 1957	7.49	-	1,500
	July 4, 1944	7.96	-	1,500					
					1958	Feb. 27, 1958	4.91	2.03	-
1945	Mar. 16, 1945	11.40	-	3,510		Apr. 27, 1958	4.80	-	525
	Apr. 18, 1945	8.09	-	1,810					
	Apr. 25, 1945	8.23	-	1,860	1959	May 31, 1959	6.90	-	1,510
	May 28, 1945	12.03	-	3,880					
	June 14, 1945	12.85	-	4,410	1960	Dec. 29, 1959	7.29	-	1,670
	July 8, 1945	9.65	-	2,560		Mar. 30, 1960	9.42	-	3,080
						Apr. 15, 1960	7.73	-	1,910
1950	Mar. 27, 1950	10.35	.62	-		Apr. 28, 1960	7.38	-	1,730
	Mar. 28, 1950	10.03	-	3,100		May 22, 1960	22.72	-	21,200
						June 23, 1960	6.97	-	1,860
1951	Apr. 7, 1951	19.73	-	13,200		July 12, 1960	9.56	-	3,700
	May 4, 1951	9.68	-	3,390					
	June 4, 1951	8.07	-	2,230	1961	Mar. 28, 1961	12.20	-	6,600
	June 28, 1951	10.27	-	3,870		Apr. 20, 1961	5.84	-	1,410
	Sept.15, 1951	9.52	-	2,800		May 20, 1961	6.18	-	1,610
						June 1, 1961	7.06	-	2,150
1952	Mar. 21, 1952	8.30	-	2,100		Aug. 2, 1961	6.47	-	1,780
	Apr. 2, 1952	16.44	-	9,640					

a Estimated maximum daily discharge.

3250. Minnesota River at Mankato, Minn.

Location.--Lat 44°10'10", long 94°00'15", in sec.7, T.108 N., R.26 W., on left bank at downstream side of Main Street Bridge in Mankato, 1.8 miles downstream from Blue Earth River and at mile 106.4.

Drainage area.--14,900 sq mi, approximately.

Gage.--Nonrecording prior to Dec. 1, 1924; recording thereafter. At site 1.8 miles upstream at datum 6.4 ft higher prior to Oct. 20, 1921. Datum of gage is 747.92 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 6,000 cfs. Only annual peaks are shown prior to 1927.

Peak stages and discharges of Minnesota River at Mankato, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1881	Apr. 26, 1881	a29.9	-	90,000
1903	May 29, 1903	19.6	-	43,500
1904	Oct. 9, 1903	13.45	-	20,500
1905	July 9, 1905	12.65	-	18,600
1906	June 10, 1906	9.2	-	9,940
1907	June 21, 1907	14.1	-	22,100
1908	June 26, 1908	21.2	-	54,500
1909	Mar. 29, 1909	17.4	-	31,700
1910	Mar. 12, 1910	15.2	-	20,700
1911	Mar. 13, 1911	2.1	-	905
1912	Apr. 2, 1912	8.4	-	8,530
1913	Apr. 15-17, 1913	6.6	-	5,460
1914	June 17, 1914	9.9	-	11,000
1915	Mar. 28, 1915	14.6	-	23,100
1916	Mar. 28, 1916	17.14	-	30,500
1917	Apr. 5, 1917	15.8	-	26,900
1918	Aug. 23, 1918	11.1	-	15,000
1919	June 21, 1919	18.9	-	38,800
1920	July 18, 1920	12.0	-	19,600
1921	May 30, 1921	5.9	-	4,910
1922	Mar. 16, 1922	13.5	-	9,040
1923	May 4, 1923	5.49	-	1,630
1924	July 2, 1924	7.8	-	3,540
1925	June 17, 1925	13.1	-	8,640
1926	Mar. 23, 1926	8.87	-	4,990
1927	Mar. 14, 1927	14.50	-	12,100
	Apr. 27, 1927	13.58	-	10,800
	May 31, 1927	10.95	-	7,640
	June 24, 1927	9.53	-	6,010
1928	Mar. 20, 1928	13.85	-	11,400
	Apr. 23, 1928	10.15	-	6,960
	May 6, 1928	9.49	-	6,190
1929	Mar. 18, 1929	19.0	-	23,200
	Apr. 7, 1929	10.87	-	7,730
	Apr. 29, 1929	11.18	-	8,060
1930	Feb. 25, 1930	12.2	-	9,260
1931	June 22, 1931	4.50	-	1,350
1932	Mar. 6, 1932	12.80	3.8	6,650
	Mar. 30, 1932	12.88	2.88	7,400
	Apr. 8, 1932	9.68	.3	6,680
1933	Apr. 3, 1933	15.02	-	13,400
1934	Apr. 7, 1934	5.51	-	2,170
1935	Mar. 16, 1935	8.85	-	5,100
1936	Mar. 23, 1936	20.03	-	25,100
1937	Apr. 16, 1937	10.50	-	6,000
	May 30, 1937	10.60	-	6,100
	June 17, 1937	12.91	-	8,400
1938	Mar. 20, 1938	14.02	-	9,880
	May 23, 1938	11.25	-	6,640
	July 11, 1938	10.85	-	6,280
	Sept. 19, 1938	15.68	-	11,200
1939	Mar. 24, 1939	13.39	-	9,350
1940	Apr. 11, 1940	7.59	-	3,930
1941	Mar. 31, 1941	14.79	-	11,400
	Apr. 24, 1941	13.27	-	9,150
	June 16, 1941	11.90	-	7,600
1942	June 7, 1942	11.40	-	7,280
1942	Sept. 21, 1942	10.16	-	6,170
1943	Mar. 30, 1943	18.32	-	17,100
	June 18, 1943	19.29	-	19,800
	July 7, 1943	11.71	-	7,790
	July 24, 1943	11.71	-	7,790
	Aug. 13, 1943	11.27	-	7,390
	Aug. 29, 1943	10.24	-	6,330
	Sept. 9, 1943	11.82	-	7,890
1944	Mar. 2, 1944	11.98	-	8,090
	May 8, 1944	20.01	-	23,600
	May 23, 1944	20.41	-	25,100
	June 17, 1944	17.53	-	16,500
1945	Mar. 16, 1945	17.42	-	18,000
	Apr. 26, 1945	9.98	-	6,580
	May 29, 1945	13.95	-	11,000
	June 15, 1945	16.90	-	16,800
	July 8, 1945	10.0	-	b6,480
1946	Mar. 18, 1946	15.12	-	13,300
	May 29, 1946	11.41	-	8,460
	June 21, 1946	12.73	-	10,000
1947	Apr. 30, 1947	17.53	-	18,900
	July 10, 1947	17.97	-	20,400
1948	Mar. 22, 1948	17.59	1.82	-
	Mar. 24, 1948	16.92	-	17,900
	Aug. 11, 1948	9.22	-	6,340
1949	Mar. 10, 1949	-	-	c8,200
	Apr. 3, 1949	19.88	-	26,600
1950	Mar. 31, 1950	13.90	-	12,200
	May 13, 1950	9.17	-	6,350
1951	Apr. 9, 1951	26.20	-	66,600
	May 5, 1951	18.70	-	22,100
	June 5, 1951	11.34	-	8,910
	July 2, 1951	16.69	-	19,000
	Sept. 16, 1951	10.82	-	8,260
1952	Mar. 22, 1952	11.20	.57	8,060
	Apr. 14, 1952	24.62	-	53,500
	July 7, 1952	13.32	-	11,400
1953	Mar. 21, 1953	13.46	-	12,400
	May 4, 1953	13.10	-	11,900
	May 28, 1953	16.10	-	17,400
	June 10, 1953	18.84	-	25,100
	July 8, 1953	13.60	-	12,600
	Aug. 7, 1953	15.01	-	15,100
1954	Mar. 25, 1954	10.22	-	8,180
	May 6, 1954	8.99	-	6,670
	June 23, 1954	11.62	-	10,000
1955	Mar. 12, 1955	10.24	-	8,200
1956	June 26, 1956	12.69	-	11,600
1957	Mar. 29, 1957	8.35	-	6,470
	June 24, 1957	22.58	-	41,700
	July 22, 1957	11.00	-	9,350
1958	Apr. 13, 1958	9.52	-	7,570
1959	June 3, 1959	7.22	-	4,850
1960	Apr. 5, 1960	17.78	-	23,700
	May 23, 1960	20.41	-	34,300
	July 12, 1960	7.93	-	6,040
1961	Mar. 29, 1961	15.61	-	17,600
	May 20, 1961	8.83	-	7,120

a Present site and datum; maximum stage known.
b Computed on basis of record at Judson and Blue Earth and Le Sueur Rivers at and near Rapidan, Minn.
c Maximum daily mean discharge.

3300. Minnesota River near Carver, Minn.

Location.--Lat 44°43'28", long 93°37'58", in NE¼SW¼ sec.31, T.115 N., R.23 W., on left bank, 2½ miles south of Carver, and at mile 36.

Drainage area.--16,200 sq mi, approximately.

Gage.--Nonrecording prior to Dec. 5, 1934; recording thereafter. Datum of gage is 690.00 ft above mean sea level, datum of 1929. Auxiliary nonrecording gage 2¾ miles upstream at same datum.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 6,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 19, 1935	ab7.62	4,010	1948	Mar. 24, 1948	a22.41	22,000
1936	Mar. 25, 1936	a22.43	23,200	1949	Mar. 14, 1949	14.68	9,500
					Apr. 5, 1949	23.59	32,600
1937	June 22, 1937	12.73	8,310				
				1950	Apr. 1, 1950	a18.10	13,300
1938	Mar. 25, 1938	13.36	8,740		May 14, 1950	13.90	6,840
	May 25, 1938	a14.12	7,870				
	July 14, 1938	10.79	6,500	1951	Apr. 11, 1951	a28.00	64,100
	Sept.23, 1938	13.14	8,760		June 6, 1951	12.64	7,900
					July 5, 1951	20.39	19,800
1939	Mar.25-28,1939	a14.5	c8,500		Sept.17, 1951	13.33	7,800
1940	Apr. 14, 1940	a7.74	3,560	1952	Apr. 16, 1952	28.31	60,600
					July 17, 1952	15.27	11,900
1941	Apr.4-6, 1941	17.56	12,300				
	June 19, 1941	12.60	7,680	1953	Mar. 24, 1953	16.27	11,900
					May 7, 1953	16.65	13,300
1942	June 9, 1942	12.40	7,590		May 31, 1953	18.68	17,100
	Sept.19, 1942	a14.36	8,400		June 14, 1953	21.47	23,000
					June 29, 1953	18.07	14,900
1943	Apr. 3, 1943	20.21	15,700		Aug. 8, 1953	17.65	16,300
	June 20, 1943	22.64	25,900				
	July 26, 1943	12.38	7,530	1954	Mar. 26, 1954	12.32	8,510
	Aug.17-20, 1943	12.23	7,360		May 7, 1954	12.69	7,470
	Sept.12, 1943	12.54	7,620		June 27, 1954	a13.77	10,300
1944	Mar. 5,6,1944	14.20	7,000	1955	Mar. 17, 1955	14.02	7,650
	May 25,26, 1944	22.82	25,100				
				1956	June 20, 1956	a16.72	12,800
1945	Mar. 20, 1945	20.21	17,700				
	Apr. 18, 1945	12.52	7,880	1957	June 26, 1957	a25.82	40,800
	Apr. 28, 1945	12.52	7,880				
	June 3, 1945	16.56	12,200	1958	Apr. 15, 1958	a12.30	7,640
	June 18, 1945	20.98	18,200				
				1959	June 5, 1959	8.37	3,880
1946	Mar.30,31, 1946	18.22	13,900				
	May 31, 1946	12.48	7,620	1960	Apr. 8, 1960	22.36	24,200
	June 25,26,1946	13.50	8,680		May 25, 1960	a24.87	36,400
1947	May 3, 1947	21.31	20,400	1961	Apr. 1, 1961	a18.57	15,700
	July 13, 1947	20.56	18,300		May 22, 1961	12.94	9,050

a Occurred at different time than peak discharge.
b Occurred Mar. 18, 1935; backwater from ice, 0.27 ft.
c Maximum daily mean discharge.

Note.--All annual maximum stages and discharges except those for 1935 are affected by backwater from the Mississippi River. Supplementary peak discharges are daily mean figures.

3310. Mississippi River at St. Paul, Minn.

Location. Lat 44°56'40", long 93°05'20", in NE¼NE¼ sec.6, T.28 N., R.22 W., on left bank in St. Paul, 300 ft upstream from Robert Street Bridge, 6 miles downstream from Minnesota River, and at mile 839.3 upstream from Ohio River.

Drainage area.--36,800 sq mi, approximately.

Gage.--Nonrecording at several sites within 300 ft of present site at same datum prior to Mar. 18, 1925, and at present site and datum Mar. 11, 1933, to Sept. 14, 1939; recording at present site Mar. 18, 1925, to Mar. 10, 1933, and after Sept. 14, 1939. Datum of gage is 684.16 ft above mean sea level, adjustment of 1912. Since September 1938, auxiliary recording gage 5.4 miles downstream.

Stage-discharge relation.--Defined by current-meter measurements. Affected by changing slope resulting from operation of navigation dam 2.

Remarks.--Slight regulation except during extreme floods by reservoirs on headwaters and by powerplants. Base for partial-duration series, 13,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1867	Apr. 22, 1867	17.4	80,800	1884	Apr. 3, 1884	9.8	29,300
	May 25, 1867	10.3	31,800		May 5-7, 1884	10.2	31,300
	June 14, 1867	16.2	70,200				
	July 1, 1867	17.0	77,200	1885	Oct. 10, 1884	6.5	15,600
	July 23, 1867	18.6	92,000		Apr. 5, 1885	6.6	16,000
					Apr. 28, 1885	7.3	18,500
1868	Mar. 23, 1868	8.3	22,500		June 18, 1885	7.4	18,900
	Apr. 4, 1868	9.3	26,900				
	May 6-8, 1868	8.4	22,900	1886	Mar. 29, 1886	8.2	22,100
					May 3-5, 1886	8.0	21,300
1869	Apr. 7, 1869	15.6	65,400		June 20, 1886	6.3	14,900
	Sept.24-27,1869	16.1	69,400				
				1887	Mar. 25, 1887	7.9	20,900
1872	May 19-22,1872	7.7	20,100		Apr. 17, 1887	9.6	28,300
	July 8, 1872	6.4	15,300				
				1888	Apr. 14, 1888	14.4	56,300
1873	Mar. 24, 1873	8.6	23,800		May 11, 1888	14.1	54,200
	Apr. 2, 1873	10.1	30,800				
	Apr. 9, 1873	9.2	26,500	1889	May 21, 1889	4.5	9,500
	Apr. 21, 1873	16.4	71,800				
	June 1, 1873	15.7	66,200	1890	June 23, 1890	7.0	17,400
1874	Apr. 10, 1874	8.9	a25,100	1891	Apr. 17, 1891	6.4	15,300
	Apr. 27, 1874	9.0	25,600				
	June 22, 1874	9.7	28,800	1892	May 26, 1892	12.6	45,700
	July 2, 1874	11.6	38,700		June 21, 1892	9.8	30,700
	Sept. 3, 1874	5.9	13,600		July 28, 1892	6.7	16,400
					Aug. 3, 1892	6.7	16,400
1875	Apr. 16, 1875	18.0	86,200				
	June 8, 1875	10.9	34,800	1893	Apr. 10, 1893	10.9	36,300
	Sept. 9, 1875	8.3	22,500		May 5-7, 1893	14.7	58,800
1876	Apr. 10, 1876	11.0	35,400	1894	Apr. 25, 1894	10.6	34,800
	May 22, 1876	10.4	32,300		May 21, 1894	11.8	41,200
1877	Apr. 21-23,1877	7.0	17,400	1895	June 16, 1895	4.6	9,640
	May 25, 1877	7.7	20,100				
	July 8, 1877	7.1	17,700	1896	Apr. 18, 1896	10.7	35,300
					May 7, 1896	9.3	28,300
1878	Mar. 17, 1878	6.4	15,300		May 21, 1896	10.5	34,300
	Apr. 27, 1878	6.7	16,300		June 12, 1896	8.9	26,300
					June 27, 1896	6.8	16,800
1879	July 11, 1879	10,8	34,300				
				1897	Apr. 6, 1897	18.0	86,200
1880	Apr. 5-7, 1880	7.2	18,100		June 23, 1897	6.8	16,700
	May 15, 1880	7.1	17,700		July 11, 1897	13.6	50,700
	June 17, 1880	15.2	62,200				
				1898	June 8, 1898	10.8	35,800
1881	Apr. 29, 1881	19.7	107,000		July 13, 1898	6.9	17,200
1882	Oct. 18, 1881	13.1	47,500	1899	Apr. 14, 1899	10.5	34,300
	Apr. 13, 1882	13.3	48,700		May 8, 1899	7.6	20,200
	May 16, 1882	11.7	39,200		June 22, 1899	11.0	36,800
	June 30, 1882	10.0	30,300		Aug. 26, 1899	8.8	25,800
	Aug. 26, 1882	8.2	22,100				
				1900	Oct. 24, 1899	8.8	25,800
1883	Apr. 22, 1883	12.5	43,900				
	May 24, 1883	8.8	24,700	1901	Oct. 7, 1900	6.6	16,000
	June 8-10,1883	8.5	23,300		Apr. 12, 1901	7.5	19,800

a First day of record during year, may not be maximum.

Peak stages and discharges of Mississippi River at St. Paul, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)
1901	May 9-11, 1901	7.3	18,900
	July 11-13,1901	7.2	18,500
1902	May 26, 1902	7.5	19,800
	June 9, 1902	6.8	16,800
1903	Mar.26-28,1903	8.3	24,000
	Apr. 18, 1903	8.9	26,800
	May 19, 1903	10.9	36,900
	June 3, 1903	12.0	43,000
	July 13, 1803	7.7	21,400
	Aug. 8, 1903	6.3	15,800
	Sept.22-24,1903	11.9	42,500
1904	Oct. 14, 1903	13.5	51,800
	Nov. 29, 1903	5.5	13,000
	Apr. 11, 1904	9.9	31,600
	June 11, 1904	7.8	21,800
1905	Oct. 27, 1904	7.8	21,800
	Mar. 28, 1905	5.9	14,400
	Apr.10-12, 1905	6.7	17,400
	May 18, 1905	11.8	41,300
	July 11, 1905	14.8	59,800
	Aug. 21, 1905	8.2	23,600
	Sept.21, 1905	7.4	20,200
1906	Oct. 26, 1905	6.0	14,700
	Nov. 29, 1905	5.9	14,400
	Apr. 19, 1906	12.0	43,000
	June 12, 1906	13.3	50,600
	(b)	8.4	24,500
	Sept.28, 1906	8.3	24,000
1907	Nov. 2, 1906	7.9	22,300
	Nov. 30, 1906	6.3	15,800
	Apr. 4, 1907	13.3	50,600
	June 1, 1907	8.9	26,800
	June 18, 1907	11.0	37,400
	Aug. 22, 1907	5.5	13,000
	Sept.25, 1907	6.3	15,800
1908	Apr. 1, 1908	5.9	15,300
	May 2, 1908	7.5	21,400
	June 4, 1908	15.3	63,200
	June 29, 1908	16.8	73,000
1909	Apr. 4, 1909	13.0	48,900
	June 8, 1909	8.8	27,100
	Aug.18-20, 1909	6.3	16,700
1910	Mar. 19, 1910	10.6	35,800
1911	May 24, 1911	3.2	8,450
1912	Apr. 4, 1912	6.5	17,400
	May 10, 1912	11.2	39,000
1913	May 27, 1913	6.1	15,800
1914	May 8, 1914	6.0	15,500
	July 3, 1914	12.2	40,500
	Sept.20, 1914	5.8	14,900
1915	Oct. 19, 1914	5.2	13,300
	Mar. 7, 1915	5.9	15,200
	Apr. 5, 1915	10.5	31,100
	July 4, 1915	9.9	28,600
1916	Oct. 11, 1915	5.5	14,100
	Nov. 15, 1915	6.8	17,800
	Apr. 6, 9, 1916	16.6	73,500
	Apr. 28, 1916	15.1	61,200
	May 30, 1916	13.8	51,100
	July 6, 1916	12.4	41,600
	Aug. 28, 1916	6.2	16,000
1917	Apr. 8, 1917	16.0	68,600
	June 15-17,1917	8.1	22,000
1917	July 1, 1917	6.7	17,500
1918	Mar. 24, 1918	7.6	22,500
	June 4, 1918	6.5	17,600
	Aug. 27, 1918	5.5	14,700
1919	Mar. 25, 1919	12.5	45,300
	Apr. 22, 1919	13.8	54,500
	June 27-29,1919	12.4	44,600
1920	Mar. 29, 1920	13.6	53,100
	May 1, 1920	8.2	24,600
	June 19, 1920	10.2	32,600
	July 4-7, 1920	11.3	37,800
1921	Apr. 12, 1921	6.4	18,600
	June 16, 1921	6.7	19,500
1922	Apr. 13, 1922	12.6	46,000
1923	May 7, 1923	4.3	13,200
1924	Aug.26-28, 1924	4.0	12,900
1925	June 20, 1925	6.33	16,800
1926	Mar. 28, 1926	5.30	14,500
	Sept.24, 1926	4.6	12,900
1927	Mar. 19, 1927	11.6	35,000
	Apr.24-27, 1927	11.25	32,400
	May 27, 1927	8.45	21,000
	June 13, 1927	7.30	18,200
1928	Mar.28-30, 1928	11.3	33,000
	Apr. 26, 1928	8.20	20,500
	May 7, 1928	7.0	17,500
1929	Oct. 24, 1928	5.2	13,500
	Mar.22-24, 1929	13.0	45,800
1930	May 19, 1930	8.80	22,000
1931	June 26, 1931	3.17	c9,670
1932	Apr. 11, 1932	6.34	-
	Apr. 12, 1932	-	c17,600
	May 12, 1932	-	14,000
1933	Apr. 6, 1933	d5.44	c14,400
1934	Apr. 10, 1934	d2.41	-
	Apr. 12, 1934	-	c7,460
1935	Mar. 23, 1935	d4.39	c12,600
1936	Mar. 30, 1936	d10.90	37,500
	May 8, 1936	6.41	18,900
1937	May 4, 1937	d6.57	c23,300
	May 31, 1937	d4.72	15,200
	June 24, 1937	d4.52	14,800
1938	Mar. 24, 1938	d5.13	20,000
	May 14, 1938	d11.20	c38,800
	Sept.24, 1938	d4.50	13,200
1939	Mar. 31, Apr. 1, 1939	d10.45	35,600
	Apr. 6, 1939	d10.45	-
	Apr. 27, 1939	d7.40	24,100
1940	Apr. 12, 1940	d7.20	23,700
1941	Apr.11-14, 1941	d11.47	39,400
	June 17, 1941	7.30	23,900
	Sept.23, 1941	d4.46	15,800
1942	Apr. 1, 1942	4.59	16,200

b Aug. 31 to Sept. 2, 1906.
c Maximum daily discharge.
d Reading by Corps of Engineers.

Peak stages and discharges of Mississippi River at St. Paul, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	May 20, 1942	d9.18	30,300	1952	Apr. 16, 1952	22.02	125,000
	Sept. 4, 1942	4.62	16,100		July 25, 1952	10.17	41,500
	Sept.21, 1942	5.96	20,400				
				1953	Mar. 28, 1953	8.34	33,400
1943	Apr. 7, 1943	14.46	58,200		May 7, 1953	7.40	29,000
	June 21, 1943	13.84	54,500		June 27, 1953	11.40	47,000
					Aug. 14, 1953	11.21	46,200
1944	May 12, 1944	13.37	51,600				
	June 21, 1944	14.26	56,900	1954	May 6, 1954	10.61	43,500
	Aug. 15, 1944	5.58	19,300		June 5, 1954	6.28	25,200
					July 5, 1954	6.16	24,800
1945	Mar. 23, 1945	13.45	53,400				
	June 21, 1945	8.87	32,400	1955	Apr. 7, 1955	6.41	25,700
					July 13, 1955	4.13	16,700
1946	Mar. 24, 1946	10.89	41,000				
	May 30, 1946	5.43	19,600	1956	Apr. 11, 1956	8.67	34,900
	July 3, 1946	9.66	35,800		June 3, 1956	3.77	14,000
					June 26, 1956	4.61	18,900
1947	Oct. 16, 1946	4.26	16,300		Aug. 6, 1956	4.86	18,200
	May 6, 1947	12.08	46,500				
	June 18, 1947	8.02	29,300	1957	Mar. 30, 1957	5.64	22,700
					Apr. 28, 1957	5.64	22,900
1948	Apr. 2, 1948	12.10	46,900		May 31, 1957	4.67	19,100
					June 29, 1957	16.68	78,400
1949	Mar. 16, 1949	3.48	13,900		Sept. 7, 1957	5.08	21,200
	Apr. 8, 1949	11.30	43,200				
	May 8, 1949	3.91	14,000	1958	Nov. 3, 1957	3.97	13,000
					Apr. 14, 1958	4.39	18,200
1950	May 13, 1950	12.95	53,900				
				1959	June 5, 1959	5.38	22,200
1951	Apr. 16, 1951	18.79	92,800				
	July 8, 1951	7.87	31,200	1960	Apr. 9, 1960	8.98	36,000
	July 22, 1951	5.70	21,800		May 28, 1960	10.50	43,300
	Sept.17, 1951	6.61	25,700				
				1961	Apr. 3, 1961	4.60	19,000
1952	Oct. 31, 1951	4.44	17,300		Apr. 26, 1961	e3.82	14,000
	Nov. 17, 1951	5.02	19,000		May 22, 1961	5.50	22,600
	Dec. 9, 1951	5.15	20,100				

d Reading by Corps of Engineers.
e Occurred Apr. 23, 1961.
Note.--Annual peak discharges, except as noted, are absolute maximum. All supplemental discharges are maximum daily mean values.

ST. CROIX RIVER BASIN

3325. Namekagon River near Trego, Wis.
(Published as "at Trego" prior to October 1927)

Location.--Lat 45°56'50", long 91°53'15", in SW¼ 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; 460 sq mi prior to October 1927.

Gage.--Headwater and tailwater gages read hourly. Prior to October 1927, nonrecording gage at site 5 miles upstream at different datum.

Remarks.--Discharge computed from powerplant records on basis of ratings developed by Geological Survey. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	July 1, 1914	2.7	1,090	1926	Apr. 14, 1926	2.2	733
1915	May 19, 1915	2.7	1,090	1927	Mar. 18, 1927	3.0	1,330
				1928	Sept.14, 1928	-	1,360
1916	Apr.22-25,1916	3.0	1,330	1929	Oct. 20, 1928	-	1,150
1917	Apr. 4, 1917	2.4	873	1930	Feb. 24, 1930	-	844
1918	June 6, 1918	2.6	1,020				
1919	Apr. 13, 1919	2.35	838	1931	June 28, 1931	-	855
1920	June 30, 1920	3.3	1,570	1932	Apr. 11, 1932	-	727
				1933	May 1, 1933	-	751
1921	Apr. 10, 1921	2.4	873	1934	Apr. 7, 1934	-	867
1922	Apr. 10, 1922	3.6	1,810	1935	Mar. 28, 1935	-	957
1923	Apr. 23, 1923	2.7	1,090				
1924	May 13, 1924	2.4	873	1936	Apr. 15, 1936	-	1,340
1925	Mar. 26, 1925	2.3	803	1937	Apr. 24, 1937	-	893

Peak stages and discharges of Namekagon River near Trego, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	May 7, 1938	-	1,300	1951	Apr.15,July 8, 1951	-	1,500
1939	Mar. 28, 1939	-	1,020	1952	July 22, 1952	-	1,480
1940	May 21, 1940	-	773	1953	May 23, 1953	-	1,330
1941	Sept. 2, 1941	-	a5,200	1954	May 4, 1954	-	2,140
1942	June 7, 1942	-	1,280	1955	July 6, 1955	-	1,120
1943	June 6, 1943	-	1,190	1956	June 16, 1956	-	1,630
1944	June 7, 1944	-	2,210	1957	June 24, 1957	-	a1,120
1945	June 17, 1945	-	1,760	1958	July 3, 1958	-	a2,380
1946	June 28, 1946	-	1,120	1959	May 7, 1959	-	a886
1947	Apr. 24, 1947	-	959	1960	May 23, 1960	-	a1,420
1948	Mar. 27, 1948	-	957	1961	May 17,18,1961	-	a1,480
1949	July 9, 1949	-	1,170				
1950	Apr. 19, 1950	-	2,160				

a Maximum daily discharge.

3335. St. Croix River near Danbury, Wis.
(Published as "at Swiss" prior to October 1933)

Location.--Lat 46°04'30", long 92°14'50", in sec.33, T.42 N., R.15 W., 20 ft downstream from 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.

Gage.--Nonrecording prior to Jan. 5, 1939; recording thereafter. Altitude of gage is 880 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 8,000 cfs.

Remarks.--Base for partial-duration series, 3,000 cfs. Only annual peaks are shown prior to 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	Apr. 24, 1914	4.15	-	4,030	1941	Sept. 4, 1941	7.16	-	8,630
1915	June 19, 1915	4.47	-	4,640	1942	Dec. 15, 1941	5.25	4.1	-
1916	Apr. 22, 1916	6.73	-	8,480		May 3, 1942	3.45	-	3,480
1917	July 21, 1917	3.05	-	2,840	1943	Apr. 2, 1943	4.97	2.5	-
1918	Mar. 22, 1918	3.80	-	-		June 4, 1943	4.06	-	4,250
	June 2, 1918	3.15	-	3,000	1944	June 6, 1944	7.47	-	8,990
1919	Apr. 11, 1919	3.50	-	3,330	1945	Mar. 19, 1945	7.95	2.5	-
1920	July 2, 1920	5.55	-	6,300		Mar. 19, 1945	5.50	-	5,600
1921	Apr. 8, 1921	2.78	-	2,630	1946	June 25, 1946	6.25	-	6,900
1922	Apr. 11, 1922	6.15	-	7,380	1947	Dec. 15, 1946	4.03	2.5	-
1923	Apr. 23, 1923	3.41	-	3,290		Apr. 13, 1947	3.73	-	3,530
1924	May 11, 1924	3.24	-	3,100	1948	Mar. 27, 1948	4.52	-	4,450
1925	Mar. 28, 1925	3.12	-	2,970		Apr. 12, 1948	4.00	-	4,090
1926	Apr. 17, 1926	2.20	-	2,030	1949	May 7, 1949	4.64	-	4,580
1927	Mar. 19, 1927	5.70	-	6,540		July 11, 1949	4.44	-	4,330
1928	Sept.17, 1928	3.80	-	3,690	1950	Apr. 19, 1950	6.96	-	8,100
1929	Mar. 31, 1929	3.60	-	3,460		May 6, 1950	8.22	-	10,200
1930	May 14, 1930	3.28	-	3,130	1951	Apr. 14, 1951	5.32	-	5,840
1931	June 24, 1931	3.25	-	3,080		June 4, 1951	3.42	-	3,450
1932	Apr. 8, 1932	3.35	-	3,240		June 27, 1951	4.97	-	5,440
1933	Apr. 3, 1933	3.55	0.6	3,160		July 5, 1951	4.26	-	4,500
1934	Apr. 8, 1934	5.45	1.0	5,090		Sept.14, 1951	4.45	-	4,370
1935	Mar. 23, 1935	5.50	-	5,630	1952	Nov. 15, 1951	3.90	-	4,010
1936	Apr. 16, 1936	5.07	-	4,980		Apr. 9, 1952	4.91	-	5,170
1937	Apr. 22, 1937	3.47	-	3,400		June 29, 1952	4.26	-	4,500
1938	May 7, 1938	4.12	-	4,000		July 21, 1952	6.12	-	6,980
1939	Mar. 30, 1939	5.16	1.0	-					
	Mar. 31, 1939	4.67	-	4,920					
1940	Apr. 10, 1940	4.55	1.8	-					
	May 16, 1940	3.01	-	2,930					

Peak stages and discharges of St. Croix River near Danbury, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1953	Apr. 4, 1953	3.61	-	3,560	1956	June 14, 1956	3.88	-	3,990
	May 22, 1953	6.05	-	6,540					
	June 21, 1953	4.21	-	4,130	1957	Nov. 30, 1956	a4.80	3.5	-
	July 3, 1953	3.62	-	3,450		Apr. 22, 1957	3.16	-	3,100
	Aug. 9, 1953	3.34	-	3,120		June 24, 1957	3.62	-	3,600
						July 21, 1957	3.48	-	3,450
1954	Apr. 16, 1954	3.93	-	4,050					
	May 2, 1954	7.38	-	8,900	1958	July 2, 1958	7.11	-	8,500
	June 1, 1954	3.57	-	3,640					
	June 20, 1954	3.88	-	3,990	1959	May 12, 1959	3.37	-	3,420
	June 26, 1954	3.91	-	4,020					
	July 11, 1954	3.30	-	3,340	1960	Apr. 4, 1960	-	-	b3,800
						Apr. 14, 1960	3.58	-	3,650
1955	Dec. 10, 1954	6.20	4.5	-		Apr. 25, 1960	3.82	-	3,910
	Apr. 6, 1955	4.06	-	4,200		May 26, 1960	3.06	-	3,080
	Aug. 4, 1955	3.56	-	3,630					
					1961	Apr. 22, 1961	4.00	-	4,130
1956	Nov. 20, 1955	5.19	3.5	-		May 16, 1961	6.20	-	7,130
	Apr. 13, 1956	4.64	-	4,950					

a Affected by backwater from ice.
b Approximate daily mean discharge; peak affected by backwater from ice.

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., 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.

Gage.--Nonrecording prior to Oct. 21, 1938; recording thereafter. Datum of gage is 848.98 ft above mean sea level, adjustment of 1912 (levels by Northern States Power Co.).

Stage-discharge relation.--Defined by current-meter measurements below 20,800 cfs.

Historical data.--Flood of May 7, 1950, highest in 40 years, from information by local residents.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1923	Apr. 24, 1923	7.65	-	5,920	1943	Apr. 3, 1943	10.75	2.4	-
1924	May 4, 1924	8.25	-	7,000		June 4, 1943	10.75	-	9,800
1925	Mar. 27, 1925	7.9	-	6,460	1944	June 7, 1944	12.79	-	15,900
					1945	Mar. 20, 1945	12.19	-	14,400
1926	Sept.20, 1926	6.68	-	4,180					
1927	Mar. 18, 1927	11.4	-	13,300	1946	June 27, 1946	12.5	-	15,100
1928	Apr. 1, 1928	9.05	-	8,500	1947	Apr.14-16,1947	8.30	-	7,060
1929	Apr. 1, 1929	8.64	-	7,740	1948	Mar. 29, 1948	9.56	-	8,700
1930	June 7, 1930	7.70	-	5,850	1949	May 8, 1949	11.44	-	13,400
					1950	May 7, 1950	15.06	-	26,300
1931	June 25, 1931	8.7	-	7,560					
1932	Apr. 10, 1932	9.06	-	8,280	1951	Apr. 15, 1951	11.78	-	14,500
1933	Apr. 2, 1933	7.06	-	4,890	1952	July 22, 1952	13.2	-	19,000
1934	Apr. 9, 1934	7.84	-	6,020	1953	May 23, 1953	12.42	-	16,300
1935	Mar. 24, 1935	11.24	-	12,600	1954	May 3, 1954	13.81	-	21,100
					1955	Apr. 3, 1955	9.64	-	9,660
1936	Apr. 13, 1936	11.42	-	13,300					
1937	Apr.16,24,1937	8.20	-	6,730	1956	Apr. 6, 1956	11.31	0.5	12,600
1938	May 8, 1938	11.08	-	12,600	1957	June 25, 1957	9.92	-	10,000
1939	Mar. 29, 1939	11.14	0.8	-	1958	July 3, 1958	13.00	-	18,300
	Mar. 30, 1939	-	-	10,500	1959	June 2, 1959	8.57	-	7,550
1940	Apr. 10, 1940	9.13	-	7,830	1960	Apr. 5, 1960	a9.44	-	-
						Apr. 16, 1960	-	-	7,770
1941	Sept.17, 1941	11.67	-	12,700					
1942	May 4, 1942	9.08	-	7,850	1961	May 17, 1961	12.48	-	16,500

a Affected by backwater from ice.

3365. Kettle River near Sandstone, Minn.

Location.--Lat 46°09'30", long 92°50'40", in SE¼SE¼ sec.34, T.43 N., R.20 W., at northeast corner of present city limits of Sandstone, 1.5 miles upstream from Great Northern Railroad bridge, and 2 miles upstream from bridge on State Highway 8.

Drainage area.--825 sq mi.

Gage.--Nonrecording. Altitude of gage is 980 ft (from river profile).

Stage-discharge relation.--Defined by current-meter measurements below 6,000 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Aug. 12, 1909	6.60	5,940	1913	May 23, 1913	5.3	3,300
1910	Mar. 24, 1910	3.75	1,410	1914	June 29, 1914	6.7	5,770
				1915	May 17, 1915	4.8	2,580
1911	May 20, 1911	4.80	2,560				
1912	May 7, 1912	7.6	10,200	1916	Apr. 24, 1916	7.7	10,600

3375. Snake River at Mora, Minn.

Location.--Lat 45°51'50", long 93°17'50", in sec.14, T.39 N., R.24 W., at bridge on State Highway 65, three-quarters of a mile south of Mora and 1¼ miles upstream from Ann River.

Drainage area.--422 sq mi.

Gage.--Nonrecording. Altitude of gage is 941 ft (from nearby reference mark).

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Aug. 14, 1909	10.1	1,300	1912	May 6, 1912	16.7	4,170
1910	Mar. 16, 1910	8.7	805	1913	May 22, 1913	11.2	1,680
1911	Sept.16, 1911	9.40	a1,000				

a Maximum daily.

3385. Snake River near Pine City, Minn.

Location.--Lat 45°50'30", long 92°56'00", in SE¼NW¼ 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 1½ miles northeast of Pine City.

Drainage area.--958 sq mi.

Gage.--Nonrecording prior to Oct. 29, 1951; recording thereafter. At site 500 ft downstream at different datum prior to Oct. 1, 1917. Datum of gage is 919.00 ft above sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 2,100 cfs. Only annual peaks are shown prior to 1952 water year.

Peak stages and discharges of Snake River near Pine City, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	July 2, 1914	-	a4,140	1954	May 4, 1954	8.13	7,710
1915	May 22, 1915	-	a1,890		June 28, 1954	6.99	5,130
1916	Apr. 25, 1916	5.40	7,315	1955	Apr. 7, 1955	6.65	4,480
1917	Apr. 6, 1917	-	a4,580				
				1956	Apr. 9, 1956	8.09	7,670
1950	May 9, 1950	-	12,500				
				1957	June 26, 1957	7.72	6,730
1952	Nov.16-22,1951	-	(b)				
	Apr. 12, 1952	8.30	7,550	1958	Apr. 12, 1958	4.80	1,500
	July 3, 1952	6.32	3,930				
	July 25, 1952	7.98	6,960	1959	June 5, 1959	4.88	1,600
1953	Apr. 2, 1953	6.47	4,260	1960	Apr. 5, 1960	5.10	2,000
	May 5, 1953	5.34	2,240				
	May 26, 1953	6.75	4,760	1961	May 20, 1961	5.33	2,290
	June 25, 1953	7.09	5,380				
	Aug. 9, 1953	6.61	4,510				

a Maximum daily discharge.
b Discharge not determined but greater than 2,810 cfs sometime during period.

3395. St. Croix River near Rush City, Minn.

Location.--Lat 45°42'15", long 92°52'20", in SW¼ sec.8, T.37 N., R.20 W., 200 ft upstream from old site of Northern Pacific Railway bridge, 5 miles east of Rush City, 10 miles downstream from Snake River, and at mile 80.6.

Drainage area.--5,120 sq mi, approximately.

Gage.--Nonrecording prior to Feb. 22, 1950; recording thereafter. Prior to Aug. 18, 1934, at site 200 ft downstream. Datum of gage is 772.47 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 46,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Apr. 24, 1923	5.4	8,300	1942	May 16, 1942	8.96	16,400
1924	May 14, 1924	6.3	9,320	1943	June 3, 1943	12.00	26,000
1925	Apr. 25, 1925	4.6	5,700	1944	June 7, 1944	15.3	38,900
				1945	Mar. 20, 1945	15.0	37,600
1926	Sept.20, 1926	4.5	4,780				
1927	Mar. 17, 1927	10.3	20,300	1946	June 27, 1946	13.24	30,500
1928	Mar. 27, 1928	9.9	19,100	1947	Apr. 14, 1947	8.56	15,300
1929	Mar.30,Apr. 1, 1929	7.6	12,700	1948	Apr. 8, 1948	8.64	15,300
				1949	May 8, 1949	10.46	20,900
1930	May 15, 1930	8.36	15,900	1950	May 8, 1950	19.04	60,600
1931	June 25, 1931	8.40	15,400	1951	Apr. 14, 1951	14.50	35,100
1932	Apr. 9, 1932	8.2	14,600	1952	July 22, 1952	16.10	43,100
1933	May 3, 1933	4.44	5,610	1953	June 22, 1953	12.25	26,700
1934	Apr. 9, 1934	5.78	8,740	1954	May 3, 1954	16.22	43,700
1935	Mar. 25, 1935	10.66	21,400	1955	Apr. 3, 1955	9.70	18,500
1936	Apr. 14, 1936	12.44	27,700	1956	Apr. 7, 1956	12.28	28,100
1937	Apr. 16, 1937	7.18	11,700	1957	Apr. 1, 1957	a11.38	a23,000
1938	May 8, 1938	11.60	24,600	1958	July 4, 1958	12.03	27,200
1939	Apr. 1, 1939	11.2	23,200	1959	June 2, 1959	7.61	13,200
1940	Apr. 12, 1940	10.1	19,700	1960	Apr. 16, 1960	6.83	11,100
1941	Apr. 10, 1941	11.49	24,200	1961	May 17, 1961	11.31	24,700

a Gage height affected by backwater from ice jam and discharge by release of storage behind ice jam.

3400. Sunrise River near Stacy, Minn.

Location.--Lat 45°24'30", long 92°55'55", in NW¼NW¼ sec.26, T.34 N., R.21 W., on right bank on upstream side of highway bridge, 2½ miles northeast of Stacy, and 3 miles downstream from West Branch Sunrise River.

Drainage area.--167 sq mi.

Gage.--Nonrecording prior to Nov. 10, 1949, recording thereafter. Altitude of gage is 855 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 630 cfs and extended above.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 29, 1949	5.26	a168	1956	Apr. 7, 1956	6.64	296
					May 15, 1956	4.83	140
1950	Apr. 3, 1950	6.32	272		Aug. 7, 1956	5.90	212
	Apr. 14, 1950	6.60	329				
	May 7, 1950	6.77	384	1957	Mar. 25, 1957	c5.37	143
					Apr. 20, 1957	4.42	115
1951	Apr. 15, 1951	6.85	325		May 28, 1957	5.61	189
	May 16, 1951	4.98	149		June 18, 1957	5.13	142
	June 27, 1951	5.64	170		June 26, 1957	6.99	378
	July 9, 1951	5.47	157		July 21, 1957	5.44	163
	Sept.15, 1951	6.35	231		Aug. 16, 1957	4.65	111
					Sept.10, 1957	6.79	329
1952	Nov. 15, 1951	-	150				
	Apr. 12, 1952	7.88	806	1958	Apr. 11, 1958	4.85	124
	May 31, 1952	4.55	123				
	June 14, 1952	5.77	193	1959	May 7, 1959	4.18	101
	June 27, 1952	6.47	243		May 11, 1959	4.50	120
	July 26, 1952	5.56	158		June 1, 1959	4.46	108
	Sept. 1, 1952	4.74	106				
				1960	Apr. 1, 1960	5.43	177
1953	Mar. 25, 1953	b6.60	322		May 5, 1960	4.85	138
	May 4, 1953	5.77	214		May 25, 1960	6.76	324
	May 24, 1953	5.59	198		June 28, 1960	4.79	125
	June 9, 1953	4.85	144		Sept. 2, 1960	6.45	236
	June 30, 1953	6.33	261				
				1961	Mar. 28, 1961	5.40	168
1954	May 3, 1954	7.54	481		Apr. 21, 1961	6.02	224
	June 22, 1954	5.86	205		May 20, 1961	6.77	326
					June 13, 1961	5.10	152
1955	Apr. 3, 1955	5.77	202				
	June 6, 1955	4.45	109				

a Annual peak only.
b Backwater from ice, 0.03 ft.
c Backwater from ice, 0.23 ft.

3405. St. Croix River at St. Croix Falls, Wis.
(Published as "near St. Croix Falls" prior to October 1939)

Location.--Lat 45°24'30", long 92°38'45", in NW¼ sec.30, T.34 N., R.18 W., 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.

Gage.--Recording. 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 by Loweth and Wolff, consulting engineers of St. Paul, Minn., to determine the flow. July 1905 to February 1940, records were computed from power generation at the St. Croix Falls powerplant.

Stage-discharge relation.--Defined by current-meter measurements below 50,000 cfs.

Historical data.--The May 8, 1950, flood was the highest since 1888, from newspaper files of the St. Croix Falls Standard-Press.

Remarks.--Flow regulated by powerplant upstream, and by Nevers Reservoir (capacity, 500,000,000 cu ft) 10 miles upstream from 1889 until spring of 1950. Figures shown prior to 1940 are maximum daily discharges. Only annual peaks are shown.

Peak stages and discharges of St. Croix River at St. Croix Falls, Wis. a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	July 10, 1902	-	12,900	1935	Mar. 25, 1935	-	26,400
1903	Apr. 12, 1903	-	b20,200				
1904	Oct. 12, 1903	-	c23,600	1936	Apr. 15, 1936	-	31,000
1905	Oct. 22, 1904	-	18,700	1937	Apr.15,16,1937	-	12,500
				1938	May 9, 1938	-	30,000
1910	Mar. 21, 1910	-	9,870	1939	Mar. 31, Apr.1, 1939	-	24,800
1911	May 23, 1911	-	7,500	1940	May 18, 1940	7.12	14,300
1912	May 6, 1912	-	33,500				
1913	May 22, 1913	-	8,980	1941	Apr. 8, 1941	13.88	29,600
1914	June 29, 1914	-	15,300	1942	May 16, 1942	8.97	18,600
1915	June 22, 1915	-	15,100	1943	June 4, 1943	13.42	28,500
				1944	June 7, 1944	17.20	37,100
1916	Apr. 23, 1916	-	35,100	1945	Mar. 20, 1945	20.53	44,600
1917	Apr. 5, 1917	-	17,700				
1918	June 3,4,1918	-	10,100	1946	June 27, 1946	16.50	35,500
1919	Apr. 12, 1919	-	14,900	1947	Apr. 14, 1947	8.90	18,400
1920	Mar. 26, 1920	-	35,800	1948	Apr.10-13,1948	8.93	18,500
				1949	May 8, 1949	11.26	23,800
1921	Apr. 9, 1921	-	11,500	1950	May 8, 1950	25.19	54,900
1922	Apr.10,11, 1922	-	18,600				
1923	Apr. 28, 1923	-	8,880	1951	Apr. 15, 1951	15.70	33,700
1924	May 15, 1924	-	9,800	1952	July 23, 1952	19.80	43,000
1925	Apr. 26, 1925	-	d5,860	1953	May 24, 1953	15.20	32,600
				1954	May 4, 1954	20.40	44,400
1926	Sept.22, 1926	-	6,140	1955	Apr. 4, 1955	10.48	22,000
1927	Mar. 18, 1927	-	27,600				
1928	Mar. 30, 1928	-	21,800	1956	Apr. 7, 1956	14.77	31,600
1929	Apr.1,2, 1929	-	16,900	1957	June 24, 1957	12.19	25,800
1930	May 16, 1930	-	17,500	1958	July 4, 1958	13.25	28,200
				1959	June 3, 1959	7.16	14,500
1931	June 26, 1931	-	16,600	1960	Apr. 3, 1960	8.13	16,700
1932	Apr. 10, 1932	-	18,500				
1933	May 4, 1933	-	7,060	1961	May 18, 1961	12.95	27,500
1934	Apr. 12, 1934	-	12,100				

a Figures shown prior to 1940 are maximum daily discharges.
b Maximum daily mean; may have been exceeded in September during period of no gage-height record.
c Maximum daily mean; may have been exceeded during 3-day period of no gage-height record immediately preceding this date.
d On Oct. 1, 1924, the maximum daily discharge was 6,820 cfs, stage falling from peak on Sept. 30, 1924.

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., 1.8 miles upstream from mouth, and 3.5 miles downstream from Somerset.

Drainage area.--555 sq mi.

Gage.--Headwater and tailwater gages read hourly. Daily discharge computed from hourly records of gate openings, head, and plant efficiency.

Remarks.--Flow regulated by many powerplants upstream. Records of daily discharge furnished by Northern States Power Co. Only maximum daily discharges are shown.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	June 1905	-	2,280	1919	Apr. 12, 1919	-	1,120
				1920	Mar. 26, 1920	-	1,370
1906	May 1906	-	2,250				
1907	March 1907	-	1,640	1921	Mar. 29, 1921	-	671
1908	May 1908	-	1,380	1922	Apr. 11, 1922	-	1,420
1909	June 1909	-	1,060	1923	Apr. 14, 1923	-	1,060
1910	December 1909	-	603	1924	Apr. 8, 1924	-	537
				1925	Mar. 24, 1925	-	598
1911	Apr. 20, 1911	-	540				
1912	May 24, 1912	-	930	1926	Mar. 25, 1926	-	932
1913	Apr.3,19, 1913	-	990	1927	Mar. 18, 1927	-	982
1914	June 29, 1914	-	870	1928	Mar. 27, 1928	-	1,160
1915	Apr. 7, 1915	-	824	1929	Mar. 20, 1929	-	1,140
				1930	Feb. 26, 1930	-	919
1916	Apr. 23, 1916	-	1,800				
1917	Apr. 6, 1917	-	966	1931	Nov. 21, 1930	-	381
1918	June 3, 1918	-	1,160	1932	Apr. 8, 1932	-	1,220

Maximum daily discharges of Apple River near Somerset, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Apr. 1, 1933	-	1,300	1948	Mar. 28, 1948	-	1,780
1934	Apr. 5, 1934	-	1,670	1949	Mar. 29, 1949	-	942
1935	Mar. 24, 1935	-	814	1950	Apr.3,May 8, 1950	-	1,290
1936	Apr. 12, 1936	-	1,690				
1937	May 27, 1937	-	558	1951	Apr.14-16,1951	-	1,930
1938	Sept.12, 1938	-	2,160	1952	Apr. 10, 1952	-	2,380
1939	Mar. 26, 1939	-	1,570	1953	Mar. 23, 1953	-	1,300
1940	Apr. 9, 1940	-	1,010	1954	May 5, 1954	-	2,200
				1955	Apr. 7, 1955	-	760
1941	Apr. 4, 1941	-	1,400				
1942	June 9, 1942	-	1,020	1956	Apr. 8, 1956	-	1,540
1943	June 17, 1943	-	2,460	1957	Mar. 25, 1957	-	890
1944	June 7, 1944	-	1,930	1958	Apr. 10, 1958	-	703
1945	Mar. 18, 1945	-	1,890	1959	Sept. 3, 1959	-	495
				1960	May 27, 1960	-	1,060
1946	June 27, 1946	-	1,870				
1947	Apr. 13, 1947	-	1,150	1961	Mar. 31, 1961	-	981

3420. Kinnikinnic River near River Falls, Wis.

Location.--Lat 44°49'50", long 92°44'00", in sec.18, T.27 N., R.19 W., at Clifton Hollow Bridge, a quarter of a mile downstream from abandoned plant of Clifton Falls Power Co., 1.9 miles upstream from mouth, and 5.5 miles west of River Falls.

Drainage area.--167 sq mi.

Gage.--Recording. Altitude of gage is 690 ft (by topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 400 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1917	Mar. 27, 1917	5.67	1,970	1920	Mar. 15, 1920	7.98	4,760
1918	June 5, 1918	6.60	3,080	1921	June 14, 1921	5.35	410
1919	Mar. 12, 1919	7.00	3,560				

MISSISSIPPI RIVER MAIN STEM

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.

Gage.--Nonrecording 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. Recording at present site at datum 69.28 ft higher Aug. 2, 1932, to Oct. 30, 1938. Datum of present gage is 600.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers). Gage heights shown in table are adjusted to present datum. Auxiliary recording gage 10.7 miles downstream from base gage.

Stage-discharge relation.--Defined by current-meter measurements. Affected by changing slope resulting from operation of navigation dam 3.

Remarks.--Floodflow not materially affected by artificial storage. Only annual peaks are shown.

Peak stages and discharges of Mississippi River at Prescott, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 25, 1929	81.57	49,600	1946	Mar. 25, 1946	82.46	65,500
1930	May 19, 1930	79.22	33,700	1947	May 6, 1947	82.32	63,100
				1948	Apr.2,3, 1948	82.49	63,100
1931	June 28, 1931	76.54	22,400	1949	Apr. 8, 1949	81.57	53,800
1932	Apr. 13, 1932	78.53	30,300	1950	May 11, 1950	85.21	101,000
1933	Apr. 7, 1933	75.60	19,800				
1934	Apr. 13, 1934	74.60	15,000	1951	Apr. 17, 1951	87.50	128,000
1935	Mar. 27, 1935	79.18	36,200	1952	Apr.16-18,1952	89.03	155,000
				1953	June 25, 1953	83.09	67,700
1936	Apr. 17, 1936	81.74	52,500	1954	May 5, 1954	84.30	82,800
1937	Apr. 30,May 1, 1937	78.62	31,000	1955	Apr. 7, 1955	80.55	45,200
1938	May 11, 1938	82.32	60,700	1956	Apr. 10, 1956	82.63	62,700
1939	Apr. 2, 1939	82.41	65,000	1957	June 30, 1957	85.13	94,000
1940	Apr. 14, 1940	78.87	33,800	1958	July 6, 1958	77.59	28,400
				1959	June 5, 1959	78.53	35,300
1941	Apr. 13, 1941	82.91	67,600	1960	May 30, 1960	81.56	54,000
1942	May 21, 1942	80.56	42,400				
1943	Apr. 8, 1943	83.84	80,200	1961	May 20, 1961	80.54	46,300
1944	June 9, 1944	83.99	84,700				
1945	Mar. 23, 1945	84.17	87,500				

VERMILLION RIVER BASIN

3460. Vermillion River at Hastings, Minn.

Location.--Lat 44°43'11", long 92°51'56", in SE¼SW¼ sec.33, T.115 N., R.17 W., at highway bridge in Hastings, 0.7 mile upstream from milldam, and 3 miles upstream from Vermillion Slough.

Drainage area.--195 sq mi.

Gage.--Nonrecording. Prior to Oct. 1, 1945, at datum 2.00 ft higher. Datum of gage is 781.59 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1942	May 31, 1942	6.10	-	1,160	1945	Mar. 16, 1945	-	-	1,710
1943	Mar. 26, 1943	6.80	4.90	-					
	Sept. 7, 1943	-	-	585	1946	Mar. 4, 1946	8.94	1.79	1,070
1944	Feb. 27, 1944	6.04	3.18	-	1947	Feb. 13, 1947	8.23	4.20	-
	May 4, 1944	-	-	921		June 2, 1947	-	-	324
1945	Mar. 14, 1945	7.10	1.21	-					

CANNON RIVER BASIN

3552. Cannon River at Welch, Minn.

Location.--Lat 44°33'50", long 92°43'55", in NW¼SW¼ sec.27, T.113 N., R.16 W., on right bank 0.3 mile downstream from highway bridge at Welch and 1.8 miles upstream from Belle Creek.

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

Gage.--Nonrecording at datum 3.00 ft lower prior to Nov. 11, 1930; recording thereafter. At site 0.3 mile upstream prior to Oct. 12, 1938. Datum of gage is 699.16 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 9,100 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Cannon River at Welch, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1911	June 4, 1911	6.9	-	701	1945	Mar. 14, 1945	10.33	-	8,840
1912	Oct. 17, 1911	12.85	-	5,300					
1913	Mar. 24, 1913	10.4	-	3,120	1946	Mar. 14, 1946	7.52	-	4,470
					1947	Apr. 11, 1947	8.68	-	6,090
1931	June 24, 1931	4.92	-	1,190	1948	Mar. 20, 1948	11.77	1.70	9,050
1932	Mar. 7, 1932	10.70	-	-	1949	Mar. 24, 1949	8.11	-	5,230
	Apr. 7, 1932	-	-	4,270	1950	Mar. 27, 1950	10.17	-	9,200
1933	Jan. 22, 1933	11.44	-	10,500					
1934	Apr. 3, 1934	7.38	-	3,980	1951	July 21, 1951	11.68	-	14,600
1935	Aug. 8, 1935	8.22	-	4,290	1952	Apr. 2, 1952	12.00	-	15,800
					1953	July 25, 1953	7.44	-	4,200
1936	Mar. 23, 1936	12.04	-	11,300	1954	June 20, 1954	11.30	-	13,200
1937	Mar. 4, 1937	7.24	1.0	2,690	1955	July 8, 1955	9.59	-	8,150
1938	Sept.10, 1938	8.55	-	5,940					
1939	Mar. 23, 1939	11.14	-	10,800	1956	Apr. 3, 1956	7.28	-	4,800
1940	Mar. 30, 1940	7.05	2.10	-	1957	Aug. 14, 1957	8.11	-	5,840
	July 11, 1940	-	-	2,330	1958	June 4, 1958	7.27	-	4,780
					1959	June 26, 1959	6.80	-	4,220
1941	Mar. 29, 1941	8.33	-	5,510	1960	May 23, 1960	10.16	-	9,420
1942	Sept.18, 1942	9.99	-	8,230					
1943	Mar. 27, 1943	8.76	-	6,240	1961	Mar. 26, 1961	7.47	-	5,020
1944	May 4, 1944	10.85	-	9,980					

CHIPPEWA RIVER BASIN

3555. West Fork Chippewa River at Lessards, near Winter, Wis.

Location.--Lat 45°54'00", long 91°05'40", in sec.34, T.40 N., R.6 W., at Lessards, 1 mile upstream from East Fork Chippewa River and 6.7 miles northwest of Winter.

Drainage area.--577 sq mi.

Gage.--Nonrecording. Prior to July 18, 1915, at site 100 ft upstream at datum 0.15 ft lower. Altitude of gage is 1,280 ft (from reservoir data).

Remarks.--Flow regulated by Moose Lake (capacity, 400 million cubic feet). Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	May 8, 1912	6.7	1,400	1915	June 10, 1915	7.3	1,840
1913	June 9, 1913	6.9	1,580				
1914	May 3, 1914	6.9	1,440	1916	Apr. 22, 1916	7.7	2,360

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., 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.

Gage.--Nonrecording prior to July 23, 1930; recording thereafter. Prior to Jan. 27, 1914, at datum 3.44 ft higher. Altitude of gage is 1,270 ft (from Lake Chippewa data).

Stage-discharge relation.--Defined by current-meter measurements below 6,500 cfs.

Remarks.--Flow completely regulated since 1923 by Lake Chippewa and Moose Lake. Only annual peaks are shown.

Peak stages and discharges of Chippewa River at Bishops Bridge, near Winter, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	May 6-19, 1912	6.9	a2,820	1937	Nov.20-25, 1936	5.75	a1,200
1913	Apr. 11, 1913	8.2	a4,410	1938	May 5, 1938	7.83	3,650
1914	May 3,4, 1914	7.7	a3,280	1939	June 15, 1939	8.55	4,660
1915	June 9, 1915	7.7	3,680	1940	Sept. 5, 1940	6.75	2,050
1916	Apr. 22, 1916	9.6	7,020	1941	Sept. 4, 1941	11.05	7,520
1917	Apr. 21, 1917	7.4	3,260	1942	June 6, 1942	7.56	3,260
1918	June 1, 1918	7.3	3,120	1943	June 15, 1943	8.19	4,130
1919	Apr. 15, 1919	7.35	3,190	1944	June 8-12, 1944	8.85	a5,060
1920	Mar. 31, 1920	7.7	a3,680	1945	June 16, 1945	7.70	3,340
1921	Apr. 30, 1921	7.2	a2,980	1946	June 29, 1946	10.70	7,220
1922	Apr. 12, 1922	9.3	6,420	1947	June 17-23, 1947	6.52	a2,030
1923	Aug. 15, 1923	7.75	3,750	1948	(d)	5.41	a919
1924	Sept.14, 1924	6.7	2,310	1949	Nov. 13, 1948	5.16	722
1925	Feb. 14, 1925	6.3	1,800	1950	May 11, 1950	10.07	6,650
1926	Sept.20-24, 1926	8.5	a4,920	1951	July 9, 1951	7.89	3,620
1927	Nov. 16, 1926	7.6	3,360	1952	July 22-25, 1952	7.72	3,340
1928	Sept.17, 1928	7.9	3,810	1953	July 5-7, 1953	8.18	4,070
1929	Oct. 18, 1928	7.9	3,810	1954	Mar. 4, 1954	10.25	6,800
1930	Nov. 29, 1929	6.4	1,870	1955	Oct. 15, 1954	7.02	2,490
1931	Dec. 12, 1930	5.95	a1,450	1956	Oct. 4, 1955	5.67	1,100
1932	(b)	5.80	a1,250	1957	Oct. 1, 1956	5.34	818
1933	(c)	5.20	a746	1958	July 9, 1958	7.84	3,480
1934	Aug.3-6, 1934	5.30	a819	1959	Sept. 1, 1959	7.35	2,890
1935	Jan.18,19, 1935	6.30	a1,780	1960	Sept. 3, 1960	8.52	4,630
1936	May 14, 1936	7.00	2,600	1961	May 23, 1961	6.29	1,670

a Maximum daily discharge. b Occurred in December 1931 and February 1932.
c Occurred in November and December 1932, June and July 1933. d Oct. 27-31; Nov. 1 2, 4, 5, 1947.

3565. Chippewa River near Bruce, Wis.

Location.--Lat 45°27'05", long 91°15'40", in SE¼ sec.5, T.34 N., R.7 W., 1 mile east of Bruce and 1 mile downstream from Thornapple River.

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

Gage.--Nonrecording prior to May 28, 1935, at railroad bridge 0.8 mile upstream at datum 2.30 ft higher; recording thereafter. Datum of gage is 1,059.62 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs.

Historical data.--The flood of Sept. 1, 1941, was the highest for at least 40 years, information from the Ladysmith, Wis., newspaper.

Remarks.--Flow regulated by Moose Lake since 1893 and by Lake Chippewa since 1923. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	Apr. 30, 1914	9.4	8,720	1931	June 11, 1931	5.0	3,480
1915	May 18, 1915	7.1	6,000	1932	Apr. 8, 1932	8.7	7,950
				1933	Apr. 1, 1933	6.20	4,470
1916	Apr. 22, 1916	12.4	13,600	1934	Apr. 6, 1934	8.7	7,950
1917	Apr. 21, 1917	8.2	7,240	1935	Mar. 24, 1935	12.5	13,800
1918	June 2, 1918	9.8	9,520				
1919	Apr. 11, 1919	9.2	8,680	1936	Apr. 12, 1936	13.00	12,100
1920	Mar. 27, 1920	12.7	14,100	1937	Apr. 22, 1937	8.38	5,890
				1938	May 6, 1938	12.94	12,000
1921	Apr. 29, 1921	9.3	8,780	1939	Mar. 27, 1939	13.18	12,400
1922	Apr. 10, 1922	13.8	15,100	1940	Apr. 10, 1940	9.15	7,040
1923	Apr. 21, 1923	10.0	9,060				
1924	Apr. 26, 1924	11.0	11,300	1941	Sept. 1, 1941	20.46	25,800
1925	Mar. 28, 1925	4.9	3,620	1942	May 31, 1942	11.52	10,200
				1943	June 28, 1943	15.84	17,000
1926	Sept.19, 1926	12.0	12,900	1944	Apr. 25, 1944	9.82	7,990
1927	Mar. 17, 1927	10.8	11,000	1945	June 3, 1945	14.04	13,900
1928	Mar. 27, 1928	8.8	8,080				
1929	Oct. 19, 1928	7.9	6,920	1946	June 28, 1946	12.12	11,000
1930	June 14, 1930	4.9	3,380	1947	June 5, 1947	7.60	5,410

Peak stages and discharges of Chippewa River near Bruce, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 27, 1948	8.09	5,960	1956	Apr. 6, 1956	12.72	11,900
1949	May 6, 1949	9.27	7,360	1957	June 23, 1957	6.82	4,620
1950	Apr. 18, 1950	12.70	11,900	1958	July 2, 1958	11.00	9,500
				1959	July 9, 1959	8.82	6,780
1951	Apr. 12, 1951	13.06	12,500	1960	Aug. 29, 1960	12.41	11,500
1952	Apr. 9, 1952	11.11	9,630				
1953	May 22, 1953	14.44	14,500	1961	May 16, 1961	9.50	7,600
1954	May 2, 1954	17.0	19,400				
1955	Oct. 16, 1954	8.72	6,660				

3575. Flambeau River at Flambeau Flowage, Wis.
(Published as "at Flambeau Reservoir" prior to 1956)

Location.--Lat 46°04'05", long 90°13'45", near north line of sec.3, T.41 N., R.2 E., 0.5 mile downstream from Flambeau Flowage dam, 10.6 miles southwest of Mercer, and at mile 114.5.

Drainage area.--666 sq mi.

Gage.--Nonrecording prior to Oct. 25, 1947; recording thereafter. Datum of gage is 1,540.0 ft above mean sea level (Northern States Power Co. bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs.

Remarks.--Flow completely regulated by Flambeau Flowage and Rest Lake, which have a combined capacity of 6,560 million cubic feet. Peaks prior to 1948 are maximum observed. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Feb. 14, 1928	5.8	1,410	1945	June 8, 1945	6.75	2,000
1929	Oct. 21, 1928	6.76	2,140				
1930	Aug.14-31,1930	4.75	714	1946	July 25, 1946	5.22	964
				1947	June 11-17,1947	6.29	1,760
1931	Oct.4-7,10,1930	4.58	616	1948	May 24-27, 1948	4.64	585
1932	Feb.3-12,15-21, 1932	4.80	727	1949	July 6, 1949	5.67	1,250
				1950	May 21, 1950	6.08	1,580
1933	Oct. 1, 1932	4.75	643				
1934	May 26,June 5, 10-18, 1934	4.52	565	1951	June 28, 1951	7.32	2,460
				1952	July 22-27,1952	8.40	3,440
1935	July 6-8,1935	7.00	2,300	1953	July 2, 1953	7.10	2,200
				1954	May 3, 1954	8.38	3,420
1936	May 8, 1936	7.37	2,600	1955	Oct. 21, 1954	6.71	1,910
1937	Sept.17, 1937	4.68	630				
1938	June 4-9, 1938	7.28	2,520	1956	Feb. 13, 1956	5.65	1,180
1939	May 28, 1939	8.39	3,440	1957	Mar. 20, 1957	5.01	761
1940	June 5-9, 1940	6.31	1,740	1958	Feb. 13, 1958	5.00	755
				1959	Mar. 4, 1959	4.95	724
1941	Oct. 1-5, 1940	5.28	1,030	1960	Oct. 31, 1959	6.99	2,190
1942	July 22-25,1942	8.25	3,260				
1943	June 15, 1943	7.92	3,000	1961	Oct. 1, 1960	6.14	1,530
1944	June 12, 1944	6.89	2,200				

3580. Flambeau River near Butternut, Wis.

Location.--Lat 46°00'35", long 90°22'10", in lot 10, sec.28, T.41 N., R.1 E., 2.5 miles downstream from Deer Creek and 6 miles east of Butternut.

Drainage area.--737 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,500 ft above mean sea level (from elevation of dams).

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs.

Remarks.--Flow regulated by Rest Lake (capacity, 260 million cubic feet in summer and 660 million cubic feet in winter) since 1887 and by Flambeau Flowage (capacity, 5,900 million cubic feet) since March 1926. Only annual peaks are shown.

Peak stages and discharges of Flambeau River near Butternut, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	June 10, 1915	6.20	2,840	1927	July 17, 1927	5.2	2,160
				1928	May 5, 1928	4.6	1,830
1916	Apr. 22, 1916	9.1	5,530	1929	Oct. 22, 1928	5.7	2,580
1917	Apr. 26, 1917	4.2	1,500	1930	Nov. 2, 1929	2.7	808
1918	June 3, 1918	4.55	1,720				
1919	July 7, 1919	6.25	2,880	1931	Oct. 11, 1930	2.7	808
1920	June 12, 1920	6.50	3,080	1932	June 11, 1932	2.85	855
				1933	Apr. 19, 1933	2.6	762
1921	Apr. 8, 1921	5.80	2,560	1934	June 26, 1934	2.8	808
1922	Apr. 9, 1922	7.16	3,620	1935	July 7, 1935	5.7	2,510
1923	Apr. 25, 1923	6.9	3,400				
1924	May 14, 1924	5.25	2,180	1936	May 9, 1936	6.5	3,370
1925	Apr. 25, 1925	3.15	962	1937	Sept. 2, 1937	2.95	855
				1938	June 6, 1938	6.10	2,960
1926	July 10, 1926	3.60	1,170				

3585. Flambeau River at Babb's Island, near Winter, Wis.

Location.--Lat 45°46'10", long 90°45'45", in SE¼ sec.17, T.38 N., R.3 W., 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 (Geological Survey river-profile map).

Drainage area.--1,000 sq mi, approximately.

Gage.--Recording. At datum 9.0 ft lower prior to Oct. 1, 1934, and present datum thereafter. Prior to Sept. 9, 1938, at bridge 300 ft upstream. Altitude of gage is 1,330 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 8,000 cfs.

Remarks.--Flow regulated by Flambeau Flowage and Rest Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1930	May 18,Sept.27, 1930	11.3	-	1,170	1946	June 25, 1946	9.45	-	9,440
					1947	Apr. 6, 1947	5.70	-	a3,000
					1948	Mar. 27, 1948	-	-	a2,200
1931	June 27, 1931	12.40	-	2,010		Mar. 28, 1948	3.86	0.8	-
1932	Apr. 13, 1932	11.85	-	1,550	1949	July 6, 1949	7.34	-	6,770
1933	Apr. 20, 1933	12.37	-	2,010	1950	Apr. 19, 1950	6.64	-	6,050
1934	Sept.26, 1934	13.21	-	2,550					
1935	July 3, 1935	4.98	-	4,200	1951	Apr. 11, 1951	5.77	-	5,080
					1952	July 23, 1952	6.52	-	5,930
1936	Apr. 16, 1936	5.47	-	4,900	1953	May 22, 1953	7.26	-	6,890
1937	Apr. 25, 1937	3.19	-	1,870	1954	May 1, 1954	6.70	-	6,170
1938	May 7, 1938	5.49	-	4,900	1955	Apr. 3, 1955	a4.93	-	3,600
1939	June 12, 1939	6.52	-	6,400					
1940	Apr. 17, 1940	4.87	1.0	-	1956	Apr. 7, 1956	5.42	1.0	-
	June 7, 1940	-	-	2,960		Apr. 8, 1956	-	-	3,700
					1957	Mar. 29, 1957	a3.67	-	-
1941	Sept. 1, 1941	7.08	-	7,250		Apr. 21, 1957	-	-	1,960
1942	Dec. 12, 1941	5.05	2.5	-	1958	July 2, 1958	5.99	-	5,310
	June 13, 1942	-	-	3,920	1959	Sept. 7, 1959	4.89	-	3,740
1943	June 17, 1943	7.67	-	7,380	1960	Apr. 24, 1960	5.18	-	4,330
1944	June 6, 1944	6.18	-	5,560					
1945	June 3, 1945	5.74	-	4,960	1961	May 15, 1961	4.19	-	3,130

a Affected by ice.

3595. South Fork Flambeau River near Phillips, Wis.

Location.--Lat 45°42'10", long 90°37'00", in NW¼SW¼ sec.10, T.37 N., R.2 W., on downstream side of bridge, 0.5 mile downstream from Big Elk River and 12 miles west of Phillips.

Drainage area.--615 sq mi.

Gage.--Nonrecording and crest-stage gage. Altitude of gage is 1,360 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 15, 1930	9.4	3,180	1946	June 26, 1946	13.0	7,460
				1947	Apr. 7, 1947	9.5	3,210
1931	June 22, 1931	10.1	3,820	1948	Apr. 27, 1948	7.4	1,480
1932	Apr. 11, 1932	10.7	4,380	1949	July 6, 1949	10.9	4,600
1933	Apr. 16, 1933	9.4	3,180	1950	Apr. 19, 1950	11.7	5,490
1934	Apr. 10, 1934	13.6	8,680				
1935	Mar.21,31,1935	-	5,000	1951	Apr. 12, 1951	11.88	5,750
				1952	Apr. 20, 1952	11.29	5,030
1936	Apr. 16, 1936	12.1	5,780	1953	May 22, 1953	9.30	3,020
1937	Apr. 16, 1937	9.3	2,870	1954	May 3, 1954	12.4	6,230
1938	June 2, 1938	10.7	4,400	1955	Oct. 16, 1954	10.50	4,240
1939	Mar. 27, 1939	10.9	4,600				
1940	May 22, 1940	9.4	3,100	1956	Apr. 8, 1956	9.6	3,250
				1957	Apr. 21, 1957	8.1	1,900
1941	Aug. 31, 1941	12.0	5,630	1958	July 3, 1958	11.20	5,070
1942	June 1, 1942	9.2	2,930	1959	Sept.23, 1959	11.66	5,420
1943	June 18, 1943	14.32	10,200	1960	Aug. 30, 1960	10.30	4,020
1944	June 7, 1944	10.8	4,500				
1945	June 3, 1945	11.36	5,140	1961	May 17, 1961	9.81	3,480

3600. Flambeau River near Ladysmith, Wis.

Location.--Lat 45°33'20", long 90°57'30", in S½ sec.35, T.36 N., R.5 W., at Big Falls powerplant of Lake Superior District Power Co., 2.3 miles upstream from Josie Creek, 4 miles upstream from highway bridge, and 8.5 miles northeast of Ladysmith.

Drainage area.--1,823 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1923. Prior to Jan. 1, 1914, in Ladysmith at different datum. Jan. 1, 1914, to Sept. 30, 1923, at site 8 miles downstream at different datum. Oct. 1, 1923, to Sept. 24, 1943, headwater and tailwater gages at present site. Sept. 25, 1943, to Sept. 30, 1950, recording gage at site 4 miles downstream at datum 1,150.28 ft above mean sea level, datum of 1929 (levels by Fargo Engineering Co.). Headwater and tailwater gages read hourly since Oct. 1, 1950.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs.

Historical data.--The flood of Apr. 11, 1922, was the highest since June 1880.

Remarks.--Flow regulated by Rest Lake and since 1926 by Flambeau Flowage. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1903	May 28, 1903	-	-	13,500	1916	Apr. 23, 1916	-	-	18,100
1904	July 4, 1904	-	-	9,270	1917	June 8, 1917	-	-	8,400
1905	June 7, 1905	-	-	9,000	1918	June 1, 1918	-	-	10,400
					1919	Apr. 12, 1919	-	-	10,100
1906	Apr. 15, 1906	-	-	11,000	1920	Mar. 31, 1920	-	-	12,000
1914	Apr. 29, 1914	-	-	12,200	1921	Apr. 30, 1921	-	-	7,880
1915	May 18, 1915	-	-	11,000	1922	Apr. 11, 1922	-	-	20,200

Peak stages and discharges of Flambeau River near Ladysmith, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1923	Apr. 23, 1923	-	-	13,200	1945	Mar. 21, 1945	15.00	8.0	-
1924	Apr. 18, 1924	-	-	a9,520		June 2, 1945	-	-	13,500
1925	Apr. 27, 1925	-	-	a4,140					
					1946	June 25, 1946	-	-	18,600
1926	Sept.19, 1926	-	-	8,860	1947	Oct. 28, 1946	-	-	6,550
1927	Mar. 18, 1927	-	-	8,350		Apr. 7,9, 1946	9.75	3.0	-
1928	Apr. 6, 1928	-	-	8,120	1948	Mar. 26, 1948	8.34	2.5	-
1929	Apr. 7, 1929	-	-	7,240		Apr. 28, 1948	-	-	4,440
1930	June 15, 1930	-	-	5,710	1949	July 6, 1949	-	-	14,100
					1950	Apr. 20, 1950	-	-	13,000
1931	June 22, 1931	-	-	b5,440					
1932	Apr. 10, 1932	-	-	b7,460	1951	Apr. 12, 1951	-	-	14,200
1933	Apr. 20, 1933	-	-	b5,140	1952	Apr. 23, 1952	-	-	10,600
1934	Apr. 9, 1934	-	-	b7,080	1953	May 22, 1953	-	-	10,600
1935	Mar. 27, 1935	-	-	b8,160	1954	May 2, 1954	-	-	13,700
					1955	Oct. 16, 1954	-	-	7,100
1936	Apr. 15, 1936	-	-	b10,900					
1937	Apr. 14, 1937	-	-	b5,460	1956	Apr. 8, 1956	-	-	6,370
1938	June 2, 1938	-	-	b10,000	1957	Apr. 21, 1957	-	-	b4,110
1939	Nov. 6, 1939	-	-	b9,900	1958	July 2, 1958	-	-	b10,700
1940	May 21, 1940	-	-	b5,490	1959	Sept.23, 1959	-	-	b9,520
					1960	Apr.25,Aug.29, 1960	-	-	b8,050
1941	Aug. 31, 1941	-	-	b17,900					
1942	Oct. 8, 1941	-	-	b6,000					
1943	June 17, 1943	-	-	b17,800	1961	May 16, 1961	-	-	b7,270
1944	June 6, 1944	-	-	10,200					

a At site 8 miles downstream.
b Maximum daily discharge.

3605. Flambeau River near Bruce, Wis.

Location.--Lat 45°22'20", long 91°12'35", in lot 7 of NW¼ 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.

Gage.--Recording. Altitude of gage is 1,060 ft (by river survey, WSP 417).

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs.

Remarks.--Flow regulated by several powerplants above station and by Rest Lake and Flambeau Flowage. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 23, 1952	8.36	11,000	1958	July 2, 1958	9.55	14,000
1953	May 22, 1953	8.82	12,000	1959	Aug. 28, 1959	8.28	-
1954	May 1, 1954	10.90	17,400		Sept.22, 1959	-	10,600
1955	Oct. 16, 1954	7.33	8,100	1960	Aug. 28, 1960	9.41	13,600
1956	Apr. 10, 1956	6.81	7,170	1961	May 15, 1961	7.92	9,830
1957	Apr. 3, 1957	5.65	4,710				

3610. Chippewa River near Holcombe, Wis.

Location.--Lat 45°18'05", long 91°12'30", in NW¼ sec.35, T.33 N., R.7 W., at Flambeau Store, 1.4 miles downstream from Flambeau River and 6.9 miles northwest of Holcombe.

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

Gage.--Nonrecording. Altitude of gage is 1,040 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 23,000 cfs.

Remarks.--Flow regulated by Lake Chippewa, Moose Lake, Flambeau Flowage, and Rest Lake. Only annual peaks are shown.

Peak stages and discharges of Chippewa River near Holcombe, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 7, 1944	11.0	18,100	1947	Apr. 8, 1947	11.0	18,100
1945	June 3, 1945	13.0	28,100	1948	Mar. 27, 1948	(a)	b10,200
				1949	Apr. 1, 1949	11.9	22,300
1946	Mar. 17, 1946	13.8	32,500				

a Affected by ice jam.
b Maximum daily discharge.

3615. South Fork Jump River near Ogema, Wis.

Location.--Lat 45°23'20", long 90°30'30", in NW¼ sec.33, T.34 N., R.1 W., 2.1 miles downstream from Mondeaux River and 11 miles southwest of Ogema.

Drainage area.--328 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,300 ft (from planimetric map).

Stage-discharge relation.--Defined by current-meter measurements below 8,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 13, 1944	9.4	3,600	1950	Apr. 18, 1950	12.6	6,760
1945	Mar. 19, 1945	11.7	6,160				
				1951	Apr. 12, 1951	11.96	6,100
1946	June 25, 1946	14.56	9,020	1952	Apr. 9, 1952	9.76	3,930
1947	Apr. 7, 1947	9.1	3,300	1953	June 21, 1953	10.14	4,200
1948	Mar. 28, 1948	8.6	2,850	1954	May 3, 1954	11.00	5,050
1949	July 7, 1949	9.4	3,570				

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 downstream side of highway bridge in Sheldon, 1,500 ft upstream from Shoulder Creek and 11 miles upstream from mouth.

Drainage area.--574 sq mi.

Gage.--Nonrecording except recording gage from Feb. 9, 1939, to Aug. 31, 1941, at same site and datum. Datum of gage is 1,092 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 13,000 cfs and by contracted-opening measurement at 46,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	Apr. 22, 1916	9.5	8,800	1931	June 21, 1931	7.7	5,390
1917	Apr. 22, 1917	7.0	4,200	1932	Apr. 8, 1932	9.7	10,400
1918	May 27, 1918	9.0	7,800	1933	May 2, 1933	8.9	8,220
1919	Apr. 11, 1919	8.4	6,600	1934	Apr. 8, 1934	8.4	6,650
1920	Mar. 26, 1920	11.5	15,700	1935	Mar. 23, 1935	9.9	10,800
1921	Mar. 20, 1921	9.0	7,800	1936	May 7, 1936	9.9	10,800
1922	Apr. 10, 1922	9.4	8,600	1937	Apr. 14, 1937	7.4	4,490
1923	Apr. 21, 1923	10.7	13,300	1938	Sept.10, 1938	10.2	11,700
1924	Apr. 25, 1924	8.7	7,660	1939	Nov. 5, 1938	11.28	15,200
1925	June 14, 1925	7.0	4,200	1940	May 21, 1940	8.26	6,150
1926	Sept.19, 1926	8.6	7,470	1941	Aug. 31, 1941	18.8	46,000
1927	Mar. 16, 1927	10.1	11,500	1942	Sept.18, 1942	12.8	14,900
1928	Mar. 26, 1928	9.5	9,800	1943	June 27, 1943	11.7	11,000
1929	Mar. 18, 1929	8.7	7,720	1944	June 5, 1944	10.16	6,900
1930	June 14, 1930	9.3	9,260	1945	Mar. 19, 1945	9.6	6,920

Peak stages and discharges of Jump River at Sheldon, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	June 25, 1946	12.9	17,200	1955	Apr. 3, 1955	9.58	6,260
1947	Apr. 6, 1947	9.89	7,430				
1948	Mar. 27, 1948	8.4	4,250	1956	Apr. 6, 1956	10.4	8,090
1949	July 6, 1949	9.0	5,450	1957	Mar. 26, 1957	a7.80	b2,000
1950	Apr. 18, 1950	11.5	12,000	1958	July 2, 1958	9.35	5,830
				1959	Sept.28, 1959	9.95	6,700
1951	Apr. 12, 1951	11.57	11,900	1960	May 6, 1960	10.10	7,300
1952	Apr. 9, 1952	10.50	8,350				
1953	Mar. 23, 1953	10.2	7,600	1961	Mar. 28, 1961	c15.00	b8,500
1954	May 1, 1954	11.4	11,100				

a Affected by ice.
b About.
c Maximum observed; result of ice jam.

3625. Chippewa River at Holcombe, Wis.

Location.--Lat 45°13'40", long 91°07'15", in sec.28, T.32 N., R.6 W., 500 ft upstream from highway bridge at west edge of Holcombe, 3.6 miles upstream from Fisher River, and 3.6 miles downstream from Jump River.

Drainage area.--4,700 sq mi, approximately.

Gage.--Nonrecording. Prior to Dec. 14, 1944, nonrecording gage 500 ft downstream at same datum; used as auxiliary gage thereafter. Datum of gage is 998.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 50,000 cfs.

Remarks.--Flow regulated by Lake Chippewa, Moose Lake, Flambeau Flowage, and Rest Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 28, 1943	16.60	55,000	1947	Apr. 8, 1947	21.2	a24,000
1944	June 6, 1944	10.6	23,600	1948	Mar. 27, 1948	13.2	18,400
1945	June 3, 1945	12.66	34,000	1949	July 7, 1949	20.5	44,200
1946	Mar. 17, 1946	22.2	51,000				

a Maximum daily discharge.

3640. Yellow River at Cadott, Wis.

Location.--Lat 44°57'10", long 91°09'00", in center of E½ sec.31, T.29 N., R.6 W., on upstream side of bridge, 200 ft downstream from Svetlik Dam at Cadott, and 6.0 miles upstream from Drywood Creek.

Drainage area.--351 sq mi.

Gage.--Nonrecording and crest-stage gage. Datum of gage is 946.54 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 16,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 28, 1943	12.15	15,600	1949	July 6, 1949	5.6	2,320
1944	May 12, 1944	6.2	3,560	1950	Apr. 11, 1950	6.9	4,050
1945	Mar. 19, 1945	6.9	4,110				
				1951	Apr. 8, 1951	8.3	6,170
1946	Mar. 16, 1946	8.6	6,670	1952	Apr. 9, 1952	6.6	3,600
1947	Apr. 6, 1947	6.5	3,460	1953	Mar. 23, 1953	7.0	4,200
1948	Mar. 27, 1948	4.7	1,410	1954	June 18, 1954	9.8	9,050

Peak stages and discharges of Yellow River at Cadott, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 15, 1955	8.30	6,170	1958	June 5, 1958	9.85	10,000
				1959	July 9, 1959	6.80	4,240
1956	Apr. 5, 1956	7.1	4,350	1960	May 7, 1960	6.14	3,300
1957	Mar. 24, 1957	a3.77	-				
	Mar. 26, 1957	-	651	1961	Mar. 28, 1961	6.80	4,240

a Affected by backwater from ice.

3645. Duncan Creek at Bloomer, Wis.

Location.--Lat 45°06'00", long 91°29'20", in sec.8, T.30 N., R.9 W., 0.3 mile below Bloomer Dam at Bloomer.

Drainage area.--49.2 sq mi.

Gage.--Nonrecording prior to June 24, 1945; recording June 24, 1945, to Sept. 30, 1951; crest-stage gage since May 15, 1957. Datum of gage is 979.46 ft above mean sea level, datum of 1929.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 15, 1945	7.7	1,130	1951	Sept.12, 1951	8.01	1,220
1946	Mar. 16, 1946	7.18	990	1958	June 5, 1958	6.49	790
1947	Apr. 6, Sept. 1, 1947	6.7	846	1959	July 8, 1959	10.83	2,300
				1960	Dec. 28, 1959	7.65	1,120
1948	Mar. 20, 1948	7.43	1,050				
1949	Mar. 24, 1949	7.38	1,050	1961	Mar. 27, 1961	6.45	775
1950	June 13, 1950	7.40	1,050				

3650. Duncan Creek at Chippewa Falls, Wis.

Location.--Lat 44°56'50", long 91°24'00", in SW¼ sec.31, T.29 N., R.8 W., on downstream side of bridge in Irvin Park at Chippewa Falls, 1.7 miles upstream from mouth.

Drainage area.--114 sq mi.

Gage.--Nonrecording. Datum of gage is 851.61 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 3, 1934	15.4	-	1949	Mar. 25, 1949	6.5	1,630
				1950	Mar. 27, 1950	7.5	2,420
1943	Mar. 31, 1943	8.35	3,310				
1944	Feb. 26, 1944	5.6	1,040	1951	Apr. 8, 1951	6.42	1,560
1945	Mar. 16, 1945	7.94	2,810	1952	Apr. 2, 1952	8.70	3,640
				1953	Mar. 22, 1953	6.18	1,430
1946	Mar. 17, 1946	6.5	1,560	1954	June 18, 1954	8.31	3,220
1947	Apr. 6, 1947	6.1	1,350	1955	Oct. 15, 1954	4.00	459
1948	Mar. 21, 1948	7.1	2,080				

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., at Chippewa Falls, 1 mile downstream from Duncan Creek.

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

Gage.--Nonrecording prior to January 1914; recording thereafter. Prior to July 1932, at site 1 mile upstream at different datum. Datum of gage is 799.3 ft above mean sea level (Northern States Power Co. bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 100,000 cfs.

Historical data.--Flood of Sept. 10, 1884, is the greatest known flood since 1838.

Remarks.--Flow regulated by many powerplants above station, especially Wissota powerplant since 1917 and Chippewa Falls powerplant since 1928, and by Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1884	Sept.10, 1884	26.94	-	1925	June 15, 1925	7.19	20,800
1888	July 19, 1888	8.6	25,700	1926	Sept.20, 1926	12.55	46,400
1889	May 14, 1889	8.2	24,200	1927	Mar. 16, 1927	13.40	52,100
1890	Apr. 13, 1890	9.1	27,600	1928	Mar. 26, 1928	12.86	48,700
				1929	Apr. 7, 1929	12.20	44,000
1891	Apr. 24, 1891	9.2	28,000	1930	Jan. 15, 1930	11.70	40,200
1892	May 21, 1892	11.3	38,400				
1893	May 13, 1893	12.1	43,400	1931	June 23, 1931	6.66	19,000
1894	May 16, 1894	14.4	59,000	1932	Apr. 9, 1932	13.1	50,100
1895	June 13, 1895	7.2	20,500	1933	Apr. 6, 1933	11.80	24,300
				1934	Sept.27, 1934	13.5	33,700
1896	Apr. 19, 1896	12.1	43,400	1935	Mar. 24, 1935	17.13	48,000
1897	Apr. 2, 1897	17.1	78,800				
1898	May 28, 1898	7.0	19,800	1936	Apr. 14, 1936	16.0	43,400
1899	May 6, 1899	8.8	27,400	1937	Apr. 23, 1937	12.9	27,800
1900	Sept.13, 1900	13.2	50,700	1938	Sept.10, 1938	19.07	64,600
				1939	Nov. 6, 1938	17.93	55,900
1901	Oct. 5, 1900	13.5	52,800	1940	June 8, 1940	13.76	31,600
1902	Apr. 28, 1902	8.0	24,200				
1903	Sept.16, 1903	13.4	52,100	1941	Sept. 1, 1941	24.8	102,000
1904	May 27, 1904	10.4	33,900	1942	May 31, 1942	19.30	60,100
1905	June 6, 1905	17.5	82,000	1943	June 28, 1943	22.20	81,000
				1944	May 13, 1944	13.32	29,900
1906	Apr. 15, 1906	11.6	40,200	1945	June 4, 1945	15.67	40,900
1907	Mar. 30, 1907	11.2	37,800				
1908	Apr. 29, 1908	9.0	28,200	1946	June 26, 1946	17.54	50,400
1909	May 18, 1909	8.6	26,600	1947	Apr. 8, 1947	12.59	26,700
1910	Nov. 15, 1909	7.8	23,000	1948	Apr. 1, 1948	7.6	9,860
				1949	July 7, 1949	12.87	28,000
1911	May 24, 1911	4.8	12,800	1950	Apr. 19, 1950	16.17	43,400
1912	Oct. 8, 1911	11.4	39,000				
1913	Apr. 4, 1913	11.2	37,800	1951	Apr. 13, 1951	18.50	56,200
1914	Apr. 30, 1914	11.0	36,700	1952	Apr. 9, 1952	14.96	37,600
1915	May 23, 1915	8.10	24,100	1953	May 23, 1953	14.41	34,800
				1954	May 2, 1954	20.65	69,400
1916	Apr. 23, 1916	13.45	52,400	1955	Oct. 15, 1954	13.88	32,400
1917	Apr. 23, 1917	8.32	24,900				
1918	June 1, 1918	12.4	45,400	1956	Apr. 7, 1956	13.92	32,600
1919	Apr.13-18, 1919	10.7	45,000	1957	June 24, 1957	8.53	12,300
1920	Mar. 27, 1920	17.0	78,000	1958	July 2, 1958	13.72	31,400
				1959	July 9, 1959	14.25	33,600
1921	Apr. 29, 1921	10.41	33,600	1960	Aug. 29, 1960	14.22	33,500
1922	Apr. 11, 1922	15.5	66,800				
1923	Apr. 22, 1923	14.40	59,000	1961	May 16, 1961	13.20	29,300
1924	Apr. 26, 1924	14.40	59,000				

3660. Eau Claire River near Augusta, Wis.

Location.--Lat 44°44'50", long 91°03'15", in sec.12, T.26 N., R.6 W., at Trouble Water Bridge, 5.6 miles northeast of Augusta, and 6 miles downstream from South Fork.

Drainage area.--500 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 910 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 5,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	May 23, 1915	7.9	4,630	1921	Mar. 21, 1921	9.1	5,620
				1922	Apr. 10, 1922	10.9	7,510
1916	Apr. 1, 1916	10.7	7,290	1923	Apr. 14, 1923	7.3	3,900
1917	Apr. 3, 1917	7.2	3,800	1924	Apr. 26, 1924	10.1	6,740
1918	May 27, 1918	9.2	5,720	1925	June 13, 1925	8.4	4,940
1919	June 25, 1919	9.4	5,920				
1920	Mar. 27, 1920	12.2	8,940	1926	Apr. 1, 1926	9.0	5,520

3665. Eau Claire River near Fall Creek, Wis.

Location.--Lat 44°48'35", long 91°16'50", in NW¼ sec.19, T.27 N., R.7 W., 0.7 mile downstream from Beaver Creek, 1.3 miles upstream from Big Falls, and 3.2 miles north of Fall Creek.

Drainage area.--747 sq mi.

Gage.--Recording to 1955; crest-stage gage since May 14, 1957. Altitude of gage is 830 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 17,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 1, 1943	15.87	16,800	1952	Apr. 3, 1952	15.28	15,700
1944	Apr. 25, 1944	7.15	3,620	1953	Mar. 23, 1953	11.67	9,140
1945	Mar. 19, 1945	13.11	11,500	1954	May 2, 1954	14.38	14,000
				1955	May 30, 1955	16.11	17,200
1946	Mar. 16, 1946	12.28	10,100				
1947	Apr. 7, 1947	10.96	8,100	1958	June 6, 1958	11.33	8,590
1948	Mar. 22, 1948	8.88	5,430	1959	July 8, 1959	-	(a)
1949	Mar. 29, 1949	6.98	3,430	1960	June 16, 1960	13.70	12,600
1950	Mar. 29, 1950	8.32	4,750				
				1961	Oct. 31, 1960	6.56	3,000
1951	Apr. 9, 1951	14.34	13,800				

a Discharge not determined.

3670. Chippewa River at Eau Claire, Wis.
(Published as "near Eau Claire" 1902-9)

Location.--Lat 44°48'40", long 91°32'10", in NE¼ sec.25, T.27 N., R.10 W., on downstream side of bridge on State Highways 37 and 85 at Eau Claire, 1.2 miles upstream from Lowes Creek, and 2.8 miles downstream from Eau Claire River.

Drainage area.--6,630 sq mi, approximately.

Gage.--Nonrecording. At different datum prior to 1944. Altitude of gage is 750 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 60,000 cfs.

Remarks.--Flow regulated by many powerplants above station and by Rest Lake since 1887, Moose Lake since 1893, Lake Wissota since 1917, Lake Chippewa since 1923, and by Flambeau Flowage since 1926. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Sept.15, 1903	19.0	53,700	1946	June 27, 1946	18.4	48,500
1904	May 28, 1904	13.7	33,300	1947	Apr. 7, 1947	15.0	33,100
1905	June 7, 1905	21.2	70,000	1948	Mar. 23, 1948	10.0	14,500
				1949	July 7, 1949	13.7	27,500
1906	Apr. 15, 1906	15.0	38,800	1950	Apr. 19, 1950	16.4	39,300
1907	Mar. 31, 1907	15.4	40,000				
1908	Apr. 29, 1908	12.8	29,600	1951	Apr. 13, 1951	19.35	63,800
				1952	Apr. 9, 1952	15.5	39,000
1944	May 14, 1944	14.8	32,200	1953	Mar. 24, 1953	14.6	34,800
1945	June 4, 1945	17.0	42,000	1954	May 2, 1954	22.00	80,000

3675. Red Cedar River near Colfax, Wis.

Location.--Lat 45°03'50", long 91°42'45", in SW¼ sec.22, T.30 N., R.11 W., 3.2 miles downstream from Trout Creek and 4.7 miles north of Colfax.

Drainage area.--1,100 sq mi, approximately.

Gage.--Nonrecording prior to September 1925; recording thereafter. Prior to Sept. 10, 1937, at site 1 mile downstream at different datum. Altitude of gage is 940 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs.

Remarks.--Flow regulated by Birch, Red Cedar, Long, and Bear Lakes. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	June 28, 1914	5.1	-	4,590	1933	Apr. 1, 1933	5.44	-	4,700
1915	Apr. 7, 1915	4.1	-	3,250	1934	Apr. 3, 1934	11.4	-	21,900
					1935	Mar. 24, 1935	5.60	-	5,000
1916	Mar. 31, 1916	6.9	-	7,520					
1917	Apr. 3, 1917	5.0	-	4,450	1936	Mar. 24, 1936	7.75	-	9,780
1918	May 27,June 1, 1918	4.2	-	3,380	1937	Apr. 25, 1937	2.75	-	1,500
					1938	Sept. 9, 1938	8.04	-	14,700
1919	Mar. 18, 1919	5.1	-	4,590	1939	Mar. 23, 1939	7.17	1.5	-
1920	Mar. 26, 1920	7.0	-	7,700		Mar. 27, 1939	-	-	7,760
					1940	Apr. 7, 1940	4.80	-	4,110
1921	Apr. 28, 1921	3.4	-	2,420					
1922	Apr. 11, 1922	5.4	-	5,010	1941	Sept. 6, 1941	4.82	-	4,110
1923	Apr. 14, 1923	5.2	-	4,730	1942	Sept.18, 1942	6.66	-	9,130
1924	Apr. 5, 1924	4.3	-	3,510	1943	June 16, 1943	7.12	-	10,900
1925	Mar. 20, 1925	4.2	-	3,380	1944	Feb. 27, 1944	5.81	-	6,400
					1945	Mar. 16, 1945	6.98	-	10,500
1926	Sept. 4, 1926	6.00	-	5,970					
1927	Mar. 14, 1927	6.00	-	6,100	1946	Mar. 16, 1946	6.32	.7	5,850
1928	Mar. 24, 1928	5.34	-	4,550	1947	Apr. 12, 1947	4.35	-	3,470
1929	Mar. 20, 1929	5.7	-	5,150	1948	Mar. 21, 1948	5.82	-	6,400
1930	Feb. 23, 1930	6.5	1.5	4,120	1949	Mar. 26, 1949	5.27	-	5,100
					1950	Mar. 27, 1950	6.62	-	8,940
1931	Mar. 25, 1931	2.1	-	1,040					
1932	Apr. 8, 1932	4.75	-	4,170	1951	Apr. 12, 1951	6.00	-	6,970

Peak stages and discharges of Red Cedar River near Colfax, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1952	Apr. 2, 1952	6.29	-	7,900	1957	June 24, 1957	3.95	-	2,520
1953	Mar. 22, 1953	6.50	-	8,580	1958	Apr. 7, 1958	3.77	-	2,470
1954	June 18, 1954	6.95	-	10,300	1959	July 10, 1959	5.45	-	5,220
1955	Mar. 13, 1955	4.69	2.0	-	1960	Aug. 29, 1960	6.34	-	8,030
	Apr. 1, 1955	-	-	1,990					
					1961	Mar. 28, 1961	5.67	-	6,040
1956	Apr. 5, 1956	6.25	-	7,740					

3680. Hay River at Wheeler, Wis.

Location.--Lat 45°02'50", long 91°54'40", in SW¼ 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.

Gage.--Nonrecording prior to Mar. 25, 1951; recording thereafter. Datum of gage is 893.66 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs.

Historical data.--Flood in April 1934 reached the maximum known stage since at least 1915.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	April 1934	16.6	-	1955	Apr. 6, 1955	6.08	1,250
1951	Apr. 12, 1951	10.06	4,300	1956	Apr. 5, 1956	11.04	5,270
	Apr. 22, 1951	5.72	1,100		Aug. 4, 1956	7.01	1,700
	June 26, 1951	10.90	5,120				
	Sept.13, 1951	8.78	3,060	1957	Mar. 15, 1957	6.17	1,290
					Mar. 23, 1957	6.43	1,390
1952	Nov. 15, 1951	5.70	1,100		June 23, 1957	5.83	1,150
	Apr. 2, 1952	10.28	4,500				
	Apr. 9, 1952	10.92	5,120	1958	Feb. 27, 1958	8.50	2,790
	July 21, 1952	6.12	1,300		Apr. 6, 1958	6.17	1,290
	Aug. 20, 1952	8.90	3,150				
				1959	July 10, 1959	5.16	854
1953	Mar. 22, 1953	12.36	6,700				
	June 21, 1953	8.82	3,060	1960	Dec. 29, 1959	9.30	3,510
	June 25, 1953	5.45	1,060		Mar. 31, 1960	9.20	3,420
					Apr. 25, 1960	6.85	1,610
1954	Mar. 20, 1954	5.82	1,150		May 23, 1960	8.95	3,200
	Mar. 26, 1954	7.40	1,930		May 29, 1960	6.97	1,670
	Apr. 15, 1954	12.31	6,600		Aug. 29, 1960	10.50	4,700
	Apr. 27, 1954	10.53	4,730				
	May 1, 1954	10.70	4,910	1961	Mar. 21, 1961	6.33	1,340
	June 19, 1954	9.50	3,710		Mar. 28, 1961	10.58	4,790
	Sept.19, 1954	5.74	1,040		May 19, 1961	5.69	1,040
1955	Mar. 13, 1955	5.63	1,060				

3690. Red Cedar River at Menomonie, Wis.

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

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

Gage.--Nonrecording prior to Sept. 4, 1908, at site 1 mile downstream at different datum; recording thereafter. May 9, 1913, to Sept. 30, 1923, at present site at datum 0.42 ft lower. Datum of present gage is 780 ft above mean sea level (Northern States Power Co. bench mark).

Stage-discharge relation.--Prior to 1958, defined by current-meter measurements below 14,000 cfs and extended above on basis of computed flow over Cedar Falls Dam, 6 miles upstream. For 1958-61, rating curve is defined below and extended above 4,000 cfs.

Historical data.--The flood of Apr. 4, 1934, was probably exceeded by floods of June 4-6, 1880, and June 4, 1905, according to the Dunn County News.

Remarks.--Flow regulated by powerplants at Menomonie and Cedar Falls and by Birch, Red Cedar, Long, and Bear Lakes. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	Apr. 27, 1908	6.1	5,260	1937	Apr. 26, 1937	3.25	3,080
				1938	Sept.10, 1938	10.82	23,000
1913	Apr. 3, 1913	6.0	8,660	1939	Mar. 28, 1939	5.27	7,440
1914	June 6, 1914	5.4	6,580	1940	Apr. 7, 1940	5.18	7,220
1915	Apr. 7, 1915	5.13	6,140				
				1941	Apr. 3, 1941	4.78	6,390
1916	Mar. 31, 1916	7.0	12,700	1942	Sept.18, 1942	9.77	24,400
1917	Apr. 3, 1917	6.3	8,300	1943	June 17, 1943	6.84	13,700
1918	Mar. 20, 1918	6.05	7,570	1944	Apr. 8, 1944	4.33	5,620
1919	Mar. 17, 1919	-	6,000	1945	Mar. 17, 1945	7.67	16,800
1920	Mar. 26, 1920	8.0	14,000				
				1946	Mar. 17, 1946	5.87	10,600
1921	Mar. 28, 1921	4.50	4,520	1947	Apr. 13, 1947	4.14	5,120
1922	Apr. 11, 1922	5.35	6,880	1948	Mar. 22, 1948	4.80	6,850
1923	Apr. 14, 1923	5.70	8,120	1949	Mar. 26, 1949	5.45	9,020
				1950	Mar. 28, 1950	6.33	12,300
1925	Mar. 25, 1925	-	3,140				
				1951	Apr. 13, 1951	6.20	11,700
1926	Mar. 25, 1926	6.25	11,000	1952	Apr. 3, 1952	6.30	12,000
1927	Mar. 15, 1927	6.0	10,700	1953	Mar. 23, 1953	6.54	12,600
1928	Mar. 23, 1928	5.5	8,950	1954	June 19, 1954	6.54	12,700
1929	Mar. 21, 1929	6.7	12,500	1955	Apr. 2, 1955	2.91	2,520
1930	Feb. 24, 1930	4.5	6,050				
				1956	Apr. 5, 1956	6.56	12,900
1931	Apr. 20, 1931	2.60	1,920	1957	Mar. 25, 1957	3.55	4,740
1932	Apr. 8, 1932	4.80	6,890	1958	June 4, 1958	6.90	11,800
1933	Apr. 1, 1933	5.20	8,160	1959	July 8, 1959	7.4	13,500
1934	Apr. 4, 1934	16.0	40,000	1960	Aug. 29, 1960	7.25	13,000
1935	Mar. 23, 1935	5.5	7,880				
				1961	Mar. 28, 1961	6.91	11,800
1936	Mar. 24, 1936	8.50	14,900				

3695. Chippewa River at Durand, Wis.

Location.--Lat 44°37'45", long 91°58'10", in SW¼ sec.21, T.25 N., R.13 W., at Durand, 75 ft downstream from highway bridge, and 9.5 miles downstream from Red Cedar River.

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

Gage.--Nonrecording prior to Dec. 9, 1930, at bridge 400 ft downstream; recording thereafter at present site. Datum of gage is 694.59 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 95,000 cfs and extended above on basis of logarithmic plotting.

Historical data.--Maximum stage known, that of Sept. 12, 1884, from floodmarks (levels by Corps of Engineers).

Remarks.--Flow regulated by powerplants, Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, Lake Wissota, Birch Lake, Red Cedar Lake, Long Lake, and Bear Lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1884	Sept.12, 1884	18.4	a160,000	1946	Mar. 19, 1946	12.36	56,400
				1947	Apr. 9, 1947	9.89	33,600
1929	Mar. 21, 1929	11.9	49,000	1948	Mar. 23, 1948	b9.87	-
1930	June 17, 1930	10.6	37,700		Mar. 25, 1948	-	24,600
				1949	July 8, 1949	8.72	25,900
1931	June 23, 1931	7.42	21,000	1950	Apr. 20, 1950	11.58	46,200
1932	Apr. 10, 1932	11.85	44,300				
1933	Apr. 8, 1933	8.52	26,200	1951	Apr. 14, 1951	13.66	71,800
1934	Apr. 4, 1934	12.43	56,000	1952	Apr. 11, 1952	11.95	50,500
1935	Mar. 25, 1935	12.56	59,500	1953	Mar. 25, 1953	10.57	37,500
				1954	May 3, 1954	15.40	101,000
1936	Apr. 14, 1936	12.27	54,400	1955	Oct. 18, 1954	9.50	31,500
1937	Apr. 24, 1937	8.32	24,200				
1938	Sept.11, 1938	15.16	91,000	1956	Apr. 8, 1956	11.29	42,800
1939	Nov. 7, 1938	13.07	67,400	1957	Mar. 21, 1957	c7.40	-
1940	June 10, 1940	10.82	38,900		June 25, 1957	-	17,600
				1958	July 4, 1958	8.79	27,600
1941	Sept. 2, 1941	15.43	93,600	1959	July 11, 1959	10.11	35,000
1942	June 1, Sept.19, 1942	14.04	75,600	1960	Aug. 31, 1960	10.62	38,000
1943	June 30, 1943	14.42	80,700	1961	Mar. 30, 1961	10.03	34,500
1944	May 15, 1944	9.47	31,600				
1945	June 5, 1945	11.54	45,000				

a Estimated.
b Backwater from ice, 2.5 ft.
c Affected by backwater from ice.

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 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.

Gage.--Nonrecording and crest-stage gages. Prior to July 31, 1957, at datum 2.0 ft higher. Datum of gage is 910.45 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 5,000 cfs.

Historical data.--The flood of Sept. 18, 1942, reached the maximum stage known since at least 1894.

Remarks.--Base for partial-duration series, 1,500 cfs. Only annual peaks are shown prior to 1949.

Peak stages and discharges of Eau Galle River at Spring Valley, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Sept.18, 1942	16.98	a33,000	1953	July 26, 1953	6.27	3,480
1944	June 5, 1944	6.98	2,880	1954	Apr. 15, 1954	9.50	7,000
1945	Mar. 15, 1945	8.00	3,900		May 1, 1954	6.35	3,560
					June 20, 1954	6.21	3,430
1946	Mar. 13, 1946	6.80	2,680		Sept.18, 1954	4.24	1,710
1947	Apr. 11, 1947	6.4	2,310				
1948	Mar. 23, 1948	6.23	2,140	1955	Apr. 4, 1955	3.62	1,280
1949	Mar. 4, 1949	-	2,310	1956	Apr. 3, 1956	7.93	5,130
	Mar. 24, 1949	-	2,490		June 16, 1956	4.20	1,680
	July 27, 1949	7.05	2,980		Aug. 3, 1956	5.70	2,940
1950	Mar. 26, 1950	7.52	3,390	1957	Mar. 14, 1957	5.2	2,490
	Mar. 31, 1950	-	1,560				
				1958	Feb. 25, 1958	5.90	1,460
1951	June 24, 1951	5.6	2,730				
	June 25, 1951	5.3	2,460	1959	July 8, 1959	10.83	6,200
1952	Apr. 8, 1952	5.20	2,370	1960	Dec. 28, 1959	7.80	3,030
	Aug. 8, 1952	6.02	3,120		Mar. 27, 1960	8.00	3,210
1953	Mar. 21, 1953	5.94	3,140	1961	Mar. 27, 1961	7.26	2,540

a Estimated by Corps of Engineers on basis of slope-area measurement by Geological Survey of the peak discharge of 39,000 cfs at Elmwood, drainage area, 91.9 sq mi.

3705. Eau Galle River at Elmwood, Wis.

Location.--Lat 44°46'40", long 92°09'55", in sec.35, T.27 N., R.15 W., on downstream side of highway bridge in Elmwood, 2 miles upstream from Cady Creek.

Drainage area.--91.9 sq mi.

Gage.--Nonrecording and crest-stage gages. Altitude of gage is 840 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above by slope-area measurement.

Historical data.--The flood of Sept. 18, 1942, reached the maximum stage known.

Remarks.--Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Sept.18, 1942	18.2	a39,000	1950	Mar. 26, 1950	10.66	4,220
1943	Mar. 30, 1943	10.71	4,220				
1944	June 5, 1944	9.78	3,320	1951	June 25, 1951	8.70	2,360
1945	Mar. 15, 1945	11.3	4,900				
				1952	Apr. 6, 1952	8.50	2,120
1946	Mar. 13, 1946	10.60	4,110		Apr. 9, 1952	9.25	2,690
1947	Apr. 11, 1947	8.16	1,970				
				1953	Mar. 22, 1953	9.20	2,780
1948	Mar. 23, 1948	-	b1,300		July 26, 1953	10.70	4,220
					Aug. 31, 1953	11.18	4,780
1949	July 6, 1949	-	2,120				
	July 27, 1949	9.43	2,780				

a Result of slope-area measurement.
b Maximum daily discharge.

3720. Buffalo River near Tell, Wis.

Location.--Lat 44°23'30", long 91°50'55", in NW¼ sec.16, T.22 N., R.12 W., on downstream side of bridge, 0.3 mile north of Tell School, 1 mile northeast of Tell, and 6 miles northeast of Alma.

Drainage area.--406 sq mi.

Gage.--Nonrecording. Prior to Mar. 13, 1936, at datum 0.12 ft lower. Datum of gage is 680.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 4,500 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Mar. 31, 1933	6.31	1,970	1942	May 30, 1942	7.6	5,750
1934	Apr. 4, 1934	8.48	8,650	1943	Mar. 27, 1943	6.6	2,900
1935	Aug. 8, 1935	6.1	1,440	1944	Mar. 13, 1944	5.6	995
				1945	Mar. 15, 1945	7.60	5,750
1936	Mar. 21, 1936	6.9	3,270				
1937	Apr. 3, 1937	5.6	1,060	1946	Mar. 15, 1946	a6.0	1,200
1938	Sept. 9, 1938	7.5	5,430	1947	July 29, 1947	6.75	2,720
1939	Mar. 22, 1939	7.5	5,430	1948	Mar. 20, 1948	7.1	5,040
1940	June 23, 1940	7.7	6,200	1949	Mar. 26, 1949	5.3	1,080
				1950	Mar. 28, 1950	6.8	2,900
1941	Apr. 1, 1941	6.3	1,750				

a Backwater from ice, 0.4 ft.

ZUMBRO RIVER BASIN

3730. South Fork Zumbro River near Rochester, Minn.

Location.--Lat 44°04'00", long 92°27'55", in SE¼ sec.14, T.107 N., R.14 W., on left bank 30 ft upstream from ford, a quarter of a mile downstream from sewage plant, 1.6 miles north of Rochester, 2 miles downstream from Cascade Creek, and 2¼ miles downstream from Silver Lake Dam.

Drainage area.--304 sq mi, approximately (provisional computation).

Gage.--Recording. Datum of gage is 951.0 ft above mean sea level, datum of 1929 (levels by city of Rochester Sewage Department).

Stage-discharge relation.--Defined by current-meter measurements below 8,300 cfs and extended above on basis of logarithmic plotting.

Historical data.--Flood of July 21, 1951, reached the maximum stage known since at least 1908, from information by sewage plant superintendent.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 21, 1951	17.5	a15,000	1954	May 31, 1954	5.03	1,040
					June 10, 1954	8.68	2,950
1952	Mar. 31, 1952	13.26	8,670		June 19, 1954	11.21	5,420
	Apr. 15, 1952	5.48	1,230		June 22, 1954	5.17	1,090
	June 24, 1952	11.60	5,920				
	July 20, 1952	6.96	1,930	1955	Mar. 11, 1955	7.39	2,140
	July 28, 1952	5.74	1,340				
	Aug. 9, 1952	6.02	1,470	1956	Apr. 2, 1956	7.89	2,400
	Aug. 16, 1952	5.78	1,360		May 29, 1956	7.05	1,980
1953	Mar. 18, 1953	5.52	1,240	1957	July 28, 1957	5.58	1,050
	May 25, 1953	6.61	1,760				
	June 13, 1953	5.74	1,340	1958	June 4, 1958	13.54	8,180
	July 26, 1953	8.93	3,140				
	July 31, 1953	7.35	2,120	1959	Mar. 25, 1959	8.75	2,840
	Aug. 3, 1953	9.55	3,700		Mar. 30, 1959	6.17	1,240
					May 20, 1959	6.92	1,530
1954	May 1, 1954	5.61	1,280		June 26, 1959	10.38	3,560

Peak stages and discharges of South Fork Zumbro River near Rochester, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Aug. 22, 1959	8.33	2,190	1960	June 28, 1960	6.49	1,500
					July 3, 1960	10.50	3,900
1960	Mar. 27, 1960	9.49	3,070				
	Apr. 13, 1960	6.70	1,580	1961	Mar. 26, 1961	15.43	10,900
	May 6, 1960	5.22	1,000		May 31, 1961	9.05	2,720
	May 21, 1960	9.90	3,370				

3735. Zumbro River near Zumbro Falls, Minn.
(Formerly published as "South Fork Zumbro River")

Location.--Lat 44°14'30", long 92°29'05", in sec.15, T.109 N., R.14 W., 1½ miles upstream from mouth, 6 miles downstream from Middle Fork, and 6 miles southwest of town of Zumbro Falls.

Drainage area.--821 sq mi.

Gage.--Nonrecording. Altitude of gage is 845 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	Oct. 17, 1911	11.42	8,180	1916	Mar. 13, 1916	11.77	8,600
1913	Mar. 24, 1913	9.1	5,500	1917	Mar. 23, 1917	14.1	12,100
1914	June 27, 1914	10.72	7,410				
1915	Mar. 25, 1915	11.6	8,160				

3740. Zumbro River at Zumbro Falls, Minn.

Location.--Lat 44°17'12", long 92°25'56", in sec.36, T.110 N., R.14 W., on left bank in Zumbro Falls, 1,000 ft downstream from Spring Creek, 0.7 mile upstream from bridge on U.S. Highway 63, and 6.3 miles downstream from North Fork.

Drainage area.--1,130 sq mi, approximately.

Gage.--Nonrecording on bridge 800 ft downstream at present datum prior to Nov. 11, 1933; recording thereafter. Datum of gage is 811.26 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 22,000 cfs and extended above.

Historical data.--Stage of the flood of 1859 exceeded that of the 1888 flood.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1888	April 1888	a29.7	-	1931	July 1, 1931	10.48	2,950
				1932	Mar. 27, 1932	13.54	5,880
1910	Nov. 15, 1909	12.4	4,500	1933	Mar. 31, 1933	22.90	18,500
				1934	Apr. 4, 1934	26.26	21,800
1911	Feb. 15, 1911	b10.30	2,250	1935	Aug. 7, 1935	19.60	11,700
1912	Oct. 17, 1911	16.65	9,200				
1913	Mar. 24, 1913	12.4	4,730	1936	Mar. 21, 1936	20.18	13,300
1914	June 27, 1914	15.8	7,950	1937	Mar. 6, 1937	20.20	13,300
1915	Mar. 25, 1915	16.4	8,570	1938	Sept.10, 1938	21.30	14,000
				1939	Mar. 22, 1939	19.48	11,900
1916	Mar. 25, 1916	16.3	8,470	1940	July 11, 1940	17.80	9,690
1917	Mar. 25, 1917	19.04	13,100				
				1941	Mar. 29, 1941	12.81	4,130
1930	June 15, 1930	13.56	6,250	1942	June 1, 1942	20.26	12,000

a Stage at present site and datum, 30.5 ft.
b Backwater from ice, 1.5 ft.

Peak stages and discharges of Zumbro River at Zumbro Falls, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	July 6, 1943	21.87	14,900	1952	Apr. 1, 1952	23.98	19,000
1944	Feb. 26, 1944	16.22	7,520	1953	July 27, 1953	20.08	12,900
1945	Mar. 14, 1945	-	c18,500	1954	June 20, 1954	19.43	12,100
	Mar. 15, 1945	23.78	-	1955	Mar. 12, 1955	14.72	6,050
1946	Feb. 6, 1946	d16.70	-	1956	Apr. 2, 1956	19.88	12,700
	Mar. 13, 1946	-	7,000	1957	July 16, 1957	18.88	11,300
1947	Apr. 6, 1947	16.03	7,430	1958	June 5, 1958	20.90	14,100
1948	Mar. 19, 1948	23.84	17,900	1959	June 26, 1959	17.58	9,110
1949	Mar. 5, 1949	17.42	9,170	1960	May 22, 1960	21.78	15,500
1950	Mar. 27, 1950	24.82	12,200				
				1961	Mar. 26, 1961	21.69	15,400
1951	July 22, 1951	30.80	35,900				

c Maximum daily discharge.
d Backwater from ice, 4.85 ft.

3745. Zumbro River at Theilman, Minn.

Location.--Lat 44°17'15", long 92°11'25", in sec.36, T.110 N., R.12 W., on left bank at Theilman, a quarter of a mile upstream from highway bridge and 1 mile upstream from West Indian Creek.

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

Gage.--Nonrecording at site half a mile downstream at present datum prior to Jan. 17, 1951; recording thereafter. Datum of gage is 700.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs and extended above on basis of logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sept.11, 1938	38.38	12,400	1947	Apr. 5, 1947	36.49	7,600
1939	Mar. 22, 1939	37.50	11,300	1948	Mar. 20, 1948	39.64	19,900
1940	July 11, 1940	36.73	8,800	1949	Mar. 28, 1949	37.90	9,910
				1950	June 13, 1950	42.09	23,000
1941	Mar. 30, 1941	34.15	4,200				
1942	June 1, 1942	37.88	12,800	1951	July 22, 1951	43.43	33,000
1943	July 6, 1943	38.94	17,100	1952	Apr. 1, 1952	41.49	20,800
1944	Feb. 27, 1944	35.73	6,400	1953	July 27, 1953	40.31	15,200
1945	Mar. 15, 1945	40.10	22,000	1954	June 20, 1954	39.87	13,500
				1955	Oct. 3, 1954	38.13	8,240
1946	Feb. 7, 1946	a36.52	-				
	Mar. 14, 1946	-	6,210	1956	Apr. 2, 1956	40.85	14,600

a Backwater from ice, 3.74 ft.

WHITEWATER RIVER BASIN

3765. South Fork Whitewater River near Altura, Minn.

Location.--Lat 44°04'10", long 91°58'49", in SE¼ sec.14, T.107 N., R.10 W., on left bank 500 ft upstream from highway bridge, 1.4 miles upstream from small tributary entering from west, 2 miles west of Altura, and 2.4 miles upstream from Keefer Creek.

Drainage area.--76.8 sq mi.

Gage.--Recording. Datum of gage is 761.80 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 3,200 cfs and extended above.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges of South Fork Whitewater River near Altura, Minn.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Mar. 29, 1940	4.96	-	1,120
	July 10, 1940	9.35	-	4,240
	Aug. 16, 1940	4.98	-	1,120
1941	Mar. 9, 1941	3.42	-	495
	Mar. 24, 1941	3.80	-	642
	Sept.15, 1941	4.94	-	1,080
1942	Oct. 6, 1941	3.98	-	719
	Oct. 13, 1941	3.77	-	623
	Oct. 26, 1941	3.62	-	567
	Nov. 1, 1941	2.56	-	230
	Mar. 16, 1942	4.93	-	1,080
	May 30, 1942	7.56	-	2,670
	June 2, 1942	4.96	-	1,120
	June 5, 1942	5.57	-	1,370
	June 28, 1942	8.06	-	3,080
	July 12, 1942	3.72	-	604
	Aug. 8, 1942	4.10	-	758
	Aug. 18, 1942	2.62	-	245
	Sept. 1, 1942	4.40	-	876
	Sept.12, 1942	4.46	-	896
	Sept.17, 1942	5.23	-	1,200
1943	Mar. 25, 1943	5.95	0.20	1,450
	June 12, 1943	3.13	-	402
	July 5, 1943	6.58	-	1,800
1944	Feb. 26, 1944	4.01	.21	642
	Mar. 11, 1944	3.19	.24	343
	Mar. 21, 1944	2.92	-	333
	Mar. 23, 1944	4.03	-	738
	Apr. 1, 1944	3.03	-	369
	June 22, 1944	3.92	-	680
1945	Mar. 15, 1945	7.05	-	1,980
	May 21, 1945	2.81	-	299
	May 24, 1945	4.93	-	1,080
	May 31, 1945	5.66	-	1,410
	July 5, 1945	2.47	-	206
	July 21, 1945	7.87	-	2,910
1946	Nov. 1, 1945	2.98	-	353
	Jan. 5, 1946	8.05	(a)	-
	Mar. 6, 1946	4.92	.25	976
	Mar. 12, 1946	3.77	-	623
	Mar. 17, 1946	4.50	-	916
	Aug. 16, 1946	2.97	-	349
	Sept. 5, 1946	2.73	-	276
1947	Jan. 14, 1947	3.73	-	623
	Mar. 13, 1947	2.97	-	349
	Mar. 23, 1947	5.86	-	1,490
	Apr. 1, 1947	3.60	-	567
	Apr. 5, 1947	7.42	-	2,500
	Apr. 10, 1947	3.52	-	531
	June 7, 1947	3.31	-	460
	June 27, 1947	4.45	-	896
	July 12, 1947	2.51	-	217
	July 26, 1947	9.66	-	4,580
	Aug. 31, 1947	10.61	-	5,460
1948	Mar. 18, 1948	5.08	-	1,160
	July 12, 1948	2.63	-	248
	Aug. 9, 1948	4.20	-	797
1949	Jan. 15, 1949	2.77	-	287
	Mar. 4, 1949	5.50	.30	1,200
1949	Mar. 22, 1949	3.66	-	586
	Mar. 24, 1949	6.88	-	2,060
	Mar. 26, 1949	3.80	-	642
	Mar. 31, 1949	4.45	-	896
	June 23, 1949	3.52	-	531
	June 27, 1949	2.96	-	346
	July 27, 1949	5.92	-	1,490
1950	Mar. 7, 1950	7.76	-	2,850
	Mar. 26, 1950	9.84	-	4,710
	June 13, 1950	7.72	-	2,780
1951	Apr. 7, 1951	3.87	-	669
	June 1, 1951	2.55	-	227
	July 21, 1951	9.36	-	4,250
	Aug. 7, 1951	3.70	-	575
	Aug. 16, 1951	5.44	-	1,290
1952	Mar. 31, 1952	8.55	-	3,520
	June 24, 1952	4.97	-	1,080
	Aug. 3, 1952	2.47	-	202
	Aug. 8, 1952	3.94	-	657
	Aug. 16, 1952	3.63	-	536
1953	Mar. 12, 1953	2.96	-	333
	Mar. 17, 1953	3.32	-	445
	May 10, 1953	5.92	-	1,480
	May 25, 1953	4.54	-	910
	July 4, 1953	2.67	-	251
	July 21, 1953	2.63	-	241
	July 26, 1953	4.12	-	735
	July 29, 1953	2.76	-	276
	Aug. 1, 1953	2.47	-	202
	Aug. 3, 1953	3.10	-	372
1954	Mar. 19, 1954	3.00	-	259
	Mar. 25, 1954	3.29	-	338
	Apr. 7, 1954	3.21	-	380
	Apr. 26, 1954	3.72	-	544
	June 19, 1954	2.67	-	237
1955	Mar. 9, 1955	3.45	-	444
	July 8, 1955	7.02	-	2,180
	July 31, 1955	3.19	-	353
1956	Mar. 5, 1956	3.12	-	332
	Apr. 2, 1956	7.11	-	2,250
	July 1, 1956	5.00	-	1,070
	Aug. 29, 1956	4.38	-	808
1957	Feb. 24, 1957	5.13	-	1,130
	July 16, 1957	5.86	-	1,440
1958	Feb. 25, 1958	4.47	0.67	576
1959	Mar. 25, 1959	5.53	-	1,140
	Mar. 29, 1959	4.62	-	764
	May 20, 1959	3.73	-	492
	May 31, 1959	3.50	-	426
	June 25, 1959	4.10	-	584
	July 8, 1959	2.62	-	207
	Aug. 16, 1959	3.83	-	524
1960	Mar. 27, 1960	5.74	-	1,400
	Apr. 15, 1960	3.15	-	332
	Aug. 3, 1960	2.80	-	251
1961	Mar. 25, 1961	9.65	-	4,530

a Ice effect not determined.

3775. Whitewater River at Beaver, Minn.

Location.--Lat 44°08'35", long 92°00'14", in sec.15, T.108 N., R.10 W., 500 ft downstream from Beaver Creek and half a mile northeast of Beaver.

Drainage area.--288 sq mi.

Gage.--Nonrecording prior to Dec. 15, 1939; recording thereafter. Prior to Oct. 18, 1939, at site a quarter of a mile downstream at datum 88.70 ft lower. Datum of gage is 688.70 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 2,700 cfs and extended by logarithmic plotting.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	September 1938	92.75	a7,500	1947	Sept. 1, 1947	8.73	4,730
1940	Mar. 30, 1940	6.84	2,400	1948	Feb. 28, 1948	c8.34	-
	July 11, 1940	8.25	4,760		Mar. 19, 1948	8.01	3,380
					Aug. 10, 1948	6.25	1,250
1941	Mar. 10, 1941	5.65	1,460				
	Mar. 24, 1941	5.31	1,230	1949	Mar. 4, 1949	d9.01	4,330
	Sept.16, 1941	6.49	1,690		Mar. 25, 1949	8.10	3,570
					Mar. 31, 1949	7.28	2,260
1942	Mar. 21, 1942	6.61	1,780		June 23, 1949	6.46	1,390
	May 29, 1942	7.32	2,250		July 28, 1949	7.02	1,890
	May 31, 1942	6.19	1,290				
	June 2, 1942	6.87	1,780	1950	Mar. 8, 1950	9.52	6,190
	June 5, 1942	6.96	1,870		Mar. 26, 1950	9.98	7,940
	June 28, 1942	7.64	3,330		June 13, 1950	10.75	10,500
	Sept.12, 1942	5.43	1,150				
	Sept.18, 1942	7.34	2,840	1951	Apr. 7, 1951	7.58	1,710
					June 2, 1951	6.97	2,070
1943	Mar. 25, 1943	6.99	2,640		June 18, 1951	5.94	1,230
	May 30, 1943	5.82	1,560		July 21, 1951	10.66	10,200
	June 12, 1943	5.54	1,390		Aug. 8, 1951	7.01	2,110
	July 6, 1943	6.39	2,020		Aug. 17, 1951	7.80	3,160
1944	Feb. 26, 1944	-	b1,200	1952	Mar. 31, 1952	9.51	6,580
	Mar. 11, 1944	6.56	1,730		June 24, 1952	7.20	2,340
	Mar. 24, 1944	6.04	1,030		Aug. 3, 1952	5.89	1,200
	June 23, 1944	6.19	1,460		Aug. 9, 1952	6.15	1,360
					Aug. 16, 1952	5.57	1,040
1945	Mar. 14, 1945	8.40	4,140				
	May 25, 1945	6.77	1,770	1953	Mar. 17, 1953	6.40	1,540
	July 21, 1945	7.96	3,420		June 13, 1953	7.10	1,580
	July 31, 1945	5.60	1,020		July 27, 1953	9.55	6,680
					July 29, 1953	6.94	1,940
1946	Jan. 6, 1946	7.80	3,130		Aug. 4, 1953	6.46	1,370
	Feb. 6, 1946	8.44	4,140				
	Mar. 6, 1946	7.57	2,840	1954	Mar. 19, 1954	6.74	1,630
	Mar. 13, 1946	6.50	1,540		Mar. 25, 1954	7.14	2,210
					June 19, 1954	6.62	1,540
1947	Mar. 13, 1947	5.97	1,290				
	Mar. 24, 1947	7.99	3,440	1955	Mar. 10, 1955	8.24	2,350
	Apr. 1, 1947	6.80	1,960		July 8, 1955	8.00	1,970
	Apr. 5, 1947	8.96	5,350		July 31, 1955	7.21	1,100
	Apr. 10, 1947	6.71	1,870				
	July 27, 1947	8.80	4,930	1956	Apr. 2, 1956	9.50	4,720

a Computed by Corps of Engineers; annual peak only. b Maximum daily discharge.
c Backwater from ice, 3.54 ft. d Backwater from ice, 0.53 ft.

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, 9½ miles upstream from Trempealeau River, and at mile 725.7 upstream from the Ohio River.

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

Gage.--Nonrecording prior to Nov. 13, 1934; recording thereafter. Prior to Apr. 16, 1931, at site 800 ft upstream. At datum 0.20 ft higher prior to Oct. 1, 1929, and at datum 0.12 ft lower Oct. 1, 1929, to Apr. 15, 1931. Datum of gage is 639.64 ft above mean sea level, datum of 1929. Since Mar. 31, 1937, auxiliary recording gage 2.7 miles upstream at tailwater of navigation dam 5A.

Stage-discharge relation.--Defined by current-meter measurements. Affected by changing slope resulting from operation of navigation dam 6.

Remarks.--Floodflow not materially affected by artificial storage. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1880	June 18, 1880	a17.30	-	1946	Mar. 25, 1946	11.78	92,700
				1947	Apr.17, May 7-9, 1947	10.61	79,400
1929	Apr. 3, 1929	11.18	78,300				
1930	May 24, 1930	7.08	41,100	1948	Apr. 5-7, 1948	10.42	77,100
				1949	Apr. 11, 1949	9.25	65,200
1931	July 3, 1931	5.44	31,600	1950	May 14, 1950	14.06	122,000
1932	Apr. 14, 1932	9.76	62,600				
1933	Apr. 12, 1933	6.62	38,600	1951	Apr. 18, 1951	17.35	178,000
1934	Apr. 8, 1934	9.10	55,500	1952	Apr. 20, 1952	17.91	190,000
1935	Mar. 30, 1935	11.16	76,200	1953	June 29, 1953	10.88	82,800
				1954	May 7, 1954	16.25	156,000
1936	Apr. 20, 1936	12.30	94,900	1955	Apr. 12, 1955	8.89	64,400
1937	May 1, 1937	8.02	49,200				
1938	May 24, 1938	12.83	93,400	1956	Apr. 14, 1956	11.59	91,700
1939	Apr. 1, 1939	12.16	93,900	1957	July 4, 1957	11.96	95,800
1940	Apr. 17, 1940	7.83	51,700	1958	Apr. 14, 1958	6.58	43,500
				1959	July 13, 1959	6.38	41,900
1941	Apr. 15, 1941	11.93	86,700	1960	June 3, 1960	9.49	70,000
1942	June 4, 1942	13.25	103,000				
1943	June 22, 1943	14.79	135,000	1961	May 23, 1961	9.22	67,600
1944	May 17, 1944	12.98	105,000				
1945	Mar. 26, 1945	13.35	115,000				

a From information by Corps of Engineers.

GILMORE CREEK BASIN

3790. Gilmore Creek at Winona, Minn.

Location.--Lat 44°02'40", long 91°41'25", in sec.29, T.107 N., R.7 W., on left bank at west edge of Winona, 1,500 ft upstream from bridge on U.S. Highway 14, 2¼ miles upstream from Lake Winona, and 6½ miles upstream from mouth.

Drainage area.--8.95 sq mi.

Gage.--Recording. Datum of gage is 672.92 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 260 cfs and extended above on basis of slope-area measurement at 2,200 cfs and logarithmic plotting.

Remarks.--Base for partial-duration series, 60 cfs.

Peak stages and discharges of Gilmore Creek at Winona, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 29, 1940	2.57	137	1949	Mar. 24, 1949	3.07	185
					Mar. 26, 1949	1.68	61
1941	Sept.15, 1941	2.74	169		Mar. 31, 1949	2.26	121
					June 27, 1949	3.10	284
1942	Oct. 13, 1941	4.42	715		Aug. 17, 1949	3.20	333
	Mar. 16, 1942	2.64	150				
	May 29, 1942	3.07	244	1950	Mar. 7, 1950	2.62	176
	May 30, 1942	2.10	66		Mar. 26, 1950	3.00	330
	June 2, 1942	3.80	470		June 13, 1950	2.01	91
	June 28, 1942	6.74	2,200		June 23, 1950	1.98	112
	Sept.12, 1942	1.97	60				
	Sept.18, 1942	2.43	116	1951	June 2, 1951	2.23	117
					July 21, 1951	9.47	5,360
1943	June 12, 1943	4.01	545		Aug. 7, 1951	2.42	144
	July 5, 1943	4.87	835		Aug. 16, 1951	2.42	144
1944	(a)	2.08	104	1952	Mar. 31, 1952	2.10	101
	Mar. 11, 1944	2.12	110		July 19, 1952	2.50	156
	Mar. 23, 1944	2.49	167				
	June 22, 1944	4.49	820	1953	May 25, Aug. 3, 1953	-	-
1945	Mar. 13, 1945	2.75	198				
	Mar. 24, 1945	1.89	70	1954	June 20, 1954	1.66	53
	May 21, 1945	1.89	70				
	May 24, 1945	2.88	227	1955	July 8, 1955	3.22	318
	May 31, 1945	4.11	605				
	July 21, 1945	2.45	141	1956	Apr. 3, 1956	1.83	73
	July 31, 1945	5.58	1,370				
				1957	Feb. 24, 1957	c2.42	123
1946	Nov. 8, 1945	5.11	1,070		July 3, 1957	2.13	105
	Jan. 5, 1946	b3.09	118		July 16, 1957	1.81	72
	Sept. 6, 1946	2.74	196		July 20, 1957	2.74	198
1947	Mar. 23, 1947	2.93	240	1958	Oct. 19, 1957	1.02	22
	Apr. 5, 1947	3.95	552				
	June 7, 1947	2.11	102	1959	Mar. 24, 1959	1.68	180
	June 27, 1947	3.20	312		Mar. 30, 1959	1.25	102
	June 28, 1947	5.26	1,160		June 25, 1959	3.08	585
	June 30, 1947	2.31	128		Aug. 26, 1959	1.83	212
	July 27, 1947	6.97	2,460				
	Aug. 9, 1947	4.18	645	1960	Mar. 27, 1960	1.80	201
	Aug. 31, 1947	5.15	1,100				
				1961	Mar. 2, 1961	1.75	199
1948	Feb. 27, 1948	2.33	131		Mar. 4, 1961	1.00	69
	Mar. 16, 1948	1.81	72		Mar. 25, 1961	2.59	425
	July 10, 1948	1.76	68				
	Sept.19, 1948	1.75	67				

a Occurred during period Jan. 23 to Feb. 15.
b Backwater from ice, 0.60 ft.
c Backwater from ice, 0.15 ft.

TREMPEALEAU RIVER BASIN

3795. Trempealeau River at Dodge, Wis.

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

Drainage area.--643 sq mi.

Gage.--Nonrecording and crest-stage gages. Datum of gage is 663.42 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 15,000 cfs.

Historical data.--The flood of Mar. 17, 1919, was the highest since 1876, which was 8 inches higher, from floodmarks in the Arcadia Hotel. The Arcadia News-Leader reported that the Apr. 4, 1956, flood was higher than the 1919 flood.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Trempealeau River at Dodge, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	June 9, 1914	8.5	3,700	1945	Mar. 16, 1945	9.1	8,120
1915	Mar. 26, 1915	6.6	1,700				
				1946	Mar. 14, 1946	7.7	4,570
1916	Mar. 26, 1916	8.2	3,360	1947	Apr. 7, 1947	8.0	5,410
1917	Apr. 3, 1917	6.5	1,650	1948	Mar. 21, 1948	7.8	4,850
1918	Mar. 20, 1918	9.0	3,600	1949	July 29, 1949	5.5	1,920
1919	Mar. 17, 1919	10.2	11,000	1950	Mar. 29, 1950	7.3	3,600
1934	Sept.28, 1934	6.8	2,570	1951	July 10, 1951	7.8	4,840
1935	July 29, 1935	7.6	4,490	1952	Apr. 2, 1952	8.85	6,950
				1953	Mar. 19, 1953	7.5	4,040
1936	Mar. 22, 1936	8.7	7,180	1954	June 21, 1954	7.85	5,710
1937	Apr. 3, 1937	5.2	1,780	1955	Oct. 4, 1954	8.80	10,400
1938	Sept.10, 1938	6.8	3,170				
1939	Mar. 24, 1939	8.4	6,400	1956	Apr. 4, 1956	10.35	17,400
1940	Apr. 1, 1940	6.9	3,120	1957	June 23, 1957	2.90	713
				1958	Feb. 28, 1958	a4.47	1,140
1941	Apr. 2, 1941	6.7	2,890	1959	Mar. 27, 1959	a8.8	b8,000
1942	June 3, 1942	8.1	5,680	1960	Dec. 30, 1959	4.3	1,480
1943	Mar. 27, 1943	7.9	5,060				
1944	Feb. 29, 1944	5.8	2,040	1961	Mar. 26, 1961	9.20	11,100

a Affected by backwater from ice.
b About.

BLACK RIVER BASIN

3810. Black River at Neillsville, Wis.

Location.--Lat 44°33'35", long 90°36'50", in sec.15, T.24 N., R.2 W., at downstream side of bridge on U.S. Highway 10 in Neillsville, 1.0 mile downstream from O'Neill Creek, and 2.6 miles upstream from Cunningham Creek.

Drainage area.--756 sq mi.

Gage.--Nonrecording prior to Oct. 24, 1934; recording thereafter. Datum of gage is 962.77 ft above mean sea level, datum of 1929 (levels by U.S. Weather Bureau).

Stage-discharge relation.--Defined by current-meter measurements below 40,000 cfs.

Historical data.--The Sept. 10, 1938, flood was the highest in the history of the community; from the Neillsville Press which published its first edition in 1861.

Remarks.--Base for partial-duration series, 5,000 cfs. Only annual peaks are shown prior to 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	June 6, 1905	22.4	41,100	1930	June 14, 1930	16.0	20,100
1906	Apr. 3, 1906	12.3	11,300	1931	June 20, 1931	7.8	3,090
1907	Mar. 27, 1907	12.7	12,200	1932	Apr. 7, 1932	14.6	16,500
1908	Apr. 28, 1908	11.6	9,820	1933	Apr. 6, 1933	9.8	6,400
				1934	Apr. 5, 1934	15.7	19,300
1914	June 5, 1914	19.8	29,400	1935	Mar. 23, 1935	15.6	19,300
1915	May 21, 1915	10.0	6,600				
				1936	Mar. 24, 1936	15.67	19,300
1916	Mar. 31, 1916	13.0	12,100	1937	Apr. 8, 1937	8.44	3,860
1917	Apr. 4, 1917	10.5	7,450				
1918	May 26, 1918	11.8	9,670	1938	Mar. 20, 1938	12.45	11,500
1919	June 24, 1919	11.7	9,490		May 18, 1938	13.05	12,800
1920	Mar. 26, 1920	15.8	20,200		Sept. 2, 1938	10.81	8,240
					Sept.10, 1938	23.8	48,800
1921	Mar. 20, 1921	13.2	12,900				
1922	Apr. 9, 1922	13.8	14,300	1939	Mar. 26, 1939	14.42	16,000
1923	Apr. 22, 1923	10.4	7,370		Apr. 17, 1939	13.07	13,100
1924	Aug. 22, 1924	14.8	16,500		Sept.12, 1939	10.41	7,480
1925	June 14, 1925	8.6	4,420				
				1940	June 18, 1940	11.71	10,000
1926	Apr. 11, 1926	12.2	10,800		June 22, 1940	13.02	12,800
1927	Mar. 13, 1927	12.4	9,360				
1928	Sept.14, 1928	17.0	22,900	1941	Apr. 2, 1941	a12.21	8,620
1929	Mar. 19, 1929	12.8	12,400		Apr. 14, 1941	10.30	7,300

a Backwater from ice, 1.2 ft.

Peak stages and discharges of Black River at Neillsville, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	May 31, 1941	9.30	5,520	1951	July 5, 1951	9.16	5,350
	Sept. 1, 1941	11.8	10,200		Sept.13, 1951	9.94	6,580
1942	Oct. 7, 1941	12.10	10,900	1952	Apr. 2, 1952	16.50	21,500
	Nov. 1, 1941	11.73	10,000		Apr. 16, 1952	10.12	6,940
	Mar. 21, 1942	11.84	10,200				
	May 31, 1942	14.68	16,700	1953	Mar. 19, 1953	9.71	6,220
	June 6, 1942	12.55	12,000		Mar. 23, 1953	14.22	15,500
	Sept.19, 1942	17.55	24,600		July 29, 1953	9.94	6,580
1943	Oct. 4, 1942	11.81	10,200	1954	Apr. 27, 1954	9.66	6,150
	Mar. 31, 1943	16.50	21,500		May 2, 1954	14.00	15,100
	May 31, 1943	14.37	16,000				
	June 17, 1943	11.02	8,620	1955	Oct. 3, 1954	10.85	8,340
	June 28, 1943	22.49	41,600		Oct. 14, 1954	10.90	8,430
					Apr. 2, 1955	9.73	6,270
1944	Apr. 7, 1944	9.15	5,350		Apr. 14, 1955	9.80	6,400
	June 18, 1944	11.03	8,620		May 29, 1955	11.54	9,700
					June 3, 1955	9.62	6,080
1945	Mar. 17, 1945	14.88	17,200				
	Mar. 26, 1945	9.09	5,180	1956	Apr. 3, 1956	16.50	21,500
	May 29, 1945	8.97	5,020		June 27, 1956	9.50	5,860
	Aug. 31, 1945	12.44	11,500				
				1957	Mar. 15, 1957	c9.41	-
1946	Nov. 8, 1945	9.43	5,690		July 9, 1957	8.16	3,730
	Jan. 6, 1946	10.64	7,860				
	Mar. 16, 1946	12.75	12,400	1958	Apr. 7, 1958	11.55	9,720
	June 11, 1946	12.39	11,500		June 5, 1958	14.18	15,500
1947	Apr. 6, 1947	12.34	11,300	1959	Mar. 30, 1959	9.03	5,070
					July 10, 1959	9.86	6,510
1948	Mar. 20, 1948	11.48	9,620		Sept.28, 1959	10.48	7,630
	Mar. 24, 1948	9.98	6,760				
				1960	Dec. 28, 1959	-	d6,000
1949	Mar. 22, 1949	b11.34	-		May 7, 1960	12.92	12,600
	Mar. 28, 1949	8.43	4,080		May 17, 1960	11.13	8,880
					Sept. 9, 1960	9.17	5,300
1950	Mar. 27, 1950	13.66	14,400				
	Apr. 12, 1950	9.33	5,520	1961	Mar. 27, 1961	13.40	13,700
1951	Apr. 8, 1951	16.41	21,300				

b Backwater from ice, 5.0 ft.
c Affected by backwater from ice.
d About.

3820. Black River near Galesville, Wis.

Location.--Lat 44°03'45", long 91°17'30", in sec.2, T.18 N., R.8 W., 30 ft downstream from bridge on State Highway 35, 4.5 miles southeast of Galesville, and 5 miles downstream from Fleming Creek.

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

Gage.--Nonrecording prior to Apr. 2, 1941; recording thereafter. Datum of gage is 658.43 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 50,000 cfs.

Remarks.--Flow partly regulated by Hatfield Reservoir (Lake Arbutus) which has a storage capacity of 272 million cubic feet, and a drainage area of 1,290 sq mi. Base for partial-duration series, 12,500 cfs. Only annual peaks are shown prior to 1942.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Apr. 9, 1932	11.5	22,400	1940	June 26, 1940	10.62	16,000
1933	Apr. 2, 1933	8.8	10,700				
1934	Sept.28, 1934	11.9	25,500	1941	Apr. 4, 1941	10.66	15,700
1935	Mar. 23, 1935	12.4	30,000				
				1942	Nov. 4, 1941	10.55	15,400
1936	Mar. 25, 1936	12.9	36,500		Mar. 23, 1942	a10.05	12,900
1937	Apr. 4, 1937	8.0	9,290		June 2, 1942	12.65	29,400
1938	Sept.11, 1938	14.31	58,000		June 7, 1942	12.85	31,900
1939	Mar. 26, 1939	12.60	30,500		Sept.21, 1942	13.10	36,400

a Backwater from ice, 0.25 ft.

Peak stages and discharges of Black River near Galesville, Wis.--Contirued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 1, 1943	12.83	29,100	1952	Apr. 3, 1952	14.00	51,000
	May 31, 1943	13.25	34,600		Apr. 18, 1952	9.76	12,900
	June 19, 1943	9.85	12,900				
	June 29, 1943	13.25	34,600	1953	Mar. 25, 1953	12.56	26,900
1944	June 20, 1944	11.55	19,400	1954	May 4, 1954	12.35	24,600
1945	Mar. 17, 1945	b12.66	-	1955	Oct. 5, 1954	10.98	16,700
	Mar. 19, 1945	12.40	25,000		Oct. 17, 1954	10.23	13,900
	May 24, 1945	10.58	15,400		May 31, 1955	11.90	20,500
					June 6, 1955	10.23	13,900
1946	Mar. 17, 1946	12.11	22,500				
	June 13, 1946	11.77	20,500	1956	Apr. 6, 1956	12.90	29,300
1947	Apr. 8, 1947	10.66	15,800	1957	Mar. 18, 1957	c7.06	d6,300
1948	Mar. 23, 1948	10.00	12,400	1958	Apr. 9, 1958	9.65	11,400
1949	Mar. 31, 1949	6.50	5,300	1959	Mar. 31, 1959	c10.76	-
					Mar. 31, 1959	10.33	13,500
1950	Mar. 8, 1950	-	-		Sept.30, 1959	10.67	14,500
	Mar. 29, 1950	10.43	14,800				
				1960	May 9, 1960	12.63	26,200
1951	Apr. 2, 1951	10.61	15,400				
	Apr. 9, 1951	13.15	29,100	1961	Mar. 29, 1961	13.38	30,800
	July 11, 1951	9.75	12,900				

b Backwater from ice, 2.0 ft.
c Affected by backwater from ice.
d About.

LA CROSSE RIVER BASIN

3825. Little La Crosse River near Leon, Wis.

Location.--Lat 43°53'45", long 90°50'25", in NE¼ sec.3, T.16 N., R.4 W., 1.1 miles downstream from Sand Creek, 1.5 miles northwest of Leon, and 4 miles upstream from mouth.

Drainage area.--77.1 sq mi.

Gage.--Recording. Datum of gage is 760.28 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 1,500 cfs.

Remarks.--Base for partial-duration series, 520 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	July 6, 1934	9.84	1,370	1946	Jan. 6, 1946	9.88	1,400
1935	Aug. 6, 1935	14.43	4,620		Feb. 6, 1946	7.47	660
					Mar. 6, 1946	9.72	1,260
1936	Mar. 10, 1936	9.62	1,210		Mar. 13, 1946	9.05	960
1937	Mar. 7, 1937	6.73	457				
1938	Sept.12, 1938	8.80	881	1947	June 13, 1947	7.48	644
1939	Mar. 19, 1939	7.17	580		June 29, 1947	11.22	986
1940	Aug. 2, 1940	8.90	913				
				1948	Feb.28,Mar.19, 1948	9.01	960
1941	Apr. 18, 1941	7.77	675		Mar. 16, 1948	6.80	548
	Sept.16, 1941	9.60	1,210				
				1949	Mar.4,22,1949	-	414
1942	Oct. 7, 1941	6.85	520		Mar. 22, 1949	5.90	-
	June 2, 1942	7.95	692				
	June 7, 1942	9.98	1,480	1950	Mar. 7, 1950	9.60	1,200
	June 29, 1942	9.82	1,340		Mar. 26, 1950	7.35	644
					June 13, 1950	7.20	612
1943	Mar. 26, 1943	6.82	520				
				1951	July 21, 1951	6.67	532
1944	Feb. 22, 1944	9.63	1,210				
	Feb. 26, 1944	7.30	595	1952	Oct. 3, 1951	6.80	548
	Mar. 12, 1944	8.99	930		Apr. 1, 1952	4.96	620
					June 23, 1952	5.31	675
1945	Mar. 15, 1945	6.99	580		July 20, 1952	8.0	1,190
	May 22, 1945	9.76	1,330				

Peak stages and discharges of Little La Crosse River near Leon, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Aug. 20, 1952	4.70	564	1959	Apr. 1, 1959	4.73	648
					Apr. 3, 1959	4.85	683
1953	Apr. 10, 1953	3.48	371		May 20, 1959	5.42	832
					Aug. 27, 1959	4.15	615
1954	June 20, 1954	4.74	572		Sept.22, 1959	4.93	714
	July 3, 1954	7.83	1,160		Sept.27, 1959	7.60	1,380
1955	May 24, 1955	5.26	668	1960	Oct. 24, 1959	-	a600
	June 2, 1955	9.80	2,100		Mar. 28, 1960	-	a1,050
					Apr. 17, 1960	-	a875
1956	Apr. 2, 1956	9.15	1,840		May 7, 1960	-	a750
					June 28, 1960	6.72	1,160
1957	June 11, 1957	4.10	522				
				1961	Feb. 24, 1961	6.35	1,080
1958	Feb. 24, 1958	3.65	426		Mar. 25, 1961	10.5	3,000

a About.

3830. La Crosse River near West Salem, Wis.

Location.--Lat 43°54'05", long 91°07'05", in SE¼ sec.32, T.17 N., R.6 W., 30 ft upstream from highway bridge, 2 miles west of West Salem, and 6 miles downstream from Dutch Creek.

Drainage area.--398 sq mi.

Gage.--Nonrecording prior to Oct. 19, 1938; recording thereafter. Datum of gage is 668.0 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	June 28, 1914	5.7	-	1,800	1939	Mar. 20, 1939	7.66	1.7	1,510
1915	Feb. 23, 1915	7.3	1.6	1,800	1940	June 24,Aug.4, 1940	4.81	-	1,140
1916	Jan. 29, 1916	5.7	-	1,850					
1917	Mar. 24, 1917	7.6	-	2,990	1941	Sept.16, 1941	8.35	-	3,020
1918	Mar. 18, 1918	7.8	-	3,130	1942	June 30, 1942	9.20	-	4,170
1919	Mar. 16, 1919	8.8	-	3,900	1943	May 31, 1943	8.22	-	2,790
1920	June 16, 1920	7.0	-	2,600	1944	Mar. 13, 1944	7.51	-	2,150
					1945	May 23, 1945	9.16	-	4,590
1921	June 10, 1921	4.1	-	1,150					
1922	Feb. 24, 1922	8.5	1.0	2,920	1946	Jan. 7, 1946	9.27	-	4,170
1923	Apr. 4, 1923	7.2	-	2,480	1947	June 30, 1947	8.29	-	2,900
1924	Aug. 20, 1924	7.0	-	2,600	1948	Feb. 29, 1948	7.70	-	2,300
1925	June 15, 1925	6.3	-	2,120	1949	Mar. 23, 1949	6.65	-	2,020
					1950	Mar. 7, 1950	8.32	-	2,900
1926	Aug. 22, 1926	6.0	-	1,920					
1927	July 21, 1927	4.7	-	1,370	1951	Mar. 29, 1951	6.13	-	1,630
1928	Sept.15, 1928	10.2	-	5,160	1952	July 20, 1952	8.04	-	2,470
1929	June 19, 1929	4.7	-	1,170	1953	Mar. 19, 1953	5.23	-	1,320
1930	Feb. 21, 1930	8.8	-	3,270	1954	July 5, 1954	6.67	-	1,730
					1955	June 3, 1955	8.92	-	3,650
1931	June 23, 1931	3.0	-	635					
1932	June 8, 1932	6.4	-	2,380	1956	Apr. 3, 1956	10.42	-	5,720
1933	Mar. 31, 1933	9.4	-	4,310	1957	Feb. 26, 1957	4.12	-	984
1934	Apr. 4, 1934	9.2	-	3,890	1958	Feb. 27, 1958	5.17	-	1,310
1935	Aug. 6, 1935	12.2	-	8,200	1959	Apr. 1, 1959	8.62	-	3,270
					1960	May 8, 1960	7.20	-	1,780
1936	Mar. 18, 1936	8.4	-	3,020					
1937	Mar. 8, 1937	7.7	3.0	1,100	1961	Mar. 27, 1961	10.33	-	4,490
1938	Sept.11, 1938	8.8	-	3,490					

3835. Mississippi River at La Crosse, Wis.

Location.--Lat 43°48'45", long 91°15'25", in sec.31, T.16 N., R.7 W., on left bank at La Crosse, 1,300 ft upstream from highway bridge, 0.4 mile downstream from La Crosse River, and at mile 697.8 upstream from Ohio River.

Drainage area.--62,800 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 17, 1934; recording thereafter. Prior to Feb. 18, 1933, at datum 0.03 ft lower; Feb. 18, 1933, to Aug. 15, 1939, at datum 0.18 ft lower. Datum of gage is 626.32 ft above mean sea level, adjustment of 1912. Since June 9, 1937, auxiliary water-stage recorder at tailwater of lock and dam 7, 4.7 miles upstream at datum 600.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements. Affected by changing slope resulting from operation of navigation dam 8.

Remarks.--Floodflow not materially affected by artificial regulation. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 18, 1930	8.60	52,300	1941	Apr. 19, 1941	11.00	-
				1942	June 5, 1942	12.94	123,000
1931	July 3, 1931	5.15	31,900	1943	June 22, 1943	13.32	137,000
1932	Apr. 15, 1932	9.59	64,800	1944	June 22, 1944	12.35	124,000
1933	Apr. 2, 1933	9.09	45,900	1945	Mar.19,26, 1945	12.30	121,000
1934	Apr. 9, 1934	10.43	69,800				
1935	Mar. 31, 1935	10.73	78,200	1946	Mar. 26, 1946	11.35	102,000
				1947	Apr. 17, 1947	10.41	84,100
1936	Mar. 27, 1936	11.92	100,000	1948	Apr. 7, 1948	10.19	85,300
1937	May 4, 1937	8.39	54,700	1949	Apr. 10, 1949	9.42	73,700
1938	May 2, 1938	-	101,000	1950	May 15, 1950	12.57	125,000
	Sept.15, 1938	12.27	-				
1939	Apr. 1, 1939	11.36	97,000	1951	Apr. 19, 1951	14.93	184,000
1940	June 12, 1940	-	55,100	1952	Apr. 20, 1952	15.32	196,000
	June 13, 1940	7.91	-	1953	June 30, 1953	10.58	86,900
				1954	May 7, 1954	14.33	166,000
1941	Apr. 18, 1941	-	96,400	1955	Apr. 11, 1955	9.14	70,500

ROOT RIVER BASIN

3840. Root River near Lanesboro, Minn.

Location.--Lat 43°44'58", long 91°58'43", in sec.1, T.103 N., R.10 W., on left bank half a mile upstream from highway bridge, $1\frac{1}{4}$ miles upstream from South Branch, and $2\frac{1}{2}$ miles northeast of Lanesboro.

Drainage area.--615 sq mi.

Gage.--Nonrecording prior to Aug. 2, 1940; recording thereafter. Prior to Oct. 1, 1917, at site half a mile downstream at datum about 1.5 ft higher. May 12, 1939, to Aug. 1, 1940, at site half a mile downstream at datum 3.07 ft lower. Datum of gage is 791.84 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 17,500 cfs and extended above.

Remarks.--Base for partial-duration series, 3,500 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Mar. 9, 1910	4.8	2,040	1940	July 11, 1940	9.50	b5,070
1911	Aug. 13, 1911	12.98	13,300	1941	Apr. 18, 1941	9.00	5,460
1912	Mar. 29, 1912	9.3	7,930	1942	June 29, 1942	14.53	15,000
1913	Mar. 14, 1913	12.0	11,800	1943	Mar. 25, 1943	11.39	8,490
1914	June 27, 1914	10.6	9,670	1944	June 18, 1944	9.07	5,570
				1945	Mar. 16, 1945	14.09	13,900
1916	Mar. 13, 1916	7.2	5,020				
1917	Mar. 23, 1917	a13.0	12,000	1946	Jan. 5, 1946	12.53	10,400

a Affected by ice.
b Maximum daily discharge.

Peak stages and discharges of Root River near Lanesboro, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 5, 1947	10.76	7,620	1954	June 19, 1954	7.20	4,090
1948	Feb. 28, 1948	10.52	7,220	1955	Mar. 9, 1955	c8.95	-
	Mar. 19, 1948	8.75	5,240		Mar. 10, 1955	7.20	4,090
1949	Mar. 5, 1949	-	b4,500	1956	Apr. 2, 1956	8.31	5,430
	Mar. 25, 1949	9.02	6,330		May 29, 1956	6.73	3,570
	Apr. 1, 1949	9.10	6,470				
				1957	July 21, 1957	7.57	4,530
1950	Mar. 8, 1950	11.89	11,700				
	Mar. 27, 1950	15.55	20,500	1958	June 5, 1958	14.52	17,800
	June 13, 1950	9.12	6,500				
	July 15, 1950	6.98	3,650	1959	Mar. 24, 1959	10.08	7,990
					Apr. 1, 1959	8.53	5,720
1951	Apr. 8, 1951	10.84	9,410		June 26, 1959	10.72	9,170
	Apr. 13, 1951	8.27	5,370				
	July 21, 1951	13.94	16,400	1960	Mar. 27, 1960	9.00	6,290
	Aug. 8, 1951	7.22	4,040		May 22, 1960	7.54	4,300
					June 27, 1960	10.10	8,020
1952	Mar. 31, 1952	15.53	20,400		July 3, 1960	10.15	8,100
	June 23, 1952	9.06	6,410		Aug. 28, 1960	8.40	5,450
1953	May 25, 1953	8.74	5,980	1961	Mar. 2, 1961	7.94	4,820
	July 26, 1953	10.30	8,370		Mar. 26, 1961	15.26	19,500
	July 31, 1953	7.52	4,400				
	Aug. 4, 1953	9.88	7,650				

b Maximum daily discharge.
c Backwater from ice, 2.45 ft.

3845. Rush Creek near Rushford, Minn.

Location.--Lat 43°50'00", long 91°46'40", on line between secs. 3 and 10, T.104 N., R.8 W., on downstream side near center of span on highway bridge, 1½ miles northwest of Rushford, and 3 miles upstream from mouth.

Drainage area.--129 sq mi.

Gage.--Recording prior to June 14, 1950; nonrecording thereafter. Aug. 5, 1942, to June 13, 1950, at site 100 ft upstream. Aug. 5, 1942, to Oct. 27, 1945, at datum 5 ft higher; Oct. 28, 1945, to Aug. 3, 1949, at datum 3 ft higher. Datum of gage is 735.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above on basis of contracted-opening measurements at gage heights 11.0 and 13.5 ft. Discharge for flood of June 28, 1942, determined by slope-area measurement.

Remarks.--Base for partial-duration series, 900 cfs. Only annual peaks are shown prior to 1943 and subsequent to 1950 water years.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	June 28, 1942	10.0	11,000	1947	Apr. 5, 1947	5.93	2,590
					July 27, 1947	4.80	1,640
1943	Mar. 25, 1943	6.74	3,600				
	June 12, 1943	3.39	915	1948	Feb. 27, 1948	a5.56	1,800
					Mar. 16, 1948	5.24	2,000
1944	Jan. 27, 1944	3.33	1,190				
	Mar. 11, 1944	3.88	1,660	1949	Mar. 4, 1949	7.0	3,640
	Mar. 23, 1944	3.70	1,560		Mar. 22, 1949	3.81	980
					Mar. 25, 1949	4.29	1,330
1945	Mar. 13, 1945	5.75	3,190		Mar. 26, 1949	4.25	1,300
	July 21, 1945	5.74	4,000		Mar. 31, 1949	5.00	1,880
	Aug. 5, 1945	1.63	902				
				1950	Mar. 7, 1950	b9.98	-
1946	Jan. 5, 1946	10.10	7,130		Mar. 7, 1950	9.64	5,070
	Feb. 5, 1946	5.89	3,190		Mar. 26, 1950	13.54	11,600
	Mar. 6, 1946	4.48	2,030		June 13, 1950	9.3	5,000
	Mar. 12, 1946	3.29	1,220				
	Mar. 17, 1946	3.36	1,340	1951	July 21, 1951	11.46	6,580
	June 17, 1946	4.28	1,870	1952	Mar. 31, 1952	11.05	6,740
	Sept. 8, 1946	4.24	1,480	1953	July 26, 1953	9.32	3,750

a Backwater from ice, 0.56 ft.
b Backwater from ice, 1.33 ft.

Peak stages and discharges of Rush Creek near Rushford, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 19, 1954	6.54	920	1958	Feb. 25, 1958	5.80	420
1955	July 8, 1955	6.80	1,180	1959	Mar. 24, 1959	7.62	2,000
				1960	July 3, 1960	9.05	3,460
1956	Apr. 3, 1956	7.00	1,380				
1957	Feb. 24, 1957	7.60	1,980	1961	Mar. 25, 1961	10.26	4,920

3850. Root River near Houston, Minn.

Location.--Lat 43°46'05", long 91°35'11", in sec.32, T.104 N., R.6 W., on right bank 1 mile west of Houston and 2½ miles upstream from South Fork.

Drainage area.--1,270 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 28, 1933; recording thereafter. Prior to Sept. 30, 1917, at site 1½ miles downstream at different datum. Datum of gage is 671.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs and extended above.

Remarks.--Base for partial-duration series, 5,000 cfs. Only annual peaks are shown prior to 1934.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1910	Mar. 7, 1910	-	-	a2,500	1942	Mar. 22, 1942	8.44	-	5,660
	Mar. 10, 1910	6.8	(b)	-		May 17, 1942	8.35	-	5,660
						June 30, 1942	13.62	-	23,700
1911	Aug. 14, 1911	10.8	-	15,200		Aug. 3, 1942	8.83	-	6,300
1912	Mar. 30, 1912	10.0	-	10,600		Aug. 8, 1942	9.59	-	7,950
1913	Mar. 25, 1913	9.9	-	10,000					
1914	June 28, 1914	10.2	-	11,700	1943	Mar. 27, 1943	10.50	-	10,600
1915	Mar. 26, 1915	9.35	-	7,330		June 28, 1943	c8.8	-	6,450
1916	Mar. 26, 1916	9.7	0.2	7,970	1944	Feb. 26, 1944	8.55	-	6,120
1917	Mar. 23, 1917	11.95	.85	17,000		Mar. 12, 1944	7.82	-	5,500
						June 19, 1944	8.09	-	5,240
1930	June 4, 1930	8.29	-	5,100					
					1945	Mar. 17, 1945	13.39	-	23,900
1931	July 15, 1931	8.00	-	4,580		May 26, 1945	8.92	-	6,600
1932	Mar. 27, 1932	9.31	-	6,900		July 21, 1945	10.38	-	10,200
1933	Mar. 31, 1933	14.07	-	26,600					
					1946	Jan. 6, 1946	12.84	1.7	12,900
1934	Apr. 4, 1934	12.56	-	19,000		Mar. 6, 1946	10.82	-	13,700
	July 10, 1934	8.92	-	5,400		Mar. 13, 1946	10.00	-	9,000
	July 27, 1934	9.40	-	5,690		June 17, 1946	9.27	-	7,300
1935	Mar. 17, 1935	10.02	-	8,520	1947	Apr. 6, 1947	10.31	-	9,300
	July 2, 1935	8.88	-	5,840		Apr. 11, 1947	8.32	-	5,570
	July 5, 1935	9.26	-	6,470					
	Aug. 3, 1935	10.15	-	8,520	1948	Feb. 29, 1948	12.00	1.20	11,700
	Aug. 6, 1935	10.81	-	11,700		Mar. 19, 1948	8.56	-	5,950
1936	Mar. 11, 1936	14.9	4.7	9,450	1949	Mar. 5, 1949	9.60	2.05	-
	Mar. 21, 1936	10.65	-	10,800		Mar. 6, 1949	8.40	-	6,440
	May 1, 1936	11.17	-	14,000		Mar. 25, 1949	8.84	-	7,110
						Mar. 27, 1949	8.04	-	5,570
1937	Mar. 6, 1937	13.34	5.1	-		Mar. 31, 1949	9.15	-	8,450
	Mar. 7, 1937	11.38	-	14,500					
	May 27, 1937	8.20	-	5,380	1950	Mar. 8, 1950	11.69	-	15,200
						Mar. 27, 1950	14.15	-	26,200
1938	Sept.11, 1938	11.79	-	15,600		June 13, 1950	9.92	-	8,760
						July 16, 1950	7.85	-	5,130
1939	Mar. 14, 1939	8.97	1.7	-					
	Mar. 14, 1939	8.85	.04	6,450	1951	Apr. 9, 1951	10.04	-	9,120
	Mar. 21, 1939	8.89	-	6,620		Apr. 13, 1951	8.59	-	6,120
						June 22, 1951	11.58	-	14,800
1940	Mar. 30, 1940	9.30	-	7,860					
	July 11, 1940	9.04	-	5,960	1952	Apr. 1, 1952	13.90	-	37,000
1941	Apr. 19, 1941	8.45	-	5,800	1953	July 27, 1953	10.05	-	10,400
	May 30, 1941	8.66	-	6,280		Aug. 4, 1953	10.04	-	9,630

a Maximum daily discharge.
b Ice effect not determined.
c Estimated gage height.

Peak stages and discharges of Root River near Houston, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1954	June 21, 1954	8.19	-	5,370	1959	Mar. 25, 1959	9.62	-	7,950
						Apr. 1, 1959	9.48	-	8,720
1955	Mar. 9, 1955	7.38	2.82	-		June 27, 1959	10.85	-	10,100
	Mar. 10, 1955	6.93	.15	3,760					
					1960	Mar. 28, 1960	9.25	-	7,520
1956	Apr. 3, 1956	10.22	-	9,660		June 28, 1960	7.74	-	5,300
						July 3, 1960	9.43	-	7,870
1957	Feb. 25, 1957	6.70	1.7	-		Aug. 29, 1960	9.92	-	8,800
	July 22, 1957	5.18	-	2,230					
					1961	Mar. 27, 1961	15.10	-	31,400
1958	June 6, 1958	10.13	-	9,600					

3855. South Fork Root River near Houston, Minn.

Location.--Lat 43°44', long 91°34', in NE¼SW¼ sec.9, T.103 N., R.6 W., on left bank 50 ft downstream from bridge on State Highway 76, half a mile upstream from Badger Creek, and 1½ miles south of Houston.

Drainage area.--275 sq mi.

Gage.--Recording. Datum of gage is 680.41 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,600 cfs and extended above.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	Mar. 26, 1950	a12.81	-	-	1957	July 22, 1957	10.64	-	1,410
1953	Mar. 13, 1953	9.28	-	1,070	1958	Feb. 25, 1958	9.30	3.25	-
	June 28, 1953	9.42	-	1,120		Feb. 26, 1958	8.14	.64	694
	July 27, 1953	11.40	-	2,590					
	July 31, 1953	9.18	-	1,040	1959	Mar. 25, 1959	11.88	-	4,010
	Aug. 4, 1953	10.19	-	1,420		Apr. 1, 1959	11.63	-	3,270
	Aug. 7, 1953	8.84	-	1,020		Apr. 4, 1959	11.04	-	2,190
						May 31, 1959	9.12	-	1,030
1954	May 1, 1954	8.85	-	878		June 26, 1959	11.08	-	2,240
						Aug. 3, 1959	11.24	-	2,410
1955	Mar. 4, 1955	8.88	-	962		Aug. 17, 1959	8.93	-	974
	Mar. 10, 1955	10.23	-	1,450		Aug. 27, 1959	10.77	-	1,900
	July 8, 1955	10.91	-	2,050		Sept.22, 1959	10.52	-	1,660
	July 31, 1955	10.73	-	1,860					
					1960	Mar. 28, 1960	12.30	-	5,270
1956	Mar. 6, 1956	11.00	-	2,150		Mar. 30, 1960	11.42	-	2,610
	Mar. 28, 1956	10.89	-	2,030		July 3, 1960	11.66	-	3,350
	Apr. 3, 1956	12.07	-	3,450		Aug. 28, 1960	10.27	-	1,470
	May 29, 1956	9.38	-	1,100					
					1961	Mar. 5, 1961	8.82	-	947
1957	Feb. 25, 1957	8.65	-	942		Mar. 26, 1961	13.74	1.40	-
	July 17, 1957	11.46	-	2,110		Mar. 26, 1961	12.87	-	6,980

a Annual peak only.

3860. Root River below South Fork, near Houston, Minn.

Location.--Lat 43°46'13", long 91°32'03", in SE¼NE¼ sec.34, T.104 N., R.6 W., on right bank 600 ft downstream from South Fork and 1½ miles northeast of Houston.

Drainage area.--1,560 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 3, 1950; recording thereafter. Datum of gage is 660.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 11,000 cfs and extended above on basis of records for station near Houston and South Fork Root River near Houston.

Remarks.--Base for partial-duration series, 8,500 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1938	Sept.10, 1938	a18.05	-	17,300	1951	July 21, 1951	17.28	-	32,400
1939	Mar. 22, 1939	14.38	-	11,500					
1940	Mar. 30, 1940	14.40	-	12,300	1952	Apr. 1, 1952	17.58	-	38,700
1941	May 30, 1941	13.32	-	8,010	1953	July 27, 1953	15.48	-	10,800
1942	June 30, 1942	17.34	-	23,600		Aug. 4, 1953	15.11	-	10,200
1943	Mar. 26, 1943	14.79	-	12,800					
1944	Feb. 26, 1944	13.72	-	9,150	1954	June 21, 1954	12.70	-	6,310
1945	Mar.15-17, 1945	16.9	-	21,600					
					1955	Mar. 10, 1955	12.36	-	5,880
1946	Jan. 6, 1946	16.9	2.0	-					
	June 17, 1946	-	-	15,600	1956	Apr. 3, 1956	15.47	-	11,200
1947	Apr. 6, 1947	15.5	-	15,600					
					1957	Feb. 25, 1957	11.42	1.94	-
1948	Feb. 28, 1948	17.50	2.50	13,600		July 22, 1957	9.75	-	3,240
	Mar. 5, 1948	14.04	.60	-					
	Mar. 17, 1948	14.50	-	11,800	1958	June 6, 1958	14.85	-	9,690
1949	Mar. 5, 1949	13.70	-	9,110	1959	Mar. 25, 1959	17.07	1.22	11,500
	Mar. 25, 1949	13.60	-	8,790		Apr. 1, 1959	14.95	-	11,300
	Mar. 31, 1949	13.40	-	10,800		June 27, 1959	14.95	-	9,870
1950	(b)	16.55	1.11	20,500	1960	Mar. 28, 1960	14.30	-	9,420
	Mar. 27, 1950	16.56	-	31,100		July 3, 1960	13.96	-	8,810
	June 13, 1950	15.00	-	21,900		Aug. 29, 1960	14.05	-	8,970
	July 16, 1950	15.00	-	16,700					
					1961	Mar. 27, 1961	17.75	-	38,200
1951	Apr. 8, 1951	14.43	-	10,100					

a Floodmark 1,000 ft upstream.
b Occurred during period Mar. 7-9, 1950.

COON CREEK BASIN

3865. Coon Creek at Coon Valley, Wis.

Location.--Lat 43°42'15", long 91°01'15", in NE¼ sec.7, T.14 N., R.5 W., 350 ft upstream from abandoned dam in town of Coon Valley and 700 ft upstream from U.S. Highways 14 and 61.

Drainage area.--77.2 sq mi.

Gage.--Recording. Datum of gage is 716.16 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 2,300 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 2, 1934	7.30	2,510	1937	Mar. 6, 1937	4.62	800
1935	Aug. 6, 1935	12.90	8,110	1938	Sept.10, 1938	7.61	2,810
				1939	Mar. 19, 1939	4.12	747
1936	Mar. 10, 1936	6.11	1,400	1940	Aug. 14, 1940	8.21	3,410

3870. Coon Creek near Stoddard, Wis.

Location.--Lat 43°39'50", long 91°09'10", in NE¼ sec.25, T.14 N., R.7 W., 0.7 mile northwest of Valley View School and 3.3 miles east of Stoddard.

Drainage area.--119 sq mi.

Gage.--Recording and Parshall flume. Datum of gage is 650.68 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 3,300 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 3, 1934	9.18	2,800	1937	Mar. 7, 1937	8.72	1,100
1935	Aug. 6, 1935	10.70	5,160	1938	July 22, 1938	9.17	2,020
				1939	Mar. 15, 1939	8.89	1,450
1936	Mar. 11, 1936	9.08	1,840	1940	Aug. 15, 1940	9.00	1,670

UPPER IOWA RIVER BASIN

3875. Upper Iowa River at Decorah, Iowa

Location.-- Lat 43°18'20", long 91°48'05", in NE¼SW¼ sec.16, T.98 N., R.8 W., on right bank 1,200 ft upstream from bridge on State Highway 52, 1,500 ft downstream from Dry Run cutoff, and 3 miles upstream from Trout Run.

Drainage area.--511 sq mi.

Gage.--Recording. Datum of gage is 850.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements throughout.

Bankfull stage.--Levees are never overtopped.

Historical data.--Maximum flood known, probably since at least 1913, occurred May 29, 1941, at site of former gaging station near Decorah, 4 miles downstream (discharge, 28,500 cfs).

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 31, 1952	9.17	8,850	1957	July 16, 1957	8.98	8,000
1953	July 26, 1953	9.32	9,600	1958	Feb. 26, 1958	-	1,200
	Aug. 3, 1953	9.58	11,100	1959	Apr. 1, 1959	8.32	5,400
1954	June 21, 1954	10.12	11,600	1960	Mar. 30, 1960	8.43	5,880
1955	Aug. 1, 1955	6.64	1,700		July 22, 1960	8.46	5,880
1956	Mar. 28, 1956	8.28	5,500	1961	Mar. 27, 1961	13.08	20,200
	Apr. 2, 1956	8.07	4,910				

3880. Upper Iowa River near Decorah, Iowa

Location.--Lat 43°18'20", long 91°45'00", in NE¼SE¼ sec.14, T.98 N., R.8 W., on left bank 500 ft upstream from county highway bridge in Freeport, 1.2 miles downstream from Trout Run, and 3 miles downstream from Decorah.

Drainage area.--568 sq mi.

Gage.--Nonrecording prior to Aug. 28, 1920, and July 1, 1933, to Sept. 30, 1936; recording Aug. 28, 1920, to June 30, 1927, and subsequent to Oct. 27, 1936. Aug. 27, 1913, to Nov. 21, 1914, and May 12, 1919, to Aug. 27, 1920, at datum 3.96 ft lower. July 1, 1933, to Sept. 30, 1936, at site 4 miles downstream at different datum. Datum of gage is 829.8 ft above mean sea level, datum of 1929 (Winneshiek County bench mark).

Stage-discharge relation.--Defined by current-meter and slope-area measurements throughout.

Remarks.--Prior to May 24, 1920, gage heights are computed to be equivalent to those for present gage. Base for partial-duration series, 4,500 cfs. Records for period July 1, 1933, to Sept. 30, 1936, furnished by Interstate Power Co.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	May 24, 1914	11.6	7,100	1942	Oct. 7, 1941	7.9	5,840
					June 30, 1942	11.1	12,500
1919	Sept.10, 1919	11.05	6,220		Aug. 1, 1942	9.8	8,720
					Aug. 8, 1942	8.2	5,820
1920	May 22, 1920	10.0	4,970		Sept.18, 1942	8.7	6,560
1921	May 27, 1921	10.21	9,860	1943	Oct. 3, 1942	8.5	6,240
	May 30, 1921	9.2	8,000		Mar. 15, 1943	9.8	8,900
	June 20, 1921	9.0	7,600		Mar. 26, 1943	8.8	6,800
	Sept.17, 1921	7.8	5,680		Aug. 13, 1943	8.3	5,920
1922	Feb. 22, 1922	10.42	10,500	1944	June 15, 1944	8.6	6,410
	Mar. 6, 1922	7.9	5,840		June 17, 1944	9.3	7,700
1923	Apr. 3, 1923	9.0	7,140	1945	Mar. 14, 1945	8.8	6,760
					Mar. 17, 1945	12.2	16,400
1924	Mar. 27, 1924	8.0	6,000		May 21, 1945	8.0	5,550
	Aug. 8, 1924	8.1	6,160		May 26, 1945	7.4	4,730
	Aug. 19, 1924	8.98	7,140		June 1, 1945	8.9	7,000
					Aug. 5, 1945	11.2	12,600
1925	Feb. 9, 1925	8.3	6,480		Aug. 14, 1945	9.0	7,220
	June 12, 1925	9.7	8,600				
				1946	Jan. 5, 1946	12.1	16,200
1926	Mar. 18, 1926	6.63	3,870		Mar. 6, 1946	10.9	11,900
					Mar. 12, 1946	9.8	8,950
1927	May 29, 1927	5.30	2,580		Sept. 6, 1946	12.0	15,800
1933	July 1, 1933	97.2	12,200	1947	Apr. 5, 1947	8.6	7,240
					Apr. 10, 1947	8.0	6,310
1934	Jan.22, Apr.3-5, 1934	92.0	3,600		June 13, 1947	9.9	8,650
				1948	Feb. 28, 1948	11.85	12,100
1935	Mar. 16, 1935	94.4	7,600		Mar. 16, 1948	8.6	7,380
					Mar. 19, 1948	8.4	6,940
1936	Mar. 10, 1936	98.0	9,420				
				1949	Mar. 5, 1949	8.6	6,410
1937	Mar. 6, 1937	8.80	7,100				
				1950	Mar. 7, 1950	-	9,500
1938	June 25, 1938	8.80	6,680		Mar. 26, 1950	11.37	13,400
	Aug. 5, 1938	7.3	4,920		June 13, 1950	8.5	6,400
	Aug. 16, 1938	7.1	4,640		July 16, 1950	10.1	9,580
1939	Mar. 13, 1939	7.5	5,100	1951	Apr. 7, 1951	9.96	9,900
					June 26, 1951	8.12	6,030
1940	Aug. 25, 1940	6.4	3,760		June 27, 1951	6.67	4,500
1941	May 29, 1941	15.2	28,500				

3884. Wexford Creek near Harpers Ferry, Iowa

Location.--Lat 43°17', long 91°08', in SE¼ sec.25, T.98 N., R.3 W., at bridge, 5 miles north of Harpers Ferry.

Drainage area.--11.9 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements and step-backwater computations.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 26, 1953	4.91	659	1958	-	(a)	-
1954	June 20, 1954	4.90	655	1959	May 31, 1959	4.50	525
1955	July 8, 1955	6.29	1,490	1960	Mar. 27, 1960	6.40	1,590
1956	May 6, 1956	5.00	695	1961	Feb. 23, 1961	5.74	2,030
1957	June 17, 1957	5.11	740				

a Not determined; peak stage did not reach bottom of gage (discharge less than 450 cfs).

PAINT CREEK BASIN

3885. Paint Creek at Waterville, Iowa

Location.--Lat 43°12'35", long 91°18'20", in NW¼NW¼ sec.22, T.97 N., R.4 W., on right bank 20 ft downstream from bridge on State Highway 373 and 0.5 mile northwest of Waterville.

Drainage area.--42.8 sq mi.

Gage.--Recording and concrete control.

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs and extended above by logarithmic plotting.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Aug. 5, 1951	17.35	a9,100	1957	July 12, 1957	6.37	1,000
					July 31, 1957	5.95	808
1953	July 26, 1953	8.53	2,840	1958	Feb. 24, 1958	6.40	1,030
1954	Apr. 15, 1954	5.67	608	1959	Mar. 24, 1959	6.38	1,030
	May 1, 1954	6.79	1,300		Mar. 31, 1959	6.62	1,150
	June 20, 1954	5.72	630		May 20, 1959	5.58	650
1955	Oct. 14, 1954	6.20	930		May 31, 1959	5.77	718
	Mar. 3, 1955	5.92	785		June 28, 1959	8.40	2,710
	June 3, 1955	5.36	536		Aug. 3, 1959	5.29	523
	July 3, 1955	6.15	900		Sept.26, 1959	7.48	1,790
	July 4, 1955	6.20	930	1960	Mar. 27, 1960	8.39	2,710
1956	Mar. 27, 1956	6.03	855		July 2, 1960	5.35	544
	May 6, 1956	6.68	1,210	1961	Feb. 22, 1961	-	1,800
	Aug. 5, 1956	5.37	544		Mar. 4, 1961	6.24	930
1957	Mar. 23, 1957	5.32	523		Mar. 24, 1961	6.88	1,340
	June 10, 1957	6.02	830		Mar. 25, 1961	8.96	3,420
	June 16, 1957	6.82	1,280		Sept. 1, 1961	6.67	1,180
	June 17, 1957	8.33	2,650		Sept.30, 1961	7.60	1,870

a Annual peak only.

3886. Paint Creek near Waterville, Iowa

Location.--Lat 43°11', long 91°16', at bridge near center of sec.36, T.97 N., R.4 W., 3 miles southeast of Waterville.

Drainage area.--56.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Aug. 5, 1951	17.00	10,800	1957	July 31, 1957	9.33	1,850
				1958	Feb. 24, 1958	7.25	760
1953	July 26, 1953	12.89	3,900	1959	Mar. 24, 1959	8.71	1,470
1954	Apr. 30, 1954	9.83	1,920	1960	Mar. 27, 1960	13.81	4,870
1955	July 4, 1955	11.25	2,720				
				1961	Mar. 25, 1961	13.53	4,540
1956	May 6, 1956	11.06	2,590				

3887. Little Paint Creek tributary near Waterville, Iowa

Location.--Lat 43°13', long 91°15', in SW¼ sec.1, T.97 N., R.4 W., at culvert, 3½ miles northeast of Waterville.

Drainage area.--1.09 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements and step-backwater computations.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 26, 1953	2.79	137	1958	Feb. 24, 1958	2.85	144
1954	Apr. 30, 1954	3.89	310	1959	June 28, 1959	4.34	404
1955	July 4, 1955	4.25	383	1960	Mar. 27, 1960	4.10	352
1956	May 6, 1956	4.02	336	1961	-	-	(b)
1957	-	-	(a)				

a Peak discharge less than 118 cfs.
b Peak discharge less than 167 cfs.

YELLOW RIVER BASIN

3890. Yellow River at Ion, Iowa

Location.--Lat 43°06'35", long 91°15'45", in SE¼SW¼ sec.24, T.96 N., R.4 W., on downstream side of county highway bridge at Ion, 7.5 miles northwest of McGregor, and 8 miles upstream from mouth.

Drainage area.--221 sq mi.

Gage.--Nonrecording. Datum of gage is 664.65 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter and indirect measurements. The relation is subject to large shifts.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges of Yellow River at Ion, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 4, 1935	11.0	5,440	1945	June 28, 1945	8.4	3,210
1936	Mar. 10, 1936	10.2	4,560	1946	Jan. 5, 1946	13.0	13,000
					Feb. 5, 1946	8.9	5,120
1937	Mar. 4, 1937	10.5	4,950		Mar. 6, 1946	11.0	7,760
	June 13, 1937	9.1	3,500		Mar. 12, 1946	11.0	7,760
					Aug. 17, 1946	9.6	5,830
1938	Feb. 6, 1938	10.4	4,840		Sept. 6, 1946	11.7	9,750
	June 30, 1938	9.8	4,200				
	July 10, 1938	8.9	3,310	1947	Apr. 10, 1947	8.8	4,980
					June 13, 1947	10.4	6,900
1939	Feb. 19, 1939	8.2	2,730				
				1948	Feb. 28, 1948	-	8,000
1940	Mar. 29, 1940	9.6	4,000		Mar. 16, 1948	8.6	4,760
	July 26, 1940	9.7	4,100		Mar. 19, 1948	12.5	13,000
	Aug. 3, 1940	9.7	4,100				
				1949	Mar. 4, 1949	10.0	6,520
1941	May 29, 1941	15.2	21,200				
				1950	Mar. 6, 1950	9.6	5,920
1942	June 13, 1942	8.7	3,250		Mar. 26, 1950	12.8	15,700
	June 29, 1942	10.3	4,910		June 13, 1950	8.8	4,980
	Aug. 1, 1942	12.0	7,320		July 16, 1950	10.1	6,550
1943	Mar. 15, 1943	9.8	4,360	1951	Feb. 25, 1951	-	4,500
	Aug. 13, 1943	12.2	8,320		Mar. 29, 1951	9.90	9,580
					Apr. 7, 1951	10.34	10,500
1944	June 16, 1944	13.5	12,200		July 8, 1951	7.57	4,840
	June 17, 1944	10.8	5,530		July 16, 1951	7.62	4,840
	June 26, 1944	10.4	5,000		Aug. 6, 1951	8.26	6,100
1945	June 1, 1945	13.1	11,600				

MISSISSIPPI RIVER MAIN STEM

3895. Mississippi River at McGregor, Iowa

Location.--Lat 43°01'30", long 91°10'20", in SE¼SE¼ sec.22, T.9[illegible] 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 upstream from Ohio River.

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

Gage.--Recording. Datum of gage is 605.30 ft above mean sea level, adjustment of 1912. Prior to June 1, 1937, and since June 2, 1939, auxiliary recording gage; June 1, 1937, to June 1, 1939, auxiliary nonrecording gage 14.1 miles upstream in tailwater of dam 9, at datum 5.30 ft lower.

Stage-discharge relation.--Discharge computed by slope method.

Historical data.--Maximum stage known, that of June 1880.

Remarks.--Stage-discharge relation affected by backwater from Wisconsin River and dam 10. Flow regulated by reservoirs and navigation dams. Peak stage usually occurs at different time than peak discharge. Gage-height record at dam 9 collected in cooperation with Corps of Engineers. Only annual maximum daily discharges and gage heights are shown.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1880	June 1880	21.0	-	1945	Mar. 29, 1945	16.80	127,700
1937	May 6,9, 1937	11.38	54,700	1946	Mar. 29, 1946	15.84	101,200
1938	May 27, 1938	15.76	101,400	1947	Apr. 21, 1947	13.70	85,500
1939	Apr. 6, 1939	-	96,900	1948	Apr. 11, 1948	12.81	84,000
1940	Apr. 19, 1940	10.50	52,100	1949	Apr.4,13, 1949	11.42	73,100
				1950	May 17, 1950	15.26	123,300
1941	Apr. 20, 1941	14.66	102,800				
1942	June 7, 1942	17.38	113,800	1951	Apr. 22, 1951	20.83	185,700
1943	June 28, 1943	16.89	124,600	1952	Apr. 22, 1952	20.89	197,500
1944	June 24, 1944	16.17	122,500	1953	July 3, 1953	12.90	86,200

Maximum daily discharges of Mississippi River at McGregor, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 9, 1954	18.60	165,500	1958	Apr. 14, 1958	8.98	55,800
1955	Apr. 14, 1955	12.20	73,700	1959	Apr. 3, 1959	12.32	72,300
				1960	June 4,5, 1960	16.08	83,100
1956	Apr.15,16, 1956	14.88	105,000				
1957	July 8, 1957	12.80	95,800	1961	Mar.29,30, 1961	15.47	114,000

WISCONSIN RIVER BASIN

3910. Wisconsin River at Rainbow Lake, near Lake Tomahawk, Wis.
(Published as "at Rainbow Reservoir " 1936-55)

Location.--Lat 45°50'00", long 89°32'50", in S½SW¼ sec.30, T.39 N., R.8 E., 400 ft upstream from Gilmore Creek, 800 ft downstream from Rainbow Lake Dam, and 2.5 miles northeast of town of Lake Tomahawk. Records include flow of Gilmore Creek.

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

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

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs.

Remarks.--Flow regulated by Rainbow Lake and 12 smaller reservoirs above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	May 11, 1937	4.10	1,130	1950	May 12, 1950	6.00	2,500
1938	Aug. 10, 1938	6.33	2,420				
1939	June 30, 1939	6.43	2,650	1951	May 19, 1951	5.43	2,170
1940	May 26, 1940	4.77	1,700	1952	Oct. 5, 1951	5.46	2,300
				1953	June 22, 1953	5.78	2,450
1941	Sept. 5, 1941	7.59	3,570	1954	May 10, 1954	5.50	2,250
1942	July 18, 1942	7.23	3,430	1955	Oct. 17, 1954	4.79	1,840
1943	June 17, 1943	6.66	3,010				
1944	May 17, 1944	4.67	1,770	1956	July 12, 1956	4.02	1,440
1945	Apr. 24, 1945	5.14	1,980	1957	Oct. 1, 1956	2.93	886
				1958	June 17, 1958	2.75	802
1946	June 26, 1946	6.68	3,010	1959	Sept.28, 1959	5.68	2,340
1947	May 10, 1947	4.54	1,600	1960	Oct. 2, 1959	5.86	2,450
1948	Feb. 28, 1948	2.72	734				
1949	Aug. 26, 1949	3.96	1,320	1961	May 19, 1961	4.70	1,750

3920. Wisconsin River at Whirlpool Rapids, near Rhinelander, Wis.
(Published as "near Rhinelander" 1905-15)

Location.--Lat 45°33'15", long 89°30'25", in NW¼ sec.4, T.35 N., R.8 E., at head of Whirlpool Rapids, 0.6 mile downstream from outlet of Crescent Lake and 10 miles southwest of Rhinelander.

Drainage area.--1,200 sq mi, approximately. At site used prior to Oct. 1, 1915, 1,150 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 1, 1915, at highway bridge 3 miles upstream at different datum; recording at present site thereafter. Datum of gage is 1,492.14 ft above mean sea level, datum of 1929 (levels by Wisconsin Public Service Commission).

Stage-discharge relation.--Defined by current-meter measurements below 5,500 cfs.

Remarks.--Flow regulated by 12 reservoirs beginning in 1908; 13 reservoirs 1909-34; 15 reservoirs since 1935, and 3 powerplants above station. Only annual peaks are shown.

Peak stages and discharges of Wisconsin River at Whirlpool Rapids, near Rhinelander, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	Apr. 22, 1906	4.8	3,460	1936	May 10, 1936	4.82	4,030
1907	Apr. 3, 1907	5.0	3,720	1937	May 3, 1937	4.05	2,780
1908	May 2, 1908	5.0	3,720	1938	May 8, 1938	4.86	3,950
1909	Apr. 29, 1909	4.3	2,820	1939	June 26, 1939	5.16	4,540
1910	Nov. 15, 1909	3.9	2,340	1940	June 10, 1940	4.50	3,400
1911	July 24, 1911	4.5	2,940	1941	Sept. 6, 1941	5.91	5,590
1912	Aug. 11, 1912	6.1	5,020	1942	Sept.23, 1942	5.44	4,880
1913	July 29, 1913	4.7	2,940	1943	June 18, 1943	5.59	5,230
1914	July 2, 1914	4.8	3,160	1944	May 18, 1944	4.33	3,180
1915	July 18, 1915	4.9	3,060	1945	June 4, 1945	4.81	3,870
1916	Apr. 22, 1916	5.61	5,250	1946	June 28, 1946	5.44	4,880
1917	Apr. 25, 1917	4.15	2,900	1947	Jan. 1, 1947	b4.35	-
1918	June 1, 1918	4.2	3,030		May 6, 1947	-	2,460
1919	Apr. 13, 1919	4.28	3,200	1948	Jan. 24, 1948	c3.40	-
1920	Apr. 1, 1920	5.2	4,520		Feb. 29, 1948	-	1,630
				1949	July 6, 1949	3.34	1,940
1921	Apr. 30, 1921	4.65	3,620	1950	May 13, 1950	5.36	4,880
1922	Apr. 12, 1922	5.18	4,490				
1923	Apr. 23, 1923	5.24	4,590	1951	May 21, 1951	4.96	4,200
1924	Apr. 18, 1924	4.55	3,480	1952	July 25, 1952	4.70	3,710
1925	June 16, 1925	4.15	2,720	1953	June 22, 1953	4.96	4,120
				1954	May 8, 1954	5.07	4,320
1927	July 28, 1927	4.35	3,180	1955	Oct. 18, 1954	4.23	2,900
1928	Sept.18, 1928	5.13	4,350				
1929	Apr. 10, 1929	5.70	5,410	1956	July 14, 1956	3.77	2,340
1930	June 21, 1930	4.15	2,970	1957	Apr. 22, 1957	3.58	2,190
				1958	July 15, 1958	3.76	2,410
1931	June 12, 1931	3.75	2,460	1959	Sept.26, 1959	5.42	4,740
1932	Apr. 12, 1932	4.38	3,250	1960	May 8, 1960	5.55	5,040
1933	Apr.19,22, 1933	4.64	a3,620				
1934	Apr. 12, 1934	4.40	3,400	1961	May 22, 1961	4.38	3,130
1935	Mar. 27, 1935	4.80	4,030				

a Peak discharge shown may have been exceeded as recorder was not in operation during parts of the year.
b Backwater from ice, 2.0 ft.
c Backwater from ice, 1.0 ft.

3924. Tomahawk River near Bradley, Wis.

Location.--Lat 45°36'15", long 89°45'10", in SW¼ sec.16, T.36 N., R.6 E., 4.5 miles downstream from Bearskin Creek and 4.7 miles north of Bradley.

Drainage area.--422 sq mi.

Gage.--Nonrecording prior to Oct. 7, 1925; recording thereafter. Altitude of gage is 1,460 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs.

Remarks.--Flow regulated by Minocqua and Squirrel Lakes. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	July 18, 1915	4.25	904	1920	Mar. 30, 1920	6.17	1,820
1916	Apr. 24, 1916	6.9	2,200	1924	Apr. 20, 1924	4.9	1,170
1917	Apr. 21, 1917	4.31	927	1925	Apr. 25, 1925	3.7	713
1918	June 4, 1918	4.83	1,140				
1919	Apr. 11, 1919	5.11	1,270	1926	Apr. 18, 1926	4.82	1,120

3930. Tomahawk River at Bradley, Wis.
(Published as "at Tomahawk" 1930-51)

Location.--Lat 45°32'20", long 89°44'45", in NW¼ 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. Prior to October 1951, 554 sq mi.

Gage.--Nonrecording supplemented by frequent readings of taintor 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.

Remarks.--Flow completely regulated by four reservoirs operated by Wisconsin Valley Improvement Co. Records of lake elevations and gate openings furnished by Wisconsin Valley Improvement Co. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	Sept.13, 1930	-	1,220	1946	June 25, 1946	-	1,840
				1947	July 31, 1947	-	1,310
1931	Sept. 7, 1931	-	890	1948	Oct. 26, 1947	-	587
1932	Jan. 29, 1932	-	1,170	1949	Feb. 13, 1949	-	759
1933	July 15, 1933	-	939	1950	June 1, 1950	-	976
1934	June 8, 1934	-	612				
1935	July 6, 1935	-	1,890	1951	Sept.15, 1951	-	1,460
				1952	Oct. 7, 1951	-	1,640
1936	July 11, 1936	-	1,170	1953	July 2, 1953	-	1,570
1937	Aug. 23, 1937	-	912	1954	Aug. 8, 1954	-	1,280
1938	Sept.13, 1938	-	1,760	1955	Oct.24-26,1954	-	1,240
1939	June 14, 1939	-	2,100				
1940	June 10, 1940	-	1,410	1956	Sept. 8, 1956	-	778
				1957	Dec. 11, 1956	-	767
1941	Sept.15, 1941	-	1,790	1958	Aug. 24, 1958	-	688
1942	May 31, 1942	-	2,100	1959	Sept.30, 1959	-	2,460
1943	June 18, 1943	-	2,530	1960	Oct. 2, 1959	-	2,690
1944	July 4, 1944	-	1,100				
1945	June 5, 1945	-	1,860	1961	Jan. 21, 1961	-	1,050

3935. Spirit River at Spirit Falls, Wis.

Location.--Lat 45°26'55", long 89°58'50", in NW¼ sec.10, T.34 N., R.4 E., on downstream side of bridge, 0.2 mile south of town of Spirit Falls, 0.6 mile upstream from Squaw Creek, and 2 miles downstream from Richie Creek.

Drainage area.--82 sq mi, approximately.

Gage.--Nonrecording and crest-stage gages. Altitude of gage is 1,450 ft (from dam and reservoir data).

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Sept.18, 1942	10.00	4,180	1952	Apr. 18, 1952	6.37	1,700
1943	Mar. 31, 1943	6.8	1,850	1953	June 20, 1953	6.64	1,820
1944	May 13, 1944	5.8	1,290	1954	May 5, 1954	5.60	1,210
1945	Mar. 18, 1945	7.18	2,200	1955	Oct. 15, 1954	6.1	1,510
1946	Mar. 17, 1946	9.14	3,540	1956	Apr. 6, 1956	a7.30	1,600
1947	Apr. 6, 1947	6.08	1,510	1957	May 15, 1957	3.9	478
1948	Mar. 27, 1948	4.3	624	1958	July 5, 1958	4.53	710
1949	Mar. 30, 1949	6.3	1,630	1959	Sept.27, 1959	6.50	1,520
1950	Apr. 18, 1950	7.10	2,140	1960	Apr. 13, 1960	6.10	1,290
1951	Apr. 12, 1951	6.22	1,570	1961	Mar. 28, 1961	b6.87	1,200

a Backwater from ice, 1.3 ft.
b Affected by backwater from ice.

3940. New Wood River near Merrill, Wis.

Location.--Lat 45°15'30", long 89°50'40", in E½ sec.15, T.32 N., R.5 E., near right bank on downstream side of county highway bridge, three-quarters of a mile downstream from Kelly Creek, 2¾ miles upstream from mouth, and 9½ miles northwest of Merrill.

Drainage area.--83 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,380 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 23, 1953	a6.50	-	1958	Apr. 2, 1958	a4.48	-
	June 21, 1953	-	1,100		Apr. 8, 1958	-	530
1954	May 3, 1954	5.32	1,110	1959	July 9, 1959	6.00	1,370
1955	Apr. 3, 1955	a8.40	-	1960	Apr. 8, 1960	a5.98	-
	Apr. 6, 1955	-	916		May 17, 1960	-	1,180
1956	Apr. 11, 1956	5.22	1,050	1961	Mar. 28, 1961	a6.6	-
1957	Mar. 25, 1957	b4.81	-		Mar. 30, 1961	-	900
	May 15, 1957	-	615				

a Affected by backwater from ice.
b Maximum observed; affected by ice jam.

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., on downstream side of county 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, approximately.

Gage.--Nonrecording. Altitude of gage is 1,300 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,500 cfs and extended by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	Apr. 30, 1914	4.5	1,160	1942	Sept.18, 1942	6.6	2,530
1915	May 22, 1915	3.8	781	1943	June 2, 1943	5.1	1,400
				1944	May 13, 1944	4.5	1,050
1916	Apr. 22, 1916	6.2	2,380	1945	Mar. 18, 1945	4.7	1,160
1917	June 8, 1917	4.1	916				
1918	May 28, 1918	5.0	1,420	1946	Mar. 17, 1946	4.8	1,280
1919	Apr. 11, 1919	4.8	1,280	1947	Apr. 6, 1947	4.7	1,220
1920	Mar. 28, 1920	5.8	2,020	1948	Mar. 27, 1948	3.3	515
				1949	July 5, 1949	3.6	628
1921	Apr. 28, 1921	5.6	1,860	1950	Apr. 18, 1950	5.5	1,660
1922	Apr. 11, 1922	5.9	2,110				
1923	Apr. 22, 1923	6.2	2,380	1951	Apr. 12, 1951	5.37	1,590
1924	Apr. 17, 1924	5.4	1,700	1952	Apr. 11, 1952	4.40	995
1925	June 5, 1925	4.0	870	1953	Mar. 23, 1953	5.36	1,590
				1954	June 26, 1954	4.5	1,050
1926	Aug. 21, 1926	7.6	3,780	1955	Apr. 2, 1955	4.45	1,020
1927	Mar. 18, 1927	5.6	1,860				
1928	Sept.15, 1928	5.0	1,420	1956	Apr. 7, 1956	4.5	1,050
1929	Apr. 7, 1929	6.5	2,680	1957	May 16, 1957	3.40	567
1930	June 16, 1930	4.5	1,110	1958	July 6, 1958	4.7	1,160
				1959	Sept.28, 1959	7.1	3,000
1931	June 13, 1931	2.9	394	1960	May 7, 1960	6.70	2,620
1940	June 8, 1940	5.6	1,810	1961	Mar. 28, 1961	6.44	2,390
1941	Aug. 31, 1941	9.45	5,800				

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., 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.

Gage.--Nonrecording prior to Sept. 11, 1914; recording thereafter. Datum of gage is 1,228.85 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs.

Historical data.--The flood of Aug. 31, 1941, was the highest since 1884.

Remarks.--Flow regulated by many reservoirs and powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Sept.16, 1903	11.7	21,800	1933	May 2, 1933	8.89	11,000
1904	May 27, 1904	11.0	19,500	1934	Apr. 9, 1934	8.6	10,100
1905	June 17, 1905	12.0	23,000	1935	Mar. 23, 1935	10.82	17,000
1906	Apr.11,14,1906	10.1	16,200	1936	May 6, 1936	9.65	14,400
1907	Sept.20, 1907	9.2	13,000	1937	Apr. 24, 1937	9.32	11,500
1908	Apr. 29, 1908	9.5	14,000	1938	May 5, 1938	10.96	17,400
1909	May 7, 1909	8.8	11,600	1939	Mar. 27, 1939	10.81	16,600
1910	Nov. 17, 1909	8.1	9,380	1940	June 9, 1940	11.07	16,500
1911	May 23, 1911	7.7	8,140	1941	Aug. 31, 1941	18.26	49,400
1912	July 24, 1912	17.5	45,000	1942	Sept.18, 1942	13.85	27,000
1913	Apr. 18, 1913	9.2	12,600	1943	June 27, 1943	10.58	14,900
1914	Apr. 30, 1914	8.9	11,000	1944	May 13, 1944	9.49	11,700
1915	Aug. 7, 1915	7.87	8,160	1945	June 3, 1945	8.37	8,330
1916	Apr. 22, 1916	12.60	23,400	1946	June 25, 1946	11.49	18,100
1917	Apr. 21, 1917	8.80	10,700	1947	Apr. 6, 1947	8.20	8,440
1918	May 28, 1918	9.73	13,400	1948	Mar. 26, 1948	6.88	5,520
1919	Apr. 11, 1919	9.51	12,900	1949	July 6, 1949	7.95	7,950
1920	Mar. 27, 1920	11.8	20,500	1950	Apr. 19, 1950	11.52	18,100
1921	Apr. 29, 1921	10.28	15,400	1951	Apr. 12, 1951	11.30	17,400
1922	Apr. 11, 1922	11.2	18,400	1952	July 23, 1952	10.45	14,600
1923	Apr. 22, 1923	11.95	20,700	1953	July 2, 1953	9.55	12,200
1924	Apr. 17, 1924	9.65	13,300	1954	May 3, 1954	10.16	13,500
1925	June 13, 1925	7.58	7,370	1955	June 11, 1955	9.24	10,600
1926	Aug. 21, 1926	10.86	17,400	1956	Apr. 6, 1956	8.48	8,650
1927	Mar. 18, 1927	10.90	17,400	1957	May 15, 1957	6.76	5,150
1928	Sept.14, 1928	11.00	17,700	1958	July 5, 1958	7.82	7,270
1929	Apr. 7, 1929	12.2	21,900	1959	Sept.27, 1959	11.94	19,600
1930	June 15, 1930	8.05	10,700	1960	May 7, 1960	11.24	17,000
1931	June 21, 1931	7.95	8,430	1961	Mar. 28, 1961	9.28	10,700
1932	Apr. 11, 1932	8.87	11,000				

3960. Rib River at Rib Falls, Wis.

Location.--Lat 44°58'25", long 89°54'15", in NW¼ sec.27, T.29 N., R.5 E., on downstream side of highway bridge in village of Rib Falls, 6 miles downstream from Black Creek.

Drainage area.--309 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,220 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs and extended by logarithmic plotting.

Historical data.--The flood of Aug. 31, 1938, was higher than the flood of 1905 according to some residents, from the Marathon Times.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Rib River at Rib Falls, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	June 4, 1925	5.90	2,500	1942	Sept.18, 1942	14.50	19,100
				1943	June 27, 1943	11.60	11,700
1926	Aug. 21, 1926	10.8	15,200	1944	May 12, 1944	6.73	2,860
1927	Mar. 17, 1927	7.7	5,960	1945	Mar. 17, 1945	9.41	6,620
1928	Mar. 26, 1928	9.4	10,400				
1929	Apr. 7, 1929	9.4	10,400	1946	June 25, 1946	9.29	6,420
1930	June 14, 1930	8.4	7,660	1947	Apr. 6, 1947	7.94	4,180
				1948	Mar. 27, 1948	6.9	3,030
1931	June 22, 1931	4.2	1,130	1949	Mar. 29, 1949	7.6	3,820
1932	Apr. 7, 1932	9.4	10,300	1950	Apr. 17, 1950	8.1	4,440
1933	Apr. 6, 1933	7.0	4,430				
1934	Sept.26, 1934	10.3	13,300	1951	Apr. 7, 1951	10.53	9,400
1935	Mar. 23, 1935	9.7	11,300	1952	Apr. 1, 1952	8.4	5,430
				1953	July 28, 1953	11.34	11,200
1936	May 6, 1936	11.5	18,000	1954	May 3, 1954	8.10	4,960
1937	Apr. 9, 1937	7.1	4,510	1955	Oct. 14, 1954	7.9	4,750
1938	Aug. 31, 1938	16.2	23,800				
1939	Mar. 26, 1939	9.7	7,590	1956	Apr. 4, 1956	a10.15	-
1940	June 8, 1940	10.2	8,580		Apr. 5, 1956	-	6,500
				1957	Mar. 15, 1957	a7.07	-
1941	Aug. 31, 1941	13.32	16,000		May 15, 1957	-	1,560

a Maximum observed, affected by ice jam.

3970. Eau Claire River near Antigo, Wis.

Location.--Lat 45°11'40", long 89°13'15", in E½ sec.3, T.31 N., R.10 E., on downstream side of highway bridge, 4.6 miles upstream from West Branch, and 4 miles northwest of Antigo.

Drainage area.--75 sq mi, approximately.

Gage.--Reference point at elevation 5.50 ft gage datum. Altitude of gage is 1,460 ft (from Chicago and North Western Railway elevation of river).

Stage-discharge relation.--Defined by current-meter measurements below 180 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	July 4, 1949	2.1	339	1952	Apr. 1, 1952	1.80	276
1950	Apr. 17, 1950	1.8	276	1953	Mar. 22, 1953	1.99	347
				1954	May 2, 1954	1.95	332
1951	Apr. 5, 1951	1.76	260	1955	Apr. 1, 1955	1.45	187

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 downstream side of 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.

Gage.--Nonrecording at datum 1.00 ft higher prior to Sept. 16, 1953; recording at present datum thereafter. Datum of gage is 1,177.88 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,000 cfs.

Remarks.--Base for partial-duration series, 1,500 cfs. Only annual peaks are shown prior to 1959.

Peak stages and discharges of Eau Claire River at Kelly, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	June 4, 1914	4.8	2,910	1948	Mar. 22, 1948	5.55	3,860
1915	May 22, 1915	3.1	1,180	1949	Apr. 1, 1949	2.98	1,300
				1950	Apr. 18, 1950	5.00	3,200
1916	Apr. 21, 1916	5.3	3,520				
1917	Apr. 4, 1917	3.4	1,460	1951	Apr. 7, 1951	5.69	4,090
1918	May 27, 1918	4.4	2,450	1952	Apr. 1, 1952	6.21	4,580
1919	June 26, 1919	4.5	2,560	1953	Mar. 23, 1953	7.07	5,280
1920	Mar. 26, 1920	6.5	5,080	1954	Apr. 27, 1954	5.33	2,430
				1955	Apr. 2, 1955	6.05	3,230
1921	Mar. 20, 1921	7.6	6,600				
1922	Apr. 9, 1922	7.5	6,460	1956	Apr. 6, 1956	a8.39	-
1923	Apr. 20, 1923	6.9	5,620		Apr. 7, 1956	-	3,650
1924	Apr. 17, 1924	5.7	4,130	1957	Mar. 15, 1957	b6.23	-
1925	June 5, 1925	3.1	1,220		Apr. 22, 1957	-	1,450
				1958	Nov. 19, 1957	b5.55	-
1926	Aug. 21, 1926	8.4	8,300		Apr. 6, 1958	-	2,420
1940	June 8, 1940	6.6	5,020	1959	Apr. 3, 1959	-	c2,000
					Aug. 24, 1959	4.60	1,580
1941	Sept. 1, 1941	7.42	5,980		Sept.27, 1959	8.76	5,410
1942	May 31, 1942	4.91	3,090				
1943	June 27, 1943	7.01	5,740	1960	Oct. 26, 1959	5.88	2,580
1944	June 16, 1944	3.57	1,760		Apr. 15, 1960	5.65	2,700
1945	Mar. 18, 1945	5.5	3,750		May 7, 1960	7.81	4,950
1946	Mar. 14, 1946	5.99	4,330	1961	Mar. 28, 1961	9.80	6,600
1947	Apr. 6, 1947	3.93	2,020				

a Backwater from ice, 3.0 ft.
b Affected by backwater from ice.
c About.

3980. Wisconsin River at Rothschild, Wis.

Location.--Lat 44°53'10", long 89°37'50", in sec.26, T.28 N., R.7 E., 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.

Gage.--Recording. Datum of gage is 1,135.86 ft above mean sea level, datum of 1929. Auxiliary staff gage in Mosinee Pond 8 miles downstream.

Stage-discharge relation.--Defined by current-meter measurements below 45,000 cfs and extended above by logarithmic plotting.

Remarks.--Flow regulated by 20 reservoirs and 12 powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Sept. 1, 1941	22.3	75,000	1953	Mar. 23, 1953	15.06	32,500
				1954	May 3, 1954	13.70	27,600
1945	Mar. 18, 1945	14.04	28,600	1955	Apr. 3, 1955	11.20	19,200
1946	Mar. 18, 1946	13.98	28,600	1956	Apr. 6, 1956	12.45	23,400
1947	Apr. 6, 1947	12.43	23,200	1957	Apr. 20, 1957	7.06	8,500
1948	Mar. 27, 1948	10.26	16,400	1958	Apr. 7, 1958	10.74	17,800
1949	Mar. 30, 1949	9.16	13,200	1959	Sept.27, 1959	17.81	47,000
1950	Apr. 19, 1950	13.68	27,600	1960	May 7, 1960	17.05	42,900
1951	Apr. 8, 1951	15.31	33,200	1961	Mar. 28, 1961	15.36	34,700
1952	Apr. 2, 1952	14.80	31,400				

3985. Bull Creek Jr. near Rothschild, Wis.

Location.--Lat 44°50'00", long 89°36'25", in sec.12, T.27 N., R.7 E., just downstream from bridge on county road X, 4 miles south of Rothschild, and 5 miles upstream from mouth.

Drainage area.--26.4 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,190 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 600 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 14, 1944	3.40	326	1948	Mar. 23, 1948	3.1	276
1945	Mar. 18, 1945	4.20	671	1949	Mar. 31, 1949	2.5	115
				1950	Apr. 12, 1950	2.90	214
1946	Mar. 15, 1946	3.70	484				
1947	Apr. 7, 1947	3.0	173	1951	Apr. 8, 1951	3.68	484

3990. Big Eau Pleine River near Colby, Wis.

Location.--Lat 44°54'10", long 90°12'45", in NW¼ sec.24, T.28 N., R.2 E., on downstream side of bridge at Cherokee, 1.6 miles upstream from Randall Creek, and 5 miles east of Colby.

Drainage area.--79 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,270 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 8,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	May 30, 1942	7.9	3,580	1949	Mar. 27, 1949	5.48	1,150
1943	June 27, 1943	11.05	9,370	1950	Mar. 28, 1950	ε6.7	1,900
1944	Apr. 7, 1944	5.00	843				
1945	Mar. 17, 1945	8.54	4,660	1951	Apr. 8, 1951	7.48	b3,160
				1952	Apr. 1, 1952	-	b1,500
1946	Mar. 14, 1946	8.0	3,880	1953	Mar. 22, 1953	7.30	2,900
1947	Apr. 6, 1947	6.8	2,310	1954	May 3, 1954	8.0	3,880
1948	Mar. 21, 1948	6.0	1,530				

a Affected by ice.
b Maximum daily discharge.

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., 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.

Gage.--Nonrecording prior to Sept. 16, 1938; recording thereafter. Prior to Dec. 31, 1925, at site 0.5 mile upstream at different datum. Altitude of gage is 1,170 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 24,000 cfs and extended by logarithmic plotting.

Remarks.--Base for partial-duration series, 2,500 cfs. Only annual peaks are shown prior to 1940.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	June 5, 1914	20.7	-	40,000
1915	May 21, 1915	7.2	-	3,420
1916	Apr. 21, 1916	9.2	-	6,050
1917	Apr. 4, 1917	7.5	-	3,770
1918	May 26, 1918	9.6	-	6,510
1919	Aug. 7, 1919	8.9	-	5,610
1920	Nov. 10, 1919	11.0	-	8,810
1921	Apr. 27, 1921	10.6	-	8,150
1922	Apr. 9, 1922	11.6	-	9,900
1923	Apr. 18, 1923	6.4	-	2,510
1924	Aug. 22, 1924	11.0	-	8,810
1925	June 17, 1925	6.6	-	2,710
1937	May 1, 1937	7.6	-	1,650
1938	Sept. 9, 1938	24.5	-	41,000
1939	Mar. 24, 1939	14.95	-	8,200
1940	Apr. 4, 1940	10.18	-	3,290
	May 20, 1940	10.50	-	3,550
	June 8, 1940	11.25	-	4,180
	June 24, 1940	16.35	-	10,200
1941	Apr. 2, 1941	13.10	-	6,060
	Apr. 14, 1941	10.09	-	3,210
	May 29, 1941	10.08	-	3,210
	Sept. 4, 1941	10.60	-	3,640
	Sept.16, 1941	14.10	-	7,160
1942	Oct. 7, 1941	15.34	-	8,590
	Oct. 27, 1941	12.48	-	5,420
	Nov. 1, 1941	12.99	-	5,950
	May 30, 1942	16.08	-	9,710
	July 16, 1942	15.35	-	8,720
	Sept.18, 1942	15.18	-	8,460
1943	Oct. 4, 1942	12.53	-	5,420
	Mar. 30, 1943	18.21	-	13,200
	May 29, 1943	11.58	-	4,540
	June 17, 1943	11.90	-	4,820
	June 27, 1943	20.5	-	18,500
1944	Nov. 8, 1943	9.23	-	2,520
	Apr. 7, 1944	9.55	-	2,810
	June 14, 1944	9.66	-	2,890
	June 25, 1944	10.28	-	3,370
1945	Mar. 17, 1945	17.30	-	11,500
	Apr. 17, 1945	9.48	-	2,730
	Aug. 31, 1945	22.2	-	24,700
1946	Nov. 8, 1945	10.16	-	3,290
	Mar. 14, 1946	14.87	-	7,840
	June 11, 1946	10.95	-	4,000
	June 24, 1946	10.85	-	3,820
	June 30, 1946	10.92	-	3,910
1947	Mar. 24, 1947	13.99	-	7,050
	Apr. 5, 1947	11.78	-	4,720
1948	Mar. 21, 1948	15.16	-	8,460
1949	Mar. 22, 1949	14.34	-	7,380
	Mar. 27, 1949	9.68	-	2,890
	Apr. 5, 1949	9.65	-	2,810
1950	Mar. 27, 1950	16.63	-	10,500
1951	Apr. 7, 1951	15.85	-	9,280
	June 4, 1951	12.90	-	5,840
1952	Apr. 1, 1952	17.31	-	11,500
	Apr. 15, 1952	10.34	-	3,290
	July 3, 1952	9.82	-	2,890
1953	Mar. 22, 1953	16.71	-	10,600
	July 26, 1953	9.25	-	2,520
	July 28, 1953	14.39	-	7,490
1954	Mar. 25, 1954	12.50	-	5,420
	Apr. 27, 1954	11.12	-	4,110
	May 3, 1954	14.54	-	7,650
	Sept.19, 1954	9.48	-	2,720
1955	Oct. 14, 1954	13.23	-	6,200
	Mar. 15, 1955	-	-	-
	Mar. 31, 1955	11.49	0.05	4,400
	Aug. 5, 1955	9.24	-	2,550
1956	Apr. 5, 1956	16.60	-	10,500
	May 14, 1956	10.02	-	3,150
	June 26, 1956	10.93	-	3,940
	July 8, 1956	9.77	-	2,950
1957	Mar. 15, 1957	a13.06	-	4,000
1958	Apr. 6, 1958	14.00	-	7,050
	June 5, 1958	15.52	-	8,890
1959	Mar. 31, 1959	10.97	.88	3,200
	Apr. 3, 1959	11.38	-	4,340
	Apr. 18, 1959	10.24	-	3,320
	Sept.27, 1959	12.69	-	5,610
1960	Oct. 24, 1959	9.92	-	3,070
	Dec. 28, 1959	15.20	-	8,460
	Mar. 29, 1960	14.28	1.38	5,840
	May 7, 1960	14.20	-	7,270
	May 17, 1960	12.68	-	5,600
1961	Mar. 26, 1961	14.05	-	7,100
	Apr. 18, 1961	9.80	-	2,970

a Affected by backwater from ice.

4000. Wisconsin River at Knowlton, Wis.

Location.--Lat 44°42', long 89°42', in N½ sec.29, T.26 N., R.7 E., on combination railroad and highway bridge at Knowlton, 1.5 miles downstream from Big Eau Pleine River.

Drainage area.--4,520 sq mi, approximately.

Gage.--Recording prior to Feb. 19, 1942; nonrecording thereafter. Datum of gage is 1,095.9 ft above mean sea level (U.S. Weather Bureau).

Stage-discharge relation.--Defined by current-meter measurements below 40,000 cfs.

Remarks.--Flow regulated by 16 reservoirs prior to 1923, 17 reservoirs 1923-26, 18 reservoirs 1927-34, 20 reservoirs 1935-36, 21 reservoirs since 1937, and many powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Apr. 29, 1921	16.0	37,400	1932	Apr. 8, 1932	14.0	31,300
1922	Apr. 11, 1922	18.6	46,800	1933	Apr. 11, 1933	9.98	19,500
1923	Apr. 22, 1923	16.55	38,600	1934	Apr. 5, 1934	13.7	30,400
1924	Apr. 18, 1924	15.0	33,900	1935	Mar. 22, 1935	18.9	47,600
1925	June 14, 1925	8.72	14,100				
				1936	Mar. 24, 1936	17.25	41,800
1926	Aug. 22, 1926	18.6	46,600	1937	Apr. 25, 1937	10.75	20,800
1927	Mar. 18, 1927	12.92	28,000	1938	Sept.11, 1938	19.91	51,900
1928	Sept.16, 1928	17.35	42,500	1939	Mar. 27, 1939	15.90	37,000
1929	Apr. 8, 1929	16.80	40,500	1940	June 9, 1940	16.17	38,100
1930	June 15, 1930	15.80	37,200				
				1941	Sept. 2, 1941	20.5	54,300
1931	June 22, 1931	6.50	9,590	1942	May 31, 1942	18.65	46,800

4005. Plover River near Stevens Point, Wis.

Location.--Lat 44°35', long 89°29', in SW¼ sec.6, T.24 N., R.9 E., at downstream side of town road bridge just east of county road Y, 5 miles northeast of Stevens Point and 9 miles upstream from mouth.

Drainage area.--136 sq mi.

Gage.--Nonrecording. Altitude of gage is 1,110 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	June 5, 1914	4.8	1,610	1945	Mar. 18, 1945	4.0	1,020
1915	Apr. 10, 1915	2.7	494				
				1946	Mar. 15, 1946	3.46	781
1916	Apr. 23, 1916	3.5	750	1947	Apr. 7, 1947	2.4	446
1917	May 1, 1917	2.6	466	1948	Mar. 22, 1948	3.18	680
1918	May 28, 1918	3.3	670	1949	Mar. 23, 1949	2.5	473
1919	June 27, 1919	4.4	1,300	1950	Mar. 29, 1950	4.2	1,160
1944	June 13, 1944	2.9	590	1951	Apr. 9, 1951	3.46	781

4008. Wisconsin River at Wisconsin Rapids, Wis.
(Published as "near Nekoosa " 1914-49)

Location.--Lat 44°22'05", long 89°51'30", in SW¼ 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; at site used 1914-49, 5,500 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 23, 1914, and recording Oct. 23, 1914, to March 1950, at site 7 miles downstream. Altitude of gage was 910 ft (from river-profile map) since Oct. 1, 1934, and at datum 2.00 ft higher prior to that date. Since October 1957, headwater and tailwater gages and generation data read hourly and entered in daily log sheet by company employees. 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).

Stage-discharge relation.--Defined by current-meter measurements below 50,000 cfs at site used prior to March 1950. At site used since October 1957, discharge computed from powerplant records on basis of ratings of hydroelectric units developed by Geological Survey, and taintor-gate ratings and spillway ratings based on theoretical formulas and discharge measurements.

Remarks.--Flow regulated by 13 reservoirs beginning in 1908, 14 reservoirs 1909, 15 reservoirs 1910-11, 16 reservoirs 1912-14, 21 reservoirs since 1937, and many powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	June 8, 1914	-	54,000	1926	Aug. 23, 1926	15.08	52,700
1915	May 24, 1915	8.68	20,200	1927	Mar. 15, 1927	13.10	38,800
				1928	Mar. 26, 1928	15.0	52,100
1916	Apr. 24, 1916	14.89	51,200	1929	Apr. 9, 1929	14.30	46,600
1917	Apr. 5, 1917	10.02	24,700	1930	June 16, 1930	13.4	40,600
1918	May 30, 1918	12.22	34,000				
1919	June 27, 1919	10.6	26,900	1931	June 23, 1931	5.70	11,700
1920	Mar. 28, 1920	15.1	52,900	1932	Apr. 9, 1932	12.82	37,000
				1933	Apr. 12, 1933	9.30	22,100
1921	Mar.22, Apr.30, 1921	13.2	39,400	1934	Apr. 6, 1934	12.78	37,000
				1935	Mar. 24, 1935	18.9	68,500
1922	Apr. 12, 1922	16.1	61,000				
1923	Apr. 23, 1923	14.04	44,800	1936	Mar. 26, 1936	16.50	48,100
1924	Apr. 19, 1924	13.00	38,200	1937	Apr. 26, 1937	11.55	23,700
1925	June 15, 1925	8.50	19,400	1938	Sept.12, 1938	19.10	70,400

Peak stages and discharges of Wisconsin River at Wisconsin Rapids, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Mar. 28, 1939	16.61	48,900	1947	Apr. 7, 1947	11.40	22,900
1940	June 26, 1940	17.00	52,100	1948	Mar. 28, 1948	10.56	21,600
				1949	Mar. 31, 1949	8.82	15,200
1941	Sept. 3, 1941	18.09	59,600				
1942	Sept.20, 1942	17.83	57,900	1958	Apr. 7, 1958	-	17,400
1943	June 29, 1943	18.05	59,600	1959	Sept.29, 1959	-	49,100
1944	June 15, 1944	10.86	21,300	1960	May 8, 1960	-	59,400
1945	Mar. 19, 1945	14.21	34,300				
				1961	Mar. 28, 1961	-	41,000
1946	Mar. 18, 1946	13.98	33,400				

4015. Wisconsin River near Necedah, Wis.

Location.--Lat 44°02', long 90°01', in sec.9, T.18 N., R.4 E., at bridge on State Highway 21, 3 miles northeast of Necedah, and 5 miles upstream from Big Roche a Cri Creek.

Drainage area.--5,860 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 880 ft (from river-profile map). Prior to June 30, 1914, at different datum.

Stage-discharge relation.--Defined by current-meter measurements below 50,000 cfs.

Remarks.--Flow regulated by 13 reservoirs beginning in 1908, 14 reservoirs 1909, 15 reservoirs 1910-11, 16 reservoirs 1912-14, 21 reservoirs since 1937, and many powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Sept.18, 1903	14.8	60,500	1913	Apr. 6, 1913	13.9	49,600
1904	May 30, 1904	12.6	35,900	1914	June 8, 1914	15.5	69,700
1905	June 10, 1905	17.2	96,400				
				1944	June 16, 1944	13.21	20,100
1906	Apr. 16, 1906	13.4	44,000	1945	Mar. 20, 1945	16.0	34,400
1907	Mar. 30, 1907	13.4	44,000				
1908	May 1, 1908	12.2	32,300	1946	Mar. 20, 1946	15.9	34,000
1909	Apr. 24, 1909	11.5	26,800	1947	Apr. 8, 1947	14.06	24,600
1910	Nov. 17, 1909	10.4	20,100	1948	Mar. 29, 1948	13.70	21,500
				1949	Apr. 2, 1949	11.10	11,700
1911	May 26, 1911	10.9	22,900	1950	Apr. 19, 1950	15.4	29,700
1912	Oct. 10, 1911	16.9	91,600				

4020. Yellow River at Babcock, Wis.

Location.--Lat 44°18'05", long 90°07'15", in NW¼ sec.14, T.21 N., R.3 E., at downstream side of highway bridge at Babcock, 1.9 miles upstream from Hemlock Creek.

Drainage area.--223 sq mi.

Gage.--Nonrecording prior to Oct. 28, 1948; recording thereafter. Datum of gage is 954.75 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,200 cfs. Only annual peaks are shown prior to 1949.

Peak stages and discharges of Yellow River at Babcock, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 19, 1944	13.6	4,880	1955	Oct. 4, 1954	12.90	4,180
1945	Mar. 18, 1945	15.78	8,430		Oct. 15, 1954	10.30	2,070
					Mar. 13, 1955	8.98	1,340
1946	June 12, 1946	13.0	4,270		Apr. 2, 1955	9.73	1,760
1947	Apr. 6, 1947	11.2	2,700		May 30, 1955	9.44	1,590
1948	Mar. 21, 1948	12.88	4,180				
				1956	Apr. 5, 1956	15.85	8,470
1949	Mar. 23, 1949	9.00	1,350		June 28, 1956	9.85	1,850
	Apr. 6, 1949	9.03	1,360				
				1957	May 27, 1957	5.52	462
1950	Mar. 28, 1950	13.98	5,400				
1951	Apr. 8, 1951	14.81	6,620	1958	Apr. 7, 1958	11.68	3,080
	Apr. 13, 1951	9.80	1,760				
				1959	Apr. 1, 1959	a12.62	3,400
1952	Apr. 2, 1952	17.38	11,600		Sept.27, 1959	12.40	2,980
	Apr. 16, 1952	9.80	1,760				
	Aug. 21, 1952	10.00	1,880	1960	Dec. 29, 1959	12.08	3,430
					Mar. 30, 1960	8.95	1,320
1953	Mar. 22, 1953	15.06	7,130		May 7, 1960	14.14	5,460
	Apr. 11, 1953	10.00	1,880				
				1961	Mar. 28, 1961	15.41	7,680
1954	May 3, 1954	12.24	3,760				
	July 8, 1954	8.82	1,260				

a Affected by backwater from ice.

4025. Yellow River at Sprague, Wis.

Location.--Lat 44°08', long 90°06', in NW¼ sec.11, T.19 N., R.3 E., 1 mile southeast of Sprague and 10 miles upstream from Necedah Dam.

Drainage area.--420 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 910 ft (from elevation of gage at Necedah).

Stage-discharge relation.--Defined by current-meter measurements below 2,300 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Mar. 15, 1927	12.2	3,740	1934	Apr. 6, 1934	10.4	1,420
1928	Sept.17, 1928	14.0	7,060	1935	Mar. 23, 1935	12.4	4,080
1929	Mar. 20, 1929	12.8	4,800				
1930	June 16, 1930	12.8	4,800	1936	Mar. 25, 1936	13.0	5,160
				1937	Apr. 5, 1937	11.4	2,420
1931	June 24, 1931	7.4	602	1938	Sept.11, 1938	13.38	5,920
1932	Apr. 8, 1932	13.2	5,540	1939	Apr. 20, 1939	11.8	3,060
1933	Apr. 3, 1933	10.4	1,450	1940	June 26, 1940	11.3	2,260

4030. Yellow River at Necedah, Wis.

Location.--Lat 44°03', long 90°04', in S½ sec.18, T.18 N., R.4 E., at Necedah powerplant of Wisconsin Power and Light Co., 5 miles downstream from Cranberry Creek.

Drainage area.--526 sq mi.

Gage.--Nonrecording. Datum of gage is 884.08 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Yellow River at Necedah, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Apr. 5, 1941	14.7	6,810	1951	Apr. 9, 1951	15.60	8,620
1942	June 2, 1942	15.50	8,400	1952	Apr. 3, 1952	17.10	12,800
1943	Apr. 1, 1943	16.0	9,500	1953	Mar. 24, 1953	15.24	8,020
1944	June 22, 1944	13.38	4,500	1954	May 6, 1954	13.20	4,120
1945	Mar. 19, 1945	15.8	9,060	1955	Oct. 6, 1954	13.50	4,600
1946	Mar. 17, 1946	14.52	6,300	1956	Apr. 7, 1956	15.60	8,990
1947	Apr. 10, 1947	12.2	2,760	1957	May 31, June 2, 1957	9.30	854
1948	Mar. 23, 1948	14.0	5,040				
1949	Apr. 10, 1949	10.7	1,620				
1950	Mar. 30, 1950	13.7	4,910				

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., 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.

Gage.--Nonrecording. Datum of gage is 867.05 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,500 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 20, 1944	8.2	1,610	1953	Mar. 24, 1953	9.80	2,480
1945	Mar. 17, 1945	11.28	3,850	1954	July 8, 1954	11.0	3,140
				1955	Oct. 6, 1954	9.85	2,320
1946	Mar. 16, 1946	11.28	3,850				
1947	June 16, 1947	9.54	2,140	1956	Apr. 5, 1956	12.60	5,580
1948	Mar. 21, 1948	10.58	2,960	1957	May 28, 1957	6.70	1,110
1949	Apr. 4, 1949	6.3	920	1958	Apr. 10, 1958	5.25	710
1950	Mar. 28, 1950	9.8	2,360	1959	Apr. 3, 1959	10.75	3,300
				1960	May 8, 1960	12.94	6,880
1951	Apr. 10, 1951	11.40	3,720				
1952	Apr. 2, 1952	12.40	5,300	1961	Mar. 29, 1961	12.24	5,480

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., 0.5 mile downstream from Dell Creek and 3 miles downstream from Wisconsin Dells.

Drainage area.--7,830 sq mi, approximately.

Gage.--Recording. Altitude of gage is 810 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 65,000 cfs.

Historical data.--The flood of Sept. 14, 1938, was the highest since the dam was built in 1909, from the Wisconsin Dells Events.

Remarks.--Flow regulated by many reservoirs and powerplants above station. Only annual peaks are shown.

Peak stages and discharges of Wisconsin River near Wisconsin Dells, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 27, 1935	17.80	64,600	1949	Apr. 4, 1949	5.43	12,400
				1950	Apr. 21, 1950	10.13	29,900
1936	Mar. 29, 1936	14.75	46,300				
1937	Apr. 28, 1937	9.90	25,000	1951	Apr. 11, 1951	15.58	61,700
1938	Sept.14, 1938	18.83	72,200	1952	Apr. 14, 1952	9.76	28,600
1939	Mar. 30, 1939	15.05	48,500	1953	Apr. 13, 1953	8.74	24,000
1940	June 28, 1940	14.90	50,700	1954	May 5, 1954	10.47	31,600
				1955	June 13, 1955	10.06	29,700
1941	Sept. 5, 1941	13.53	43,600				
1942	June 4, 1942	15.13	52,800	1956	Apr. 11, 1956	10.00	29,500
1943	June 4, 1943	15.63	57,500	1957	Mar. 18, 1957	3.01	7,130
1944	June 17, 1944	8.31	20,700	1958	July 9, 1958	3.53	8,240
1945	Mar. 22, 1945	13.08	43,000	1959	Sept.30, 1959	12.97	43,800
				1960	May 10, 1960	16.02	63,300
1946	Mar. 19, 1946	13.63	45,600				
1947	Apr. 9, 1947	8.93	24,800	1961	Mar. 31, 1961	10.27	30,100
1948	Mar. 27, 1948	8.82	24,400				

4050. Baraboo River near Baraboo, Wis.

Location.--Lat 43°28'55", long 89°38'00", in NW¼ sec.35, T.12 N., R.7 E., on upstream side of highway bridge, 0.3 mile downstream from Rowley Creek, and 4 miles east of Baraboo.

Drainage area.--600 sq mi.

Gage.--Nonrecording. Datum of gage is 788.21 ft above mean sea level, datum of 1929. Prior to Mar. 31, 1922, at bridge 2.3 miles upstream at datum 7.6 ft higher.

Stage-discharge relation.--Defined by current-meter measurements below 6,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	June 25, 1914	7.4	1,030	1947	June 14, 1947	18.02	3,400
1915	Sept.17, 1915	10.3	1,700	1948	Mar. 21, 1948	20.63	5,340
				1949	June 29, 1949	13.4	1,950
1916	Mar.27, June 6, 1916	12.75	2,500	1950	Mar. 29, 1950	21.16	5,760
1917	Mar. 26, 1917	17.5	7,900	1951	Apr. 30, 1951	17.93	3,550
1918	Mar. 20, 1918	15.1	4,170	1952	Apr. 4, 1952	18.63	3,800
1919	Mar. 20, 1919	15.4	4,550	1953	Mar. 23, 1953	13.31	2,020
1920	June 22, 1920	17.08	7,360	1954	July 8, 1954	14.0	2,150
				1955	Apr. 25, 1955	12.95	1,800
1921	May 28, 1921	11.2	2,110				
				1956	Apr. 6, 1956	20.60	5,340
1935	Aug. 6, 1935	15.8	5,100	1957	June 13, 1957	9.45	808
				1958	Apr. 7, 1958	10.05	940
1943	Mar. 29, 1943	16.4	3,000	1959	Apr. 5, 1959	21.35	5,910
1944	Feb. 28, 1944	14.24	2,210	1960	May 10, 1960	18.50	4,220
1945	June 5, 1945	16.66	3,110				
				1961	Mar. 30, 1961	21.10	5,640
1946	Mar. 17, 1946	18.78	3,880				

4060. Wisconsin River at Prairie du Sac, Wis.

Location.--Lat 43°17'25", long 89°42'55", in sec.1, T.9 N., R.6 E., on downstream end of bridge on State Highway 60 in Prairie du Sac, 1.6 miles downstream from Prairie du Sac powerplant, and 6.5 miles upstream from Honey Creek.

Drainage area.--8,950 sq mi, approximately.

Gage.--Recording. Datum of gage is 729.64 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 65,000 cfs.

Remarks.--Flow regulated by many reservoirs and powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 18, 1944	10.8	25,000	1949	Apr. 4, 1949	7.70	13,400
1945	Mar. 23, 1945	15.8	52,300	1950	Apr. 24, 1950	12.66	34,900
1946	Mar. 19, 1946	15.79	52,300	1951	Apr. 13, 1951	17.10	67,700
1947	Apr. 10, 1947	12.23	32,700	1952	Apr.11,15, 1952	12.00	32,300
1948	Mar. 30, 1948	11.20	28,100	1953	Apr. 14, 1953	11.10	27,300

4065. Black Earth Creek at Black Earth, Wis.

Location.--Lat 43°08'00", long 89°44'00", in SW¼ 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.--45.9 sq mi.

Gage.--Recording. Altitude of gage is 810 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 31, 1954	3.68	252	1958	Feb. 24, 1958	3.60	266
	June 22, 1954	5.17	576				
	July 3, 1954	6.58	1,750	1959	Mar. 24, 1959	4.40	428
	July 7, 1954	4.02	311		Apr. 1, 1959	5.83	1,120
					Aug. 22, 1959	3.68	280
1955	Oct. 3, 1954	4.52	440		Aug. 27, 1959	3.53	253
	Feb. 20, 1955	5.28	654				
	Mar. 3, 1955	3.89	320	1960	Oct. 23, 1959	3.39	228
	Apr. 24, 1955	3.44	237		Jan. 13, 1960	4.12	366
					Mar. 29, 1960	4.68	503
1956	Feb. 24, 1956	3.59	261		May 7, 1960	4.55	468
	Mar. 26, 1956	3.69	282		July 3, 1960	5.80	1,020
	Mar. 28, 1956	3.28	210				
	May 13, 1956	4.33	408	1961	Oct. 31, 1960	4.11	340
					Feb. 23, 1961	3.95	324
1957	Feb. 9, 1957	3.28	210		Mar. 6, 1961	4.42	433
	June 11, 1957	5.96	1,030		Mar. 25, 1961	5.22	693

4070. Wisconsin River at Muscoda, Wis.

Location.--Lat 43°12'00", long 90°26'25", in sec.1, T.8 N., R.1 W., 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.

Gage.--Nonrecording prior to Mar. 16, 1930; recording thereafter. Datum of gage is 667.05 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 78,000 cfs.

Remarks.--Flow regulated by many reservoirs and powerplants above station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1881	June 11, 1881	11.1	-	-	1939	Apr. 2, 1939	8.87	-	50,700
					1940	July 1, 1940	9.15	-	50,700
1914	June 13, 1914	8.6	-	45,700					
1915	Apr. 17, 1915	6.1	-	24,200	1941	Sept. 8, 1941	8.28	-	44,300
					1942	June 7, 1942	9.30	-	54,600
1916	Apr. 29, 1916	9.2	-	54,300	1943	June 6, 1943	9.64	-	57,900
1917	Apr. 11, 1917	7.0	-	33,200	1944	June 19, 1944	6.15	-	27,200
1918	June 5, 1918	8.1	-	40,800	1945	Mar. 25, 1945	8.48	-	46,300
1919	Apr. 16, 1919	7.98	-	42,500					
1920	Apr. 2, 1920	10.10	-	63,300	1946	Mar. 10, 1946	9.68	5.0	-
						Mar. 21, 1946	-	-	51,300
1921	May 6, 1921	7.8	-	39,500	1947	Apr. 12, 1947	6.70	-	30,700
1922	Apr. 16, 1922	10.60	-	72,100	1948	Feb. 28, 1948	7.62	4.5	-
1923	Apr. 27, 1923	8.7	-	52,500		Mar. 28, 1948	-	-	27,900
1924	Apr. 24, 1924	8.0	-	42,500	1949	Mar. 6, 1949	4.81	2.0	-
1925	June 22, 1925	6.00	-	25,100		Apr. 7, 1949	-	-	13,200
					1950	Mar. 8, 1950	7.07	3.5	-
1926	Aug. 29, 1926	8.28	-	43,800		Apr. 24, 1950	-	-	30,700
1927	Mar. 20, 1927	8.20	-	43,000					
1928	Sept.22, 1928	9.5	-	52,600	1951	Apr. 14, 1951	9.95	-	64,800
1929	Apr. 14, 1929	9.3	-	51,800	1952	Apr. 16, 1952	6.80	-	31,500
1930	June 22, 1930	7.60	-	38,400	1953	Apr.15,16,1953	5.82	-	24,600
					1954	May 9, 1954	6.85	-	31,900
1931	June 29, 1931	3.28	-	11,300	1955	June 16, 1955	6.07	-	25,600
1932	Apr. 14, 1932	8.00	-	40,800					
1933	Apr. 7, 1933	6.54	-	30,000	1956	Apr. 15, 1956	6.81	-	31,600
1934	Apr. 12, 1934	7.50	-	36,800	1957	June 12, 1957	3.35	-	12,000
1935	Mar. 29, 1935	9.90	-	62,200	1958	Mar. 4, 1958	a3.97	-	-
						July 11,14,1958	-	-	10,700
1936	Mar. 31, 1936	8.70	-	48,100	1959	Apr. 3, 1959	5.91	-	25,300
1937	Mar. 7, 1937	6.68	2.0	-	1960	May 12, 1960	10.17	-	67,200
	May 2, 1937	-	-	27,900					
1938	Sept.16, 1938	11.48	-	80,800	1961	Apr. 3, 1961	7.34	-	35,800

a Affected by backwater from ice.

4080. Kickapoo River at La Farge, Wis.

Location.--Lat 43°34'30", long 90°38'35", on east-west quarter section line, in W½ sec.29, T.13 N., R.2 W., 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.

Gage.--Nonrecording prior to Dec. 4, 1939; recording thereafter. Datum of gage is 782.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 6,000 cfs.

Remarks.--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges of Kickapoo River at La Farge, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Sept. 4, 1939	7.44	a1,610	1950	Mar. 8, 1950	b12.90	-
					Mar. 24, 1950	9.70	2,510
1940	June 23, 1940	10.26	2,860		Mar. 27, 1950	11.90	5,460
					June 13, 1950	8.91	2,050
1941	Mar. 31, 1941	8.28	1,770		June 22, 1950	8.75	2,000
	Apr. 18, 1941	8.44	1,810				
				1951	Apr. 7, 1951	8.55	1,950
1942	Sept.18, 1942	7.89	1,630		July 21, 1951	12.32	6,600
1943	Mar. 26, 1943	9.52	2,210	1952	Oct. 3, 1951	8.44	1,760
	May 30, 1943	8.23	1,720		Apr. 1, 1952	10.95	3,480
	July 7, 1943	9.12	2,030		June 3, 1952	8.42	1,810
1944	Feb. 23, 1944	8.98	1,990	1953	Aug. 2, 1953	7.77	1,560
	Feb. 26, 1944	10.06	2,530				
	Mar. 12, 1944	10.58	3,180	1954	July 3, 1954	11.44	4,370
	Mar. 24, 1944	8.27	1,750				
	June 16, 1944	10.12	2,530	1955	June 3, 1955	9.82	2,510
	June 18, 1944	8.64	1,840				
				1956	Apr. 4, 1956	12.35	6,750
1945	Mar. 16, 1945	9.81	2,460				
	May 22, 1945	10.72	3,290	1957	July 21, 1957	7.86	1,570
	June 1, 1945	10.41	2,770				
				1958	Feb. 25, 1958	c7.13	-
1946	Jan. 6, 1946	12.03	5,730		Apr. 6, 1958	5.66	902
	Feb. 6, 1946	9.23	2,180				
	Mar. 6, 1946	11.32	4,110	1959	Apr. 5, 1959	10.99	3,070
	Mar. 13, 1946	11.46	4,490		May 21, 1959	11.76	5,100
					May 31, 1959	8.41	1,780
1947	Mar. 13, 1947	8.97	2,020		Aug. 27, 1959	11.67	4,880
	Apr. 6, 1947	8.64	1,900		Sept.23, 1959	9.65	2,330
	Apr. 11, 1947	8.72	1,940		Sept.27, 1959	9.94	2,530
	June 14, 1947	9.95	2,470				
	June 29, 1947	9.73	2,310	1960	Oct. 25, 1959	9.80	2,500
	July 27, 1947	8.51	1,810		Mar. 28, 1960	11.42	4,330
					Apr. 17, 1960	10.55	3,130
1948	Feb. 28, 1948	11.22	-		May 7, 1960	10.63	3,210
	Mar. 17, 1948	10.05	2,450		July 2, 1960	9.22	2,150
	Mar. 19, 1948	11.75	5,200				
				1961	Feb. 23, 1961	10.97	3,170
1949	Mar. 22, 1949	7.29	1,370		Mar. 26, 1961	12.70	7,040

a Annual peak only.
b Backwater from ice, 3.5 ft.
c Affected by backwater from ice.

4085. Knapp Creek near Bloomingdale, Wis.

Location.--Lat 43°40'05", long 90°46'55", in NW¼ 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.

Gage.--Recording. Altitude of gage is 960 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 400 cfs and extended above on basis of slope-area measurement at 3,710 cfs.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peak is shown for 1954.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	July 1954	a10.5	-	1956	Apr. 2, 1956	3.36	401
1955	Mar. 3, 1955	3.18	320	1957	June 17, 1957	3.65	402
	Mar. 9, 1955	3.55	464		Sept.19, 1957	3.52	352
	May 4, 1955	3.22	347				
	May 23, 1955	2.88	224	1958	Feb. 24, 1958	2.95	140
	May 26, 1955	2.92	241				
	June 2, 1955	4.56	1,030	1959	Mar. 31, 1959	3.13	231
	July 30, 1955	2.73	202		Apr. 5, 1959	3.52	352

a Annual peak only.

Peak stages and discharges of Knapp Creek near Bloomingdale, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	May 20, 1959	5.18	1,140	1960	Mar. 27, 1960	3.31	522
	May 31, 1959	3.44	324		Apr. 15, 1960	3.20	481
	July 8, 1959	3.11	226		Apr. 16, 1960	3.82	734
	Aug. 26, 1959	8.76	3,710		June 28, 1960	2.98	346
	Sept.22, 1959	4.45	1,040		July 2, 1960	3.77	712
	Sept.26, 1959	4.72	1,180	1961	Feb. 22, 1961	-	b400
1960	Oct. 24, 1959	2.64	295		Mar. 27, 1961	4.08	825
	Jan. 12, 1960	2.34	219				

b About.

4100. Kickapoo River at Gays Mills, Wis.

Location.--Lat 43°19'10", long 90°51'10", in sec.28, T.10 N., R.4 W., at highway bridge 300 ft downstream from dam and powerplant of Interstate Power Co. in Gays Mills, 3.3 miles downstream from Taintor Creek.

Drainage area.--616 sq mi.

Gage.--Nonrecording. Datum of gage is 685.75 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	-	a15.2	-	1924	Aug. 4, 1924	11.0	3,800
1914	June 23, 1914	5.6	1,370	1925	June 15, 1925	9.25	2,620
1915	July 30, 1915	6.9	1,910	1926	Aug. 24, 1926	9.0	2,140
1916	June 4, 1916	10.1	3,510	1927	Sept.11, 1927	11.8	3,220
1917	Mar. 24, 1917	15.05	9,800	1928	Mar. 13, 1928	12.8	5,840
1918	Mar. 18, 1918	10.35	3,000	1929	Mar. 15, 1929	12.9	6,020
1919	Mar. 17, 1919	12.0	4,710	1930	Feb. 23, 1930	a9.8	2,800
1920	June 17, 1920	10.65	3,460	1931	June 22, 1931	4.0	874
1921	Sept. 6, 1921	9.5	2,520	1932	July 12, 1932	11.5	4,350
1922	Mar. 6, 1922	9.2	2,650	1933	Mar. 31, 1933	14.1	7,470
1923	Apr. 3, 1923	12.6	5,510	1934	Apr. 5, 1934	12.95	5,790

a Probably affected by backwater from ice.

4105. Kickapoo River at Steuben, Wis.

Location.--Lat 43°11'25", long 90°52'30", in NW¼ sec.8, T.8 N., R.4 W., 0.8 mile upstream from Duffy Creek, 1 mile northwest of Steuben, and 14 miles upstream from mouth.

Drainage area.--690 sq mi.

Gage.--Nonrecording at site 1 mile upstream at datum 1.3 ft higher, prior to Oct. 20, 1938; recording at present site and datum thereafter. Datum of gage is 657.82 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,900 cfs. Only annual peaks are shown prior to 1939.

Peak stages and discharges of Kickapoo River at Steuben, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 5, 1934	10.32	5,830	1950	July 16, 1950	11.36	5,780
1935	Aug. 8, 1935	12.30	8,600	1951	Apr. 1, 1951	8.70	1,980
1936	Mar. 12, 1936	10.1	3,650		Apr. 11, 1951	8.71	1,980
1937	Mar. 8, 1937	10.10	4,340		July 22, 1951	13.66	10,300
1938	Sept.11, 1938	10.18	3,400	1952	Apr. 3, 1952	9.75	4,470
1939	Mar. 15, 1939	8.19	1,860		July 22, 1952	9.26	2,570
1940	Mar. 31, 1940	8.38	2,230	1953	Aug. 5, 1953	8.06	1,430
1941	Apr. 4, 1941	8.14	1,800	1954	July 7, 1954	9.25	2,570
1942	Sept.21, 1942	8.59	2,540	1955	June 7, 1955	8.78	1,670
1943	Mar. 28, 1943	8.62	2,570	1956	Apr. 5, 1956	10.88	6,310
1944	Mar. 15, 1944	a8.92	-	1957	June 19, 1957	6.81	972
	June 19, 1944	-	3,050	1958	Mar. 1, 1958	7.07	1,030
1945	June 3, 1945	9.03	3,370	1959	Apr. 3, 1959	10.95	6,940
1946	Mar. 8, 1946	10.25	7,630		Aug. 30, 1959	9.66	3,720
1947	June 17, 1947	8.70	2,570	1960	Oct. 28, 1959	8.93	1,930
1948	Mar. 19, 1948	9.92	5,640		Mar. 30, 1960	9.23	2,740
1949	Mar. 5, 1949	8.42	1,790		Apr. 20, 1960	9.00	2,080
1950	Mar. 9, 1950	-	-		May 9, 1960	9.40	3,070
	Mar. 27, 1950	10.06	6,160		July 5, 1960	9.17	2,500
				1961	Feb. 25, 1961	9.31	2,840
					Mar. 28, 1961	12.33	10,800

a Backwater from ice, 0.5 ft.

MISSISSIPPI RIVER MAIN STEM

4115. Mississippi River at Clayton, Iowa

Location.--Lat 42°54'15", long 91°08'45", in NE¼NW¼ sec.1, T.93 N., R.3 W., a quarter of a mile downstream from railroad station in Clayton, 2.4 miles downstream from Magill Creek, 6.6 miles upstream from Buck Creek, and at mile 624.8 upstream from Ohio River.

Drainage area.--79,200 sq mi, approximately.

Gage.--Nonrecording. Prior to Dec. 27, 1932, at site 0.4 mile upstream at datum 0.03 ft higher. Datum of gage is 602.60 ft above mean sea level, adjustment of 1912.

Remarks.--Flow partly regulated by reservoir and powerplants. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 25, 1930	10.90	79,000	1934	Apr. 14, 1934	11.4	82,500
1931	July 6, 1931	6.62	40,100	1935	Apr. 1, 1935	14.40	129,000
1932	Apr. 18, 1932	12.36	95,200	1936	Apr. 2, 1936	15.36	137,000
1933	Apr. 4, 1933	10.60	77,700				

4116. Turkey River at Spillville, Iowa

Location.--Lat 43°12'30", long 91°57'00", in SW¼NE¼ sec.19, T.97 N., R.9 W., on right bank 60 ft downstream from highway bridge at north edge of Spillville, 150 ft downstream from old milldam, and 3,000 ft upstream from Wonder Creek.

Drainage area.--177 sq mi.

Gage.--Recording. Datum of gage is 1,034.77 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 1947	18.4	a10,000	1959	Mar. 30, 1959	9.12	2,100
1956	July 31, 1956	4.13	b398	1960	Mar. 30, 1960	10.70	3,220
					May 7, 1960	9.18	2,360
1957	July 16, 1957	6.73	1,230		June 24, 1960	10.12	2,860
1958	Feb. 24, 1958	5.17	a500	1961	Mar. 27, 1961	14.37	6,420

a About.
b Maximum during period July to September.

4116.5. Crane Creek tributary near Saratoga, Iowa

Location.--Lat 43°22', long 92°23', near southeast corner of sec.21, T.99 N., R.13 W., at bridge on State Highway 9, 1 mile east of Saratoga.

Drainage area.--4.06 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 13, 1953	5.77	1,050	1958	Apr. 7, 1958	2.38	22
1954	June 21, 1954	5.41	777	1959	Mar. 26, 1959	5.34	734
1955	Mar. 15, 1955	3.79	157	1960	June 23, 1960	5.97	1,210
1956	Apr. 1, 1956	4.43	316	1961	Mar. 26, 1961	6.02	1,700
1957	July 16, 1957	4.44	320				

4117. Crane Creek near Lourdes, Iowa

Location.--Lat 43°13', long 92°19', in NW¼ sec.6, T.97 N., R.12 W., at bridge on State Highway 272, 1 mile southwest of Lourdes.

Drainage area.--75.8 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 13, 1953	12.00	3,200	1958	Apr. 7, 1958	6.39	336
1954	June 21, 1954	10.61	2,620	1959	Mar. 31, 1959	9.28	1,370
1955	Mar. 15, 1955	9.35	1,430	1960	June 23, 1960	12.13	5,960
1956	Apr. 1, 1956	9.23	1,330	1961	Mar. 26, 1961	11.32	3,890
1957	Mar. 24, 1957	7.60	580				

4120. Turkey River at Elkader, Iowa

Location.--Lat 42°51'05", long 91°24'15", in NW¼SE¼ sec.23, T.93 N., R.5 W., in tailrace of hydroelectric plant of Central States Power & Light Corp. in Elkader, 2.7 miles upstream from Roberts Creek.

Drainage area.--891 sq mi.

Gage.--Nonrecording. Datum of gage is 701.61 ft above mean sea level, datum of 1929. Auxiliary nonrecording gage in forebay of hydroelectric plant of Central States Power & Light Corp. at same datum.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Maximum daily discharge during flood of Mar. 16, 1929, 25,200 cfs (from records by Management Engineering Corp).

Remarks.--Records computed by Central States Power & Light Corp. and reviewed by Geological Survey. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	June 1, 1916	34.3	a30,000	1937	Mar. 7, 1937	27.5	12,300
				1938	Feb. 5, 1938	14.50	13,000
1933	Apr. 1, 1933	-	b23,800	1939	Mar. 14, 1939	11.50	4,970
1934	Jan. 22, 1934	-	6,860	1940	July 27, 1940	29.1	19,000
1935	Mar. 6, 1935	14.0	11,400				
				1941	May 31, 1941	29.1	19,300
1936	Mar.11,25, 1936	-	9,000	1942	June 30, 1942	13.0	9,200

a About.
b Daily mean discharge, from records by Central States Power and Light Co.

4125. Turkey River at Garber, Iowa

Location.--Lat 42°44'20", long 91°15'45", in NE¼SW¼ sec.36, T.92 N., R.4 W., on left bank 10 ft downstream from highway bridge at Garber, 800 ft upstream from Wayman Creek, 2,000 ft downstream from Elk Creek, and 1 mile downstream from Volga River.

Drainage area.--1,545 sq mi.

Gage.--Nonrecording prior to Feb. 8, 1935; recording thereafter. Datum of gage is 635.34 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements. The relation is subject to large shifts.

Bankfull stage.--15 ft.

Historical data.--Maximum stage known since about 1890, that of Feb. 23, 1922.

Remarks.--Base for partial-duration series, 10,000 cfs. Records for period Apr. 24, 1929, to Sept. 30, 1930, furnished by Management Engineering Corp. of Chicago, Ill.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	May 18, 1902	23.7	a25,000	1937	June 13, 1937	17.1	13,500
1914	June 15, 1914	13.2	8,960	1938	Sept.13, 1938	21.1	19,600
1915	Aug. 4, 1915	14.7	10,900	1939	Mar. 14, 1939	-	9,200
1916	Mar. 25, 1916	20.6	18,000	1940	July 27, 1940	25.3	26,100
	June 2, 1916	22.0	20,300		Aug. 27, 1940	16.4	10,400
1919	June 4, 1919	16.8	13,100	1941	Mar. 21, 1941	17.6	12,300
					May 28, 1941	20.0	16,200
1920	Mar. 12, 1920	15.1	11,000		May 31, 1941	20.0	16,200
					June 12, 1941	23.3	22,100
1921	May 31, 1921	14.5	10,400				
				1942	June 30, 1942	17.5	12,000
1922	Feb. 23, 1922	28.06	32,300				
	July 22, 1922	23.0	23,000	1943	Mar. 16, 1943	21.0	17,600
					Aug. 13, 1943	20.0	15,900
1923	Mar. 4, 1923	17.2	13,800				
	Apr. 3, 1923	24.2	25,200	1944	May 23, 1944	16.6	10,800
					June 16, 1944	20.6	16,900
1924	Mar. 4, 1924	15.0	11,000				
	July 21, 1924	17.4	14,600	1945	Mar. 18, 1945	17.2	11,600
	Aug. 19, 1924	15.5	11,700		June 2, 1945	18.2	13,000
					June 28, 1945	17.3	11,700
1925	June 15, 1925	24.7	25,200		Aug. 14, 1945	17.0	11,300
	June 17, 1925	15.5	11,700				
	June 24, 1925	15.5	11,700	1946	Jan. 5, 1946	24.3	24,100
					Mar. 6, 1946	22.1	19,600
1926	Aug. 20, 1926	12.0	7,130		Mar. 13, 1946	17.9	12,600
1927	Oct. 3, 1926	16.8	13,700	1947	Mar. 13, 1947	17.2	11,600
	May 24, 1927	15.0	10,800		Apr. 10, 1947	17.3	11,700
	May 28, 1927	14.6	10,300		June 13, 1947	26.6	29,000
					June 29, 1947	22.9	21,200
1929	July 13, 1929	-	b7,630				
				1948	Feb. 28, 1948	-	18,000
1930	June 13, 1930	-	14,500		Mar. 15, 1948	17.1	11,400
					Mar. 17, 1948	19.8	15,600
1933	Dec. 24, 1932	14.9	10,700		Mar. 19, 1948	21.7	19,000
	Mar. 30, 1933	22.5	20,600		May 10, 1948	17.3	11,700
	Apr. 1, 1933	20.9	18,500				
	Apr. 10, 1933	14.4	10,200	1949	Mar. 4, 1949	20.5	16,800
	May 20, 1933	14.7	10,600				
	July 2, 1933	22.4	20,400	1950	Mar. 7, 1950	23.7	23,700
					Mar. 27, 1950	23.3	22,900
1934	Jan. 22, 1934	11.5	6,230		June 13, 1950	16.9	11,900
					June 25, 1960	17.0	12,000
1935	Mar. 4, 1935	19.9	17,100		July 16, 1950	17.2	12,300
					Aug. 1, 1950	17.3	12,400
1936	Mar. 11, 1936	-	15,000		Sept.22, 1950	17.9	13,200
1937	Mar. 6, 1937	20.8	18,900	1951	Feb. 26, 1951	18.72	14,600

a About.
b Period April to September 1929.

Peak stages and discharges of Turkey River at Garber, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 28, 1951	22.79	21,900	1957	June 18, 1957	14.20	7,320
	Apr. 7, 1951	20.90	18,300				
	Apr. 26, 1951	15.94	10,500	1958	May 31, 1958	17.61	12,100
	Apr. 30, 1951	20.44	17,400				
	June 27, 1951	16.71	11,600	1959	Mar. 26, 1959	21.06	17,000
	July 8, 1951	21.44	19,200		Apr. 1, 1959	19.93	15,000
					June 26, 1959	17.35	11,400
1952	Apr. 1, 1952	15.88	9,840				
				1960	Jan. 12, 1960	20.02	15,200
1953	July 27, 1953	20.62	16,900		Mar. 30, 1960	22.96	20,000
	Aug. 4, 1953	19.71	15,300		May 6, 1960	21.07	17,000
	Aug. 6, 1953	19.85	15,700				
				1961	Feb. 23, 1961	17.31	11,200
1954	May 1, 1954	15.84	10,000		Mar. 6, 1961	16.48	10,100
	June 21, 1954	19.94	16,400		Mar. 26, 1961	22.84	19,700
					Aug. 1, 1961	17.55	11,600
1955	June 3, 1955	15.32	9,840		Sept.30, 1961	17.79	11,900
1956	Mar. 28, 1956	17.00	12,300				

GRANT RIVER BASIN

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 downstream side of highway bridge at Burton, 6 miles northwest of Potosi, and 9.4 miles upstream from mouth.

Drainage area.--267 sq mi. At site used prior to Oct. 1, 1947, 257 sq mi.

Gage.--Nonrecording prior to July 28, 1949; recording thereafter. Prior to Sept. 30, 1947, at site 6 miles upstream at datum 33.18 ft higher. Datum of gage is 606.89 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 18,000 cfs and extended above on basis of slope-area measurement.

Remarks.--Base for partial-duration series, 2,400 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 4, 1935	10.0	6,820	1952	July 23, 1952	16.95	2,560
1936	Mar. 4, 1936	9.0	5,420	1953	Feb. 20, 1953	20.92	12,300
1937	Feb. 20, 1937	9.6	6,260		Mar. 15, 1953	17.62	3,250
1938	Feb. 5, 1938	10.37	7,350		July 26, 1953	20.61	11,400
1939	Mar. 4, 1939	7.44	2,060		Aug. 4, 1953	17.12	2,660
1940	July 27, 1940	16.3	23,800				
				1954	May 28, 1954	19.55	8,300
1941	Mar. 21, 1941	6.6	2,490		June 22, 1954	24.45	23,800
1942	June 29, 1942	7.8	3,860				
1943	Aug. 13, 1943	12.30	12,300	1955	Oct. 10, 1954	18.61	5,630
1944	Mar. 14, 1944	11.33	9,820		Feb. 20, 1955	a23.30	b8,000
1945	June 28, 1945	9.4	6,010				
				1956	Mar. 2, 1956	20.23	b6,000
1946	Jan. 5, 1946	12.0	11,600				
1947	June 13, 1947	15.54	21,400	1957	July 31, 1957	17.56	3,240
1948	Feb. 28, 1948	20.24	10,200				
1949	June 25, 1949	21.5	14,100	1958	Feb. 25, 1958	c18.76	1,200
1950	Mar. 6, 1950	22.75	-	1959	Mar. 21, 1959	c21.59	-
	Mar. 24, 1950	20.05	9,600		Mar. 25, 1959	20.46	11,000
	Mar. 26, 1950	19.54	8,150		May 20, 1959	17.78	3,020
	May 25, 1950	20.93	12,300				
	July 16, 1950	24.82	25,000	1960	Jan. 13, 1960	20.38	10,700
	July 30, 1950	20.30	10,500		Mar. 29, 1960	20.04	9,720
1951	July 8, 1951	20.67	11,700	1961	Feb. 23, 1961	21.27	13,400
					Sept.13, 1961	20.37	10,700
1952	Mar. 10, 1952	19.18	7,280				

a Backwater from ice, 5.0 ft.
b About.
c Affected by backwater from ice.

4140. Platte River near Rockville, Wis.

Location.--Lat 42°43'55", long 90°38'25", in SW¼ 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. At site used prior to Oct. 1, 1941, 137 sc mi.

Gage.--Nonrecording prior to June 30, 1949; recording thereafter. Prior to Oct. 1, 1941, at site 1.3 miles upstream at datum 12.55 ft higher. Datum of gage is 642.95 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs and extended above on basis of slope-area measurement.

Historical data.--The flood of July 16, 1950, was the highest since 1876, from the Grant County News.

Remarks.--Base for partial-duration series, 2,100 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 4, 1935	8.67	3,980	1953	Feb. 20, 1953	10.79	7,290
1936	Mar. 10, 1936	8.0	2,730	1954	May 28, 1954	8.07	2,170
1937	Mar. 4, 1937	10.6	8,560		June 21, 1954	13.33	16,400
1938	Feb. 6, 1938	9.6	5,980				
1939	Jan. 5, 1939	8.2	3,060	1955	Feb. 20, 1955	8.85	3,080
1940	July 26, 1940	12.4	13,100		June 2, 1955	8.23	2,340
					June 19, 1955	8.35	2,460
1941	Mar. 3, 1941	8.8	4,180				
1942	June 29, 1942	9.1	3,670	1956	Mar. 1, 1956	8.3	2,400
1943	June 2, 1943	12.1	10,400				
1944	Mar. 14, 1944	10.44	6,310	1957	Jan. 21, 1957	8.5	2,620
1945	June 28, 1945	9.10	3,660				
				1958	Feb. 23, 1958	a8.15	-
1946	Jan. 5, 1946	11.4	8,700		Sept. 3, 1958	6.57	1,060
1947	June 13, 1947	12.30	11,000				
1948	Feb. 28, 1948	11.1	7,980	1959	Mar. 26, 1959	9.97	5,280
1949	Mar. 4, 1949	9.40	4,150		Apr. 1, 1959	9.52	4,280
					May 20, 1959	10.77	7,220
1950	Mar. 6, 1950	10.38	6,310		Aug. 3, 1959	8.73	2,910
	Mar. 23, 1950	8.62	3,000		Aug. 27, 1959	9.09	3,470
	May 25, 1950	8.45	2,820				
	June 13, 1950	8.00	2,350	1960	Jan. 12, 1960	10.9	7,550
	July 16, 1950	17.26	43,500		Mar. 29, 1960	9.56	4,370
	July 19, 1950	9.24	3,200		May 6, 1960	8.29	2,500
1951	July 8, 1951	12.41	12,300	1961	Feb. 18, 1961	b8.93	c2,500
	Aug. 6, 1951	12.81	13,900		Feb. 23, 1961	9.42	4,080
					Mar. 24, 1961	8.22	2,320
1952	Mar. 10, 1952	7.63	1,660				

a Affected by backwater from ice.
b Backwater from ice, 0.64 ft.
c About.

LITTLE MAQUOKETA RIVER BASIN

4143.5. Little Maquoketa River near Graf, Iowa

Location.--Lat 42°31', long 90°51', in SE¼ sec.20, T.89 N., R.1 E., at highway bridge 300 ft downstream from Illinois Central RR. bridge, half a mile northeast of Graf.

Drainage area.--41.5 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Little Maquoketa River near Graf, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Aug. 20, 1952	9.30	1,850	1957	Jan. 21, 1957	8.57	1,520
1953	Feb. 20, 1953	13.41	4,500	1958	-	(a)	<1,100
1954	May 31, 1954	11.79	3,250	1959	Apr. 1, 1959	13.10	4,590
1955	Feb. 19, 1955	9.26	1,830	1960	Jan. 12, 1960	13.93	5,280
1956	Aug. 30, 1956	10.90	2,690	1961	Sept.13, 1961	8.36	1,560

a Not determined; peak stage did not reach bottom of gage.

4144. Middle Fork Little Maquoketa River near Rickardsville, Iowa

Location.--Lat 42°34', long 90°50', in SE¼ sec.32, T.90 N., R.1 E., at road bridge, 2 miles southeast of Rickardsville.

Drainage area.--30.1 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Oct. 7, 1951	18.16	-	1957	Jan. 21, 1957	15.17	-
1953	Feb. 20, 1953	17.75	-	1958	Aug. 20, 1958	14.56	-
1954	May 31, 1954	17.87	-	1959	Apr. 1, 1959	16.89	-
1955	Feb. 20, 1955	15.36	-	1960	Jan. 12, 1960	19.04	-
1956	Dec. 25, 1955	15.12	-	1961	Feb. 18, 1961	16.07	-

4144.5. North Fork Little Maquoketa River near Rickardsville, Iowa

Location.--Lat 42°35', long 91°50', near northwest corner sec.28, T.90 N., R.1 E., at bridge, 1 mile northeast of Rickardsville.

Drainage area.--22.8 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	10.84	3,510	1957	July 31, 1957	8.90	1,720
1952	Aug. 20, 1952	10.63	3,040	1958	Aug. 20, 1958	7.96	1,300
1953	Feb. 19, 1953	9.70	2,190	1959	Mar. 19, 1959	10.39	2,790
1954	May 31, 1954	8.34	1,460	1960	Mar. 30, 1960	10.84	3,330
1955	Feb. 20, 1955	7.07	964	1961	Feb. 18, 1961	7.36	1,010
1956	-	(a)	b360				

a Not determined; peak stage did not reach bottom of gage.
b Less then figure shown.

4145. Little Maquoketa River near Durango, Iowa

Location.--Lat 42°33'25", long 90°44'45", in NW¼NE¼ sec.5, T.89 N., R.2 E., on left bank 10 ft upstream from bridge on county road, 500 ft southeast of U.S. Highway 52, 1½ miles east of Durango, 5 miles northwest of Dubuque, and 7.0 miles upstream from mouth.

Drainage area.--130 sq mi.

Gage.--Nonrecording prior to Jan. 5, 1939; recording thereafter. Datum of gage is 612.03 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 5,100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	June 15, 1925	22.1	a29,000	1947	July 5, 1947	14.0	5,900
					July 13, 1947	14.6	6,200
1935	Mar. 4, 1935	13.63	5,430				
				1948	Feb. 27, 1948	17.40	11,300
1936	Mar. 10, 1936	6.11	791		Mar. 15, 1948	13.8	5,740
					Mar. 19, 1948	13.5	5,420
1937	Feb. 20, 1937	18.2	13,000		May 10, 1948	14.6	6,400
	Mar. 6, 1937	14.2	6,000				
	June 21, 1937	20.75	21,000	1949	Mar. 4, 1949	13.94	5,790
1938	Feb. 5, 1938	15.73	7,850	1950	Mar. 5, 1950	14.8	6,550
	Aug. 5, 1938	14.1	5,950				
	Sept. 7, 1938	15.6	7,800	1951	Feb. 25, 1951	14.76	5,500
					July 8, 1951	19.98	14,800
1939	July 7, 1939	13.20	5,000				
				1952	Aug. 20, 1952	14.22	6,180
1940	Aug. 15, 1940	13.33	5,130				
				1953	Feb. 20, 1953	18.40	11,100
1941	Mar. 22, 1941	11.9	3,840				
				1954	June 1, 1954	14.35	6,460
1942	June 29, 1942	11.6	3,640		June 21, 1954	13.49	5,750
1943	Aug. 13, 1943	14.95	6,820	1955	Feb. 20, 1955	12.93	5,120
1944	Feb. 26, 1944	13.7	5,800	1956	July 8, 1956	10.67	3,490
	Mar. 14, 1944	13.3	5,300				
	June 13, 1944	19.8	18,000	1957	July 31, 1957	11.93	4,330
	June 16, 1944	15.4	7,100				
	June 26, 1944	19.7	17,600	1958	Feb. 24, 1958	9.12	2,190
1945	July 21, 1945	12.6	4,720	1959	Mar. 19, 1959	-	5,400
					Apr. 1, 1959	15.95	8,200
1946	Jan. 5, 1946	16.3	9,000				
	Mar. 6, 1946	17.05	10,400	1960	Jan. 12, 1960	18.76	13,400
					Mar. 30, 1960	16.48	9,000
1947	Apr. 10, 1947	13.4	5,100		May 6, 1960	17.48	10,700
	June 5, 1947	16.2	8,620				
	June 13, 1947	21.23	23,000	1961	Sept.13, 1961	12.70	4,110
	June 17, 1947	13.1	5,120				

a About; computed by Corps of Engineers.

4146. Little Maquoketa River tributary at Dubuque, Iowa

Location.--Lat 42°31', long 90°40', near northwest corner sec.11, T.83 N., R.2 E., at bridge on U.S. Highway 52, near north city limits of Dubuque.

Drainage area.--1.51 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements and by step-backwater computation.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Little Maquoketa River tributary at Dubuque, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	7.90	1,070	1957	July 31, 1957	7.98	1,120
1952	Aug. 20, 1952	6.82	368	1958	Aug. 20, 1958	7.26	576
1953	July 26, 1953	6.87	388	1959	Oct. 9, 1958	5.91	162
1954	June 21, 1954	6.10	190	1960	Jan. 12, 1960	6.51	698
1955	June 2, 1955	5.48	107	1961	-	(a)	-
1956	Aug. 30, 1956	6.92	408				

a Not determined; peak stage did not reach bottom of gage.

GALENA RIVER BASIN

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., 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.

Gage.--Nonrecording prior to Dec. 1, 1939; recording thereafter. Datum of gage is 682.77 ft above mean sea level, adjustment of 1912 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 8,100 cfs and extended above on basis of logarithmic plotting and slope-area measurement at gage height 15.68 ft.

Historical data.--The flood of Feb. 20, 1937, was 3 ft higher in Galena than any known flood, from the Benton Advocate.

Remarks.--Base for partial-duration series, 3,000 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	February 1937	17.1	18,000	1950	Mar. 23, 1950	11.2	3,640
					June 13, 1950	-	6,800
1940	Mar. 18, 1940	11.6	3,860		July 1, 1950	13.41	7,000
					Sept.21, 1950	11.1	3,560
1941	Mar. 20, 1941	9.86	2,760				
				1951	July 8, 1951	13.86	6,800
1942	May 31, 1942	-	3,150				
	Aug. 2, 1942	12.79	5,820	1952	Mar. 10, 1952	12.97	6,200
1943	Mar. 15, 1943	-	6,030	1953	Feb. 20, 1953	15.68	12,400
	Aug. 13, 1943	13.58	7,420				
				1954	June 22, 1954	12.35	5,010
1944	Feb. 26, 1944	-	3,730				
	Mar. 14, 1944	12.09	4,640	1955	Feb. 20, 1955	13.52	7,250
1945	May 28, 1945	-	4,000	1956	Feb. 24, 1956	11.32	3,390
	June 28, 1945	11.94	4,370				
				1957	Jan. 21, 1957	11.53	3,520
1946	Jan. 5, 1946	13.90	8,080		July 12, 1957	11.40	3,440
	Mar. 6, 1946	12.3	4,930		July 16, 1957	12.36	4,630
	Mar. 12, 1946	-	5,630		July 22, 1957	11.26	3,360
1947	Apr. 5, 1947	10.4	3,060	1958	Feb. 24, 1958	10.42	2,890
	June 13, 1947	12.83	5,820				
	Sept. 5, 1947	10.4	3,060	1959	Mar. 20, 1959	a13.53	-
					Mar. 24, 1959	12.71	5,320
1948	Feb. 27, 1948	14.30	8,960		Mar. 26, 1959	13.28	6,460
	Mar. 15, 1948	11.5	3,820		Apr. 1, 1959	13.00	5,900
	May 10, 1948	12.6	5,440				
				1960	Jan. 12, 1960	14.20	8,430
1949	Mar. 4, 1949	13.20	6,600		Mar. 30, 1960	12.74	5,380
	July 1, 1949	12.8	5,820		May 6, 1960	11.22	3,330
1950	Mar. 5, 1950	12.9	6,010	1961	Feb. 18, 1961	9.15	2,240

a Affected by backwater from ice jam.

4155. East Fork Galena River at Council Hill, Ill.

Location.--Lat 42°28'05", long 90°20'20", in W½ sec.31, T.29 N., R.2 E., at Council Hill, 3 miles upstream from mouth, and 6 miles northeast of Galena. Records include flow of unnamed creek which enters just downstream from gage.

Drainage area.--20.1 sq mi, includes that of unnamed creek.

Gage.--Recording. Datum of gage is 686.59 ft above mean sea level, adjustment of 1912 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,500 cfs and extended above on basis of slope-area measurements at gage heights 9.33 and 15.3 ft and a contracted-opening measurement at gage height 15.3 ft.

Remarks.--Base for partial-duration series, 700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 10, 1940	5.83	565	1949	July 1, 1949	6.52	920
					July 8, 1949	7.20	1,360
1941	Mar. 20, 1941	6.70	798		Aug. 11, 1949	6.42	867
	Sept. 8, 1941	6.80	825		Aug. 11, 1949	10.35	5,250
1942	June 11, 1942	9.50	3,860	1950	Mar. 5, 1950	6.47	894
	Sept. 9, 1942	6.36	774		June 13, 1950	6.75	920
					July 1, 1950	9.33	3,590
1943	Mar. 15, 1943	7.70	1,340		Sept.21, 1950	8.13	2,110
	Mar. 16, 1943	6.50	829				
	Aug. 13, 1943	12.10	8,620	1951	July 8, 1951	9.60	4,000
	Aug. 26, 1943	6.40	792				
				1952	Oct. 20, 1951	6.31	842
1944	Mar. 14, 1944	6.85	981				
	Apr. 23, 1944	6.59	962	1953	Feb. 20, 1953	8.65	2,770
	June 12, 1944	9.02	2,060				
	June 26, 1944	8.56	2,010	1954	June 20, 1954	5.84	652
	July 8, 1944	6.95	1,020				
	Aug. 17, 1944	7.49	1,250	1955	Feb. 20, 1955	5.92	634
1945	May 25, 1945	7.46	1,250	1956	Aug. 30, 1956	7.66	1,740
	May 27, 1945	10.26	5,080				
				1957	June 13, 1957	8.44	2,460
1946	Jan. 5, 1946	7.05	1,540		July 12, 1957	9.85	4,190
	Mar. 5, 1946	5.16	727		July 16, 1957	6.00	777
	Mar. 12, 1946	6.65	1,340		July 21, 1957	7.33	1,520
	Sept. 8, 1946	5.72	926				
				1958	Feb. 24, 1958	6.17	858
1947	Dec. 27, 1946	5.32	766		Aug. 20, 1958	5.96	759
	Apr. 29, 1947	15.3	16,600				
	June 1, 1947	7.31	1,440	1959	Mar. 20, 1959	6.44	997
	June 13, 1947	8.03	2,110		Mar. 26, 1959	6.75	1,170
					May 20, 1959	6.87	1,230
1948	Feb. 17, 1948	6.18	766				
	Feb. 27, 1948	8.77	2,890	1960	Jan. 12, 1960	8.23	2,270
	Mar. 19, 1948	6.86	1,120		Mar. 29, 1960	6.30	922
	May 10, 1948	7.03	1,220		May 6, 1960	6.98	1,300
	Aug. 29, 1948	6.31	816				
				1961	July 1, 1961	8.37	2,390
1949	June 14, 1949	7.00	1,220		July 6, 1961	6.82	1,210

MAQUOKETA RIVER BASIN

4170. Maquoketa River near Manchester, Iowa

Location.--Lat 42°27'25", long 91°25'55", in NW¼NE¼ sec.9, T.88 N., R.5 W., on left bank 300 ft upstream from concrete control, 2 miles southeast of Manchester, and 4.7 miles downstream from Honey and Prairie Creeks.

Drainage area.--305 sq mi.

Gage.--Recording and concrete control. Datum of gage is 895.06 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs and extended above by logarithmic plotting and area-velocity studies.

Bankfull stage.--Banks not subject to overflow.

Remarks.--Data for 1928-30 from Iowa Electric Co. dam in Manchester, discharge estimated by Corps of Engineers. Equivalent gage heights on present gage computed for 1933-35 peaks. Base for partial-duration series, 2,200 cfs.

Peak stages and discharges of Maquoketa River near Manchester, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)
1925	June 15, 1925	-	a25,400
1928	Nov. 18, 1927	-	2,640
1929	Mar. 13, 1929	-	5,600
	Apr. 7, 1929	-	3,320
1930	Feb. 19, 1930	-	3,180
1933	May 20, 1933	9.2	2,850
1934	Jan. 22, 1934	6.2	695
1935	Mar. 5, 1935	10.45	4,880
1936	Mar. 10, 1936	10.5	4,280
1937	Feb. 20, 1937	-	3,500
	Mar. 4, 1937	14.2	8,150
	June 21, 1937	8.8	2,730
1938	Feb. 6, 1938	12.1	5,860
	Sept.14, 1938	11.2	4,980
1939	May 27, 1939	7.7	1,790
1940	June 23, 1940	8.9	2,770
	July 27, 1940	8.4	2,320
1941	Oct. 7, 1940	10.8	4,330
	Nov. 1, 1940	12.4	6,140
	Mar. 23, 1941	8.6	2,420
	Apr. 4, 1941	11.3	4,850
	Sept. 8, 1941	14.6	8,880
	Sept.17, 1941	8.7	2,480
1942	May 31, 1942	8.5	2,340
	June 4, 1942	11.0	4,520
	June 6, 1942	8.8	2,570
	June 12, 1942	10.3	3,840
	July 14, 1942	8.4	2,270
	Sept.14, 1942	9.9	3,460
1943	Feb. 23, 1943	9.3	3,000
	Mar. 16, 1943	11.7	5,320
1944	May 20, 1944	8.4	2,250
	June 16, 1944	14.0	8,010
1945	Mar. 26, 1945	8.4	2,300
	Apr. 4, 1945	9.0	2,740
	Apr. 16, 1945	10.2	2,900
	Aug. 14, 1945	9.91	3,060
1946	Jan. 6, 1946	14.9	9,130
	Mar. 6, 1946	10.2	3,790
	Mar. 13, 1946	9.5	3,170
1947	Apr. 5, 1947	9.6	3,190
	Apr. 11, 1947	11.3	5,000
	May 29, 1947	9.0	2,590
	June 1, 1947	14.3	8,380
1947	June 5, 1947	14.2	8,260
	June 13, 1947	21.4	20,000
	July 5, 1947	10.5	4,060
	July 13, 1947	11.0	4,600
1948	Feb. 28, 1948	13.40	7,340
	Mar. 16, 1948	10.9	4,250
	Mar. 19, 1948	10.8	4,200
	May 10, 1948	11.8	5,370
	June 6, 1948	8.4	2,230
1949	Mar. 5, 1949	12.29	6,020
1950	Mar. 7, 1950	14.72	8,920
	Mar. 24, 1950	9.4	2,960
	Mar. 27, 1950	9.9	3,460
	Sept.21, 1950	12.0	5,660
1951	Feb. 26, 1951	14.03	8,060
	Mar. 6, 1951	8.41	2,300
	Mar. 29, 1951	13.90	7,940
	Apr. 7, 1951	11.77	5,440
	Apr. 26, 1951	8.90	2,620
	Apr. 29, 1951	13.37	7,340
	June 2, 1951	13.94	7,940
	July 9, 1951	19.65	16,800
	Aug. 26, 1951	8.59	2,380
1952	Mar. 11, 1952	9.12	2,780
1953	Feb. 20, 1953	10.66	4,260
	July 26, 1953	8.40	2,260
	Aug. 4, 1953	8.46	2,300
1954	May 1, 1954	9.60	3,230
1955	Feb. 20, 1955	9.32	b2,500
1956	May 28, 1956	8.21	2,060
1957	May 30, 1957	8.84	2,540
	June 16, 1957	10.62	4,160
1958	June 1, 1958	8.87	2,620
1959	Mar. 20, 1959	9.38	3,050
	Mar. 25, 1959	11.42	5,000
	Mar. 27, 1959	12.27	5,990
	June 25, 1959	9.57	3,230
	July 1, 1959	10.73	4,260
1960	Jan. 13, 1960	13.30	7,090
	Mar. 30, 1960	16.48	11,600
	Apr. 18, 1960	10.16	3,650
	May 1, 1960	8.85	2,390
	May 7, 1960	13.85	7,740
	May 17, 1960	12.50	6,100
1961	Mar. 7, 1961	8.95	2,550
	Mar. 26, 1961	10.28	3,750
	Sept.13, 1961	9.36	2,910

a Computed by Prof. Nagler, State University of Iowa.
b About.

4175. Maquoketa River near Delhi, Iowa

Location.--Lat 42°24'30", long 91°20'45", in SW¼NW¼ sec.29, T.88 N., R.4 W., in tailrace of Interstate Power Co.'s hydroelectric plant, 1½ miles south of Delhi, and 6 miles upstream from Plum Creek.

Drainage area.--347 sq mi.

Gage.--Recording. Datum of gage is 774.32 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Flow regulated by reservoir just above station. Records furnished by Interstate Power Co. Only annual peaks are shown.

Peak stages and discharges of Maquoketa River near Delhi, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 14, 1929	89.82	a7,360	1936	Mar. 11, 1936	86.4	2,990
				1937	Mar. 4, 1937	89.2	6,740
1933	Mar. 30, 1933	88.5	5,350	1938	Feb. 6, 1938	88.0	5,300
1934	Aug. 11, 23, Sept. 14, 22, 1934	82.9	531	1939	May 27, 1939	84.6	1,640
				1940	June 23, 1940	86.1	3,330
1935	Mar. 5, 1935	88.0	4,700				

a Result of discharge measurement.

4185. Maquoketa River near Maquoketa, Iowa

Location.--Lat 42°05'05", long 90°37'55", in SW¼NE¼ sec.17, T.84 N., R.3 E., on right bank 500 ft upstream from bridge on State Highway 62, 1,200 ft upstream from Prairie Creek, 2 miles northeast of Maquoketa, and 2.2 miles downstream from North Fork.

Drainage area.--1,553 sq mi.

Gage.--Nonrecording prior to July 14, 1924; recording thereafter. Datum of gage is 636.52 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements. Large seasonal shifts apparently caused by vegetation.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 9,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	-	23.5	43,200	1929	Mar. 14, 1929	20.6	30,300
1914	Sept. 15, 1914	17.0	13,700	1930	Feb. 20, 1930	12.9	8,320
1915	Sept. 28, 1915	19.6	18,400	1931	Sept. 25, 1931	11.0	6,090
1916	Jan. 22, 1916	15.6	12,500	1932	Oct. 11, 1931	14.2	10,200
	Jan. 27, 1916	14.9	11,000		Mar. 26, 1932	15.0	11,400
	Mar. 27, 1916	22.6	39,100	1933	May 21, 1933	13.5	9,130
1917	Mar. 14, 1917	13.8	9,270				
	June 13, 1917	16.9	16,300	1934	July 6, 1934	13.85	7,680
1918	Feb. 15, 1918	15.8	13,000	1935	Mar. 5, 1935	15.5	12,200
					Mar. 11, 1935	13.6	9,270
1919	Mar. 17, 1919	16.8	16,000	1936	Mar. 11, 1936	14.1	10,000
	May 4, 1919	15.6	12,500				
	July 10, 1919	15.0	11,200	1937	Feb. 21, 1937	22.18	25,100
1920	Nov. 11, 1919	15.3	11,800		Mar. 6, 1937	20.08	27,500
	Mar. 13, 1920	15.0	11,200		Apr. 5, 1937	13.6	9,190
	May 23, 1920	15.5	12,300		June 13, 1937	15.6	12,800
					June 21, 1937	17.7	18,500
1921	Sept. 17, 1921	15.2	11,000	1938	Jan. 24, 1938	-	9,800
1922	Feb. 24, 1922	18.9	23,400		Feb. 6, 1938	18.48	13,600
	July 23, 1922	14.7	10,200	1939	July 17, 1939	13.21	8,610
1923	Apr. 4, 1923	20.6	30,300	1940	June 23, 1940	18.30	17,600
1924	Aug. 20, 1924	19.8	19,300	1941	Mar. 21, 1941	15.4	11,800
1925	June 17, 1925	19.67	26,600		June 1, 1941	14.3	9,430
					June 12, 1941	17.2	17,300
1926	Mar. 1, 1926	12.9	8,320		Sept. 9, 1941	22.08	25,600
1927	Feb. 5, 1927	13.9	9,700	1942	Aug. 2, 1942	11.94	7,060
	May 10, 1927	14.9	11,200				
	May 24, 1927	16.0	12,900	1943	Mar. 16, 1943	18.30	21,200
	June 21, 1927	14.9	11,200		June 2, 1943	15.2	10,800
1928	Feb. 7, 1928	-	13,600	1944	Mar. 15, 1944	14.0	9,540
	Mar. 13, 1928	15.4	12,100		June 27, 1944	24.70	48,000

Peak stages and discharges of Maquoketa River near Maquoketa, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 26, 1945	13.9	9,460	1952	Jan. 19, 1952	12.26	9,080
	Aug. 15, 1945	15.92	12,600		Mar. 11, 1952	15.57	14,000
1946	Jan. 6, 1946	22.17	37,100	1953	Feb. 20, 1953	21.61	33,900
	Mar. 6, 1946	14.6	10,600	1954	Aug. 18, 1954	8.52	4,980
1947	Apr. 6, 1947	14.4	10,400	1955	Feb. 20, 1955	15.04	13,000
	Apr. 11, 1947	13.8	9,590				
	June 2, 1947	16.7	16,100	1956	Aug. 30, 1956	11.70	8,170
	June 6, 1947	15.5	12,800				
	June 14, 1947	19.96	28,000	1957	May 31, 1957	8.73	5,140
	July 6, 1947	14.8	11,100				
1948	Feb. 28, 1948	20.02	28,200	1958	Feb. 24, 1958	10.8	a5,000
	Mar. 16, 1948	15.5	12,700				
	Mar. 20, 1948	17.0	16,900	1959	Mar. 21, 1959	17.58	19,200
					Mar. 27, 1959	14.88	12,800
1949	Mar. 5, 1949	18.29	21,600	1960	Jan. 13, 1960	18.91	23,700
1950	Mar. 7, 1950	18.14	21,000		Mar. 30, 1960	18.91	23,700
	Sept.21, 1950	17.1	17,400		May 7, 1960	17.12	18,600
1951	Feb. 26, 1951	18.20	21,200	1961	Sept.14, 1961	14.24	10,400
	Mar. 30, 1951	14.72	12,500				
	July 9, 1951	18.43	19,100				

a About.

APPLE RIVER BASIN

4188. Mill Creek near Scales Mound, Ill.

Location.--Lat 42°27'10", long 90°15'10", near center of sec.2, T.28 N., R.2 E., at culvert on county road, 1½ miles south of Scales Mound.

Drainage area.--0.795 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 31, 1956	14.40	-	1960	May 6, 1960	13.60	170
1957	July 8, 1957	17.58	729				
1958	Aug. 20, 1958	14.57	287	1961	Apr. 24, 1961	14.20	243
1959	Mar. 6, 1959	12.91	100				

4190. Apple River near Hanover, Ill.

Location.--Lat 42°15'05", long 90°17'10", in NE¼NW¼ sec.16, T.26 N., R.2 E., 0.3 mile southwest of Hanover and 12 miles upstream from mouth.

Drainage area.--244 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1945, at site 3.5 miles downstream at datum 9.48 ft lower; recording at present site and datum thereafter. Datum of gage is 591.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,000 cfs. Only annual peaks are shown prior to 1946.

Peak stages and discharges of Apple River near Hanover, Ill.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1935	Mar. 5, 1935	18.03	-	3,970	1951	Feb. 26, 1951	19.50	-	7,160
1936	Mar. 4, 1936	15.04	-	2,760		July 9, 1951	23.17	-	9,980
1937	Feb. 21, 1937	30.67	-	11,300					
1938	Feb. 6, 1938	24.67	-	7,590	1952	Oct. 21, 1951	14.91	-	4,550
1939	Feb. 20, 1939	18.21	a4.5	-		Oct. 24, 1951	13.30	-	3,820
	Mar. 10, 1939	13.67	-	2,200		Nov. 13, 1951	14.94	-	4,550
1940	June 23, 1940	16.40	-	3,170		Jan. 19, 1952	12.03	-	3,280
						Mar. 11, 1952	14.35	-	4,320
1941	Mar. 21, 1941	19.47	-	4,700		Mar. 19, 1952	12.97	-	3,690
1942	Aug. 8, 1942	12.78	-	1,930					
1943	Mar. 16, 1943	25.00	-	7,770	1953	Feb. 20, 1953	22.36	-	9,300
1944	Apr. 24, 1944	18.62	-	4,240					
1945	June 28, 1945	19.68	-	4,770	1954	Apr. 25, 1954	11.26	-	3,000
1946	Jan. 5, 1946	26.12	.8	12,000	1955	Feb. 20, 1955	b21.31	-	8,380
	Mar. 6, 1946	12.8	-	3,640					
	Mar. 13, 1946	16.9	-	5,640	1956	Feb. 25, 1956	12.46	-	3,480
						Aug. 31, 1956	-	-	c3,400
1947	June 1, 1947	12.2	-	3,360					
	June 13, 1947	17.64	-	5,970	1957	July 12, 1957	13.37	-	3,870
						July 22, 1957	12.99	-	3,690
1948	Feb. 28, 1948	22.77	-	9,620					
	Mar. 15, 1948	14.8	-	4,500	1958	Feb. 25, 1958	13.43	-	3,870
	Mar. 19, 1948	2[illegible]9	-	8,150					
	May 10, 1948	14.1	-	4,190	1959	Mar. 21, 1959	17.25	-	5,750
						Mar. 24, 1959	12.86	-	3,640
1949	Jan. 5, 1949	12.2	-	3,360		Mar. 27, 1959	16.28	-	5,250
	Jan. 16, 1949	17.57	1.8	5,000					
	Feb. 24, 1949	16.27	-	5,250	1960	Oct. 5, 1959	12.13	-	3,320
	Mar. 5, 1949	15.3	-	4,750		Jan. 13, 1960	21.92	-	8,900
	July 6, 1949	12.0	-	3,280		Mar. 30, 1960	21.67	-	8,750
						Apr. 2, 1960	12.76	-	3,600
1950	Jan. 25, 1950	16.2	2.1	4,200		May 7, 1960	24.70	-	11,300
	Mar. 6, 1950	18.24	3.6	4,400					
	Apr. 24, 1950	12.0	-	3,280	1961	Mar. 15, 1961	14.04	-	4,140
	June 13, 1950	14.8	-	4,500		Sept.14, 1961	13.54	-	3,910
	July 2, 1950	14.2	-	4,230					
	Sept.21, 1950	16.10	-	5,150					

a Backwater from ice, greater than figure shown.
b Occurred at different time than peak discharge.
c About.

PLUM RIVER BASIN

4195. Plum River near Savanna, Ill.

Location.--Lat 42°07'00", long 90°03'20", in SW¼NW¼ sec.33, T.25 N., R.4 E., 0.9 mile upstream from Carroll Creek, 5 miles northeast of Savanna, and 16.4 miles upstream from mouth.

Drainage area.--164 sq mi.

Gage.--Nonrecording. Datum of gage is 582.54 ft above mean sea level, adjustment of 1912.

Historical data.--Maximum stage known, 29.3 ft, date unknown, from floodmarks.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Feb. 15, 1935	23.35	-	1939	Feb. 20, 1939	23.52	-
	Mar. 11, 1935	-	2,200		Mar. 12, 1939	-	2,290
				1940	June 24, 1940	18.30	564
1936	Mar. 4, 1936	22.28	1,370				
1937	Feb. 21, 1937	28.03	5,800	1941	Sept. 9, 1941	24.20	1,500
1938	June 24, 1938	27.02	5,440				

4200. Plum River below Carroll Creek, near Savanna, Ill.

Location.--Lat 42°06'50", long 90°05'35", in NW¼SW¼ sec.31, T.25 N., R.4 E., on left bank 0.7 mile upstream from Camp Creek, 2.6 miles downstream from Carroll Creek, 3½ miles northeast of Savanna, and 13 miles upstream from mouth.

Drainage area.--231 sq mi.

Gage.--Recording. Datum of gage is 580.00 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1941	Mar. 21, 1941	20.9	-	1,940	1951	Feb. 26, 1951	24.33	-	4,730
	May 31, 1941	20.2	-	1,620		July 9, 1951	26.68	-	7,780
	Sept.10, 1941	21.08	-	2,050	1952	Nov. 14, 1951	23.09	-	3,500
1942	Oct. 7, 1941	19.88	-	1,490		Jan. 20, 1952	20.83	-	1,760
	Sept. 3, 1942	19.6	-	1,380		Mar. 11, 1952	22.18	-	2,690
1943	Dec. 27, 1942	22.8	1.3	2,400		Mar. 19, 1952	20.41	-	1,560
	Feb. 20, 1943	21.9	1.5	1,700	1953	Feb. 20, 1953	23.80	-	4,200
	Mar. 16, 1943	23.0	-	3,870					
	June 2, 1943	26.90	-	8,470	1954	June 4, 1954	-	-	a1,400
1944	Feb. 27, 1944	21.3	-	2,250	1955	Oct. 11, 1954	19.59	-	1,280
	Mar. 15, 1944	22.87	-	3,750		Feb. 20, 1955	24.83	-	5,290
1945	May 15, 1945	19.81	-	1,560	1956	Feb. 25, 1956	-	-	a1,900
	June 2, 1945	18.6	-	1,240	1957	Jan. 22, 1957	19.67	-	1,310
1946	Jan. 6, 1946	28.74	-	11,600		July 13, 1957	23.60	-	4,000
	Jan. 9, 1946	19.0	-	1,320					
	Mar. 7, 1946	18.8	-	1,280	1958	Feb. 27, 1958	19.90	-	1,370
	Mar. 13, 1946	20.4	-	1,780		June 13, 1958	19.65	-	1,280
						July 15, 1958	22.39	-	2,850
1947	Jan. 14, 1947	18.7	-	1,260					
	June 1, 1947	21.40	-	2,330	1959	Feb. 24, 1959	-	-	a2,000
	July 6, 1947	21.2	-	2,190		Mar. 1, 1959	-	-	a1,800
						Mar. 20, 1959	24.28	-	4,730
1948	Feb. 28, 1948	28.15	-	10,700		Mar. 27, 1959	20.14	-	1,360
	Mar. 15, 1948	21.8	-	2,680		Sept.27, 1959	19.55	-	1,210
	Mar. 19, 1948	25.8	-	7,070					
	May 11, 1948	18.9	-	1,300	1960	Oct. 6, 1959	19.97	-	1,330
						Dec. 29, 1959	20.38	-	1,480
1949	Jan. 5, 1949	19.7	-	1,420		Jan. 15, 1960	25.14	-	5,650
	Jan. 16, 1949	21.3	-	2,250		Mar. 30, 1960	25.05	-	5,530
	Feb. 20, 1949	20.0	-	1,580		Apr. 2, 1960	21.52	-	2,170
	Feb. 25, 1949	23.31	-	4,180		Apr. 18, 1960	20.23	-	1,400
	Mar. 5, 1949	20.7	-	1,920		May 7, 1960	23.13	-	3,500
						Sept.18, 1960	20.03	-	1,330
1950	Jan. 26, 1950	23.34	1.2	3,000					
	Mar. 5, 1950	22.9	1.2	2,600	1961	Oct. 31, 1960	20.46	-	1,280
	June 16, 1950	19.9	-	1,500		Mar. 5, 1961	23.20	-	2,400
	Sept.22, 1950	22.9	-	3,750		Mar. 7, 1961	21.63	-	1,610
						Mar. 14, 1961	21.05	-	1,400
1951	Feb. 19, 1951	21.70	-	a1,500		Sept.14, 1961	23.76	-	2,900

a About.

4205. Mississippi River at Clinton, Iowa

Location.--Lat 41°46'50", long 90°15'07", in NW¼ sec.34, T.81 N., R.6 E., on right bank at foot of Eighth Avenue in Camanche, 5.0 miles upstream from Wapsipinicon River, 6.4 miles downstream from Clinton, 10.6 miles downstream from dam 13, and at mile 511.8 upstream from Ohio River.

Drainage area.--85,600 sq mi, approximately, at Fulton-Lyons Bridge (formerly U.S. Highway 30) where discharge measurements are made.

Gage.--Nonrecording prior to June 1, 1934; recording thereafter. Prior to Oct. 1, 1939, in stone well 14.8 miles downstream at Le Claire, at datum 0.07 ft lower. Oct. 1, 1939, to Sept. 30, 1955, at site 10.6 miles upstream at dam 13, at datum 5.48 ft higher. Datum of gage is 562.68 ft above mean sea level, datum of 1929. Auxiliary recording gage at dam 13 since Oct. 1, 1958. Present gage used as auxiliary gage Oct. 1, 1939, to Sept. 30, 1955.

Stage-discharge relation.--Computed by slope method.

Remarks.--Flow regulated by reservoirs and navigation dams. Only annual maximum daily discharges are shown. Gage heights are instantaneous maxima.

Maximum daily discharge

Water year	Date	Gage height a/ (feet)	Discharge (cfs)	Water year	Date	Gage height a/ (feet)	Discharge (cfs)
1874	May 17, 1874	-	98,400	1920	Apr. 9, 1920	-	222,000
1875	Apr.29,30, 1875	-	167,000				
				1921	May 11-13, 1921	-	85,300
1876	(b)	-	165,000	1922	Apr. 23, 1922	-	212,000
1877	Apr. 3, 1877	-	104,000	1923	Apr.7-8, 1923	-	106,000
1878	June 5, 1878	-	80,800	1924	Aug. 23, 1924	-	106,000
1879	June 1, 1879	-	96,800	1925	June 19,20,1925	-	93,900
1880	June 25, 1880	-	250,000				
				1926	Sept.26,27,1926	-	83,600
1881	May 12, 1881	-	174,000	1927	(e)	-	133,000
1882	Oct.26,27, 1881	-	237,000	1928	Apr.9,10,1928	-	116,000
1883	May 1, 1883	-	174,000	1929	(f)	-	146,000
1884	(c)	-	144,000	1930	June 28, 1930	-	83,600
1885	Oct. 18, 1884	-	146,000				
				1931	July 6-11, 1931	-	40,700
1886	May 1,2, 1886	-	157,000	1932	Apr.22,23, 1932	-	97,500
1887	Apr. 28, 1887	-	149,000	1933	Apr.8-13, 1933	-	92,100
1888	May 14-16, 1888	-	248,000	1934	Apr.19,20, 1934	-	81,400
1889	(d)	-	64,300	1935	Apr. 7, 1935	-	123,000
1890	June 28,29,1890	-	142,000				
				1936	Apr. 7, 1936	-	133,000
1891	May 2,3, 1891	-	130,000	1937	Mar.8,9, 1937	-	95,800
1892	June 26, 1892	-	238,000	1938	Sept.23, 1938	-	167,400
1893	May 12-15, 1893	-	174,000	1939	Apr. 9, 1939	-	144,900
1894	May 30-31, 1894	-	157,000	1940	June 19, 1940	10.36	74,100
1895	Mar. 2, 1895	-	70,000				
				1941	Apr. 25, 1941	15.11	128,200
1896	May 28,29, 1896	-	148,000	1942	June 13, 1942	18.04	169,600
1897	Apr.17,18, 1897	-	198,000	1943	June 30, 1943	17.30	158,700
1898	June 24-27 1898	-	88,800	1944	June 28, 1944	18.60	168,500
1899	June 24-26, 1899	-	149,000	1945	Mar. 31, 1945	17.69	164,400
1900	May 3,4, 1900	-	100,000				
				1946	Mar. 28, 1946	-	144,800
1901	Oct. 20, 1900	-	142,000		Mar. 29, 1946	16.48	-
1902	May 26,27, 1902	-	123,000	1947	June 15, 1947	-	125,500
1903	Sept.29,30, 1903	-	176,000		June 16, 1947	15.18	-
1904	Oct. 1, 1903	-	174,000	1948	Mar. 21, 1948	13.66	108,300
1905	June 21,22, 1905	-	172,000	1949	Apr. 7, 1949	11.08	85,300
				1950	May 22, 1950	15.24	129,900
1906	Apr.22-25, 1906	-	169,000				
1907	Apr.11-13, 1907	-	171,000	1951	Apr. 26, 1951	21.0	221,500
1908	July 20, 1908	-	134,000	1952	Apr. 27, 1952	21.24	225,400
1909	Apr. 22, 1909	-	123,000	1953	Apr. 5, 1953	14.00	104,100
1910	Mar. 25, 1910	-	73,100	1954	May 14, 1954	18.55	175,900
				1955	Apr. 25, 1955	13.69	96,900
1911	Feb. 18, 1911	-	84,000				
1912	Oct.21,22, 1911	-	120,000	1956	Apr. 20, 1956	15.3	127,000
1913	Mar. 27, 1913	-	123,000	1957	July 14, 1957	13.87	103,000
1914	July 13-15, 1914	-	111,000	1958	Apr.15-17 1958	-	64,500
1915	Apr.23,24, 1915	-	92,000		Apr. 17, 1958	10.78	-
				1959	Apr. 3, 1959	14.97	112,000
1916	May 5, 1916	-	195,000	1960	May 18, 1960	17.04	151,000
1917	Apr. 21, 1917	-	142,000				
1918	June 13,14, 1918	-	123,000	1961	Apr. 2, 1961	16.13	143,000
1919	Apr. 25, 1919	-	166,000				

a Figures shown for water years 1940 to 1952, 1960 and 1961 are maximum gage height at Dam 13; those shown for water years 1953 to 1959 are maximum gage height at Camanche, Iowa. b Occurred May 7-10, 30, 31, June 1, 2, 1876. c Occurred Mar. 27, 28, Sept. 27, 28, 1884. d Occurred May 30, 31, June 1, 1889. e Occurred Mar. 31, Apr. 1, 1927. f Occurred Apr. 2, 3, 19-21, 1929.

4206. Little Wapsipinicon River tributary near Riceville, Iowa

Location.--Lat 43°21', long 92°29', near south quarter corner of sec.27, T.93 N., R.14 W., at culvert, 3½ miles east of Riceville and 0.4 mile south of State Highway 9.

Drainage area.--0.90 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 13, 1953	4.21	141	1958	Apr. 7, 1958	3.29	28
1954	Aug. 24, 1954	4.60	300	1959	Mar. 26, 1959	4.57	284
1955	Aug. 1, 1955	4.59	295	1960	June 23, 1960	4.22	144
1956	Apr. 1, 1956	4.14	124	1961	Mar. 26, 1961	4.85	150
1957	May 30, 1957	4.17	131				

4206.2. Little Wapsipinicon River near Acme, Iowa

Location.--Lat 43°19', long 92°29', in sec.10, T.98 N., R.14 W., at bridge on county road D, 1 mile north of Acme.

Drainage area.--7.76 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 13, 1953	6.74	668	1958	Apr. 7, 1958	3.66	155
1954	June 21, 1954	7.19	822	1959	Mar. 26, 1959	5.75	250
1955	Aug. 1, 1955	6.63	635	1960	Mar. 29, 1960	6.04	302
1956	Apr. 1, 1956	5.60	420	1961	Mar. 27, 1961	7.19	a 700
1957	Mar. 24, 1957	3.77	167				

a Result of current-meter measurement near crest.

4206.4. Little Wapsipinicon River at Elma, Iowa

Location.--Lat 43°15', long 92°27', in NW¼ sec.12, T.97 N., R.14 W., at bridge, on county road "A" near west city limits of Elma.

Drainage area.--37.3 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 13, 1953	10.60	3,010	1958	Apr. 7, 1958	5.02	154
1954	June 21, 1954	10.59	3,000	1959	Mar. 26, 1959	7.43	559
1955	Mar. 15, 1955	7.00	450	1960	June 23, 1960	9.09	1,380
1956	Apr. 1, 1956	5.91	259	1961	July 31, 1961	10.10	2,400
1957	Mar. 24, 1957	4.21	88				

4209.6. Harter Creek near Independence, Iowa

Location.--Lat 42°31', long 91°54', near south quarter corner of sec.22, T.89 N., R.9 W., at bridge 0.2 mile west of State Highway 150, 2 miles north of Independence.

Drainage area.--6.17 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 10, 1952	6.31	162	1957	June 17, 1957	8.18	750
1953	Feb. 20, 1953	7.43	420	1958	Feb. 28, 1958	5.51	77
1954	Apr. 30, 1954	6.74	238	1959	Mar. 26, 1959	9.17	1,450
1955	Feb. 20, 1955	5.67	90	1960	May 7, 1960	8.35	842
1956	-	(a)	-	1961	Aug. 7, 1961	8.07	695

a Not determined; peak stage did not reach bottom of gage.

4210. Wapsipinicon River at Independence, Iowa

Location.--Lat 42°27'50", long 91°53'40", in SE¼ sec.4, T.88 N., R.9 W., on right bank at Sixth Street in Independence, 1,800 ft downstream from Interstate Power Co.'s hydroelectric plant, 4¾ miles downstream from Otter Creek, and 9½ miles upstream from Pine Creek.

Drainage area.--1,048 sq mi.

Gage.--Nonrecording in tailrace of powerplant 1,800 ft upstream at datum 80.00 ft lower prior to May 24, 1941; recording at present site and datum thereafter. Equivalent gage heights on present gage computed for peaks prior to May 24, 1941. Datum of gage is 882.85 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Large shift in relation occurred in June 1947.

Bankfull stage.--13 ft.

Historical data.--Maximum stage since at least 1901, that of June 14, 1947.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 11, 1934	5.9	1,010	1946	Mar. 7, 1946	8.9	4,380
					Mar. 14, 1946	10.0	5,190
1935	Mar.5,6, 1935	11.4	7,220				
	Mar. 24, 1935	8.4	4,040	1947	Apr. 11, 1947	11.5	7,220
	May 5, 1935	7.5	3,000		June 2, 1947	10.7	6,270
					June 5, 1947	10.6	6,160
1936	Mar. 12, 1936	11.1	6,900		June 14, 1947	18.74	21,500
	Mar. 26, 1936	9.7	5,170		June 18, 1947	12.7	10,000
					July 1, 1947	9.0	4,770
1937	Feb. 20, 1937	7.9	3,480				
	Mar. 8, 1937	12.0	7,900	1948	Feb. 28, 1948	9.4	5,480
	June 15, 1937	7.6	3,180		Mar. 3, 1948	8.2	3,940
	June 21, 1937	8.0	3,600		Mar. 20, 1948	13.33	11,100
					May 12, 1948	7.6	3,140
1938	Feb. 7, 1938	7.7	3,240				
	Sept.19, 1938	8.4	3,990	1949	Mar. 6, 1949	10.78	7,420
					Apr. 1, 1949	7.6	3,140
1939	Nov.9,10,1938	7.4	2,790				
				1950	Mar. 7, 1950	12.8	10,300
1940	Sept. 1, 1940	7.3	2,540		Mar. 27, 1950	8.5	4,300
					June 19, 1950	7.5	3,020
1941	Mar. 24, 1941	8.6	4,120		June 24, 1950	9.8	6,020
	Apr. 4, 1941	8.3	3,870		Sept.21, 1950	10.3	6,720
	Apr. 19, 1941	7.7	3,280				
	June 2, 1941	9.9	5,100	1951	Apr. 30, 1951	18.20	20,800
	Sept. 8, 1941	10.13	5,250				
	Sept.16, 1941	8.6	4,060	1952	Apr. 3, 1952	9.76	6,460
1942	Oct. 7, 1941	8.6	4,060	1953	Aug. 8, 1953	9.72	6,350
	Nov. 1, 1941	10.9	6,580				
	Mar. 22, 1942	8.2	3,750	1954	May 3, 1954	7.30	2,780
	June 3, 1942	8.5	4,000				
	June 12, 1942	13.46	9,060	1955	Feb. 21, 1955	6.35	1,560
1943	Oct. 6, 1942	8.0	3,560	1956	Apr. 2, 1956	6.77	2,100
	Feb. 24, 1943	7.6	3,110				
	Mar. 16, 1943	8.59	4,090	1957	June 19, 1957	7.79	3,270
	Mar. 20, 1943	7.3	3,000				
	Mar. 31, 1943	7.7	3,160	1958	June 1, 1958	6.07	1,210
1944	Mar. 15, 1944	8.4	3,900	1959	Mar. 27, 1959	13.67	11,800
	May 22, 1944	9.4	4,740		July 1, 1959	11.57	8,460
	June 17, 1944	15.64	13,800				
	June 22, 1944	7.9	3,440	1960	Mar. 30, 1960	15.63	15,200
					Apr. 19, 1960	10.14	6,300
1945	Mar. 14, 1945	8.8	4,220		May 1, 1960	7.84	3,270
	Mar. 18, 1945	13.95	10,900		May 7, 1960	12.07	9,210
	Apr. 17, 1945	8.0	3,550				
	June 3, 1945	10.0	5,150	1961	Mar. 7, 1961	8.24	3,690
					Mar. 29, 1961	16.11	15,700
1946	Jan. 6, 1946	13.36	9,910		Apr. 25, 1961	7.94	3,330
	Jan. 9, 1946	9.0	4,460		Aug. 6, 1961	8.16	3,690

4211. Pine Creek tributary near Winthrop, Iowa

Location.--Lat 42°31', long 91°48', in SW¼ sec.27, T.89 N., R.8 W., at culvert 1.4 miles north of U.S. Highway 20 and 2½ miles northwest of Winthrop.

Drainage area.--0.334 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	-	(a)	b10	1957	June 17, 1957	6.92	173
1953	July 26, 1953	6.30	137	1958	Aug. 20, 1958	6.61	154
1954	Aug. 30, 1954	4.41	50	1959	June 24, 1959	8.67	304
1955	Feb. 20, 1955	3.73	29	1960	May 7, 1960	4.78	64
1956	-	(a)	b10	1961	-	(a)	<10

a Not determined; peak stage did not reach bottom of gage.

4212. Pine Creek near Winthrop, Iowa

Location.--Lat 42°28', long 91°47', in SW¼ sec.34, T.89 N., R.8 W., at Illinois Central Railroad bridge, 500 ft above U.S. Highway 20 and 2½ miles southwest of Winthrop.

Drainage area.--28.3 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Sept.21, 1950	21.70	14,500	1956	-	-	(a)
				1957	June 17, 1957	13.27	990
1951	June 2, 1951	18.74	10,600	1958	-	-	(a)
1952	Mar. 10, 1952	13.47	1,090	1959	June 25, 1959	13.94	1,360
1953	Feb. 20, 1953	13.43	1,070	1960	Mar. 30, 1960	15.17	2,450
1954	Apr. 30, 1954	12.35	650				
1955	Feb. 20, 1955	12.19	590	1961	Mar. 5, 1961	12.82	800

a Peak stage did not reach bottom of gage; discharge less than 490 cfs.

4213. Pine Creek tributary No. 2 at Winthrop, Iowa

Location.--Lat 42°28', long 91°45', at north quarter corner of sec.2, T.88 N., R.8 W., at culvert on U.S. Highway 20 near west city limits of Winthrop.

Drainage area.--0.704 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 26, 1953	5.78	27	1958	Aug. 20, 1958	6.04	51
1954	Aug. 30, 1954	5.90	36	1959	June 24, 1959	7.12	443
1955	-	-	(a)	1960	Mar. 30, 1960	7.05	390
1956	May 29, 1956	6.28	87	1961	Mar. 5, 1961	5.30	7
1957	June 17, 1957	6.50	135				

a Peak stage did not reach bottom of gage; discharge less than 1.4 cfs.

4214. Wapsipinicon River at Central City, Iowa

Location.--Lat 42°12'20", long 91°31'55", in sec.3, T.85 N., R.6 W., on State Highway 13 in Central City, 4½ miles downstream from Walton Creek.

Drainage area.--1,263 sq mi.

Gage.--Nonrecording. Datum of gage is 812.24 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 7, 1929	17	13,000	1945	Apr. 19, 1945	13.2	3,400
					June 5, 1945	14.3	5,660
1941	Apr. 7, 1941	13.6	4,300				
	Apr. 21, 1941	13.1	3,200	1946	Jan. 8, 1946	15.6	8,760
	June 5, 1941	13.9	4,800		Mar. 9, 1946	14.1	5,220
	Sept. 9, 1941	15.8	9,280		Mar. 18, 1946	14.9	6,980
	Sept.18, 1941	13.2	3,500		Sept.23, 1946	13.1	3,200
1942	Oct. 8, 1941	13.6	4,200	1947	Apr. 13, 1947	15.0	7,200
	Nov. 3, 1941	14.6	6,320		June 2, 1947	16.0	9,800
	Mar. 24, 1942	13.5	4,000		June 6, 1947	17.0	12,000
	June 14, 1942	15.8	9,280		June 15, 1947	19.3	22,500
	July 31, 1942	13.4	3,700		July 4, 1947	14.0	5,000
	Aug. 3, 1942	14.8	6,760				
				1948	Mar. 1, 1948	13.7	4,400
1943	Oct. 8, 1942	13.0	3,000		Mar. 4, 1948	13.2	3,300
	Mar. 17, 1943	13.8	4,600		Mar. 22, 1948	16.3	10,800
	Mar. 22, 1943	13.3	3,600		May 13, 1948	13.1	3,200
	Apr. 2, 1943	13.3	3,600				
				1949	Mar. 8, 1949	14.9	6,980
1944	Mar. 17, 1944	13.4	3,900		Apr. 1, 1949	13.2	3,500
	May 24, 1944	14.0	5,110				
	June 19, 1944	16.8	12,400	1950	Mar. 9, 1950	15.4	8,240
	June 23, 1944	14.4	5,880		Mar. 28, 1950	13.6	4,100
					June 25, 1950	14.1	5,220
1945	Mar. 20, 1945	16.3	10,800		Sept.22, 1950	-	6,600

4215. Wapsipinicon River at Stone City, Iowa

Location.--Lat 42°07'00", long 91°21'10", in SW¼NE¼ sec.6, T.84 N., R.4 W., at highway bridge at Stone City, 100 ft upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 3.3 miles upstream from Buffalo Creek.

Drainage area.--1,324 sq mi.

Gage.--Nonrecording. Datum of gage, about 776.7 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1892	July 1892	28	32,000	1908	July 21, 1908	8.3	3,330
1903	July 13, 1903	-	a10,500	1909	Feb. 24, 1909	7.2	2,600
					Mar. 7, 1909	8.5	3,490
1904	Mar. 21, 1904	11.3	5,820		Mar. 27, 1909	9.2	4,000
	Mar. 27, 1904	12.8	7,510		Apr. 22, 1909	14.0	9,160
	May 30, 1904	6.8	2,370		May 1, 1909	9.7	4,400
					May 17, 1909	10.1	4,720
1905	Mar. 15, 1905	8.4	3,400		June 8, 1909	7.3	2,650
	Mar. 22, 1905	13.1	7,900				
	May 18, 1905	8.2	3,270	1910	Dec. 7, 1909	7.2	2,560
	June 2, 1905	6.5	2,140		Mar. 12, 1910	9.5	4,240
	July 7, 1905	6.9	2,370		Mar. 16, 1910	11.7	6,230
	July 23, 1905	6.2	1,930				
				1911	Feb. 17, 1911	14.3	9,580
1906	Mar. 4, 1906	12.2	6,780		Aug. 16, 1911	6.4	2,070
	Mar. 31, 1906	14.2	9,440				
	Apr. 11, 1906	8.4	3,400	1912	Oct. 1, 1911	7.3	2,650
					Dec. 20, 1911	6.8	2,330
1907	Feb. 22, 1907	9.2	4,000		Mar. 24, 1912	8.7	3,620
	Mar. 4, 1907	9.6	4,320		Mar. 30, 1912	14.8	10,300
	June 13, 1907	6.6	2,160		Apr. 1, 1912	15.6	11,500
	July 20, 1907	10.1	4,720		Apr. 14, 1912	8.6	3,560
	Aug. 17, 1907	10.3	4,890		Aug. 19, 1912	7.6	2,860
	Aug. 31, 1907	8.7	3,620				
				1913	Mar. 19, 1913	10.6	5,200
1908	Oct. 5, 1907	6.6	2,190		Mar. 24, 1913	10.8	5,340
	Feb. 26, 1908	8.4	3,400		Apr. 13, 1913	6.8	2,310
	Mar. 7, 1908	8.8	3,700		May 24, 1913	9.8	4,450
	May 30, 1908	9.7	4,400		May 29, 1913	9.9	4,570
	July 3, 1908	7.4	2,680				

a Results of discharge measurement.

4215.5. Buffalo Creek above Winthrop, Iowa

Location.--Lat 42°31', long 91°44', near northeast corner of sec.25, T.89 N., R.8 W., 1½ miles northeast of Winthrop.

Drainage area.--68.2 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	June 17, 1957	16.10	810	1960	Mar. 30, 1960	18.59	5,350
1958	May 31, 1958	16.92	1,500				
1959	July 1, 1959	17.45	1,600	1961	Mar. 26, 1961	17.48	2,090

4220. Wapsipinicon River near De Witt, Iowa

Location.--Lat 41°45'55", long 90°32'00", in SW¼NE¼ sec.6, T.80 N., R.4 E., on left bank 15 ft downstream from bridge on U.S. Highway 61, 3 miles south of DeWitt, 6.2 miles upstream from Brophy Creek, and 15.1 miles upstream from mouth.

Drainage area.--2,330 sq mi.

Gage.--Recording. Datum of gage is 599.73 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements. Shifts in the relation are common.

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 12, 1935	9.7	8,070	1948	Feb. 28, 1948	-	6,500
	Mar. 27, 1935	8.0	5,440		Mar. 9, 1948	-	8,500
					Mar. 20, 1948	11.1	17,200
1936	Mar. 18, 1936	9.1	6,880				
	Apr. 1, 1936	8.4	5,440	1949	Mar. 10, 1949	10.0	8,240
					July 21, 1949	9.9	7,910
1937	Feb. 21, 1937	-	7,200				
	Mar. 6, 1937	10.8	14,900	1950	Mar. 13, 1950	10.1	9,700
	Apr. 6, 1937	8.2	5,320		Apr. 1, 1950	8.3	4,580
					Apr. 26, 1950	9.8	8,480
1938	Feb. 8, 1938	-	7,810		June 19, 1950	9.0	5,500
	May 20, 1938	8.2	5,260				
	June 12, 1938	8.1	5,170	1951	Feb. 20, 1951	10.81	a9,800
	June 15, 1938	8.9	6,550		Feb. 26, 1951	11.20	14,700
					Apr. 3, 1951	11.07	13,600
1939	Mar. 13, 1939	9.7	8,500		Apr. 14, 1951	10.87	12,300
					May 6, 1951	11.30	15,600
1940	June 27, 1940	6.8	3,520		June 8, 1951	8.70	5,450
					July 15, 1951	10.67	11,100
1941	Mar. 23, 1941	8.1	4,840				
	Apr. 10, 1941	8.3	5,280	1952	Nov. 14, 1951	10.27	8,000
	Apr. 21, 1941	8.3	5,160		Mar. 13, 1952	10.88	10,800
	June 1, 1941	8.6	5,590		Apr. 10, 1952	9.39	5,620
	June 15, 1941	7.9	4,650		May 23, 1952	9.03	5,280
	Sept.14, 1941	10.2	8,130		June 14, 1952	9.34	5,800
1942	Oct. 13, 1941	8.4	4,760	1953	Feb. 8, 1953	9.16	5,620
	Oct. 23, 1941	8.6	5,000		Feb. 21, 1953	10.73	9,350
	Nov. 8, 1941	9.6	6,800				
	June 19, 1942	10.3	8,390	1954	Aug. 19, 1954	8.15	3,940
	Aug. 8, 1942	9.6	7,280				
				1955	Oct. 11, 1954	9.33	5,620
1943	Dec. 28, 1942	-	5,500		Feb. 21, 1955	10.22	a5,100
	Feb. 23, 1943	8.7	5,220		Apr. 20, 1955	8.76	4,780
	Mar. 19, 1943	9.4	6,610		Apr. 25, 1955	8.68	4,630
	Mar. 26, 1943	8.5	4,870				
				1956	May 30, 1956	8.09	3,720
1944	Mar. 16, 1944	9.3	6,520				
	Apr. 24, 1944	9.4	6,550	1957	June 21,23, 1957	7.31	2,770
	May 21, 1944	10.5	10,400				
	June 24, 1944	10.3	9,440	1958	June 14, 1958	9.27	5,620
	June 27, 1944	12.07	26,000				
				1959	Feb. 27, 1959	8.9	a5,400
1945	Mar. 25, 1945	10.2	9,000		Mar. 21, 1959	10.23	6,950
	Apr. 22, 1945	8.2	4,580		Apr. 4, 1959	11.17	10,600
	May 18, 1945	8.4	4,970		Apr. 28, 1959	9.27	5,250
	June 11, 1945	8.8	5,490		July 7, 1959	10.56	8,200
	June 30, 1945	8.4	4,900				
				1960	Jan. 16, 1960	10.88	10,800
1946	Jan. 6, 1946	11.1	14,600		Apr. 4, 1960	11.71	18,300
	Jan. 10, 1946	10.7	11,600		Apr. 24, 1960	10.24	7,600
	Mar. 21, 1946	10.0	8,240		May 10, 1960	11.16	12,600
	Sept. 6, 1946	8.7	5,320		June 6, 1960	10.02	6,800
1947	Apr. 6, 1947	9.3	6,420	1961	Mar. 12, 1961	9.86	6,420
	Apr. 21, 1947	10.3	9,440		Apr. 4, 1961	11.36	14,200
	June 9, 1947	11.3	16,600		June 9, 1961	10.00	6,800
	June 19, 1947	11.8	21,600		Sept.14, 1961	10.07	6,950
	July 7, 1947	9.8	7,610				
	July 13, 1947	8.5	5,000				

a About.

4230. West Branch Rock River near Waupun, Wis.

Location.--Lat 43°40'05", long 88°39'10", in SW¼ sec.24, T.14 N., R.15 E., 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.

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

Stage-discharge relation.--Defined by current-meter measurements below 800 cfs.

Remarks.--Base for partial-duration series, 250 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 27, 1949	4.11	246	1956	Apr. 1, 1956	5.76	a600
1950	Mar. 27, 1950	6.56	949	1957	June 12, 1957	3.46	112
1951	Mar. 29, 1951	4.73	386	1958	Nov. 9, 1957	2.57	37
	Apr. 26, 1951	4.36	294	1959	Apr. 2, 1959	b6.54	-
1952	Mar. 21, 1952	5.48	602		Apr. 3, 1959	6.07	730
	Mar. 31, 1952	5.08	480	1960	Mar. 30, 1960	6.08	733
1953	Feb. 21, 1953	5.17	494		May 7, 1960	4.67	313
	Mar. 16, 1953	5.22	509		July 23, 1960	4.48	271
					July 26, 1960	4.88	364
1954	May 31, 1954	2.91	80		Aug. 20, 1960	5.26	467
1955	Oct. 4, 1954	4.58	332	1961	Nov. 16, 1960	4.23	210

a About.
b Affected by backwater from ice.

4235. South Branch Rock River at Waupun, Wis.

Location.--Lat 43°38'30", long 88°43'15", in NW¼ sec.33, T.14 N., R.15 E., 100 ft upstream from bridge on U.S. Highway 151 at Waupun, and 3 miles upstream from West Branch Rock River.

Drainage area.--62.8 sq mi.

Gage.--Recording. Datum of gage is 863.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 700 cfs.

Remarks.--Base for partial-duration series, 400 cfs. Only annual peak is shown for 1949.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 27, 1949	5.24	398	1956	Apr. 2, 1956	6.65	753
1950	Mar. 27, 1950	6.56	818	1957	June 11, 1957	3.92	170
	July 20, 1950	6.29	633	1958	Aug. 12, 1958	2.56	51
1951	Mar. 29, 1951	5.95	584	1959	Apr. 3, 1959	7.97	1,500
	Apr. 25, 1951	5.63	442	1960	Dec. 28, 1959	6.02	524
1952	Mar. 21, 1952	6.96	1,000		Mar. 30, 1960	7.50	1,150
	Mar. 31, 1952	5.90	568		May 7, 1960	5.77	463
1953	Feb. 21, 1953	5.70	507		July 23, 1960	6.63	723
					July 26, 1960	6.66	736
1954	July 7, 1954	4.00	168		Aug. 20, 1960	5.92	499
1955	Oct. 4, 1954	5.91	570	1961	Nov. 16, 1960	5.32	369

4240. East Branch Rock River near Mayville, Wis.

Location.--Lat 43°31'45", long 88°34'00", in NE¼ sec.10, T.12 N., R.16 E., 500 ft downstream from Kekoskee Dam, 0.5 mile upstream from Gill Creek, and 2 miles northwest of Mayville.

Drainage area.--179 sq mi.

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

Stage-discharge relation.--Defined by current-meter measurements below 2,100 cfs.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 29, 1950	8.80	2,160	1954	July 7, 1954	6.12	773
	July 19, 1950	7.80	1,370	1955	Oct. 3, 1954	8.02	1,600
1951	Mar. 6, 1951	6.43	883		Mar. 14, 1955	5.78	664
	Mar. 30, 1951	7.94	1,530	1956	Apr. 3, 1956	6.85	1,010
	Apr. 4, 1951	6.96	1,090		May 6, 1956	6.58	914
	Apr. 8, 1951	6.45	883		May 9, 1956	6.18	779
	Apr. 12, 1951	6.45	883	1957	Feb. 25, 1957	4.87	405
	Apr. 25, 1951	7.09	1,130	1958	Apr. 6, 1958	4.42	296
1952	Mar. 17, 1952	5.82	670	1959	Apr. 3, 1959	a11.02	b3,400
	Mar. 21, 1952	8.74	2,080	1960	Dec. 28, 1959	7.35	1,240
	Mar. 31, 1952	6.60	935		Apr. 1, 1960	8.44	1,880
	Apr. 13, 1952	5.92	701		May 6, 1960	7.79	1,460
	July 15, 1952	7.29	1,220		May 9, 1960	7.42	1,280
	July 18, 1952	7.40	1,270		July 30, 1960	6.12	773
	July 23, 1952	6.82	1,010	1961	Mar. 25, 1961	5.61	590
	July 28, 1952	6.13	782				
1953	Feb. 21, 1953	-	a700				
	Mar. 15, 1953	5.84	686				
	May 2, 1953	5.75	654				

a Affected by backwater from ice.
b About.

4255. Rock River at Watertown, Wis.

Location.--Lat 43°11'25", long 88°43'35", in sec.4, T.8 N., R.15 E., at Watertown, 700 ft downstream from Milwaukee Street Bridge and 1.1 miles downstream from Silver Creek.

Drainage area.--971 sq mi.

Gage.--Nonrecording at site 700 ft upstream at different datum prior to Sept. 26, 1933; recording at present site and datum thereafter. Datum of gage is 792.58 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,000 cfs.

Remarks.--Base for partial-duration series, 1,100 cfs. Only annual peaks are shown prior to 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Jan. 13, 1932	2.39	1,570	1938	Feb. 6, 1938	a5.31	-
1933	May 20, 1933	3.90	3,390		Feb. 13, 1938	4.84	3,340
1934	Apr. 4, 1934	3.08	1,010		Sept.25, 1938	4.46	2,720
1935	Mar. 20, 1935	3.94	1,980	1939	Feb. 19, 1939	3.37	1,210
1936	Mar. 22, 1936	3.80	1,810		Mar. 15, 1939	3.59	1,490
1937	Feb. 21, 1937	4.50	2,800		Apr. 5, 1939	3.57	1,460

a Backwater from ice, 1.5 ft.

Peak stages and discharges of Rock River at Watertown, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	June 28, 1940	4.76	2,800	1953	Feb. 20, 1953	3.67	1,540
					Mar. 1, 1953	3.58	1,440
1941	Apr. 20, 1941	3.82	1,670		Mar. 5, 1953	3.55	1,400
					Mar. 27, 1953	3.90	1,810
1942	June 12, 1942	3.35	1,170		Aug. 4, 1953	3.60	1,460
1943	Mar. 16, 1943	5.36	3,760	1954	July 7, 1954	3.94	1,640
1944	Mar. 14, 1944	4.18	2,000	1955	Oct. 10, 1954	3.98	1,910
					Feb. 20, 1955	3.36	1,210
1945	Dec. 21, 1944	b3.58	-		Mar. 13, 1955	3.49	1,340
	Mar. 25, 1945	3.23	1,040		Mar. 27, 1955	3.60	1,460
					Apr. 19, 1955	3.63	1,490
1946	Mar. 14, 1946	5.27	3,600		June 12, 1955	3.74	1,620
					Aug. 2, 1955	4.13	2,090
1947	Apr. 11, 1947	3.74	1,580				
				1956	Apr. 13, 1956	3.61	1,470
1948	Mar. 16, 1948	4.72	2,780		May 13, 1956	3.87	1,770
	Mar. 21, 1948	5.05	3,290		June 22, 1956	3.37	1,220
1949	Mar. 6, 1949	3.51	1,330	1957	June 6, 1957	3.41	1,190
	Mar. 15, 1949	3.55	1,380				
				1958	Mar. 8, 1958	2.86	667
1950	Mar. 28, 1950	4.35	2,300				
	July 20, 1950	4.43	2,430	1959	Apr. 4, 1959	6.32	5,030
1951	Mar. 13, 1951	-	-	1960	Jan. 13, 1960	3.81	1,700
	Mar. 22, 1951	4.26	2,240		Mar. 30, 1960	4.88	3,050
	Apr. 14, 1951	5.05	3,280		May 7, 1960	5.09	3,330
	Apr. 29, 1951	5.10	3,340		Aug. 9, 1960	4.17	2,130
					Sept.26, 1960	3.77	1,650
1952	Oct. 25, 1951	3.66	1,530				
	Nov. 14, 1951	3.26	1,110	1961	Nov. 17, 1960	3.29	1,140
	Jan. 17, 1952	3.43	1,280		Mar. 7, 1961	3.32	1,210
	Mar. 12, 1952	3.90	1,810		Mar. 28, 1961	3.77	1,690
	Mar. 24, 1952	5.69	4,180		May 1, 1961	3.73	1,640
	July 28, 1952	3.83	1,730				

b Affected by ice.

4260. Crawfish River at Milford, Wis.

Location.--Lat 43°06'00", long 88°51'00", in sec.4, T.7 N., R.14 E., 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.

Gage.--Nonrecording. Altitude of gage is 780 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,250 cfs. Only annual peaks are shown prior to 1949.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Nov. 26, 1931	4.44	1,370	1947	June 18, 1947	5.23	1,810
1933	Apr. 3, 1933	6.46	2,650	1948	Mar. 22, 1948	8.3	3,850
1934	Apr. 6, 1934	4.06	1,140				
1935	Mar. 14, 1935	6.6	2,720	1949	Mar. 11, 1949	5.29	1,870
1936	Mar. 18, 1936	6.08	2,240	1950	Mar. 12, 1950	4.70	1,500
1937	Mar. 9, 1937	7.24	3,110		Mar. 30, 1950	6.62	2,710
1938	Sept.22, 1938	7.6	3,370		July 24, 1950	7.78	3,310
1939	Jan. 12, 1939	5.3	1,720				
1940	June 28, 1940	5.26	1,840	1951	Mar. 10, 1951	6.98	2,970
					Apr. 2, 1951	5.92	2,250
1941	Mar. 27, 1941	6.4	2,560		Apr. 29, 1951	5.60	2,060
1942	Mar. 22, 1942	4.16	1,180				
1943	Mar. 22, 1943	8.2	3,780	1952	Mar. 25, 1952	8.76	3,940
1944	Mar. 18, 1944	6.5	2,640		July 25, 1952	4.96	1,580
1945	Mar. 16, 1945	5.00	1,690				
				1953	Feb. 26, 1953	-	-
1946	Mar. 17, 1946	8.88	4,260		Mar. 18, 1953	5.15	1,700

Peak stages and discharges of Crawfish River at Milford, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Aug. 8, 1953	5.44	1,870	1958	Mar. 3, 1958	3.67	915
1954	July 10, 1954	5.75	2,070	1959	Apr. 6, 1959	11.15	6,140
1955	Mar. 16, 1955	4.88	1,520	1960	Jan. 16, 1960	a5.10	b1,400
	Apr. 29, 1955	4.40	1,280		Apr. 3, 1960	8.45	3,680
					May 10, 1960	7.55	3,000
1956	Apr. 3, 1956	5.20	1,700	1961	Mar. 27, 1961	5.28	1,690
1957	June 13, 1957	4.27	1,260				

a Backwater from ice, 0.25 ft.
b About.

4265. Whitewater Creek near Whitewater, Wis.

Location.--Lat 42°46'40", long 88°41'40", in NW¼ sec.26, T.4 N., R.15 E., at downstream end of highway culvert, 3,000 ft downstream from Whitewater Lake, and 4 miles south of Whitewater.

Drainage area.--7.2 sq mi.

Gage.--Nonrecording and Cippoletti weir control. Prior to July 3, 1946, at site 15 ft upstream from culvert with different control and at datum 0.20 ft lower. Altitude of gage is 865 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 16 cfs.

Remarks.--Entire flow from 6.6 sq mi of drainage area impounded in Whitewater Lake Jan. 29 to Feb. 3, 1928, and since Jan. 29, 1947, but there may be considerable seepage from the lake. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Apr. 9, 1926	1.45	12.8	1950	June 13, 1950	2.2	16.3
1927	May 28, 1927	2.0	24.8				
1928	July 3, 1928	1.2	8.4	1951	Feb. 26, 1951	1.54	8.20
				1952	Nov. 13, 1951, Mar. 18, 1952	1.92	12.6
1947	Mar. 23, 1947	1.2	4.8				
1948	Mar. 19, 1948	1.74	10.5	1953	Feb. 20, 1953	1.54	8.29
1949	Feb. 24, 1949	1.8	11.2	1954	June 3, 1954	1.34	6.24

4270. Whitewater Creek at Whitewater, Wis.

Location.--Lat 42°49'00", long 88°42'30", in SW¼ sec.10, T.4 N., R.15 E., at upstream side of highway bridge, 0.5 mile upstream from Tripp Lake pond and 1 mile southeast of Whitewater.

Drainage area.--16.7 sq mi.

Gage.--Nonrecording. Altitude of gage is 825 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 400 cfs.

Remarks.--Entire flow from 6.6 sq mi of drainage area impounded in Whitewater Lake Jan. 29 to Feb. 3, 1928, and since Jan. 29, 1947. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	May 28, 1927	4.3	445	1950	June 13, 1950	5.1	451
1928	July 3, 1928	3.1	176				
				1951	Mar. 30, 1951	2.43	98
1947	June 2, 1947	2.7	113	1952	Nov. 13, 1951	4.15	300
1948	Mar. 19, 1948	4.2	330	1953	Feb. 21, 1953	2.83	132
1949	Mar. 4, 1949	2.3	89	1954	July 7, 1954	2.8	127

4295. Yahara River near McFarland, Wis.

Location.--Lat 43°00'30", long 89°18'15", in SW¼ sec.3, T.6 N., R.10 E., just upstream from bridge on U.S. Highway 51, at dam at outlet of Lake Waubesa, 1 mile southwest of McFarland.

Drainage area.--351 sq mi.

Gage.--Nonrecording prior to Dec. 23, 1934; recording thereafter. Datum of gage is 840.40 ft above mean sea level, datum of 1929 (levels by Public Service Commission of Wisconsin).

Stage-discharge relation.--Defined by current-meter measurements below 800 cfs.

Remarks.--Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Oct.8-16,1930	-	211	1947	Apr. 11, 1947	4.66	404
1932	Nov.24-29,1931	-	353	1948	Mar. 23, 1948	5.2	531
1933	May 21, 1933	5.89	655	1949	Apr.1-3, 1949	4.6	350
1934	Apr. 11, 1934	3.94	223	1950	July 20-22,1950	-	600
1935	Apr. 12, 1935	4.48	370				
				1951	Apr. 30, 1951	4.70	416
1936	Apr.7,10-20,1936	5.00	347	1952	Apr. 3, 1952	5.19	531
1937	Mar.13-18, 21, 1937	6.10	672	1953	Mar. 16, 1953	5.03	496
				1954	July 11, 1954	6.21	500
1938	Feb.18-25, Sept.21-24,1938	5.81	508	1955	Apr. 25, 1955	4.59	391
1939	Oct. 1, 1938	5.46	439	1956	May 18, 1956	4.36	338
1940	Apr. 11, 1940	4.01	258	1957	May 26, 1957	-	296
					June 25-30,1957	a5.77	-
1941	Apr. 4-7,1941	4.88	416	1958	June 1, 1958	4.60	282
1942	June 10, 1942	4.53	350	1959	Apr. 10, 1959	5.82	867
1943	Mar.26-29,1943	5.05	462	1960	July 3, 1960	5.29	580
1944	Apr. 3, 1944	4.88	462				
1945	Mar.19-27,1945	-	255	1961	Mar. 28, 1961	4.70	433
1946	Mar.19-21,25, 1946	5.56	613				

a Affected by backwater from weeds.

4301. Badfish Creek near Stoughton, Wis.

Location.--Lat 42°53'28", long 89°17'23", in SW¼ 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.

Gage.--Recording. Datum of gage is 873.2 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 150 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	June 11, 1957	2.84	68	1960	May 6, 1960	3.92	694
					July 3, 1960	2.90	429
1958	Feb. 24, 1958	2.15	252		July 26, 1960	2.11	208
					Sept.19, 1960	3.65	557
1959	Mar. 24, 1959	3.04	457		Sept.24, 1960	2.40	199
	Apr. 1, 1959	3.87	682				
	July 30, 1959	2.20	266	1961	Oct. 31, 1960	2.44	200
	Sept.26, 1959	2.71	331		Nov. 15, 1960	2.16	167
					Feb. 23, 1961	1.77	161
1960	Oct. 5, 1959	2.43	162		Mar. 6, 1961	2.68	348
	Dec. 27, 1959	2.33	226		Mar. 24, 1961	3.22	504
	Jan. 13, 1960	4.60	871		Sept.13, 1961	4.01	339
	Mar. 30, 1960	4.55	858				

4305. Rock River at Afton, Wis.

Location.--Lat 42°36'40", long 89°04'10", in sec.27, T.2 N., R.12 E., 0.3 mile downstream from highway bridge in Afton and 0.8 mile upstream from Bass Creek.

Drainage area.--3,300 sq mi, approximately.

Gage.--Nonrecording prior to Aug. 21, 1932; recording thereafter. Datum of gage is 742.36 ft above mean sea level, datum of 1929. Gage heights prior to Oct. 1, 1933, are adjusted to present datum and rounded to nearest 0.1 ft.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The flood of Mar. 23, 1929, was higher than the flood in 1905, which was previous high, by about 0.1 ft (from the Janesville Gazette).

Remarks.--Base for partial-duration series, 3,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	Sept.15, 1914	7.6	-	7,050	1928	Apr. 14, 1928	8.4	-	6,670
						June 18, 1928	6.3	-	3,830
1915	Mar. 5, 1915	8.7	-	7,190		June 29, 1928	6.3	-	3,830
	Aug. 11, 1915	6.4	-	4,160					
	Sept.13, 1915	11.0	-	10,500	1929	Nov. 18, 1928	6.9	-	4,500
	Sept.26, 1915	9.7	-	8,620		Dec. 22, 1928	10.2	3.3	4,500
						Mar. 23, 1929	11.8	-	13,000
1916	Dec. 3, 1915	6.4	-	4,160		June 16, 1929	7.2	-	4,860
	Jan. 22, 1916	9.6	2.2	5,400					
	Jan. 27, 1916	9.7	1.0	7,200	1930	Mar. 4, 1930	7.0	-	4,620
	Feb. 5, 1916	13.05	a4.3	-		Apr. 21, 1930	6.4	-	3,940
	Apr. 1, 1916	10.1	-	9,270					
	June 15, 1916	7.0	-	4,900	1931	Mar. 28, 1931	3.5	-	1,380
1917	Apr. 1, 1917	10.0	-	9,050	1932	Nov. 27, 1931	6.7	-	4,270
	May 6, 1917	7.1	-	5,030		Mar. 27, 1932	6.8	-	4,380
	June 13, 1917	8.2	-	6,490					
	June 30, 1917	9.9	-	8,930	1933	Apr. 9, 1933	8.4	-	6,640
						May 16, 1933	9.1	-	7,640
1918	Nov. 2, 1917	6.0	-	3,680		May 20, 1933	10.0	-	8,990
	Mar. 14, 1918	11.4	-	12,000					
	Mar.24-26,1918	11.5	-	12,700	1934	Apr. 11, 1934	5.36	-	2,890
	May 6, 1918	6.0	-	3,680					
	May 23, 1918	9.5	-	8,300	1935	Mar. 5, 1935	7.4	-	4,990
						Mar. 10, 1935	8.52	-	6,350
1919	Apr. 15, 1919	5.9	-	3,560					
					1936	Mar. 26, 1936	7.07	-	4,600
1920	Oct. 4, 1919	7.7	-	5,810					
	Mar. 12, 1920	7.1	-	5,030	1937	Feb. 21, 1937	12.77	3.0	8,400
	Apr. 1, 1920	10.3	-	10,100		Mar. 4, 1937	10.23	.3	8,510
	June 23, 1920	6.5	-	4,280		May 1, 1937	6.6	-	4,170
1921	May 2, 1921	9.3	-	8,200	1938	Jan. 24, 1938	10.44	1.6	9,190
	Sept.25, 1921	6.5	-	4,280		Feb. 6, 1938	11.90	2.2	8,200
						Feb. 17, 1938	9.2	-	7,620
1922	Feb. 23, 1922	9.2	-	7,850		July 17, 1938	6.4	-	3,820
	Mar. 20, 1922	9.4	-	8,150		Sept. 7, 1938	6.3	-	3,710
	Apr. 11, 1922	9.7	-	8,640		Sept.12, 1938	8.3	-	6,230
	May 25, 1922	7.7	-	5,689		Sept.25, 1938	9.6	-	8,270
1923	Mar. 12, 1923	6.8	-	4,510	1939	Jan. 16, 1939	6.3	-	3,710
	Apr. 12, 1923	10.6	-	10,400		Jan. 26, 1939	8.0	a2.2	-
						Feb. 19, 1939	6.6	-	4,040
1924	Apr. 9, 1924	7.6	-	5,550		Feb. 25, 1939	8.0	-	5,800
	Aug. 20, 1924	8.7	-	7,100		Mar. 27, 1939	7.1	-	4,610
						Apr. 26, 1939	7.0	-	4,490
1925	Feb. 23, 1925	7.0	-	4,720					
	Feb. 27, 1925	7.3	1.5	-	1940	July 3, 1940	6.6	-	4,050
						Aug. 26, 1940	10.8	-	10,700
1926	Mar. 23, 1926	7.4	-	5,180					
	Apr. 9, 1926	7.3	-	5,060	1941	Jan. 5, 1941	6.8	-	4,270
						Apr. 4, 1941	7.43	-	4,990
1927	Feb. 5, 1927	7.1	-	4,800					
	Mar. 20, 1927	7.8	-	5,750	1942	Mar. 25, 1942	5.94	-	3,300
	June 4, 1927	7.7	-	5,610					
					1943	Mar. 4, 1943	8.5	-	6,530
1928	Oct. 7, 1927	7.0	-	4,670		Mar. 16, 1943	11.04	-	11,100
	Feb. 21, 1928	8.1	-	6,200		Apr. 1, 1943	10.0	-	9,000

a Greater than figure shown.

Peak stages and discharges of Rock River at Afton, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	Feb. 26, 1944	7.4	-	4,990	1952	Oct. 27, 1951	6.72	-	4,340
	Mar. 9, 1944	6.4	-	3,830		Jan. 25, 1952	8.15	-	6,350
	Mar. 14, 1944	9.19	-	7,620		Jan. 29, 1952	8.73	-	7,100
	Apr. 29, 1944	6.2	-	3,610		Mar. 29, 1952	10.39	-	9,810
	June 19, 1944	6.2	-	3,610		Aug. 3, 1952	7.48	-	5,100
	June 24, 1944	6.2	-	3,610	1953	Feb. 20, 1953	8.06	-	6,200
1945	Mar. 21, 1945	6.31	-	3,830		Mar. 26, 1953	7.40	-	5,230
1946	Jan. 5, 1946	10.0	-	9,000	1954	July 14, 1954	6.93	-	4,620
	Jan. 16, 1946	8.1	-	5,940					
	Mar. 23, 1946	10.46	-	10,000	1955	Oct. 11, 1954	6.82	-	4,480
						Feb. 20, 1955	6.67	-	4,300
1947	Apr. 16, 1947	6.98	-	4,490		Mar. 21, 1955	6.26	-	3,810
	June 19, 1947	6.2	-	3,600	1956	Apr. 9, 1956	6.25	-	3,800
1948	Feb. 28, 1948	9.8	-	8,620		May 16, 1956	6.80	-	4,460
	Mar. 16, 1948	8.9	-	7,140					
	Mar.19,27,1948	10.2	-	9,390	1957	June 14, 1957	5.96	-	3,460
	May 10, 1948	6.8	-	4,260					
	May 16, 1948	6.3	-	3,710	1958	Mar. 6, 1958	4.76	-	2,230
1949	Mar. 5, 1949	7.79	-	5,520	1959	Mar. 20, 1959	-	-	b3,600
	Mar. 31, 1949	6.8	-	4,260		Apr. 10, 1959	11.77	-	12,100
1950	Jan. 25, 1950	6.7	-	4,340	1960	Jan. 13, 1960	8.17	-	6,160
	Apr. 4, 1950	8.2	-	6,350		Apr. 6, 1960	10.00	-	8,840
	Apr. 25, 1950	6.72	-	4,340		May 13, 1960	9.55	-	8,120
	July 26-28,1950	8.24	-	6,350		Aug. 21, 1960	6.82	-	4,380
1951	Mar. 11, 1951	8.06	-	6,200	1961	Mar. 29, 1961	8.09	-	c6,050
	Apr. 12, 1951	8.54	-	6,800					
	May 4, 1951	9.16	-	7,850					

b About.
c Annual peak only.

4315. Turtle Creek near Clinton, Wis.

Location.--Lat 42°35'55", long 88°51'50", in SE¼ sec.29, T.2 N., R.14 E., 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.

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

Stage-discharge relation.--Defined by current-meter measurements below 5,500 cfs and extended above by logarithmic plotting.

Historical data.--The flood of February 1938 reached the maximum stage known.

Remarks.--Base for partial-duration series, 1,200 cfs. Only annual peak is shown for 1938.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1938	February 1938	12.09	-	10,700	1944	Feb. 26, 1944	8.12	-	2,790
						Mar. 12, 1944	6.20	-	1,330
1940	Aug. 26, 1940	7.18	-	2,020		Mar. 14, 1944	8.34	-	2,980
1941	Mar. 3, 1941	a7.70	2.0	-	1945	May 28, 1945	6.66	-	1,780
	Mar. 21, 1941	5.97	-	1,120		Sept.28, 1945	8.19	-	3,380
1942	Sept. 3, 1942	7.10	-	1,950	1946	Jan. 5, 1946	9.88	-	5,850
						Mar. 12, 1946	6.73	-	1,850
1943	Dec. 27, 1942	7.68	.10	2,350					
	Feb. 21, 1943	8.00	.10	2,610	1947	Mar. 12, 1947	5.86	-	1,270
	Mar. 16, 1943	9.29	-	3,950					
	Aug. 26, 1943	6.00	-	1,210	1948	Mar. 15, 1948	7.50	-	2,610

a Affected by backwater from ice.

Peak stages and discharges of Turtle Creek near Clinton, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1948	Mar. 19, 1948	9.46	-	5,350	1955	Feb. 20, 1955	7.17	-	2,270
	May 10, 1948	6.05	-	1,390	1956	June 21, 1956	4.5	-	590
1949	Feb. 24, 1949	10.22	-	6,560	1957	Feb. 10, 1957	a6.20	-	b800
	Mar. 4, 1949	7.22	-	2,300	1958	Feb. 26, 1958	a5.31	-	b320
1950	Jan. 25, 1950	8.12	-	-	1959	Mar. 15, 1959	a8.32	-	-
	Mar. 6, 1950	9.45	-	-		Mar. 20, 1959	7.85	-	3,020
	Mar. 27, 1950	5.81	-	1,240		May 19, 1959	6.13	-	1,440
1951	Feb. 26, 1951	a9.56	3.0	-	1960	Jan. 12, 1960	7.85	-	3,020
	Mar. 3, 1951	6.93	-	2,060		Mar. 30, 1960	8.15	-	3,400
1952	Mar. 12, 1952	6.81	-	1,930		May 7, 1960	6.00	-	1,360
	Mar. 19, 1952	6.56	-	1,740	1961	Mar. 15, 1961	6.36	-	1,600
	July 18, 1952	6.62	-	1,560					
1953	Feb. 20, 1953	7.23	-	2,350					
1954	Apr. 25, 1954	4.84	-	756					

a Affected by backwater from ice.
b About.

4325. Pecatonica River at Darlington, Wis.

Location.--Lat 42°40'30", long 90°06'55", in NE¼ sec.3, T.2 N., R.3 E., in Darlington, 3 miles upstream from Otter Creek.

Drainage area.--274 sq mi.

Gage.--Recording. Datum of gage is 801.90 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 11,000 cfs and extended above on basis of slope-area measurement.

Historical data.--The flood of July 16, 1950, was the highest ever recorded (from the Republican Journal), and the highest in history (from the Lafayette County News).

Remarks.--Base for partial-duration series, 2,000 cfs. Only annual peak is shown for 1937.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Feb. 21, 1937	17.6	-	1950	July 16, 1950	20.71	22,000
1940	Aug. 27, 1940	11.0	1,930	1951	July 8, 1951	16.61	7,750
1941	Mar. 23, 1941	11.05	1,910		Aug. 6, 1951	16.42	7,340
1942	Aug. 2, 1942	14.96	3,460	1952	Mar. 11, 1952	13.12	3,350
1943	Mar. 16, 1943	15.73	5,780		Mar. 19, 1952	13.38	3,650
1944	Feb. 23, 1944	12.50	2,660	1953	Feb. 6, 1953	11.54	2,080
	Feb. 27, 1944	12.82	2,870		Feb. 20, 1953	17.47	8,380
	Mar. 15, 1944	15.26	6,020		Mar. 16, 1953	11.51	2,080
1945	June 30, 1945	11.39	2,040	1954	June 22, 1954	15.79	6,930
1946	Jan. 6, 1946	17.18	8,300	1955	Feb. 21, 1955	13.05	3,340
	Feb. 7, 1946	12.00	2,380	1956	Mar. 3, 1956	10.70	a1,500
	Mar. 6, 1946	14.85	5,180	1957	Jan. 22, 1957	9.06	1,450
	Mar. 13, 1946	14.40	4,710	1958	Feb. 24, 1958	b10.64	-
1947	Mar. 13, 1947	11.26	2,010		Feb. 25, 1958	b10.05	a1,600
	June 14, 1947	14.05	3,860	1959	Mar. 26, 1959	14.22	4,600
1948	Feb. 28, 1948	17.65	9,540		Apr. 1, 1959	17.16	10,700
	Mar. 16, 1948	12.97	2,900	1960	Jan. 13, 1960	15.58	6,700
1949	Mar. 5, 1949	14.70	5,240		Mar. 30, 1960	16.06	7,770
1950	Mar. 7, 1950	13.88	3,750		May 7, 1960	13.73	4,030
	Mar. 24, 1950	12.19	2,370	1961	Feb. 24, 1961	12.00	2,520
	Mar. 27, 1950	11.91	2,240		Mar. 26, 1961	12.58	2,930

a About. b Affected by backwater from ice.

4330. East Branch Pecatonica River near Blanchardville, Wis.

Location.--Lat 42°47'10", long 89°51'40", in SE¼ sec.26, T.4 N., R.5 E., 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.

Gage.--Recording. Datum of gage is 796.8 ft above mean sea level (unadjusted). Auxiliary staff gage 2.7 miles upstream at same datum since Apr. 6, 1949.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The flood of Feb. 28, 1948, was the worst since 1915, according to the Blanchardville Blade.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Aug. 27, 1940	9.76	-	965	1951	Apr. 29, 1951	10.06	-	1,070
						Aug. 6, 1951	a10.19	-	-
1941	Mar. 23, 1941	11.34	-	1,310					
					1952	Mar. 11, 1952	11.88	-	2,250
1942	Aug. 2, 1942	12.98	-	2,550		Mar. 19, 1952	12.62	-	3,250
						June 12, 1952	11.59	-	1,850
1943	Mar. 16, 1943	14.04	-	5,450					
					1953	Feb. 6, 1953	10.31	-	1,310
1944	Jan. 28, 1944	10.78	-	1,430		Feb. 20, 1953	15.25	-	8,750
	Feb. 23, 1944	12.34	-	2,660		July 27, 1953	12.05	-	2,600
	Feb. 26, 1944	12.62	-	2,970					
	Mar. 12, 1944	10.73	-	1,380	1954	June 22, 1954	13.10	-	3,300
	Mar. 15, 1944	14.00	-	5,440					
	June 18, 1944	12.81	-	3,190	1955	Oct. 11, 1954	11.29	-	1,830
						Feb. 21, 1955	b13.55	2.5	-
1945	June 29, 1945	11.24	-	1,690		Mar. 4, 1955	10.83	-	1,450
1946	Jan. 6, 1946	14.37	-	6,500	1956	Feb. 25, 1956	11.85	2.5	-
	Mar. 6, 1946	13.48	-	4,180		Mar. 7, 1956	9.80	-	1,070
	Mar. 13, 1946	13.18	-	3,700					
					1957	June 11, 1957	12.96	-	2,820
1947	Apr. 6, 1947	11.06	-	1,970		June 14, 1957	11.53	-	2,030
	June 13, 1947	12.12	-	2,980					
					1958	Feb. 25, 1958	b11.90	-	1,700
1948	Feb. 20, 1948	-	-	-					
	Feb. 28, 1948	15.74	-	11,700	1959	Mar. 25, 1959	12.33	.6	c1,900
	Mar. 16, 1948	12.36	-	3,320		Apr. 1, 1959	15.61	-	9,680
1949	Mar. 5, 1949	13.18	-	4,260	1960	Jan. 13, 1960	14.08	-	5,380
						Mar. 30, 1960	14.81	-	6,960
1950	Jan. 26, 1950	10.97	-	1,780		May 7, 1960	12.04	-	2,200
	Mar. 6, 1950	14.79	-	4,900					
	Mar. 24, 1950	12.31	-	2,360	1961	Feb. 23, 1961	12.03	-	2,090
	Mar. 27, 1950	12.23	-	2,300		Mar. 7, 1961	11.87	-	1,980
	July 17, 1950	15.73	-	7,150		Mar. 26, 1961	12.86	-	2,900
	July 20, 1950	11.50	-	1,750					
	Sept.19, 1950	12.70	-	3,560					

a Backwater from inflow downstream.
b Affected by backwater from ice.
c About.

4335. Yellowstone River near Blanchardville, Wis.

Location.--Lat 42°46'55", long 89°59'50", in NE¼ sec.34, T.4 N., R.4 E., on right bank 0.6 mile upstream from highway bridge, 7 miles southwest of Blanchardville, and about 9 miles upstream from mouth.

Drainage area.--29.1 sq mi.

Gage.--Recording. Altitude of gage is 840 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 870 cfs and extended above.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges of Yellowstone River near Blanchardville, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 2, 1954	3.67	166	1959	Apr. 1, 1959	10.00	2,000
	Oct. 10, 1954	4.64	292		June 24, 1959	6.10	548
	Feb. 20, 1955	9.50	1,740		June 26, 1959	8.65	1,360
	Mar. 1, 1955	7.08	826		Aug. 3, 1959	6.82	722
	Mar. 3, 1955	6.31	620				
				1960	Dec. 27, 1959	3.85	172
1956	Feb. 24, 1956	-	460		Jan. 12, 1960	9.92	1,960
	Feb. 26, 1956	5.98	539		Mar. 29, 1960	10.47	2,240
	Feb. 29, 1956	5.05	356		May 6, 1960	5.75	474
	Mar. 1, 1956	5.61	459		June 28, 1960	6.63	674
					July 2, 1960	4.38	235
1957	Jan. 21, 1957	7.98	-		July 12, 1960	4.18	210
	Feb. 9, 1957	6.34	603		Aug. 19, 1960	3.82	168
	Feb. 12, 1957	6.23	577		Sept.18, 1960	6.91	747
	June 11, 1957	9.65	1,820				
	June 13, 1957	6.67	684	1961	Feb. 18, 1961	6.96	761
	June 16, 1957	4.23	216		Feb. 22, 1961	8.53	1,310
	Aug. 30, 1957	4.30	225		Mar. 4, 1961	8.29	1,220
1958	Feb. 24, 1958	8.55	1,320		Mar. 6, 1961	5.86	497
					Mar. 24, 1961	7.89	1,060
1959	Oct. 9, 1958	3.74	157		June 8, 1961	3.22	113
	Mar. 24, 1959	-	1,200		Sept.13, 1961	3.17	106

4340. Pecatonica River at Dill, Wis.

Location.--Lat 42°35'10", long 89°49'30", in sec.6, T.1 N., R.6 E., at Illinois Central Railroad bridge at Dill (Ramona Post Office), 1.3 miles downstream from East Branch, and 9 miles upstream from Wisconsin-Illinois State line.

Drainage area.--951 sq mi.

Gage.--Nonrecording. Datum of gage is 768.52 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 5,800 cfs and extended above on basis of velocity-area study.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	Sept.15, 1914	11.9	5,080	1917	Mar. 15, 1917	12.7	5,520
1915	Sept.14, 1915	15.0	6,830	1918	Mar. 28, 1918	13.4	5,970
				1919	Mar. 17, 1919	13.7	6,770
1916	Mar. 27, 1916	19.1	13,100				

4345. Pecatonica River at Martintown, Wis.

Location.--Lat 42°30'35", long 89°48'00", in SE¼ sec.32, T.1 N., R.6 E., 20 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.

Gage.--Recording. Datum of gage is 757.9 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges of Pecatonica River at Martintown, Wis.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1916	Mar. 27, 1916	20.8	-	14,000	1950	Mar. 9, 1950	18.12	-	9,360
						Mar. 27, 1950	14.98	-	5,700
1940	Aug. 26, 1940	13.11	-	3,680		July 19, 1950	19.00	-	9,200
1941	Mar. 24, 1941	14.88	-	5,820	1951	July 11, 1951	18.56	-	8,580
	Sept.11, 1941	13.32	-	4,550		Aug. 10, 1951	14.28	-	4,900
1942	Aug. 4, 1942	15.66	-	5,660	1952	Mar. 13, 1952	16.52	-	7,250
	Aug. 5, 1942	15.77	-	-		Mar. 21, 1952	15.11	-	5,800
1943	Feb. 26, 1943	12.62	-	4,040	1953	Feb. 23, 1953	18.80	-	10,600
	Mar. 18, 1943	17.12	-	7,900					
					1954	June 25, 1954	13.12	-	4,180
1944	Feb. 28, 1944	16.48	-	7,240					
	Mar. 17, 1944	16.15	-	6,930	1955	Feb. 21, 1955	15.85	3.5	b3,700
	June 24, 1944	13.51	-	4,700		Feb. 24, 1955	a16.00	4.0	-
1945	June 28, 1945	13.67	-	4,700	1956	Feb. 29, 1956	a12.0	2.7	2,280
1946	Jan. 7, 1946	18.77	-	11,000	1957	June 15, 1957	11.31	-	2,720
	Mar. 8, 1946	14.55	-	5,530					
	Mar. 15, 1946	16.27	-	7,030	1958	Feb. 27, 1958	a14.9	-	c4,300
1947	June 16, 1947	14.78	-	5,520	1959	Mar. 28, 1959	19.56	.65	c11,500
						Apr. 3, 1959	20.23	-	14,200
1948	Feb. 29, 1948	20.24	-	13,400					
	Mar. 19, 1948	16.18	-	6,920	1960	Jan. 15, 1960	18.36	.83	c9,000
	May 12, 1948	13.14	-	4,170		Apr. 1, 1960	19.55	-	12,800
						May 10, 1960	16.46	-	7,120
1949	Mar. 8, 1949	a17.86	2.0	b6,000					
					1961	Mar. 8, 1961	13.40	-	4,010
1950	Jan. 25, 1950	14.01	.10	4,740		Mar. 28, 1961	15.14	-	5,570

a Affected by backwater from ice.
b Maximum daily.
c About.

4350. Cedar Creek near Winslow, Ill.

Location.--Lat 42°28'00", long 89°50'02", in SE¼NE¼ sec.32, T.29 N., R.6 E., on right bank at downstream side of highway bridge, 3 miles southwest of Winslow, and 3 miles upstream from mouth.

Drainage area.--1.29 sq mi.

Gage.--Recording. Datum of gage is 912.57 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 25 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951a/	July 8, 1951	4.38	91	1955	Oct. 10, 1954	2.59	27
	Aug. 6, 1951	3.17	47		Feb. 20, 1955	4.21	84
1952	Oct. 21, 1951	2.82	35	1956	May 27, 1956	3.15	47
	Nov. 13, 1951	2.69	31		Aug. 29, 1956	2.54	26
	Jan. 14, 1952	2.59	28		Aug. 30, 1956	4.07	78
	Jan. 17, 1952	2.82	29				
	Feb. 1, 1952	2.67	30	1957	Jan. 21, 1957	b2.84	-
	Feb. 10, 1952	2.53	26		Feb. 12, 1957	2.62	29
	Mar. 11, 1952	3.29	52				
	Mar. 18, 1952	3.13	47	1958	Dec. 22, 1957	2.02	5.2
	June 13, 1952	4.66	101				
	June 23, 1952	2.80	34	1959	Mar. 20, 1959	b5.50	c120
	Aug. 3, 1952	4.63	101				
				1960	Jan. 12, 1960	4.63	82
1953	Feb. 5, 1953	2.54	26		Mar. 29, 1960	4.75	86
	Feb. 11, 1953	2.56	27		May 6, 1960	3.70	44
	Feb. 20, 1953	4.68	103				
				1961	Mar. 6, 1961	3.27	29
1954	Feb. 8, 1954	b2.70	-		Mar. 14, 1961	3.86	49
	June 3, 1954	2.18	12				

a Period March to September. b Ice jam. c About.

4355. Pecatonica River at Freeport, Ill.

Location.--Lat 42°18'13", long 89°36'57", in SE¼ sec.30, T.27 N., R.8 E., on right bank on property of Public Service Co. of Northern Illinois in Freeport, 0.3 mile upstream from Stephenson Street Bridge, and 5 miles upstream from Yellow Creek.

Drainage area.--1,330 sq mi, approximately.

Gage.--Nonrecording at site 0.9 mile downstream at datum 4.2 ft lower prior to Jan. 15, 1935; recording at present site thereafter. Datum of gage is 743.18 ft above mean sea level, datum of 1929. Since July 13, 1943, auxiliary nonrecording gage 0.9 mile downstream.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Floods of March 1916 and 1929 were the greatest known in history of Pecatonica Valley.

Remarks.--Base for partial-duration series, 2,800 cfs. Only annual peaks are shown for 1914 and subsequent to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	Sept.16, 1914	18.45	-	13,000
1915	Feb. 16, 1915	15.7	-	5,520
	Feb. 27, 1915	17.27	-	9,070
	June 13, 1915	12.5	-	2,870
	Aug. 3, 1915	12.8	-	3,000
	Sept.17, 1915	16.2	-	6,310
	Sept.28, 1915	15.8	-	5,810
1916	Jan. 28, 1916	17.0	0.9	6,300
	Feb. 24, 1916	14.3	1.7	2,900
	Mar. 28, 1916	19.4	-	17,000
	June 9, 1916	13.1	-	3,120
1917	Mar. 16, 1917	16.09	-	6,310
	June 14, 1917	14.0	-	3,830
1918	Feb. 15, 1918	16.38	-	6,880
	Mar. 2, 1918	16.1	-	6,140
	Mar. 14, 1918	16.0	-	5,750
1919	Mar. 16, 1919	17.60	-	10,000
	May 4, 1919	13.4	-	3,260
	Sept.24, 1919	13.2	-	3,240
1920	Oct. 2, 1919	13.3	-	3,240
	Oct. 6, 1919	14.0	-	3,670
	Oct. 31, 1919	14.1	-	3,650
	Nov. 11, 1919	12.9	-	3,040
	Mar. 16, 1920	15.48	-	5,380
	Mar. 27, 1920	14.8	-	4,560
	Apr. 22, 1920	13.0	-	3,080
1921	Aug. 20, 1921	12.06	-	2,720
1922	Feb. 25, 1922	18.82	-	14,500
	Mar. 9, 1922	14.7	-	4,270
	Mar. 22, 1922	12.9	-	3,040
	Apr. 11, 1922	14.3	-	3,910
1923	Feb. 28, 1923	14.0	-	3,580
	Mar. 5, 1923	15.6	-	5,130
	Apr. 6, 1923	18.36	-	13,100
1924	Mar. 7, 1924	12.9	-	3,040
	Mar. 30, 1924	13.9	-	3,660
	June 26, 1924	13.9	-	3,860
	Aug. 6, 1924	12.7	-	3,120
	Aug. 23, 1924	14.88	-	4,830
1925	Feb. 11, 1925	13.5	-	3,540
	Feb. 24, 1925	14.28	-	4,180
	Mar. 21, 1925	12.8	-	3,000
	June 27, 1925	12.9	-	3,040
1926	Mar. 2, 1926	13.3	-	3,210
1926	Mar. 21, 1926	13.2	-	3,170
	Apr. 10, 1926	14.3	-	4,000
	June 14, 1926	15.09	-	4,040
1927	Oct. 3, 1926	14.4	-	3,870
	Feb. 5, 1927	14.9	-	4,400
	Feb. 9, 1927	16.74	a1.9	-
	Mar. 13, 1927	12.7	-	2,950
	May 12, 1927	13.0	-	3,080
	May 29, 1927	14.4	-	3,870
	Sept.14, 1927	13.3	-	3,210
	Sept.20, 1927	12.8	-	3,000
1928	Oct. 8, 1927	15.6	-	5,310
	Dec. 30, 1927	14.5	-	3,960
	Feb. 12, 1928	16.3	-	6,640
	Mar. 16, 1928	16.77	-	8,070
	Apr. 7, 1928	12.5	-	2,870
	Aug. 28, 1928	14.8	-	4,280
1929	Nov. 19, 1928	14.8	-	4,210
	Dec. 16, 1928	13.4	-	3,260
	Mar. 16, 1929	19.76	-	18,400
	Apr. 11, 1929	13.9	-	3,560
	Apr. 20, 1929	12.7	-	2,950
1930	Feb. 24, 1930	16.28	-	6,150
	June 16, 1930	12.4	-	2,830
1931	Sept.27, 1931	10.98	-	2,280
1932	Nov. 21, 1931	13.6	-	3,350
	Nov. 25, 1931	13.8	-	3,460
	Mar. 29, 1932	16.28	-	5,650
	June 10, 1932	14.1	-	3,650
1933	Dec. 29, 1932	14.3	-	3,790
	Apr. 3, 1933	17.41	-	8,600
	May 3, 1933	13.5	-	3,300
	May 9, 1933	13.2	-	3,180
	May 23, 1933	15.3	-	4,740
	July 6, 1933	15.5	-	4,990
1934	Jan. 14, 1934	b12.0	-	2,660
1935	Nov. 23, 1934	13.5	-	3,300
	Dec. 1, 1934	13.9	-	3,520
	Mar. 9, 1935	12.49	.5	4,600
1936	Mar. 16, 1936	11.99	-	4,190
1937	Feb. 24, 1937	15.8	1.5	9,500
	Mar. 8, 1937	17.98	.4	15,700
	June 14, 1937	10.1	-	3,390
	June 23, 1937	11.5	-	4,560
	June 27, 1937	10.7	-	3,850

a Greater than figure shown.
b Estimated.

Peak stages and discharges of Pecatonica River at Freeport, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1938	Jan. 26, 1938	13.3	2.1	4,300	1946	Mar. 10, 1946	12.0	-	3,870
	Feb. 9, 1938	16.33	.9	12,300		Mar. 17, 1946	13.4	-	6,410
	June 26, 1938	9.4	-	2,960					
	July 3, 1938	10.6	-	3,770	1947	June 18, 1947	12.30	-	4,570
	Aug. 17, 1938	11.0	-	2,990					
	Sept.19, 1938	14.3	-	7,410	1948	Mar. 1, 1948	16.41	-	13,700
						Mar. 20, 1948	15.8	-	11,400
1939	Jan. 10, 1939	11.0	-	2,990		May 13, 1948	11.9	-	4,080
	Mar. 15, 1939	11.40	-	3,350					
					1949	Mar. 1, 1949	12.2	-	4,400
1940	Aug. 29, 1940	10.72	-	3,080		Mar. 9, 1949	14.65	-	8,640
1941	Mar. 25, 1941	12.85	-	4,840	1950	Jan. 27, 1950	12.8	0.6	4,500
	Sept.13, 1941	11.1	-	3,360		Mar. 11, 1950	13.8	-	6,550
						Mar. 28, 1950	12.9	-	5,510
1942	Aug. 3, 1942	13.76	-	5,820		July 22, 1950	14.51	-	8,450
1943	Dec. 28, 1942	10.7	-	3,120	1951	July 12, 1951	14.59	-	7,820
	Feb. 22, 1943	11.8	.3	3,700	1952	Mar. 14, 1952	14.13	-	7,220
	Mar. 16, 1943	14.13	-	7,890	1953	Feb. 24, 1953	15.04	-	8,820
	Aug. 15, 1943	11.6	-	3,770	1954	June 27, 1954	11.21	-	2,730
					1955	Feb. 21, 1955	13.23	-	5,700
1944	Feb. 27, 1944	13.75	-	7,110					
	Mar. 15, 1944	13.3	-	6,230	1956	Feb. 28, 1956	10.10	-	2,600
	June 26, 1944	12.1	-	4,310	1957	June 15, 1957	10.13	-	2,600
					1958	Mar. 1, 1958	c12.21	-	d3,000
1945	May 29, 1945	10.0	-	2,830	1959	Apr. 5, 1959	16.90	-	12,000
	June 29, 1945	12.67	-	5,170	1960	Apr. 2, 1960	16.35	-	11,000
1946	Jan. 9, 1946	15.46	-	10,500	1961	Mar. 30, 1961	12.94	-	4,480

c Backwater from ice.
d About.

4360. Mount Vernon Creek near Mount Vernon, Wis.

Location.--Lat 42°55'20", long 89°37'30", in SW¼ sec.12, T.5 N. R.7 E., on right bank 400 ft downstream from bridge on State Highway 92, 0.9 mile upstream from West Branch Sugar River, and 2.5 miles southeast of Mount Vernon.

Drainage area.--16.1 sq mi.

Gage.--Recording. Altitude of gage is 875 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 90 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Apr. 7, 1954	4.12	131	1958	Feb. 24, 1958	5.90	528
	June 22, 1954	5.98	602				
	July 7, 1954	5.24	203	1959	Mar. 25, 1959	5.75	410
	July 29, 1954	3.83	104		Apr. 1, 1959	6.32	940
					June 26, 1959	4.25	112
1955	Oct. 10, 1954	5.48	260				
	Feb. 20, 1955	5.83	471	1960	Dec. 28, 1959	4.42	125
	Mar. 3, 1955	4.99	153		Jan. 12, 1960	a7.00	b850
	Apr. 24, 1955	5.12	158		Mar. 30, 1960	6.28	900
	June 30, 1955	5.42	238		May 6, 1960	5.63	334
					July 3, 1960	5.00	160
1956	Feb. 24, 1956	5.40	230		Sept.19, 1960	4.20	112
	Mar. 6, 1956	4.00	111				
	Aug. 13, 1956	5.15	151	1961	Oct. 31, 1960	5.35	184
	Aug. 29, 1956	3.74	96		Nov. 15, 1960	3.81	102
	Aug. 31, 1956	4.40	115		Feb. 18, 1961	3.62	94
					Feb. 23, 1961	5.45	194
1957	Jan. 22, 1957	4.03	114		Mar. 4, 1961	5.39	187
	Feb. 9, 1957	4.28	125		Mar. 6, 1961	5.26	176
	June 11, 1957	4.16	119		Mar. 24, 1961	6.20	522
	June 13, 1957	5.12	164				

a From floodmark (backwater from ice).
b About.

4365. Sugar River near Brodhead, Wis.

Location.--Lat 42°36'40", long 89°23'50", in SW¼ sec.26, T.2 N., R.9 E., on downstream side of highway bridge, 2 miles upstream from Jordan Creek, and 2 miles southwest of Brodhead.

Drainage area.--527 sq mi.

Gage.--Nonrecording prior to Oct. 17, 1938; recording thereafter. Datum of gage is 768.14 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,000 cfs.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	Sept.15, 1914	8.98	-	7,670	1928	Mar. 13, 1928	7.6	-	4,440
						Apr. 8, 1928	4.2	-	1,450
1915	Feb. 14, 1915	8.1	1.4	3,000		Aug. 24, 1928	5.5	-	2,150
	Feb. 24, 1915	7.1	-	3,500					
	Aug. 5, 1915	5.5	-	2,030	1929	Nov. 18, 1928	6.0	-	2,520
	Sept.13, 1915	11.4	-	14,800		Dec. 15, 1928	4.5	-	1,570
	Sept.18, 1915	6.7	-	3,030		Mar. 14, 1929	10.0	-	11,400
	Sept.26, 1915	7.5	-	4,250		Apr. 8, 1929	6.4	-	2,840
						Apr. 13, 1929	4.0	-	1,260
1916	Nov. 28, 1915	4.5	-	1,440					
	Jan. 22, 1916	8.99	.2	7,100	1930	Feb. 21, 1930	7.4	-	4,080
	Jan. 28, 1916	8.3	-	5,900					
	Feb. 21, 1916	4.4	-	1,390	1931	Sept.28, 1931	2.85	-	823
	Mar. 26, 1916	9.3	-	8,500					
	June 8, 1916	5.0	-	1,730	1932	Nov. 25, 1931	4.6	-	1,600
						Mar. 27, 1932	7.38	-	4,350
1917	Mar. 12, 1917	6.6	-	2,910		July 12, 1932	4.6	-	1,600
	Mar. 23, 1917	4.8	-	1,610					
	June 13, 1917	7.2	-	3,310	1933	Dec. 26, 1932	6.0	1.5	1,500
						Feb. 25, 1933	3.9	-	1,200
1918	Feb. 27, 1918	8.7	2.3	2,700		Mar. 31, 1933	8.06	-	7,940
	Mar. 5, 1918	7.7	-	4,630		May 2, 1933	4.1	-	1,320
	Mar. 14, 1918	8.27	-	5,900		May 9, 1933	4.9	-	1,780
	Mar. 19, 1918	5.8	-	2,240		May 13, 1933	3.9	-	1,200
	May 23, 1918	5.6	-	2,100		May 21, 1933	8.5	-	6,360
						July 3, 1933	6.3	-	2,760
1919	Mar. 16, 1919	9.2	-	9,100					
	Sept.23, 1919	5.1	-	1,900	1934	Apr. 4, 1934	3.22	-	943
1920	Oct. 5, 1919	6.6	-	2,710	1935	Nov. 23, 1934	5.5	-	2,150
	Nov. 1, 1919	4.8	-	1,720		Nov. 30, 1934	4.5	-	1,540
	Mar. 12, 1920	6.5	-	2,890		Dec. 4, 1934	4.2	-	1,370
	Mar. 27, 1920	6.4	-	2,820		Mar. 6, 1935	7.1	2.2	1,800
	Apr. 22, 1920	4.2	-	1,370		Mar. 12, 1935	5.58	-	2,180
	June 19, 1920	4.1	-	1,320		Aug. 9, 1935	3.9	-	1,230
1921	Sept.24, 1921	3.9	-	1,110	1936	Mar. 12, 1936	6.2	-	2,630
1922	Feb. 23, 1922	9.78	-	10,000	1937	Feb. 21, 1937	10.8	1.9	8,000
	Mar. 7, 1922	6.6	-	3,020		Mar. 5, 1937	10.07	.7	8,780
	Mar. 21, 1922	5.1	-	1,900		June 21, 1937	6.6	-	2,990
	Apr. 11, 1922	5.8	-	2,360					
					1938	Jan. 25, 1938	8.3	1.1	3,800
1923	Mar. 4, 1923	4.8	-	1,800		Feb. 6, 1938	9.9	.8	7,290
	Apr. 4, 1923	8.7	-	7,580		Feb. 14, 1938	6.2	-	2,620
						July 3, 1938	4.4	-	1,480
1924	Mar. 6, 1924	4.3	-	1,480		Sept. 9, 1938	8.8	-	7,130
	Mar. 29, 1924	4.8	-	1,780		Sept.12, 1938	8.0	-	5,250
	June 26, 1924	5.7	-	2,380		Sept.19, 1938	6.9	-	3,330
	July 24, 1924	4.2	-	1,420					
	Aug. 7, 1924	4.8	-	1,720	1939	Jan. 7, 1939	6.12	-	2,540
	Aug. 22, 1924	4.8	-	1,720		Feb. 21, 1939	-	-	1,400
						Mar. 7, 1939	3.9	-	1,250
1925	Feb. 10, 1925	5.40	-	2,150		Mar. 15, 1939	4.5	-	1,530
1926	Mar. 20, 1926	5.3	-	2,140	1940	Aug. 26, 1940	7.80	-	4,480
1927	Oct. 4, 1926	3.9	-	1,200	1941	Feb. 14, 1941	4.5	-	1,530
	Feb. 6, 1927	7.7	-	4,650		Mar. 23, 1941	6.60	-	2,990
	May 11, 1927	4.3	-	1,450		Sept. 9, 1941	-	-	2,400
	May 30, 1927	5.7	-	2,290					
					1942	Aug. 4, 1942	4.52	-	1,530
1928	Oct. 7, 1927	5.6	-	2,220					
	Feb. 9, 1928	7.1	-	3,580	1943	Feb. 22, 1943	5.9	1.7	1,400

Peak stages and discharges of Sugar River near Brodhead, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Mar. 16, 1943	9.86	1.1	7,000	1952	Oct. 24, 1951	4.15	-	1,580
	Mar. 18, 1943	-	-	3,550		Nov. 15, 1951	3.97	-	1,460
	Aug. 28, 1943	4.0	-	1,300		Jan. 17, 1952	4.41	-	1,680
						Mar. 13, 1952	7.02	-	3,670
1944	Feb. 27, 1944	7.65	-	4,540		Mar. 19, 1952	7.52	-	4,380
	Mar. 15, 1944	7.90	-	5,040		June 13, 1952	6.14	-	2,720
	June 19, 1944	6.5	-	2,890		Aug. 4, 1952	4.04	-	1,480
1945	Mar. 6, 1945	3.40	-	1,060	1953	Feb. 8, 1953	4.11	-	1,530
						Feb. 21, 1953	9.30	-	8,500
1946	Jan. 6, 1946	9.1	-	7,640		Mar. 16, 1953	4.21	-	1,480
	Mar. 3, 1946	4.5	-	1,680					
	Mar. 7, 1946	7.1	-	4,070	1954	July 9, 1954	4.55	-	1,760
	Mar. 14, 1946	7.8	-	5,300					
					1955	Oct. 12, 1954	4.68	-	1,820
1947	Mar. 14, 1947	4.2	-	1,500		Feb. 21, 1955	7.51	-	4,400
	June 15, 1947	4.84	-	1,830		Apr. 25, 1955	5.75	-	2,460
1948	Feb. 20, 1948	5.4	-	2,190	1956	Feb. 26, 1956	3.40	1.0	-
	Feb. 28, 1948	9.8	-	10,000		Apr. 29, 1956	2.41	-	775
	Mar. 16, 1948	7.1	-	3,800					
	Mar. 19, 1948	6.5	-	3,200	1957	June 14, 1957	2.55	-	826
	May 11, 1948	6.2	-	2,820					
					1958	Feb. 27, 1958	6.22	-	2,830
1949	Jan. 6, 1949	3.8	-	1,300					
	Jan. 17, 1949	5.4	-	2,190	1959	Mar. 22, 1959	7.20	-	3,970
	Feb. 26, 1949	6.0	.3	2,400		Mar. 27, 1959	8.35	-	6,040
	Mar. 6, 1949	7.6	-	4,380		Apr. 2, 1959	8.80	-	7,150
	Mar. 28, 1949	3.60	-	1,200					
					1960	Dec. 30, 1959	4.29	-	1,460
1950	Mar. 7, 1950	7.8	-	4,900		Jan. 14, 1960	7.97	-	5,530
	Mar. 28, 1950	6.1	-	2,730		Mar. 31, 1960	9.72	-	10,200
	June 24, 1950	5.3	-	2,130		May 8, 1960	6.91	-	3,570
	July 18, 1950	8.2	-	5,700					
	July 21, 1950	7.5	-	4,380	1961	Nov. 2, 1960	5.25	-	1,960
	Sept.21, 1950	5.2	-	2,070		Mar. 7, 1961	5.63	-	2,230
						Mar. 26, 1961	6.74	-	3,340
1951	Feb. 28, 1951	5.68	-	2,400		Sept.15, 1961	4.84	-	1,730
	May 1, 1951	4.26	-	1,630					

4370. Pecatonica River at Shirland, Ill.

Location.--Lat 42°26'10", long 89°11'50", in SW¼ sec.11, T.28 N., R.11 E., near left bank on downstream side of highway bridge over mouth of Sugar River, half a mile south of Shirland, and 7½ miles upstream from mouth.

Drainage area.--2,540 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 711.79 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Gage readings furnished by Corps of Engineers. Base for partial-duration series, 4,000 cfs. Only annual peaks are shown subsequent to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1916	March 1916	a19.0	-	-	1942	Aug. 7, 1942	11.71	-	6,290
1937	February 1937	b17.1	-	-	1943	Dec. 31, 1942	11.7	0.9	5,400
						Feb. 24, 1943	13.8	2.5	5,800
1940	Aug. 28, 1940	13.54	-	7,900		Mar. 18, 1943	15.38	-	12,600
						June 14, 1943	9.4	-	4,290
1941	Feb. 17, 1941	10.4	-	5,180		Aug. 15, 1943	9.1	-	4,060
	Mar. 7, 1941	9.8	-	4,640					
	Mar. 25, 1941	13.08	-	7,800	1944	Feb. 28, 1944	14.1	-	10,100
	Sept.13, 1941	10.1	-	4,910		Mar. 17, 1944	14.88	-	11,600

a At Harrison bridge, half a mile upstream, from report of Illinois Rivers and Lakes Commission.
b From floodmark pointed out by Mr. Carrol Coats, highway maintenance emplcyee.

Peak stages and discharges of Pecatonica River at Shirland, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	June 24, 1944	11.1	-	5,650	1950	Jan. 28, 1950	12.1	0.7	5,900
						Mar. 9, 1950	12.6	-	7,460
1945	May 18, 1945	9.1	-	4,060		Mar. 29, 1950	12.8	-	7,770
	May 29, 1945	9.5	-	4,370		Apr. 27, 1950	10.2	-	4,870
	July 2, 1945	10.77	-	5,400		July 23, 1950	13.40	-	7,930
	Sept.29, 1945	10.0	-	4,760		Sept.22, 1950	11.4	-	5,960
1946	Jan. 8, 1946	16.76	-	15,400	1951	July 16, 1951	13.33	-	8,600
	Mar. 8, 1946	11.6	-	6,170	1952	Mar. 21, 1952	14.91	-	11,600
	Mar. 15, 1946	14.3	-	10,400	1953	Feb. 23, 1953	14.18	-	10,200
					1954	June 6, 1954	9.90	-	4,610
1947	Mar. 17, 1947	11.23	-	5,770	1955	Feb. 22, 1955	13.50	-	8,960
	Apr. 10, 1947	9.3	-	4,130					
	June 3, 1947	9.3	-	4,130	1956	Mar. 1, 1956	10.20	-	c3,600
	June 18, 1947	10.3	-	4,960	1957	Feb. 14, 1957	9.56	-	-
						June 17, 1957	8.52	-	3,490
1948	Mar. 2, 1948	16.3	-	14,400	1958	Mar. 1, 1958	12.31	-	c3,800
	Mar. 21, 1948	16.73	-	15,200					
	May 12, 1948	12.0	-	6,640					
1949	Mar. 8, 1949	15.04	-	11,800					

c About.

4375. Rock River at Rockton, Ill.
(Published as "below mouth of Pecatonica River, at Rockton" 1903-9; as "at Rockford" 1914-19)

Location.--Lat 42°27'05", long 89°04'20", in SE¼NW¼ sec.24, T.46 N., R.1 E., on left bank at upstream side of bridge on State Highway 2 in Rockton, three-quarters of a mile downstream from Pecatonica River.

Drainage area.--6,290 sq mi, approximately. August 1914 to September 1919, 6,520 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 30, 1919; recording thereafter. Prior to Oct. 1, 1906, at datum about 1 ft higher, and Oct. 1, 1906, to Mar. 31, 1909, at datum about 2 ft higher. July 30, 1914, to Apr. 30, 1919, at site at Rockford 21 miles downstream, at different datum. Datum of gage is 707.94 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measuremerts.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 22, 1904	13.80	28,500	1945	Sept.28, 1945	6.77	8,020
1905	Mar. 26, 1905	11.56	23,000				
				1946	Jan. 9, 1946	12.24	20,900
1906	Mar. 3, 1906	11.30	22,300	1947	Apr. 11, 1947	7.44	9,200
1907	Jan. 20, 1907	8.10	16,800	1948	Mar. 20, 1948	13.82	25,700
1908	Mar. 10, 1808	7.81	16,000	1949	Mar. 9, 1949	10.57	16,500
1915	Sept.16, 1915	9.68	18,000	1950	July 26, 1950	9.51	13,800
1916	Mar. 30, 1916	13.06	32,500				
				1951	Mar. 4, 1951	9.57	14,000
1917	June 23, 1917	7.88	13,900	1952	Mar. 22, 1952	11.82	19,800
1918	Mar. 14, 1918	11.4	24,400	1953	Feb. 24, 1953	9.57	14,000
1919	Mar. 19, 1919	11.5	24,800	1954	July 11, 1954	6.36	7,450
				1955	Feb. 20, 1955	8.91	12,400
1937	February 1937	a14.6	-				
				1956	May 11, 1956	5.92	6,340
1940	Aug. 27, 1940	10.53	15,800	1957	June 17, 1957	6.22	6,880
				1958	Mar. 1, 1958	5.91	6,340
1941	Mar. 25, 1941	8.47	11,500	1959	Apr. 4, 1959	14.08	25,400
1942	Sept. 3, 1942	6.54	7,760	1960	Apr. 2, 1960	13.49	23,800
1943	Mar. 16, 1943	12.88	22,800				
1944	Mar. 15, 1944	10.91	17,300	1961	Mar. 29, 1961	9.04	12,600

a From painted floodmark; unknown amount of backwater from ice.

4385. Kishwaukee River at Belvidere, Ill.

Location.--Lat 42°15'20", long 88°51'45", near southeast corner of sec.27, T.44 N., R.3 E., at Belvidere sewage-treatment plant, 1¼ miles downstream from State Street Bridge in Belvidere, and 3.0 miles downstream from Piscasaw Creek.

Drainage area.--525 sq mi.

Gage.--Nonrecording. Prior to Oct. 1, 1942, at site 1¼ miles upstream at datum 3.99 ft higher. Datum of gage is 738.34 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 9,000 cfs.

Remarks.--Gage readings furnished by city engineer of Belvidere. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Jan. 24, 1938	a16.9	-	1950	Sept.22, 1950	5.5	1,750
1940	June 19, 1940	10.00	1,330	1951	Feb. 20, 1951	7.82	3,160
					Feb. 26, 1951	11.00	6,410
1941	Mar. 22, 1941	10.58	2,240		Mar. 30, 1951	5.31	1,700
	Sept. 9, 1941	10.30	1,880		Apr. 13, 1951	5.28	1,700
					July 10, 1951	7.42	2,920
1942	Oct. 24, 1941	10.89	3,230				
	Nov. 2, 1941	10.25	1,760	1952	Nov. 14, 1951	7.00	2,680
	Mar. 6, 1942	-	2,200		Jan. 18, 1952	7.00	2,680
	Mar. 18, 1942	10.6	2,240		Mar. 12, 1952	11.24	6,690
	Sept. 3, 1942	10.7	2,720		Mar. 19, 1952	7.38	2,920
					Apr. 14, 1952	6.53	2,380
1943	Dec. 28, 1942	7.5	2,660		June 14, 1952	6.00	2,080
	Feb. 22, 1943	9.7	4,760		July 19, 1952	9.55	4,640
	Mar. 16, 1943	13.10	10,300				
				1953	June 12, 1953	5.58	1,850
1944	Feb. 27, 1944	8.8	3,800				
	Mar. 12, 1944	6.8	2,190	1954	Apr. 26, 1954	8.00	3,290
	Mar. 15, 1944	12.56	9,200		June 4, 1954	6.87	2,620
	Apr. 25, 1944	5.6	1,520		July 8, 1954	5.12	1,600
1945	May 18, 1945	5.90	1,850	1955	Oct. 11, 1954	6.00	2,080
					Jan. 6, 1955	5.94	2,020
1946	Jan. 6, 1946	12.90	9,830		Feb. 21, 1955	6.08	2,140
	Jan. 10, 1946	6.7	2,470		Mar. 4, 1955	5.52	1,780
	Mar. 6, 1946	10.2	5,360				
	Mar. 15, 1946	5.6	1,810	1956	Apr. 30, 1956	3.87	935
1947	Apr. 6, 1947	5.1	1,510	1957	May 21, 1957	4.23	1,070
	June 2, 1947	6.20	2,170				
				1958	Feb. 28, 1958	4.56	1,270
1948	Feb. 28, 1948	10.7	6,010				
	Mar. 16, 1948	8.8	3,870	1959	Feb. 25, 1959	5.75	1,870
	Mar. 20, 1948	12.00	8,000		Mar. 3, 1959	6.98	2,550
	May 11, 1948	7.3	2,710		Mar. 9, 1959	5.48	1,720
	May 16, 1948	5.1	1,510		Mar. 15, 1959	6.25	2,070
					Mar. 20, 1959	8.30	3,330
1949	Feb. 20, 1949	5.6	1,810				
	Feb. 25, 1949	10.50	5,750	1960	Dec. 29, 1959	6.28	2,130
	Mar. 5, 1949	8.3	3,490		Jan. 13, 1960	9.40	4,030
					Mar. 31, 1960	12.70	8,230
1950	Jan. 26, 1950	7.4	2,900		Apr. 18, 1960	9.06	3,820
	Mar. 6, 1950	10.0	5,120		May 7, 1960	6.68	2,370
	Mar. 27, 1950	6.2	2,170				
	Apr. 11, 1950	5.1	1,510	1961	Mar. 15, 1961	4.82	1,420
	Apr. 26, 1950	10.10	5,240				

a From information by sewage-plant employees; unknown amount of backwater from ice.

4388.5. Middle Branch of South Branch Kishwaukee River near Malta, Ill.

Location.--Lat 41°51'20", long 88°53'10", in NE¼SE¼ sec.16, T.39 N., R.3 E., at culvert on county road, 5½ miles south of Malta.

Drainage area.--1.15 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July 8, 1956	10.75	18	1960	Apr. 17, 1960	13.50	257
1957	June 6, 1957	12.96	202				
1958	July 14, 1958	13.97	306	1961	Mar. 13, 1961	10.96	33
1959	Apr. 28, 1959	14.63	399				

4390. South Branch Kishwaukee River at De Kalb, Ill.

Location.--Lat 41°55'52", long 88°45'33", in SW¼NE¼ sec.22, T.40 N., R.4 E., at alternate U.S. Highway 30 bridge in De Kalb, 8 miles upstream from East Branch.

Drainage area.--70 sq mi.

Gage.--Nonrecording. Datum of gage is 835.28 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 640 cfs and extended above.

Remarks.--Channel was dredged in October 1929. Base for partial-duration series, 400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1926	Feb. 18, 1926	5.8	0.1	450	1929	Nov. 18, 1928	7.4	-	714
	Feb. 25, 1926	7.4	.1	690		Mar. 3, 1929	7.3	0.5	620
	Mar. 1, 1926	5.9	-	478		Mar. 16, 1929	6.1	-	502
	Apr. 9, 1926	5.6	-	436		Apr. 1, 1929	7.1	-	663
	June 12, 1926	6.4	-	553		Apr. 21, 1929	7.0	-	646
	Sept.25, 1926	5.4	-	408		Apr. 25, 1929	6.1	-	502
						June 12, 1929	8.93	-	978
1927	Oct. 5, 1926	5.7	-	450					
	Nov. 15, 1926	7.0	-	644	1930	Apr. 17, 1930	5.0	-	396
	Feb. 5, 1927	7.9	-	788					
	Apr. 19, 1927	6.3	-	538	1931	June 23, 1931	4.8	-	368
	Apr. 29, 1927	5.6	-	436					
	May 24, 1927	8.9	-	958	1932	Mar. 27, 1932	5.6	-	481
1928	Oct. 7, 1927	5.5	-	422	1933	July 2, 1933	6.3	-	591
	Apr. 6, 1928	5.8	-	464		July 9, 1933	5.4	-	452
	July 4, 1928	6.1	-	508					

4395. South Branch Kishwaukee River near Fairdale, Ill.

Location.--Lat 42°06'40", long 88°54'00", on line between and near south boundary of secs. 16 and 17, T.42 N., R.3 E., on left bank at upstream side of county highway bridge, 1.2 miles downstream from Owens Creek, 1¾ miles northeast of Fairdale, and 9½ miles upstream from mouth.

Drainage area.--386 sq mi.

Gage.--Nonrecording prior to May 1940; recording thereafter. Datum of gage is 733.90 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	March 1937	a11.9	-	-
1940	Mar. 8, 1940	6.67	2.3	1,350
1941	Feb. 13, 1941	7.08	b2.5	-
	Feb. 15, 1941	4.9	-	1,650
	Mar. 20, 1941	6.1	-	2,380
	Sept. 9, 1941	4.7	-	1,530
1942	Oct. 7, 1941	5.3	-	1,890
	Oct. 13, 1941	5.1	-	1,770
	Oct. 23, 1941	8.00	-	4,530
	June 12, 1942	6.2	-	2,350
	Aug. 2, 1942	6.1	-	2,280
1943	Dec. 29, 1942	5.7	-	1,960
	Feb. 21, 1943	8.1	1.1	3,000
	Mar. 15, 1943	8.74	-	5,680
	May 21, 1943	5.4	-	1,840
1944	Feb. 26, 1944	6.8	-	2,840
	Mar. 14, 1944	8.78	-	5,850
	May 24, 1944	5.2	-	1,780
1945	May 17, 1945	6.45	-	2,510
1946	Jan. 5, 1946	9.35	-	6,840
	Jan. 9, 1946	7.2	-	3,260
	Mar. 6, 1946	8.0	-	4,530
1947	Feb. 14, 1947	6.43	b1.7	-
	Mar. 14, 1947	4.9	-	1,510
	Apr. 7, 1947	5.0	-	1,560
	Apr. 20, 1947	5.1	-	1,620
	Apr. 25, 1947	6.0	-	2,210
	June 1, 1947	5.6	-	1,930
1948	Feb. 28, 1948	6.4	-	2,510
	Mar. 15, 1948	6.4	-	2,510
	Mar. 19, 1948	8.73	-	5,680
	Mar. 27, 1948	5.5	-	1,860
	May 10, 1948	4.9	-	1,500
1949	Feb. 20, 1949	8.7	2.3	2,500
	Feb. 24, 1949	10.00	1.1	6,000
1950	Jan. 26, 1950	6.9	-	2,930
1950	Mar. 6, 1950	6.6	0.9	2,000
	Apr. 25, 1950	7.99	-	4,530
	Sept. 21, 1950	5.4	-	1,800
1951	Feb. 19, 1951	9.04	-	c5,200
	Feb. 25, 1951	7.46	-	3,620
	May 13, 1951	5.19	-	1,680
	June 1, 1951	5.17	-	1,680
	July 9, 1951	9.29	-	6,670
1952	Jan. 19, 1952	6.83	-	2,840
	Mar. 11, 1952	8.11	-	4,690
	Apr. 13, 1952	5.47	-	1,800
1953	Feb. 6, 1953	d4.53	-	-
	June 10, 1953	4.47	-	1,290
1954	June 3, 1954	6.38	-	2,340
1955	Oct. 12, 1954	9.25	-	5,910
	Jan. 6, 1955	6.05	-	2,100
	Feb. 20, 1955	6.61	-	2,470
	Feb. 27, 1955	5.45	-	1,740
	Mar. 3, 1955	5.76	-	1,980
1956	May 10, 1956	5.42	-	1,740
1957	Apr. 26, 1957	5.91	-	2,000
1958	Mar. 1, 1958	-	-	c2,000
	June 15, 1958	6.48	-	2,190
	July 3, 1958	8.53	-	4,290
1959	Feb. 23, 1959	e8.57	-	c2,900
	Mar. 8, 1959	6.50	-	2,400
	Mar. 15, 1959	6.80	-	2,620
	Apr. 30, 1959	5.19	-	1,580
1960	Jan. 12, 1960	7.02	-	2,790
	Mar. 30, 1960	8.80	-	5,240
	Apr. 17, 1960	7.91	-	3,850
	May 7, 1960	5.27	-	1,560
	May 21, 1960	5.65	-	1,740
1961	Sept. 27, 1961	4.23	-	1,010

a From information by local resident.
b Greater than figure shown.
c About.
d Ice jam.
e Backwater from ice.

4400. Kishwaukee River near Perryville, Ill.

Location.--Lat 42°11'45", long 88°59'55", in northeast corner of sec.21, T.43 N., R.2 E., on left bank at upstream side of Forest Preserve road bridge, 1¼ miles downstream from South Branch, 2 miles southwest of Perryville, 7½ miles upstream from Killbuck Creek, and 9½ miles upstream from mouth.

Drainage area.--1,090 sq mi.

Gage.--Nonrecording prior to Apr. 30, 1940; recording thereafter. Datum of gage is 692.13 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	January 1938	a23.85	-	-	1951	Feb. 21, 1951	15.63	-	9,520
						Feb. 26, 1951	17.03	-	11,900
1940	June 18, 1940	10.21	-	3,240		Mar. 4, 1951	10.66	-	3,870
						July 9, 1951	14.96	-	8,500
1941	Feb. 14, 1941	10.2	-	3,320					
	Feb. 20, 1941	10.5	-	3,590	1952	Nov. 15, 1951	11.21	-	4,320
	Mar. 5, 1941	10.2	-	3,320		Jan. 20, 1952	13.41	-	6,500
	Mar. 21, 1941	11.25	-	4,220		Mar. 13, 1952	16.45	-	10,900
	Sept. 9, 1941	11.2	-	4,220		Mar. 20, 1952	11.78	-	4,880
						Apr. 14, 1952	11.10	-	4,230
1942	Oct. 23, 1941	12.84	-	5,840		June 14, 1952	11.02	-	4,140
	Mar. 18, 1942	10.3	-	3,410		July 19, 1952	14.98	-	8,500
	Aug. 2, 1942	10.8	-	3,860					
					1953	June 10, 1953	9.17	-	2,620
1943	Dec. 29, 1942	11.4	-	4,400					
	Feb. 22, 1943	15.4	-	9,180	1954	Apr. 26, 1954	10.69	-	3,870
	Mar. 16, 1943	17.43	-	12,600		June 4, 1954	11.60	-	4,680
1944	Feb. 27, 1944	13.7	-	6,830	1955	Oct. 13, 1954	14.82	-	8,190
	Mar. 13, 1944	10.8	-	3,860		Jan. 6, 1955	11.06	-	4,230
	Mar. 15, 1944	18.63	-	14,800		Feb. 20, 1955	12.23	-	5,280
						Feb. 27, 1955	10.18	-	3,420
1945	May 18, 1945	11.33	-	4,360		Mar. 4, 1955	11.26	-	4,410
1946	Jan. 6, 1946	19.50	-	16,400	1956	May 10, 1956	8.54	-	2,340
	Jan. 9, 1946	12.9	-	6,040					
	Mar. 6, 1946	14.4	-	7,630	1957	Jan. 22, 1957	b10.17	-	-
						Apr. 27, 1957	8.56	-	2,360
1947	Apr. 25, 1947	10.0	-	3,450					
	June 3, 1947	10.62	-	3,990	1958	Mar. 1, 1958	b12.72	-	c3,500
						July 3, 1958	11.47	-	4,650
1948	Feb. 28, 1948	14.4	-	7,630					
	Mar. 16, 1948	13.6	-	6,740	1959	Feb. 26, 1959	-	-	c3,600
	Mar. 20, 1948	18.78	-	15,200		Mar. 1, 1959	b14.35	-	-
	Mar. 27, 1948	10.0	-	3,360		Mar. 2, 1959	13.12	-	5,890
	May 11, 1948	12.0	-	5,160		Mar. 9, 1959	11.37	-	4,360
						Mar. 15, 1959	12.08	-	4,990
1949	Feb. 20, 1949	13.0	2.9	3,500		Mar. 20, 1959	11.72	-	4,630
	Feb. 25, 1949	17.25	1.6	9,500					
	Mar. 5, 1949	11.7	-	4,890	1960	Dec. 29, 1959	10.67	-	3,760
						Jan. 13, 1960	14.25	-	6,970
1950	Jan. 26, 1950	12.6	.7	5,100		Mar. 31, 1960	19.05	-	14,100
	Mar. 7, 1950	13.6	-	6,740		Apr. 18, 1960	14.10	-	6,860
	Mar. 28, 1950	10.6	-	3,900		May 8, 1960	11.26	-	4,270
	Apr. 26, 1950	15.08	-	8,670					
	Sept.21, 1950	10.4	-	3,720	1961	Mar. 15, 1961	9.22	-	2,690

a From information by Corps of Engineers.
b Backwater from ice.
c About.

4405. Killbuck Creek near Monroe Center, Ill.

Location.--Lat 42°05'55", long 89°03'10", in NW¼SW¼ sec.19, T.42 N., R.2 E., on right bank 800 ft downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 800 ft upstream from bridge on State Highway 72, 3 miles west of Monroe Center, and 8 miles upstream from mouth.

Drainage area.--114 sq mi.

Gage.--Nonrecording prior to May 1, 1940; recording thereafter. Datum of gage is 734.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 750 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Mar. 4, 1940	4.65	1.0	640	1951	Feb. 25, 1951	6.25	-	1,860
						July 9, 1951	11.41	-	6,100
1941	Feb. 13, 1941	6.1	1.3	1,200		Aug. 6, 1951	7.22	-	2,410
	Mar. 3, 1941	6.72	-	2,360					
	Mar. 20, 1941	5.1	-	1,370	1952	Jan. 15, 1952	5.77	-	1,650
						Mar. 11, 1952	8.51	-	3,450
1942	Oct. 23, 1941	4.75	-	1,100		Apr. 13, 1952	4.15	-	870
						June 12, 1952	4.85	-	1,180
1943	Dec. 28, 1942	4.80	-	1,220		July 19, 1952	9.16	-	4,030
	Feb. 20, 1943	8.97	3.4	1,600					
	Mar. 14, 1943	4.25	-	945	1953	Feb. 6, 1953	4.59	-	-
	Mar. 15, 1943	8.50	-	3,450		Feb. 6, 1953	3.92	-	770
	June 2, 1943	5.2	-	1,420					
					1954	June 3, 1954	3.53	-	620
1944	Feb. 24, 1944	3.95	-	795					
	Feb. 26, 1944	5.0	-	1,320	1955	Oct. 10, 1954	11.36	-	6,100
	Mar. 14, 1944	7.09	-	2,370		Jan. 6, 1955	4.52	-	1,010
						Feb. 20, 1955	6.41	-	1,990
1945	June 25, 1945	4.45	-	1,040		Feb. 27, 1955	4.18	-	890
	June 28, 1945	7.41	-	2,520					
					1956	Feb. 24, 1956	5.72	-	1,600
1946	Jan. 5, 1946	10.03	-	4,750		May 5, 1956	4.24	-	910
	Jan. 9, 1946	5.9	-	1,770		July 13, 1956	8.05	-	3,050
	Mar. 6, 1946	7.1	-	2,370					
					1957	Feb. 9, 1957	5.41	-	1,450
1947	Feb. 14, 1947	8.21	a4.4	-		Aug. 3, 1957	4.28	-	805
	June 2, 1947	4.00	-	795					
					1958	Feb. 27, 1958	-	-	b1,100
1948	Feb. 18, 1948	4.55	-	1,100		June 9, 1958	4.12	-	825
	Feb. 27, 1948	7.0	-	2,320		June 13, 1958	6.37	-	1,990
	Mar. 15, 1948	6.2	-	1,920		July 3, 1958	7.22	-	2,490
	Mar. 19, 1948	9.60	-	4,390					
	May 10, 1948	3.90	-	770	1959	Feb. 23, 1959	c8.76	-	3,610
						Feb. 27, 1959	-	-	b1,400
1949	Jan. 5, 1949	5.3	.1	1,400		Mar. 8, 1959	4.20	-	865
	Feb. 13, 1949	6.5	1.3	1,400		Mar. 15, 1959	4.87	-	1,180
	Feb. 18, 1949	8.98	1.4	2,600		Apr. 28, 1959	4.35	-	932
	Feb. 24, 1949	7.6	-	2,620					
					1960	Jan. 12, 1960	5.58	-	1,550
1950	Jan. 25, 1950	5.3	-	1,470		Jan. 15, 1960	4.29	-	910
	Mar. 5, 1950	8.00	-	2,820		Mar. 30, 1960	7.38	-	2,630
	Apr. 25, 1950	5.7	-	1,670		Apr. 17, 1960	5.84	-	1,650
	June 15, 1950	7.8	-	2,720					
	Sept.21, 1950	4.40	-	1,020	1961	Sept.26, 1961	2.44	-	267
1951	Feb. 19, 1951	8.70	-	3,610					

a Greater than figure shown.
b About.
c Ice jam.

4409. Leaf River tributary near Forreston, Ill.

Location.--Lat 42°07'40", long 89°31'20", in NE¼NW¼ sec.36, T.25 N., R.8 E., at culvert on State Highway 72, 3 miles east of Forreston.

Drainage area.--0.162 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July 8, 1956	13.82	34	1960	Mar. 30, 1960	13.26	17
1957	Jan. 22, 1957	13.27	17				
1958	June 8, 1958	17.45	213	1961	Mar. 4, 1961	13.43	22
1959	Mar. 6, 1959	13.72	30				

4410. Leaf River at Leaf River, Ill.

Location.--Lat 42°07'40", long 89°23'25", in NW¼ sec.31, T.25 N., R.10 E., near left bank on downstream side of bridge on State Highway 72, 0.4 mile downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 0.6 mile east of town of Leaf River, and 0.8 mile downstream from Mud Creek.

Drainage area.--102 sq mi.

Gage.--Nonrecording. Crest-stage gage since October 1946. Datum of gage is 685.64 ft above mean sea level, datum of 1929.

Historical data.--Flood of Feb. 4, 1938, reached the maximum stage known, from information by local residents.

Remarks.--Gage readings furnished by Corps of Engineers. Base for partial-duration series, 1,000 cfs. Only annual peaks are shown subsequent to 1958.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb. 4, 1938	a15.9	-	1948	Feb. 17, 1948	8.5	1,030
					Feb. 27, 1948	14.44	6,510
1940	June 23, 1940	11.85	2,160		Mar. 15, 1948	12.3	2,800
	Aug. 14, 1940	10.3	1,470		Mar. 19, 1948	13.5	4,710
1941	Feb. 13, 1941	11.1	1,780	1949	Jan. 4, 1949	11.3	1,880
	Mar. 3, 1941	8.8	1,050		Feb. 24, 1949	12.46	3,070
	Mar. 20, 1941	12.57	3,210		Mar. 4, 1949	9.3	1,180
	Sept. 8, 1941	11.1	1,780		June 13, 1949	11.0	1,730
					June 28, 1949	12.46	3,070
1942	Aug. 2, 1942	9.7	1,290				
	Sept. 2, 1942	11.27	1,900	1950	Jan. 13, 1950	9.3	1,180
					Jan. 25, 1950	12.5	3,070
1943	Dec. 27, 1942	12.5	3,070		Mar. 5, 1950	12.2	2,680
	Feb. 20, 1943	11.9	2,340		Apr. 25, 1950	10.3	1,470
	Mar. 15, 1943	12.9	3,670		June 13, 1950	11.1	1,780
	June 2, 1943	13.11	4,000		Sept.21, 1950	12.68	3,360
	July 16, 1943	11.7	2,140				
				1951	Feb. 19, 1951	12.42	2,930
1944	Feb. 26, 1944	11.6	2,070		Feb. 25, 1951	12.42	2,930
	Mar. 14, 1944	13.00	3,830		Mar. 3, 1951	9.18	1,150
	May 16, 1944	9.0	1,100		July 8, 1951	14.20	6,080
					Aug. 6, 1951	11.94	2,340
1945	June 2, 1945	8.30	978		Aug. 15, 1951	12.48	3,070
1946	Jan. 5, 1946	14.15	6,090	1952	Jan. 17, 1952	11.78	2,150
	Jan. 9, 1946	11.8	2,240		Mar. 11, 1952	12.47	3,070
	Mar. 6, 1946	9.9	1,350		Mar. 18, 1952	9.34	1,180
	Mar. 12, 1946	9.3	1,180		June 12, 1952	10.48	1,560
	Aug. 17, 1946	11.6	2,070		July 18, 1952	13.20	4,500
					July 19, 1952	13.98	6,080
1947	Jan. 14, 1947	9.21	1,150		July 23, 1952	9.08	1,050

a From information by local residents.

Peak stages and discharges of Leaf River at Leaf River, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 11, 1953	10.34	1,470	1956	Feb. 24, 1956	10.14	1,280
	Feb. 20, 1953	13.12	3,980		June 22, 1956	11.30	1,810
					July 8, 1956	9.74	1,160
1954	June 1, 1954	7.72	797				
				1957	Jan. 21, 1957	b10.20	1,020
1955	Oct. 10, 1954	10.79	1,640				
	Feb. 20, 1955	13.39	4,500	1958	June 13, 1958	12.12	2,560
	Feb. 26, 1955	9.41	1,200		July 2, 1958	9.94	1,220
	Mar. 3, 1955	13.54	4,680	1959	Feb. 23, 1959	13.38	4,500
	Apr. 24, 1955	11.89	2,340	1960	Mar. 30, 1960	12.64	3,210
	June 30, 1955	8.65	1,000				
	Aug. 5, 1955	9.47	1,230	1961	Mar. 8, 1961	12.22	2,680

b Ice jam.

4415. Rock River at Oregon, Ill.

Location.--Lat 42°01', long 89°20', near center of sec.3, T.23 N., R.10 E., in tailrace of Illinois Northern Utilities Co.'s plant in Oregon, 1,000 ft upstream from bridge on State Highway 64, and 2 miles upstream from Kyte River.

Drainage area.--8,120 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 659.24 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Historical data.--The flood of February 1937 reached the highest stage known.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	February 1937	a18.7	-	1944	Mar. 15, 1944	11.94	34,000
				1945	May 18, 1945	6.00	12,400
1940	Aug. 28, 1940	7.21	15,400				
				1946	Jan. 6, 1946	15.00	45,500
1941	Mar. 22, 1941	6.70	b15,600	1947	June 3, 1947	6.00	12,400
1942	Oct. 22, 1941	6.00	12,800	1948	Mar. 20, 1948	13.20	38,000
1943	Mar. 17, 1943	11.94	34,000	1949	Feb. 25, 1949	c10.52	20,000

a From floodmarks.
b Maximum daily discharge.
c Backwater from ice.

4420. Kyte River near Flagg Center, Ill.

Location.--Lat 41°56', long 89°09', in sec.18, T.40 N., R.1 E., at bridge on county highway, 2 miles west of Flagg Center and 3 miles downstream from Chicago & Northwestern Railroad bridge.

Drainage area.--125 sq mi.

Gage.--Nonrecording. Crest-stage gage since October 1946. Altitude of gage is 750 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 650 cfs.

Peak stages and discharges of Kyte River near Flagg Center, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	February 1937	a8.5	-	1947	Feb. 14, 1947	4.4	811
					Apr. 5, 1947	4.61	889
1940	Mar. 4, 1940	b4.84	800		Apr. 20, 1947	4.4	811
					Apr. 24, 1947	4.5	849
1941	Feb. 13, 1941	5.1	1,100		June 1, 1947	4.5	849
	Mar. 21, 1941	4.8	971				
				1948	Feb. 28, 1948	5.2	1,140
1942	Aug. 2, 1942	4.19	692		Mar. 15, 1948	5.2	1,140
	Sept. 3, 1942	4.0	674		Mar. 20, 1948	5.88	1,480
1943	Feb. 10, 1943	4.4	811	1949	Jan. 4, 1949	4.2	740
	Feb. 20, 1943	4.7	929		Feb. 13, 1949	6.1	1,250
	Mar. 16, 1943	5.60	1,380		Feb. 19, 1949	6.11	1,600
	May 20, 1943	4.1	706		Feb. 24, 1949	5.3	1,190
1944	Feb. 26, 1944	4.0	674	1950	Jan. 26, 1950	4.3	755
	Mar. 15, 1944	5.46	1,280		Mar. 6, 1950	5.60	1,330
	Apr. 24, 1944	4.1	706		Apr. 25, 1950	5.4	1,240
					June 2, 1950	4.1	706
1945	May 15, 1945	4.5	849		June 14, 1950	4.2	740
	May 17, 1945	4.6	889		June 19, 1950	4.4	811
	June 28, 1945	4.2	740				
				1951	Feb. 20, 1951	7.70	2,630
1946	Jan. 6, 1946	6.80	2,030		Feb. 26, 1951	-	-
	Jan. 9, 1946	4.4	811		May 11, 1951	4.80	971
	Mar. 5, 1946	5.6	1,330		July 10, 1951	6.31	1,720
	Aug. 17, 1946	5.5	1,280				

a From information by local residents.
b About 0.5 ft backwater from ice.

4435. Rock River at Como, Ill.
(Published as "at Lyndon " 1914-34)

Location.--Lat 41°47'00", long 89°44'58", in NE¼ sec.25, T.21 N., R.6 E., on left bank 1 mile upstream from Como, 3 miles downstream from Rock Falls, and 3½ miles upstream from Elkhorn Creek.

Drainage area.--8,700 sq mi.

Gage.--Nonrecording at Lyndon 16½ miles downstream at datum 22.46 ft lower prior to December 1933; recording thereafter. Datum of gage is 606.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 42,000 cfs at Como, and below 37,000 cfs at Lyndon. Discharge for peak of Feb. 22, 1937, is computed at lower dam at Rock Falls from rating curve extended above 21,000 cfs by logarithmic plotting.

Remarks.--Gage heights listed for the period 1914 to 1933 are from gage at Lyndon. The corresponding discharges have been adjusted to the Como site by multiplying the Lyndon discharge by the square root of the drainage-area ratio. Base for partial-duration series, 13,000 cfs. Only annual peaks are shown prior to 1951.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1915	Feb. 15, 1915	15.5	a2.5	-	1925	Feb. 24, 1925	17.7	0.8	39,000
	Feb. 25, 1915	13.01	-	23,600					
					1926	Feb. 27, 1926	13.98	-	27,000
1916	Jan. 22, 1916	18.4	a1.4	-	1927	Feb. 7, 1927	15.12	-	31,400
	Mar. 28, 1916	17.02	-	39,500	1928	Dec. 29, 1927	13.6	a1.2	-
1917	Mar. 14, 1917	15.2	1.5	26,000		Feb. 8, 1928	12.40	-	20,800
1918	Feb. 16, 1918	19.6	3.3	36,000	1929	Mar. 7, 1929	18.63	-	-
1919	Mar. 20, 1919	16.52	-	37,000		Mar. 17, 1929	16.6	-	37,200
1920	Mar. 27, 1920	16.33	-	36,200	1930	Feb. 27, 1930	11.20	-	17,100
1921	Apr. 28, 1921	13.61	-	25,600	1931	Dec. 23, 1930	7.9	a1.3	-
1922	Apr. 11, 1922	14.11	-	27,400		June 25, 1931	6.60	-	5,130
1923	Apr. 11, 1923	14.70	-	29,800	1932	Oct. 11, 1931	13.63	-	25,400
1924	Aug. 23, 1924	14.77	-	30,200	1933	May 28, 1933	13.83	-	26,100

a Greater than figure shown.

Peak stages and discharges of Rock River at Como, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1934	Apr. 6, 1934	4.15	-	5,490	1952	Mar. 14, 1952	10.47	-	28,800
1935	Feb. 16, 1935	11.04	a1.4	-		Apr. 14, 1952	7.94	-	19,200
	Mar. 12, 1935	9.56	-	23,900		June 13, 1952	7.91	-	19,200
						July 20, 1952	12.06	-	35,800
1936	Mar. 10, 1936	10.69	a2.5	-					
	Mar. 12, 1936	8.6	.4	b18,000	1953	Feb. 22, 1953	7.54	-	17,800
1937	Feb. 22, 1937	14.5	-	51,000		Mar. 16, 1953	6.22	-	13,300
	Feb. 25, 1937	16.63	a2.1	-					
1938	Jan. 24, 1938	-	-	c46,600	1954	June 5, 1954	6.08	-	12,900
	Feb. 7, 1938	17.51	a3.8	-					
1939	Mar. 12, 1939	8.43	-	20,500	1955	Oct. 11, 1954	12.11	-	34,000
1940	Aug. 28, 1940	7.50	-	17,200		Feb. 21, 1955	7.72	-	18,400
						Feb. 27, 1955	8.86	-	22,600
1941	Mar. 22, 1941	6.99	-	16,200		Mar. 4, 1955	8.41	-	20,900
1942	Oct. 23, 1941	6.64	-	14,700					
1943	Mar. 16, 1943	11.89	-	39,400	1957	June 17, 1957	4.45	-	7,330
1944	Mar. 16, 1944	11.90	-	34,900					
1945	May 18, 1945	6.26	-	13,600	1958	Mar. 1, 1958	5.50	-	10,900
1946	Jan. 6, 1946	14.40	-	46,400	1959	Feb. 25, 1959	-	-	c14,000
1947	Jan. 22, 1947	6.83	a.4	-		Mar. 3, 1959	7.65	-	17,600
	June 4, 1947	6.44	-	14,000		Mar. 9, 1959	6.84	-	14,800
1948	Mar. 21, 1948	12.76	-	41,400		Mar. 16, 1959	7.23	-	16,200
1949	Feb. 25, 1949	9.34	a.7	-		Mar. 20, 1959	8.23	-	19,700
	Feb. 26, 1949	-	-	c22,000		Apr. 5, 1959	10.01	-	26,200
1950	Mar. 7, 1950	-	-	c25,000		Apr. 28, 1959	6.63	-	14,100
1951	Feb. 26, 1951	d11.82	-	34,400	1960	Jan. 15, 1960	9.88	-	25,800
	Apr. 15, 1951	-	-	c15,000		Apr. 1, 1960	11.99	-	34,800
	May 12, 1951	7.12	-	15,800		Apr. 19, 1960	9.60	-	24,600
	July 9, 1951	11.55	-	32,900		May 9, 1960	8.33	-	20,000
1952	Nov. 14, 1951	7.37	-	16,900	1961	Mar. 14, 1961	6.80	-	15,300
	Jan. 19, 1952	10.07	-	c19,000		Mar. 30, 1961	6.53	-	14,300
	Jan. 28, 1952	7.47	-	c15,000					

a Greater than figure shown. b Maximum daily. c Estimated. d Affected by ice.

4440. Elkhorn Creek near Penrose, Ill.

Location.--Lat 41°54'10", long 89°41'40", in SW¼SE¼ sec.9, T.22 N., R.7 E., on left bank 50 ft upstream from county highway bridge, 2 miles northwest of Penrose, 2.2 miles downstream from Buffalo Creek, and 5 miles upstream from Sugar Creek.

Drainage area.--153 sq mi.

Gage.--Nonrecording prior to Apr. 6, 1940; recording thereafter. Datum of gage is 657.85 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	June 1938	a19.6	-	1942	June 11, 1942	9.0	1,970
					Sept. 3, 1942	8.0	1,570
1940	June 23, 1940	5.75	908				
				1943	Dec. 27, 1942	13.41	3,850
1941	Feb. 13, 1941	8.9	1,930		Feb. 20, 1943	10.7	2,650
	Mar. 20, 1941	10.97	3,010		Mar. 15, 1943	10.2	2,450
	May 31, 1941	10.4	2,670		June 2, 1943	7.2	1,290
	June 3, 1941	10.5	2,720		June 20, 1943	6.9	1,200
	June 28, 1941	10.2	2,570		Aug. 2, 1943	6.9	1,200
	Sept. 8, 1941	8.9	1,930				
				1944	Feb. 23, 1944	7.8	1,490
1942	Oct. 23, 1941	9.60	2,270		Feb. 26, 1944	8.1	1,610
	June 3, 1942	8.5	1,770		Mar. 15, 1944	14.07	4,060
	June 10, 1942	8.5	1,770				

a From high-water mark 909, Corps of Engineers.

Peak stages and discharges of Elkhorn Creek near Penrose, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	May 14, 1945	5.45	770	1953	Feb. 11, 1953	6.91	1,250
					Feb. 20, 1953	12.94	4,110
1946	Jan. 5, 1946	17.75	5,980				
	Jan. 9, 1946	10.1	2,210	1954	Aug. 18, 1954	13.06	4,220
	Mar. 5, 1946	8.2	1,650				
				1955	Oct. 10, 1954	7.68	1,490
1947	Feb. 14, 1947	b8.81	-		Feb. 20, 1955	11.91	3,560
	Mar. 13, 1947	7.08	1,260		Feb. 27, 1955	8.06	1,730
					Mar. 4, 1955	9.43	2,300
1948	Feb. 28, 1948	15.12	4,630		Apr. 24, 1955	7.62	1,530
	Mar. 15, 1948	10.8	2,690		Aug. 5, 1955	7.49	1,450
	Mar. 19, 1948	14.1	4,160				
				1956	Feb. 24, 1956	c7.93	-
1949	Jan. 4, 1949	8.0	1,680		Feb. 24, 1956	7.66	1,570
	Jan. 15, 1949	7.9	1,640				
	Feb. 13, 1949	9.4	2,310	1957	Feb. 9, 1957	7.20	1,370
	Feb. 18, 1949	11.4	3,300		July 12, 1957	9.83	2,500
	Feb. 24, 1949	11.72	3,460		Aug. 3, 1957	10.53	2,850
1950	Jan. 25, 1950	11.00	3,050	1958	Feb. 25, 1958	c8.44	-
	Mar. 5, 1950	10.7	2,880		Feb. 25, 1958	8.39	1,810
	June 2, 1950	7.7	1,450		June 13, 1958	8.04	1,530
1951	Feb. 19, 1951	14.02	4,700	1959	Feb. 23, 1959	13.99	4,750
	Feb. 25, 1951	10.95	3,050		Feb. 27, 1959	11.95	3,620
	July 9, 1951	14.27	4,880		Mar. 15, 1959	9.58	2,400
	Aug. 15, 1951	8.50	1,760		Mar. 19, 1959	10.06	2,650
1952	Mar. 11, 1952	10.11	2,650	1960	Jan. 12, 1960	9.73	2,450
	June 12, 1952	9.31	2,250		Mar. 29, 1960	11.54	3,350
	June 13, 1952	15.52	5,650				
	July 18, 1952	11.48	3,350	1961	Mar. 6, 1961	7.05	1,290
	Aug. 16, 1952	7.23	1,370		Sept.13, 1961	10.56	2,900

b Backwater from ice, greater than 2.0 ft.
c Ice jam.

4455. Rock Creek near Morrison, Ill.
(Published as "at Morrison " 1940-42)

Location.--Lat 41°49'50", long 89°58'00", in SW¼SE¼ sec.6, T.21 N., R.5 E., on right bank just downstream from small tributary on right bank, 1½ miles north of Morrison, and 4½ miles downstream from Little Rock Creek.

Drainage area.--143 sq mi; at site used 1940-42, 169 sq mi.

Gage.--Recording prior to 1959; crest-stage gage thereafter. At site 2¼ miles southwest of present site at datum 606.91 ft above mean sea level, datum of 1929 (Illinois Division of Waterways bench mark), for period 1940-42. Datum of gage is 620.41 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measuremerts.

Remarks.--Base for partial-duration series, 1,000 cfs. Only annual peaks are shown subsequent to 1958.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	June 1937	a17.7	-	-	1944	Feb. 23, 1944	7.2	-	1,100
						Mar. 15, 1944	13.05	-	3,060
1940	Aug. 13, 1940	12.58	-	1,200					
					1945	May 14, 1944	6.27	-	857
1941	Feb. 13, 1941	12.7	-	1,290					
	Mar. 21, 1941	13.15	-	1,600	1946	Jan. 6, 1946	16.04	-	5,770
	June 1, 1941	13.88	-	2,520		Jan. 9, 1946	9.0	-	1,680
	June 3, 1941	13.60	-	1,990		Mar. 5, 1946	7.2	-	1,140
	Sept. 8, 1941	13.40	-	1,800		Mar. 12, 1946	7.4	-	1,200
1942	Oct. 23, 1941	11.79	-	1,100	1947	Jan. 14, 1947	8.05	-	1,380
						Feb. 15, 1947	9.03	1.6	1,200
1943	Dec. 27, 1942	14.66	-	4,180		June 1, 1947	7.2	-	1,140
	Feb. 20, 1943	10.6	2.3	1,400					
	Mar. 16, 1943	7.7	-	1,230	1948	Feb. 28, 1948	15.02	-	4,780

a At present site, from information by local residents.

Peak stages and discharges of Rock Creek near Morrison, Ill.--Contirued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1948	Mar. 15, 1948	10.0	-	2,010	1953	Nov. 17, 1952	7.57	-	1,210
	Mar. 19, 1948	14.2	-	4,100		Feb. 6, 1953	7.72	-	1,240
						Feb. 11, 1953	7.16	-	1,100
1949	Jan. 4, 1949	7.7	-	1,290		Feb. 20, 1953	12.68	-	2,900
	Jan. 15, 1949	9.8	1.4	1,500					
	Feb. 13, 1949	7.1	-	1,110	1954	June 1, 1954	7.23	-	1,100
	Feb. 19, 1949	9.6	-	1,870		Aug. 18, 1954	11.35	-	2,180
	Feb. 24, 1949	b11.36	-	2,480					
					1955	Oct. 10, 1954	9.02	-	1,600
1950	Jan. 25, 1950	9.2	-	1,740		Feb. 20, 1955	12.27	-	2,740
	Feb. 8, 1950	8.0	-	1,380		Feb. 27, 1955	7.29	-	1,130
	Mar. 5, 1950	10.87	-	2,320		Aug. 5, 1955	7.57	-	1,210
	Apr. 25, 1950	7.9	-	1,350					
	June 2, 1950	7.8	-	1,320	1956	Feb. 24, 1956	8.53	-	1,460
1951	Feb. 20, 1951	13.76	-	3,540	1957	Feb. 9, 1957	9.44	-	1,710
	Feb. 25, 1951	11.05	-	2,330		Aug. 3, 1957	8.50	-	1,460
	July 9, 1951	13.75	-	3,210					
	Aug. 15, 1951	7.54	-	1,220	1958	Feb. 25, 1958	9.58	-	1,770
						June 13, 1958	8.38	-	1,430
1952	Nov. 14, 1951	9.35	-	1,710					
	Jan. 19, 1952	7.29	-	1,130	1959	Feb. 24, 1959	11.70	-	2,500
	Mar. 12, 1952	10.69	-	2,100	1960	Mar. 29, 1960	11.64	-	2,460
	June 14, 1952	9.77	-	1,820					
	July 18, 1952	7.81	-	1,270	1961	Sept.14, 1961	11.03	-	2,220
	Aug. 20, 1952	6.91	-	1,020					

b Ice jam.

4465. Rock River near Joslin, Ill.

Location.--Lat 41°33'35", long 90°10'55", in NE¼ sec.18, T.18 N., R.3 E., on right bank at downstream side of bridge on State Highway 92, 1¾ miles east of Joslin, 12 miles downstream from Rock Creek, and 27 miles upstream from mouth.

Drainage area.--9,520 sq mi, approximately.

Gage.--Recording. Datum of gage is 564.06 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Maximum stage known since 1892 is that of Mar. 3, 1948.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 30, 1940	10.41	15,700	1951	July 11, 1951	13.76	-
				1952	Mar. 15, 1952	13.15	29,500
1941	Mar. 22, 1941	11.61	20,600		July 22, 1952	13.37	-
1942	Oct. 24, 1941	9.73	13,800	1953	Feb. 22, 1953	11.26	17,800
1943	Mar. 18, 1943	14.20	36,400	1954	June 6, 1954	9.58	13,000
1944	Mar. 18, 1944	14.00	34,800	1955	Oct. 13, 1954	15.02	28,000
1945	May 19, 1945	9.88	14,200				
				1956	Feb. 26, 1956	b10.32	-
1946	Jan.9,10,1946	-	a38,000		May 12, 1956	8.26	9,710
	Jan. 11, 1946	14.98	-	1957	Feb. 13, 1957	d8.64	-
1947	June 3, 1947	10.51	15,900		June 18, 1957	7.07	7,480
1948	Mar. 3, 1948	16.23	-	1958	Mar. 4, 1958	-	c11,200
	Mar. 22, 1948	14.46	46,200		Mar. 5, 1958	d13.60	-
1949	Mar. 7, 1949	b14.55	c27,000	1959	Apr. 7, 1959	14.36	26,000
1950	Mar. 8, 1950	13.02	27,500	1960	Apr. 3, 1960	16.08	36,400
1951	Feb. 28, 1951	13.51	32,800	1961	Mar. 17, 1961	10.44	15,400

a Daily mean.
b Backwater from ice.
c About.
d Ice jam.

4470. Green River at Amboy, Ill.

Location.--Lat 41°42'35", long 89°19'28", in SE¼NE¼ sec.22, T.20 N., R.10 E., on left bank at downstream side of bridge on U.S. Highway 52, at southeast edge of Amboy.

Drainage area.--199 sq mi.

Gage.--Nonrecording prior to April 1940; recording April 1940 to 1958; crest-stage gage thereafter. Datum of gage is 724.14 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,100 cfs. Only annual peaks are shown subsequent to 1958.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 3, 1940	a7.65	2,030	1950	Apr. 25, 1950	9.01	2,890
					June 2, 1950	6.9	1,520
1941	Feb. 13, 1941	8.38	2,490		June 10, 1950	7.6	1,970
	Mar. 20, 1941	6.5	1,300		June 13, 1950	8.8	2,750
					June 18, 1950	-	2,500
1942	Oct. 3, 1941	7.98	2,230				
	Mar. 16, 1942	6.1	1,140	1951	Feb. 19, 1951	9.00	2,770
	Aug. 2, 1942	6.7	1,320		May 10, 1951	8.68	2,560
					July 9, 1951	8.81	2,630
1943	Feb. 6, 1943	b7.9	1,800		July 22, 1951	6.92	1,480
	Feb. 10, 1943	6.5	1,260		July 27, 1951	7.91	2,030
	Mar. 16, 1943	8.68	2,680		Aug. 6, 1951	7.99	2,090
	May 20, 1943	8.0	2,230		Sept.26, 1951	6.63	1,350
	May 29, 1943	7.1	1,640				
				1952	Jan. 20, 1952	6.99	1,530
1944	Mar. 15, 1944	8.94	2,820		Mar. 11, 1952	8.70	2,560
	May 16, 1944	6.6	1,350		Mar. 23, 1952	5.95	1,120
					Apr. 13, 1952	6.61	1,350
1945	May 17, 1945	7.0	1,470		June 13, 1952	8.38	2,350
	June 10, 1945	7.0	1,470				
	June 28, 1945	7.76	2,100	1953	June 5, 1953	4.13	615
	Aug. 14, 1945	7.2	1,600				
				1954	June 3, 1954	6.60	1,350
1946	Jan. 5, 1946	10.28	3,960		Aug. 18, 1954	6.43	1,270
	Jan. 9, 1946	8.4	2,490				
	Mar. 5, 1946	8.7	2,420	1955	Oct. 10, 1954	12.26	6,120
					Jan. 6, 1955	6.25	1,190
1947	Feb. 14, 1947	6.7	1,270		Feb. 20, 1955	7.14	1,580
	Apr. 5, 1947	7.6	1,890		Feb. 27, 1955	7.33	1,680
	Apr. 20, 1947	7.68	2,020				
	Apr. 24, 1947	7.4	1,740	1956	Feb. 24, 1956	c7.57	1,790
	June 1, 1947	6.4	1,260				
				1957	Feb. 9, 1957	4.43	-
1948	Feb. 17, 1948	6.6	1,230		Feb. 9, 1957	4.12	593
	Feb. 28, 1948	8.6	2,620				
	Mar. 14, 1948	8.3	2,490	1958	June 13, 1958	6.97	1,530
	Mar. 19, 1948	9.23	3,030		July 3, 1958	8.40	1,910
					July 5, 1958	7.57	1,530
1949	Feb. 13, 1949	8.9	2,820				
	Feb. 18, 1949	8.95	2,890	1959	Apr. 28, 1959	10.12	3,740
	Feb. 24, 1949	7.9	2,340	1960	Mar. 31, 1960	10.62	4,240
1950	Jan. 26, 1950	6.1	1,150	1961	Sept.14, 1961	3.64	480
	Mar. 5, 1950	-	1,950				

a Backwater from ice, 0.1 ft.
b Backwater from ice, 0.6 ft.
c Ice jam.

4472. Normandy ditch at Normandy, Ill.

Location.--Lat 41°33'50", long 89°39'20", in SW¼NE¼ sec.11, T.18 N., R.7 E., at culvert on county road, 0.4 mile west of Normandy.

Drainage area.--5.90 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 24, 1956	a13.04	40	1960	Mar. 16, 1960	13.83	70
1957	Feb. 26, 1957	12.06	25				
1958	July 14, 1958	13.56	63	1961	Sept.14, 1961	12.53	35
1959	Apr. 28, 1959	13.08	51				

a Backwater from ice or vegetation.

4475. Green River near Geneseo, Ill.

Location.--Lat 41°29'20", long 90°09'30", in NE¼SW¼ sec.4, T.17 N., R.3 E., on right bank at upstream side of bridge on State Highway 82, 1.4 miles upstream from Geneseo Creek, and 2.4 miles north of Geneseo.

Drainage area.--958 sq mi.

Gage.--Nonrecording prior to April 1940; recording thereafter. Datum of gage is 580.66 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Gage heights prior to Oct. 1, 1939, have been adjusted to present datum by subtracting 30.0 ft.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1936	Oct. 10, 1935	13.0	-	5,000	1943	May 21, 1943	11.8	-	5,290
						June 20, 1943	11.0	-	4,330
1937	Oct. 9, 1936	12.95	-	5,300					
	Feb. 21, 1937	12.9	-	4,950	1944	Mar. 15, 1944	13.01	-	6,730
	Apr. 5, 1937	10.7	-	3,350		Apr. 24, 1944	10.6	-	3,890
	Apr. 21, 1937	10.8	-	3,400					
					1945	May 17, 1945	12.48	-	4,930
1938	Jan. 24, 1938	14.0	-	6,850					
	Jan. 30, 1938	14.27	5.0	-	1946	Jan. 5, 1946	14.06	-	8,050
						Jan. 9, 1946	13.0	-	6,970
1939	Feb. 10, 1939	13.3	2.0	3,700		Mar. 6, 1946	11.0	-	4,110
	Mar. 12, 1939	13.56	-	6,180		June 13, 1946	10.1	-	3,340
	July 6, 1939	10.6	-	3,350		June 19, 1946	10.6	-	4,000
1940	Mar. 4, 1940	11.44	-	3,750	1947	Feb. 16, 1947	11.8	-	4,930
						Apr. 5, 1947	13.74	-	6,400
1941	Feb. 13, 1941	11.0	-	3,500		Apr. 20, 1947	12.2	-	5,170
	June 4, 1941	11.98	-	4,350		June 2, 1947	12.8	-	5,530
						June 8, 1947	10.9	-	4,220
1942	Oct. 4, 1941	12.7	-	4,680					
	Oct. 7, 1941	11.6	-	3,950	1948	Feb. 28, 1948	14.00	-	6,670
	Oct. 10, 1941	10.5	-	3,290		Mar. 15, 1948	11.7	-	4,600
	Mar. 17, 1942	10.4	-	3,230		Mar. 19, 1948	13.5	-	6,220
	July 16, 1942	11.6	-	3,950					
	Aug. 8, 1942	13.53	-	5,240	1949	Feb. 13, 1949	13.3	-	6,040
	Aug. 29, 1942	10.9	-	3,530		Feb. 18, 1949	13.64	-	6,310
						Feb. 24, 1949	13.1	-	5,860
1943	Dec. 27, 1942	12.32	-	5,890		Aug. 11, 1949	11.6	-	4,510
	Apr. 27, 1943	11.4	-	4,810					
	Apr. 30, 1943	10.2	-	3,450	1950	Mar. 5, 1950	a15.59	4.5	4,100

a Backwater from ice.

Peak stages and discharges of Green River near Geneseo, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	Apr. 25, 1950	12.8	-	5,590	1955	Feb. 27, 1955	10.45	-	3,470
	June 19, 1950	10.7	-	3,710		Apr. 24, 1955	12.08	-	4,960
						June 11, 1955	11.57	-	4,510
1951	Feb. 20, 1951	a16.14	-	b4,800					
	May 12, 1951	14.13	-	6,760	1956	Feb. 24, 1956	a11.23	-	-
	June 22, 1951	11.44	-	4,330		Feb. 25, 1956	10.77	-	3,790
	July 9, 1951	13.87	-	6,580					
	Aug. 29, 1951	14.27	-	6,940	1957	Apr. 6, 1957	5.94	-	1,340
1952	Nov. 14, 1951	10.41	-	3,470	1958	June 10, 1958	10.23	-	3,320
	Jan. 20, 1952	10.60	-	3,630					
	Mar. 11, 1952	12.42	-	5,230	1959	Feb. 15, 1959	-	-	b3,400
	Mar. 19, 1952	10.74	-	3,710		Feb. 24, 1959	13.81	-	7,100
						Apr. 29, 1959	12.36	-	5,230
1953	July 6, 1953	10.97	-	3,970					
					1960	Jan. 13, 1960	12.37	-	5,230
1954	June 3, 1954	9.11	-	2,630		Mar. 30, 1960	a15.14	-	-
						Mar. 31, 1960	-	-	8,500
1955	Oct. 11, 1954	14.69	-	8,900		Apr. 17, 1960	12.95	-	7,900
	Jan. 6, 1955	11.50	-	4,420					
	Feb. 20, 1955	12.43	-	5,230	1961	Sept.14, 1961	11.20	-	4,690

a Backwater from ice.
b About.

4480. Mill Creek at Milan, Ill.

Location.--Lat 41°26'35", long 90°33'15", in SW¼SE¼ sec.24, T.17 N., R.2 W., on left bank at upstream side of Knoxville Road bridge, 1 mile southeast of Milan.

Drainage area.--62.5 sq mi.

Gage.--Nonrecording prior to April 1940; recording thereafter. Datum of gage is 566.23 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The flood of June 1936 reached the maximum stage known prior to beginning of record, according to Mr. Joe Winter, who has resided in the vicinity of the gage since 1900.

Remarks.--Base for partial-duration series, 1,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1936	June 1936	a7.4	-	-	1945	May 15, 1945	d4.63	-	1,050
1940	Mar. 3, 1940	b3.7	-	450	1946	Jan. 5, 1946	7.40	-	4,570
						Jan. 9, 1946	5.20	-	1,590
1941	Feb. 13, 1941	4.62	c0.5	-		June 18, 1946	6.80	-	3,500
	May 16, 1941	4.20	-	690					
					1947	Apr. 5, 1947	6.32	-	2,770
1942	July 6, 1942	6.38	-	2,130		June 29, 1947	5.35	-	1,550
1943	Dec. 27, 1942	7.47	.25	4,000	1948	Feb. 27, 1948	7.44	-	4,570
	Feb. 4, 1943	6.55	-	3,170		Mar. 14, 1948	5.60	-	1,910
	Feb. 10, 1943	6.65	-	3,330		Mar. 19, 1948	6.65	-	3,340
	Apr. 27, 1943	6.30	-	2,770		July 21, 1948	5.55	-	1,870
	May 16, 1943	5.35	-	1,460					
	May 20, 1943	5.80	-	1,970	1949	Jan. 4, 1949	5.0	-	1,430
	June 6, 1943	5.90	-	2,130		Feb. 13, 1949	8.5	3.2	2,000
	June 20, 1943	5.50	-	1,590		Feb. 18, 1949	8.78	3.3	2,200
						June 25, 1949	4.9	-	1,590
1944	Mar. 15, 1944	6.08	-	2,450					
	Apr. 23, 1944	5.65	-	1,800	1950	Jan. 25, 1950	5.45	-	2,110
	June 16, 1944	5.20	-	1,410		Mar. 4, 1950	4.75	-	1,460

a From information by local resident.
b Doubtful gage-height record.
c Greater than figure shown.
d Occurred on Aug. 11.

Peak stages and discharges of Mill Creek at Milan, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	Apr. 24, 1950	5.60	-	2,270	1956	Feb. 24, 1956	5.75	-	2,440
	May 4, 1950	5.20	-	1,860		July 8, 1956	7.12	-	4,320
	June 18, 1950	6.90	-	4,000					
	July 19, 1950	5.65	-	2,320	1957	Feb. 9, 1957	3.93	-	865
1951	Feb. 19, 1951	7.98	-	5,960	1958	June 10, 1958	6.20	-	2,980
	May 10, 1951	5.38	-	2,060					
	June 21, 1951	5.07	-	1,720	1959	Feb. 23, 1959	9.03	-	8,100
						Apr. 28, 1959	5.33	-	1,830
1952	Jan. 14, 1952	e6.11	-	-		May 30, 1959	5.77	-	2,320
	Mar. 22, 1952	3.88	-	850		July 30, 1959	6.55	-	3,460
1953	Feb. 20, 1953	5.92	-	2,610	1960	Oct. 6, 1959	7.45	-	4,830
						Jan. 12, 1960	6.96	-	4,160
1954	June 1, 1954	5.11	-	1,770		Mar. 29, 1960	8.32	-	6,580
						Apr. 17, 1960	4.97	-	1,400
1955	Oct. 10, 1954	9.36	-	8,980		June 13, 1960	8.11	-	6,160
	Feb. 20, 1955	5.65	-	2,320					
	Feb. 27, 1955	4.72	-	1,420	1961	Sept.13, 1961	6.68	-	3,790

e Ice jam.

4480.5. Sand Creek near Milan, Ill.

Location.--Lat 41°24'05", long 90°36'20", in SE¼SE¼ sec.4, T.16 N., R.2 W., at culvert on county road, 4 miles southwest of Milan.

Drainage area.--0.198 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 24, 1956	17.03	12.1	1960	June 12, 1960	18.86	62
1957	Apr. 3, 1957	17.13	13.9				
1958	Dec. 20, 1957	17.42	19.1	1961	Sept.13, 1961	17.51	21.1
1959	Aug. 6, 1959	17.93	31.4				

IOWA RIVER BASIN

4485. West Branch Iowa River near Klemme, Iowa

Location.--Lat 42°57'50", long 93°42'20", in NE¼NW¼ sec.17, T.94 N., R.24 W., on downstream side of highway bridge, 6 miles southwest of Klemme, and 12.4 miles upstream from confluence with East Fork Iowa River.

Drainage area.--122 sq mi.

Gage.--Nonrecording. Prior to June 13, 1948, at datum 1.00 ft higher. Datum of gage is 1,180.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--High banks; not subject to overflow.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges of West Branch Iowa River near Klemme, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 27, 1949	7.08	538	1952	July 7, 1952	7.93	653
1950	Mar. 27, 1950	-	522	1953	June 8, 1953	6.16	391
1951	Feb. 26, 1951	9.63	550	1954	June 21, 1954	14.97	1,920
	Mar. 28, 1951	10.68	740				
	Apr. 7, 1951	11.84	1,420	1955	July 6, 1955	5.9	349
	May 2, 1951	8.33	565				
	June 26, 1951	12.38	1,340	1956	Mar. 27, 1956	4.40	130
	July 9, 1951	8.38	580				
				1957	May 30, 1957	5.15	272
1952	Mar. 30, 1952	9.12	860				
	June 14, 1952	7.36	568	1958	June 4, 1958	5.35	256

4486. East Branch Iowa River above Hayfield, Iowa

Location.--Lat 43°09', long 93°41', near south quarter corner sec.4, T.96 N., R.24 W., at bridge, 1½ miles southeast of Hayfield.

Drainage area.--2.23 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 4, 1953	3.02	24.2	1958	June 4, 1958	2.65	17.0
1954	June 18, 1954	7.15	209	1959	May 21, 1959	6.77	186
1955	July 6, 1955	2.25	10.6	1960	Mar. 29, 1960	4.67	75
1956	July 2, 1956	2.05	8.0	1961	Mar. 26, 1961	6.94	196
1957	-	(a)	<7.6				

a Not determined; peak stage did not reach bottom of gage.

4487. East Branch Iowa River near Hayfield, Iowa

Location.--Lat 43°11', long 93°39', in NW¼ sec.35, T.97 N., R.24 W., at bridge, 2 miles east of Hayfield.

Drainage area.--7.94 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 29, 1952	6.45	122	1957	June 23, 1957	7.11	69
1953	Aug. 4, 1953	7.26	172	1958	June 4, 1958	9.52	187
1954	June 18, 1954	13.01	457	1959	May 21, 1959	11.89	357
1955	July 6, 1955	6.50	51	1960	Mar. 29, 1960	6.33	34
1956	July 31, 1956	6.80	60	1961	Mar. 26, 1961	12.16	260

4488. East Branch Iowa River near Garner, Iowa

Location.--Lat 43°06', long 93°37', near center of sec.25, T.96 N., R.24 W., at bridge on U.S. Highway 18, 1.2 miles west of Garner.

Drainage area.--45.1 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 29, 1952	7.38	352	1957	May 30, 1957	7.06	322
1953	Mar. 13, 1953	5.55	189	1958	-	(a)	<260
1954	June 18, 1954	12.42	1,040	1959	May 21, 1959	10.36	709
1955	July 6, 1955	5.14	155	1960	Mar. 29, 1960	9.69	650
1956	-	(a)	b260	1961	Mar. 26, 1961	12.81	1,120

a Not determined; peak stage did not reach bottom of gage.

4489. East Branch Iowa River tributary near Garner, Iowa

Location.--Lat 43°06', long 93°39', near center sec.27, T.96 N., R.24 W., at culvert on U.S. Highway 18, 2.1 miles west of Garner.

Drainage area.--5.98 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Poorly defined by current-meter measuremerts.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 29, 1952	4.92	83	1957		(a)	-
1953	Mar. 13, 1953	4.36	62	1958		(a)	-
1954	June 17, 1954	6.71	206	1959	May 21, 1959	5.22	167
1955	-	(a)	-	1960	Mar. 29, 1960	5.18	160
1956	-	(a)	-	1961	Mar. 26, 1961	7.05	155

a Not determined; peak stage did not reach bottom of gage.

4490. East Branch Iowa River near Klemme, Iowa

Location.--Lat 43°00'30", long 93°37'35", in NE¼NW¼ sec.36, T.95 N., R.24 W., on left bank 15 ft downstream from highway bridge, 1.0 mile west of Klemme, and 15.4 miles upstream from confluence with West Branch Iowa River.

Drainage area.--133 sq mi.

Gage.--Nonrecording at site 0.6 mile upstream at datum 1.11 ft higher prior to Oct. 1, 1955; recording at present site and datum thereafter. Datum of gage is 1,179.02 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Shifts in relation occur frequently.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges of East Branch Iowa River near Klemme, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 1944	a10	-	1955	July 5, 1955	5.47	348
1949	Mar. 27, 1949	-	685	1956	Mar. 26, 1956	4.91	150
1950	Mar. 26, 1950	-	500	1957	June 23, 1957	4.75	176
1951	Mar. 29, 1951	8.59	b1,000	1958	June 4, 1958	6.08	355
	Apr. 7, 1951	8.61	1,940	1959	May 21, 1959	8.25	1,100
	June 26, 1951	10.80	3,440		May 31, 1959	8.12	1,020
1952	Mar. 30, 1952	7.60	900	1960	Mar. 28, 1960	8.25	1,100
1953	June 8, 1953	5.70	385	1961	Mar. 26, 1961	9.40	3,250
1954	June 19, 1954	11.2	5,960				
	June 21, 1954	10.74	4,820				

a From information by local residents.
b About.

4495. Iowa River near Rowan, Iowa

Location.--Lat 42°45'35", long 93°37'15", in NW¼NE¼ sec.25, T.92 N., R.24 W., on left bank 10 ft downstream from bridge on county road, 3.8 miles northwest of Rowan, and 9.4 miles downstream from the confluence of East and West Branches.

Drainage area.--429 sq mi.

Gage.--Nonrecording prior to Oct. 14, 1948; recording thereafter. Datum of gage is 1,143.35 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Shifts in relation occur frequently.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	June 5, 1941	9.4	1,450	1951	Feb. 26, 1951	11.09	2,200
	June 14, 1941	8.8	1,250		Mar. 29, 1951	12.78	3,300
1942	Nov. 4, 1941	9.0	1,320		Apr. 7, 1951	12.38	4,230
1943	Mar. 27, 1943	8.9	1,280		May 3, 1951	10.10	1,860
1944	May 22, 1944	10.3	2,160		June 28, 1951	13.18	5,610
	June 14, 1944	12.0	3,840		July 10, 1951	9.85	1,700
1945	Mar. 13, 1945	-	2,200		July 22, 1951	9.17	1,400
	Apr. 14, 1945	8.9	1,360	1952	Feb. 14, 1952	9.17	1,250
	Apr. 25, 1945	9.6	1,670		Mar. 21, 1952	9.32	1,450
	June 3, 1945	9.5	1,620		Mar. 31, 1952	10.61	2,200
	Aug. 15, 1945	11.50	3,120		June 16, 1952	8.75	1,220
1946	Jan. 6, 1946	-	1,360		July 9, 1952	9.30	1,400
	Mar. 14, 1946	9.0	1,400	1953	May 2, 1953	6.87	645
	May 27, 1946	9.6	1,660	1954	June 21, 1954	14.88	8,460
1947	Apr. 13, 1947	9.4	1,580		Aug. 27, 1954	8.78	1,220
	June 14, 1947	8.5	1,200	1955	July 7, 1955	6.54	551
	June 26, 1947	10.0	1,860	1956	Mar. 28, 1956	-	300
	July 2, 1947	10.5	2,170	1957	May 31, 1957	6.43	492
	July 7, 1947	10.6	2,240	1958	May 27, 1958	6.77	530
1948	Feb. 29, 1948	-	1,940	1959	May 24, 1959	9.87	1,420
	Mar. 18, 1948	10.6	2,240		June 2, 1959	10.07	1,540
1949	Mar. 7, 1949	-	1,230	1960	Mar. 30, 1960	-	2,900
	Mar. 28, 1949	9.4	1,580				
1950	Mar. 28, 1950	-	1,800	1961	Mar. 28, 1961	12.81	5,580

4512. South Fork Iowa River near New Providence, Iowa

Location.--Lat 42°19', long 93°10', near north quarter corner of sec.27, T.87 N., R.20 W., 3 miles north of New Providence, Iowa.

Drainage area.--233 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Records collected by Corps of Engineers. Station is inflow forecasting station for Coralville Reservoir. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Sept.20, 1950	-	3,75[illegible]	1954	Aug. 27, 1954	7.75	2,550
				1955	Feb. 20, 1955	6.06	1,310
1951	Mar. 29, 1951	8.64	3,380				
1952	July 3, 1952	6.27	1,400	1956	Sept. 5, 1956	4.02	406
1953	Mar. 11, 1953	5.60	1,060				

4512.5. Beaver Creek near Eldora, Iowa

Location.--Lat 42°21', long 93°08', near the center of sec.13, T.87 N., R.20 W., about a quarter of a mile south of Eldora, Iowa.

Drainage area.--69.8 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Records collected by Corps of Engineers. Stations is inflow forecasting station for Coralville Reservoir. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Sept.21, 1950	9.09	3,280	1954	Aug. 26, 1954	8.73	3,010
				1955	July 10, 1955	6.90	1,200
1951	Mar. 28, 1951	7.63	1,720				
1952	June 14, 1952	6.12	685	1956	Sept. 5, 1956	5.69	436
1953	June 25, 1953	5.32	386				

4513.5. Honey Creek at Bangor, Iowa

Location.--Lat 42°10', long 93°05', near west quarter corner sec.16, T.85 N., R.19 W., at county road "L" bridge over Honey Creek, about 1.0 miles east of Bangor, Iowa.

Drainage area.--95.6 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Records collected by Corps of Engineers. Station is inflow forecasting station for Coralville Reservoir. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 7, 1950	8.25	1,480	1954	June 11, 1954	9.60	3,350
				1955	Feb. 19, 1955	5.54	744
1951	Mar. 28, 1951	9.01	2,230				
1952	Mar. 11, 1952	6.53	1,400	1956	Sept. 5, 1956	5.58	757
1953	Feb. 21, 1953	6.92	1,640				

4514.5. Minerva Creek near Clemons, Iowa

Location.--Lat 42°07', long 93°05', near center of sec.5, T.84 N., R.19 W., at county road bridge about 3½ miles east of Clemons, Iowa.

Drainage area.--148 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Records collected by Corps of Engineers. Station is inflow forecasting station for Coralville Reservoir. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 6, 1950	7.95	1,900	1954	June 10, 1954	9.3	5,700
				1955	July 10, 1955	7.11	1,660
1951	June 2, 1951	9.50	2,840				
1952	Mar. 14, 1952	7.21	1,670	1956	Aug. 13, 1956	2.35	142
1953	Feb. 21, 1953	8.10	2,240				

4515. Iowa River at Marshalltown, Iowa

Location.--Lat 42°04'05", long 92°54'05", in NW¼SW¼ sec.24, T.84 N., R.18 W., on right bank in city park in Marshalltown, 300 ft upstream from Burnett Creek, 0.2 mile downstream from State Highway 14 bridge, 2 miles upstream from Linn Creek, and at mile 189. Records include flow of Burnett Creek.

Drainage area.--1,564 sq mi, including that of Burnett Creek.

Gage.--Nonrecording prior to Aug. 22, 1934; recording thereafter. Oct. 25, 1902, to Aug. 8, 1903, at site 1 mile upstream at different datum. May 21, 1915, to Sept. 30, 1927, and Feb. 1, 1933, to Aug. 21, 1934, on steel highway bridge 1,000 ft upstream. Fragmentary readings available 1929-30. Datum of gage is 853.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Large shifts in the relation occur frequently.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 29, 1903	-	7,760	1926	Sept.19, 1926	13.9	10,000
1915	June 1, 1915	13.8	a9,440	1927	Feb. 12, 1927	12.2	6,300
					June 9, 1927	13.0	7,610
1916	Mar. 29, 1916	9.5	3,620				
				1929	Mar. 26, 1929	-	14,500
1917	Mar. 27, 1917	14.6	13,000		Aug. 3, 1929	15.0	15,500
	June 10, 1917	13.5	9,300				
				1930	Apr. 1, 1930	10.6	4,480
1918	May 25, 1918	12.9	7,750				
	June 4, 1918	17.74	42,000	1933	Apr. 4, 1933	15.5	17,100
	June 22, 1918	11.2	5,060				
				1934	Jan. 24, 1934	6.3	1,400
1919	Mar. 17, 1919	13.0	7,480				
	Apr. 14, 1919	12.2	6,300	1935	Mar. 5, 1935	15.7	12,500
					June 26, 1935	13.0	6,960
1920	Oct. 6, 1919	12.4	6,520				
				1936	Mar. 9, 1936	13.6	8,450
1921	Sept.17, 1921	13.4	8,500				
				1937	Mar. 6, 1937	13.8	9,130
1922	Feb. 24, 1922	11.7	5,710		June 15, 1937	12.7	6,280
1923	Apr. 4, 1923	10.5	4,350	1938	Mar. 6, 1938	11.3	4,540
1924	June 29, 1924	13.6	9,060	1939	Mar. 13, 1939	13.8	9,080
	Aug. 23, 1924	11.4	5,200				
				1940	June 23, 1940	7.9	2,200
1925	June 19, 1925	7.6	2,480				

a Maximum during period May to September 1915.

Peak stages and discharges of Iowa River at Marshalltown, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Sept. 8, 1941	9.6	2,900	1951	May 3, 1951	13.60	5,760
					June 2, 1951	15.95	14,500
1942	June 3, 1942	15.8	18,100		July 4, 1951	13.93	6,300
	June 13, 1942	12.8	5,870		July 9, 1951	13.15	5,150
					Aug. 27, 1951	14.10	6,750
1943	Feb. 27, 1943	12.1	4,960				
				1952	Mar. 11, 1952	13.99	6,500
1944	May 3, 1944	12.9	6,090		Mar. 13, 1952	13.30	5,290
	May 20, 1944	15.9	18,900				
	June 13, 1944	13.5	6,340	1953	Feb. 21, 1953	16.70	b7,000
	June 17, 1944	13.4	6,290				
				1954	June 2, 1954	14.21	6,520
1945	Mar. 16, 1945	14.1	8,340		June 11, 1954	15.21	8,850
	Apr. 17, 1945	12.4	5,150		June 16, 1954	16.02	11,200
	June 2, 1945	13.9	7,880		June 25, 1954	15.51	9,700
					Aug. 28, 1954	16.09	11,500
1946	Jan. 6, 1946	-	14,300				
	Mar. 13, 1946	13.6	7,050	1955	Feb. 20, 1955	11.75	3,290
1947	June 2, 1947	15.7	14,400	1956	May 13, 1956	9.89	2,160
	June 5, 1947	15.0	11,000				
	June 13, 1947	16.8	20,500	1957	May 30, 1957	13.93	5,220
	June 18, 1947	14.8	10,100		June 16, 1957	15.24	7,800
	June 22, 1947	15.3	11,900		July 4, 1957	14.42	6,300
	July 1, 1947	14.4	8,760				
				1958	June 13, 1958	14.11	5,550
1948	Feb. 28, 1948	15.8	15,000				
	Mar. 17, 1948	15.0	10,600	1959	Mar. 20, 1959	15.48	9,700
	Mar. 19, 1948	15.2	11,400		Mar. 27, 1959	15.57	10,000
	Mar. 28, 1948	13.8	7,240				
				1960	Mar. 31, 1960	17.51	21,500
1949	Mar. 5, 1949	14.8	10,000		Apr. 18, 1960	14.12	6,340
					May 7, 1960	15.66	10,300
1950	Mar. 7, 1950	15.8	14,800		May 26, 1960	13.77	5,070
	June 10, 1950	13.1	5,950				
	June 19, 1950	15.1	11,200	1961	Feb. 18, 1961	-	b5,100
	June 24, 1950	12.5	5,120		Feb. 23, 1961	13.95	6,170
					Mar. 7, 1961	13.32	5,070
1951	Feb. 26, 1951	16.05	b10,000		Mar. 15, 1961	13.31	5,070
	Mar. 29, 1951	16.13	15,200		Mar. 31, 1961	14.81	7,850
	Apr. 8, 1951	14.20	7,000		Sept.30, 1961	13.47	5,370

b About.

4517. Timber Creek near Marshalltown, Iowa

Location.--Lat 42°00'25", long 92°51'30", in SE¼SW¼ sec.8, T.83 N., R.17 W., on left bank 20 ft downstream from bridge on U.S. Highway 30, 2.7 miles upstream from mouth, and 3.0 miles southeast of Marshalltown.

Drainage area.--118 sq mi.

Gage.--Recording. Datum of gage is 849.44 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 1947	16.8	-	1951	July 3, 1951	8.79	751
					July 9, 1951	9.99	990
1950	Feb. 9, 1950	11.92	1,520		Aug. 25, 1951	9.32	845
	Feb. 10, 1950	12.30	1,690				
	Feb. 28, 1950	-	a830	1952	Mar. 10, 1952	13.87	2,770
	Mar. 5, 1950	15.10	4,030		Mar. 13, 1952	9.73	925
	Mar. 22, 1950	-	a1,000		May 23, 1952	9.59	905
	May 9, 1950	9.10	805	1953	Jan. 15, 1953	-	a900
	June 18, 1950	15.77	4,940		Feb. 11, 1953	-	a1,000
	June 24, 1950	8.74	734		Feb. 20, 1953	15.09	4,030
1951	Feb. 19, 1951	-	a1,000	1954	June 1, 1954	8.55	717
	Mar. 28, 1951	10.70	1,160		June 10, 1954	13.47	2,450
	June 1, 1951	11.52	1,390		June 16, 1954	9.45	865

a About.

Peak stages and discharges of Timber Creek near Marshalltown, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Feb. 19, 1955	13.45	1,500	1959	May 19, 1959	14.32	3,120
	July 10, 1955	9.30	845		May 31, 1959	9.42	865
1956	May 13, 1956	4.35	150	1960	Jan. 13, 1960	14.0	2,850
1957	Jan. 21, 1957	-	850		Mar. 30, 1960	14.57	3,420
	Feb. 9, 1957	-	a900		Apr. 17, 1960	10.47	1,120
	June 18, 1957	14.23	3,030		May 6, 1960	14.40	3,220
	July 3, 1957	15.38	4,420		May 26, 1960	12.36	1,740
1958	Feb. 24, 1958	10.56	a800	1961	Feb. 18, 1961	15.67	4,810
					Feb. 23, 1961	13.37	2,370
1959	Feb. 28, 1959	10.83	1,190		Mar. 6, 1961	12.86	2,020
	Mar. 14, 1959	10.22	1,040		Mar. 13, 1961	12.3	1,690
	Mar. 20, 1959	14.59	3,420		July 27, 1961	9.12	825
	Mar. 26, 1959	-	1,200		Aug. 4, 1961	8.74	734

a About.

4518. Deer Creek at Toledo, Iowa

Location.--Lat 42°00', long 92°36', near west quarter corner of sec.15, T.83 N., R.15 W., on county road bridge west of Toledo, Iowa.

Drainage area.--76.4 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Records collected by Corps of Engineers. Station is inflow forecasting station for Coralville Reservoir. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 6, 1950	9.12	1,600	1953	Feb. 20, 1953	9.51	2,800
				1954	Aug. 26, 1954	6.08	1,030
1951	June 2, 1951	9.03	3,250	1955	Feb. 19, 1955	5.77	911
1952	Mar. 10, 1952	7.82	1,580				

4519. Richland Creek near Haven, Iowa

Location.--Lat 41°53'55", long 92°28'35", in SE¼NE¼ sec.21, T.82 N., R.14 W., on right bank 5 ft upstream from highway bridge, 0.5 mile north of Haven, and 3.0 miles upstream from mouth.

Drainage area.--56.1 sq mi.

Gage.--Recording. Datum of gage is 798.69 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter and indirect measurements. Shifts in relation occur.

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 1918	14.3	-	1952	Mar. 10, 1952	7.50	870
					May 23, 1952	5.90	509
1950	Feb. 11, 1950	7.18	780				
	Mar. 5, 1950	10.24	2,100	1953	Feb. 20, 1953	10.22	2,100
	Mar. 6, 1950	10.10	2,090		June 11, 1953	6.14	541
	June 18, 1950	10.92	2,560		June 27, 1953	7.67	935
1951	Feb. 18, 1951	6.70	655	1954	Aug. 26, 1954	8.32	1,170
	July 8, 1951	7.68	935		Aug. 27, 1954	6.94	705

Peak stages and discharges of Richland Creek near Haven, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Feb. 19, 1955	8.56	1,290	1959	May 21, 1959	6.28	593
					June 30, 1959	6.40	604
1956	Aug. 1, 1956	4.88	364				
				1960	Jan. 12, 1960	10.37	2,220
1957	May 31, 1957	5.87	509		Mar. 30, 1960	12.39	3,650
					May 6, 1960	7.65	900
1958	July 14, 1958	9.10	1,530				
	Sept. 3, 1958	9.18	1,580	1961	Feb. 18, 1961	9.60	1,960
	Sept. 5, 1958	7.68	935		Feb. 23, 1961	5.20	660
					Mar. 6, 1961	10.33	2,240
1959	Nov. 18, 1958	8.50	1,250		Mar. 8, 1961	7.5	1,220
	Feb. 28, 1959	6.35	582		Mar. 13, 1961	6.00	805
	Mar. 20, 1959	8.98	1,480		Mar. 14, 1961	5.61	729
	Mar. 26, 1959	7.93	1,010		June 6, 1961	8.13	1,420
	Apr. 28, 1959	9.54	1,730				

4520. Salt Creek near Elberon, Iowa

Location.--Lat 41°57'45", long 92°18'55", in NW¼NW¼ sec.36, T.83 N., R.13 W., near center of span on downstream side of bridge on U.S. Highway 30, 1.2 miles northwest of Irving, 2.5 miles south of Elberon, and 9.0 miles upstream from mouth.

Drainage area.--201 sq mi.

Gage.--Nonrecording prior to Oct. 15, 1945; recording thereafter. Datum of gage is 781.58 ft above mean sea level (Iowa Highway Commission bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 17,000 cfs and extended above by logarithmic plotting.

Bankfull stage.--9.5 ft.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 16, 1944	19.9	a30,000	1953	June 8, 1953	11.48	1,750
					June 12, 1953	13.70	4,250
1946	Jan. 6, 1946	15.84	8,690		June 27, 1953	11.17	1,570
	Mar. 6, 1946	11.92	1,570				
	Mar. 13, 1946	12.30	1,690	1954	Aug. 26, 1954	15.21	5,410
	Sept. 9, 1946	11.40	1,330				
	Sept.23, 1946	14.70	5,030	1955	Oct. 10, 1954	11.83	1,360
1947	Apr. 10, 1947	12.85	2,250	1956	May 13, 1956	12.50	1,640
	June 1, 1947	16.10	16,700		Aug. 1, 1956	13.82	3,610
	June 13, 1947	17.6	35,000				
	June 22, 1947	13.6	4,000	1957	May 31, 1957	13.93	2,810
	July 11, 1947	11.7	1,650		June 17, 1957	12.77	1,790
					June 18, 1957	12.94	1,860
1948	Feb. 28, 1948	-	a2,400				
	Mar. 17, 1948	-	4,670	1958	July 15, 1958	16.12	6,600
	Mar. 19, 1948	14.40	5,820		Aug. 16, 1958	13.75	2,020
					Sept. 6, 1958	13.44	1,770
1949	Mar. 5, 1949	14.85	a3,500				
	Mar. 22, 1949	11.32	1,630	1959	Mar. 20, 1959	15.6	6,580
					Mar. 27, 1959	14.75	4,470
1950	Mar. 7, 1950	15.50	10,500				
	June 24, 1950	14.82	6,310	1960	Jan. 13, 1960	16.16	a6,400
					Mar. 30, 1960	16.18	a5,700
1951	Feb. 25, 1951	14.12	3,860		Apr. 17, 1960	-	a2,250
	Mar. 29, 1951	13.40	3,680		May 7, 1960	15.60	5,200
	June 2, 1951	13.67	4,250				
	June 16, 1951	12.34	2,340	1961	Feb. 19, 1961	16.23	a7,200
	June 20, 1951	11.34	1,630		Feb. 23, 1961	13.85	2,900
	July 8, 1951	12.56	2,600		Mar. 6, 1961	15.15	5,750
	Aug. 27, 1951	12.78	2,810		Mar. 8, 1961	12.60	1,510
					Mar. 14, 1961	14.20	3,520
1952	Mar. 11, 1952	14.26	4,050		Mar. 15, 1961	13.40	2,240
	Mar. 13, 1952	12.85	2,600		June 7, 1961	16.18	9,400
	May 23, 1952	11.50	1,750		Aug. 1, 1961	12.84	1,680
1953	Feb. 20, 1953	15.40	a7,000				

a About.

4522. Walnut Creek near Hartwick, Iowa

Location.--Lat 41°50'10", long 92°23'20", in SE¼SW¼ sec.8, T.81 N., R.13 W., on left bank 5 ft upstream from highway bridge, 1.2 miles downstream from North Walnut Creek, 4.0 miles northwest of Hartwick, and 6.5 miles upstream from mouth.

Drainage area.--70.9 sq mi.

Gage.--Recording. Datum of gage is 786.59 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter and indirect measurements. Frequent shifts in relation occur.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 1947	17.7	-	1957	May 30, 1957	10.97	694
1950	Mar. 5, 1950	-	a1,700	1958	June 13, 1958	12.70	970
	Mar. 6, 1950	15.07	a2,000		July 14, 1958	13.45	1,290
	June 18, 1950	-	3,500		Sept. 3, 1958	15.67	4,930
	June 24, 1950	15.12	3,600		Sept. 5, 1958	12.64	955
1951	Apr. 27, 1951	11.67	974		Sept. 6, 1958	13.41	1,270
	May 19, 1951	10.62	770	1959	Feb. 26, 1959	-	a1,000
	May 26, 1951	11.54	930		Mar. 20, 1959	14.88	3,230
	June 3, 1951	13.27	1,450		Mar. 26, 1959	12.27	1,120
	July 9, 1951	13.27	1,450		Apr. 1, 1959	11.91	1,020
	July 11, 1951	11.36	908		Apr. 27, 1959	14.07	1,950
1952	Jan. 19, 1952	-	a900		May 21, 1959	13.74	1,680
	Mar. 10, 1952	13.90	1,820		June 30, 1959	14.24	2,180
	Mar. 13, 1952	12.08	1,060	1960	Nov. 4, 1959	13.21	1,410
	May 23, 1952	11.77	996		Jan. 12, 1960	15.04	3,500
1953	Feb. 20, 1953	14.50	a2,000		Jan. 14, 1960	13.01	1,450
1954	June 1, 1954	11.64	952		Mar. 29, 1960	-	a3,000
	Aug. 26, 1954	13.31	1,450		Mar. 31, 1960	12.73	1,360
	Aug. 27, 1954	13.31	1,450		May 6, 1960	14.56	2,640
	Sept.29, 1954	11.94	1,020	1961	Feb. 18, 1961	14.75	2,980
1955	Apr. 23, 1955	11.57	952		Mar. 6, 1961	15.17	3,700
					Mar. 8, 1961	14.80	3,060
1956	July 31, 1956	12.27	895		Mar. 13, 1961	12.10	1,350
					Mar. 14, 1961	10.28	980
					June 6, 1961	9.93	940

a About.

4525. Iowa River near Belle Plaine, Iowa

Location.--Lat 41°51'30", long 92°16'50", in SW¼NW¼ sec.5, T.81 N., R.12 W., on right bank 5 ft downstream from State Highway 212 bridge, 1.1 miles downstream from Walnut Creek, and 2.7 miles south of Belle Plaine.

Drainage area.--2,455 sq mi.

Gage.--Nonrecording prior to Mar. 13, 1940; recording thereafter. Datum of gage is 749.82 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Minor shifts in relation occur.

Bankfull stage.--13 ft.

Historical data.--Maximum discharge since at least 1902, that of June 5, 1918.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges of Iowa River near Belle Plaine, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 5, 1918	a17.86	43,000	1950	Mar. 7, 1950	-	18,300
					June 22, 1950	14.1	8,730
1940	Mar. 19, 1940	9.46	2,430		June 25, 1950	14.8	12,600
1941	Mar. 22, 1941	-	4,280	1951	Feb. 26, 1951	14.33	b7,000
					Mar. 2, 1951	13.15	6,200
1942	Nov. 2, 1941	13.0	5,620		Mar. 31, 1951	15.72	20,100
	June 6, 1942	14.4	9,450		Apr. 12, 1951	14.06	8,730
	June 11, 1942	13.2	6,200		Apr. 28, 1951	12.87	5,650
	June 16, 1942	12.5	5,100		May 6, 1951	13.25	6,200
					June 5, 1951	15.24	15,700
1943	Feb. 24, 1943	12.8	5,580		June 22, 1951	12.46	5,060
	Mar. 16, 1943	13.7	6,890		July 9, 1951	14.36	10,100
	May 16, 1943	12.8	5,680				
	Aug. 4, 1943	12.7	5,540	1952	Mar. 12, 1952	14.30	9,620
					Mar. 14, 1952	14.58	11,300
1944	May 7, 1944	13.0	5,990		Apr. 5, 1952	12.65	5,650
	May 21, 1944	16.9	31,800				
	June 16, 1944	16.8	31,600	1953	Feb. 21, 1953	13.82	b6,500
					Feb. 24, 1953	13.24	6,200
1945	Mar. 19, 1945	14.1	8,770				
	Mar. 28, 1945	12.7	5,390	1954	June 15, 1954	12.86	6,000
	Apr. 19, 1945	13.3	6,380		June 20, 1954	13.90	8,010
	May 17, 1945	12.5	5,100		June 28, 1954	14.50	10,700
	June 6, 1945	13.4	6,560		Aug. 27, 1954	13.79	7,160
	June 10, 1945	13.6	7,290		Aug. 31, 1954	14.27	8,350
1946	Jan. 6, 1946	16.2	25,000	1955	Oct. 11, 1954	11.02	3,600
	Feb. 6, 1946	-	5,100				
	Mar. 17, 1946	13.7	7,390	1956	May 14, 1956	10.37	2,590
	Sept.23, 1946	13.6	7,190				
				1957	May 31, 1957	13.38	5,240
1947	Apr. 11, 1947	13.8	7,590		June 20, 1957	14.21	6,950
	Apr. 20, 1947	13.2	6,200		July 7, 1957	13.49	5,400
	May 29, 1947	12.6	5,160				
	June 2, 1947	16.5	27,600	1958	July 16, 1958	14.45	7,200
	June 5, 1947	16.9	32,000		Sept. 4, 1958	13.94	6,080
	June 14, 1947	17.1	34,000		Sept. 6, 1958	13.54	5,370
	June 24, 1947	15.5	17,900				
				1959	Mar. 3, 1959	13.15	5,210
1948	Feb. 28, 1948	-	12,000		Mar. 14, 1959	13.16	5,210
	Mar. 17, 1948	14.4	10,400		Mar. 23, 1959	15.37	14,100
	Mar. 19, 1948	15.5	18,100		Mar. 27, 1959	15.02	11,300
	Mar. 30, 1948	13.1	5,890		Apr. 28, 1959	13.28	5,370
					May 21, 1959	13.48	5,400
1949	Mar. 8, 1949	-	14,000		June 3, 1959	11.86	5,620

a From information by Corps of Engineers.
b About.

4530. Bear Creek at Ladora, Iowa

Location.--Lat 41°45'00", long 92°11'00", in SW¼SW¼ sec.7, T.80 N., R.11 W., on right bank 10 ft downstream from highway bridge, a quarter of a mile south of Ladora, and 2½ miles upstream from Little Bear Creek.

Drainage area.--189 sq mi.

Gage.--Nonrecording prior to June 26, 1946; recording thereafter. Datum of gage is 759.28 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Frequent large shifts occur.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 5, 1946	13.1	9,050	1947	Oct. 24, 1946	7.25	1,850
	Mar. 6, 1946	9.4	3,830		Apr. 5, 1947	7.42	2,260
	Mar. 26, 1946	7.8	2,260		Apr. 10, 1947	7.68	2,570
	May 3, 1946	8.2	2,590		Apr. 20, 1947	7.36	2,200
	June 19, 1946	7.9	2,340		May 28, 1947	7.02	1,890
	Sept.22, 1946	7.73	2,200		June 1, 1947	9.45	5,360

Peak stages and discharges of Bear Creek at Ladora, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 5, 1947	10.90	7,610	1954	Aug. 26, 1954	10.74	4,010
	June 13, 1947	10.00	6,650				
	June 21, 1947	8.67	3,830	1955	Oct. 10, 1954	6.62	1,360
	June 30, 1947	11.35	7,060				
				1956	July 7, 1956	9.60	2,950
1948	Feb. 28, 1948	11.48	7,220				
	Mar. 16, 1948	9.60	5,630	1957	May 30, 1957	11.43	4,600
	Mar. 19, 1948	7.70	3,250		July 4, 1957	7.42	1,520
	July 21, 1948	7.72	3,270		July 28, 1957	8.93	2,440
1949	Jan. 15, 1949	6.90	a1,500	1958	Feb. 23, 1958	-	a1,600
	Feb. 24, 1949	9.86	a2,500		June 1, 1958	7.93	1,500
	Mar. 4, 1949	8.74	3,930		June 13, 1958	9.22	2,130
	Mar. 22, 1949	6.61	2,000		Sept. 4, 1958	13.78	5,290
					Sept. 5, 1958	11.08	3,230
1950	Feb. 9, 1950	7.47	a1,500				
	Mar. 4, 1950	12.14	a6,500	1959	Feb. 27, 1959	8.24	1,720
	June 18, 1950	11.64	7,320		Mar. 20, 1959	13.06	4,670
	June 24, 1950	11.15	6,840		Mar. 26, 1959	8.40	1,800
					Apr. 1, 1959	9.15	2,200
1951	Feb. 17, 1951	9.12	a2,500		Apr. 28, 1959	8.82	2,150
	Feb. 25, 1951	8.45	a1,600		May 21, 1959	11.39	3,480
	Mar. 28, 1951	7.33	1,970		July 1, 1959	11.08	3,270
	May 26, 1951	8.44	2,860		July 18, 1959	7.89	1,580
	June 3, 1951	6.58	1,520				
	July 8, 1951	9.47	3,950	1960	Nov. 4, 1959	8.51	1,850
					Jan. 12, 1960	13.50	4,950
1952	Jan. 19, 1952	10.74	a2,500		Jan. 15, 1960	-	a2,000
	Mar. 10, 1952	8.62	3,050		Mar. 30, 1960	14.60	10,500
	Mar. 13, 1952	6.83	1,640		May 6, 1960	12.10	5,940
	May 23, 1952	7.56	2,180		May 26, 1960	7.95	2,160
1953	Feb. 20, 1953	10.81	a4,800	1961	Feb. 18, 1961	11.55	3,800
	May 24, 1953	9.95	5,800		Mar. 6, 1961	12.69	4,400
	June 8, 1953	8.71	4,170		Mar. 8, 1961	11.33	3,560
	June 11, 1953	6.40	1,640		Mar. 13, 1961	11.65	3,740
	June 27, 1953	8.64	3,950		Sept.13, 1961	7.94	1,840

a About.

4531. Iowa River at Marengo, Iowa

Location.--Lat 41°48'35", long 92°04'20", in NW¼SE¼ sec.24, T.81 N., R.11 W., on right bank at downstream side of abandoned county highway bridge, 0.7 mile downstream from Bear Creek, 0.8 mile north of Marengo, and 4.9 miles upstream from Hilton Creek.

Drainage area.--2,794 sq mi.

Gage.--Recording. Datum of gage is 725.06 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 6,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	June 22, 1957	14.82	7,060	1960	Jan. 14, 1960	16.89	14,000
					Mar. 31, 1960	19.21	30,800
1958	July 17, 1958	14.77	7,060		Apr. 21, 1960	14.44	6,960
	Sept. 4, 1958	16.34	11,000		May 10, 1960	16.03	13,500
1959	Mar. 21, 1959	16.62	14,000	1961	Feb. 18, 1961	16.80	a6,200
	Mar. 24, 1959	16.92	15,400		Mar. 8, 1961	16.32	11,500
	May 21, 1959	14.58	7,390		Apr. 4, 1961	14.13	6,460
	July 1, 1959	14.18	6,430				

a About.

4536. Rapid Creek below Morse, Iowa

Location.--Lat 41°45', long 91°26', near northeast corner sec.21, T.80 N., R.5 W., at bridge 1½ miles southeast of Morse.

Drainage area.--7.84 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	17.22	223	1957	Jan. 21, 1957	16.53	166
1952	June 5, 1952	18.06	316	1958	Feb. 24, 1958	16.75	183
1953	Feb. 20, 1953	22.38	1,210	1959	Mar. 19, 1959	20.81	983
1954	Aug. 26, 1954	15.71	109	1960	June 4, 1960	21.38	1,160
1955	Apr. 23, 1955	17.44	244	1961	Mar. 4, 1961	21.78	1,300
1956	Aug. 30, 1956	19.86	642				

4537. Rapid Creek tributary No. 4 near Oasis, Iowa

Location.--Lat 41°43', long 91°24', near south quarter corner sec.22, T.80 N., R.5 W., at culvert 2 miles northwest of Oasis.

Drainage area.--1.55 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	15.23	78	1957	Aug. 28, 1957	14.40	33
1952	May 23, 1952	15.47	97	1958	Feb. 24, 1958	15.18	75
1953	July 20, 1953	18.23	956	1959	Oct. 8, 1958	16.70	260
1954	-	(a)	<6.7	1960	July 12, 1960	16.85	290
1955	Apr. 23, 1955	14.91	58	1961	Nov. 15, 1960	15.75	124
1956	Aug. 30, 1956	17.22	376				

a Not determined; peak stage did not reach bottom of gage.

4537.5. Rapid Creek southwest of Morse, Iowa

Location.--Lat 41°44', long 91°27', in W½ sec.21, T.80 N., R.5 W., at bridge, 2 miles southwest of Morse.

Drainage area.--14.8 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	20.64	307	1957	Jan. 21, 1957	20.97	360
1952	May 22, 1952	21.93	540	1958	Feb. 24, 1958	22.36	629
1953	Feb. 20, 1953	27.34	2,190	1959	Mar. 19, 1959	26.41	1,810
1954	Aug. 26, 1954	19.30	141	1960	June 4, 1960	26.13	1,700
1955	Apr. 23, 1955	22.34	624	1961	Mar. 4, 1961	24.47	1,180
1956	Aug. 30, 1956	23.97	1,030				

4538.5. Rapid Creek tributary No. 3 near Oasis, Iowa

Location.--Lat 41°43', long 91°27', near center of sec.29, T.80 N., R.5 W., at bridge, 3½ miles west of Oasis.

Drainage area.--1.51 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	20.79	281	1957	Aug. 28, 1957	20.75	278
1952	May 22, 1952	20.89	290	1958	June 13, 1958	20.69	272
1953	Feb. 19, 1953	21.42	378	1959	Oct. 8, 1958	23.14	2,360
1954	Apr. 30, 1954	17.28	48	1960	July 12, 1960	22.74	1,180
1955	Apr. 23, 1955	20.37	243	1961	Nov. 15, 1960	22.65	1,030
1956	Aug. 30, 1956	22.99	1,270				

4539. Rapid Creek tributary near Oasis, Iowa

Location.--Lat 41°41', long 91°26', near southwest corner of sec.33, T.80 N., R.5 W., at bridge, 3 miles southwest of Oasis.

Drainage area.--0.93 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	13.58	223	1957	-	(a)	<78
1952	May 22, 1952	13.82	247	1958	June 13, 1958	13.62	227
1953	May 24, 1953	15.00	373	1959	Oct. 8, 1958	16.83	598
1954	-	(a)	<78	1960	July 12, 1960	17.03	626
1955	Oct. 10, 1954	12.35	112	1961	Nov. 15, 1960	14.96	369
1956	July 18, 1956	18.32	809				

a Not determined; peak stage did not reach bottom of gage.

4539.5. Rapid Creek tributary near Iowa City, Iowa

Location.--Lat 41°42', long 91°28', in NW¼ sec.31, T.80 N., R.5 W., at bridge, 4 miles northeast of Iowa City.

Drainage area.--3.38 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	22.39	427	1957	Aug. 28, 1957	19.82	138
1952	May 23, 1952	22.26	408	1958	June 13, 1958	21.09	263
1953	Feb. 19, 1953	23.09	578	1959	Oct. 8, 1958	23.70	840
1954	Apr. 30, 1954	18.48	52	1960	July 12, 1960	23.58	771
1955	Apr. 23, 1955	19.88	142	1961	Aug. 1, 1961	23.72	856
1956	July 18, 1956	24.35	1,850				

4540. Rapid Creek near Iowa City, Iowa

Location.--Lat 41°42'00", long 91°29'05", in NE¼NE¼ sec.36, T.80 N., R.6 W., on left bank 80 ft upstream from bridge on State Highway 261, 3 miles northeast of Iowa City, and 4.0 miles upstream from mouth.

Drainage area.--24.6 sq mi.

Gage.--Recording and concrete control with sharp-crested weir. Datum of gage is 673.72 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Jan. 24, 1938	10.30	868	1953	Feb. 5, 1953	10.97	1,200
1939	Mar. 12, 1939	12.05	1,800		Feb. 20, 1953	13.05	3,800
1940	Mar. 17, 1940	8.52	372		May 24, 1953	11.07	1,280
					July 6, 1953	9.66	680
1941	June 27, 1941	12.54	3,710		July 20, 1953	9.75	700
1942	Oct. 22, 1941	11.32	2,090				
1943	June 1, 1943	11.48	2,200	1954	Aug. 26, 1954	6.17	216
1944	May 20, 1944	12.66	3,890				
1945	June 1, 1945	7.66	398	1955	Feb. 19, 1955	10.50	a650
					Apr. 24, 1955	9.95	750
1946	Jan. 5, 1946	11.24	2,530				
1947	June 30, 1947	10.72	1,390	1956	July 18, 1956	12.27	2,620
					July 31, 1956	10.68	1,080
1948	Feb. 27, 1948	10.89	1,830		Aug. 12, 1956	10.07	815
	Mar. 15, 1948	10.25	1,110		Aug. 30, 1956	12.48	3,000
	Mar. 19, 1948	10.70	1,580				
	July 21, 1948	11.17	2,180	1957	Aug. 28, 1957	7.60	326
1949	Feb. 24, 1949	11.10	a1,200	1958	June 13, 1958	9.15	509
	Mar. 4, 1949	10.35	a750				
				1959	Oct. 9, 1958	11.74	1,980
1950	Dec. 31, 1949	-	567		Feb. 23, 1959	-	a600
	Jan. 13, 1950	10.08	770		Mar. 19, 1959	12.51	a2,300
	Feb. 6, 1950	11.12	a600		Apr. 27, 1959	10.15	850
	Feb. 28, 1950	10.64	1,030		May 19, 1959	8.76	537
	Mar. 5, 1950	10.45	865		May 30, 1959	9.50	655
	May 21, 1950	9.50	625		July 18, 1959	10.08	815
	July 1, 1950	12.45	2,780				
	July 12, 1950	10.88	1,200	1960	Jan. 12, 1960	-	a950
					Mar. 29, 1960	12.04	2,340
1951	Feb. 19, 1951	11.07	1,380		May 6, 1960	11.70	1,730
	Feb. 25, 1951	11.25	1,460		June 4, 1960	11.87	2,090
	July 8, 1951	10.35	900		July 12, 1960	11.22	1,450
1952	Mar. 10, 1952	9.06	549	1961	Oct. 31, 1960	10.47	952
	May 23, 1952	10.94	1,220		Nov. 15, 1960	11.26	1,450
	June 8, 1952	9.36	607		Mar. 4, 1961	11.17	1,410
					Aug. 1, 1961	11.19	1,450
1953	Nov. 17, 1952	9.02	560		Sept.13, 1961	9.63	675

a About.

4543. Clear Creek near Coralville, Iowa

Location.--Lat 41°40'35", long 91°35'55", in NW¼SW¼ sec.6, T.79 N., R.6 W., on left bank 50 ft upstream from highway bridge, 1.2 miles west of Coralville, and 2.2 miles upstream from mouth.

Drainage area.--98.1 sq mi.

Gage.--Nonrecording prior to Jan. 7, 1957; recording thereafter. Datum of gage is 648.43 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges of Clear Creek near Coralville, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 20, 1953	11.18	a1,800	1959	Mar. 20, 1959	11.68	2,880
	May 25, 1953	9.3	1,010		Mar. 26, 1959	10.22	1,040
					Apr. 28, 1959	10.25	1,040
1954	Aug. 26, 1954	8.10	730				
				1960	Jan. 13, 1960	11.79	3,060
1955	Feb. 21, 1955	9.70	a850		Mar. 31, 1960	11.63	2,740
					June 2, 1960	10.08	1,150
1956	Aug. 30, 1956	9.52	900		June 4, 1960	10.06	1,120
					July 9, 1960	10.27	1,240
1957	Jan. 22, 1957	-	a300		July 14, 1960	10.90	1,840
1958	Sept. 5, 1958	9.69	1,020	1961	Mar. 5, 1961	11.84	3,020
					Mar. 14, 1961	a10.5	1,180
1959	Feb. 27, 1959	-	a1,500				

a About.

4545. Iowa River at Iowa City, Iowa

Location.--Lat 41°39'25", long 91°32'25", in SE¼SE¼ sec.9, T.79 N., R.6 W., in Iowa City on right bank, 25 ft downstream from State University of Iowa Hydraulics Laboratory, 175 ft downstream from University Dam, 0.9 mile upstream from Ralston Creek, 3.6 miles downstream from Clear Creek, and at mile 66.6.

Drainage area.--3,271 sq mi.

Gage.--Nonrecording prior to Nov. 19, 1921; recording thereafter. June 1, 1903, to July 21, 1906, at site 1,200 ft upstream at datum 3.05 ft higher. Nov.29, 1907, to Oct. 29, 1913, at site 200 ft upstream at different datum. Oct.30, 1913, to Nov. 18, 1921, at site 2,600 ft downstream at datum 0.2 ft higher. Nov. 19, 1921, to Sept. 30, 1922, at present site at datum 1.0 ft higher. Oct. 1, 1930, to Sept. 30, 1934, at present site at Iowa City datum. Datum of gage is 39.00 ft above Iowa City datum, and 627.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 34,000 cfs; extended by logarithmic plotting to 46,000 cfs.

Bankfull stage.--18 ft.

Remarks.--Gage heights for peaks prior to Oct. 1, 1922, are equivalent gage heights computed for present recorder installation. Peak discharge 1907-13 estimated by Prof. F. A. Nagler from University Power Plant records. Operation of the Coralville flood-control reservoir affects the discharge at this station since Sept. 17, 1958, after which time only annual peaks are shown. Base for partial-duration series, 6,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June 1851	a24	70,000	1911	Feb. 17, 1911	-	17,200
1881	July 17, 1881	b21.1	51,000	1912	Apr. 4, 1912	-	20,000
1903	June 3, 1903	15.0	22,500	1913	Mar. 24, 1913	-	7,030
1904	Mar. 25, 1904	8.3	9,880	1914	Sept.15, 1914	10.6	9,620
1905	Mar. 24, 1905	6.7	6,830	1915	Feb. 18, 1915	-	20,000
	May 24, 1905	8.0	8,490		Feb. 25, 1915	-	20,000
	June 10, 1905	8.8	9,740		June 4, 1915	10.9	9,470
					July 28, 1915	11.0	9,600
1906	Mar. 2, 1906	10.2	11,900		Aug. 2, 1915	10.8	9,340
	Apr. 5, 1906	7.6	7,960		Sept.29, 1915	12.5	10,600
1907	July 15, 1907	-	13,000	1916	Mar. 26, 1916	13.5	16,100
1908	June 3, 1908	-	6,000	1917	Mar. 29, 1917	-	17,500
					June 16, 1917	-	17,500
1909	July 7, 1909	-	12,500				
				1918	May 27, 1918	12.7	14,200
1910	Mar. 9, 1910	-	12,600		June 8, 1918	19.6	42,500

a About; maximum known since at least 1850.
b From floodmark (site and datum in use 1913-31); from information by local resident.

Peak stages and discharges of Iowa River at Iowa City, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	July 7, 1918	8.7	7,220	1940	Mar. 22, 1940	4.2	3,020
1919	Mar. 20, 1919	10.0	9,370	1941	Mar. 21, 1941	8.5	7,490
	Apr. 28, 1919	9.2	7,970		Sept. 8, 1941	8.5	7,310
	May 7, 1919	12.0	13,800				
	June 9, 1919	8.6	7,080	1942	Nov. 6, 1941	7.6	6,350
					June 13, 1942	8.9	7,800
1920	Nov. 13, 1919	8.2	6,570				
	Mar. 18, 1920	9.4	8,300	1943	Mar. 16, 1943	7.8	6,580
	Mar. 26, 1920	9.3	8,130		May 20, 1943	7.8	6,580
	Apr. 23, 1920	8.3	6,690		June 2, 1943	11.1	10,600
	May 16, 1920	8.2	6,570		Aug. 7, 1943	8.2	7,040
1921	Sept.21, 1921	12.7	15,600	1944	Apr. 23, 1944	7.8	6,570
					May 24, 1944	18.0	31,100
1922	Apr. 11, 1922	6.6	5,880		June 19, 1944	16.1	23,500
1923	Apr. 7, 1923	9.7	8,590	1945	Mar. 26, 1945	10.3	9,560
					Apr. 23, 1945	7.9	6,690
1924	Mar. 10, 1924	8.9	7,670		May 21, 1945	7.4	6,210
	June 8, 1924	9.8	8,900		June 10, 1945	10.3	9,530
	July 1, 1924	15.3	19,900				
	July 24, 1924	9.2	8,060	1946	Jan. 5, 1946	-	10,800
	July 27, 1924	10.4	9,660		Jan. 9, 1946	13.3	14,800
	Aug. 6, 1924	7.6	6,290		Mar. 20, 1946	9.9	9,040
	Aug. 22, 1924	7.4	6,000				
				1947	Apr. 20, 1947	10.4	9,690
1925	Mar. 21, 1925	-	1,590		June 8, 1947	17.3	28,100
					June 17, 1947	18.6	33,800
1926	Sept.23, 1926	14.5	17,800				
				1948	Feb. 28, 1948	10.1	c8,200
1927	May 13, 1927	8.2	6,900		Mar. 1, 1948	13.4	11,000
	May 24, 1927	11.1	10,900		Mar. 19, 1948	14.5	18,000
	June 21, 1927	9.2	8,110				
				1949	Mar. 5, 1949	-	c6,500
1928	Oct. 6, 1927	10.6	10,000		Mar. 10, 1949	13.0	14,100
	Feb. 14, 1928	9.9	9,120				
	Mar. 13, 1928	8.2	6,900	1950	Mar. 6, 1950	-	7,480
					Mar. 11, 1950	12.8	13,700
1929	Mar. 16, 1929	16.1	21,900		June 27, 1950	10.8	10,500
	Aug. 2, 1929	11.5	11,600		July 2, 1950	11.4	11,400
	Aug. 7, 1929	9.3	8,160				
				1951	Mar. 2, 1951	-	c6,200
1930	Feb. 22, 1930	9.6	8,380		Mar. 5, 1951	9.45	c8,000
	Feb. 24, 1930	9.2	7,900		Apr. 3, 1951	13.70	15,700
	June 15, 1930	13.3	13,600		Apr. 15, 1951	10.53	10,200
					May 11, 1951	9.19	8,460
1931	Sept.28, 1931	4.1	2,790		June 8, 1951	11.98	12,300
					July 12, 1951	10.01	9,500
1932	Dec. 1, 1931	9.2	7,880				
				1952	Mar. 17, 1952	10.70	10,400
1933	Apr. 10, 1933	10.0	8,700				
	May 26, 1933	8.8	7,240	1953	Feb. 20, 1953	11.85	11,900
1934	July 17, 1934	-	2,140	1954	July 3, 1954	8.31	7,690
					Sept. 5, 1954	7.17	6,340
1935	Mar. 11, 1935	9.8	8,710				
	June 19, 1935	7.7	7,350	1955	Apr. 24, 1955	5.65	4,600
	June 26, 1935	9.3	8,110				
	July 4, 1935	9.3	8,110	1956	Aug. 31, 1956	3.95	3,100
1936	Mar. 15, 1936	12.0	12,900	1957	June 25, 1957	5.70	4,700
1937	Feb. 23, 1937	13.7	7,380	1958	Sept. 7, 1958	5.95	5,000
	Mar. 7, 1937	14.6	17,100				
				1959	Apr. 14, 1959	10.40	9,380
1938	Jan. 24, 1938	-	5,000	1960	Apr. 16, 1960	11.28	10,700
1939	Mar. 12, 1939	10.4	9,870	1961	Mar. 13, 1961	10.73	9,940
	Mar. 16, 1939	9.8	9,090				

c About.

4550. Ralston Creek at Iowa City, Iowa

Location.--Lat 41°39'50", long 91°30'45", in SE¼NW¼ sec.11, T.79 N., R.6 W., on left bank 10 ft upstream from bridge at east edge of Iowa City, and 2.2 miles upstream from mouth.

Drainage area.--3.01 sq mi.

Gage.--Recording and V-notch sharp-crested weir. Datum of gage is 663.81 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--Banks are not overtopped at gage.

Remarks.--Base for partial-duration series, 200 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Sept. 8, 1925	4.15	266	1952	May 23, 1952	3.73	220
					June 14, 1952	3.56	202
1926	Sept.22, 1926	5.03	370				
1927	June 20, 1927	7.18	800	1953	Nov. 17, 1952	3.93	240
1928	Oct. 2, 1927	5.11	383		Feb. 5, 1953	3.65	210
1929	June 11, 1929	5.20	396		Feb. 19, 1953	4.65	312
1930	Sept.25, 1930	7.53	905		May 24, 1953	3.71	215
1931	Sept.25, 1931	4.03	254	1954	Aug. 25, 1954	2.72	107
1932	Aug. 1, 1932	8.18	1,200				
1933	Dec. 24, 1932	3.30	174	1955	Apr. 23, 1955	3.41	166
1934	July 12, 1934	4.00	249				
1935	June 26, 1935	6.37	570	1956	July 18, 1956	9.06	1,690
					July 31, 1956	5.55	416
1936	Sept. 1, 1936	3.59	193		Aug. 30, 1956	7.11	770
1937	Feb. 20, 1937	6.28	533				
1938	July 6, 1938	5.81	466	1957	Jan. 21, 1957	2.16	40
1939	Mar. 12, 1939	4.71	322				
1940	Aug. 13, 1940	3.00	87	1958	June 13, 1958	3.79	226
					July 14, 1958	4.60	296
1941	June 27, 1941	8.25	1,230				
1942	Sept. 8, 1942	7.41	824	1959	Oct. 8, 1958	7.03	755
1943	June 1, 1943	7.72	960		Mar. 19, 1959	5.06	362
1944	Jan. 27, 1944	6.48	554		Apr. 27, 1959	3.60	206
1945	June 10, 1945	4.00	155		May 19, 1959	4.82	328
					May 30, 1959	4.30	276
1946	Aug. 2, 1946	6.46	547		July 18, 1959	3.61	206
1947	June 30, 1947	6.61	465				
1948	July 21, 1948	6.73	662	1960	Jan. 12, 1960	3.54	201
1949	June 23, 1949	3.37	125		June 1, 1960	3.77	221
					June 4, 1960	6.30	558
1950	May 21, 1950	3.73	220		July 12, 1960	3.93	241
	July 1, 1950	8.32	1,250				
	July 12, 1950	3.90	235	1961	Nov. 15, 1960	5.70	448
					July 31, 1961	4.23	266
1951	Feb. 25, 1951	4.07	250				
	July 8, 1951	4.81	328				

4551. Old Mans Creek near Iowa City, Iowa

Location.--Lat 41°36', long 91°36', in NW¼ sec.36, T.79 N., R.7 W., at county road bridge, 3 miles southwest of Iowa City.

Drainage area.--201 sq mi.

Gage.--Nonrecording and crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Old Mans Creek near Iowa City, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 25, 1951	10.6	1,530	1957	Feb. 9, 1957	6.56	680
1952	Mar. 12, 1952	13.2	2,210	1958	Aug. 5, 1958	8.64	1,070
1953	Feb. 20, 1953	12.6	2,030	1959	Mar. 21, 1959	12.93	3,080
1954	May 1, 1954	10.45	470	1960	Jan. 12, 1960	13.68	3,310
1955	Feb. 20, 1955	10.64	1,450	1961	Aug. 1, 1961	13.72	3,350
1956	Aug. 19, 1956	10.46	1,200				

4551.5. North Fork English River near Montezuma, Iowa

Location.--Lat 41°39', long 92°33', in SW¼ sec.13, T.79 N., R.15 W., at bridge on U.S. Highway 63, 5 miles northwest of Montezuma.

Drainage area.--34.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements. Frequent large shifts occur.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	May 24, 1953	13.25	4,240	1958	May 31, 1958	9.13	1,940
1954	Aug. 26, 1954	7.47	1,270	1959	Mar. 20, 1959	13.18	4,190
1955	-	(a)	<450	1960	Mar. 30, 1960	11.60	-
1956	June 20, 1956	7.08	1,120	1961	Mar. 13, 1961	12.95	-
1957	July 28, 1957	12.22	3,700				

a Not determined; peak stage did not reach bottom of gage.

4552. North Fork English River near Guernsey, Iowa

Location.--Lat 41°39', long 92°22', near southwest corner of sec.17, T.79 N., R.13 W., at bridge, 2¼ miles west of Guernsey.

Drainage area.--68.7 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements. Frequent large shifts occur.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	May 24, 1953	11.70	7,000	1958	Sept.10, 1958	11.21	2,130
1954	Aug. 26, 1954	11.35	6,300	1959	Mar. 20, 1959	12.65	-
1955	Feb. 20, 1955	9.86	4,280	1960	Mar. 30, 1960	13.63	-
1956	June 20, 1956	5.72	700	1961	Mar. 6, 1961	11.98	-
1957	July 3, 1957	11.39	2,200				

4552.8. South Fork English River tributary near Barnes City, Iowa

Location.--Lat 41°33', long 92°28', near northeast corner sec.21, T.78 N., R.14 W., at county road bridge, 3 miles north of Barnes City.

Drainage area.--2.51 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 28, 1953	7.38	400	1958	Aug. 15, 1958	6.72	255
1954	Aug. 26, 1954	8.21	650	1959	July 18, 1959	8.55	793
1955	Oct. 10, 1954	6.19	170	1960	June 19, 1960	8.57	690
1956	Aug. 12, 1956	6.77	263	1961	July 27, 1961	8.81	784
1957	July 3, 1957	7.38	400				

4553. South Fork English River near Barnes City, Iowa

Location.--Lat 41°31', long 92°27', near northwest corner sec.34, T.78 N., R.14 W., at county road bridge, 1 mile north of Barnes City.

Drainage area.--11.5 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 28, 1953	11.38	445	1958	July 31, 1958	10.85	340
1954	Aug. 26, 1954	10.86	325	1959	July 18, 1959	11.70	550
1955	Apr. 24, 1955	9.18	179	1960	July 12, 1960	12.04	865
1956	Aug. 12, 1956	8.42	130	1961	July 27, 1961	13.43	1,780
1957	July 3, 1957	9.48	200				

4553.5. South Fork English River tributary No. 2 near Montezuma, Iowa

Location.--Lat 41°34', long 92°26', near southwest corner sec.11, T.78 N., R.14 W., at box culvert, 4 miles southeast of Montezuma.

Drainage area.--0.523 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 28, 1953	8.53	31	1958	Sept.10, 1958	8.39	27
1954	Aug. 26, 1954	8.44	28	1959	May 19, 1959	9.43	60
1955	Apr. 24, 1955	8.27	24	1960	June 19, 1960	11.18	143
1956	Aug. 12, 1956	8.52	31	1961	July 27, 1961	13.65	344
1957	July 3, 1957	8.29	24				

4555. English River at Kalona, Iowa

Location.--Lat 41°28'10", long 91°43'00", in SE¼SE¼ sec.13, T.77 N., R.8 W., on right bank 30 ft upstream from bridge on State Highway 1, 1 mile south of Kalona, 4 miles downstream from Smith Creek, and 14.5 miles upstream from mouth.

Drainage area.--573 sq mi.

Gage.--Nonrecording prior to Dec. 27, 1939; recording thereafter. Datum of gage is 633.45 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements. Shifts in the relation occur.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 30, 1930	19.9	18,500	1951	Feb. 19, 1951	12.26	a3,700
					Mar. 30, 1951	11.84	3,860
1940	Mar. 19, 1940	7.35	1,400		Apr. 8, 1951	11.61	3,740
					May 11, 1951	10.46	3,080
1941	July 2, 1941	10.00	2,490		May 27, 1951	12.70	4,490
					June 22, 1951	9.80	2,720
1942	Nov. 2, 1941	11.8	3,340		June 26, 1951	11.24	3,500
					July 4, 1951	10.82	3,260
1943	Feb. 5, 1943	-	3,960		July 10, 1951	11.06	3,440
	May 1, 1943	11.1	3,000		Aug. 26, 1951	14.74	6,130
	May 17, 1943	12.8	4,030				
	Aug. 5, 1943	18.11	10,700	1952	Nov. 13, 1951	12.09	3,930
					Mar. 12, 1952	15.47	6,840
1944	Apr. 16, 1944	11.9	3,660		Mar. 19, 1952	10.12	2,870
	Apr. 23, 1944	15.3	6,070		May 24, 1952	11.02	3,380
	May 22, 1944	15.91	6,810		June 21, 1952	10.18	2,920
	May 27, 1944	13.8	4,730				
	June 17, 1944	13.2	4,290	1953	Feb. 21, 1953	14.43	5,860
					Mar. 31, 1953	10.27	2,970
1945	Mar. 26, 1945	10.1	2,750		June 12, 1953	9.77	2,720
	Apr. 17, 1945	11.7	3,720				
	May 16, 1945	12.81	4,300	1954	Aug. 27, 1954	8.90	2,270
	May 18, 1945	11.9	3,790				
	June 1, 1945	11.5	3,530	1955	Oct. 10, 1954	11.35	3,620
	June 12, 1945	12.7	4,280		Apr. 20, 1955	10.83	3,260
					Apr. 25, 1955	13.4	5,020
1946	Jan. 7, 1946	19.74	16,400				
	Mar. 14, 1946	9.8	2,630	1956	Aug. 31, 1956	10.78	2,730
	Mar. 18, 1946	11.3	3,530				
	Mar. 25, 1946	9.9	2,690	1957	July 5, 1957	9.17	2,000
	Mar. 27, 1946	9.8	2,630				
	May 5, 1946	13.2	4,860	1958	May 31, 1958	9.75	2,200
	June 20, 1946	15.3	6,400				
				1959	Feb. 23, 1959	-	a3,300
1947	Mar. 13, 1947	10.4	2,860		Feb. 25, 1959	12.23	3,590
	Apr. 6, 1947	16.60	7,900		Mar. 21, 1959	17.12	8,960
	Apr. 11, 1947	12.3	3,950		Mar. 27, 1959	10.08	2,600
	Apr. 21, 1947	14.6	5,620		Apr. 2, 1959	-	a2,750
	May 30, 1947	10.8	3,230		Apr. 29, 1959	11.19	3,170
	June 3, 1947	13.3	4,830		May 22, 1959	10.1	2,600
	June 7, 1947	14.6	5,880		May 30, 1959	12.54	4,000
	June 15, 1947	13.4	4,940				
	June 23, 1947	11.7	3,790	1960	Nov. 6, 1959	10.10	2,600
	July 2, 1947	14.1	5,470		Dec. 27, 1959	11.32	3,030
					Jan. 14, 1960	17.59	9,700
1948	Feb. 29, 1948	15.7	6,680		Mar. 31, 1960	19.89	18,500
	Mar. 17, 1948	15.6	6,630		May 8, 1960	15.14	6,010
	Mar. 20, 1948	13.9	5,040		June 13, 1960	10.88	2,790
	July 5, 1948	10.0	2,620		June 21, 1960	11.94	3,390
	July 22, 1948	12.8	4,290		July 10, 1960	11.53	3,150
					July 14, 1960	15.01	5,900
1949	Jan. 17, 1949	10.2	2,870				
	Feb. 26, 1949	-	a4,000	1961	Feb. 23, 1961	11.10	2,910
	Mar. 6, 1949	14.3	5,770		Mar. 5, 1961	11.22	2,970
	Mar. 31, 1949	10.0	2,750		Mar. 7, 1961	13.69	4,680
					Mar. 14, 1961	15.20	6,120
1950	Mar. 7, 1950	16.1	8,550		Sept.15, 1961	13.28	4,340
	June 19, 1950	17.33	9,450				
	June 25, 1950	10.6	3,110				

a About.

4557. Iowa River near Lone Tree, Iowa

Location.--Lat 41°25'35", long 91°28'20", in NW¼NE¼ sec.6, T.76 N., R.5 W., on left bank 10 ft downstream from county highway bridge, 5 miles southwest of Lone Tree, and 6 miles downstream from English River.

Drainage area.--4,293 sq mi.

Gage.--Nonrecording prior to Dec. 28, 1956; recording thereafter. Datum of gage is 588.16 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--14 ft.

Remarks.--Flow regulated by Coralville Reservoir (capacity, 492,000 acre-ft) beginning Sept. 17, 1958. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 25, 1944	a19.94	-	1959	Mar. 21, 1959	15.97	16,600
				1960	Apr. 1, 1960	17.90	28,100
1957	June 25, 1957	9.14	4,550				
1958	Feb. 26, 1958	b11.47	-	1961	Mar. 15, 1961	16.06	17,000
	Sept. 7, 1958	-	6,610				

a From information by Corps of Engineers.
b Ice jam.

4570. Cedar River near Austin, Minn.

Location.--Lat 43°38'10", long 92°58'20", in NE¼SE¼ sec.15, T.102 N., R.18 W., on left bank 200 ft upstream from abandoned powerhouse, 500 ft upstream from highway bridge, 1.1 miles downstream from Turtle Creek, and 1.1 miles south of Austin.

Drainage area.--425 sq mi.

Gage.--Nonrecording prior to October 1914; recording thereafter. May 1909 to April 1912, at site 200 ft downstream at datum 3.1 ft lower. May 1912 to September 1914, on highway bridge 500 ft downstream at datum 1.1 ft lower. Datum of gage is 1,162.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,400 cfs. Only annual peaks are shown prior to 1945.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Nov. 14, 1909	15.7	5,940	1947	July 13, 1947	7.14	1,980
1911	Aug. 14, 1911	12.1	3,960	1948	Feb. 28, 1948	12.56	5,260
1912	Mar. 28, 1912	15.25	5,670		Mar. 19, 1948	9.17	3,460
1913	June 26, 1913	7.94	1,930				
1914	June 15, 1914	6.85	1,480	1949	Mar. 5, 1949	10.14	4,000
					Mar. 25, 1949	9.93	3,880
1945	Mar. 15, 1945	16.62	7,750		Mar. 27, 1949	9.80	3,820
	Apr. 23, 1945	7.24	2,260		Mar. 31, 1949	9.97	3,940
	May 22, 1945	13.84	5,980				
	May 25, 1945	14.26	6,280	1950	Mar. 7, 1950	9.76	3,670
	June 2, 1945	6.33	1,770		Mar. 26, 1950	17.81	8,800
	June 11, 1945	6.09	1,670				
	July 6, 1945	10.17	4,060	1951	Apr. 7, 1951	15.12	7,070
	Aug. 5, 1945	8.01	2,740		Apr. 22, 1951	6.15	1,700
					June 2, 1951	10.30	3,980
1946	Feb. 5, 1946	6.52	1,880		June 28, 1951	6.54	1,700
	Mar. 4, 1946	8.03	2,740		Sept.13, 1951	9.80	3,380
	(a)	5.98	1,620				
	June 18, 1946	8.25	2,740	1952	Nov. 14, 1951	5.86	1,440
	Sept. 6, 1946	12.92	5,440		Mar. 18, 1952	5.55	1,400
					Mar. 31, 1952	15.82	7,520
1947	Mar. 24, 1947	7.32	2,320		Apr. 15, 1952	5.97	1,600
	Apr. 6, 1947	8.67	3,160		June 25, 1952	10.19	3,630
	Apr. 11, 1947	9.36	3,580		June 28, 1952	6.16	1,410
	July 1, 1947	6.50	1,670				

a Occurred during period Mar. 13-17, 1946.

Peak stages and discharges of Cedar River near Austin, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	May 25, 1953	9.18	3,370	1958	June 5, 1958	4.56	534
	June 14, 1953	10.74	4,300				
	July 22, 1953	8.70	2,790	1959	Mar. 31, 1959	6.72	1,760
	Aug. 3, 1953	15.00	6,990		June 1, 1959	6.22	1,500
					June 26, 1959	12.20	4,940
1954	May 1, 1954	5.91	1,560		Aug. 23, 1959	7.10	1,900
	June 20, 1954	12.82	5,570				
				1960	Mar. 28, 1960	7.62	2,220
1955	Mar. 11, 1955	8.02	2,710		Apr. 13, 1960	6.93	1,860
					May 22, 1960	11.01	4,260
1956	Apr. 2, 1956	7.08	2,190				
				1961	Mar. 26, 1961	17.03	8,290
1957	July 17, 1957	7.34	2,250				

4575. Cedar River at Mitchell, Iowa

Location.--Lat 43°18'55", long 92°52'45", in NE¼SW¼ sec.8, T.98 N., R.17 W., in tailrace of hydroelectric plant of Central States Power & Light Corp. at Mitchell, 7.0 miles downstream from Deer Creek, 11.7 miles upstream from Rock Creek, and at mile 274.3.

Drainage area.--826 sq mi.

Gage.--Nonrecording. Datum of gage is 1,000 ft above mean sea level (levels by Central States Power & Light Corp.).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 4, 1934	89.7	13,000	1940	Mar. 30, 1940	85.7	4,130
1935	Mar. 16, 1935	88.3	9,400				
				1941	Apr. 18, 1941	89.1	11,300
1936	Mar. 17, 1936	88.0	8,680	1942	June 29, 1942	89.1	11,400
1937	Mar. 7, 1937	-	9,000				
1938	Sept.14, 1938	88.6	10,200	1961	Mar. 26, 1961	98.5	20,500
1939	Mar. 14, 1939	87.7	7,990				

4577. Cedar River at Charles City, Iowa

Location.--Lat 43°04', long 92°41', in NE¼ sec.12, T.95 N., R.16 W., at St. Mary's bridge in Charles City, Iowa.

Drainage area.--1,054 sq mi.

Gage.--Nonrecording. Datum of gage is 973.02 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Sept. 7, 1946	16.05	15,100	1951	Apr. 8, 1951	18.9	21,400
1947	Apr. 11, 1947	10.44	7,470	1952	Apr. 1, 1952	14.6	12,600
1948	Feb. 28, 1948	17.00	16,500	1953	Aug. 4, 1953	14.35	12,300
1949	Mar. 6, 1949	13.00	10,800				
1950	Mar. 28, 1950	18.3	20,000	1961	Mar. 27, 1961	21.53	29,200

4580. Little Cedar River near Ionia, Iowa

Location.--Lat 43°02'00", long 92°30'10", in SW¼NE¼ sec.21, T.95 N., R.14 W., on left bank 12 ft downstream from highway bridge, 2.5 miles west of Ionia, and 7.0 miles upstream from mouth.

Drainage area.--306 sq mi.

Gage.--Recording. Datum of gage is 973.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--High banks are not subject to overflow.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 22, 1954	11.37	4,600	1959	May 20,31,1959	7.30	1,830
1955	June 3, 1955	7.54	1,500	1960	Mar. 30, 1960	8.42	2,650
					May 7, 1960	6.89	1,530
1956	Apr. 2, 1956	6.78	1,160		June 25, 1960	9.19	2,790
					Aug. 30, 1960	6.95	1,340
1957	July 23, 1957	6.19	890	1961	Mar. 4, 1961	6.52	1,370
1958	July 15, 1958	5.53	632		Mar. 27, 1961	15.58	10,800
					Aug. 2, 1961	11.43	5,310
1959	Mar. 26, 1959	7.63	1,710				

4585. Cedar River at Janesville, Iowa

Location.--Lat 42°39'00", long 92°27'50", in NE¼SW¼ sec.35, T.91 N., R.14 W., on left bank 300 ft downstream from county highway bridge at Janesville and 3.3 miles upstream from Shell Rock River.

Drainage area.--1,661 sq mi.

Gage.--Nonrecording prior to Nov. 11, 1949; recording thereafter. Prior to July 26, 1919, at Illinois Central Railroad bridge 1,000 ft downstream at datum 4.0 ft lower. July 26, 1919, to Sept. 30, 1927; Nov. 14, 1932, to Sept. 30, 1942; and Apr. 26, 1946, to Nov. 10, 1949, at county highway bridge 300 ft upstream. Datum of gage is 868.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	May 17, 1905	7.1	5,840	1921	May 29, 1921	11.5	15,300
1906	Mar. 27, 1906	14.2	27,100	1923	Apr. 4, 1923	6.2	4,630
1915	May 31, 1915	8.9	7,220	1924	Aug. 22, 1924	6.0	4,410
1916	Mar. 16, 1916	8.9	7,220	1925	June 15, 1925	7.7	6,860
	Mar. 27, 1916	10.4	10,400				
	Apr. 22, 1916	10.4	10,400	1926	Mar. 22, 1926	5.6	4,010
	June 2, 1916	11.0	12,100				
				1927	May 28, 1927	6.2	4,630
1917	Mar. 24, 1917	13.8	21,900				
	June 25, 1917	12.6	17,300	1933	Feb. 27, 1933	7.1	5,500
					Apr. 1, 1933	16.0	33,300
1918	Mar. 20, 1918	9.0	7,400				
				1934	Apr. 6, 1934	9.9	11,200
1919	Apr. 10, 1919	8.7	6,870				
	Apr. 18, 1919	7.5	5,130	1935	Mar. 5, 1935	9.1	9,580
					Mar. 8, 1935	8.6	8,530
1920	Mar. 19, 1920	6.8	5,410		Mar. 18, 1935	7.9	7,200
	Mar. 28, 1920	7.3	6,190				

Peak stages and diacharges of Cedar River at Janesville, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Mar. 15, 1936	7.7	6,840	1950	Mar. 9, 1950	-	a11,600
	Mar. 24, 1936	9.8	11,200		Mar. 28, 1950	12.7	20,200
1937	Mar. 8, 1937	-	12,000	1951	Mar. 1, 1951	6.67	6,440
					Mar. 30, 1951	6.37	a5,200
1938	May 29, 1938	6.7	5,310		Apr. 9, 1951	14.05	25,000
	Sept.17, 1938	8.8	8,910		Apr. 29, 1951	12.43	19,300
					June 5, 1951	6.16	5,650
1939	Mar. 17, 1939	-	7,500		June 27, 1951	7.77	8,360
1940	Apr. 1, 1940	6.0	4,410	1952	Mar. 21, 1952	6.30	5,800
					Apr. 2, 1952	10.74	14,700
1941	Mar. 12, 1941	-	8,740				
	Apr. 20, 1941	8.7	8,890	1953	Feb. 21, 1953	-	a4,000
					June 16, 1953	8.36	9,500
1942	Mar. 23, 1942	7.7	6,860		Aug. 6, 1953	10.80	15,000
	June 3, 1942	8.3	7,950				
	June 7, 1942	7.6	6,690	1954	June 22, 1954	12.08	18,400
	July 2, 1942	8.4	8,140				
	July 16, 1942	9.3	10,100	1955	Mar. 14, 1955	5.16	4,430
1945	Mar. 17, 1945	16.2	34,300	1956	Apr. 5, 1956	4.46	3,530
1946	Sept. 9, 1946	11.3	14,700	1957	May 31, 1957	3.10	1,890
1947	Apr. 8, 1947	8.1	7,650	1958	Feb. 25, 1958	2.73	a1,100
	Apr. 13, 1947	9.3	9,820				
	June 13, 1947	10.14	12,200	1959	Mar. 27, 1959	6.78	6,620
	June 18, 1947	7.5	6,520		June 25, 1959	5.83	5,210
1948	Mar. 1, 1948	14.1	25,100	1960	Mar. 30, 1960	10.46	13,200
	Mar. 19, 1948	8.7	9,330		May 24, 1960	6.38	6,040
					June 26, 1960	5.71	5,080
1949	Mar. 7, 1949	-	a14,000				
	Mar. 27, 1949	-	7,570	1961	Mar. 28, 1961	16.33	37,000
	Mar. 29, 1949	8.5	8,850		Aug. 3, 1961	6.66	6,210
	Apr. 2, 1949	8.0	7,930				

a About.

4589. West Fork Cedar River at Finchford, Iowa
(Published as West Fork Shell Rock River at Finchford prior to October 1955)

Location.--Lat 42°37'50", long 92°32'25", in SW¼SE¼ sec.6, T.90 N., R.14 W., on left bank 100 ft downstream from highway bridge in Finchford and 3.2 miles upstream from Shell Rock River.

Drainage area.--846 sq mi.

Gage.--Nonrecording prior to June 10, 1955; recording thereafter. Datum of gage is 867.06 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	March 1929	a14	b12,800	1949	Mar. 7, 1949	12.25	6,330
1946	Mar. 8, 1946	11.51	5,220	1950	Mar. 8, 1950	14.80	11,000
					Mar. 28, 1950	-	3,120
1947	June 13, 1947	13.7	11,600		May 11, 1950	-	3,480
	June 15, 1947	12.6	7,800				
	June 21, 1947	10.3	3,200	1951	Feb. 28, 1951	13.5	10,500
	June 24, 1947	10.5	3,440		Mar. 30, 1951	14.5	14,500
	June 2, 1947	11.2	4,630		Apr. 8, 1951	13.0	8,800
	July 7, 1947	11.0	4,300		Apr. 30, 1951	13.42	10,100
					June 4, 1951	9.6	2,540
1948	Mar. 1, 1948	-	a7,000		June 27, 1951	17.28	31,900
	Mar. 19, 1948	12.87	9,580		July 11, 1951	10.89	4,100

a About.
b Estimated.

Peak stages and discharges of West Fork Cedar River at Finchford, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 1, 1952	11.91	5,800	1958	July 17, 1958	5.95	712
1953	Aug. 7, 1953	8.97	2,250	1959	Mar. 28, 1959	12.07	4,740
1954	June 20, 1954	14.18	11,400	1960	Mar. 30, 1960	14.00	10,600
	June 23, 1954	14.9	14,200		Apr. 28, 1960	10.19	2,660
					May 8, 1960	10.97	3,400
1955	Oct. 16, 1954	6.32	850	1961	Mar. 7, 1961	10.34	2,770
1956	Mar. 29, 1956	5.61	642		Mar. 27, 1961	15.40	17,400
1957	June 19, 1957	6.82	1,040				

4590. Shell Rock River near Northwood, Iowa

Location.--Lat 43°24'50", long 93°13'10", in NW¼NW¼ sec.9, T.99 N., R.20 W., on right bank 50 ft downstream from highway bridge, 2 miles south of Northwood, and 4.1 miles upstream from Elk Creek.

Drainage area.--300 sq mi.

Gage.--Nonrecording prior to May 17, 1956; recording thereafter. Datum of gage is 1,176.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 1,000 cfs. Only anrual peaks are shown prior to 1951.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Mar. 13, 1946	-	1,400	1955	June 4, 1955	6.00	502
1947	Apr. 11, 1947	-	926				
1948	Mar. 20, 1948	-	1,600	1956	Apr. 1, 1956	7.37	a800
1949	Mar. 31, 1949	-	1,230				
1950	Mar. 28, 1950	9.72	1,800	1957	May 29, 1957	6.44	655
1951	Apr. 10, 1951	9.55	2,430	1958	Apr. 6, 1958	5.54	348
	May 3, 1951	7.19	1,010				
				1959	May 31, 1959	6.58	655
1952	Apr. 2, 1952	8.26	1,470				
				1960	Mar. 30, 1960	7.76	a800
1953	Aug. 4, 1953	7.54	1,060				
				1961	Mar. 26, 1961	11.68	a3,000
1954	June 22, 1954	7.96	1,360				

a About.

4595. Winnebago River at Mason City, Iowa
(Published as "Lime Creek at Mason City, Iowa" prior to 1960)

Location.--Lat 43°10'00", long 93°11'40", in NE¼NW¼ sec.3, T.96 N., R.20 W., on right bank 650 ft upstream from Thirteenth Street Bridge in Mason City and 1.0 mile upstream from Willow Creek.

Drainage area.--526 sq mi.

Gage.--Nonrecording prior to Mar. 22, 1935; recording thereafter. Concrete control since Nov. 6, 1934. Prior to Oct. 15, 1934, at datum 6.47 ft lower. Datum of gage is 1,069.59 ft above mean sea level, datum of 1929.

State-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges of Winnebago River at Mason City, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Mar. 30, 1933	a15.7	10,800	1947	June 29, 1947	7.9	3,690
					June 30, 1947	8.8	4,360
1934	Apr. 3, 1934	4.1	1,470		July 6, 1947	6.4	2,700
1935	Mar. 5, 1935	5.80	2,340	1948	Feb. 28, 1948	11.22	b5,000
1936	Mar. 16, 1936	6.10	2,520	1949	Mar. 4, 1949	7.4	3,310
	Mar. 17, 1936	5.97	2,440		Mar. 24, 1949	6.4	2,630
					Mar. 27, 1949	6.8	2,820
1937	Mar. 5, 1937	9.68	5,260		June 25, 1949	5.9	2,310
1938	June 23, 1938	8.7	4,340	1950	Mar. 7, 1950	7.3	3,310
	June 25, 1938	10.29	5,850		Mar. 27, 1950	6.4	2,690
	Sept.15, 1938	8.2	3,970				
				1951	Feb. 26, 1951	8.75	b3,000
1939	Mar. 13, 1939	7.9	3,730		Apr. 7, 1951	12.44	7,560
	Mar. 22, 1939	5.8	2,360		Apr. 29, 1951	8.11	3,880
					May 2, 1951	9.12	4,680
1940	Mar. 29, 1940	3.4	980		June 28, 1951	9.05	4,600
1941	June 2, 1941	4.4	1,500	1952	Mar. 18, 1952	5.97	2,450
					Mar. 21, 1952	5.42	2,090
1942	Nov. 1, 1941	5.8	2,290		Mar. 30, 1952	8.70	4,360
1943	Mar. 16, 1943	7.93	3,760	1953	Aug. 3, 1953	4.73	1,730
1944	May 21, 1944	6.7	2,840	1954	June 18, 1954	10.67	4,900
	June 12, 1944	12.2	7,020		June 21, 1954	11.85	7,060
	June 17, 1944	8.1	3,820		Aug. 23, 1954	5.65	2,210
1945	Mar. 11, 1945	10.22	b4,600	1955	June 3, 1955	5.75	2,330
	Mar. 13, 1945	-	b4,000				
	Mar. 15, 1945	8.0	3,750	1956	Apr. 1, 1956	4.15	1,360
	Apr. 23, 1945	6.4	2,630				
	May 25, 1945	6.4	2,630	1957	May 30, 1957	3.58	1,090
	June 1, 1945	6.6	2,770				
	June 10, 1945	8.6	4,160	1958	June 4, 1958	3.83	955
	Aug. 14, 1945	6.0	2,350				
				1959	May 21, 1959	7.33	3,040
1946	Mar. 14, 1946	6.9	2,970		May 31, 1959	6.40	2,560
	May 24, 1946	5.8	2,260				
				1960	Mar. 28, 1960	5.98	2,320
1947	Apr. 10, 1947	6.4	2,680				
	June 17, 1947	8.1	3,850	1961	Mar. 27, 1961	14.80	10,500

a Present datum.
b About.

4605. Shell Rock River at Marble Rock, Iowa
(Published as "at Greene" July 1933 to September 1942)

Location.--Lat 42°58'00", long 92°52'15", in SE¼SE¼ sec.8, T.94 N., R.17 W., on left bank 20 ft above dam at Marble Rock, 1.1 miles upstream from Ackley Creek, and 9.5 miles downstream from Winnebago River.

Drainage area.--1,318 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1942; Mar. 13, 1945, to June 5, 1946; and since June 20, 1950. Recording Oct. 1, 1942, to Mar. 12, 1945, and June 6, 1946, to June 19, 1950. Prior to Oct. 1, 1942, in tailrace of powerplant at Greene, 5.7 miles downstream at different datum. Datum of gage is 960.39 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements at Marble Rock; extended by logarithmic plotting above 23,000 cfs at Greene.

Remarks.--Records at the two sites not adjusted for 40 sq mi difference in drainage area. Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Mar. 27, 1933	107.6	36,400	1936	Mar. 17, 1936	97.2	6,580
					Sept.15, 1936	96.0	5,340
1934	Apr. 4, 1934	94.2	3,760				
				1937	Mar. 6, 1937	105.9	10,000
1935	Mar. 5, 1935	97.5	6,910				
				1938	June 1, 1938	95.2	4,590
1936	Mar. 12, 1936	97.1	6,470		June 25, 1938	101.7	13,400

Peak stages and discharges of Shell Rock River at Marble Rock, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sept.15, 1938	97.7	7,130	1945	Aug. 14, 1945	4.5	5,900
1939	Mar. 14, 1939	98.8	8,390	1946	Mar. 6, 1946	4.39	5,730
					Mar. 13, 1946	4.0	4,930
1940	Aug. 25, 1940	93.5	3,070				
				1947	Apr. 10, 1947	5.1	7,270
1941	Mar. 9, 1941	94.6	4,110		June 13, 1947	5.2	7,500
	Apr. 20, 1941	95.0	4,430		June 17, 1947	6.36	10,300
	May 30, 1941	96.7	6,040		June 29, 1947	5.6	8,430
	June 3, 1941	98.9	8,510		July 1, 1947	5.8	8,910
	June 12, 1941	98.5	8,030		July 6, 1947	3.7	4,340
1942	Nov. 2, 1941	96.0	5,340	1948	Feb. 28, 1948	8.56	14,000
	June 1, 1942	97.4	6,800				
	June 3, 1942	95.4	4,770	1949	Mar. 5, 1949	5.46	8,190
	June 28, 1942	95.7	5,040		Mar. 22, 1949	3.9	4,630
	July 30, 1942	95.0	4,430		Mar. 25, 1949	4.8	6,610
					Mar. 27, 1949	4.8	6,610
1943	Mar. 16, 1943	5.97	9,340		June 25, 1949	4.2	5,330
	Mar. 25, 1943	-	4,870				
	Mar. 26, 1943	4.1	5,150	1950	Mar. 7, 1950	7.75	14,400
					Mar. 27, 1950	7.4	13,200
1944	May 3, 1944	4.2	5,440				
	May 22, 1944	4.1	5,130	1951	Feb. 26, 1951	6.05	9,410
	June 12, 1944	8.28	15,900		Mar. 30, 1951	4.12	5,130
	June 18, 1944	5.1	7,180		Apr. 7, 1951	9.35	22,700
					Apr. 29, 1951	4.04	11,900
1945	Mar. 13, 1945	6.6	11,000		June 2, 1951	3.47	11,500
	Mar. 15, 1945	7.78	14,400		June 28, 1951	2.21	8,980
	Apr. 23, 1945	4.8	6,540				
	May 22, 1945	3.9	4,730	1952	Mar. 19, 1952	4.18	5,330
	May 25, 1945	4.8	6,680		Mar. 30, 1952	5.51	8,190
	June 1, 1945	5.6	8,380				
	June 10, 1945	6.1	9,660	1953	Aug. 4, 1953	3.83	4,630

4615. Shell Rock River near Clarksville, Iowa

Location.--Lat 42°47'25", long 92°41'15", in NW¼NW¼ sec.13, T.92 N., R.16 W., at highway bridge 1¼ miles northwest of Clarksville, 5 miles downstream from Flood Creek, and 20 miles upstream from mouth.

Drainage area.--1,626 sq mi.

Gage.--Nonrecording. Altitude of gage is 916 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 3,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	May 30, 1915	11.5	a11,800	1920	May 23, 1920	6.8	4,660
					Sept.11, 1920	6.0	3,760
1916	Mar. 16, 1916	8.4	6,570				
	Mar. 26, 1916	11.9	12,500	1921	Feb. 16, 1921	-	3,760
	Apr. 21, 1916	8.4	6,570		May 28, 1921	9.33	7,860
	May 14, 1916	7.7	5,640				
	June 2, 1916	12.8	14,400	1922	Feb. 23, 1922	-	14,200
					Mar. 6, 1922	6.2	3,980
1917	Mar. 22, 1917	-	17,600		Apr. 11, 1922	7.1	5,140
	Mar. 28, 1917	5.8	3,680				
	June 7, 1917	8.5	6,920	1923	Apr. 4, 1923	6.1	3,870
1918	Mar. 20, 1918	-	3,890	1924	Oct. 2, 1923	6.9	4,780
	May 10, 1918	7.0	5,020		June 29, 1924	6.2	3,980
	May 30, 1918	7.6	5,760				
	June 4, 1918	6.2	4,110	1925	June 13, 1925	9.6	8,240
	Aug. 17, 1918	10.4	9,380				
				1926	Aug. 19, 1926	6.8	4,660
1919	Oct. 28, 1918	6.1	4,000				
	Feb. 14, 1919	-	4,400	1927	May 28, 1927	6.6	4,420
	Mar. 16, 1919	10.8	10,400				
	Apr. 11, 1919	9.2	7,680	1933	Mar. 31, 1933	16.7	23,800
	Apr. 16, 1919	8.7	7,020		May 20, 1933	6.4	4,330
	May 7, 1919	6.4	4,200				
	June 11, 1919	9.6	8,230	1934	Apr. 4, 1934	5.5	3,360
1920	Mar. 26, 1920	-	4,090				

a Maximum for period May to September 1915.

4620. Shell Rock River at Shell Rock, Iowa

Location.--Lat 42°42'50", long 92°34'55", in NW¼NE¼ sec.11, T.91 N., R.15 W., on right bank 400 ft upstream from bridge on State Highway 3 in Shell Rock, and 11 miles upstream from mouth.

Drainage area.--1,746 sq mi.

Gage.--Recording. Rockfill dam control since Oct. 19, 1957. Datum of gage is 885.34 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1856	-	a17.7	b45,000	1958	June 4, 1958	7.99	1,650
1953	Aug. 4, 1953	8.79	c4,720	1959	Mar. 27, 1959	11.03	7,630
					June 1, 1959	10.19	5,480
1954	June 22, 1954	14.00	21,300				
	Aug. 24, 1954	9.56	5,S40	1960	Mar. 30, 1960	11.54	10,100
					May 7, 1960	9.17	4,040
1955	June 5, 1955	6.27	2,640				
				1961	Mar. 5, 1961	9.51	4,740
1956	Apr. 2, 1956	6.50	2,S00		Mar. 28, 1961	16.26	33,500
1957	May 31, 1957	5.74	2,200				

a At bridge 400 ft downstream; from information furnished by Corps of Engineers.
b About. c Maximum for period June to September 1953.

4630. Beaver Creek at New Hartford, Iowa

Location.--Lat 42°34'20", long 92°36'55", in SE¼SE¼ sec.28, T.90 N., R.15 W., on downstream side of center bridge pier of highway bridge, a quarter of a mile north of New Hartford, and 8 miles upstream from mouth.

Drainage area.--347 sq mi.

Gage.--Nonrecording prior to July 14, 1959; recording thereafter. Datum of gage is 881.30 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 7,300 cfs and extended above by logarithmic plotting.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 1,400 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Mar. 7, 1946	10.2	6,900	1954	June 11, 1954	7.64	1,410
1947	June 13, 1947	13.5	1S,000		June 17, 1954	8.55	1,990
1948	Feb. 28, 1948	10.9	9,240		June 22, 1954	7.86	1,530
1949	Mar. 5, 1949	10.18	6,900				
				1955	July 11, 1955	5.02	510
1950	Mar. 7, 1950	11.52	a5,000				
	Mar. 27, 1950	-	a2,000	1956	Mar. 21, 1956	3.80	200
	May 6, 1950	7.66	1,850				
	May 10, 1950	9.10	4,050	1957	May 31, 1957	7.65	1,160
	June 10, 1950	8.82	3,410				
	June 19, 1950	S.16	2,400	1958	July 16, 195S	8.68	1,560
1951	Feb. 26, 1951	10.8	8,300	1959	Mar. 15, 1959	-	a1,500
	Mar. 7, 1951	8.4	2,760		Mar. 21, 1959	11.32	6,250
	Mar. 29, 1951	11.7	11,600		Mar. 27, 1959	10.5	4,400
	Apr. 8, 1951	8.3	2,610				
	Apr. 30, 1951	8.9	3,600	1960	Mar. 30, 1960	12.40	11,200
	June 3, 1951	9.5	5,050		Apr. 18, 1960	8.89	2,060
	June 27, 1951	8.7	3,230		May 7, 1960	10.10	3,670
	July 9, 1951	8.5	2,910				
	Aug. 27, 1951	10.9	8,550	1961	Feb. 24, 1961	-	a1,700
					Mar. 5, 1961	8.49	2,010
1952	Mar. 14, 1952	7.20	1,430		Mar. 26, 1961	9.52	3,440
	Apr. 1, 1952	7.30	1,510		Apr. 24, 1961	8.65	2,190
1953	Aug. 5, 1953	7.60	1,720				

a About.

4635. Blackhawk Creek at Hudson, Iowa

Location.--Lat 42°24'30", long 92°27'45", in SW¼NE¼ sec.27, T.88 N., R.14 W., on left bank 35 ft downstream from bridge on State Highway 58 and 0.2 mile northwest of Chicago Great Western Railway tracks in the west edge of Hudson.

Drainage area.--303 sq mi.

Gage.--Recording. Datum of gage is 865.03 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 1, 1952	10.63	900	1958	July 16, 1958	14.57	2,450
1953	Feb. 21, 1953	15.46	a1,300	1959	Mar. 20, 1959	-	7,250
	June 13, 1953	12.57	1,550		Mar. 24, 1959	14.69	2,580
	July 7, 1953	13.71	2,100		Mar. 27, 1959	16.48	8,750
1954	June 2, 1954	12.73	1,590	1960	Jan. 14, 1960	12.77	1,520
	June 11, 1954	13.58	2,040		Mar. 31, 1960	16.93	a9,000
	Aug. 28, 1954	11.98	1,310		Apr. 18, 1960	14.97	2,960
					May 8, 1960	14.75	2,710
1955	Mar. 3, 1955	11.86	a830				
				1961	Feb. 20, 1961	13.52	a1,400
1956	Sept. 6, 1956	9.03	421		Feb. 23, 1961	14.93	2,950
					Mar. 7, 1961	14.09	2,310
1957	May 30, 1957	14.57	2,490		Mar. 15, 1961	12.35	1,480
	June 18, 1957	13.92	2,100		Mar. 26, 1961	11.88	1,320
1958	June 15, 1958	12.58	1,330				

a About.

4640. Cedar River at Waterloo, Iowa

Location.--Lat 42°29'40", long 92°20'00", in NW¼NW¼ sec.25, T.89 N., R.13 W., on left bank at foot of East Seventh Street, 0.3 mile upstream from Eleventh Avenue Bridge in Waterloo, and 1 mile downstream from Blackhawk Creek.

Drainage area.--5,146 sq mi.

Gage.--Recording. Datum of gage is 824.09 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--18 ft.

Remarks.--Base for partial-duration series, 13,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 16, 1929	a20.0	65,000	1945	Apr. 26, 1945	9.4	13,100
					May 25, 1945	11.2	19,400
1933	Apr. 2, 1933	b19.5	61,000		May 28, 1945	11.8	21,100
					June 2, 1945	12.8	24,700
1941	Apr. 21, 1941	9.23	11,700		Aug. 17, 1945	9.6	14,000
1942	June 4, 1942	12.22	23,000	1946	Jan. 6, 1946	12.95	25,200
	July 17, 1942	9.13	13,000		Mar. 8, 1946	12.66	24,200
	Aug. 1, 1942	12.1	22,600		Mar. 14, 1946	12.00	21,900
1943	Mar. 18, 1943	9.90	14,700	1947	Apr. 13, 1947	10.73	18,100
	Mar. 28, 1943	10.75	17,700		June 2, 1947	12.70	24,800
					June 13, 1947	18.70	55,600
1944	May 22, 1944	10.36	16,200		June 19, 1947	11.57	20,900
	June 17, 1944	13.25	26,400		July 3, 1947	10.77	18,200
1945	Mar. 17, 1945	18.38	53,300	1948	Mar. 1, 1948	15.85	38,200

a About; determined by Corps of Engineers, from information by city of Waterloo.
b About; from information by city of Waterloo.

Peak stages and discharges of Cedar River at Waterloo, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 20, 1948	14.33	30,900	1953	Aug. 7, 1953	11.29	19,800
1949	Mar. 8, 1949	12.21	23,100	1954	June 23, 1954	18.40	49,400
	Mar. 29, 1949	10.30	16,600	1955	Mar. 14, 1955	7.40	6,590
1950	Mar. 8, 1950	15.90	38,400				
	Mar. 29, 1950	13.70	28,400	1956	Apr. 4, 1956	7.09	5,920
1951	Feb. 28, 1951	11.83	21,600	1957	May 31, 1957	7.65	7,680
	Mar. 30, 1951	15.05	33,900				
	Apr. 9, 1951	18.83	56,400	1958	July 17, 1958	6.67	4,320
	Apr. 30, 1951	16.97	44,400				
	June 4, 1951	9.95	15,400	1959	Mar. 28, 1959	13.15	24,700
	June 27, 1951	17.01	44,400				
	July 10, 1951	9.73	14,400	1960	Mar. 31, 1960	18.10	48,100
	Aug. 27, 1951	10.50	17,100		May 8, 1960	10.82	17,000
1952	Mar. 22, 1952	9.62	14,100	1961	Mar. 6, 1961	9.49	13,100
	Apr. 2, 1952	13.57	28,000		Mar. 29, 1961	21.86	76,700

4645. Cedar River at Cedar Rapids, Iowa

Location.--Lat 41°58'20", long 91°40'05", in SE¼NW¼ sec.28, T.83 N., R.7 W., on right bank 500 ft upstream from Eighth Avenue Bridge in Cedar Rapids, 2.7 miles upstream from Prairie Creek, and at mile 109.0.

Drainage area.--6,510 sq mi.

Gage.--Nonrecording prior to Aug. 20, 1920; recording thereafter. Datum of gage is 700.33 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 15,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June 1851	a20	b65,000	1914	June 19, 1914	7.8	17,000
1903	May 31, 1903	16.85	53,600	1915	Feb. 25, 1915	10.3	26,800
					Mar. 28, 1915	12.0	33,600
1904	Mar. 26, 1904	6.45	11,800		June 2, 1915	11.5	31,600
					Sept.28, 1915	9.4	23,300
1905	Mar. 23, 1905	9.05	23,000				
	May 20, 1905	8.1	19,000	1916	Mar. 30, 1916	10.0	25,700
					Apr. 25, 1916	7.4	15,400
1906	Feb. 28, 1906	8.4	19,400		June 6, 1916	8.1	18,200
	Mar. 30, 1906	17.6	55,700				
				1917	Mar. 26, 1917	17.4	54,900
1907	July 20, 1907	8.5	19,800		June 13, 1917	8.3	19,000
	Aug. 17, 1907	8.2	18,600				
				1918	June 7, 1918	11.0	28,200
1908	May 30, 1908	8.8	21,000				
	June 26, 1908	8.0	17,800	1919	Mar. 20, 1919	11.4	29,700
					Apr. 15, 1919	9.4	21,800
1909	Mar. 30, 1909	9.1	22,100				
	Apr. 22, 1909	7.4	15,400	1920	Mar. 30, 1920	7.6	14,800
1910	Nov. 19, 1909	8.0	17,800	1921	June 1, 1921	8.40	17,900
	Dec. 2, 1909	7.4	15,400				
	Dec. 11, 1909	8.4	19,400	1922	Feb. 27, 1922	9.1	21,000
	Mar. 14, 1910	9.6	24,100				
				1923	Apr. 4, 1923	7.80	16,000
1911	Feb. 16, 1911	7.1	14,300				
				1924	Aug. 22, 1924	10.54	26,300
1912	Apr. 1, 1912	17.2	54,000				
				1925	June 18, 1925	7.00	12,800
1913	Mar. 18, 1913	9.2	22,500				

a About.
b Estimated.

Peak stages and discharges of Cedar River at Cedar Rapids, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Sept.21, 1926	6.70	11,500	1946	Mar. 11, 1946	9.2	21,200
					Mar. 17, 1946	9.9	23,700
1927	May 25, 1927	6.77	11,800		Sept.24, 1946	7.8	16,200
1928	Feb. 12, 1928	9.5	22,200	1947	Apr. 16, 1947	8.3	18,000
	Aug. 29, 1928	11.05	29,200		June 6, 1947	13.5	37,000
					June 16, 1947	18.23	56,200
1929	Mar. 18, 1929	20.0	64,000		July 6, 1947	8.6	19,100
	Apr. 30, 1929	9.3	21,400				
				1948	Mar. 3, 1948	12.82	34,500
1930	Feb. 24, 1930	6.90	12,200		Mar. 20, 1948	12.6	33,900
1931	Sept.26, 1931	4.10	3,270	1949	Mar. 7, 1949	11.75	30,800
					Mar. 31, 1949	8.3	18,000
1932	Nov. 28, 1931	8.4	17,900				
	Apr. 2, 1932	8.73	19,100	1950	Mar. 7, 1950	-	a25,000
	June 23, 1932	8.4	17,900		Mar. 11, 1950	12.45	33,000
					Apr. 1, 1950	9.8	23,400
1933	Apr. 4, 1933	18.6	58,400		June 26, 1950	7.9	16,600
1934	Apr. 9, 1934	5.55	8,620	1951	Feb. 27, 1951	12.51	a30,000
					Mar. 31, 1951	13.54	39,300
1935	Mar. 8, 1935	10.38	26,900		Apr. 11, 1951	17.22	54,100
					May 2, 1951	13.45	38,900
1936	Mar. 15, 1936	9.45	22,700		June 3, 1951	8.42	19,400
	Mar. 27, 1936	8.9	20,600		June 30, 1951	12.00	33,300
					July 10, 1951	8.35	19,400
1937	Feb. 21, 1937	9.3	22,300		Aug. 30, 1951	7.56	16,300
	Mar. 9, 1937	13.61	40,700				
	June 17, 1937	9.6	23,500	1952	Apr. 5, 1952	10.40	27,000
1938	Sept.21, 1938	6.93	12,900	1953	Aug. 10, 1953	7.29	15,200
1939	Mar. 18, 1939	8.67	19,700	1954	June 26, 1954	14.02	41,400
1940	Apr. 4, 1940	4.86	5,540	1955	Mar. 5, 1955	5.67	a8,100
1941	Mar. 21, 1941	8.02	17,100	1956	Apr. 6, 1956	4.69	5,400
1942	June 7, 1942	8.9	19,100	1957	June 20, 1957	6.00	9,900
	Aug. 3, 1942	12.6	33,900				
				1958	June 13, 1958	4.58	5,240
1943	Mar. 31, 1943	7.91	15,800				
				1959	Mar. 21, 1959	8.75	21,000
1944	May 25, 1944	8.5	17,900		Mar. 30, 1959	9.77	25,800
	June 18, 1944	11.43	29,100				
	June 23, 1944	9.2	20,300	1960	Jan. 13, 1960	8.60	20,400
					Apr. 2, 1960	16.75	55,100
1945	Mar. 19, 1945	17.09	52,300		May 7, 1960	11.59	32,400
	May 31, 1945	8.8	19,700				
	June 5, 1945	9.2	21,200	1961	Mar. 8, 1961	7.62	17,600
					Mar. 31, 1961	19.66	73,000
1946	Jan. 9, 1946	10.8	27,100				

a About.

4650. Cedar River near Conesville, Iowa

Location.--Lat 41°24'30", long 91°17'15", in SW¼SW¼ sec.2, T.76 N., R.4 W., on left bank 150 ft downstream from Muscatine County road C, 3½ miles northeast of Conesville, 5 miles downstream from Wapsinonoc Creek, and at mile 10.5.

Drainage area.--7,785 sq mi.

Gage.--Recording. Datum of gage is 581.95 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; shifts in relation occur.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 12,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	March 1929	15.8	-	1949	Apr. 3, 1949	12.1	17,700
1940	Mar. 19, 1940	7.11	5,490	1950	Mar. 13, 1950	14.10	34,100
	Apr. 5, 1940	7.11	5,490		Apr. 3, 1950	12.8	21,000
					June 28, 1950	11.5	14,100
1941	Mar. 24, 1941	10.68	13,200				
	Apr. 21, 1941	10.2	12,100	1951	Mar. 2, 1951	13.35	25,700
	Sept.11, 1941	10.3	12,400		Apr. 3, 1951	14.27	41,300
					Apr. 13, 1951	15.10	54,100
1942	Nov. 9, 1941	11.3	15,600		May 5, 1951	13.86	32,600
	Mar. 24, 1942	10.4	12,400		June 9, 1951	12.27	18,300
	June 10, 1942	11.8	18,000		July 3, 1951	13.50	26,600
	July 7, 1942	10.3	12,000		July 13, 1951	13.58	27,600
	Aug. 6, 1942	13.37	31,300		Sept. 1, 1951	11.20	13,200
1943	Feb. 28, 1943	11.4	17,200	1952	Mar. 13, 1952	12.54	20,000
	Mar. 18, 1943	11.3	16,600		Mar. 26, 1952	11.64	15,900
	Mar. 23, 1943	11.2	16,100		Apr. 7, 1952	13.14	23,700
	Apr. 2, 1943	11.45	17,400				
				1953	Feb. 21, 1953	12.87	22,400
1944	Apr. 24, 1944	10.3	12,400		Aug. 12, 1953	11.20	14,300
	May 12, 1944	10.6	13,300				
	May 27, 1944	12.5	23,500	1954	June 28, 1954	14.80	36,600
	June 20, 1944	13.1	29,600				
	June 27, 1944	13.93	44,500	1955	Oct. 11, 1954	10.26	10,700
1945	Mar. 21, 1945	14.49	50,900	1956	Apr. 3, 1956	7.90	5,580
	Apr. 20, 1945	11.1	14,600				
	May 1, 1945	10.4	12,400	1957	June 21, 1957	9.89	9,950
	June 2, 1945	12.3	22,200				
	June 8, 1945	12.4	23,000	1958	June 14, 1958	9.04	7,800
	June 17, 1945	10.4	12,400				
				1959	Mar. 1, 1959	10.43	11,200
1946	Jan. 10, 1946	-	32,000		Apr. 1, 1959	13.45	26,100
	Mar. 13, 1946	12.2	21,500		July 2, 1959	10.95	13,000
	Mar. 19, 1946	12.8	25,900				
	July 3, 1946	10.1	12,200	1960	Jan. 16, 1960	13.22	24,400
	Sept.26, 1946	10.7	13,300		Apr. 4, 1960	15.60	58,800
					Apr. 22, 1960	12.23	17,000
1947	Apr. 7, 1947	10.8	13,500		May 9, 1960	13.90	29,000
	Apr. 18, 1947	12.2	19,200		May 29, 1960	11.14	13,000
	June 8, 1947	14.2	37,200		June 6, 1960	12.45	18,500
	June 18, 1947	15.35	60,000				
	July 7, 1947	12.4	20,300	1961	Mar. 11, 1961	12.64	18,900
					Apr. 2, 1961	16.62	70,800
1948	Mar. 5, 1948	14.00	42,600		June 9, 1961	11.62	14,800
	Mar. 22, 1948	-	37,000		Sept.15, 1961	11.49	14,400
1949	Mar. 10, 1949	13.69	28,700				

4655. Iowa River at Wapello, Iowa

Location.--Lat 41°10'40", long 91°10'55", in NW¼SE¼ sec.27, T.74 N., R.3 W., on right bank 30 ft downstream from bridge on State Highway 99 at east edge of Wapello, 13 miles downstream from Cedar River, and at mile 15.4.

Drainage area.--12,499 sq mi.

Gage.--Nonrecording prior to Apr. 17, 1934; recording thereafter. Datum of gage is 548.98 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements. Large and frequent shifts in the relation occur; listed gage heights not corrected for shift. Left bank leveed above and below gage. One or more breaks in the levees occurred before the peak discharge in 1918, 1929, and 1947, affecting the high-stage relation until repairs were made.

Bankfull stage.--10 ft. Levees protect lowland.

Remarks.--Maximum daily discharge for 1903-14 was estimated by Corps of Engineers from Mississippi River records. Since peak discharge at this station rarely exceeds the corresponding daily discharge by more than five percent, these estimates are listed as annual flood peaks. Flow regulated by Coralville Reservoir (capacity, 492,000 acre-ft) beginning Sept. 17, 1958. Base for partial-duration series, 20,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	June 3, 1903	-	88,700	1924	June 28, 1924	11.3	40,700
1904	Mar. 27, 1904	-	20,600		July 24, 1924	8.6	26,900
1905	Mar. 26, 1905	-	37,800		Aug. 23, 1924	10.4	35,500
1906	Apr. 2, 1906	-	73,800	1925	June 21, 1925	5.2	12,900
1907	July 23, 1907	-	37,300				
1908	June 2, 1908	-	32,400	1926	Sept.25, 1926	11.8	43,500
1909	Apr. 2, 1909	-	31,800				
1910	Mar. 17, 1910	-	37,600	1927	Feb. 5, 1927	7.6	22,500
					Apr. 20, 1927	9.7	32,200
1911	Feb. 19, 1911	-	29,400		May 26, 1927	10.1	34,200
1912	Apr. 3, 1912	14.3	58,000		June 22, 1927	8.3	25,600
1913	Mar. 21, 1913	-	35,000				
1914	June 22, 1914	-	27,000	1928	Oct. 9, 1927	9.1	29,200
					Feb. 16, 1928	9.2	28,800
1915	Feb. 26, 1915	11.5	41,800		Mar. 15, 1928	8.0	24,200
	Apr. 1, 1915	10.3	35,300		Sept. 3, 1928	9.0	28,800
	June 6, 1915	10.6	36,800				
	July 31, 1915	7.7	22,600	1929	Nov. 20, 1928	8.8	27,800
					Mar. 21, 1929	14.6	72,200
1916	Oct. 2, 1915	10.6	36,800		Apr. 13, 1929	8.1	24,600
	Jan. 28, 1916	8.4	25,800		Apr. 21, 1929	8.8	27,800
	Mar. 28, 1916	12.7	48,900		Apr. 26, 1929	8.6	26,900
	June 10, 1916	7.5	22,100		May 4, 1929	9.4	30,700
1917	Mar. 29, 1917	13.2	52,000	1930	Feb. 27, 1930	8.5	26,500
	June 15, 1917	11.9	44,100		June 17, 1930	13.5	52,200
1918	Feb. 14, 1918	7.6	22,500	1931	Sept.27, 1931	3.1	6,740
	May 29, 1918	9.8	32,700				
	June 8, 1918	15.0	77,000	1932	Dec. 2, 1931	8.8	27,800
					Apr. 5, 1932	8.3	25,600
1919	Mar. 23, 1919	10.8	38,100		June 27, 1932	8.0	24,200
	Apr. 19, 1919	9.7	32,200				
	May 7, 1919	10.3	35,200	1933	Apr. 7, 1933	15.4	62,000
	June 8, 1919	7.4	21,600		May 24, 1933	9.2	28,600
	June 27, 1919	7.4	21,600				
				1934	Apr. 11, 1934	3.3	7,230
1920	Nov. 13, 1919	7.8	23,400				
	Mar. 18, 1920	7.2	20,900	1935	Mar. 12, 1935	11.0	35,500
	Mar. 29, 1920	9.7	32,200		June 21, 1935	8.0	21,600
	Apr. 20, 1920	7.9	23,800		June 29, 1935	8.1	22,100
	May 15, 1920	7.3	21,300				
				1936	Mar. 18, 1936	11.6	36,500
1921	Sept.24, 1921	9.6	32,400				
				1937	Feb. 23, 1937	-	37,600
1922	Mar. 2, 1922	8.6	26,500		Mar. 7, 1937	14.6	53,800
	Apr. 13, 1922	7.6	22,500		June 21, 1937	8.9	25,600
1923	Apr. 7, 1923	9.6	31,700				

Peak stages and discharges of Iowa River at Wapello, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	June 15, 1938	8.2	21,200	1950	Apr. 4, 1950	8.5	23,800
					June 21, 1950	8.6	25,000
1939	Mar. 14, 1939	11.3	37,000		June 28, 1950	8.2	23,400
1940	Mar. 21, 1940	3.7	7,780	1951	Feb. 20, 1951	10.12	a27,000
					Feb. 27, 1951	8.46	24,600
1941	Mar. 25, 1941	7.1	16,600		Mar. 3, 1951	10.30	32,300
					Apr. 4, 1951	13.75	50,300
1942	Nov. 6, 1941	8.5	24,100		Apr. 14, 1951	16.14	67,000
	June 15, 1942	9.3	27,200		May 5, 1951	11.95	40,800
	Aug. 7, 1942	11.1	36,300		May 11, 1951	10.28	32,300
					June 10, 1951	9.77	29,800
1943	Mar. 1, 1943	8.0	21,700		July 4, 1951	11.06	36,300
	Mar. 25, 1943	8.3	22,800		July 14, 1951	9.86	30,300
	Apr. 3, 1943	7.8	20,600				
	May 19, 1943	8.0	21,500	1952	Nov. 14, 1951	7.43	20,200
	Aug. 4, 1943	8.7	24,400		Jan. 20, 1952	11.76	a21,000
					Mar. 14, 1952	12.10	41,300
1944	Mar. 17, 1944	7.7	21,000		Apr. 8, 1952	10.46	33,300
	Apr. 25, 1944	9.7	29,000				
	May 12, 1944	7.7	20,100	1953	Feb. 23, 1953	10.42	32,800
	May 25, 1944	14.7	54,100				
	June 21, 1944	14.2	51,800	1954	June 29, 1954	11.98	40,800
	June 28, 1944	13.0	45,400				
				1955	Feb. 21, 1955	10.07	a24,000
1945	Mar. 22, 1945	14.8	56,400		Apr. 25, 1955	8.26	23,000
	Apr. 20, 1945	8.4	23,800				
	May 18, 1945	8.5	24,000	1956	Sept. 1, 1956	4.18	9,340
	June 3, 1945	9.8	30,100				
				1957	June 22, 1957	5.89	14,200
1946	Jan. 8, 1946	14.0	51,400				
	Mar. 14, 1946	9.5	28,700	1958	Feb. 27, 1958	6.48	13,000
	Mar. 20, 1946	11.4	37,700				
	June 21, 1946	8.0	22,200	1959	Mar. 1, 1959	8.68	23,100
					Mar. 22, 1959	11.52	37,200
1947	Apr. 8, 1947	10.2	31,800		Apr. 3, 1959	11.35	36,600
	Apr. 22, 1947	11.0	35,800				
	June 9, 1947	16.5	71,000	1960	Jan. 16, 1960	12.63	43,600
	June 18, 1947	16.1	94,000		Apr. 5, 1960	17.02	69,000
					Apr. 23, 1960	10.10	29,000
1948	Mar. 1, 1948	11.1	36,200		May 10, 1960	12.42	40,500
	Mar. 7, 1948	12.0	40,800		June 6, 1960	9.76	27,600
	Mar. 21, 1948	14.7	60,000		June 13, 1960	9.60	26,800
1949	Mar. 11, 1949	12.7	44,300	1961	Mar. 11, 1961	10.88	32,700
	Apr. 3, 1949	8.8	25,800		Apr. 3, 1961	16.85	68,000
					Sept.16, 1961	8.07	20,800
1950	Mar. 14, 1950	12.8	44,800				

a About.

EDWARDS RIVER BASIN

4660. Edwards River near Orion, Ill.

Location.--Lat 41°16'20", long 90°22'40", in NE¼SE¼ sec.21, T.15 N., R.1 E., on left bank at downstream side of bridge on U.S. Highway 150, 1.5 miles north of Opheim, and 5.5 miles south of Orion.

Drainage area.--163 sq mi.

Gage.--Nonrecording prior to Apr. 4, 1941; recording thereafter. Datum of gage is 653.96 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,800 cfs.

Peak stages and discharges of Edwards River near Orion, Ill.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1924	August 1924	a20.2	-	-	1950	Feb. 28, 1950	7.8	-	1,990
						Mar. 4, 1950	9.0	-	2,960
1941	Feb. 13, 1941	9.45	-	1,780		Apr. 24, 1950	11.21	-	5,420
						June 18, 1950	9.1	-	3,050
1942	Oct. 3, 1941	10.8	-	2,240					
	Oct. 6, 1941	11.01	-	2,320	1951	Feb. 11, 1951	-	-	c2,500
	Feb. 6, 1942	9.5	-	1,810		Feb. 19, 1951	13.41	-	8,910
	Mar. 16, 1942	10.1	-	2,010		May 10, 1951	11.79	-	6,350
	Aug. 29, 1942	10.5	-	2,140		July 9, 1951	8.15	-	2,310
						Aug. 29, 1951	9.07	-	3,050
1943	Dec. 27, 1942	11.0	-	2,530					
	Feb. 3, 1943	11.82	2.3	2,560	1952	Jan. 15, 1952	d11.49	-	-
	Apr. 27, 1943	11.1	-	2,560		Mar. 11, 1952	7.33	-	1,660
1944	Mar. 15, 1944	9.8	-	2,150	1953	July 6, 1953	10.89	-	5,000
	Apr. 23, 1944	9.92	-	2,180					
	May 24, 1944	9.0	-	1,880	1954	June 1, 1954	9.18	-	2,310
	June 14, 1944	9.5	-	2,050					
					1955	Oct. 10, 1954	12.69	-	4,040
1945	May 14, 1945	11.35	-	2,940		Jan. 5, 1955	8.44	-	1,950
	May 17, 1945	9.2	-	2,110		Feb. 20, 1955	10.41	-	2,850
						Apr. 24, 1955	8.90	-	2,180
1946	Jan. 5, 1946	12.85	-	4,560		June 6, 1955	8.78	-	2,080
	Jan. 9, 1946	10.4	-	2,990		June 11, 1955	8.73	-	2,080
1947	Apr. 6, 1947	12.58	-	4,420	1956	Feb. 24, 1956	11.55	-	3,100
	Apr. 20, 1947	10.4	-	2,990					
	June 2, 1947	9.1	-	2,380	1957	Apr. 4, 1957	4.88	-	725
	June 29, 1947	9.7	-	2,660					
					1958	Feb. 25, 1958	-	-	c2,000
1948	Feb. 16, 1948	8.3	-	1,980		June 10, 1958	12.97	-	4,200
	Feb. 27, 1948	11.97	-	3,930		June 13, 1958	9.83	-	2,310
	Mar. 14, 1948	10.0	-	2,700					
	Mar. 19, 1948	11.2	-	3,460	1959	Feb. 24, 1959	-	-	c2,000
	July 21, 1948	8.7	-	2,300					
					1960	Mar. 29, 1960	d13.27	-	-
1949	Feb. 13, 1949	12.6	3.9	2,200		Mar. 30, 1960	11.78	-	3,550
	Feb. 19, 1949	13.40	b5.7	-		Apr. 2, 1960	8.25	-	1,860
	Mar. 31, 1949	8.2	-	1,940		Apr. 17, 1960	10.09	-	2,720
	June 14, 1949	8.5	-	2,160		June 13, 1960	9.75	-	2,580
	June 25, 1949	10.7	-	3,210					
					1961	Sept.14, 1961	8.26	-	1,900
1950	Jan. 24, 1950	8.3	-	2,390					

a From high-water mark of Corps of Engineers. b Greater than figure shown.
c About. d Affected by ice.

4665. Edwards River near New Boston, Ill.

Location.--Lat 41°11'15", long 90°58'05", at quarter corner between secs. 21 and 28, T.14 N., R.5W., on left bank at downstream side of bridge on State Highway 17, 1½ miles northeast of New Boston, and 5 miles upstream from mouth.

Drainage area.--434 sq mi.

Gage.--Nonrecording prior to Mar. 1, 1941; recording thereafter. Datum of gage is 529.92 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1935	Nov. 30, 1934	17.8	-	2,250	1937	Feb. 21, 1937	19.74	1.1	a2,900
	Dec. 3, 1934	17.2	-	1,900					
	Jan. 8, 1935	18.65	-	3,000	1938	Jan. 24, 1938	18.2	-	2,590
	May 4, 1935	17.4	-	2,000		Jan. 29, 1938	19.60	b2.9	-
	June 2, 1935	16.9	-	1,760		May 28, 1938	17.5	-	2,060
	June 20, 1935	17.6	-	2,120		June 11, 1938	17.8	-	2,250
	July 3, 1935	18.0	-	2,400		June 15, 1938	18.48	-	2,890
						July 8, 1938	18.4	-	2,790
1936	Feb. 27, 1936	20.16	1.4	3,200					

a Estimated.
b Greater than figure shown.

Peak stages and discharges of Edwards River near New Boston, Ill.--Contirued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Mar. 12, 1939	18.96	-	4,680	1950	Mar. 5, 1950	19.35	0.e	2,500
	July 4, 1939	17.9	-	2,380		Apr. 26, 1950	20.56	-	7,280
	Aug. 17, 1939	18.9	-	4,330		June 20, 1950	19.15	-	3,600
						July 21, 1950	17.8	-	1,880
1940	Mar. 7, 1940	17.53	-	2,090					
					1951	Feb. 19, 1951	20.07	-	5,850
1941	Feb. 13, 1941	15.93	-	1,230		Mar. 31, 1951	18.00	-	1,980
						Apr. 14, 1951	17.42	-	1,720
1942	Oct. 10, 1941	18.15	-	2,100		May 12, 1951	20.63	-	7,280
						June 22, 1951	17.68	-	1,840
1943	Dec. 29, 1942	19.0	-	4,680		June 24, 1951	17.84	-	1,880
	Feb. 4, 1943	17.6	-	1,750		July 11, 1951	17.87	-	1,930
	Feb. 10, 1943	19.88	b2.3	-					
	Apr. 29, 1943	18.97	-	4,680	1952	Mar. 14, 1952	18.61	-	2,460
	May 16, 1943	17.8	-	1,850		Mar. 23, 1952	17.91	-	1,930
	May 21, 1943	18.38	-	2,520					
	June 7, 1943	18.41	-	2,610	1953	Feb. 20, 1953	17.82	-	1,880
						July 9, 1953	17.55	-	1,800
1944	Mar. 17, 1944	18.83	-	3,120					
	Apr. 25, 1944	19.04	-	3,680	1954	June 3, 1954	18.32	-	2,050
	May 23, 1944	18.0	-	1,800					
	June 26, 1944	18.6	-	2,400	1955	Oct. 13, 1954	21.46	-	7,020
						Jan. 8, 1955	18.47	-	1,900
1945	May 10, 1945	18.2	-	1,930		Feb. 22, 1955	20.09	-	3,840
	May 17, 1945	19.15	-	3,840		Apr. 26, 1955	19.44	-	4,340
1946	Jan. 7, 1946	20.17	-	6,050	1956	July 8, 1956	18.67	-	2,540
	Jan. 12, 1946	18.5	-	2,160					
	June 18, 1946	18.7	-	2,350	1957	Apr. 6, 1957	15.27	-	1,000
1947	Apr. 7, 1947	19.67	-	5,150	1958	Feb. 27, 1958	d20.17	-	e3,200
	Apr. 22, 1947	18.99	-	3,200		June 13, 1958	19.65	-	4,840
	June 10, 1947	18.5	-	2,160		July 14, 1958	18.70	-	2,600
	June 18, 1947	18.0	-	1,930		Aug. 1, 1958	18.53	-	2,420
	July 1, 1947	19.45	-	4,550					
	July 6, 1947	17.5	-	1,760	1959	Feb. 14, 1959	-	-	e2,300
						Feb. 24, 1959	-	-	e3,500
1948	Mar. 1, 1948	19.57	-	3,920		Feb. 26, 1959	d19.77	-	-
	Mar. 15, 1948	c19.0	-	2,760					
	Mar. 19, 1948	19.45	-	3,640	1960	Oct. 7, 1959	19.54	-	3,140
	July 5, 1948	19.1	-	2,830		Jan. 15, 1960	19.04	-	2,350
						Apr. 1, 1960	20.77	-	6,250
1949	Feb. 14, 1949	19.4	-	3,500		Apr. 20, 1960	19.08	-	2,200
	Feb. 25, 1949	20.03	b2.7	-		June 16, 1960	19.05	-	2,450
	June 27, 1949	18.4	-	2,240					
					1961	Sept.14, 1961	-	-	4,200
1950	Jan. 26, 1950	19.55	1.0	2,200					

b Greater than figure shown. c Doubtful gage height. d Ice jam. e About.

POPE CREEK BASIN

4670. Pope Creek near Keithsburg, Ill.

Location.--Lat 41°07'45", long 90°55'10", in SE¼ sec.11, T.13 N., R.5 W., near center of span on downstream side of highway bridge, 2 miles northeast of Keithsburg, and 3.3 miles upstream from mouth.

Drainage area.--171 sq mi.

Gage.--Nonrecording. Crest-stage gage since September 1945. Datum of gage is 524.07 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Nov. 30, 1934	23.0	1,980	1936	Nov. 3, 1935	21.4	1,360
	Jan. 8, 1935	21.5	1,400		Feb. 26, 1936	23.16	2,210
	May 3, 1935	23.2	2,070		Sept.16, 1936	20.8	1,160
	May 28, 1935	20.4	1,030		Sept.27, 1936	21.8	1,500
	June 2, 1935	21.4	1,440				
	June 18, 1935	24.00	2,530	1937	Feb. 21, 1937	a28.00	2,000
	July 4, 1935	23.3	2,120		Mar. 4, 1937	22.1	1,620

a Backwater from ice, 5.0 ft.

Peak stages and discharges of Pope Creek near Keithsburg, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	June 1, 1937	21.0	1,220	1949	June 15, 1949	20.7	1,080
					June 25, 1949	23.0	1,950
1938	Jan. 24, 1938	24.95	3,200				
	Jan. 30, 1938	b23.1	1,000	1950	Mar. 6, 1950	22.8	1,850
	May 17, 1938	22.1	1,610		Apr. 25, 1950	26.19	4,180
	June 11, 1938	21.9	1,550		June 19, 1950	24.0	2,520
	June 15, 1938	21.3	1,370		July 20, 1950	22.2	1,610
	July 7, 1938	21.5	1,430				
	Aug. 8, 1938	21.1	1,310	1951	Feb. 11, 1951	21.10	1,160
					Feb. 19, 1951	24.97	3,140
1939	Mar. 12, 1939	26.24	4,230		Mar. 30, 1951	21.21	1,190
	Aug. 8, 1939	21.2	1,300		Apr. 28, 1951	24.90	3,060
	Aug. 17, 1939	22.2	1,640		May 11, 1951	25.91	3,860
					July 9, 1951	23.10	1,890
1940	Mar. 3, 1940	19.30	795		July 22, 1951	23.45	2,040
1941	June 3, 1941	20.74	1,120	1952	Mar. 22, 1952	22.42	1,600
					Apr. 23, 1952	21.14	1,160
1942	July 6, 1942	21.77	1,520		June 21, 1952	20.85	1,060
	July 14, 1942	21.1	1,310				
				1953	Feb. 20, 1953	21.77	1,390
1943	Feb. 5, 1943	-	2,000		July 6, 1953	23.21	2,040
	Feb. 6, 1943	23.35	-				
				1954	Mar. 25, 1954	22.41	1,600
1944	Mar. 15, 1944	21.8	1,480		June 1, 1954	20.91	1,100
	Apr. 23, 1944	23.6	2,340				
	May 23, 1944	23.99	2,580	1955	Oct. 11, 1954	25.12	2,090
					Jan. 5, 1955	22.38	1,190
1945	Mar. 26, 1945	20.4	1,060		Feb. 21, 1955	c26.64	d1,800
	May 7, 1945	22.2	1,610		Apr. 24, 1955	23.10	1,360
	May 16, 1945	23.11	2,000				
				1956	Oct. 6, 1955	24.56	1,840
1946	Jan. 5, 1946	25.39	3,520		July 8, 1956	22.74	1,260
	Jan. 9, 1946	23.5	2,220				
				1957	July 4, 1957	20.11	671
1947	Apr. 5, 1947	24.2	2,650				
	Apr. 20, 1947	21.8	1,450	1958	Feb. 27, 1958	22.15	1,090
	July 1, 1947	25.66	3,600		June 11, 1958	26.06	2,660
	Sept.21, 1947	20.8	1,130		June 14, 1958	23.80	1,610
					July 31, 1958	26.52	3,040
1948	Feb. 27, 1948	25.1	3,300				
	Mar. 15, 1948	20.6	1,070	1959	May 30, 1959	22.94	1,320
	Mar. 19, 1948	25.57	3,670				
	July 5, 1948	24.8	3,070	1960	Oct. 6, 1959	25.55	2,520
	July 21, 1948	20.7	1,070		Jan. 13, 1960	22.00	1,090
					Mar. 30, 1960	26.69	3,500
1949	Jan. 16, 1949	20.5	1,010		Apr. 17, 1960	24.20	1,690
	Feb. 13, 1949	22.9	1,900				
	Feb. 19, 1949	23.10	1,950	1961	Sept.13, 1961	24.30	1,730
	Feb. 24, 1949	21.2	1,240				

b Backwater from ice, 2.8 ft.
c Ice jam.
d About.

HENDERSON CREEK BASIN

4675. Henderson Creek near Little York, Ill.

Location.--Lat 41°02'35", long 90°44'45", between secs. 8 and 9, T.12 N., R.3 W., near center of span on upstream side of bridge on State Highways 94 and 135, 1.3 miles upstream from Duck Creek, 2.2 miles north of Little York, and 3.8 miles upstream from North Henderson Creek.

Drainage area.--151 sq mi.

Gage.--Nonrecording. Crest-stage gage since September 1946. Datum of gage is 566.24 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 900 cfs. Only annual peaks are shown after 1958.

Peak stages and discharges of Henderson Creek near Little York, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	June 28, 1924	a23.2	-	1950	Mar. 1, 1950	c13.0	1,000
					Mar. 5, 1950	12.2	1,280
1941	Feb. 13, 1941	b10.92	708		Apr. 25, 1950	17.65	8,250
					June 15, 1950	12.0	1,220
1942	Oct. 5, 1941	11.6	1,020		June 19, 1950	15.2	2,840
	Oct. 9, 1941	14.53	2,100		July 19, 1950	13.0	1,580
	Feb. 8, 1942	11.6	1,020				
	July 8, 1942	13.8	1,770	1951	Feb. 13, 1951	-	d1,000
					Feb. 19, 1951	15.41	3,090
1943	Dec. 29, 1942	12.8	1,350		Mar. 30, 1951	10.97	982
	Feb. 5, 1943	13.7	1,720		Apr. 28, 1951	11.15	1,030
	Apr. 28, 1943	11.8	1,160		May 11, 1951	12.26	1,390
	May 21, 1943	11.3	1,020		July 3, 1951	12.00	1,300
	June 5, 1943	15.43	3,000		July 9, 1951	12.20	1,360
					July 24, 1951	14.68	2,560
1944	Mar. 17, 1944	14.12	2,110				
	Apr. 25, 1944	13.2	1,660	1952	June 21, 1952	11.30	1,160
					Aug. 21, 1952	10.20	914
1945	May 8, 1945	13.9	1,990				
	May 15, 1945	14.56	2,420	1953	July 6, 1953	12.00	1,360
	June 10, 1945	11.4	1,040				
				1954	June 2, 1954	13.30	1,790
1946	Jan. 6, 1946	14.14	2,110				
	Jan. 9, 1946	12.2	1,280	1955	Feb. 20, 1955	13.66	1,970
					Apr. 23, 1955	10.65	1,050
1947	Apr. 6, 1947	15.84	3,500		June 7, 1955	12.54	1,540
	June 7, 1947	11.4	1,040				
	July 1, 1947	12.6	1,420	1956	July 9, 1956	13.54	1,870
1948	Feb. 29, 1948	14.0	1,990	1957	June 13, 1957	11.52	1,220
	Mar. 16, 1948	10.9	912				
	Mar. 20, 1948	16.55	5,400	1958	Feb. 26, 1958	13.00	d1,100
					June 12, 1958	13.50	1,870
1949	Jan. 28, 1949	11.0	937				
	Feb. 14, 1949	15.04	2,700	1960	Mar. 29, 1960	15.60	3,250
	Feb. 19, 1949	14.8	2,560				
	June 26, 1949	12.5	1,390	1961	Sept.14, 1961	11.82	1,300

a From floodmark. b Backwater from ice, 0.9 ft. c Backwater from ice, 1.7 ft.
d About.

4680. North Henderson Creek near Seaton, Ill.

Location.--Lat 41°05'25", long 90°46'25", near center of sec.30, T.13 N., R.3 W., at bridge on county road, 1.1 miles upstream from Snake Creek, 1.6 miles southeast of Seaton, and 6 miles upstream from mouth.

Drainage area.--66.4 sq mi.

Gage.--Nonrecording. Datum of gage is 581.43 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 580 cfs. Only annual peaks are shown prior to 1951.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1935	May 1935	a15.7	-	-	1948	Mar. 20, 1948	13.67	-	1,380
					1949	Feb. 13, 1949	13.81	0.4	b1,200
1941	Feb. 13, 1941	11.00	0.4	b530	1950	Apr. 24, 1950	14.27	-	1,740
1942	July 6, 1942	12.74	-	833					
1943	Feb. 3, 1943	12.54	c.9	-	1951	Feb. 12, 1951	12.16	-	821
	Feb. 4, 1943	-	-	726		Feb. 19, 1951	13.81	-	1,440
1944	Apr. 23, 1944	12.62	-	951		Apr. 28, 1951	11.97	-	785
1945	May 15, 1945	13.08	-	1,120		May 10, 1951	13.11	-	1,050
						July 9, 1951	13.36	-	1,200
1946	Jan. 5, 1946	13.65	-	1,320		July 22, 1951	13.83	-	1,440
1947	June 29, 1947	13.34	-	1,150					

a From floodmarks.
b About.
c Greater than figure shown.

4685. Cedar Creek at Little York, Ill.

Location.--Lat 41°00'50", long 90°44'45", between secs. 20 and 21, T.12 N., R.3 W., near center of span on downstream side of bridge or State Highway 135 at north edge of Little York, 1.5 miles upstream from Davids Creek, and 6.7 miles upstream from mouth.

Drainage area.--128 sq mi.

Gage.--Nonrecording. Crest-stage gage since September 1943. Datum of gage is 574.27 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measuremerts.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	June 1924	a18.1	-	1949	Feb. 19, 1949	15.1	3,370
					June 25, 1949	14.0	1,020
1941	May 31, 1941	13.97	1,090				
				1950	Apr. 24, 1950	16.70	7,470
1942	Oct. 4, 1941	14.57	1,690		June 15, 1950	14.3	1,200
	Oct. 7, 1941	15.11	3,460		June 19, 1950	16.2	6,150
	Oct. 9, 1941	14.85	2,460		July 17, 1950	14.9	2,740
	Oct. 13, 1941	13.5	963				
	Feb. 6, 1942	13.8	1,040	1951	Feb. 19, 1951	14.91	2,740
					July 24, 1951	14.70	2,210
1943	Dec. 27, 1942	14.0	1,090				
	Feb. 3, 1943	14.4	1,300	1952	June 21, 1952	13.75	965
	June 4, 1943	14.49	1,420				
				1953	June 10, 1953	14.90	2,600
1944	Mar. 15, 1944	14.70	2,780				
	Apr. 23, 1944	14.40	1,680	1954	Mar. 25, 1954	13.96	1,020
					June 1, 1954	15.00	3,000
1945	Mar. 26, 1945	13.9	1,030				
	May 8, 1945	14.80	2,370	1955	Feb. 21, 1955	14.17	1,070
	May 15, 1945	14.67	1,810		Apr. 24, 1955	14.04	940
	June 16, 1945	14.58	1,550		June 7, 1955	13.92	910
1946	Jan. 5, 1946	14.90	2,680	1956	Oct. 6, 1955	13.95	940
	Jan. 9, 1946	14.2	1,090		July 4, 1956	14.30	1,190
	June 12, 1946	15.35	4,250		July 9, 1956	17.04	8,260
	June 18, 1946	13.5	900				
				1958	Feb. 25, 1958	b13.90	-
1947	Apr. 5, 1947	14.85	2,300		June 10, 1958	13.53	790
	June 7, 1947	14.86	2,510				
	June 29, 1947	14.85	2,300	1959	Feb. 14, 1959	-	c1,100
					Feb. 24, 1959	b14.70	c1,300
1948	Feb. 28, 1948	14.90	2,680				
	Mar. 20, 1948	15.95	5,630	1960	Oct. 6, 1959	13.89	910
	July 21, 1948	13.6	919		Mar. 29, 1960	15.34	2,800
	July 26, 1948	13.5	900		June 23, 1960	14.95	1,800
1949	Jan. 15, 1949	13.5	900	1961	Sept.14, 1961	14.87	1,540
	Feb. 14, 1949	15.24	3,900				

a From floodmark.
b Affected by ice.
c About.

4690. Henderson Creek near Oquawka, Ill.

Location.--Lat 41°00'05", long 90°51'15", in NE¼SW¼ sec.28, T.12 N., R.4 W., on left bank at downstream side of bridge on State Highway 94, 1 mile south of Bald Bluff, 6½ miles northeast of Oquawka, and 22 miles upstream from mouth.

Drainage area.--428 sq mi.

Gage.--Nonrecording prior to March 1941; recording thereafter. Datum of gage is 541.67 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges of Henderson Creek near Oquawka, Ill.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1924	June 1924	a27.8	-	-
1935	June 2, 1935	23.70	-	4,720
1936	Nov. 4, 1935	23.8	-	4,910
	Feb. 27, 1936	25.26	0.6	b6,800
1937	Feb. 21, 1937	24.20	1.4	b3,100
	June 1, 1937	22.4	-	2,650
1938	Jan. 25, 1938	25.6	1.7	5,000
	Jan. 31, 1938	24.2	1.6	2,900
	Feb. 6, 1938	23.4	1.0	2,600
	Apr. 7, 1938	22.0	-	2,250
	May 18, 1938	22.6	-	2,890
	July 3, 1938	22.4	-	2,650
	Aug. 9, 1938	25.46	-	5,840
1939	Mar. 13, 1939	25.60	-	8,920
	June 27, 1939	22.2	-	2,440
	Aug. 17, 1939	22.5	-	2,090
1940	Mar. 4, 1940	22.75	.7	2,240
1941	Feb. 13, 1941	22.95	.3	3,460
1942	Oct. 5, 1941	22.95	-	2,460
	Oct. 10, 1941	25.22	-	5,330
	Oct. 14, 1941	22.50	-	2,090
	Feb. 7, 1942	22.50	-	2,760
	July 8, 1942	22.75	-	2,530
1943	Dec. 28, 1942	22.95	-	2,700
	Feb. 4, 1943	23.40	-	3,780
	Feb. 5, 1943	23.75	c.4	-
	May 21, 1943	22.40	-	2,010
	June 5, 1943	23.20	-	3,270
1944	Mar. 16, 1944	23.92	-	5,850
	Apr. 24, 1944	23.70	-	4,630
1945	Mar. 27, 1945	22.85	-	2,220
	May 8, 1945	24.05	-	4,450
	May 16, 1945	24.67	-	5,650
	June 17, 1945	23.20	-	2,720
1946	Jan. 6, 1946	26.01	-	8,060
	Jan. 10, 1946	23.55	-	3,280
	June 13, 1946	24.05	-	4,140
	June 19, 1946	22.85	-	2,010
1947	Apr. 6, 1947	25.11	-	6,020
	June 7, 1947	23.80	-	3,620
	July 1, 1947	24.55	-	5,050
1948	Feb. 28, 1948	24.45	-	4,680
1948	Mar. 16, 1948	22.85	-	2,010
	Mar. 20, 1948	26.22	-	9,030
1949	Jan. 16, 1949	22.95	-	2,220
	Feb. 15, 1949	25.10	-	6,510
	Feb. 20, 1949	24.65	-	5,450
	June 26, 1949	23.85	-	3,850
1950	Feb. 9, 1950	23.50	0.6	2,090
	Mar. 4, 1950	-	-	d2,200
	Apr. 25, 1950	28.17	-	16,500
	June 16, 1950	23.70	-	3,330
	June 19, 1950	26.3	-	9,250
	July 19, 1950	24.50	-	5,070
1951	Feb. 13, 1951	-	-	b3,400
	Feb. 19, 1951	26.15	-	9,000
	Mar. 30, 1951	23.31	-	2,630
	Apr. 28, 1951	23.55	-	3,040
	May 11, 1951	23.88	-	3,750
	July 10, 1951	23.56	-	2,670
	July 23, 1951	24.76	-	4,180
1952	Mar. 12, 1952	22.94	-	2,150
	June 21, 1952	23.79	-	3,540
1953	Feb. 20, 1953	22.87	-	2,020
1954	Mar. 25, 1954	22.93	-	2,150
	June 2, 1954	24.28	-	4,620
1955	Feb. 21, 1955	25.81	-	4,600
1956	Feb. 25, 1956	23.92	-	2,580
	July 9, 1956	26.30	-	6,000
1957	June 13, 1957	22.63	-	1,760
1958	Feb. 26, 1958	23.70	-	2,480
	June 1, 1958	23.17	-	2,120
	June 12, 1958	24.33	-	3,310
	June 14, 1958	24.27	-	3,240
1959	Feb. 11, 1959	e24.95	-	b2,300
	Feb. 15, 1959	-	-	b2,500
	Feb. 24, 1959	24.47	-	3,500
1960	Oct. 7, 1959	24.28	-	3,220
	Mar. 30, 1960	26.48	-	7,750
	Apr. 18, 1960	23.97	-	2,660
	June 24, 1960	23.63	-	2,310
	July 26, 1960	23.66	-	2,310
1961	Sept.14, 1961	24.57	-	3,130

a From floodmarks. b About. c Greater than figure shown. d Estimated.
e Backwater from ice.

4695. South Henderson Creek at Biggsville, Ill.

Location.--Lat 40°51'25", long 90°51'50", between secs. 16 and 17, T.10 N., R.4 W., near center of span on downstream side of bridge on State Highway 94 at north edge of Biggsville, 1.5 miles downstream from Old Tom Creek and 6.4 miles upstream from mouth.

Drainage area.--81.4 sq mi.

Gage.--Nonrecording. Crest-stage gage since September 1946. Datum of gage is 618.02 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges of South Henderson Creek at Biggsville, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	-	a19	-	1949	Feb. 14, 1949	9.43	1,530
					Feb. 17, 1949	9.0	1,360
1940	Mar. 3, 1940	9.10	1,250		July 29, 1949	8.2	1,020
1941	May 31, 1941	11.58	2,450	1950	Feb. 8, 1950	9.2	1,440
					Apr. 24, 1950	14.6	4,270
1942	Oct. 3, 1941	10.6	1,950		June 19, 1950	16.05	5,300
	Oct. 7, 1941	14.48	3,900		July 17, 1950	9.0	1,360
	Oct. 9, 1941	10.9	2,100		Aug. 10, 1950	8.8	1,270
	Oct. 13, 1941	8.4	1,040				
				1951	Feb. 11, 1951	9.90	1,760
1943	Dec. 27, 1942	9.3	1,330		Feb. 19, 1951	12.13	2,800
	Feb. 3, 1943	9.60	1,450				
	June 4, 1943	8.9	1,190	1952	June 14, 1952	8.10	1,020
					June 20, 1952	8.35	1,110
1944	Mar. 15, 1944	10.08	1,840				
	Apr. 23, 1944	10.0	1,800	1953	June 11, 1953	8.56	1,190
1945	Mar. 25, 1945	8.9	1,350	1954	Apr. 6, 1954	7.75	1,000
	May 7, 1945	8.4	1,150		June 1, 1954	8.97	1,420
	May 15, 1945	8.8	1,310		Aug. 17, 1954	9.06	1,460
	June 16, 1945	14.37	3,980				
				1955	Feb. 19, 1955	9.80	1,730
1946	Jan. 5, 1946	12.3	2,900		Sept.29, 1955	9.20	1,460
	Jan. 9, 1946	9.1	1,430				
	June 12, 1946	18.50	6,700	1956	Feb. 24, 1956	8.45	1,210
	June 18, 1946	10.4	1,980		July 8, 1956	11.66	2,600
1947	Apr. 5, 1947	9.9	1,760	1957	June 28, 1957	4.95	158
	June 6, 1947	10.7	2,120				
	June 13, 1947	9.4	1,530	1958	Feb. 25, 1958	b9.19	-
	June 30, 1947	11.86	2,700		June 10, 1958	7.80	1,000
1948	Feb. 27, 1948	8.2	1,020	1959	Feb. 23, 1959	8.51	1,240
	Mar. 19, 1948	15.62	4,690				
	July 5, 1948	8.4	1,110	1960	Mar. 28, 1960	9.17	1,490
	July 21, 1948	8.4	1,110				
	July 25, 1948	9.0	1,360	1961	Sept.13, 1961	8.15	1,140

a From information by local residents.
b Affected by ice jam.

ELLISON CREEK BASIN

4697.5. Ellison Creek tributary near Roseville, Ill.

Location.--Lat 40°44'00", long 90°45'35", near quarter section corner between secs. 29 and 32, T.9 N., R.3 W., at culvert on State Highway 116, 5 miles west of Roseville.

Drainage area.--0.260 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 13, 1956	13.54	61	1960	June 23, 1960	14.09	81
1957	-	(a)	-				
1958	July 2, 1958	16.23	178	1961	July 21, 1961	12.75	34
1959	May 19, 1959	13.90	73				

a Peak stage did not reach bottom of gage.

4700. Skunk River near Ames, Iowa

Location.--Lat 42°04'05", long 93°37'05", in NW¼SW¼ sec.23, T.84 N., R.24 W., on left bank 2.5 miles north of Ames, 3.5 miles downstream from Keigley Branch, and 5.2 miles upstream from Squaw Creek.

Drainage area.--315 sq mi.

Gage.--Nonrecording prior to Aug. 25, 1921; recording thereafter. Concrete control since July 21, 1934. Datum of gage is 893.61 ft above mean sea level, datum of 1929 (Iowa Highway Commission bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Remarks.--Several diversions for irrigation above station. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Sept.17, 1921	9.2	3,540	1946	Mar. 6, 1946	5.9	1,600
					Mar. 13, 1946	5.9	1,610
1922	Feb. 23, 1922	9.0	3,370				
	Apr. 12, 1922	6.0	1,400	1947	June 1, 1947	8.63	3,740
	July 16, 1922	6.1	1,460		June 4, 1947	8.18	3,400
					June 13, 1947	11.95	6,550
1923	Mar. 28, 1923	6.22	1,670		June 23, 1947	10.80	5,400
	Sept.28, 1923	6.0	1,530		June 30, 1947	6.4	2,200
1924	Mar. 30, 1924	6.3	1,680	1948	Feb. 28, 1948	5.8	1,630
	June 28, 1924	8.21	3,010		Mar. 19, 1948	7.35	2,620
	Aug. 9, 1924	6.0	1,680		Mar. 27, 1948	7.3	2,600
1925	Aug. 7, 1925	5.0	905	1949	Mar. 4, 1949	-	3,000
1926	Sept. 8, 1926	6.5	1,900	1950	Mar. 7, 1950	8.86	3,820
	Sept.19, 1926	8.26	3,120		May 5, 1950	6.0	1,810
					May 9, 1950	7.0	2,410
1927	Feb. 5, 1927	7.4	2,460		June 9, 1950	5.8	1,690
					June 18, 1950	6.6	2,170
1930	Nov. 24, 1929	11.2	5,230				
				1951	Feb. 26, 1951	5.75	1,690
1933	Apr. 1, 1933	6.47	1,990		Mar. 29, 1951	10.90	5,320
					May 2, 1951	6.75	2,290
1934	Jan. 22, 1934	-	600		June 2, 1951	10.35	4,920
					June 20, 1951	6.25	1,930
1935	Feb. 15, 1935	-	2,490		July 4, 1951	7.07	2,470
	Mar. 5, 1935	9.0	3,490				
	June 19, 1935	6.5	1,900	1952	July 9, 1952	5.73	1,630
	June 25, 1935	8.4	2,960				
	July 24, 1935	7.0	2,190	1953	May 1, 1953	4.71	980
1936	Mar. 10, 1936	7.7	2,580	1954	June 1, 1954	7.84	3,180
					June 10, 1954	13.66	8,630
1937	Mar. 6, 1937	-	3,000		June 16, 1954	6.37	2,110
					June 22, 1954	5.88	1,770
1938	May 4, 1938	8.3	2,890		Aug. 27, 1954	8.27	3,520
	May 17, 1938	6.5	1,880				
	June 29, 1938	5.8	1,540	1955	Oct. 15, 1954	5.22	1,340
1939	Mar. 14, 1939	-	3,230	1956	Sept. 4, 1956	3.49	376
1940	Aug. 13, 1940	7.3	2,320	1957	June 16, 1957	8.28	3,540
					July 4, 1957	6.52	2,200
1941	Sept. 8, 1941	8.6	3,050				
				1958	July 2, 1958	6.55	2,270
1942	Nov. 1, 1941	5.9	1,630		July 4, 1958	7.85	3,150
	Sept.14, 1942	8.1	2,530		July 11, 1958	5.78	1,720
1943	June 16, 1943	6.5	1,910	1959	Mar. 20, 1959	5.60	1,590
	July 31, 1943	10.3	4,500		May 31, 1959	5.83	1,720
1944	May 20, 1944	13.9	8,060	1960	Mar. 30, 1960	10.33	6,210
	June 12, 1944	8.0	2,840		May 7, 1960	5.59	1,590
1945	Mar. 16, 1945	6.3	1,800	1961	Feb. 23, 1961	5.71	1,990
	May 22, 1945	7.7	2,620		Mar. 15, 1961	5.51	1,770
	June 2, 1945	9.7	4,010		Aug. 2, 1961	5.51	1,770
1946	Feb. 5, 1946	7.1	2,270				

4705. Squaw Creek at Ames, Iowa

Location.--Lat 42°01'20", long 93°37'55", in SE¼SW¼ sec.3, T.83 N., R.24 W., on U.S. Highway 30 bridge in Ames, 0.1 mile downstream from College Creek, and 2.8 miles upstream from mouth.

Drainage area.--204 sq mi.

Gage.--Nonrecording. Prior to Mar. 11, 1925, at site 0.6 mile upstream at different datum. Altitude of gage, 885 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 4, 1918	14.5	6,900	1923	Sept.28, 1923	6.1	1,340
1919	Sept.30, 1919	7.96	a1,900	1924	July 28, 1924	8.8	3,170
1920	Oct. 4, 1919	8.6	2,260	1925	Aug. 7, 1925	4.9	791
1921	Sept.17, 1921	7.4	1,900	1926	Sept.19, 1926	10.2	3,610
1922	July 17, 1922	10.7	4,130	1927	Oct. 4, 1926	5.8	1,060

a Maximum during period May to September.

4710. Skunk River below Squaw Creek, near Ames, Iowa

Location.--Lat 42°00'30", long 93°35'40", in NE¼NW¼ sec.13, T.83 N., R.24 W., on right bank 15 ft downstream from highway bridge, a quarter of a mile downstream from Squaw Creek, 1 mile downstream from bridge on U.S. Highway 30, and 2 miles southeast of Ames.

Drainage area.--556 sq mi.

Gage.--Recording and concrete control. Datum of gage is 867.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 19, 1944	13	10,000	1957	July 4, 1957	8.54	3,950
1953	May 1, 1953	5.47	1,620	1958	June 8, 1958	6.95	2,610
					June 13, 1958	6.93	2,610
1954	May 28, 1954	6.36	2,330		July 2, 1958	11.13	6,120
	June 1, 1954	10.92	6,500		July 4, 1958	12.82	8,550
	June 11, 1954	11.92	7,980				
	June 16, 1954	7.63	3,200	1959	Mar. 20, 1959	8.69	3,860
	June 22, 1954	8.63	3,820		May 31, 1959	10.57	5,520
	Aug. 22, 1954	8.53	3,950				
	Aug. 26, 1954	9.26	4,700	1960	Mar. 30, 1960	13.20	9,260
	Aug. 28, 1954	12.36	8,700		May 7, 1960	9.47	4,600
1955	Oct. 14, 1954	6.81	2,680	1961	Feb. 23, 1961	7.98	3,450
	July 10, 1955	6.73	2,540		Mar. 15, 1961	8.05	3,380
					June 7, 1961	7.11	2,680
1956	May 13, 1956	3.05	638		Aug. 1, 1961	7.97	3,310
					Sept.30, 1961	8.27	3,520
1957	June 16, 1957	11.58	6,360				

4715. Skunk River near Oskaloosa, Iowa

Location.--Lat 41°21'15", long 92°39'30", in NW¼SW¼ sec.25, T.76 N., R.16 W., on right bank 300 ft upstream from bridge on U.S. Highway 63 and 4 miles north of Oskaloosa.

Drainage area.--1,635 sq mi.

Gage.--Nonrecording at site 300 ft downstream prior to Nov. 21, 1947; recording at present site thereafter. Datum of gage is 685.50 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 1944	25.8	a37,000	1955	Feb. 20, 1955	-	b3,700
1946	Jan. 9, 1946	18.57	9,600	1956	Aug. 13, 1956	7.90	782
	June 27, 1946	11.04	7,500	1957	June 18, 1957	15.06	4,860
1947	June 6, 1947	19.47	14,300		July 6, 1957	14.32	4,130
	June 15, 1947	21.26	20,000	1958	July 7, 1958	15.76	5,680
1948	Feb. 29, 1948	-	7,120	1959	Feb. 26, 1959	-	b5,500
	Mar. 22, 1948	17.50	9,050		Mar. 14, 1959	14.4	4,760
1949	Mar. 9, 1949	18.27	10,800		Mar. 21, 1959	16.87	8,500
					Mar. 28, 1959	-	4,660
1950	Mar. 8, 1950	18.09	9,320		May 21, 1959	15.15	4,960
					June 2, 1959	16.2	6,280
1951	Feb. 18, 1951	16.15	4,200		July 2, 1959	16.03	5,960
	Mar. 31, 1951	16.61	6,700				
	May 4, 1951	14.88	4,710	1960	Jan. 14, 1960	16.84	7,340
	May 26, 1951	15.09	4,900		Apr. 3, 1960	20.56	14,800
	June 7, 1951	17.26	7,810		Apr. 19, 1960	14.58	4,130
	June 21, 1951	14.17	4,110		May 11, 1960	17.94	8,900
	July 3, 1951	16.30	6,290		May 26, 1960	15.72	5,160
					June 28, 1960	16.64	6,800
1952	Mar. 12, 1952	16.58	6,700		July 1, 1960	15.14	4,760
	May 24, 1952	14.75	4,620		July 13, 1960	15.38	5,060
1953	Feb. 22, 1953	18.46	9,980	1961	Feb. 19, 1961	-	b5,000
					Feb. 23, 1961	-	b5,700
1954	June 3, 1954	14.24	4,030		Mar. 6, 1961	16.00	5,680
	June 14, 1954	14.75	4,270		Mar. 14, 1961	16.14	5,960
	June 18, 1954	15.00	4,530		Aug. 3, 1961	14.55	4,380
	June 24, 1954	15.89	5,420		Sept.13, 1961	16.17	6,280
	Aug. 31, 1954	15.83	5,300				

a From rating curve extended above 18,000 cfs on basis of velocity-area study.
b About.

4725. North Skunk River near Sigourney, Iowa

Location.--Lat 41°18'05", long 92°12'10", in NE¼SE¼ sec.14, T.75 N., R.12 W., on right bank 20 ft downstream from bridge on State Highway 149, 2½ miles south of Sigourney, and 16.2 miles upstream from mouth.

Drainage area.--730 sq mi.

Gage.--Nonrecording prior to June 10, 1953; recording thereafter. Datum of gage is 651.53 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--17 ft.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges of North Skunk River near Sigourney, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 1944	22.8	14,500	1953	Nov. 17, 1952	14.00	2,650
					Feb. 24, 1953	16.43	3,820
1946	Jan. 7, 1946	22.57	14,000				
				1954	Apr. 30, 1954	11.65	1,830
1947	June 15, 1947	21.8	12,000				
				1955	Apr. 24, 1955	18.18	5,180
1948	Feb. 18, 1948	-	2,690				
	Mar. 1, 1948	-	6,610	1956	June 20, 1956	7.98	880
	Mar. 19, 1948	19.5	7,660				
				1957	July 8, 1957	15.81	3,490
1949	Mar. 8, 1949	19.65	6,920				
	Mar. 24, 1949	-	6,760	1958	Feb. 27, 1958	12.26	2,040
	Mar. 27, 1949	-	3,700				
				1959	Feb. 24, 1959	-	a2,700
1950	Mar. 8, 1950	18.84	5,810		Feb. 27, 1959	-	a3,300
	June 21, 1950	-	2,960		Mar. 22, 1959	19.83	7,270
					Apr. 1, 1959	14.50	2,860
1951	Feb. 19, 1951	16.00	a2,500		May 21, 1959	14.0	2,650
	Mar. 31, 1951	14.34	2,780		May 30, 1959	17.37	4,500
	Apr. 7, 1951	14.76	3,000				
	May 11, 1951	14.83	3,000	1960	Jan. 15, 1960	21.56	11,500
	May 26, 1951	16.2	3,700		Mar. 31, 1960	25.33	27,500
	May 29, 1951	16.4	3,820		May 9, 1960	18.76	5,810
	June 21, 1951	13.79	2,570		July 13, 1960	17.29	4,420
	July 3, 1951	19.92	7,460		Aug. 6, 1960	14.39	2,650
	July 9, 1951	14.6	2,860				
	July 12, 1951	15.88	3,490	1961	Feb. 22, 1961	17.80	4,820
					Mar. 8, 1961	18.73	5,700
1952	Nov. 14, 1951	14.30	2,780		Mar. 16, 1961	17.50	4,580
	Mar. 13, 1952	20.16	7,660		July 28, 1961	15.58	3,310
	May 26, 1952	13.82	2,570		July 31, 1961	16.45	3,790
	June 21, 1952	14.35	2,780		Sept.16, 1961	18.79	5,810

a About.

4730. Skunk River at Coppock, Iowa

Location.--Lat 41°09'50", long 91°43'05", in NE¼NE¼ sec.1, T.73 N., R.8 W., at bridge on State Highway 78, half a mile west of Coppock, three-quarters of a mile upstream from Crooked Creek, and at mile 66.

Drainage area.--2,916 sq mi.

Gage.--Nonrecording. Prior to Oct. 1, 1937, at site one-eighth of a mile upstream at approximately the same datum. Altitude of gage is 583 ft above mean sea level (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements. Shifts in the relation occur.

Historical data.--Maximum stage known since at least 1881, that of May 24, 1944.

Remarks.--Base for partial-duration series, 6,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	22	40,000	1917	June 14, 1917	17.6	18,300
1914	Sept.21, 1914	11.7	6,980	1918	May 29, 1918	12.2	7,800
					June 9, 1918	19.8	28,200
1915	May 26, 1915	11.7	6,980				
	June 8, 1915	11.2	6,350	1919	Mar. 17, 1919	15.2	12,200
	July 11, 1915	13.4	9,300		May 5, 1919	14.1	10,200
	Aug. 4, 1915	16.5	15,200		June 9, 1919	12.7	8,260
	Sept.16, 1915	11.3	6,450				
				1920	Mar. 27, 1920	15.5	12,800
1916	Oct. 2, 1915	14.7	11,200		Apr. 20, 1920	13.3	9,090
	Jan. 27, 1916	12.8	8,400		May 13, 1920	12.4	7,870
	Feb. 22, 1916	12.4	7,870				
	Mar. 27, 1916	17.1	16,800	1921	June 19, 1921	13.2	8,950
	May 15, 1916	12.2	7,600		Sept.27, 1921	14.6	11,000
	Sept. 6, 1916	11.6	6,900				
				1922	Mar. 11, 1922	11.6	6,860
1917	Mar. 14, 1917	12.0	7,350				
	May 1, 1917	12.1	7,450	1923	Apr. 2, 1923	10.3	5,360
	May 22, 1917	11.7	6,980				
	June 7, 1917	16.7	15,600	1924	Mar. 4, 1924	-	6,890

Peak stages and discharges of Skunk River at Coppock, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	June 29, 1924	19.1	23,900	1938	May 19, 1938	12.3	7,500
	July 26, 1924	13.2	8,950	1939	Mar. 13, 1939	17.4	15,700
1925	June 4, 1925	10.2	5,040	1940	Aug. 29, 1940	7.9	3,260
1926	June 15, 1926	14.0	10,100				
	Sept.10, 1926	14.4	10,700	1941	Feb. 15, 1941	11.9	5,500
	Sept.16, 1926	17.8	18,900				
	Sept.26, 1926	19.4	25,100	1942	Nov. 7, 1941	12.4	7,390
1927	Feb. 5, 1927	16.5	15,200	1943	Feb. 9, 1943	-	6,520
	Apr. 19, 1927	15.5	12,800		May 21, 1943	15.0	10,900
	May 25, 1927	11.3	6,450		June 17, 1943	12.1	6,300
	June 4, 1927	11.7	6,980		June 22, 1943	13.0	7,390
					Aug. 4, 1943	21.6	37,400
1928	June 30, 1928	14.0	10,100				
	July 4, 1928	14.5	10,800	1944	Apr. 24, 1944	17.6	18,700
	Aug. 6, 1928	14.3	10,600		May 10, 1944	12.9	7,260
					May 24, 1944	22.27	41,500
1929	Nov. 19, 1928	14.2	10,400		June 16, 1944	17.0	16,500
	Mar. 19, 1929	17.7	18,600				
	Apr. 1, 1929	11.5	6,700	1945	Mar. 26, 1945	12.5	6,760
	Apr. 20, 1929	13.6	9,500		Apr. 22, 1945	13.5	8,110
	Apr. 26, 1929	14.6	11,000		May 19, 1945	15.5	12,100
					June 4, 1945	12.9	7,260
1930	June 15, 1930	22.1	40,700		June 16, 1945	14.0	8,910
1931	Sept.27, 1931	8.2	3,360	1946	Jan. 9, 1946	17.7	19,100
					Mar. 19, 1946	14.3	9,440
1932	Nov. 29, 1931	15.4	12,600		Mar. 26, 1946	12.2	6,410
	Jan. 1, 1932	12.9	8,600		June 13, 1946	12.5	6,760
	June 26, 1932	12.3	7,740		June 20, 1946	18.9	24,200
	July 11, 1932	11.3	6,450				
	Aug. 13, 1932	11.2	6,380	1947	Apr. 8, 1947	15.7	12,600
					Apr. 16, 1947	13.8	8,580
1933	May 13, 1933	12.8	8,400		Apr. 22, 1947	15.4	11,800
	May 26, 1933	14.2	10,400		June 9, 1947	18.8	23,700
					June 18, 1947	19.3	26,000
1934	Jan. 26, 1934	6.5	1,840				
				1948	Feb. 19, 1948	-	6,640
1935	June 3, 1935	12.2	6,400		Mar. 3, 1948	14.5	9,820
	June 20, 1935	13.8	7,870		Mar. 20, 1948	18.1	20,700
	July 4, 1935	12.4	6,640				
				1949	Mar. 4, 1949	-	10,200
1936	Mar. 13, 1936	15.0	11,400		June 25, 1949	11.9	6,080
1937	Feb. 23, 1937	-	8,510	1950	Mar. 12, 1950	13.8	8,580
	Mar. 10, 1937	17.7	19,600		June 21, 1950	15.0	10,900
					June 26, 1950	14.4	9,630
1938	Feb. 6, 1938	14.6	9,600				

4735. Big Creek near Mount Pleasant, Iowa

Location.--Lat 41°00'50", long 91°34'45", in NW¼NW¼ sec.29, T.72 N., R.6 W., on left bank 12 ft downstream from highway bridge, 100 ft downstream from Lynn Creek, 0.7 mile downstream from Brandywine Creek, and 3.4 miles northwest of Mount Pleasant.

Drainage area.--106 sq mi.

Gage.--Recording and concrete control. Datum of gage is 630.53 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Aug. 3, 1948	ab27	-	1958	Feb. 24, 1958	9.38	1,600
					June 9, 1958	9.24	1,540
1956	Feb. 24, 1956	-	a500		June 13, 1958	8.49	1,320
					July 19, 1958	7.30	1,000
1957	Apr. 3, 1957	4.33	264		Aug. 1, 1958	8.32	1,250

a About.
b From floodmarks by local residents.

Peak stages and discharges of Big Creek near Mount Pleasant, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Feb. 10, 1959	-	a900	1960	Apr. 14, 1960	8.96	1,470
	Feb. 23, 1959	-	a1,150		Apr. 17, 1960	11.12	2,190
	July 1, 1959	7.41	994		June 5, 1960	9.11	1,500
					June 12, 1960	12.89	2,950
1960	Oct. 5, 1959	11.37	2,310		June 23, 1960	7.75	1,100
	Oct. 6, 1959	10.83	2,080				
	Mar. 29, 1960	15.30	4,460	1961	Sept.13, 1961	11.24	2,230

a About.

4740. Skunk River at Augusta, Iowa

Location.--Lat 40°45'10", long 91°16'30", in NE¼NE¼ sec.26, T.69 N., R.4 W., on left bank 300 ft upstream from bridge on State Highway 394 at Augusta, 2 miles upstream from Long Creek, and at mile 12.5.

Drainage area.--4,303 sq mi.

Gage.--Nonrecording prior to Jan. 15, 1935; recording thereafter. May 27, 1915, to Jan. 14, 1935, at site 400 ft upstream at present datum. Datum of gage is 521.24 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 15,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	June 1, 1903	a21	a45,000	1927	Oct. 1, 1926	18.9	26,400
					Feb. 6, 1927	14.8	18,700
1915	July 11, 1915	15.7	22,800		Apr. 16, 1927	13.2	15,500
					Apr. 20, 1927	18.3	25,000
1916	Jan. 24, 1916	-	18,400		May 19, 1927	14.8	18,000
	Jan. 27, 1916	-	17,100		June 4, 1927	14.4	17,300
	Mar. 28, 1916	18.7	33,600				
	June 7, 1916	14.5	19,700	1928	June 29, 1928	13.0	16,100
					July 5, 1928	14.6	18,600
1917	June 7, 1917	17.2	27,700		Aug. 4, 1928	16.0	21,200
	June 13, 1917	14.0	18,400		Aug. 7, 1928	13.9	17,500
	June 16, 1917	14.8	20,400				
				1929	Nov. 18, 1928	17.9	25,000
1918	May 30, 1918	12.8	15,600		Mar. 13, 1929	15.5	20,400
	June 11, 1918	17.2	27,700		Mar. 20, 1929	16.0	21,200
					Apr. 21, 1929	18.4	26,600
1919	Mar. 17, 1919	14.5	19,600		Apr. 25, 1929	18.0	25,500
	May 4, 1919	15.3	21,700				
				1930	June 17, 1930	22.6	44,500
1920	Mar. 26, 1920	16.5	25,000				
	Apr. 20, 1920	17.6	24,500	1931	July 4, 1931	11.9	14,000
	May 13, 1920	14.9	20,600				
				1932	Nov. 23, 1931	14.6	18,600
1921	June 19, 1921	11.8	13,700		Jan. 1, 1932	15.8	20,900
					Aug. 14, 1932	13.0	16,000
1922	Feb. 23, 1922	10.3	11,200				
				1933	Dec. 25, 1932	14.4	18,400
1923	Mar. 26, 1923	8.5	8,600		May 13, 1933	15.2	19,800
1924	June 25, 1924	14.4	18,200	1934	Apr. 5, 1934	4.0	2,220
	June 28, 1924	19.4	27,800				
	June 30, 1924	19.2	27,200	1935	June 2, 1935	15.2	16,400
	July 25, 1924	15.4	20,100		June 19, 1935	14.3	15,400
1925	Feb. 24, 1925	-	14,300	1936	Feb. 26, 1936	-	16,000
1926	June 13, 1926	16.2	20,300	1937	Feb. 22, 1937	17.3	21,800
	June 17, 1926	15.5	19,000		Mar. 6, 1937	15.3	17,000
	Sept. 9, 1926	19.0	26,600		Mar. 12, 1937	15.5	17,400
	Sept.16, 1926	20.5	31,500				

a About.

Peak stages and discharges of Skunk River at Augusta, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb. 8, 1938	-	18,300	1950	Apr. 25, 1950	18.5	25,900
	June 16, 1938	17.9	23,300		June 19, 1950	19.9	30,100
1939	Mar. 13, 1939	19.5	28,000	1951	Feb. 19, 1951	22.2	a18,000
					Mar. 29, 1951	13.95	15,400
1940	Aug. 17, 1940	11.9	11,800		May 11, 1951	18.00	23,700
					Aug. 28, 1951	16.02	19,100
1941	June 12, 1941	9.2	8,280				
				1952	Mar. 13, 1952	15.92	18,900
1942	Feb. 3, 1942	14.3	13,600		June 21, 1952	14.60	16,500
1943	May 20, 1943	16.6	19,600	1953	Apr. 1, 1953	14.39	16,100
	Aug. 6, 1943	20.5	29,800				
				1954	Aug. 27, 1954	10.2	9,780
1944	Mar. 15, 1944	14.9	16,200				
	Apr. 24, 1944	19.8	29,600	1955	Feb. 27, 1955	-	a15,000
	May 26, 1944	23.0	44,800		Apr. 25, 1955	15.62	18,300
	June 19, 1944	15.3	17,000				
				1956	June 20, 1956	5.47	4,050
1945	Mar. 26, 1945	14.7	16,000				
	May 18, 1945	16.7	20,200	1957	July 31, 1957	7.05	5,850
1946	Jan. 6, 1946	19.2	27,500	1958	Aug. 1, 1958	13.12	12,800
	Jan. 9, 1946	19.2	27,600				
	Mar. 17, 1946	14.6	16,000	1959	Feb. 26, 1959	-	a15,000
	June 22, 1946	20.1	30,900				
				1960	Oct. 7, 1959	15.80	16,200
1947	Apr. 5, 1947	16.7	20,500		Jan. 16, 1960	17.29	20,900
	Apr. 20, 1947	15.8	18,700		Apr. 3, 1960	25.00	51,000
	June 9, 1947	19.6	29,000		Apr. 15, 1960	15.49	17,500
	June 20, 1947	19.1	27,400		May 10, 1960	15.11	16,800
	July 1, 1947	19.1	27,000		June 15, 1960	14.92	16,400
					July 13, 1960	14.17	15,200
1948	Feb. 28, 1948	16.6	20,200				
	Mar. 20, 1948	18.7	25,800	1961	Mar. 8, 1961	14.49	15,800
					Mar. 14, 1961	14.55	15,900
1949	Mar. 4, 1949	-	16,000		Sept.14, 1961	15.38	17,300

a About.

MISSISSIPPI RIVER MAIN STEM

4745. Mississippi River at Keokuk, Iowa

Location.--Lat 40°23'35", long 91°22'25", in SE¼SW¼ sec.30, T.65 N., R.4 W., near right bank in tailwater at downstream end of new lock below dam and powerplant of Union Electric Co. at Keokuk, 2.8 miles upstream from Des Moines River, and 364.2 miles upstream from Ohio River.

Drainage area.--119,000 sq mi, approximately.

Gage.--Nonrecording prior to May 1913; recording thereafter. Prior to May 1913 at Galland (formerly Nashville), 8 miles upstream; zero of gage was set to low-water mark of 1864, or 497.94 ft above mean sea level, adjustment of 1912. Datum of gage is 477.41 ft above mean sea level, datum of 1929 (levels by Corps of Engineers); 477.83 ft above mean sea level, adjustment of 1912; 477.34 ft above mean gulf level; and 484.65 ft above Memphis datum.

Stage-discharge relation.--Since 1913, discharge computed from records of operation of turbines in powerplant and spillway gates in dam.

Remarks.--Keokuk Dam completed in 1913. Records January 1878 to September 1932 from report of Iowa State Planning Board; since October 1932, furnished by Union Electric Co. Only annual maximum daily discharges are shown.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June 6, 1851	a13.5	360,000	1882	Oct.31,Nov.1, 1881	-	293,000
1878	June 11, 1878	-	150,000	1883	May 18, 1883	-	201,000
1879	June 2,3,1879	-	110,000	1884	Apr. 1, 1884	-	236,000
1880	June 29, 1880	-	271,000	1885	Oct.9,10,1884	-	170,000
1881	Apr.23,24, 1881	-	241,000	1886	May 6, 1886	-	212,000

a Estimated; stage at present site and datum, 21.0 ft.

Maximum daily discharges of Mississippi River at Keokuk, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1887	May 4, 1887	-	156,000	1925	June 23, 1925	-	112,000
1888	May 18, 1888	b12.0	314,000				
1889	Apr.20, June 8, 18, 1889	-	84,200	1926	Sept.28, 1926	-	146,000
				1927	Apr. 3, 1927	-	175,000
1890	July 1, 1890	-	178,000	1928	Apr. 12, 1928	-	150,000
				1929	Mar. 23, 1929	-	247,000
1891	May 3, 1891	-	141,000	1930	June 18, 1930	-	163,000
1892	June 29, 1892	-	306,000				
1893	May 15-17,1893	-	203,000	1931	July 4, 1931	-	52,500
1894	June 4, 1894	-	158,000	1932	Apr.24,25,1932	-	106,000
1895	Mar. 11, 1895	-	59,200	1933	Apr. 9, 1933	-	160,000
				1934	Apr. 22, 1934	-	83,500
1896	June 3, 1896	-	161,000	1935	Apr.11,12,1935	-	138,000
1897	Apr.28,29,1897	-	230,000				
1898	Mar. 20, 1898	-	108,000	1936	Apr.9,10, 1936	-	148,000
1899	June 29, 1899	-	159,000	1937	Mar. 10, 1937	-	190,000
1900	Apr. 5,6, 1900	-	124,000	1938	Sept.26, 1938	-	193,800
				1939	Oct. 1, 1938	-	159,100
1901	Mar.24-26,1901	-	150,000	1940	Apr. 19, 1940	-	81,700
1902	July 21,22,1902	-	181,000				
1903	June 6, 1903	-	270,000	1941	Apr. 27, 1941	-	154,400
1904	Oct. 7, 1903	-	186,000	1942	June 16, 1942	-	200,900
1905	June 10, 1905	-	212,000	1943	Apr. 18, 1943	-	174,000
				1944	May 27,28,1944	-	254,500
1906	Apr.26-28, 1906	-	192,000	1945	Mar. 26, 1945	-	203,300
1907	Apr.17,18, 1907	-	178,000				
1908	June 9, 1908	-	178,000	1946	Jan. 11, 1946	-	223,300
1909	May 5-7, 1909	-	181,000	1947	June 21, 1947	-	245,700
1910	Mar.20-23,1910	-	124,000	1948	Mar. 23, 1948	-	233,600
				1949	Mar. 12, 1949	-	150,700
1911	Feb. 21, 1911	-	156,000	1950	Apr.25,26, 1950	-	175,900
1912	Apr.6,7, 1912	-	220,000				
1913	Mar. 29, 1913	-	169,000	1951	Apr. 29, 1951	-	265,100
1914	June 24, 1914	-	122,000	1952	Apr. 27, 1952	-	253,800
1915	Feb. 28, 1915	-	142,000	1953	Apr. 1,2,1953	-	137,200
				1954	May 17, 1954	-	181,400
1916	May 9, 1916	-	213,000	1955	Apr. 25, 1955	-	156,600
1917	June 17, 1917	-	163,000				
1918	June 12, 1918	-	192,000	1956	Apr. 22, 1956	-	131,500
1919	May 8, 1919	-	205,000	1957	July 15, 1957	-	106,000
1920	Apr.10,11,1920	-	230,000	1958	June 13, 1958	-	99,000
				1959	Apr. 5, 1959	-	182,000
1921	May 12,13, 1921	-	108,000	1960	Apr. 4, 1960	-	289,500
1922	Apr. 24,25,1922	-	240,000				
1923	Apr. 9,10, 1923	-	148,000	1961	Apr. 5, 1961	-	208,400
1924	Apr.24,25,1924	-	160,000				

b Stage at present site and datum, 19.6 ft.

DES MOINES RIVER BASIN

4750. Heron Lake Outlet near Heron Lake, Minn.

Location.--Lat 43°48'10", long 95°16'30", on line between secs. 21 and 22, T.104 N., R.37 W., half a mile downstream from outlet dam, 2 miles east of village of Heron Lake, and 12 miles upstream from Des Moines River.

Drainage area.--457 sq mi.

Gage.--Nonrecording. At site half a mile downstream at datum 0.56 ft lower prior to May 17, 1934. Datum of gage is 1,405.84 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 1,560 cfs and extended above.

Remarks.--Flow completely regulated by Heron Lake (usable capacity, about 15,000 acre-ft). Only annual peaks are shown.

Peak stages and discharges of Heron Lake Outlet near Heron Lake, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Oct. 1, 1930	0.72	11	1938	July 5, 1938	8.53	1,660
1932	Apr. 5, 1932	-	500	1939	Oct. 1, 1938	4.54	422
1933	Apr. 5, 1933	1.28	53	1940	Apr. 8, 1940	2.72	184
1934	June 12, 1934	3.00	200				
1935	Mar. 17, 1935	3.20	226	1941	Apr. 26, 1941	4.70	471
				1942	Sept. 6, 1942	8.56	1,880
1936	Mar. 25, 1936	6.82	960	1943	June 19, 1943	7.12	1,170
1937	Apr. 18, 1937	4.60	392				

4760. West Fork Des Moines River at Jackson, Minn.

Location.--Lat 43°37'10", long 94°59'10", in SE¼SW¼ sec.24, T.102 N., R.35 W., on right bank in Jackson, 200 ft downstream from dam at powerplant.

Drainage area.--1,220 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 28, 1949; recording thereafter. May 31, 1909, to Dec. 20, 1913, at site 0.6 mile downstream at datum 0.99 ft lower. Aug. 22, 1930, to Sept. 30, 1944, at site 7 miles upstream at datum 17.10 ft higher. Oct. 1, 1944, to Oct. 27, 1949, at site 600 ft upstream at datum 10.64 ft higher. Datum of gage is 1,287.75 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs and extended above on basis of contracted-opening measurement at 8,360 cfs.

Remarks.--Regulation at times by Yankton, Long, Shetak, and Heron Lakes. Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1945.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1909	June 30, 1909	10.05	-	1,700	1947	July 4, 1947	4.29	-	2,100
1910	Mar. 15, 1910	7.9	-	1,100					
					1948	Mar. 24, 1948	4.39	-	2,300
1911	Aug. 10, 1911	3.98	-	169		May 11, 1948	3.58	-	990
1912	Apr. 3, 1912	5.6	-	503					
1913	Sept. 3, 1913	5.12	-	358	1949	Mar. 8, 1949	3.34	-	708
						Apr. 11, 1949	4.88	-	3,350
1931	Nov. 20, 1930	1.58	-	61					
1932	Apr. 2, 1932	5.10	-	906	1950	Apr. 2, 1950	8.14	-	1,120
1933	Mar. 29, 1933	6.80	-	1,600					
1934	Apr. 3, 1934	2.68	-	224	1951	Apr. 10, 1951	14.73	-	4,380
1935	Mar. 17, 1935	4.55	1.15	-		May 2, 1951	11.05	-	2,280
	June 24, 1935	-	-	500		May 25, 1951	7.16	-	898
						May 31, 1951	7.26	-	872
1936	Mar. 22, 1936	9.60	-	2,320		June 27, 1951	11.32	-	2,410
1937	Apr. 20, 1937	6.60	-	1,150					
1938	Mar. 22, Apr. 8-10, 1938	10.01	-	2,200	1952	Mar. 21, 1952	6.65	-	783
						Apr. 1, 1952	13.39	-	3,530
1939	Mar. 24, 1939	5.69	2.00	-		Apr. 5, 1952	14.60	-	4,290
	Mar. 29, 1939	-	-	499		June 15, 1952	7.16	-	845
1940	Mar. 30, 1940	5.70	1.8	-		June 25, 1952	7.44	-	918
	Aug. 25, 1940	-	-	574		July 7, 1952	7.30	-	856
						Aug. 29, 1952	6.18	-	594
1941	Apr. 21, 1941	8.92	-	1,940					
1942	Sept. 3, 1942	12.2	-	3,410	1953	Mar. 22, 1953	7.79	-	1,020
1943	June 13, 1943	10.40	-	2,490		May 6, 1953	7.40	-	908
1944	May 13, 1944	11.36	-	3,070		May 20, 1953	6.83	-	760
						May 26, 1953	12.71	-	3,100
1945	Mar. 16, 1945	4.33	-	2,300		May 31, 1953	11.82	-	2,630
	Apr. 23, 1945	3.32	-	697		June 8, 1953	17.43	-	8,360
	May 26, 1945	3.53	-	968					
	June 10, 1945	3.81	-	1,300	1954	Feb. 20, 1954	5.72	-	513
	June 15, 1945	4.05	-	1,700		Mar. 25, 1954	7.95	-	1,160
	July 30, 1945	3.41	-	800		Apr. 5, 1954	6.85	-	819
	Sept. 23, 1945	3.38	-	800		June 18, 1954	6.07	-	602
						June 23, 1954	5.92	-	563
1946	Mar. 26, 1946	3.94	-	1,530					
	June 16, 1946	3.38	-	800	1955	Mar. 11, 1955	6.13	-	630
	June 30, 1946	3.62	-	1,020					
					1956	May 30, 1956	5.64	-	483
1947	Oct. 14, 1946	3.14	-	544					
	Apr. 17, 1947	4.23	-	2,000	1957	Mar. 30, 1957	6.86	-	807

Peak stages and discharges of West Fork Des Moines River at Jackson, Minn.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1957	May 29, 1957	8.08	-	1,200	1960	May 22, 1960	7.99	-	1,120
	June 23, 1957	8.19	-	1,230		Sept. 9, 1960	6.31	-	602
	July 27, 1957	6.07	-	587		Sept.26, 1960	6.02	-	507
1958	Apr. 6, 1958	5.29	-	396	1961	Mar. 2, 1961	6.06	-	580
						Mar. 24, 1961	10.78	-	2,140
1959	May 30, 1959	13.19	-	3,370		May 23, 1961	6.55	-	716
1960	Apr. 4, 1960	13.77	-	3,800					

4765. West Fork Des Moines River at Estherville, Iowa

Location.--Lat 43°24'00", long 94°50'40", in SW¼SE¼ sec.10, T.99 N., R.34 W., on right bank in city park, 1,200 ft downstream from bridge on State Highway 9 at Estherville, and 2.5 miles upstream from Brown Creek.

Drainage area.--1,372 sq mi.

Gage.--Recording and concrete control. Datum of gage is 1,247.55 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 31, 1952	10.63	3,900	1957	June 24, 1957	5.33	1,200
	Apr. 6, 1952	11.82	4,880				
				1958	Apr. 7, 1958	3.51	404
1953	May 28, 1953	9.12	2,860				
	June 8, 1953	15.53	10,800	1959	June 1, 1959	10.04	3,040
1954	Mar. 19, 1954	5.67	1,380	1960	Apr. 5, 1960	10.79	4,040
					May 22, 1960	7.80	2,250
1955	Mar. 12, 1955	4.37	752				
				1961	Mar. 25, 1961	12.03	5,350
1956	Apr. 4, 1956	3.42	370				

4767.5. West Fork Des Moines River at Humboldt, Iowa

Location.--In SW¼ sec.1, T.91 N., R.29 W., at bridge in town of Humboldt, 1,000 ft below hydroelectric plant.

Drainage area.--2,256 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Apr. 1, 1940	4.4	815	1951	Apr. 5, 1951	11.30	8,980
				1952	Apr. 11, 1952	9.28	5,870
1941	June 15,.1941	6.73	2,730	1953	June 13, 1953	9.64	6,280
1942	June 4, 1942	7.32	3,550	1954	June 22, 1954	11.33	9,490
1943	June 30, 1943	7.95	4,520	1955	Apr. 26, 1955	6.40	2,450
1944	May 20, 1944	10.33	7,300				
1945	June 15, 1945	8.35	4,670	1956	May 17, 1956	3.91	505
				1957	May 21, 1957	4.62	945
1946	May 25, 1946	7.70	3,890	1958	July 15, 1958	4.36	770
1947	June 23, 1947	12.2	11,000	1959	May 23, 1959	6.67	2,770
1948	Feb. 29, 1948	-	5,540	1960	Mar. 31, 1960	9.52	6,400
1949	Apr. 3, 1949	7.72	3,890				
1950	June 19, 1950	6.88	2,990	1961	Mar. 29, 1961	11.56	9,280

4780. East Fork Des Moines River near Burt, Iowa

Location.--Lat 43°12'35", long 94°10'40", in NW¼NE¼ sec.20, T.97 N., R.28 W., on right bank 30 ft downstream from highway bridge, 0.8 mile upstream from Buffalo Creek, 2.5 miles northeast of Burt, and 5.3 miles downstream from Mud Creek.

Drainage area.--462 sq mi.

Gage.--Recording. Datum of gage is 1,109.92 ft above mean sea level, datum of 1929.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 22, 1952	10.88	1,260	1957	June 1, 1957	7.97	392
	Mar. 31, 1952	11.42	1,680	1958	June 4, 1958	9.52	365
1953	June 13, 1953	10.36	1,060	1959	May 23, 1959	10.13	675
1954	June 21, 1954	12.67	3,870	1960	Apr. 1, 1960	10.29	880
1955	Apr. 26, June 3, 1955	9.58	670		May 22, 1960	11.72	2,120
1956	Aug. 3, 1956	6.71	244	1961	Mar. 27, 1961	12.05	2,800

4785. East Fork Des Moines River near Hardy, Iowa

Location.--Lat 42°48'10", long 94°08'00", in NW¼NE¼ sec.10, T.92 N., R.28 W., 4½ miles west of Hardy, 6 miles northeast of Dakota City, 7½ miles downstream from Lotts Creek, and 12 miles upstream from mouth.

Drainage area.--1,268 sq mi.

Gage.--Nonrecording.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 2,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	September 1938	a17.4	b22,000	1947	Apr. 12, 1947	10.0	2,520
					May 17, 1947	9.4	2,200
1940	Aug. 30, 1940	4.8	608		June 23, 1947	15.4	11,800
1941	June 15, 1941	9.7	2,300	1948	Feb. 28, 1948	-	3,860
					Mar. 18, 1948	10.5	3,000
1942	Nov. 7, 1941	11.39	3,580	1949	Mar. 6, 1949	-	3,000
1943	July 7, 1943	9.72	2,360		Apr. 1, 1949	11.1	3,290
1944	May 23, 1944	12.6	4,680	1950	July 19, 1950	9.6	2,300
	June 14, 1944	14.6	9,200	1951	Mar. 29, 1951	12.36	4,700
1945	Mar. 11, 1945	10.3	2,720		Apr. 9, 1951	14.95	10,800
	Mar. 17, 1945	10.9	3,140		July 1, 1951	12.96	5,600
	Apr. 17, 1945	9.6	2,300				
	Apr. 23, 1945	10.0	2,520	1952	Apr. 2, 1952	13.00	5,600
	May 22, 1945	10.7	3,000		July 8, 1952	10.04	2,540
	June 16, 1945	10.7	3,000				
	Aug. 15, 1945	13.7	6,820	1953	Aug. 5, 1953	8.96	2,000
1946	May 24, 1946	13.36	6,160	1954	June 21, 1954	16.95	18,800

a Maximum stage known.
b About.

4790. East Fork Des Moines River at Dakota City, Iowa

Location.--Lat 42°43'25", long 94°11'30", in NW¼SE¼ sec.6, T.91 N., R.28 W., on right bank 50 ft upstream from old milldam, in city part at east edge of Dakota City, 500 ft upstream from highway bridge, 0.6 mile downstream from bridge on State Highway 3, and 3.6 miles upstream from confluence with West Fork Des Moines River.

Drainage area.--1,308 sq mi.

Gage.--Recording. Datum of gage is 1,038.71 ft above mean sea level, datum of 1929.

Bankfull stage.--20 ft.

Remarks.--Base for partial-duration series, 2,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 21, 1954	24.02	a17,400	1959	May 22, 1959	16.97	6,860
1955	June 9, 1955	11.23	1,640	1960	Mar. 29, 1960	17.49	4,300
1956	Mar. 27, 1956	9.60	a640		May 26, 1960	14.28	4,130
1957	May 30, 1957	10.31	1,060	1961	Mar. 28, 1961	19.12	9,440
1958	July 14, 1958	10.78	1,360				

a Annual peak only.

4800. Lizard Creek near Clare, Iowa

Location.--Lat 42°32'40", long 94°20'45", in NE¼NE¼ sec.11, T.89 N., R.30 W., on right bank 20 ft downstream from highway bridge, 3 miles south of Clare, 8 miles northwest of Fort Dodge, and 8.9 miles upstream from confluence with South Lizard Creek.

Drainage area.--257 sq mi.

Gage.--Nonrecording prior to May 6, 1953; recording thereafter. Concrete control since Oct. 11, 1956. Datum of gage is 1,079.30 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,500 cfs and extended above by slope-conveyance studies and logarithmic plotting.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 26, 1940	4.8	374	1949	Mar. 5, 1949	-	1,700
1941	June 14, 1941	5.1	442	1950	June 25, 1950	5.7	870
1942	June 5, 1942	6.65	1,060	1951	Mar. 28, 1951	10.42	3,620
1943	Feb. 22, 1943	7.4	1,440		May 2, 1951	8.79	2,390
1944	May 20, 1944	11.11	4,410		June 6, 1951	6.0	990
	June 13, 1944	9.2	2,640		June 18, 1951	7.1	1,430
1945	Mar. 11, 1945	7.42	1,570		June 26, 1951	5.8	910
	Apr. 24, 1945	6.7	1,270		Aug. 15, 1951	5.9	950
	May 22, 1945	6.7	1,310	1952	Mar. 30, 1952	7.15	1,470
	June 1, 1945	6.8	1,310		July 8, 1952	7.11	1,430
1946	May 25, 1946	9.18	2,750	1953	June 28, 1953	6.54	1,190
1947	June 19, 1947	6.1	1,030		Aug. 4, 1953	5.83	930
	June 23, 1947	16.0	10,000	1954	June 11, 1954	11.06	4,150
	June 30, 1947	8.5	2,170		June 20, 1954	13.21	6,210
1948	Feb. 28, 1948	7.2	1,370		Aug. 27, 1954	7.29	1,530
	Mar. 18, 1948	7.5	1,550	1955	Apr. 25, 1955	5.29	660
				1956	May 31, 1956	3.74	147

Peak stages and discharges of Lizard Creek near Clare, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 21, 1957	4.75	399	1960	Mar. 29, 1960	10.01	3,650
					June 18, 1960	5.86	820
1958	June 3, 1958	7.71	1,740				
	July 14, 1958	5.97	860	1961	Mar. 3, 1961	-	a800
					Mar. 26, 1961	9.08	2,900
1959	June 1, 1959	7.67	1,740				

a About.

4805. Des Moines River at Fort Dodge, Iowa

Location.--Lat 42°30'25", long 94°12'00", in NW¼SW¼ sec.19, T.89 N., R.28 W., on right bank 400 ft upstream from Soldier Creek, 1,800 ft downstream from Illinois Central Railroad bridge, and 2,000 ft downstream from Lizard Creek.

Drainage area.--4,190 sq mi.

Gage.--Nonrecording prior to Oct. 21, 1921, and Oct. 1, 1946, to Dec. 7, 1949; recording Oct. 21, 1921, to June 19, 1927, and after Dec. 7, 1949. Apr. 22, 1905, to July 19, 1906, at bridge 3,000 ft downstream at different datum. Oct. 18, 1913, to June 19, 1927, at site 7 miles downstream at Kalo, at different datum. Oct. 1, 1946, to Dec. 7, 1949, at bridge 1,800 ft upstream at present datum. Datum of gage is 969.38 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--17 ft.

Remarks.--Base for partial-duration series, 8,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	May 17, 1905	7.0	6,460	1947	June 23, 1947	19.62	34,000
1906	Mar. 26, 1906	9.9	12,000	1948	Feb. 27, 1948	9.89	13,000
1914	June 20, 1914	7.4	6,530	1949	Mar. 6, 1949	8.42	9,250
1915	Mar. 22, 1915	8.6	9,120	1950	Mar. 8, 1950	6.70	6,850
	Mar. 26, 1915	9.1	9,970				
	May 30, 1915	14.0	18,500	1951	Mar. 28, 1951	10.42	17,200
					Apr. 8, 1951	12.13	22,300
1916	Mar. 29, 1916	10.2	11,900		May 2, 1951	11.28	19,900
					July 1, 1951	7.88	10,800
1917	Mar. 22, 1917	12.9	17,100				
	June 8, 1917	9.8	11,200	1952	Apr. 2, 1952	8.75	13,100
					July 8, 1952	7.15	9,100
1918	June 4, 1918	10.1	11,400				
	June 7, 1918	8.8	9,460	1953	June 13, 1953	7.14	8,850
1919	Apr. 18, 1919	8.2	8,440	1954	June 11, 1954	7.15	9,150
	June 24, 1919	9.2	10,200		June 21, 1954	19.28	35,400
1920	July 9, 1920	11.38	14,200	1955	Apr. 26, 1955	6.30	6,840
1921	May 28, 1921	7.2	6,600	1956	Mar. 28, 1956	4.97	3,400
1922	Apr. 13, 1922	7.5	7,500	1957	May 30, 1957	5.42	4,400
1923	Mar. 25, 1923	-	4,160	1958	July 14, 1958	7.97	7,450
1924	Apr. 5, 1924	4.52	3,320	1959	May 22, 1959	9.17	9,680
					May 31, 1959	8.67	8,730
1925	Mar. 9, 1925	7.6	4,200				
				1960	Mar. 29, 1960	11.28	16,200
1926	Sept.21, 1926	5.03	3,990		May 26, 1960	8.81	10,700
1927	Apr. 22, 1927	8.45	8,870	1961	Mar. 28, 1961	12.83	20,500

4810. Boone River near Webster City, Iowa

Location.--Lat 42°26'00", long 93°48'15", in NW¼SE¼ sec.18, T.88 N., R.25 W., on right bank 10 ft upstream from bridge on State Highway 60, 2 miles south of Webster City, and 4.5 miles downstream from White Fox Creek.

Drainage area.--844 sq mi.

Gage.--Nonrecording prior to June 26, 1940; recording thereafter. Concrete control since Sept. 24, 1956. Datum of gage is 989.57 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Historical data.--Maximum stage known since 1896, that of June 10, 1918.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 10, 1918	19.1	21,500	1950	June 18, 1950	8.10	3,890
					June 24, 1950	7.10	2,990
1932	June 18, 1932	16.0	15,000				
				1951	Feb. 27, 1951	9.2	4,950
1941	June 3, 1941	5.4	1,500		Mar. 6, 1951	6.60	2,580
					Mar. 29, 1951	13.00	9,800
1942	June 7, 1942	6.7	2,620		Apr. 7, 1951	11.00	7,070
	June 30, 1942	7.52	3,060		Apr. 25, 1951	6.70	2,510
					May 2, 1951	9.85	5,630
1943	Mar. 16, 1943	6.71	2,410		June 3, 1951	7.30	3,030
					June 15, 1951	8.08	3,830
1944	May 20, 1944	11.4	7,090		June 28, 1951	13.37	10,400
	June 14, 1944	13.70	10,200				
				1952	Apr. 1, 1952	7.65	3,330
1945	Mar. 13, 1945	9.26	4,820		July 9, 1952	8.10	3,830
	Apr. 17, 1945	7.42	3,130		July 15, 1952	7.10	2,840
	Apr. 24, 1945	9.18	4,730				
	May 24, 1945	7.44	3,220	1953	May 1, 1953	5.72	1,760
	June 2, 1945	9.21	4,810				
	June 10, 1945	7.02	2,810	1954	June 10, 1954	7.72	3,450
	Aug. 16, 1945	11.51	7,200		June 22, 1954	18.55	20,300
					Aug. 27, 1954	7.04	2,790
1946	February 1946	-	5,340				
	Mar. 13, 1946	7.47	3,150	1955	July 6, 1955	11.14	7,190
	May 26, 1946	10.67	6,730				
				1956	May 30, 1956	4.32	890
1947	June 13, 1947	8.02	3,780				
	June 18, 1947	8.05	3,800	1957	June 16, 1957	7.52	3,230
	June 25, 1947	12.75	9,340				
	July 1, 1947	9.52	5,250	1958	July 15, 1958	9.47	5,300
1948	Feb. 28, 1948	-	2,600	1959	May 24, 1959	7.50	3,300
	Mar. 19, 1948	8.40	4,160		June 1, 1959	7.40	3,210
1949	Mar. 7, 1949	8.24	3,980	1960	Mar. 29, 1960	12.10	8,960
	Mar. 28, 1949	6.90	2,820				
				1961	Mar. 28, 1961	9.80	5,860
1950	Mar. 7, 1950	9.25	5,000				

4815. Des Moines River near Boone, Iowa

Location.--Lat 42°04'40", long 93°55'55", in NE¼NE¼ sec.24, T.84 N., R.27 W., on left bank 30 ft upstream from Boone Water Department dam, 2 miles northwest of Boone, and 2.2 miles upstream from Bluff Creek.

Drainage area.--5,511 sq mi.

Gage.--Nonrecording prior to Feb. 7, 1935; recording thereafter. Concrete control since Oct. 20, 1932. Prior to Apr. 9, 1920, at site 2.5 miles downstream at datum 7.87 ft lower. Apr. 9, 1920, to Sept. 13, 1924, at site 1.3 miles upstream at datum 1.65 ft lower. Oct. 9, 1924, to Jan. 10, 1933, at site 0.3 mile upstream at datum 6.69 ft lower. Jan. 11, 1933, to Sept. 30, 1934, at present site at datum 0.41 ft lower. Datum of gage is 871.52 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 11,000 cfs. Only annual peaks are shown prior to 1935.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 30, 1903	25.4	43,600
1905	May 17, 1905	13.3	13,100
1906	Mar. 29, 1906	15.1	16,200
1907	July 13, 1907	17.2	19,800
1908	June 23, 1908	20.2	26,200
1909	June 29, 1909	17.6	20,400
1910	Mar. 9, 1910	13.4	12,400
1911	Feb. 17, 1911	7.6	4,200
1912	Mar. 30, 1912	20.9	27,000
1913	May 23, 1913	13.8	12,600
1914	June 18, 1914	10.1	6,880
1915	May 31, 1915	22.8	31,400
1916	Mar. 27, 1916	15.6	15,300
1917	Mar. 24, 1917	20.2	24,000
1918	June 6, 1918	20.5	31,400
1919	June 22, 1919	14.9	13,300
1920	July 11, 1920	13.5	16,900
1921	May 30, 1921	9.4	10,400
1922	Apr. 14, 1922	9.9	11,200
1923	Mar. 28, 1923	6.6	6,520
1924	Mar. 30, 1924	7.0	7,350
1925	June 18, 1925	8.8	4,280
1926	Oct. 4, 1925	10.2	6,180
1927	Apr. 18, 1927	13.0	10,100
1928	Aug. 28, 1928	9.9	5,560
1929	Mar. 17, 1929	21.0	24,200
1931	Sept.20, 1931	7.8	2,930
1933	Apr. 2, 1933	17.4	29,100
1934	Apr. 6, 1934	2.9	4,420
1935	Mar. 6, 1935	8.0	11,300
	June 26, 1935	11.3	17,000
1936	Mar. 12, 1936	8.8	12,600
1937	Mar. 7, 1937	9.6	14,000
	June 16, 1937	11.9	18,100
1938	Sept.13, 1938	8.8	12,600
	Sept.18, 1938	16.0	24,500
1939	Mar. 15, 1939	9.0	13,100
1940	Aug. 27, 1940	3.4	7,410
1941	June 16, 1941	4.8	7,040
1942	Nov. 8, 1941	6.0	9,200
1943	Feb. 25, 1943	5.6	8,710
1944	Mar. 22, 1944	17.3	30,000
	June 15, 1944	16.3	27,300
1945	Mar. 13, 1945	9.8	14,700
	Apr. 25, 1945	10.0	15,100
	May 24, 1945	9.2	13,300
	June 2, 1945	11.2	16,500
	Aug. 18, 1945	9.6	13,800
1946	May 27, 1946	11.4	16,800
1947	June 14, 1947	8.3	11,800
	June 20, 1947	8.0	11,400
	June 24, 1947	19.8	37,100
	July 1, 1947	12.6	19,000
1948	Feb. 28, 1948	8.5	12,200
	Mar. 20, 1948	9.4	13,500
1949	Mar. 7, 1949	9.5	14,500
	Mar. 28, 1949	7.9	11,900
1950	Mar. 7, 1950	-	9,800
1951	Mar. 30, 1951	16.82	28,200
	Apr. 9, 1951	16.44	27,200
	May 3, 1951	13.82	21,800
	June 4, 1951	7.52	11,300
	June 29, 1951	11.00	16,900
1952	Apr. 2, 1952	10.78	16,600
	Apr. 15, 1952	7.44	11,100
	July 10, 1952	8.68	1 ,200
1953	June 15, 1953	6.03	9,080
1954	June 11, 1954	10.50	16,200
	June 22, 1954	25.35	57,400
	Aug. 27, 1954	8.97	13,800

Peak stages and discharges of Des Moines River near Boone, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	July 10, 1955	4.10	6,390	1959	June 1, 1959	8.91	13,200
1956	May 31, 1956	1.11	1,550	1960	Mar. 31, 1960	17.08	29,800
1957	June 16, 1957	5.35	8,300		May 27, 1960	8.00	11,800
1958	July 16, 1958	6.22	9,500	1961	Mar. 29, 1961	15.47	26,200

4820. Des Moines River at Des Moines, Iowa

Location.--Lat 41°36'45", long 93°37'15", in NE¼NE¼ sec.34, T.79 N., R.24 W., on right bank 5 ft upstream from Second Avenue Bridge in Des Moines, 1.8 miles upstream from Center Street Dam, 2.8 miles upstream from Raccoon River, and 4.5 miles downstream from Beaver Creek.

Drainage area.--6,245 sq mi.

Gage.--Nonrecording or recording gages at several sites within 3 miles of the present site and at various datums, prior to Aug. 21, 1941; recording and concrete multiple arch control dam at present site thereafter. Datum of gage is 773.68 ft above mean sea level, datum of 1929, and at city datum.

Stage-discharge relation.--Defined by current-meter measurements for present gage location. Relation for gage sites below Center Street Dam prior to 1933 affected by backwater from Raccoon River and from various channel alterations. Discharge for certain peaks prior to 1933 computed from study of backwater effects available for those peaks only; other peak discharges could not be computed.

Bankfull stage.--23 ft.

Historical data.--Flood of June 24, 1954, is the greatest since flood of May 1892 (magnitude unknown) and may have been the greatest since 1851.

Remarks.--Gage heights shown prior to 1934 are from various gages below Center Street Dam, all of which were at about the same datum but slightly different locations. Gage heights 1936-41 computed for present gage from gage readings at Center Street Dam. Backwater effect of 1.0 ft included in peak gage height for June 26, 1947. Base for partial-duration series, 10,000 cfs. Only annual peaks are shown prior to 1944.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1893	May 12, 1893	9.8	-	1921	Feb. 18, 1921	-	10,700
1894	Mar. 6, 1894	3.6	-	1922	Apr. 13, 1922	9.6	12,000
				1923	Mar. 28, 1923	8.2	8,000
1897	Mar. 23, 1897	16.0	-	1924	Mar. 31, 1924	8.3	7,570
1898	June 11, 1898	7.9	-	1925	June 18, 1925	5.1	4,920
1899	Apr. 11, 1899	9.1	-				
1900	Mar. 13, 1900	6.3	-	1926	Sept.20, 1926	13.1	12,000
				1927	Feb. 7, 1927	8.4	12,800
1901	Mar. 20, 1901	9.4	-	1928	Aug. 27, 1928	5.7	5,700
1902	July 10, 1902	20.1	32,900	1929	Mar. 18, 1929	16.1	23,300
1903	May 31, 1903	27.3	42,000	1930	June 16, 1930	5.9	6,140
1904	June 4, 1904	7.9	-				
1905	May 19, 1905	9.6	-	1931	Sept.28, 1931	3.5	2,290
				1932	Mar. 5, 1932	14.62	28,500
1906	Mar. 30, 1906	10.8	13,700	1933	Apr. 4, 1933	16.1	30,600
1907	July 15, 1907	11.6	-	1934	Apr. 7, 1934	4.40	5,370
1908	June 25, 1908	14.9	-	1935	July 3, 1935	13.3	17,600
1909	July 9, 1909	14.6	-				
1910	Mar. 8, 1910	11.5	-	1936	Mar. 14, 1936	-	13,600
				1937	Mar. 7, 1937	13.2	14,400
1911	Nov. 18, 1910	11.9	-		June 18, 1937	-	15,800
1912	Apr. 1, 1912	17.1	-	1938	Sept.20, 1938	14.70	24,800
1913	May 16, 1913	10.8	-	1939	Mar. 16, 1939	4.60	13,400
1914	Sept.17, 1914	8.3	-	1940	Aug. 28, 1940	3.00	6,810
1915	June 1, 1915	16.0	29,000				
				1941	June 16, 1941	3.33	8,100
1916	Mar. 28, 1916	10.1	17,200	1942	Nov. 10, 1941	17.1	9,330
1917	June 10, 1917	16.2	26,800	1943	Feb. 24, 1943	19.02	a9,500
1918	June 7, 1918	16.5	27,300				
1919	Apr. 25, 1919	11.2	16,900	1944	May 23, 1944	24.4	34,000
1920	July 12, 1920	10.1	18,700		June 17, 1944	23.4	29,100

a About.

Peak stages and discharges of Des Moines River at Des Moines, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 18, 1945	19.5	15,500	1951	July 4, 1951	20.40	18,500
	Apr. 19, 1945	18.5	12,500		July 14, 1951	17.59	10,600
	Apr. 27, 1945	19.5	15,400				
	May 25, 1945	19.6	15,800	1952	Mar. 23, 1952	17.47	10,400
	June 4, 1945	20.46	18,700		Apr. 3, 1952	20.20	17,800
	Aug. 20, 1945	18.3	12,100		Apr. 17, 1952	18.30	12,400
					July 12, 1952	18.87	13,900
1946	Mar. 16, 1946	18.0	10,900				
	May 29, 1946	19.78	16,900	1953	June 12, 1953	17.90	11,400
	June 21, 1946	17.8	11,000				
				1954	June 13, 1954	19.06	14,300
1947	June 6, 1947	18.1	11,700		June 24, 1954	30.16	60,200
	June 13, 1947	21.3	20,200		Aug. 29, 1954	19.92	16,800
	June 26, 1947	26.5	39,500				
	June 3, 1947	21.2	21,300	1955	Oct. 15, 1954	16.02	6,840
1948	Mar. 2, 1948	-	a12,000	1956	May 30, 1956	13.44	1,420
	Mar. 19, 1948	21.21	20,300				
				1957	June 17, 1957	17.15	9,680
1949	Mar. 8, 1949	19.43	15,300				
	Mar. 30, 1949	18.4	12,400	1958	July 17, 1958	16.83	8,480
1950	Mar. 9, 1950	17.73	10,600	1959	May 26, 1959	17.42	10,200
	June 22, 1950	17.67	10,600		June 3, 1959	19.72	16,100
1951	Mar. 1, 1951	19.0	a12,000	1960	Apr. 1, 1960	25.25	36,200
	Mar. 31, 1951	23.80	32,400		May 7, 1960	18.61	13,100
	Apr. 10, 1951	23.68	31,900		May 27, 1960	19.25	14,600
	Apr. 27, 1951	19.25	14,700				
	May 4, 1951	22.54	26,600	1961	Mar. 31, 1961	22.55	26,700
	June 5, 1951	19.02	14,100				

a About.

4825. North Raccoon River near Jefferson, Iowa

Location.--Lat 41°59'20", long 94°22'30", in SW¼NW¼ sec.20, T.83 N., R.30 W., on right bank 50 ft downstream from bridge on State Highway 17, 2 miles south of Jefferson, and 4.2 miles upstream from Hardin Creek.

Drainage area.--1,619 sq mi.

Gage.--Nonrecording prior to June 26, 1946, and Oct. 1, 1955, to Apr. 30, 1958; recording June 26, 1946, to Sept. 30, 1955, and after Apr. 30, 1958. Prior to Apr. 22, 1946, at site 4 miles upstream at different datum. Datum of gage is 967.09 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 28, 1940	10.9	4,030	1947	June 14, 1947	12.4	5,780
					June 23, 1947	22.3	29,100
1941	June 14, 1941	9.1	2,420		July 8, 1947	11.6	5,420
1942	July 15, 1942	10.5	3,590	1948	Mar. 20, 1948	13.8	8,630
1943	Aug. 13, 1943	15.5	9,480	1949	Mar. 7, 1949	14.8	10,100
1944	May 22, 1944	15.4	9,860	1950	June 19, 1950	12.0	6,050
	June 14, 1944	16.2	11,900		June 23, 1950	11.1	4,710
1945	Mar. 12, 1945	12.9	6,880	1951	Mar. 29, 1951	17.39	16,000
	Apr. 18, 1945	10.6	4,130		May 3, 1951	15.62	11,800
	Apr. 25, 1945	14.2	8,700		June 3, 1951	12.88	6,720
	May 24, 1945	13.1	7,120		June 21, 1951	12.25	5,800
	June 3, 1945	14.3	8,780		July 4, 1951	12.58	6,320
	June 10, 1945	13.5	7,630		Aug. 18, 1951	12.41	6,060
	Aug. 8, 1945	10.7	4,230		Aug. 30, 1951	12.97	6,860
1946	Mar. 16, 1946	11.5	5,160	1952	Apr. 1, 1952	12.80	6,580
	May 28, 1946	13.4	7,310		July 11, 1952	12.51	6,190

Peak stages and discharges of North Raccoon River near Jefferson, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 1, 1953	10.10	3,490	1958	June 7, 1958	11.70	4,720
1954	June 13, 1954	11.09	4,670	1959	June 3, 1959	15.06	9,800
	June 22, 1954	19.52	21,300				
	Aug. 29, 1954	14.19	9,360	1960	Mar. 31, 1960	19.43	18,600
1955	Apr. 26, 1955	9.78	3,580		May 28, 1960	13.45	6,960
1956	May 13, 1956	5.4	650	1961	Mar. 29, 1961	13.19	6,680
1957	June 16, 1957	13.49	7,800				

4826. Hardin Creek at Farnhamville, Iowa

Location.--Lat 42°16', long 94°25', near northeast corner sec.14, T.86 N., R.31 W., at bridge on State Highway 175 near west city limits of Farnhamville.

Drainage area.--43.7 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 29, 1952	8.09	318	1957	June 16, 1957	7.90	270
1953	July 14, 1953	8.44	429	1958	June 7, 1958	7.69	225
1954	Aug. 26, 1954	10.48	2,000	1959	June 1, 1959	9.06	700
1955	Mar. 11, 1955	8.76	557	1960	Mar. 29, 1960	9.75	840
1956	Mar. 21, 1956	6.78	118	1961	Sept.30, 1961	7.91	272

4828. Happy Run at Churdan, Iowa

Location.--Lat 42°10', long 94°30', near southwest corner sec.17, T.85 N., R.31 W., at bridge near west city limits of Churdan.

Drainage area.--7.58 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 29, 1951	7.72	110	1957	June 17, 1957	7.81	71
1952	Mar. 19, 1952	6.25	54	1958	-	(a)	<19
1953	-	(a)	<19	1959	June 1, 1959	7.70	77
1954	Aug. 26, 1954	7.87	116	1960	May 6, 1960	6.50	48
1955	July 10, 1955	7.80	113	1961	Sept.30, 1961	6.42	46
1956	-	(a)	<19				

a Not determined; peak stage did not reach bottom of gage.

4829. Hardin Creek near Farlin, Iowa

Location.--Lat 42°05', long 94°25', near north quarter corner sec.14, T.84 N., R.31 W., at bridge, 1½ miles northeast of Farlin.

Drainage area.--101 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 29, 1951	12.97	2,270	1957	June 17, 1957	10.59	743
1952	Mar. 29, 1952	9.11	472	1958	-	(a)	<120
1953	July 14, 1953	7.96	300	1959	June 1, 1959	11.40	980
1954	Aug. 27, 1954	12.57	1,810	1960	Mar. 29, 1960	13.32	1,960
1955	July 10, 1955	10.03	631	1961	Mar. 27, 1961	8.82	324
1956	-	(a)	<120				

a Not determined; peak stage did not reach bottom of gage.

4830. East Fork Hardin Creek near Churdan, Iowa

Location.--Lat 42°06'25", long 94°22'10", in SE¼SW¼ sec.5, T.84 N., R.30 W., on left bank 35 ft upstream from highway bridge, 4.4 miles upstream from mouth, and 6.5 miles southeast of Churdan.

Drainage area.--24.0 sq mi.

Gage.--Recording and concrete control. Datum of gage is 1,050.90 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 180 cfs and extended above by logarithmic plotting.

Bankfull stage.--High banks are not subject to overflow.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 10, 1953	5.17	105	1958	July 19, 1958	6.10	186
1954	Aug. 26, 1954	7.73	329	1959	May 31, 1959	7.36	288
1955	Oct. 13, 1954	6.15	250	1960	Mar. 29, 1960	-	a300
	July 10, 1955	6.60	252		Apr. 24, 1960	8.04	350
					May 5, 1960	8.92	413
1956	May 13, 1956	4.42	112		May 25, 1960	6.30	231
1957	June 14, 1957	6.57	216	1961	Feb. 22, 1961	-	a150
	June 16, 1957	8.82	371				

a About.

4840. South Raccoon River at Redfield, Iowa

Location.--Lat 41°34'45", long 94°11'00", in SW¼SW¼ sec.3, T.78 N., R.29 W., on left bank 10 ft upstream from highway bridge at Redfield, 0.8 mile downstream from bridge on State Highway 90, 1 mile downstream from Middle Raccoon River, and 15.6 miles upstream from mouth.

Drainage area.--988 sq mi.

Gage.--Nonrecording prior to June 12, 1946; recording thereafter. Datum of gage is 896.43 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--20 ft.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	July 31, 1940	13.3	6,100	1951	May 2, 1951	17.70	11,700
					June 2, 1951	18.14	12,200
1941	June 28, 1941	10.5	3,550		June 7, 1951	12.19	5,680
					June 3, 1951	16.26	10,100
1942	May 11, 1942	13.0	5,740				
	Aug. 28, 1942	13.4	6,380	1952	Mar. 13, 1952	11.53	5,160
					Mar. 31, 1952	14.39	7,840
1943	Aug. 25, 1943	14.1	6,610		June 21, 1952	12.12	5,680
					June 27, 1952	16.06	9,740
1944	May 3, 1944	13.2	5,930				
	May 20, 1944	23.8	20,000	1953	May 24, 1953	12.23	5,680
	May 23, 1944	16.9	9,750		June 10, 1953	23.08	21,300
	June 11, 1944	13.7	6,430				
				1954	Aug. 22, 1954	13.84	7,200
1945	May 14, 1945	15.0	7,730				
	May 22, 1945	17.2	10,100	1955	Apr. 24, 1955	12.86	6,310
	May 30, 1945	15.0	7,730				
	June 6, 1945	13.1	5,830	1956	Sept. 4, 1956	9.80	3,840
1946	Aug. 24, 1946	18.9	12,000	1957	June 17, 1957	17.80	12,700
	Sept. 8, 1946	21.4	15,200				
				1958	July 2, 1958	29.04	35,000
1947	June 2, 1947	19.9	15,000		July 4, 1958	19.28	14,200
	June 5, 1947	22.7	20,500		July 19, 1958	15.80	9,580
	June 12, 1947	24.3	23,800		Sept. 6, 1958	25.12	25,500
	June 24, 1947	16.7	10,500				
				1959	May 30, 1959	10.95	5,420
1948	Mar. 19, 1948	21.3	17,600				
				1960	Mar. 30, 1960	15.29	9,340
1949	Mar. 6, 1949	14.2	7,530		May 7, 1960	15.31	9,340
1950	May 5, 1950	14.7	7,990	1961	Feb. 23, 1961	11.23	5,590
	June 19, 1950	17.9	11,600		Mar. 27, 1961	10.67	5,160
	June 23, 1950	13.8	7,080		June 14, 1961	10.78	5,250
					Sept.30, 1961	11.00	5,420
1951	Mar. 29, 1951	20.10	15,400				

4845. Raccoon River at Van Meter, Iowa

Location.--Lat 41°32'00", long 93°57'10", in SW¼SW¼ sec.22, T.78 N., R.27 W., on right bank 100 ft downstream from highway bridge, 0.3 mile northeast of Van Meter, 1.2 miles downstream from confluence of North and South Raccoon Rivers, and 30 miles upstream from mouth.

Drainage area.--3,441 sq mi.

Gage.--Nonrecording prior to May 31, 1923, and Oct. 1, 1927, to Aug. 8, 1934; recording May 31, 1923, to Sept. 30, 1927, and after Aug. 8, 1934. Prior to Oct. 1, 1915, at datum 2.00 ft higher. Datum of gage is 841.16 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--13 ft.

Remarks.--Base for partial-duration series, 10,000 cfs.

Peak stages and discharges of Raccoon River at Van Meter, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)
1915	May 29, 1915	15.19	21,600
1916	Mar. 16, 1916	8.4	5,840
1917	June 7, 1917	18.4	35,200
	June 10, 1917	17.0	26,000
1918	June 6, 1918	13.7	14,800
1919	Apr. 24, 1919	12.6	12,400
	May 4, 1919	12.4	12,000
	June 4, 1919	11.7	10,700
	June 11, 1919	11.8	11,000
1920	Mar. 14, 1920	-	10,000
1921	Sept.20, 1921	11.1	9,670
1922	Apr. 11, 1922	12.1	11,400
1923	Mar. 27, 1923	11.6	10,300
1924	Oct. 3, 1923	11.2	10,000
	June 8, 1924	12.3	12,400
	June 25, 1924	15.2	20,100
1925	Aug. 7, 1925	10.1	8,060
1926	Sept.20, 1926	19.0	32,000
1927	Feb. 8, 1927	9.7	6,880
1928	Aug. 27, 1928	10.8	8,480
1929	Mar. 14, 1929	16.2	19,400
1930	May 13-16,1930	8.8	5,870
1931	June 21, 1931	8.3	5,270
1932	Nov. 24, 1931	14.6	15,200
	Jan. 1, 1932	12.5	11,400
	Mar. 4, 1932	14.2	14,200
1933	Apr. 5, 1933	10.1	7,550
1934	Apr. 7, 1934	5.0	2,020
1935	Mar. 5, 1935	13.1	11,000
1936	Mar. 5, 1936	13.9	12,200
1937	Mar. 4, 1937	13.9	12,200
1938	June 2, 1938	11.6	8,590
1939	Mar. 12, 1939	-	a14,000
	Mar. 16, 1939	13.0	10,600
1940	July 31, 1940	9.2	5,770
1941	June 2, 1941	10.0	6,920
1942	May 11, 1942	11.7	8,800
1943	June 16, 1943	12.9	10,000
1943	Aug. 16, 1943	14.7	12,500
1944	May 21, 1944	18.3	23,400
	June 11, 1944	15.1	13,100
	June 16, 1944	17.2	17,900
1945	Mar. 15, 1945	13.7	11,600
	Apr. 28, 1945	12.7	10,200
	May 15, 1945	13.4	11,200
	May 23, 1945	15.7	14,300
	May 31, 1945	15.0	12,900
	June 6, 1945	16.1	15,100
	June 13, 1945	13.0	10,900
1946	Aug. 25, 1946	13.2	10,300
	Sept. 9, 1946	16.1	15,100
1947	June 3, 1947	17.4	19,800
	June 5, 1947	19.3	25,600
	June 13, 1947	21.4	41,200
	June 23, 1947	16.4	17,300
	June 25, 1947	21.1	38,000
1948	Mar. 19, 1948	19.0	26,700
1949	Mar. 6, 1949	15.7	15,900
1950	Mar. 7, 1950	12.4	11,300
	June 20, 1950	16.1	17,600
	June 24, 1950	14.0	13,700
1951	Mar. 31, 1951	19.15	27,700
	May 2, 1951	17.00	19,900
	June 3, 1951	17.13	20,200
	June 8, 1951	14.47	14,400
	July 4, 1951	15.18	15,800
	July 6, 1951	11.55	10,100
1952	Apr. 1, 1952	14.81	15,100
	June 27, 1952	14.67	14,900
1953	June 11, 1953	19.42	26,000
1954	June 16, 1954	12.46	11,000
	June 25, 1954	17.40	20,800
	Aug. 22, 1954	12.07	10,200
	Aug. 31, 1954	14.14	13,800
1955	Apr. 24, 1955	11.43	8,620
1956	Sept. 4, 1956	7.43	4,150
1957	June 18, 1957	17.27	20,000
1958	July 3, 1958	21.77	35,200
	July 20, 1958	13.73	13,300
	Sept. 6, 1958	17.76	20,900
1959	June 4, 1959	13.22	13,500
1960	Apr. 2, 1960	21.18	32,300
	May 7, 1960	14.62	14,800
	May 26, 1960	11.76	10,400
1961	Mar. 27, 1961	12.35	11,300

a About.

4855. Des Moines River below Raccoon River, at Des Moines, Iowa

Location.--Lat 41°34'30", long 93°35'40", in NE¼SE¼ sec.10, T.73 N., R.24 W., near right bank on upstream side of East 14th Street Bridge, 0.8 mile downstream from Raccoon River and Scott Street Dam, and at mile 200.7.

Drainage area.--9,879 sq mi.

Gage.--Recording prior to Oct. 1, 1951, and Oct. 1, 1953, to Sept. 30, 1959, at site above Scott Street Dam, 0.8 mile upstream, at datum 11.16 ft higher. Nonrecording Oct. 1, 1951, to Sept. 30, 1953, and after Sept. 30, 1959. Datum of gage is 762.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--26 ft.

Historical data.--Maximum stage known since at least 1893, that of June 26, 1947, site and datum then in use.

Remarks.--Base for partial-duration series, 12,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	a20.9	-	1951	Apr. 27, 1951	10.82	22,500
					May 5, 1951	15.64	42,000
1940	Aug. 30, 1940	6.9	8,990		June 4, 1951	13.80	33,100
					June 21, 1951	8.15	16,600
1941	June 16, 1941	-	b13,000		July 4, 1951	-	33,400
					Aug. 17, 1951	7.57	14,600
1942	May 12, 1942	9.03	17,000				
				1952	Mar. 14, 1952	16.5	12,800
1943	June 16, 1943	-	12,800		Mar. 23, 1952	18.4	16,700
	Aug. 17, 1943	8.0	15,100		Apr. 1, 1952	22.5	28,900
					June 27, 1952	19.7	20,800
1944	Apr. 24, 1944	-	14,600		July 12, 1952	20.0	21,600
	May 4, 1944	8.60	16,700				
	May 24, 1944	17.60	53,200	1953	June 12, 1953	24.50	34,200
	June 17, 1944	16.20	45,500		June 29, 1953	16.56	13,000
1945	Mar. 17, 1945	12.38	27,000	1954	June 13, 1954	7.93	14,800
	Apr. 17, 1945	10.46	21,700		June 16, 1954	8.64	16,900
	Apr. 28, 1945	11.21	23,900		June 24, 1954	20.08	67,300
	May 15, 1945	8.91	17,400		Aug. 22, 1954	8.54	16,500
	May 25, 1945	12.62	28,400		Aug. 24, 1954	7.70	14,100
	June 4, 1945	12.77	28,900		Aug. 26, 1954	10.55	20,800
	June 13, 1945	-	21,200		Aug. 29, 1954	12.50	26,300
1946	Mar. 16, 1946	9.37	19,100	1955	Apr. 27, 1955	-	11,600
	May 29, 1946	10.82	22,800		July 11, 1955	7.27	11,600
	June 20, 1946	8.86	17,300				
	Sept.10, 1946	8.70	15,300	1956	Sept. 5, 1956	5.71	3,850
1947	Apr. 13, 1947	-	17,000	1957	June 19, 1957	11.60	25,700
	June 6, 1947	15.08	37,800				
	June 13, 1947	18.60	59,500	1958	July 4, 1958	14.96	39,000
	June 23, 1947	-	39,200		July 20, 1958	9.34	19,100
	June 26, 1947	20.8	77,000		Sept. 7, 1958	8.00	16,000
1948	Mar. 3, 1948	-	13,100	1959	Mar. 27, 1959	7.31	13,000
	Mar. 20, 1948	15.69	44,400		May 26, 1959	7.70	14,200
					June 3, 1959	12.82	27,700
1949	Mar. 7, 1949	12.58	28,100		June 30, 1959	7.13	12,200
	Mar. 29, 1949	-	17,200				
				1960	Apr. 2, 1960	28.86	68,900
1950	Mar. 8, 1950	-	16,300		Apr. 18, 1960	18.35	15,500
	May 11, 1950	-	16,000		May 7, 1960	22.50	26,300
	June 21, 1950	11.56	24,800		May 26, 1960	22.20	25,300
1951	Mar. 1, 1951	-	15,000	1961	Mar. 31, 1961	25.10	37,600
	Mar. 31, 1951	17.75	54,800		Apr. 12, 1961	16.30	12,500

a From flood profile; from office of Des Moines City Engineer.
b Maximum daily.

4860. North River near Norwalk, Iowa

Location.--Lat 41°27'25", long 93°39'10", in NW¼SW¼ sec.20, T.77 N., R.24 W., on left bank 10 ft downstream from highway bridge, 1¾ miles southeast of Norwalk, 8 miles northwest of Indianola, 8.7 miles upstream from Middle Creek, and 9 miles south of Des Moines.

Drainage area.--349 sq mi. Prior to Oct. 12, 1960, 340 sq mi.

Gage.--Nonrecording prior to June 12, 1946, and Jan. 7 to Oct. 11, 1960. Recording June 12, 1946, to Jan. 6, 1960, and after Oct. 11, 1960. Jan. 7 to Oct. 11, 1960, at site 2.1 miles upstream at different datum. Datum of gage is 788.45 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 9,100 cfs and extended above by area-velocity studies.

Bankfull stage.--19 ft.

Historical data.--A stage of 21 ft occurred in January or February 1939, from high-water mark and statement of local resident; discharge, about 6,000 cfs.

Remarks.--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 1, 1940	14.74	986	1950	June 20, 1950	20.6	2,260
1941	Sept.17, 1941	17.4	1,530	1951	Mar. 30, 1951	19.77	2,380
					May 2, 1951	20.52	3,970
1942	Oct. 9, 1941	19.8	2,250		May 27, 1951	20.25	3,300
	Nov. 2, 1941	20.4	3,800		June 4, 1951	19.11	1,760
	Dec. 25, 1941	19.0	2,040		June 9, 1951	19.40	1,980
	May 7, 1942	18.5	1,820		July 4, 1951	19.89	2,600
	May 12, 1942	20.62	4,350				
	July 21, 1942	20.0	3,020	1952	Mar. 12, 1952	20.48	3,970
					May 25, 1952	19.79	2,440
1943	Feb. 5, 1943	-	1,710		June 23, 1952	20.80	5,670
	June 18, 1943	20.51	3,720		June 29, 1952	18.96	1,820
					Aug. 17, 1952	19.22	1,820
1944	May 5, 1944	19.8	2,430				
	May 22, 1944	20.3	3,430	1953	June 11, 1953	19.64	1,940
	May 27, 1944	20.45	3,830				
	June 12, 1944	20.1	2,970	1954	May 31, 1954	18.45	1,600
1945	Mar. 17, 1945	19.7	2,290	1955	July 11, 1955	-	a1,400
	Apr. 5, 1945	19.8	2,430				
	Apr. 17, 1945	19.9	2,590	1956	Aug. 8, 1956	16.85	1,140
	May 16, 1945	19.9	2,590				
				1957	May 11, 1957	18.26	1,410
1946	Mar. 27, 1946	19.6	2,170				
	Aug. 26, 1946	21.87	10,200	1958	July 6, 1958	20.77	3,180
					July 21, 1958	20.20	2,220
1947	Oct. 20, 1946	20.0	2,800				
	Apr. 6, 1947	19.9	2,600	1959	May 22, 1959	19.63	1,810
	Apr. 11, 1947	20.8	5,040		May 31, 1959	20.33	2,660
	May 30, 1947	20.6	4,370		July 1, 1959	22.60	9,460
	June 5, 1947	24.4	26,000				
	June 13, 1947	25.3	32,000	1960	Jan. 13, 1960	19.76	4,580
	June 24, 1947	21.1	6,080		Mar. 30, 1960	-	a6,800
	July 7, 1947	19.3	2,080		May 7, 1960	17.8	2,500
					May 25, 1960	17.97	2,600
1948	Mar. 19, 1948	21.36	7,200				
				1961	Mar. 14, 1961	19.92	2,290
1949	Mar. 5, 1949	18.68	1,860		Mar. 29, 1961	19.19	1,730
					Apr. 14, 1961	20.05	2,480
1950	Mar. 2, 1950	-	a2,500		June 8, 1961	20.18	2,130
	Mar. 6, 1950	20.32	3,430		June 15, 1961	19.90	1,910
	June 16, 1950	19.4	1,800				

a About.

4864.9 Middle River near Indianola, Iowa

Location.--Lat 41°26'00", long 93°33'20", in SW¼NW¼ sec.31, T.77 N., R.23 W., on right bank 5 ft downstream from bridge on U.S. Highways 65 and 69, 5 miles north of Indianola, 11.0 miles south of Des Moines, and 12.5 miles upstream from mouth.

Drainage area.--506 sq mi.

Gage.--Nonrecording prior to June 11, 1946; June 9, 1947, to Nov. 23, 1948; and Sept. 8, 1951, to Oct. 30, 1952. Recording June 11, 1946, to June 8, 1947 (destroyed by flood); Nov. 24, 1948, to Sept. 7, 1951; and after Oct. 30, 1952. Datum of gage is 773.34 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--16 ft.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	July 31, 1940	12.40	2,400	1951	Mar. 28, 1951	16.4	5,520
					May 1, 1951	19.37	8,520
1941	June 9, 1941	19.73	8,240		May 26, 1951	17.3	6,270
	Sept.16, 1941	17.0	5,060		June 8, 1951	15.65	4,920
1942	Nov. 1, 1941	19.5	7,960	1952	Mar. 13, 1952	15.65	4,920
	Dec. 24, 1941	16.5	4,750		May 23, 1952	16.71	5,760
	May 11, 1942	17.7	5,740		June 22, 1952	22.20	14,400
	July 19, 1942	17.5	5,540		Aug. 15, 1952	16.26	5,440
1943	May 16, 1943	15.54	4,150	1953	June 10, 1953	17.53	6,450
1944	May 22, 1944	20.32	9,490	1954	June 1, 1954	17.55	6,540
					June 12, 1954	16.28	5,440
1945	Mar. 15, 1945	19.36	7,860		June 16, 1954	16.80	5,840
	Apr. 16, 1945	19.0	7,280				
	May 15, 1945	17.4	5,000	1955	July 10, 1955	11.88	2,850
1946	Jan. 5, 1946	-	6,900	1956	Aug. 18, 1956	11.48	2,650
	June 20, 1946	18.4	6,550				
	Aug. 25, 1946	18.90	7,190	1957	May 11, 1957	12.90	3,350
1947	Apr. 5, 1947	18.8	7,650	1958	July 2, 1958	17.54	6,090
	Apr. 11, 1947	19.8	9,250		Sept. 8, 1958	19.22	8,260
	May 29, 1947	19.0	7,950				
	June 5, 1947	25.0	21,800	1959	May 21, 1959	17.13	6,090
	June 13, 1947	26.40	34,000		May 30, 1959	-	a6,000
	June 21, 1947	19.1	8,100		July 1, 1959	19.52	8,650
1948	Mar. 19, 1948	17.40	5,840	1960	Jan. 13, 1960	19.44	8,520
					Mar. 30, 1960	20.43	9,900
1949	Feb. 24, 1949	-	5,740		May 25, 1960	15.26	4,710
	June 25, 1949	15.67	4,670				
				1961	Feb. 18, 1961	-	a6,500
1950	Feb. 28, 1950	-	4,600		Mar. 13, 1961	16.97	5,520
	June 19, 1950	16.47	5,600		Sept.13, 1961	16.76	5,360

a About.

4873. South Otter Creek near Woodburn, Iowa

Location.--Lat 41°02', long 93°41', near southeast corner sec.18, T.72 N., R.24 W., at culvert on U.S. Highway 34, 3 miles northwest of Woodburn.

Drainage area.--2.26 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges of South Otter Creek near Woodburn, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 8, 1953	6.81	-	1958	July 3, 1958	7.22	-
1954	May 29, 1954	3.68	-	1959	May 21, 1959	10.68	-
1955	Oct. 8, 1954	5.01	-	1960	June 13, 1960	9.92	-
1956	-	(a)	-	1961	Feb. 18, 1961	9.70	-
1957	Apr. 2, 1957	3.99	-				

a Not determined; peak stage did not reach bottom of gage.

4873.5. South Otter Creek tributary near Woodburn, Iowa

Location.--Lat 41°03', long 93°36', near southwest corner sec.11, T.72 N., R.24 W., at county road bridge, 2 miles north of Woodburn.

Drainage area.--0.71 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	July 9, 1955	11.98	-	1959	May 21, 1959	13.21	-
				1960	June 13, 1960	10.80	-
1956	Sept. 9, 1956	10.70	-				
1957	June 10, 1957	9.83	-	1961	Feb. 18, 1961	10.70	-
1958	July 30, 1958	10.90	-				

4874.7 South River near Ackworth, Iowa

Location.--Lat 41°22'20", long 93°25'45", in SW¼NE¼ sec.19, T.76 N., R.22 W., near center of span on downstream side of bridge on State Highway 92, 2 miles east of Ackworth, 4.5 miles downstream from Otter Creek, and 7 miles east of Indianola.

Drainage area.--474 sq mi.

Gage.--Nonrecording prior to June 13, 1946, and after Apr. 13, 1960; recording June 13, 1946, to Apr. 13, 1960. Datum of gage is 761.91 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--23.5 ft.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 1930	a24.5	30,000	1944	May 22, 1944	19.7	10,900
					June 9, 1944	17.5	8,600
1940	Aug. 11, 1940	8.3	1,770				
				1945	Mar. 15, 1945	14.8	6,140
1941	June 9, 1941	20.6	13,400		Apr. 16, 1945	19.6	11,800
	Sept.16, 1941	17.9	8,570		May 14, 1945	18.5	10,100
					May 25, 1945	15.4	6,660
1942	Oct. 22, 1941	16.9	7,420				
	Nov. 1, 1941	18.7	9,480	1946	Jan. 6, 1946	-	5,100
	Dec. 23, 1941	14.3	5,210		Mar. 26, 1946	16.3	7,470
	July 19, 1942	18.4	9,090		June 19, 1946	20.0	12,600
					Aug. 25, 1946	15.5	7,470
1943	May 15, 1943	15.1	6,130				
	June 12, 1943	13.8	5,130	1947	Apr. 4, 1947	18.6	10,300
					Apr. 11, 1947	13.9	7,290
1944	Apr. 22, 1944	13.4	5,030		May 29, 1947	19.8	12,400
	May 2, 1944	16.3	7,460		June 5, 1947	24.6	34,000

a From information by local residents.

Peak stages and discharges of South River near Ackworth, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 13, 1947	23.1	22,500	1954	Apr. 25, 1954	13.70	7,100
	June 22, 1947	21.9	17,300		June 1, 1954	12.37	5,860
					June 16, 1954	13.03	6,400
1948	Mar. 15, 1948	16.0	8,900				
				1955	July 10, 1955	12.02	5,500
1949	Feb. 24, 1949	14.5	7,250				
	June 25, 1949	17.8	11,000	1956	Aug. 18, 1956	7.69	2,350
1950	Feb. 28, 1950	16.6	10,300	1957	Apr. 3, 1957	9.01	3,130
	May 9, 1950	20.1	15,200				
	June 14, 1950	13.9	7,350	1958	July 2, 1958	14.43	6,040
	June 18, 1950	13.5	6,950		July 19, 1958	13.88	5,590
1951	Mar. 28, 1951	12.02	5,450	1959	Mar. 26, 1959	12.5	5,150
	Apr. 13, 1951	11.90	5,360		Apr. 20, 1959	13.03	5,500
	May 1, 1951	16.80	10,500		May 22, 1959	22.81	13,700
	May 26, 1951	18.84	13,100		May 29, 1959	19.35	11,700
	June 2, 1951	15.12	8,660		June 30, 1959	19.52	11,800
	June 7, 1951	14.43	7,960		Aug. 7, 1959	14.83	6,940
	July 3, 1951	12.17	5,980		Sept.26, 1959	15.04	7,100
1952	Mar. 13, 1952	12.23	5,980	1960	Jan. 13, 1960	21.26	13,000
	May 23, 1952	13.01	5,800		Mar. 30, 1960	22.60	18,100
	June 22, 1952	21.83	16,600		May 6, 1960	16.6	8,190
	Aug. 15, 1952	14.32	7,780		May 25, 1960	19.7	11,300
					Sept.24, 1960	18.0	9,450
1953	Feb. 20, 1953	12.81	6,220				
	Mar. 30, 1953	12.53	5,950	1961	Feb. 18, 1961	19.8	11,400
	June 10, 1953	20.65	16,200		Mar. 13, 1961	19.6	11,100

4876. South Whitebreast Creek near Osceola, Iowa

Location.--Lat 40°58', long 93°41', near southwest corner sec.12, T.71 N., R.25 W., at county road bridge, 6 miles southeast of Osceola.

Drainage area.--28.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements to 1,000 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 8, 1953	11.21	1,280	1958	July 3, 1958	11.57	1,350
1954	May 29, 1954	5.27	302	1959	Aug. 6, 1959	13.09	1,680
1955	July 9, 1955	12.02	1,440	1960	Mar. 27, 1960	11.44	1,330
1956	-	(a)	b75	1961	Sept.14, 1961	11.04	1,240
1957	Apr. 2, 1957	9.90	1,020				

a Not determined; peak stage did not reach bottom of gage.
b Less than figure shown.

4878. Whitebreast Creek at Lucas, Iowa

Location.--Lat 41°02', long 93°28', in NE¼ sec.23, T.72 N., R.23 W., at bridge on U.S. Highway 65, near south city limits of Lucas.

Drainage area.--128 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Whitebreast Creek at Lucas, Iowa

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 8, 1953	15.15	3,420	1958	July 30, 1958	13.59	1,760
1954	May 29, 1954	8.52	583	1959	May 22, 1959	16.98	11,900
1955	July 8, 1955	14.95	2,960	1960	Mar. 29, 1960	15.80	5,600
1956	-	(a)	b110	1961	Sept.14, 1961	14.41	2,570
1957	Apr. 4, 1957	12.85	1,460				

a Not determined; peak stage did not reach bottom of gage.
b Less than figure shown.

4880. Whitebreast Creek near Knoxville, Iowa

Location.--Lat 41°19'25", long 93°08'55", in NE¼SW¼ sec.3, T.75 N., R.20 W., on right bank 10 ft downstream from bridge on State Highway 92, 1.1 miles upstream from Butcher Creek, 2.2 miles west of Knoxville, and 11.1 miles upstream from mouth.

Drainage area.--380 sq mi.

Gage.--Nonrecording prior to Feb. 18, 1949; recording thereafter. Datum of gage is 734.73 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--High banks are not subject to overflow.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	June 20, 1946	4.20	8,740	1957	May 13, 1957	10.42	2,760
1947	June 6, 1947	19.6	14,000	1958	July 2, 1958	18.37	7,300
					July 4, 1958	18.24	7,020
1948	Mar. 16, 1948	11.2	2,730		July 19, 1958	12.35	3,660
1949	Feb. 19, 1949	-	2,800	1959	Nov. 17, 1958	8.9	2,630
	Feb. 23, 1949	15.30	5,400		Mar. 20, 1959	-	a3,600
	June 25, 1949	16.38	6,580		Mar. 26, 1959	14.0	4,850
					Apr. 1, 1959	-	a2,600
1950	Feb. 28, 1950	15.83	5,900		Apr. 20, 1959	-	a5,000
	May 10, 1950	17.95	9,100		May 11, 1959	11.5	3,680
	June 18, 1950	12.16	3,540		May 22, 1959	17.75	7,800
					May 31, 1959	16.64	6,660
1951	Mar. 28, 1951	11.17	3,290		July 1, 1959	9.03	2,670
	May 3, 1951	9.92	2,710		Sept.26, 1959	10.77	3,390
	May 26, 1951	14.70	5,020				
	July 3, 1951	14.98	5,200	1960	Jan. 12, 1960	17.10	7,100
					Mar. 30, 1960	19.02	11,000
1952	Mar. 13, 1952	12.49	3,880		Apr. 17, 1960	-	a3,900
	Mar. 19, 1952	10.00	2,750		May 7, 1960	17.0	7,000
	June 21, 1952	18.16	9,500		May 25, 1960	-	a8,000
	Aug. 15, 1952	11.44	3,380		Sept.24, 1960	9.93	2,760
1953	Nov. 17, 1952	15.89	6,000	1961	Oct. 31, 1960	9.66	2,660
	Feb. 20, 1953	-	a3,100		Feb. 18, 1961	15.74	5,940
	Mar. 30, 1953	13.72	4,700		Mar. 6, 1961	12.80	4,260
	June 10, 1953	15.90	6,540		Mar. 13, 1961	15.48	5,800
					Mar. 23, 1961	10.27	3,190
1954	Apr. 25, 1954	12.01	3,850		Sept.14, 1961	14.75	5,330
					Sept.30, 1961	9.07	2,710
1955	July 10, 1955	9.74	2,590				
1956	Aug. 8, 1956	10.79	3,000				

a About.

4885. Des Moines River near Tracy, Iowa

Location.--Lat 41°16'55", long 92°51'30", in NW¼SE¼ sec.19, T.75 N., R.17 W., on right bank 250 ft upstream from abandoned Bellefountaine Bridge, 0.5 mile downstream from bridge on State Highway 92, 0.8 mile east of Tracy, 3.1 miles upstream from Cedar Creek, and 6.4 miles downstream from English Creek.

Drainage area.--12,479 sq mi.

Gage.--Nonrecording prior to June 27, 1940, and June 30, 1952, to Nov. 4, 1960; recording June 27, 1940, to June 29, 1952, and after Nov. 4, 1960. Prior to Nov. 4, 1960, at site 250 ft downstream. Datum of gage is 670.91 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--20 ft.

Historical data.--Maximum stage known since 1851, that of June 14, 1947.

Remarks.--Base for partial-duration series, 20,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	a25	a130,000	1942	Nov. 2, 1941	15.7	28,000
					Jan. 26, 1942	13.4	20,900
1920	Mar. 16, 1920	13.0	25,900		May 14, 1942	14.4	23,700
	Mar. 27, 1920	13.7	28,200		July 15, 1942	13.2	20,400
	Apr. 20, 1920	12.5	24,200		July 20, 1942	13.2	20,400
	May 14, 1920	15.0	32,800				
	July 15, 1920	13.6	27,900	1943	May 17, 1943	15.7	28,000
					June 13, 1943	13.4	20,900
1921	Sept.17, 1921	13.3	26,900				
				1944	Apr. 24, 1944	16.1	29,000
1922	Apr. 13, 1922	12.4	23,100		May 4, 1944	16.8	32,200
	May 27, 1922	13.4	26,600		May 23, 1944	21.6	75,000
					June 10, 1944	17.3	35,500
1923	Mar. 26, 1923	13.3	26,300		June 13, 1944	17.3	36,600
					June 19, 1944	18.9	46,200
1924	Mar. 4, 1924	12.6	23,800				
	Mar. 31, 1924	12.0	21,700	1945	Mar. 17, 1945	18.5	39,300
	June 27, 1924	16.5	38,200		Mar. 26, 1945	15.8	29,400
					Apr. 5, 1945	13.0	20,000
1925	June 23, 1925	8.7	11,500		Apr. 18, 1945	18.8	41,400
					Apr. 29, 1945	14.5	24,000
1926	June 15, 1926	13.0	25,200		May 16, 1945	16.6	32,000
	Sept.24, 1926	16.3	37,500		May 27, 1945	17.7	37,300
					June 10, 1945	16.4	31,100
1927	Apr. 20, 1927	15.8	35,500		June 21, 1945	14.2	23,200
	Apr. 30, 1927	11.7	20,700				
	May 24, 1927	11.9	21,400	1946	Jan. 6, 1946	18.8	40,700
					Mar. 17, 1946	15.3	27,000
1928	Aug. 4, 1928	11.4	19,700		Mar. 27, 1946	14.3	23,400
					May 31, 1946	13.6	21,300
1929	Mar. 16, 1929	18.6	45,500		June 20, 1946	17.8	35,400
					Aug. 26, 1946	13.1	20,300
1930	June 17, 1930	16.4	33,500				
				1947	Mar. 13, 1947	13.3	20,800
1931	June 22, 1931	9.0	11,800		Apr. 6, 1947	17.1	33,600
					Apr. 12, 1947	16.6	31,800
1932	Nov. 26, 1931	16.5	34,000		Apr. 21, 1947	16.0	29,500
					May 30, 1947	16.8	32,500
1933	Apr. 7, 1933	16.7	35,000		June 6, 1947	25.8	125,200
					June 14, 1947	26.5	155,000
1934	Apr. 9, 1934	5.5	4,950		June 23, 1947	20.7	66,200
					June 27, 1947	21.5	76,000
1935	June 3, 1935	15.4	26,900				
	June 20, 1935	15.7	28,000	1948	Feb. 28, 1948	14.4	25,400
	June 28, 1935	20.2	54,600		Mar. 17, 1948	13.7	23,000
	July 4, 1935	18.6	43,300		Mar. 22, 1948	20.1	59,700
1936	Mar. 5, 1936	14.2	23,100	1949	Mar. 5, 1949	-	a27,000
					Mar. 9, 1949	15.4	29,300
1937	Mar. 5, 1937	17.9	38,900		June 25, 1949	13.6	22,600
1938	Sept.23, 1938	15.2	26,200	1950	Mar. 1, 1950	16.0	31,700
					May 10, 1950	15.6	30,100
1939	Mar. 13, 1939	17.5	36,600		June 20, 1950	14.9	26,900
1940	Aug. 15, 1940	9.3	11,600	1951	Apr. 2, 1951	19.81	56,300
					Apr. 14, 1951	18.50	45,400
1941	June 11, 1941	13.8	21,500		May 5, 1951	18.74	46,800

a About.

Peak stages and discharges of Des Moines River near Tracy, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 26, 1951	15.89	31,300	1958	July 3, 1958	16.64	28,200
	June 9, 1951	16.79	35,300		July 7, 1958	16.98	33,100
	July 3, 1951	16.87	35,800		July 21, 1958	14.12	22,900
1952	Mar. 13, 1952	14.93	27,300	1959	Mar. 20, 1959	13.20	21,300
	Mar. 23, 1952	13.23	21,300		Mar. 27, 1959	13.85	22,900
	Apr. 4, 1952	15.25	28,500		May 22, 1959	17.00	29,600
	May 24, 1952	13.04	20,700		May 31, 1959	17.92	38,900
	June 22, 1952	17.40	38,400		July 2, 1959	16.65	32,600
	June 29, 1952	13.84	23,300				
	July 14, 1952	12.91	20,400	1960	Jan. 14, 1960	16.70	33,100
					Apr. 4, 1960	23.00	75,500
1953	Feb. 21, 1953	12.93	20,100		Apr. 18, 1960	12.50	20,700
	Mar. 31, 1953	13.26	21,600		May 7, 1960	17.80	38,400
	June 14, 1953	16.19	27,700		May 26, 1960	17.60	37,400
1954	June 17, 1954	14.02	23,500	1961	Feb. 19, 1961	-	a25,000
	June 27, 1954	22.14	69,900		Mar. 7, 1961	14.37	23,800
	Sept. 1, 1954	14.8	25,900		Mar. 14, 1961	16.89	32,900
					Mar. 23, 1961	13.27	20,200
1955	July 12, 1955	10.63	14,300		Apr. 2, 1961	18.12	38,200
					Apr. 13, 1961	14.10	22,700
1956	Aug. 20, 1956	5.80	4,480		Sept.14, 1961	14.92	25,500
1957	June 20, 1957	13.58	24,100				

a About.

4890. Cedar Creek near Bussey, Iowa

Location.--Lat 41°13'10", long 92°54'25", at corner common to secs.10, 11, 14, 15, T.74 N., R.18 W., on left bank at downstream side of bridge on State Highway 156, 1.6 miles northwest of Bussey, and 8.9 miles upstream from mouth.

Drainage area.--374 sq mi.

Gage.--Nonrecording prior to Feb. 21, 1949; recording thereafter. Datum of gage is 682.15 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--18 ft.

Remarks.--Base for partial-duration series, 3,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	June 1946	a28.05	31,500	1958	July 3, 1958	28.06	29,000
					July 4, 1958	17.60	4,140
1948	Feb. 28, 1948	24.90	15,900		July 20, 1958	18.63	4,560
					July 30, 1958	15.95	3,500
1949	Feb. 24, 1949	21.58	7,800		Aug. 6, 1958	15.98	3,500
1950	May 9, 1950	27.50	29,300	1959	Feb. 23, 1959	-	b3,500
					Mar. 20, 1959	20.25	6,090
1951	Apr. 7, 1951	16.54	3,500		Mar. 27, 1959	18.92	4,860
	May 11, 1951	20.02	5,800		Apr. 1, 1959	19.78	5,650
	May 26, 1951	21.37	7,680		Apr. 20, 1959	19.48	5,360
	July 3, 1951	18.00	4,200		May 21, 1959	22.84	11,000
					May 30, 1959	-	b9,000
1952	Mar. 13, 1952	16.68	3,580				
	Mar. 19, 1952	16.98	3,700	1960	Jan. 13, 1960	19.58	5,450
	May 10, 1952	16.58	3,540		Jan. 15, 1960	16.57	3,740
	June 3, 1952	19.83	5,620		Mar. 30, 1960	25.71	18,800
	June 21, 1952	25.72	20,100		Apr. 18, 1960	18.34	4,500
					May 7, 1960	25.00	16,000
1953	Nov. 18, 1952	19.18	5,080		May 17, 1960	19.32	5,180
	Feb. 20, 1953	16.88	3,660		May 25, 1960	20.62	6,630
	Mar. 31, 1953	20.12	5,920		June 13, 1960	16.68	3,780
1954	Aug. 26, 1954	16.44	3,460	1961	Feb. 18, 1961	16.96	3,900
					Mar. 6, 1961	19.60	5,370
1955	Feb. 20, 1955	16.46	3,500		Mar. 8, 1961	16.84	3,820
					Mar. 14, 1961	19.90	5,580
1956	Aug. 9, 1956	17.20	3,980		Mar. 27, 1961	17.40	4,100
					Sept.13, 1961	27.54	20,800
1957	Apr. 3, 1957	17.37	4,060				

a Gage height 28.45 ft on upstream side of bridge; from levels to floodmarks by Corps of Engineers.
b About.

4895. Des Moines River at Ottumwa, Iowa

Location.--Lat 41°00'30", long 92°24'40", in NW¼SW¼ sec.30, T.72 N., R.13 W., near right bank 10 ft downstream from Vine Street Bridge at Ottumwa, 6.3 miles upstream from Village Creek, 9.7 miles downstream from South Avery Creek, and at mile 92.6.

Drainage area.--13,374 sq mi.

Gage.--Nonrecording prior to Mar. 31, 1935; recording thereafter. Prior to Sept. 30, 1930, at Market Street Bridge half a mile upstream at datum 0.06 ft higher. Oct. 1, 1930, to Mar. 31, 1935, at Eldon, 15 miles downstream at different datum. Datum of gage is 622.77 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--Overbank sections protected by levees.

Historical data.--Maximum stage known since at least 1850, that of June 7, 1947.

Remarks.--Base for partial-duration series, 25,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	a19.4	b140,000	1935	June 4, 1935	10.2	29,200
					June 21, 1935	11.1	33,000
1917	June 10, 1917	16.8	62,200		June 28, 1935	15.45	53,200
					July 5, 1935	14.2	47,400
1918	June 10, 1918	14.0	43,500				
	June 25, 1918	11.4	34,400	1936	Mar.5,6, 1936	9.50	27,800
1919	Mar. 17, 1919	12.4	39,000	1937	Feb. 21, 1937	-	29,200
	Apr. 26, 1919	11.1	33,000		Mar. 6, 1937	14.77	50,300
	May 7, 1919	14.4	45,900				
	June 7, 1919	12.3	38,500	1938	Sept.24, 1938	8.82	25,300
	June 12, 1919	9.4	26,100				
				1939	Mar. 14, 1939	12.47	39,800
1920	Mar. 16, 1920	9.4	27,200				
	Mar. 26, 1920	12.4	35,700	1940	Aug. 17, 1940	5.57	14,000
	Apr. 20, 1920	12.0	34,000				
	May 16, 1920	11.0	30,000	1941	June 11, 1941	8.33	22,800
	July 16, 1920	10.8	29,200				
				1942	Nov. 3, 1941	9.96	29,000
1921	Sept.17, 1921	12.2	34,800		Jan. 27, 1942	9.7	28,000
1922	May 27, 1922	10.5	28,000	1943	May 17, 1943	10.7	32,100
1923	Mar. 27, 1923	10.3	27,300	1944	Apr. 24, 1944	11.2	33,500
					May 5, 1944	10.9	32,700
1924	Mar. 3, 1924	9.91	25,700		May 24, 1944	17.5	73,200
	Mar. 5, 1924	10.0	26,100		June 11, 1944	12.6	39,200
	June 28, 1924	12.8	37,600		June 19, 1944	14.3	46,500
1925	June 16, 1925	7.0	14,900	1945	Mar. 19, 1945	12.4	38,400
					Mar. 27, 1945	10.2	30,000
1926	June 15, 1926	11.3	31,300		Apr. 18, 1945	13.44	42,500
	Sept.25, 1926	12.5	36,200		May 17, 1945	13.0	40,900
					May 28, 1945	12.0	37,000
1927	Apr. 21, 1927	13.0	38,600				
	May 23, 1927	9.9	25,700	1946	Jan. 8, 1946	14.34	46,600
					Mar. 19, 1946	10.6	31,500
1928	Feb. 8, 1928	9.6	24,500		June 20, 1946	13.8	44,200
					July 17, 1946	12.5	38,300
1929	Mar. 17, 1929	14.5	46,700				
	Apr. 25, 1929	10.2	26,800	1947	Apr. 5, 1947	13.1	41,100
					Apr. 13, 1947	11.5	34,400
1930	June 16, 1930	10.6	28,400		Apr. 22, 1947	11.4	33,500
					May 31, 1947	11.4	34,000
1931	June 23, 1931	8.09	11,400		June 7, 1947	20.2	135,000
					June 15, 1947	20.1	130,700
1932	Nov. 26, 1931	14.99	35,100		June 28, 1947	16.6	70,200
	Jan. 3, 1932	11.7	32,600				
	Mar. 7, 1932	11.3	31,300	1948	Feb. 28, 1948	11.0	31,800
	June 27, 1932	9.8	25,300		Mar. 23, 1948	14.74	52,900
	July 10, 1932	9.9	25,700				
				1949	Mar. 10, 1949	10.84	31,300
1933	Apr. 8, 1933	14.68	35,400		June 26, 1949	9.3	25,500
1934	Apr. 10, 1934	5.16	5,020	1950	Mar. 1, 1950	9.8	26,600

a Present site and datum or about 22 ft at Market Street Bridge; from information by Corps of Engineers and U.S. Weather Bureau.
b Estimated.

Peak stages and discharges of Des Moines River at Ottumwa, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	May 11, 1950	11.68	34,600	1956	Aug. 9, 1956	4.39	9,720
	June 20, 1950	10.8	30,600	1957	June 18, 1957	8.09	22,000
1951	Apr. 4, 1951	15.15	55,200				
	Apr. 14, 1951	13.93	45,400	1958	July 4, 1958	10.86	33,500
	Apr. 28, 1951	9.92	27,000		July 20, 1958	8.78	25,100
	May 6, 1951	14.07	46,600				
	May 27, 1951	11.68	34,600	1959	May 23, 1959	10.76	32,900
	June 7, 1951	12.63	38,700		June 1, 1959	12.12	38,600
	July 4, 1951	13.15	41,500		July 3, 1959	10.05	29,600
1952	Mar. 13, 1952	11.28	32,800	1960	Jan. 14, 1960	11.55	38,300
	Apr. 5, 1952	10.28	28,600		Apr. 1, 1960	17.49	70,500
	June 23, 1952	13.38	42,500		May 7, 1960	13.12	43,400
					May 27, 1960	12.10	38,600
1953	Apr. 1, 1953	10.04	27,400				
	June 14, 1953	10.51	29,400	1961	Feb. 19, 1961	-	41,400
					Mar. 8, 1961	9.45	27,200
1954	June 28, 1954	16.89	61,400		Mar. 15, 1961	11.17	34,500
	Sept. 1, 1954	9.32	25,100		Apr. 3, 1961	11.75	37,200
					Sept.15, 1961	10.85	32,900
1955	July 12, 1955	5.79	13,800				

4905. Des Moines River at Keosauqua, Iowa

Location.--Lat 40°43'45", long 91°57'45", in SE¼SW¼ sec.36, T.69 N., R.10 W., on right bank 10 ft upstream from bridge on State Highway 1 at Keosauqua, 4.0 miles downstream from Chequest Creek, and at mile 50.6.

Drainage area.--14,038 sq mi.

Gage.--Nonrecording prior to Dec. 24, 1933; recording thereafter. Datum of gage is 558.10 ft above mean sea level, datum of 1912 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--20 ft.

Remarks.--Base for partial-duration series, 25,000 cfs. Only annual peaks are shown for 1912-15.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June 1, 1851	24	-	1919	Apr. 27, 1919	11.0	32,600
					May 8, 1919	13.6	42,200
1903	June 1, 1903	27.85	146,000		June 8, 1919	12.0	36,300
1904	Apr. 26, 1904	13.4	44,200	1920	Mar. 26, 1920	14.1	44,100
					Apr. 21, 1920	11.2	33,300
1905	Mar. 1, 1905	9.9	28,100		May 15, 1920	10.2	29,700
	June 10, 1905	23.8	108,000		June 14, 1920	11.2	33,300
	July 2, 1905	10.8	31,700				
				1921	Sept.21, 1921	9.45	27,100
1906	Feb. 25, 1906	11.4	33,700				
				1922	May 28, 1922	9.6	27,600
1912	Apr. 4, 1912	16.7	56,600				
1913	May 21, 1913	9.3	26,600	1923	Mar. 28, 1923	9.2	26,200
1914	Sept.18, 1914	10.8	31,900				
1915	Aug. 3, 1915	18.6	67,600	1924	Mar. 5, 1924	9.3	26,600
					June 28, 1924	13.1	40,400
1916	Oct. 2, 1915	10.1	29,400				
	Feb. 23, 1916	10.7	31,500	1925	June 16, 1925	7.6	20,800
	Mar. 27, 1916	14.6	46,400				
	May 14, 1916	10.3	30,100	1926	June 16, 1926	9.6	27,600
	May 24, 1916	11.0	32,600		Sept. 9, 1926	10.1	29,400
					Sept.15, 1926	12.4	37,800
1917	Mar. 30, 1917	9.3	26,600		Sept.25, 1926	11.8	35,600
	June 6, 1917	16.0	51,000				
	June 14, 1917	18.7	68,200	1927	Apr. 16, 1927	9.3	26,600
					Apr. 19, 1927	14.0	43,700
1918	May 29, 1918	9.2	26,200		May 25, 1927	10.4	30,400
	June 11, 191[illegible]	13.2	40,700		June 4, 1927	9.2	26,200
	June 25, 19[illegible]	13.6	42,200				
				1928	Aug. 4, 1928	7.3	19,800
1919	Mar. 16, 1919	14.4	45,400				

Peak stages and discharges of Des Moines River at Keosauqua, Iowa--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Nov. 17, 1928	11.0	32,600	1947	Apr. 6, 1947	14.2	47,900
	Mar. 17, 1929	13.5	41,800		Apr. 13, 1947	10.9	32,200
	Apr. 20, 1929	10.4	30,400		Apr. 22, 1947	11.0	32,600
	Apr. 25, 1929	11.7	35,200		June 8, 1947	25.1	123,000
					June 16, 1947	25.14	124,000
1930	June 15, 1930	10.1	29,400		June 24, 1947	17.8	71,000
					June 30, 1947	19.4	80,200
1931	July 3, 1931	7.2	19,500				
				1948	Feb. 28, 1948	9.7	30,000
1932	Oct. 8, 1931	9.2	26,200		Mar. 17, 1948	8.8	26,400
	Nov. 25, 1931	11.7	35,200		Mar. 19, 1948	13.1	46,200
	Jan. 4, 1932	10.6	31,200		Mar. 23, 1948	14.38	52,800
	June 27, 1932	8.9	25,200				
	July 10, 1932	10.2	29,700	1949	Feb. 27, 1949	8.4	25,000
	Aug. 14, 1932	8.9	25,200		Mar. 6, 1949	9.1	27,900
					Mar. 11, 1949	9.9	31,300
1933	Apr. 8, 1933	11.3	33,700		Mar. 27, 1949	9.2	28,300
					Mar. 31, 1949	9.97	31,700
1934	Apr. 4, 1934	4.1	9,880		June 24, 1949	9.1	27,000
1935	June 4, 1935	10.7	31,600	1950	Mar. 2, 1950	8.9	27,000
	June 19, 1935	12.5	39,000		May 11, 1950	10.6	34,400
	June 29, 1935	15.9	54,400		June 19, 1950	11.40	38,100
	July 6, 1935	14.6	48,300				
				1951	Apr. 4, 1951	14.38	53,000
1936	Mar. 6, 1936	9.39	26,900		Apr. 28, 1951	10.07	32,200
					May 10, 1951	16.45	63,500
1937	Feb. 21, 1937	-	30,900		May 28, 1951	10.72	34,900
	Mar. 6, 1937	14.87	50,600		June 8, 1951	12.26	42,400
					June 22, 1951	10.01	32,200
1938	Sept.25, 1938	9.05	25,100		July 5, 1951	12.14	41,400
1939	Mar. 12, 1939	14.30	46,900	1952	Mar. 13, 1952	11.57	39,000
					Mar. 20, 1952	8.69	26,200
1940	Aug. 18, 1940	6.28	15,600		Apr. 6, 1952	9.63	30,000
					June 24, 1952	12.45	42,900
1941	June 11, 1941	9.30	26,200				
				1953	Apr. 1, 1953	9.95	31,600
1942	Oct. 10, 1941	10.1	29,300		June 15, 1953	9.71	30,300
	Nov. 4, 1941	10.37	30,100				
	Jan. 27, 1942	9.7	27,300	1954	June 29, 1954	16.14	60,800
					Sept. 2, 1954	8.66	25,800
1943	May 17, 1943	11.71	35,300				
	June 13, 1943	10.4	30,100	1955	Oct. 10, 1954	7.57	22,100
1944	Apr. 15, 1944	10.0	29,600	1956	Aug. 10, 1956	4.46	11,600
	Apr. 23, 1944	15.3	55,500				
	May 6, 1944	11.3	35,500	1957	June 21, 1957	7.44	21,300
	May 25, 1944	18.30	72,300				
	June 11, 1944	-	41,600	1958	July 5, 1958	10.50	33,800
	June 15, 1944	-	38,700				
	June 20, 1944	14.2	49,900	1959	Mar. 21, 1959	8.63	25,800
					Mar. 28, 1959	8.66	26,200
1945	Mar. 19, 1945	12.6	39,800		May 24, 1959	10.60	34,300
	Mar. 27, 1945	10.1	32,200		June 1, 1959	12.08	41,400
	Apr. 19, 1945	13.4	47,300		July 3, 1959	9.58	29,900
	May 17, 1945	13.88	49,500				
	May 28, 1945	11.8	39,800	1960	Jan. 15, 1960	12.0	40,900
	June 9, 1945	10.9	35,600		Apr. 2, 1960	18.34	73,800
	June 16, 1945	10.5	33,600		May 7, 1960	16.15	62,400
	June 22, 1945	9.0	27,100		May 25, 1960	11.56	39,000
1946	Jan. 8, 1946	13.8	49,600	1961	Feb. 19, 1961	10.57	34,300
	Mar. 17, 1946	11.5	37,000		Mar. 8, 1961	9.82	30,800
	Mar. 24, 1946	9.6	27,500		Mar. 16, 1961	10.18	32,500
	June 18, 1946	19.50	78,300		Apr. 4, 1961	10.83	35,200
	July 18, 1946	14.8	51,000		Sept.14, 1961	10.95	36,100

4910. Sugar Creek near Keokuk, Iowa

Location.--Lat 40°26'45", long 91°28'55", in SE¼NW¼ sec.7, T.65 N., R.5 W., on left bank 10 ft downstream from highway bridge, 4.1 miles upstream from mouth, and 6 miles northwest of Keokuk.

Drainage area.--105 sq mi.

Gage.--Nonrecording prior to June 25, 1923; recording thereafter. June 30, 1923, to June 27, 1927, heavy timber and riprap control. Datum of gage is 510.20 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Historical data.--Maximum stage known, that of June 9, 1905.

Remarks.--Records for 1922-24 furnished by Union Electric Co., formerly Mississippi River Power Co. Base for partial-duration series, 1,300 cfs. Only annual peaks are shown prior to 1959.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	June 9, 1905	20.6	a33,000	1959	Aug. 6, 1959	10.88	2,270
					Sept.27, 1959	10.92	2,460
1922	July 12, 1922	10.0	b2,780		Sept.28, 1959	12.22	4,300
1923	Mar. 15, 1923	5.8	980				
1924	Aug. 7, 1924	9.81	2,400	1960	Oct. 6, 1959	11.72	3,500
1925	July 7, 1925	9.30	2,180		Mar. 30, 1960	11.40	2,900
					Apr. 17, 1960	11.17	2,500
1926	Sept.8,16,1926	10.58	3,040		May 16, 1960	8.75	1,410
1927	June 11, 1927	13.5	6,170		May 25, 1960	10.09	1,860
1928	Oct. 1, 1927	13.85	6,620		June 23, 1960	11.54	3,200
1929	Nov. 17, 1928	-	(c)		June 29, 1960	9.07	1,500
1930	June 15, 1930	9.0	1,970		July 1, 1960	10.73	2,100
					July 12, 1960	12.87	6,120
1931	June 6, 1931	10.0	2,560				
				1961	Apr. 22, 1961	8.80	1,410
1959	Apr. 19, 1959	10.56	2,320		Sept.14, 1961	12.32	4,750
	May 30, 1959	8.40	1,440		Sept.24, 1961	9.42	1,540
	Aug. 4, 1959	8.32	1,410				

a Estimated on basis of velocity-area study.
b Maximum during period April to September 1922.
c Not determined.

FOX RIVER BASIN

4941. South Fox Creek tributary near West Grove, Iowa

Location.--Lat 40°44', long 92°35', near south quarter corner sec.31, T.69 N., R.15 W., at culvert on State Highway 2, 3½ miles west of West Grove.

Drainage area.--0.55 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown, except for 1954.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 30, 1953	3.47	-	1958	July 31, 1958	6.02	-
1954	Apr. 21, 1954	4.88	302	1959	Aug. 6, 1959	5.67	-
1955	Oct. 10, 1954	4.15	-	1960	Oct. 9, 1959	5.60	-
1956	Aug. 1, 1956	3.67	-	1961	-	(a)	-
1957	-	(a)	-				

a Not determined; peak stage did not reach bottom of gage.

4943. Fox River at Bloomfield, Iowa

Location.--Lat 40°46'10", long 92°25'10", in SW¼SE¼ sec.13, T.69 N., R.14 W., on left bank 15 ft downstream from highway bridge, 1¼ miles north of Bloomfield, and 8.6 miles downstream from North Fox Creek.

Drainage area.--87.7 sq mi.

Gage.--Recording. Prior to Oct. 1, 1957, crest-stage gage. Datum of gage is 755.57 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,400 cfs and extended above on basis of slope-area measurement at 8,600 cfs.

Historical data.--Floods of June 9, 1905, and June 18, 1946, were the highest known (stage and discharge unknown).

Remarks.--Base for partial-duration series, 1,300 cfs. Only annual peaks are shown prior to 1958.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 30, 1953	12.22	1,640	1959	Aug. 5, 1959	21.62	5,660
1954	May 28, 1954	9.94	1,060		Sept. 1, 1959	16.48	3,300
1955	Apr. 24, 1955	14.57	2,360		Sept.26, 1959	12.37	1,670
1956	July 31, 1956	8.87	827	1960	Oct. 5, 1959	20.87	6,130
1957	Apr. 21, 1957	9.26	913		Dec. 27, 1959	12.83	1,790
					Jan. 15, 1960	11.55	1,440
1958	June 12, 1958	17.15	2,930		Mar. 29, 1960	20.71	5,990
	July 30, 1958	17.10	2,890		Apr. 16, 1960	11.60	1,440
	July 31, 1958	19.18	3,970		May 6, 1960	24.02	8,600
					May 25, 1960	15.85	2,960
1959	Nov. 17, 1958	13.17	1,640		June 28, 1960	11.87	1,520
	Apr. 20, 1959	12.5	1,460				
	July 1, 1959	12.78	1,530	1961	Mar. 13, 1961	10.65	1,160

4945. Fox River at Cantril, Iowa

Location.--Lat 40°39'35", long 92°03'46", in NW¼SW¼ sec.30, T.68 N., R.10 W., on left bank 5 ft downstream from bridge on State Highway 2, a quarter of a mile upstream from Bone Run, and 1 mile northeast of Cantril.

Drainage area.--161 sq mi.

Gage.--Nonrecording prior to Nov. 7, 1940; recording thereafter. Datum of gage is 657.98 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measuremerts. The relation is subject to frequent shifts.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1920	-	17.9	10,500	1947	Apr. 5, 1947	14.7	4,820
					June 5, 1947	16.0	5,880
1941	June 10, 1941	13.7	3,980		June 6, 1947	-	4,360
					June 13, 1947	15.4	5,250
1942	Oct. 9, 1941	15.4	5,220				
				1948	Mar. 19, 1948	16.0	5,880
1943	May 16, 1943	15.4	5,640				
	June 11, 1943	15.2	5,460	1949	June 24, 1949	11.45	3,270
1944	Apr. 23, 1944	16.9	7,460	1950	June 15, 1950	17.4	10,000
					June 19, 1950	15.5	6,380
1945	May 15, 1945	15.92	5,780				
				1951	June 25, 1951	14.93	5,780
1946	Jan. 5, 1946	-	5,430		July 20, 1951	15.82	6,500
	June 18, 1946	18.94	16,500		July 22, 1951	14.28	5,160
	July 18, 1946	18.7	15,000				

4950. Fox River at Wayland, Mo.
(Published as "near Wayland" prior to 1930)

Location.--Lat 40°23'45", long 91°35'50", in NW¼ sec.31, T.65 N., R.6 W., on left bank 90 ft downstream from bridge on U.S. Highway 136, three-quarters of a mile west of Wayland, and 5 miles downstream from Brush Creek.

Drainage area.--400 sq mi, approximately; 392 sq mi prior to Oct. 1, 1929.

Gage.--Nonrecording Feb. 22, 1922, to June 11, 1936; recording thereafter. Prior to Oct. 1, 1929, at site 2.8 miles upstream at different datum. Datum of gage is 501.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; frequent shifts in relation occur.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	July 1909	a21.4	-	1940	Apr. 24, 1940	9.08	1,640
1922	July 12, 1922	11.00	2,400	1941	June 11, 1941	12.75	3,080
1923	Mar. 16, 1923	9.75	1,980	1942	Oct. 11, 1941	15.80	4,510
					Nov. 2, 1941	15.7	4,420
1924	Aug. 6, 1924	13.32	3,250		Feb. 7, 1942	15.41	4,260
1925	Apr. 26, 1925	14.9	3,760	1943	May 17, 1943	16.45	5,290
1926	Sept.10, 1926	14.60	4,160	1944	Mar. 16, 1944	16.00	4,800
	Sept.17, 1926	17.50	6,570		Apr. 24, 1944	18.50	10,200
1927	Oct. 2, 1926	17.90	6,900	1945	Feb. 17, 1945	15.70	4,510
	Apr. 20, 1927	18.30	7,300		May 16, 1945	17.27	6,810
	May 25, 1927	16.12	5,240		June 17, 1945	17.34	6,810
	June 5, 1927	16.00	5,150				
	June 13, 1927	15.55	4,830	1946	Jan. 7, 1946	18.10	8,950
					June 19, 1946	20.66	19,900
1928	Oct. 1, 1927	19.10	8,100		July 19, 1946	18.40	9,880
	Oct. 12, 1927	15.10	4,430				
	Feb. 8, 1928	14.56	4,070	1947	Apr. 6, 1947	18.20	9,260
	June 19, 1928	17.70	6,700		June 7, 1947	19.12	12,200
	July 5, 1928	15.00	4,350		June 14, 1947	17.30	6,810
	Sept.12, 1928	15.95	5,150		June 19, 1947	15.1	4,060
1929	Nov. 18, 1928	20.0	16,100	1948	Feb. 29, 1948	15.8	5,290
	Mar. 1, 1929	b15.00	-		Mar. 20, 1948	18.2	11,900
	Mar. 14, 1929	15.80	5,400		July 26, 1948	16.17	6,310
	Apr. 21, 1929	18.80	12,600				
	Apr. 25, 1929	17.60	9,470	1949	Feb. 20, 1949	b15.50	-
	June 3, 1929	17.00	8,010		Apr. 1, 1949	12.90	3,350
	July 15, 1929	15.40	4,700				
				1950	June 16, 1950	17.79	9,560
1930	June 16, 1930	14.16	3,460		June 20, 1950	17.20	7,960
1931	Apr. 21, 1931	17.20	7,090	1951	Feb. 20, 1951	b15.40	-
	June 7, 1931	18.35	9,940		Mar. 29, 1951	14.85	4,860
					May 12, 1951	15.27	5,250
1932	Nov. 24, 1931	16.85	6,440		June 27, 1951	15.21	5,160
	Jan. 2, 1932	16.74	6,020		July 23, 1951	13.84	4,180
1933	Dec. 24, 1932	15.22	4,000	1952	Apr. 23, 1952	14.65	4,720
	Jan. 19, 1933	17.00	6,650		June 23, 1952	16.3	6,400
	May 12, 1933	17.13	6,870				
	June 29, 1933	21.53	25,000	1953	Apr. 1, 1953	17.2	7,960
1934	Apr. 5, 1934	10.92	1,780	1954	Apr. 21, 1954	13.60	4,050
1935	June 2, 1935	19.38	13,300	1955	Jan. 6, 1955	15.98	6,000
1936	Feb. 26, 1936	17.65	8,060	1956	Aug. 9, 1956	6.98	1,030
1937	Feb. 22, 1937	b18.52	-	1957	June 11, 1957	16.35	6,130
	Mar. 5, 1937	13.72	3,540				
				1958	June 14, 1958	15.42	4,650
1938	Apr. 6, 1938	14.88	4,070		July 31, 1958	15.51	4,750
1939	Mar. 13, 1939	18.22	9,260	1959	May 31, 1959	15.72	4,950
	Apr. 16, 1939	17.10	6,390		Aug. 8, 1959	18.33	9,840

a At present site prior to construction of highway fill in 1928.
b Backwater from ice.

Peak stages and discharges of Fox River at Wayland, Mo.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Sept.28, 1959	15.18	4,470	1960	May 27, 1960	14.65	4,220
					June 24, 1960	18.37	10,100
1960	Oct. 7, 1959	18.24	9,570		July 1, 1960	17.16	7,200
	Mar. 30, 1960	20.17	13,400		July 13, 1960	16.28	5,760
	Apr. 17, 1960	14.64	4,080				
	May 8, 1960	16.77	6,480	1961	Sept.14, 1961	14.69	4,290

4951. Big Branch tributary near Wayland, Mo.

Location.--Lat 40°18'52", long 91°34'34", in NW¼SE¼ sec.29, T.64 N., R.6 W., at culvert under U.S. Highway 61, 5.6 miles south of Wayland.

Drainage area.--0.70 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect measurements.

Bankfull stage.--8 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	-	(a)	b30	1959	Sept.29, 1959	6.49	80
				1960	June 30, 1960	7.81	240
1956	July 7, 1956	5.62	10				
1957	May 10, 1957	6.95	130	1961	Apr. 22, 1961	6.91	126
1958	June 10, 1958	8.68	360				

a Not determined; peak stage did not reach bottom of gage.
b Less than figure shown.

BEAR CREEK BASIN

4952. Little Creek near Breckenridge, Ill.

Location.--Lat 40°15'00", long 91°19'15", in E½ sec.16, T.3 N., R.8 W., at culvert on West Point road, 1.8 miles west of Breckenridge.

Drainage area.--1.48 sq mi.

Gage.--Crest-stage gage.

Stage-discharge rleation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July 2, 1956	15.35	202	1960	July 13, 1960	18.50	754
1957	Aug. 3, 1957	17.69	592				
1958	July 15, 1958	19.04	1,150	1961	Sept.13, 1961	18.2	710
1959	May 29, 1959	13.65	141				

4955. Bear Creek near Marcelline, Ill.

Location.--Lat 40°08'34", long 91°20'14", between secs. 20 and 21, T.2 N., R.8 W., on right bank at downstream side of highway bridge, 0.9 mile downstream from Grindstone Creek, 2¼ miles northeast of Marcelline, and 12 miles upstream from mouth.

Drainage area.--348 sq mi.

Gage.--Nonrecording prior to June 24, 1949; recording thereafter. Datum of gage is 504.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 4,000 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Apr. 11, 1944	23.30	16,800	1955	May 13, 1955	12.55	4,360
1945	Mar. 26, 1945	18.60	10,300		May 28, 1955	18.65	10,300
1946	Jan. 6, 1946	15.06	6,470	1956	Oct. 5, 1955	13.27	4,920
1947	Apr. 6, 1947	17.40	12,000				
1948	Mar. 20, 1948	20.90	13,400	1957	June 11, 1957	17.14	8,470
1950	Apr. 4, 1950	12.7	4,440	1958	June 13, 1958	13.13	4,680
	June 14, 1950	15.5	6,830		July 31, 1958	13.66	5,210
	June 19, 1950	20.10	12,100				
				1959	Feb. 10, 1959	15.76	7,120
1951	Feb. 19, 1951	13.79	5,320				
	Mar. 29, 1951	16.19	7,520	1960	Mar. 29, 1960	15.44	6,740
	June 27, 1951	12.60	4,360		Apr. 17, 1960	12.52	4,200
	July 22, 1951	26.07	21,200		June 23, 1960	21.51	14,200
					July 1, 1960	22.63	15,700
1952	Mar. 18, 1952	12.98	4,680		July 13, 1960	15.48	6,830
1953	May 17, 1953	9.61	2,230	1961	Apr. 23, 1961	14.07	5,570
					July 2, 1961	17.71	9,160
1954	June 1, 1954	10.82	3,030		July 23, 1961	16.54	7,820
					Aug. 10, 1961	13.23	4,840
1955	Jan. 6, 1955	12.55	4,360		Sept.14, 1961	23.60	17,200
	Feb. 19, 1955	17.80	9,280		Sept.24, 1961	20.15	12,400
	Apr. 24, 1955	16.30	7,620				

WYACONDA RIVER BASIN

4956. South Wyaconda River near West Grove, Iowa

Location.--Lat 40°44', long 92°30', near northwest corner sec.5, T.68 N., R.14 W., at bridge on State Highway 63, 2½ miles east of West Grove.

Drainage area.--4.69 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter and indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 30, 1953	8.18	530	1958	July 31, 1958	9.21	1,310
1954	Apr. 6, 1954	8.09	485	1959	Aug. 5, 1959	9.64	1,970
1955	Oct. 10, 1954	9.15	1,250	1960	Oct. 6, 1959	9.39	1,490
1956	-	(a)	-	1961	Mar. 27, 1961	7.34	215
1957	June 11, 1957	6.98	139				

a Not determined; peak stage did not reach bottom of gage.

4956.5. South Wyaconda River near Bloomfield, Iowa

Location.--Lat 40°42', long 92°26', in SW¼ sec.12, T.68 N., R.14 W., at bridge on county road J, 4 miles south of Bloomfield.

Drainage area.--19.1 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	-	(a)	-	1958	July 31, 1958	10.09	-
1954	Apr. 6, 1954	8.93	-	1959	Aug. 5, 1959	13.11	-
1955	Oct. 10, 1954	9.35	-	1960	May 6, 1960	11.38	-
1956	-	(a)	-	1961	-	(a)	-
1957	Nov. 18, 1956	8.54	-				

a Not determined; peak stage did not reach bottom of gage.

4960. Wyaconda River above Canton, Mo.
(Published as "near Canton" prior to 1933)

Location.--Lat 40°08'30", long 91°33'55", in SE¼ sec.28, T.62 N., R.6 W., on left bank on downstream side of bridge on State Highway 16, 1 mile upstream from Sugar Creek, and 2 miles west of Canton.

Drainage area.--393 sq mi; 447 sq mi prior to Oct. 1, 1932.

Gage.--Nonrecording prior to May 1, 1939; recording thereafter. Prior to Oct.1, 1932, at site 2 miles downstream at different datum. Datum of gage is 515.41 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; shifts in relation occur.

Bankfull stage.--18 ft.

Remarks.--Records for sites "near" and "above" considered equivalent for flood-frequency study. Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 14, 1922	11.66	3,270	1932	Aug. 15, 1932	15.04	4,930
1923	Mar. 16, 1923	10.10	2,630	1933	Dec. 25, 1932	22.40	6,620
	Sept.28, 1923	10.10	2,630		May 13, 1933	23.80	7,870
1924	June 27, 1924	12.26	3,520		June 30, 1933	30.00	17,700
1925	Apr. 26, 1925	10.18	2,670	1934	Apr. 5, 1934	10.56	1,470
1926	Sept.27, 1926	15.76	5,300	1935	June 3, 1935	29.30	16,200
1927	Oct. 3, 1926	17.95	6,700	1936	Feb. 27, 1936	22.84	6,960
	Apr. 21, 1927	15.65	5,180	1937	Feb. 22, 1937	a21.61	3,120
	June 13, 1927	15.30	5,000	1938	Apr. 7, 1938	18.84	4,430
1928	Oct. 3, 1927	18.78	7,300	1939	Mar. 13, 1939	24.54	9,200
1929	Nov. 18, 1928	26.7	16,000		Apr. 16, 1939	21.54	5,980
	Apr. 1, 1929	15.94	5,340	1940	Apr. 24, 1940	12.92	2,300
	Apr. 21, 1929	20.54	8,750	1941	June 10, 1941	14.25	2,720
	Apr. 26, 1929	19.10	7,540	1942	Feb. 7, 1942	21.7	6,510
	June 3, 1929	16.73	5,820	1943	Aug. 9, 1943	20.4	5,600
	July 16, 1929	17.70	6,490				
1930	Feb. 13, 1930	10.88	3,040				
1931	June 7, 1931	19.00	7,460				

a Backwater from ice.

Peak stages and discharges of Wyaconda River above Canton, Mo.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Mar. 16, 1944	21.48	6,350	1952	Apr. 24, 1952	16.5	3,280
	Apr. 12, 1944	19.56	5,100				
	Apr. 24, 1944	24.45	9,040	1953	Apr. 1, 1953	21.05	5,380
1945	June 17, 1945	25.03	8,590	1954	Apr. 22, 1954	14.36	2,600
1946	Jan. 6, 1946	25.40	9,100	1955	Jan. 7, 1955	21.12	5,460
	June 20, 1946	22.90	6,670				
	July 19, 1946	24.70	8,260	1956	Oct. 5, 1955	13.27	2,280
1947	Apr. 6, 1947	26.40	11,200	1957	June 11, 1957	14.16	2,540
	June 7, 1947	27.14	12,400				
	June 14, 1947	21.10	5,440	1958	Aug. 2, 1958	18.35	3,800
1948	Mar. 20, 1948	24.10	8,020	1959	Aug. 9, 1959	19.64	4,580
1949	Mar. 27, 1949	15.53	2,950	1960	Oct. 7, 1959	23.24	7,140
					Mar. 31, 1960	23.64	7,560
1950	June 20, 1950	26.07	10,800		June 25, 1960	20.98	5,380
					July 2, 1960	25.87	10,600
1951	Feb. 20, 1951	21.79	5,900				
	July 22, 1951	20.89	5,320	1961	Sept.14, 1961	17.99	-
					Sept.15, 1961	-	3,530
1952	Mar. 19, 1952	16.5	3,280				

FRAZIER CREEK BASIN

4969. Homan Creek tributary near Quincy, Ill.

Location.--Lat 39°58'45", long 91°22'40", in SW¼ sec.18, T.1 S., R.8 W., at culvert on State Highway 96, 2 miles north of city limits of Quincy.

Drainage area.--0.674 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 8, 1956	20.38	91	1960	July 12, 1960	26.80	604
1957	July 28, 1957	25.51	482				
1958	July 15, 1958	25.05	442	1961	July 22, 1961	25.66	502
1959	Feb. 10, 1959	22.89	264				

FABIUS RIVER BASIN

4970. North Fabius River at Monticello, Mo.

Location.--Lat 40°06'30", long 91°42'55", in SW¼SE¼ sec.6, T.61 N., R.7 W., near center of span on downstream side of bridge on State Highway 16, 1 mile south of Monticello, and 19 miles upstream from Middle Fabius River.

Drainage area.--452 sq mi.

Gage.--Nonrecording. Prior to Nov. 22, 1930, at site 400 ft downstream at datum 0.03 ft lower. Datum of gage is 540.73 ft above mean sea level, datum of 1929. Gage heights given herein converted to present datum.

Stage-discharge relation.--Defined by current-meter measurements; large shift in relation occurred in 1936.

Bankfull stage.--22 ft.

Historical data.--Flood of June 30, 1933, is maximum known since at least 1874.

Remarks.--Considerable improvement work completed on tributaries and main channel upstream from gaging station prior to establishment. Base for partial-duration series, 6,000 cfs.

Peak stages and discharges of North Fabius River at Monticello, Mo.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	July 13, 1922	18.60	5,140	1942	July 15, 1942	22.30	8,450
1923	Mar. 16, 1923	15.70	3,590	1943	May 16, 1943	20.15	6,850
1924	June 26, 1924	22.9	8,310	1944	Mar. 16, 1944	21.05	7,410
					Apr. 11, 1944	19.46	6,360
1925	Apr. 25, 1925	18.18	4,910		Apr. 24, 1944	25.1	11,100
1926	Sept.16, 1926	23.2	8,580	1945	Feb. 15, 1945	19.80	6,570
					May 15, 1945	19.65	6,430
1927	Oct. 3, 1926	23.10	8,490		May 17, 1945	20.40	6,990
	Apr. 20, 1927	23.50	8,760		June 17, 1945	26.7	13,000
	June 13, 1927	20.30	6,210				
				1946	Jan. 6, 1946	25.77	11,900
1928	Oct. 1, 1927	22.60	8,040		Mar. 17, 1946	19.80	6,570
	June 19, 1928	25.00	10,300		Mar. 24, 1946	19.42	6,290
					June 19, 1946	21.70	7,970
1929	Nov. 18, 1928	30.0	16,000		July 18, 1946	27.00	13,300
	Apr. 1, 1929	21.00	6,700				
	Apr. 21, 1929	22.00	7,500	1947	Apr. 6, 1947	28.00	14,700
	Apr. 25, 1929	24.00	9,300		May 29, 1947	20.36	6,990
	June 3, 1929	23.30	8,670		June 7, 1947	28.65	15,600
	July 16, 1929	26.80	12,200		June 14, 1947	24.98	11,000
					June 19, 1947	20.00	6,710
1930	Oct. 29, 1929	20.50	6,350		June 22, 1947	19.50	6,360
1931	Apr. 21, 1931	22.40	7,860	1948	Dec. 5, 1947	20.00	6,710
	June 6, 1931	22.80	8,220		Feb. 28, 1948	21.70	7,970
					Mar. 20, 1948	24.61	10,500
1932	Nov. 23, 1931	21.40	7,020				
	Jan. 1, 1932	21.42	7,020	1949	Feb. 24, 1949	a23.2	6,500
	Aug. 15, 1932	21.50	7,100				
	Aug. 18, 1932	20.65	6,420	1950	June 20, 1950	25.93	11,200
1933	Dec. 24, 1932	25.70	11,000	1951	Feb. 19, 1951	21.3	7,170
	Jan. 19, 1933	20.50	6,350		July 22, 1951	24.0	9,410
	May 13, 1933	24.00	9,300				
	June 30, 1933	30.8	17,400	1952	Mar. 11, 1952	19.02	5,580
1934	Sept.29, 1934	8.80	1,270	1953	Mar. 31, 1953	21.8	7,550
1935	May 24, 1935	25.85	10,900	1954	Apr. 21, 1954	18.7	5,270
	May 28, 1935	20.58	6,340				
	June 3, 1935	29.62	15,700	1955	Jan. 6, 1955	22.6	8,190
	June 19, 1935	22.17	7,480				
				1956	Aug. 9, 1956	13.90	2,500
1936	Feb. 25, 1936	25.68	10,800				
	Sept.28, 1936	21.3	7,800	1957	June 11, 1957	15.65	3,320
1937	Feb. 21, 1937	21.34	7,650	1958	Aug. 1, 1958	21.05	6,100
1938	May 28, 1938	17.44	4,830	1959	Aug. 7, 1959	23.58	8,700
1939	Mar. 13, 1939	26.0	12,100	1960	Oct. 7, 1959	23.84	8,800
	Apr. 16, 1939	25.25	10,200		Mar. 29, 1960	24.10	9,210
					May 8, 1960	23.19	8,300
1940	Apr. 24, 1940	12.4	2,360		June 24, 1960	21.16	6,380
					July 2, 1960	25.85	11,200
1941	June 10, 1941	18.0	5,380				
				1961	Sept.14, 1961	19.14	4,670
1942	Feb. 7, 1942	23.14	9,120				

a Backwater from ice.

4975. Middle Fabius River near Baring, Mo.

Location.--Lat 40°19'55", long 92°12'50", in NW¼NW¼ sec.26, T.64 N., R.12 W., on right bank at downstream side of bridge on State Highway 15, 1 mile downstream from confluence of North and South Forks, and 6 miles north of Baring.

Drainage area.--185 sq mi.

Gage.--Nonrecording prior to Sept. 17, 1934; recording thereafter. Datum of gage is 679.69 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,200 cfs; shifts in relation occur.

Bankfull stage.--19 ft.

Remarks.--Base for partial-duration series, 2,600 cfs.

Peak stages and discharges of Middle Fabius River near Baring, Mo.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1875	July 1875	a27	-	1945	June 21, 1945	18.2	3,840
1931	Apr. 21, 1931	19.70	4,840	1946	Jan. 5, 1946	22.2	6,970
	May 29, 1931	18.00	3,830		Mar. 23, 1946	18.3	3,900
	June 6, 1931	18.55	4,160		July 17, 1946	22.80	7,480
	July 3, 1931	15.85	2,840	1947	Apr. 5, 1947	22.0	6,800
1932	Nov. 24, 1931	18.90	4,340		June 5, 1947	24.2	8,730
	Aug. 15, 1932	18.70	4,220		June 13, 1947	23.40	8,010
1933	Dec. 24, 1932	16.00	2,790	1948	Dec. 5, 1947	17.91	3,480
	Jan. 19, 1933	18.10	3,880		Feb. 28, 1948	19.70	4,940
	May 12, 1933	19.90	4,940		Mar. 20, 1948	21.73	6,540
	June 29, 1933	24.23	8,740	1949	June 26, 1949	16.6	2,720
1934	Apr. 4, 1934	8.60	800	1950	June 19, 1950	24.55	9,000
1935	May 4, 1935	15.94	2,740	1951	Feb. 20, 1951	19.59	4,180
	May 24, 1935	19.78	4,880		Apr. 8, 1951	17.26	2,710
1936	Feb. 27, 1936	15.76	2,700		July 22, 1951	17.17	2,660
	Sept.27, 1936	20.10	5,000	1952	Apr. 23, 1952	17.26	2,710
1937	Oct. 11, 1936	16.38	2,980		June 3, 1952	17.30	2,710
	Feb. 21, 1937	20.07	5,060				
	Mar. 4, 1937	15.75	2,700	1953	Mar. 31, 1953	21.43	6,160
1938	Apr. 7, 1938	15.13	2,230	1954	Apr. 21, 1954	17.15	2,660
1939	Mar. 12, 1939	22.31	7,060	1955	Jan. 6, 1955	21.89	6,490
	Apr. 15, 1939	21.62	6,460		Feb. 19, 1955	17.32	2,830
					May 13, 1955	17.10	2,730
1940	Mar. 3, 1940	15.40	2,130	1956	Oct. 6, 1955	13.75	1,470
1941	June 10, 1941	19.07	4,500	1957	May 14, 1957	14.58	1,710
1942	Nov. 1, 1941	17.5	3,350	1958	Oct. 24, 1957	17.66	3,030
	Dec. 24, 1941	16.4	2,660		Dec. 20, 1957	16.88	2,640
	Feb. 7, 1942	19.24	4,570		May 5, 1958	17.12	2,730
1943	Dec. 28, 1942	17.52	3,350		July 20, 1958	17.65	2,980
	Apr. 27, 1943	16.9	2,960		Aug. 1, 1958	18.37	3,440
	May 17, 1943	17.0	3,020	1959	Aug. 6, 1959	22.18	5,800
1944	Mar. 15, 1944	20.4	5,490	1960	Oct. 6, 1959	21.64	5,250
	Apr. 23, 1944	24.06	8,640		Mar. 28, 1960	21.98	5,610
1945	May 16, 1945	16.3	2,600		May 7, 1960	22.30	5,900
	June 16, 1945	25.1	9,540		July 1, 1960	23.18	7,100

a About.

4977. Bridge Creek Branch near Baring, Mo.

Location.--Lat 40°15'30", long 92°13'00", in NE¼NE¼ sec.22, T.63 N., R.12 W., at culvert under State Highway 15, 1 mile northwest of Baring.

Drainage area.--2.54 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 140 cfs and extended on basis of indirect measurements.

Bankfull stage.--13 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Jan. 5, 1955	13.26	455	1959	Nov. 17, 1958	9.49	94
				1960	June 23, 1960	15.20	800
1956	July 1, 1956	11.17	207				
1957	July 28, 1957	12.55	360	1961	Apr. 22, 1961	10.81	170
1958	Oct. 23, 1957	13.91	552				

4980. Middle Fabius River near Monticello, Mo.

Location.--Lat 40°05'40", long 91°44'10", in SE¼ sec.12, T.61 N., R.8 W., near center of span on upstream side of bridge on State Highway 16, 2½ miles southwest of Monticello, 8 miles downstream from Radish Branch, and 17 miles upstream from mouth.

Drainage area.--393 sq mi.

Gage.--Nonrecording. Datum of gage is 540.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--13 ft.

Remarks.--Base for partial-duration series, 3,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 8, 1946	19.2	6,520	1954	Mar. 25, 1954	12.33	2,580
	July 20, 1946	16.88	4,880	1955	Jan. 8, 1955	18.06	5,670
1947	Apr. 5, 1947	20.9	8,100				
	May 29, 1947	15.0	3,880	1956	Oct. 5, 1955	10.50	1,860
	June 7, 1947	26.28	16,200				
	June 16, 1947	18.4	5,880	1957	May 10, 1957	13.70	3,230
	June 19, 1947	16.0	4,380				
				1958	Oct. 24, 1957	18.05	5,600
1948	Mar. 1, 1948	14.50	3,630		Dec. 20, 1957	14.35	3,580
	Mar. 22, 1948	18.04	5,600				
				1959	Aug. 9, 1959	15.12	3,930
1949	Feb. 21, 1949	17.2	5,060				
	July 21, 1949	18.45	5,880	1960	Oct. 9, 1959	19.00	6,360
					Mar. 31, 1960	19.51	6,770
1950	June 21, 1950	20.9	8,300		May 9, 1960	17.90	5,530
					June 23, 1960	14.36	3,580
1951	Feb. 22, 1951	16.5	4,960		July 3, 1960	20.08	7,310
	July 23, 1951	20.1	6,610				
				1961	Mar. 22, 1961	14.56	3,500
1952	June 3, 1952	15.7	4,230		Apr. 21, 1961	15.02	3,700
					Sept.13, 1961	16.02	4,230
1953	Apr. 2, 1953	18.4	5,880		Sept.23, 1961	16.17	4,350

4985. North Fabius River at Taylor, Mo.

Location.--Lat 39°56'05", long 91°31'35", in NE¼SE¼ sec.2, T.59 N., R.6 W., at bridge on U.S. Highway 61 at Taylor, 6.5 miles upstream from mouth.

Drainage area.--930 sq mi, approximately.

Gage.--Nonrecording Apr. 12, 1930, to Sept. 17, 1934; recording thereafter. Datum of gage is 469.65 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; shifts in relation occur. Relation affected at times by backwater from Mississippi River.

Bankfull stage.--15 ft.

Remarks.--New channel dug from near gage to mouth prior to establishment of gaging station. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Nov. 19, 1928	23.5	26,000	1937	Feb. 23, 1937	11.31	8,480
				1938	Apr. 10, 1938	10.64	7,460
1931	June 8, 1931	14.29	11,400	1939	Mar. 14, 1939	15.67	16,200
1932	Aug. 19, 1932	14.36	11,600	1940	Mar. 4, 1940	7.18	3,790
1933	June 30, 1933	22.85	30,300				
1934	Sept.29, 1934	6.18	2,380	1941	June 11, 1941	8.35	5,050
1935	June 4, 1935	19.44	24,400	1942	Feb. 8, 1942	15.10	13,100
1936	Feb. 26, 1936	14.50	12,100				

5000. South Fabius River near Taylor, Mo.

Location.--Lat 39°53'50", long 91°34'50", in SW¼NW¼ sec.21, T.59 N., R.6 W., on right bank at downstream side of highway bridge, 4½ miles southwest of Taylor, 5 miles downstream from Grassy Creek, and 5.3 miles upstream from confluence with North Fabius River.

Drainage area.--620 sq mi; 630 sq mi at site used prior to May 14, 1936.

Gage.--Nonrecording Dec. 16, 1934, to Dec. 2, 1940; recording thereafter. Prior to May 14, 1936, at site 4 miles downstream at datum 21.94 ft lower. Datum of gage is 482.91 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 11,000 cfs and extended above.

Bankfull stage.--11 ft.

Remarks.--Channel improvements made in Fabius River, 5.3 miles below station, and for distance of 7.5 miles in South Fabius River, about 34 miles upstream from station. Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	November 1928	a18.49	17,800	1945	Mar. 25, 1945	10.09	5,670
					Apr. 13, 1945	11.78	7,870
1933	June 1933	a18.42	17,700		Apr. 16, 1945	9.20	4,630
					May 17, 1945	10.45	6,030
1935	May 2, 1935	17.7	6,670		June 9, 1945	12.20	8,430
	May 9, 1935	17.8	6,760		June 18, 1945	13.05	9,550
	May 14, 1935	17.4	6,400		Sept.29, 1945	9.30	4,740
	May 30, 1935	18.1	7,030				
	June 4, 1935	22.9	11,830	1946	Jan. 7, 1946	13.60	10,400
	June 19, 1935	23.38	12,400		Mar. 26, 1946	8.80	4,210
					May 6, 1946	8.80	4,210
1936	Feb. 26, 1936	21.85	10,600				
	Sept.29, 1936	9.11	5,110	1947	Oct. 17, 1946	10.40	6,030
					Nov. 2, 1946	9.85	5,310
1937	Feb. 21, 1937	9.80	5,950		Dec. 13, 1946	9.14	4,520
	July 13, 1937	8.80	4,780		Apr. 6, 1947	17.30	15,700
					May 30, 1947	10.48	6,150
1938	Jan. 24, 1938	8.10	4,010		June 8, 1947	19.5	19,700
	Mar. 30, 1938	10.91	7,190		June 20, 1947	11.2	6,990
	Apr. 10, 1938	10.80	7,060				
	May 28, 1938	8.14	4,014	1948	Dec. 7, 1947	8.68	4,070
	Aug. 28, 1938	9.00	5,000		Feb. 27, 1948	9.25	4,620
					Mar. 21, 1948	11.88	7,830
1939	Nov. 7, 1938	8.40	4,340				
	Mar. 13, 1939	12.82	9,510	1949	July 20, 1949	12.19	8,210
	Apr. 17, 1939	11.50	7,730		July 22, 1949	9.0	4,400
	May 27, 1939	10.40	6,300				
	June 22, 1939	9.60	5,360	1950	Apr. 4, 1950	8.34	3,650
	Aug. 11, 1939	8.90	4,590				
	Aug. 18, 1939	9.00	4,700	1951	Feb. 20, 1951	9.57	5,070
					Mar. 29, 1951	10.40	6,030
1940	Mar. 3, 1940	7.8	3,470		July 24, 1951	10.17	5,790
1941	Apr. 20, 1941	6.93	2,580	1952	Mar. 10, 1952	8.97	4,330
					Mar. 19, 1952	9.66	5,100
1942	Nov. 1, 1941	9.33	4,760		Apr. 25, 1952	10.05	5,430
	Dec. 26, 1941	8.70	4,070		June 9, 1952	9.07	4,440
	Feb. 4, 1942	10.10	5,670				
	Feb. 7, 1942	13.62	10,400	1953	Apr. 2, 1953	10.18	5,670
	Mar. 16, 1942	9.50	4,950		July 21, 1953	9.61	4,990
	Apr. 10, 1942	8.80	4,180				
	Apr. 29, 1942	9.12	4,510	1954	Aug. 17, 1954	8.10	3,490
	June 26, 1942	10.10	5,670				
	July 15, 1942	10.20	5,790	1955	Jan. 6, 1955	9.34	4,730
					Feb. 20, 1955	11.58	7,470
1943	Dec. 27, 1942	10.80	6,540		Apr. 23, 1955	10.90	6,630
	May 21, 1943	14.38	11,700		May 28, 1955	15.25	12,300
	June 9, 1943	9.91	5,430				
	June 19, 1943	9.24	4,620	1956	Oct. 6, 1955	9.65	5,070
	July 15, 1943	9.00	4,400				
				1957	May 17, 1957	11.40	6,290
1944	Mar. 17, 1944	13.44	10,200				
	Apr. 11, 1944	14.30	11,600	1958	Oct. 26, 1957	14.44	9,820
	Apr. 24, 1944	13.15	9,700		July 3, 1958	11.90	6,840
	Aug. 21, 1944	10.35	5,970		July 15, 1958	13.08	8,190
1945	Mar. 20, 1945	10.35	6,030	1959	Feb. 10, 1959	9.21	3,990

a From floodmark, present site and datum.

Peak stages and discharges of South Fabius River near Taylor, Mo.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 30, 1960	12.35	7,850	1961	Mar. 13, 1961	8.68	4,150
	Apr. 16, 1960	9.28	4,730		Apr. 25, 1961	10.16	5,540
	June 24, 1960	11.25	6,630		May 8, 1961	10.76	6,140
	July 1, 1960	8.86	4,370		Sept.14, 1961	12.94	8,390
	July 12, 1960	9.80	5,230		Sept.26, 1961	11.16	6,540

NORTH RIVER BASIN

5005. North River at Bethel, Mo.

Location.--Lat 39°52', long 92°01', in NE¼NW¼ sec.33, T.59 N., R.10 W., at left abutment on downstream side of bridge on State Highway 15 at Bethel, 2½ miles upstream from Messner Branch.

Drainage area.--58 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 17, 1956; recording thereafter. Datum of gage is 683.37 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,600 cfs.

Bankfull stage.--14 ft.

Historical data.--Floods of Apr. 5, 1947, and Oct. 24, 1957, reached maximum stages known since at least 1875, from information by local resident.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Jan. 31, 1937	a10.6	-	1945	June 16, 1945	17.3	4,410
	Feb. 9, 1937	a8.8	-		July 1, 1945	9.3	756
	Feb. 13, 1937	a11.57	-		Sept.29, 1945	13.0	1,840
	May 3, 1937	8.3	518				
				1946	Jan. 5, 1946	16.07	3,620
1938	Apr. 10, 1938	9.36	777		Mar. 24, 1946	11.4	1,310
					May 4, 1946	9.1	713
1939	Mar. 12, 1939	17.1	4,280		May 7, 1946	9.3	756
	Apr. 16, 1939	10.15	972				
	June 21, 1939	10.20	972	1947	Dec. 13, 1946	9.9	897
	Aug. 11, 1939	9.90	894		Apr. 5, 1947	20.9	6,930
					May 29, 1947	11.1	1,220
1940	Mar. 3, 1940	8.6	596		June 2, 1947	10.0	922
					June 6, 1947	18.8	5,460
1941	Jan. 17, 1941	7.5	420		June 19, 1947	16.4	3,810
					June 21, 1947	14.6	2,530
1942	Oct. 22, 1941	8.8	652		Sept.21, 1947	9.2	713
	Nov. 1, 1941	10.7	1,110				
	Dec. 24, 1941	8.8	652	1948	Dec. 5, 1947	10.66	1,110
	Feb. 6, 1942	15.10	2,960		Feb. 28, 1948	10.60	1,080
	Mar. 17, 1942	10.2	973		Mar. 19, 1948	16.75	4,070
	Apr. 10, 1942	10.5	1,050		Apr. 8, 1948	8.78	652
	July 14, 1942	9.6	824				
				1949	Jan. 16, 1949	a9.45	-
1943	Dec. 27, 1942	9.3	756		Feb. 14, 1949	a9.45	-
	Feb. 4, 1943	8.6	613		Feb. 19, 1949	9.97	922
	May 16, 1943	8.8	652		Feb. 24, 1949	8.60	613
	May 20, 1943	12.1	1,530		Mar. 27, 1949	9.80	872
	June 9, 1943	9.9	897		June 3, 1949	8.67	632
	June 11, 1943	9.3	756		June 27, 1949	11.25	1,250
	June 17, 1943	12.2	1,560		July 20, 1949	10.40	1,030
1944	Mar. 15, 1944	18.04	4,900	1950	Oct. 21, 1949	8.73	632
	Apr. 11, 1944	16.3	3,750		Jan. 14, 1950	9.22	734
	Apr. 23, 1944	13.0	1,840		Apr. 4, 1950	9.50	801
	May 24, 1944	9.4	778		Apr. 25, 1950	8.80	652
					June 15, 1950	8.80	652
1945	Mar. 26, 1945	10.9	1,190				
	Apr. 17, 1945	9.5	801	1951	Feb. 20, 1951	a12.4	900
	Apr. 26, 1945	9.9	897		June 27, 1951	11.49	1,020
	May 17, 1945	12.2	1,560				
	June 10, 1945	12.1	1,530	1952	Mar. 10, 1952	11.8	1,110

a Backwater from ice.

Peak stages and discharges of North River at Bethel, Mo.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 19, 1952	10.9	850	1958	Dec. 26, 1957	9.88	730
	Apr. 23, 1952	16.0	3,280		Feb. 24, 1958	9.62	670
					July 2, 1958	9.34	614
1953	Apr. 1, 1953	11.5	1,020		July 16, 1958	13.70	1,720
					Aug. 1, 1958	12.69	1,410
1954	Apr. 6, 1954	13.6	1,800				
	Aug. 8, 1954	9.8	618	1959	Feb. 10, 1959	12.28	1,300
	Aug. 17, 1954	12.2	1,240		May 31, 1959	9.19	608
1955	Jan. 6, 1955	12.12	1,200	1960	Oct. 6, 1959	9.56	665
	Feb. 19, 1955	12.0	1,170		Mar. 28, 1960	15.01	2,170
	May 28, 1955	13.68	1,850		Apr. 16, 1960	9.87	800
	June 20, 1955	10.93	860		May 7, 1960	10.56	940
					July 1, 1960	9.68	762
1956	Oct. 6, 1955	10.48	776		July 11, 1960	14.69	2,050
	Aug. 3, 1956	10.64	795				
				1961	Mar. 9, 1961	9.17	667
1957	May 18, 1957	9.55	670		Mar. 14, 1961	10.05	820
	July 29, 1957	10.77	930		Apr. 23, 1961	11.54	1,120
					May 6, 1961	9.25	667
1958	Oct. 24, 1957	20.90	5,870		Sept.14, 1961	15.52	2,370
	Nov. 19, 1957	9.30	614		Sept.24, 1961	14.83	2,090
	Dec. 21, 1957	9.51	650				

5010. North River at Palmyra, Mo.

Location.--Lat 39°49'05", long 91°31'15", in SE¼SW¼ sec.13, T.58 N., R.6 W., on right bank 100 ft upstream from city waterworks dam, 1,000 ft upstream from bridge on U.S. Highways 24 and 61, half a mile north of Palmyra, and 7 miles upstream from mouth.

Drainage area.--373 sq mi.

Gage.--Nonrecording Dec. 14, 1934, to June 22, 1951; recording thereafter. Prior to Oct. 1, 1945, at site 1,000 ft downstream at same datum. Datum of gage is 464.81 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 15,000 cfs; a large shift in relation occurred in 1951.

Bankfull stage.--19 ft.

Historical data.--Maximum stage known, about 28 ft, from floodmarks, date unknown.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	May 9, 1935	18.15	a8,790	1942	Oct. 5, 1941	15.52	5,480
					Oct. 21, 1941	15.52	5,480
1936	Feb. 26, 1936	21.00	15,000		Nov. 1, 1941	16.32	6,310
					Feb. 7, 1942	18.95	10,800
1937	Feb. 21, 1937	15.36	5,350		Mar. 16, 1942	14.90	5,370
	July 13, 1937	18.45	9,220		Apr. 10, 1942	16.90	7,240
	July 19, 1937	16.84	6,550		June 19, 1942	b14.90	-
					June 26, 1942	20.48	15,200
1938	Mar. 29, 1938	15.63	5,510		July 10, 1942	15.00	5,450
	Mar. 31, 1938	18.00	8,380		July 15, 1942	19.00	10,800
	May 28, 1939	17.54	7,500				
				1943	Dec. 27, 1942	19.27	11,500
1939	Mar. 12, 1939	19.70	12,200		May 16, 1943	15.78	6,120
	Apr. 17, 1939	17.39	7,600		May 18, 1943	18.00	8,800
	May 27, 1939	18.80	10,100		May 21, 1943	16.00	6,300
	June 21, 1939	17.20	7,310		June 8, 1943	15.19	5,610
	July 25, 1939	20.50	14,600		June 10, 1943	18.30	9,350
	Aug. 12, 1939	16.00	5,920				
	Aug. 17, 1939	15.40	5,350	1944	Mar. 15, 1944	19.80	12,800
					Apr. 11, 1944	22.96	27,400
1940	Mar. 3, 1940	12.4	3,330		Apr. 23, 1944	19.50	12,000
					May 28, 1944	b13.40	-
1941	Apr. 19, 1941	12.0	3,110				

a Annual peak only.
b Backwater from Mississippi River.

Peak stages and discharges of North River at Palmyra, Mo.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 21, 1945	18.77	10,400	1951	June 27, 1951	18.69	8,460
	Mar. 25, 1945	b18.77	-				
	Apr. 13, 1945	19.18	11,300	1952	Nov. 12, 1951	17.80	7,350
	Apr. 16, 1945	15.98	6,300		Mar. 10, 1952	15.19	5,000
	Apr. 26, 1945	15.60	5,940		Mar. 18, 1952	17.94	7,460
	May 17, 1945	18.42	9,540		May 9, 1952	14.48	4,280
	June 9, 1945	19.00	10,800				
	June 16, 1945	20.30	14,400	1953	Mar. 31, 1953	15.39	5,200
	July 1, 1945	15.70	6,030		June 14, 1953	15.26	5,100
	Sept.28, 1945	17.00	7,350				
				1954	June 1, 1954	13.42	2,900
1946	Jan. 6, 1946	18.40	8,290				
	Jan. 9, 1946	18.6	8,560	1955	Jan. 5, 1955	16.63	6,240
	May 11, 1946	14.72	4,485		Feb. 19, 1955	20.33	11,000
					Apr. 24, 1955	18.87	8,750
1947	Oct. 18, 1946	16.80	6,430		May 28, 1955	24.42	23,000
	Nov. 3, 1946	16.20	5,980				
	Nov. 9, 1946	15.48	5,300	1956	Apr. 29, 1956	15.49	5,160
	Dec. 13, 1946	14.70	4,480		June 21, 1956	17.05	6,600
	Apr. 5, 1947	21.65	15,600				
	May 29, 1947	14.37	4,170	1957	Apr. 22, 1957	15.35	5,060
	June 1, 1947	22.4	19,000		Apr. 27, 1957	15.95	5,660
	June 7, 1947	b21.41	11,000		May 17, 1957	19.00	8,900
	June 20, 1947	b20.02	8,000		June 8, 1957	16.81	6,420
					June 12, 1957	14.71	4,320
1948	Dec. 4, 1947	16.39	6,130		July 29, 1957	16.83	6,420
	Dec. 7, 1947	16.04	5,800				
	Feb. 28, 1948	15.10	4,900	1958	Oct. 25, 1957	16.96	4,820
	Mar. 6, 1948	15.04	4,800		July 16, 1958	21.60	11,100
	Mar. 19, 1948	18.84	8,490		July 20, 1958	18.96	6,840
	Mar. 22, 1948	15.09	4,900		July 31, 1958	19.70	7,790
1949	Feb. 13, 1949	21.0	12,300	1959	Feb. 10, 1959	21.38	10,600
	June 2, 1949	15.4	5,200		June 1, 1959	17.09	4,900
	June 24, 1949	20.55	11,600				
	June 26, 1949	17.0	6,600	1960	Mar. 28, 1960	17.86	5,590
	July 20, 1949	22.3	16,000		Apr. 17, 1960	16.50	4,470
	July 22, 1949	22.2	15,600		July 1, 1960	16.00	4,150
					July 11, 1960	17.23	4,980
1950	Oct. 21, 1949	14.68	4,480		July 13, 1960	17.14	4,900
	Dec. 21, 1949	15.56	5,400				
	Jan. 3, 1950	15.56	5,400	1961	May 8, 1961	20.67	9,320
	Apr. 4, 1950	15.13	5,000		July 1, 1961	16.92	4,750
					July 23, 1961	16.68	4,610
1951	Feb. 19, 1951	14.45	4,170		Sept.14, 1961	23.58	15,400
	Mar. 29, 1951	22.72	17,900				

b Backwater from Mississippi River.

SOUTH RIVER BASIN

5012. Nichols Branch near Palmyra, Mo

Location.--Lat 39°44'30", long 91°32'00", in SE¼SE¼ sec.11, T.57 N., R.6 W., at culvert on county road 4 miles south of Palmyra.

Drainage area.--2.58 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Bankfull stage.--22 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	July 21, 1949	-	3,700	1958	-	(a)	-
				1959	-	(a)	-
1955	-	(a)	-	1960	July 12, 1960	17.64	-
1956	July 7, 1956	15.76	-	1961	May 8, 1961	19.60	669
1957	June 8, 1957	16.29	-				

a Not determined; peak stage did not reach bottom of gage.

5020. Bear Creek at Hannibal, Mo.

Location.--Lat 39°40'43", long 91°24'41", in SE¼NW¼ sec.1, T.56 N., F.5 W., on left bank on downstream side of bridge on U.S. Highway 61 at Hannibal, 4¾ miles upstream from mouth.

Drainage area.--31.0 sq mi.

Gage.--Nonrecording prior to Mar. 25, 1948; recording thereafter. Prior to Oct. 1, 1953, at datum 2.00 ft higher. Datum of gage is 508.91 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs and extended above; shifts in relation occur.

Bankfull stage.--10 ft.

Remarks.--High flow regulated by Bear Creek Reservoir since Aug. 7, 1961. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	June 13, 1937	10.8	6,050	1954	Apr. 30, 1954	5.59	415
1939	Mar. 11, 1939	7.53	2,740	1955	Feb. 19, 1955	8.66	1,700
	Apr. 17, 1939	6.58	1,970		May 28, 1955	10.47	2,780
	June 19, 1939	7.50	2,740		June 29, 1955	10.43	2,710
	June 21, 1939	9.5	4,670		July 5, 1955	9.66	2,260
	Aug. 11, 1939	6.60	1,970		Aug. 29, 1955	10.74	2,920
1940	Apr. 17, 1940	6.50	1,890	1956	Oct. 5, 1955	8.99	1,850
	Aug. 5, 1940	9.86	5,070		June 19, 1956	8.73	1,700
1941	Sept. 2, 1941	7.4	2,610	1957	June 8, 1957	9.12	1,900
					June 14, 1957	13.62	5,880
1942	July 14, 1942	7.1	2,280		July 28, 1957	12.39	4,460
					July 29, 1957	9.72	2,260
1948	Apr. 7, 1948	7.39	2,090		Aug. 3, 1957	14.05	6,500
1949	June 2, 1949	7.60	2,200	1958	July 15, 1958	10.67	2,920
	June 23, 1949	10.80	4,900		July 19, 1958	11.19	3,300
	July 21, 1949	10.95	5,120		July 31, 1958	8.90	1,650
	Sept.12, 1949	8.30	2,640		Aug. 21, 1958	11.66	3,750
1950	Oct. 21, 1949	8.20	2,580	1959	Nov. 17, 1958	9.92	1,800
	Dec. 21, 1949	7.60	2,200		Feb. 10, 1959	10.05	1,850
1951	July 28, 1951	7.84	2,380	1960	July 12, 1960	8.74	1,400
1952	Mar. 18, 1952	5.15	988	1961	May 8, 1961	12.46	3,970
1953	Mar. 21, 1953	2.31	208				

SALT RIVER BASIN

5025. Salt River near Shelbina, Mo.

Location.--Lat 39°44', long 92°01', in SW¼NE¼ sec.17, T.57 N., R.10 W., on right bank 75 ft downstream from bridge on State Highway 15, 3 miles north of Shelbina, and 15 miles upstream from Black Creek.

Drainage area.--481 sq mi.

Gage.--Nonrecording prior to Mar. 1, 1934; recording thereafter. Datum of gage is 664.58 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs.

Bankfull stage.--15 ft.

Remarks.--Some channel improvements made in drainage basin upstream from gage during period 1906-20. Base for partial-duration series, 3,000 cfs.

Peak stages and discharges of Salt River near Shelbina, Mo.

Water year	Date	Gage height (feet)	Discharge (cfs)
1909	July 1909	23.42	a17,700
1928	June 1928	23.54	a18,000
1931	Apr. 23, 1931	12.58	3,890
	June 8, 1931	17.88	8,270
1932	Nov. 19, 1931	12.30	3,720
	Nov. 26, 1931	13.00	4,110
	Jan. 2, 1932	11.85	3,460
	Aug. 3, 1932	13.04	4,110
	Aug. 18, 1932	16.32	5,920
1933	Dec. 26, 1932	17.20	7,390
	May 14, 1933	15.34	5,490
	July 1, 1933	22.62	16,000
1934	Sept.30, 1934	10.48	2,800
1935	Nov. 5, 1934	11.74	3,360
	May 3, 1935	14.10	4,660
	May 10, 1935	13.60	4,360
	May 12, 1935	17.78	8,140
	May 22, 1935	11.37	3,220
	May 29, 1935	16.78	6,930
	June 3, 1935	20.63	12,300
	June 19, 1935	14.90	5,180
1936	Feb. 27, 1936	17.40	7,040
	Sept.28, 1936	14.15	4,720
1937	Feb. 15, 1937	b12.32	-
	Feb. 21, 1937	b13.94	4,000
1938	Mar. 30, 1938	12.68	3,780
	Apr. 11, 1938	13.24	4,050
1939	Mar. 13, 1939	17.72	7,880
	Apr. 17, 1939	15.80	5,810
	June 22, 1939	14.05	4,500
	Aug. 2, 1939	12.10	3,480
1940	Mar. 4, 1940	12.11	3,560
1941	Jan. 18, 1941	7.69	1,590
1942	Nov. 2, 1941	13.60	4,270
	Dec. 25, 1941	12.00	3,480
	Feb. 7, 1942	17.65	7,750
	Mar. 17, 1942	12.80	3,840
	Apr. 11, 1942	14.40	4,760
1943	Dec. 28, 1942	13.00	3,940
	May 21, 1943	16.00	5,990
	June 10, 1943	15.60	5,630
	June 18, 1943	16.35	6,380
1944	Mar. 16, 1944	18.60	9,160
	Apr. 12, 1944	18.10	8,440
	Apr. 24, 1944	19.39	10,400
	May 4, 1944	11.10	3,010
1945	Mar. 27, 1945	13.60	4,270
	Apr. 18, 1945	12.40	3,630
	Apr. 27, 1945	12.00	3,430
	May 18, 1945	16.00	5,990
	June 11, 1945	15.00	5,160
	June 18, 1945	18.74	9,310
1945	Sept.30, 1945	11.72	3,290
1946	Jan. 7, 1946	20.66	11,700
	Mar. 25, 1946	14.10	4,560
1947	Apr. 6, 1947	20.90	13,000
	June 1, 1947	14.20	4,630
	June 3, 1947	15.20	5,310
	June 7, 1947	27.4	23,000
	June 15, 1947	13.9	4,440
	June 20, 1947	21.8	13,400
1948	Dec. 6, 1947	12.97	3,940
	Feb. 29, 1948	13.60	4,270
	Mar. 20, 1948	17.80	7,920
1949	Feb. 15, 1949	11.27	3,100
	Feb. 21, 1949	14.20	4,630
	July 12, 1949	11.50	3,080
	July 22, 1949	13.56	4,270
1950	June 17, 1950	12.60	3,730
	June 21, 1950	13.35	4,160
1951	Feb. 21, 1951	15.81	5,810
	June 28, 1951	16.23	6,180
	July 25, 1951	15.32	5,390
1952	Mar. 11, 1952	15.14	5,230
	Mar. 21, 1952	12.73	3,780
	Apr. 24, 1952	14.35	4,760
1953	Apr. 1, 1953	17.00	7,010
1954	Apr. 7, 1954	9.19	2,020
	June 2, 1954	9.25	-
1955	Jan. 7, 1955	15.84	5,440
	Feb. 20, 1955	16.10	5,740
	May 14, 1955	13.56	3,900
	May 29, 1955	15.30	5,000
	July 6, 1955	12.51	3,360
1956	July 4, 1956	10.79	2,580
1957	May 18, 1957	13.82	3,800
	July 31, 1957	12.80	3,200
1958	Oct. 25, 1957	20.38	10,600
	Feb. 25, 1958	12.78	3,300
	July 17, 1958	16.44	5,670
	July 20, 1958	12.76	3,300
	Aug. 1, 1958	17.41	6,740
1959	Feb. 12, 1959	13.65	3,700
1960	Oct. 7, 1959	12.81	3,500
	Mar. 30, 1960	18.14	7,850
	May 8, 1960	16.94	6,500
	July 2, 1960	16.12	5,690
	July 12, 1960	12.64	3,420
1961	Mar. 15, 1961	12.90	3,550
	Mar. 22, 1961	12.27	3,300
	Apr. 24, 1961	13.45	3,810
	May 7, 1961	12.18	3,260
	Sept.15, 1961	17.15	6,830
	Sept.26, 1961	13.67	3,990

a Annual peak only.
b Backwater from ice.

5030. Douglas Creek near Emden, Mo.

Location.--Lat 39°45'30", long 91°55'00", in NW¼ sec.9, T.57 N., R.9 W., at culvert under county highway, 4 miles southwest of Emden.

Drainage area.--2.69 sq mi.

Gage.--Recording. Altitude of gage is 700 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 200 cfs and extended above on basis of indirect measurement of flow through culvert at 1,200 cfs.

Remarks.--Base for partial-duration series, 350 cfs. Only annual peaks are shown after 1959.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	June 20, 1956	7.86	1,200	1958	July 30, 1958	4.99	631
1957	June 8, 1957	3.70	401	1959	May 31, 1959	3.51	369
	June 28, 1957	3.63	393		Aug. 5, 1959	4.80	593
	July 28, 1957	3.74	409	1960	July 12, 1960	5.55	745
1958	July 4, 1958	3.60	385				
	July 14, 1958	4.53	538	1961	Sept.13, 1961	5.62	749
	July 19, 1958	3.67	393				

5035. Salt River near Hunnewell, Mo.

Location.--Lat 39°40'05", long 91°54'10", in SW¼NW¼ sec.10, T.56 N., R.9 W., at bridge on U.S. Highway 36, 1½ miles downstream from Black Creek, and 2 miles west of Hunnewell.

Drainage area.--626 sq mi.

Gage.--Nonrecording. Datum of gage is 615.64 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; shifts in relation occur.

Bankfull stage.--12 ft.

Remarks.--Some channel improvements made in drainage basin upstream from gage during period 1906-20. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	June 8, 1931	18.50	9,280	1936	Feb. 26, 1936	18.83	9,590
1932	Aug. 20, 1932	15.22	6,560	1937	Feb. 22, 1937	13.09	4,700
1933	July 1, 1933	21.20	15,400	1938	Mar. 31, 1938	14.9	6,000
1934	Sept.15, 1934	10.00	2,920	1939	Mar. 14, 1939	18.34	9,150
1935	June 4, 1935	19.80	11,300	1940	Mar. 5, 1940	11.05	3,600

5050. South Fork Salt River at Santa Fe, Mo.

Location.--Lat 39°21'45", long 91°49'05", in NW¼NE¼ sec.20, T.53 N., R.8 W., on right bank on downstream side of highway bridge, a quarter of a mile south of Santa Fe and 1 mile upstream from Elm Creek.

Drainage area.--298 sq mi.

Gage.--Nonrecording prior to Feb. 5, 1940; recording thereafter. Datum of gage is 613.05 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 12,300 cfs; shifts in relation occur.

Bankfull stage.--14 ft.

Historical data.--Flood in about 1929 washed away county highway bridge 100 ft upstream from gage; magnitude of flood unknown.

Remarks.--Base for partial-duration series, 5,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	June 11, 1940	13.97	5,460	1949	Sept.13, 1949	14.82	6,230
1941	Apr. 19, 1941	16.78	7,780	1950	Oct. 21, 1949	17.27	8,580
					Dec. 21, 1949	14.87	6,320
1942	Oct. 5, 1941	19.10	10,400				
	Oct. 31, 1941	16.30	7,390	1951	Mar. 17, 1951	15.88	7,210
	June 27, 1942	19.12	10,500				
				1952	Mar. 18, 1952	13.79	5,410
1943	Dec. 27, 1942	20.10	11,700				
	May 8, 1943	19.20	10,600	1953	June 14, 1953	10.20	3,030
	May 19, 1943	20.36	12,100				
				1954	June 2, 1954	5.42	865
1944	Apr. 11, 1944	17.10	8,190				
	Apr. 23, 1944	21.10	13,100	1955	Feb. 19, 1955	12.02	4,100
	Apr. 27, 1944	14.90	6,470				
				1956	Apr. 29, 1956	18.00	9,280
1945	Mar. 2, 1945	14.40	5,890				
	Mar. 21, 1945	15.20	6,580	1957	Apr. 18, 1957	11.49	3,740
	Apr. 14, 1945	14.86	6,320				
	May 16, 1945	16.90	8,180	1958	July 20, 1958	17.89	9,060
	June 7, 1945	16.55	7,880		July 31, 1958	20.62	12,300
	Sept.22, 1945	15.85	7,120				
	Sept.28, 1945	16.10	7,400	1959	Feb. 10, 1959	16.93	8,000
1946	Jan. 9, 1946	16.30	7,580	1960	Mar. 28, 1961	15.99	7,120
1947	Apr. 25, 1947	17.43	8,680	1961	May 8, 1961	19.62	11,700
					July 1, 1961	17.06	8,850
1948	Mar. 23, 1948	9.30	2,570		Sept.25, 1961	16.51	8,240

5060. Youngs Creek near Mexico, Mo.

Location.--Lat 39°18'40", long 91°56'40", in NW¼SW¼ sec.5, T.52 N., R.9 W., on downstream side of bridge on State Highway 15, 6 miles upstream from Long Branch, and 11 miles north of Mexico.

Drainage area.--67.4 sq mi.

Gage.--Nonrecording prior to June 1, 1956; recording thereafter. Datum of gage is 704.31 ft above mean sea level, datum of 1929 (levels by Missouri Highway Department).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--13 ft.

Historical data.--Maximum stage known, about 15.1 ft, date unknown, from information by Missouri State Highway Department.

Remarks.--Base for partial-duration series, 1,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	May 3, 1937	5.08	1,080	1947	Apr. 1, 1947	5.90	1,950
					Apr. 5, 1947	5.30	1,600
1938	Apr. 8, 1938	6.10	1,570		Apr. 11, 1947	5.41	1,660
	July 17, 1938	7.80	2,470		Apr. 25, 1947	7.05	2,610
					June 7, 1947	5.23	1,550
1939	Mar. 12, 1939	7.20	2,140		June 18, 1947	6.60	2,360
	Apr. 16, 1939	6.60	1,820				
	May 27, 1939	8.00	2,580	1948	July 21, 1948	4.4	1,060
	June 20, 1939	7.65	2,360				
	June 27, 1939	7.61	2,360	1949	Sept.13, 1949	4.5	1,120
	Aug. 12, 1939	6.20	1,620				
	Aug. 17, 1939	12.0	5,960	1950	Oct. 21, 1949	7.85	3,130
					Dec. 20, 1949	7.3	2,800
1940	June 11, 1940	7.0	2,030				
				1951	Feb. 20, 1951	5.8	1,890
1941	Jan. 17, 1941	4.0	610		Mar. 17, 1951	6.46	2,310
					June 26, 1951	6.29	2,190
1942	Oct. 5, 1941	7.35	2,450		July 12, 1951	5.10	1,470
	Oct. 21, 1941	6.96	2,190				
	Oct. 31, 1941	6.45	1,820	1952	Mar. 18, 1952	6.00	2,010
	Mar. 16, 1942	7.17	2,320		Aug. 21, 1952	6.64	2,370
	June 19, 1942	6.10	1,640				
	June 26, 1942	12.19	6,140	1953	Mar. 31, 1953	3.6	655
1943	Dec. 27, 1942	10.1	4,390	1954	June 3, 1954	2.98	330
	May 8, 1943	7.37	2,450				
	May 11, 1943	6.20	1,700	1955	Oct. 11, 1954	6.1	1,750
	May 15, 1943	8.68	3,330		Jan. 6, 1955	6.01	1,700
	May 18, 1943	9.50	3,920		Feb. 19, 1955	6.00	1,700
	June 6, 1943	6.18	1,700		June 24, 1955	6.1	1,750
	June 10, 1943	5.80	1,480		Aug. 29, 1955	7.63	2,570
	June 22, 1943	5.67	1,430				
				1956	Oct. 5, 1955	7.50	2,510
1944	Mar. 15, 1944	7.62	2,580		Apr. 29, 1956	7.76	2,610
	Apr. 11, 1944	9.33	3,780		July 16, 1956	6.65	1,860
	Apr. 23, 1944	9.06	3,620				
	Apr. 27, 1944	7.20	2,320	1957	May 17, 1957	6.25	1,650
	May 1, 1944	7.42	2,450				
				1958	July 16, 1958	8.05	2,530
1945	Mar. 21, 1945	6.90	2,120		July 20, 1958	9.40	3,570
	Mar. 25, 1945	5.80	1,480		July 31, 1958	12.52	6,530
	Apr. 14, 1945	7.30	2,380				
	Apr. 17, 1945	7.33	2,380	1959	Feb. 10, 1959	7.40	2,030
	June 7, 1945	8.5	3,190				
	Sept.22, 1945	6.90	2,120	1960	Mar. 28, 1960	7.67	2,670
1946	Jan. 5, 1946	5.85	1,890	1961	Apr. 25, 1961	6.08	1,450
					May 8, 1961	10.48	4,520
1947	Nov. 3, 1946	5.01	1,420		Sept.13, 1961	6.03	1,400
	Nov. 10, 1946	5.00	1,420		Sept.24, 1961	7.80	2,390
	Mar. 13, 1947	5.18	1,520				

5065. Middle Fork Salt River at Paris, Mo.

Location.--Lat 39°29'00", long 91°59'50", in SW¼SW¼ sec.2, T.54 N., R.10 W., on right bank on downstream side of Wabash Railroad bridge in Paris, 12½ miles upstream from Elk Fork Salt River.

Drainage area.--356 sq mi.

Gage.--Nonrecording prior to Jan. 22, 1940; recording thereafter. Datum of gage is 621.71 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 2,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 4, 1940	9.35	2,070	1950	Dec. 22, 1949	10.63	2,520
1941	Sept. 3, 1941	10.60	2,520	1951	Mar. 29, 1951	13.68	4,280
					June 30, 1951	14.88	5,060
1942	Oct. 4, 1941	11.60	3,040				
	Nov. 2, 1941	10.93	2,670	1952	Mar. 10, 1952	11.01	2,720
	Feb. 8, 1942	12.96	3,860		Mar. 19, 1952	10.83	2,620
	Mar. 18, 1942	10.50	2,470		Apr. 24, 1952	11.40	2,930
	Apr. 8, 1942	11.60	3,040		Sept. 3, 1952	10.65	2,520
	Apr. 11, 1942	11.44	2,930				
	June 27, 1942	21.76	10,500	1953	Apr. 2, 1953	14.54	4,800
1943	Dec. 27, 1942	11.58	3,040	1954	Apr. 22, 1954	9.82	2,160
	May 17, 1943	16.78	6,430				
	June 10, 1943	11.68	3,400	1955	Jan. 6, 1955	11.43	2,720
					Feb. 20, 1955	12.67	3,680
1944	Mar. 17, 1944	16.86	6,500		May 29, 1955	18.93	7,920
	Apr. 12, 1944	18.52	7,730		July 7, 1955	10.44	2,430
	Apr. 24, 1944	17.50	6,960				
				1956	July 31, 1956	10.08	2,300
1945	Mar. 26, 1945	11.40	2,930				
	Apr. 14, 1945	13.60	4,240	1957	May 17, 1957	10.97	2,720
	Apr. 17, 1945	11.91	3,210		June 15, 1957	11.40	2,930
	May 18, 1945	12.29	3,440				
	June 11, 1945	14.94	5,080	1958	Oct. 27, 1957	11.20	2,670
	June 18, 1945	11.07	2,770		July 21, 1958	23.48	10,800
					Aug. 1, 1958	29.94	23,100
1946	Oct. 1, 1945	10.80	2,620				
	Jan. 7, 1946	17.2	6,640	1959	Feb. 12, 1959	12.69	3,840
					Mar. 7, 1959	12.38	3,670
1947	Nov. 3, 1946	10.50	2,480				
	Apr. 6, 1947	19.75	8,670	1960	Mar. 30, 1960	15.41	5,090
	May 28, 1947	10.95	2,720		Apr. 17, 1960	10.86	2,720
	June 8, 1947	18.80	7,840		May 6, 1960	10.69	2,520
	June 20, 1947	17.15	6,640		July 2, 1960	17.55	6,770
1948	Feb. 28, 1948	10.40	2,430	1961	Mar. 14, 1961	10.95	2,820
	Mar. 21, 1948	14.65	4,870		May 7, 1961	14.63	4,790
					Sept.15, 1961	25.37	13,400
1949	June 29, 1949	11.80	3,150		Sept.24, 1961	10.55	2,570

5070. Elk Fork Salt River near Paris, Mo.

Location.--Lat 39°26'25", long 92°00'05", in SE¼SE¼ sec.22, T.54 N., R.10 W., on left bank on upstream side of bridge on State Highway 15, 2½ miles south of Paris, and 11 miles upstream from mouth.

Drainage area.--262 sq mi.

Gage.--Nonrecording Apr. 3, 1930, to Jan. 21, 1935 (fragmentary record); recording thereafter. Datum of gage is 630.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 16,000 cfs; large shift in relation occurred May 27, 1939.

Bankfull stage.--14 ft.

Historical data.--Flood of June 1928 was higher than that of 1902 but might have been exceeded by the flood of 1875, from information by local residents. Flood of July 31, 1958, reached the highest stage since at least 1875.

Remarks.--Base for partial-duration series, 3,600 cfs; only annual peaks are shown prior to 1935.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	June 1928	19.1	18,400	1944	Mar. 15, 1944	13.58	9,140
					Apr. 10, 1944	16.66	14,000
1931	June 12, 1931	12.50	10,100		Apr. 23, 1944	16.55	13,800
1932	Aug. 14, 1932	10.46	7,820		May 1, 1944	9.18	4,560
1933	May 13, 1933	12.32	9,490				
1934	Sept.12, 1934	8.64	5,400	1945	Mar. 20, 1945	10.40	5,570
					Mar. 25, 1945	11.62	6,700
1935	Mar. 7, 1935	9.03	5,700		Apr. 14, 1945	12.44	7,550
	May 3, 1935	9.11	5,810		May 17, 1945	9.88	5,140
	May 14, 1935	10.70	7,570		June 8, 1945	12.25	7,330
	May 28, 1935	11.08	8,020		June 30, 1945	8.82	4,240
	June 2, 1935	8.80	5,500				
				1946	Jan. 6, 1946	9.32	4,640
1936	Feb. 26, 1936	12.20	9,360		Mar. 23, 1946	9.76	5,050
1937	Feb. 21, 1937	7.57	4,400	1947	Nov. 3, 1946	9.84	5,050
	May 3, 1937	6.88	3,600		Nov. 10, 1946	9.06	4,480
					Apr. 1, 1947	9.08	4,480
1938	Mar. 29, 1938	8.31	5,000		Apr. 5, 1947	9.82	5,050
	Apr. 9, 1938	8.02	4,700		Apr. 25, 1947	9.75	5,050
	May 23, 1938	12.99	10,400		June 7, 1947	11.83	6,900
	July 18, 1938	7.24	3,900		June 19, 1947	13.4	8,860
1939	Mar. 12, 1939	9.76	6,580	1948	Feb. 27, 1948	8.38	4,000
	May 27, 1939	11.28	5,850				
	June 21, 1939	13.45	8,860	1949	Jan. 16, 1949	7.86	3,560
	June 28, 1939	14.45	10,300				
	July 25, 1939	14.20	10,000	1950	Oct. 21, 1949	8.45	3,930
	Aug. 17, 1939	12.67	7,910		Dec. 21, 1949	11.90	7,000
					Jan. 3, 1950	8.07	3,700
1940	June 11, 1940	9.56	4,610				
				1951	Feb. 20, 1951	8.10	3,700
1941	Jan. 17, 1941	6.40	2,420		Mar. 17, 1951	9.26	4,640
					Mar. 29, 1951	11.73	6,800
1942	Oct. 4, 1941	10.97	5,640				
	Oct. 22, 1941	10.04	4,860	1952	Mar. 10, 1952	9.5	4,800
	Oct. 31, 1941	10.07	4,940		Mar. 18, 1952	10.0	5,220
	Feb. 6, 1942	8.45	3,700		Aug. 22, 1952	13.86	9,560
	Mar. 16, 1942	9.41	4,420				
	Apr. 7, 1942	9.55	4,560	1953	Apr. 1, 1953	8.65	4,080
	Apr. 10, 1942	10.06	4,940				
	June 27, 1942	20.22	20,600	1954	Apr. 11, 1954	4.58	1,480
1943	Dec. 27, 1942	12.75	8,040	1958	July 31, 1958	21.03	22,300
	May 18, 1943	14.42	10,300				
	June 10, 1943	11.70	6,700				

5075. Salt River near Monroe City, Mo.

Location.--Lat 39°32'25", long 91°40'20", in NE¼NW¼ sec.22, T.55 N., R.7 W., on left bank on downstream side of old bridge pier, 135 ft upstream from highway bridge at Joanna, 2,500 ft downstream from Indian Creek, 2 miles upstream from Lick Creek, and 8 miles southeast of Monroe City.

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

Gage.--Recording. Datum of gage is 520.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 67,000 cfs; shifts in relation occur.

Bankfull stage.--26 ft.

Remarks.--Base for partial-duration series, 20,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	June 1928	a36	-	1948	Feb. 28, 1948	16.20	16,500
1940	Mar. 3, 1940	13.40	12,600	1949	July 20, 1949	13.94	12,800
1941	Apr. 20, 1941	15.30	15,600	1950	Dec. 22, 1949	20.49	24,400
1942	Oct. 5, 1941	21.70	26,200	1951	Feb. 21, 1951	19.36	22,300
	Nov. 1, 1941	19.70	22,500		Mar. 18, 1951	19.76	23,000
	Feb. 6, 1942	20.60	24,100		Mar. 30, 1951	19.83	23,000
	Mar. 17, 1942	19.00	21,200				
	June 28, 1942	28.7	44,900	1952	Mar. 19, 1952	19.22	21,900
1943	Dec. 28, 1942	26.27	38,000	1953	Apr. 1, 1953	16.75	17,800
	May 18, 1943	30.04	48,800				
	June 11, 1943	21.68	26,200	1954	Apr. 22, 1954	9.64	6,400
1944	Mar. 16, 1944	23.52	30,400	1955	Feb. 20, 1955	21.04	25,500
	Apr. 12, 1944	29.63	47,600		May 29, 1955	18.18	20,000
	Apr. 24, 1944	30.34	49,700				
	May 1, 1944	18.64	20,600	1956	Apr. 29, 1956	18.53	20,600
1945	Mar. 21, 1945	21.34	25,400	1957	June 14, 1957	20.66	23,600
	Mar. 26, 1945	21.65	26,000				
	Apr. 14, 1945	23.45	30,100	1958	July 16, 1958	21.41	23,400
	Apr. 17, 1945	18.60	20,500		July 21, 1958	30.34	44,400
	May 17, 1945	22.50	28,000		Aug. 1, 1958	34.81	71,100
	June 9, 1945	23.45	30,100				
	June 16, 1945	18.68	20,700	1959	Feb. 10, 1959	22.16	24,800
1946	Jan. 9, 1946	22.8	28,600	1960	Mar. 30, 1960	23.37	27,000
1947	Apr. 6, 1947	21.30	26,300	1961	May 9, 1961	29.00	39,600
	Apr. 25, 1947	21.10	25,800		Sept.15, 1961	27.74	35,800
	June 9, 1947	24.17	32,700		Sept.25, 1961	20.05	21,100
	June 20, 1947	23.65	31,400				

a Approximate; from information by local resident.

5080. Salt River near New London, Mo.

Location.--Lat 39°36'44", long 91°24'30", in NE¼NW¼ sec.36, T.56 N., R.5 W., on left bank 180 ft upstream from bridge on U.S. Highway 61, 2 miles north of New London, and 8 miles upstream from Spencer Creek.

Drainage area.--2,480 sq mi, approximately.

Gage.--Nonrecording prior to Jan. 18, 1935; recording thereafter. Prior to Apr. 7, 1931, at present site at datum 0.03 ft higher, and Apr. 7, 1931, to Jan. 17, 1935, at site 180 ft downstream at datum 0.04 ft lower. Datum of gage is 477.03 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; shifts in relation occur.

Bankfull stage.--19 ft.

Remarks.--Base for partial-duration series, 25,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1858	July 14, 1858	a27.6	-	1942	Oct. 6, 1941	21.36	28,200
					Feb. 7, 1942	20.49	25,800
1922	Mar. 16, 1922	24.15	39,800		June 29, 1942	25.55	43,500
1923	Mar. 12, 1923	15.50	15,800	1943	Dec. 29, 1942	24.20	37,500
					May 19, 1943	27.18	51,600
1924	June 13, 1924	14.21	13,700		June 11, 1943	21.28	27,900
1925	Mar. 19, 1925	14.70	14,500	1944	Mar. 17, 1944	22.55	31,800
					Apr. 13, 1944	26.08	45,900
1926	Apr. 8, 1926	26.64	41,700		Apr. 25, 1944	26.48	47,900
	Sept. 6, 1926	26.00	49,800				
				1945	Mar. 22, 1945	21.38	28,200
1927	Mar. 21, 1927	23.46	36,600		Mar. 26, 1945	21.45	28,200
	Apr. 2, 1927	23.35	36,200		Apr. 15, 1945	22.53	31,400
	Apr. 14, 1927	22.60	32,800		May 18, 1945	21.95	29,900
					June 10, 1945	23.2	33,800
1928	June 21, 1928	28.8	58,700				
				1946	Jan. 10, 1946	22.11	30,200
1929	Nov. 19, 1928	24.00	37,800				
	Mar. 17, 1929	23.26	35,100	1947	Apr. 7, 1947	21.04	25,200
	Apr. 26, 1929	21.65	29,400		Apr. 26, 1947	21.02	25,200
	May 15, 1929	21.30	28,500		June 10, 1947	22.77	31,100
	May 20, 1929	22.30	31,600		June 21, 1947	23.0	31,700
1930	Feb. 13, 1930	16.45	17,400	1948	Mar. 23, 1948	16.96	16,800
1931	June 13, 1931	22.54	33,400	1949	July 20, 1949	15.65	14,600
1932	Aug. 15, 1932	18.70	23,500	1950	Dec. 23, 1949	19.78	22,400
1933	Dec. 25, 1932	20.80	29,600	1951	Mar. 18, 1951	19.91	23,500
	May 14, 1933	21.72	32,400				
	May 27, 1933	20.36	28,300	1952	Mar. 19, 1952	19.13	21,800
1934	Sept.30, 1934	15.40	15,800	1953	Apr. 1, 1953	17.1	17,800
1935	May 4, 1935	20.60	28,900	1954	Apr. 22, 1954	10.64	7,700
	May 15, 1935	20.26	27,900				
	May 30, 1935	19.95	27,000	1955	Feb. 20, 1955	20.40	23,500
1936	Feb. 28, 1936	22.90	36,500	1956	Apr. 30, 1956	18.43	19,900
1937	Feb. 21, 1937	15.77	16,900	1957	June 15, 1957	20.44	24,600
1938	May 24, 1938	18.31	22,400	1958	July 22, 1958	27.17	46,500
					Aug. 2, 1958	29.92	64,700
1939	Mar. 13, 1939	21.13	26,900				
	Apr. 18, 1939	21.31	27,500	1959	Feb. 11, 1959	21.90	25,600
	June 22, 1939	22.47	31,000				
	July 26, 1939	20.66	25,900	1960	Mar. 30, 1960	22.55	29,000
1940	Mar. 3, 1940	13.97	12,600	1961	May 9, 1961	25.70	39,600
					Sept.16, 1961	25.08	36,600
1941	Apr. 20, 1941	16.37	17,600				

a About present site and datum; from comparison with crest of June 1928 at stone marker 1 mile below gage.

5100. Hadley Creek near Barry, Ill.

Location.--Lat 39°42'48", long 91°03'56", in SW¼SW¼ sec.14, T.4 S., R.6 W., on left bank 300 ft downstream from bridge on U.S. Highway 36, 1.8 miles northwest of Barry, and 2 miles upstream from Beebe Creek.

Drainage area.--40.6 sq mi.

Gage.--Recording. Datum of gage is 533.59 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,500 cfs and extended above on basis of logarithmic plotting.

Remarks.--Base for partial-duration series, 1,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	11.31	8,000	1960	Mar. 27, 1960	6.12	1,740
	June 19, 1956	8.54	4,060		Apr. 15, 1960	5.74	1,460
					June 29, 1960	5.80	1,500
1957	Apr. 3, 1957	6.10	1,740		Aug. 19, 1960	5.88	1,580
	Apr. 22, 1957	7.62	3,100				
	Apr. 28, 1957	6.45	2,020	1961	Apr. 25, 1961	6.20	1,820
	May 17, 1957	9.22	5,000		May 8, 1961	10.65	6,960
	June 14, 1957	6.46	2,020		May 14, 1961	6.31	1,900
	Aug. 3, 1957	6.35	1,940		June 30, 1961	6.80	2,320
					July 23, 1961	7.13	2,600
1958	July 15, 1958	7.41	2,900		Aug. 10, 1961	9.59	5,560
	July 19, 1958	6.65	2,180		Sept.13, 1961	8.55	4,180
	Aug. 1, 1958	6.82	2,320				
1959	Feb. 10, 1959	7.20	2,700				

5105. Hadley Creek at Kinderhook, Ill.

Location.--Lat 39°41'35", long 91°08'55", in SE¼NE¼ sec.25, T.4 S., R.7 W., on right bank at upstream side of bridge on State Highway 96, 0.8 mile southeast of Kinderhook, 2.0 miles upstream from Chicago, Burlington & Quincy Railroad bridge, and 5.5 miles upstream from mouth.

Drainage area.--72.7 sq mi.

Gage.--Recording. Datum of gage is 469.55 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Subject to frequent shifts. Defined by current-meter measurements below 4,900 cfs, and extended above on basis of contracted-opening measurement.

Remarks.--Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1951.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Aug. 17, 1939	a15.93	-	1951	June 27, 1951	6.84	2,170
1940	June 11, 1940	9.15	5,760				
				1952	Mar. 18, 1952	7.88	3,070
1941	Apr. 19, 1941	10.83	7,520		Apr. 13, 1952	6.56	2,010
1942	June 19, 1942	11.35	8,260				
1943	Dec. 27, 1942	11.10	7,780	1953	Nov. 18, 1952	4.87	834
1944	Apr. 23, 1944	13.91	15,000				
1945	June 9, 1945	12.15	8,500	1954	Apr. 22, 1954	6.10	1,620
1946	June 18, 1946	12.18	8,500	1955	Feb. 20, 1955	10.06	5,220
1947	Nov. 3, 1946	12.7	9,300		Apr. 24, 1955	11.52	6,850
1948	July 25, 1948	8.93	3,980		May 13, 1955	7.30	2,570
1949	July 20, 1949	12.92	8,930		May 28, 1955	12.16	7,850
1950	Dec. 21, 1949	10.30	5,440		Aug. 29, 1955	13.59	11,800
1951	Feb. 18, 1951	8.11	3,250	1956	Apr. 29, 1956	13.77	12,600

a From floodmarks.

Peak stages and discharges of Hadley Creek at Kinderhook, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	June 20, 1956	-	b9,500	1959	Nov. 17, 1958	8.84	3,880
					Feb. 10, 1959	10.95	b5,600
1957	Jan. 22, 1957	7.98	3,160		May 22, 1959	9.25	4,280
	Mar. 25, 1957	7.10	2,410				
	Apr. 3, 1957	9.13	4,180	1960	Oct. 6, 1959	6.55	2,010
	Apr. 20, 1957	8.07	3,250		Mar. 27, 1960	8.08	3,250
	Apr. 22, 1957	11.37	6,720		Apr. 16, 1960	6.97	2,620
	Apr. 28, 1957	11.01	6,240		May 16, 1960	6.67	2,420
	May 10, 1957	9.32	4,380		May 19, 1960	6.31	2,160
	May 17, 1957	13.85	13,200		May 25, 1960	6.66	2,420
	June 11, 1957	8.33	3,430		June 29, 1960	9.87	5,000
	June 12, 1957	9.14	4,180		Aug. 18, 1960	6.41	2,230
	June 14, 1957	11.50	6,850				
	Aug. 3, 1957	11.18	6,480	1961	Mar. 31, 1961	7.58	3,030
					Apr. 25, 1961	7.37	2,890
1958	May 4, 1958	7.56	2,810		May 8, 1961	13.45	10,100
	July 15, 1958	10.89	6,120		May 14, 1961	9.04	4,100
	July 19, 1958	10.77	6,000		June 30, 1961	9.38	4,480
	Aug. 2, 1958	9.93	5,000		July 23, 1961	9.31	4,380
	Aug. 12, 1958	6.92	2,250		Aug. 10, 1961	14.58	13,000
	Aug. 21, 1958	8.35	3,520		Sept.13, 1961	11.78	7,260

b About.

5116.25. Kiser Creek tributary near Barry, Ill.

Location.--Lat 39°41'05", long 91°00'00", in S½ sec.29, T.4 S., R.5 W., at culvert on U.S. Highway 36, 2.3 miles east of Barry.

Drainage area.--0.748 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	June 20, 1956	17.81	888	1960	June 29, 1960	13.84	248
1957	May 17, 1957	17.45	798				
1958	July 15, 1958	14.42	302	1961	May 8, 1961	16.80	650
1959	Feb. 10, 1959	13.51	218				

5125. Bay Creek at Pittsfield, Ill.

Location.--Lat 39°37'30", long 90°47'40", in NE¼SW¼ sec.18, T.5 S., R.3 W., on right bank at downstream side of bridge on abandoned county road, 50 ft downstream from Panther Creek, 0.1 mile downstream from bridge on State Highway 107, 0.4 mile downstream from Wabash Railroad bridge, and 1.4 miles northeast of Pittsfield.

Drainage area.--39.6 sq mi.

Gage.--Recording. Datum of gage is 638.48 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 4,400 cfs and extended above.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges of Bay Creek at Pittsfield, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Sept. 8, 1926	a18.4	-	1948	July 12, 1948	10.71	3,120
					July 26, 1948	9.8	2,130
1940	Aug. 17, 1940	7.10	1,040				
				1949	July 20, 1949	11.85	4,280
1941	Apr. 19, 1941	10.56	2,760				
	June 9, 1941	9.7	2,030	1950	Dec. 21, 1949	10.1	2,280
					Apr. 3, 1950	10.35	2,520
1942	Oct. 4, 1941	11.55	4,600				
	Feb. 4, 1942	10.80	3,120	1951	Feb. 18, 1951	8.70	1,560
	Mar. 16, 1942	11.35	3,720				
	May 16, 1942	9.9	2,200	1952	June 22, 1952	10.21	2,370
	June 19, 1942	10.3	2,530				
	July 19, 1942	9.7	2,070	1953	Nov. 25, 1952	5.51	530
1943	Dec. 27, 1942	10.85	3,000	1954	July 22, 1954	13.14	6,840
	May 8, 1943	11.31	3,940				
	May 11, 1943	10.0	2,270	1955	Feb. 19, 1955	10.60	2,830
	May 15, 1943	11.15	3,400		May 28, 1955	12.07	5,920
	May 18, 1943	10.70	2,820		Aug. 29, 1955	11.95	5,370
	May 19, 1943	10.2	2,440				
				1956	Apr. 29, 1956	11.39	4,160
1944	Apr. 11, 1944	12.19	5,920				
	Apr. 23, 1944	10.4	2,630	1957	Apr. 22, 1957	10.66	2,900
					May 17, 1957	13.14	8,050
1945	Mar. 25, 1945	9.9	2,130		May 19, 1957	10.27	2,420
	June 7, 1945	10.0	2,440		June 14, 1957	12.90	7,560
	June 9, 1945	13.25	8,300				
	June 16, 1945	11.40	3,940	1958	Oct. 23, 1957	9.90	2,130
	July 1, 1945	11.05	3,260				
	Sept.22, 1945	10.85	3,060	1959	Feb. 10, 1959	b12.56	6,150
	Sept.28, 1945	10.0	2,350				
				1960	Mar. 28, 1960	11.16	3,650
1946	May 11, 1946	10.0	2,350		Mar. 30, 1960	11.20	3,740
	June 18, 1946	12.48	6,610				
	Aug. 16, 1946	11.95	5,480	1961	May 8, 1961	12.56	6,840
					July 23, 1961	10.91	3,250
1947	Nov. 6, 1946	10.3	2,530		Aug. 10, 1961	13.81	9,800
	Apr. 5, 1947	10.1	2,440		Sept.13, 1961	13.98	10,000
	Apr. 25, 1947	10.1	2,440		Sept.24, 1961	11.64	4,710
	June 19, 1947	10.85	2,860				
	June 30, 1947	11.10	3,120				

a From floodmarks.
b Backwater from ice.

5130. Bay Creek at Nebo, Ill.

Location.--Lat 39°26'35", long 90°47'45", in NW¼ sec.19, T.7 S., R.3 W., on left bank 40 ft downstream from highway bridge, 500 ft upstream from Spring Creek, a quarter of a mile west of Nebo, and 1.6 miles upstream from Chicago & Alton Railroad bridge.

Drainage area.--162 sq mi, including that of Spring Creek.

Gage.--Recording. Datum of gage is 462.56 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 9,000 cfs and extended above.

Remarks.--Base for partial-duration series, 3,000 cfs. Records include flow of Spring Creek.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	Aug. 16, 1916	a18.2	-	1942	Nov. 6, 1941	12.7	3,230
					Feb. 4, 1942	12.8	3,340
1940	Aug. 27, 1940	9.73	1,550		Feb. 6, 1942	12.6	3,130
					Mar. 16, 1942	16.1	13,400
1941	Apr. 19, 1941	12.67	3,230		May 18, 1942	13.4	4,420
					June 19, 1942	14.5	7,980
1942	Oct. 4, 1941	16.73	15,500		July 9, 1942	12.5	3,040

a Reported to have reached about this stage.

Peak stages and discharges of Bay Creek at Nebo, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Nov. 22, 1942	13.6	4,970	1950	Dec. 21, 1949	12.42	3,600
	Dec. 27, 1942	14.5	7,980				
	May 8, 1943	13.1	5,010	1951	Feb. 18, 1951	11.65	3,040
	May 11, 1943	12.75	4,060		Feb. 20, 1951	11.62	3,040
	May 15, 1943	14.6	9,100		May 22, 1951	11.74	3,090
	May 18, 1943	14.78	10,000				
	June 6, 1943	12.8	4,180	1952	Apr. 23, 1952	10.11	2,440
	June 10, 1943	11.9	3,060				
				1953	Mar. 31, 1953	5.31	736
1944	Apr. 11, 1944	14.96	10,600				
	Apr. 22, 1944	12.75	3,950	1954	July 22, 1954	10.39	2,500
	May 25, 1944	12.4	3,400				
				1955	Aug. 29, 1955	13.20	5,300
1945	Mar. 26, 1945	12.5	3,510				
	June 8, 1945	12.3	3,400	1956	Oct. 5, 1955	12.81	4,150
	June 9, 1945	15.48	12,100		Apr. 29, 1956	12.58	3,800
	June 16, 1945	14.1	7,910		June 19, 1956	13.42	5,880
1946	Aug. 5, 1946	13.45	5,880	1957	May 17, 1957	13.28	5,590
	Aug. 16, 1946	19.31	23,500		May 19, 1957	12.18	3,400
					June 14, 1957	15.44	11,800
1947	Nov. 1, 1946	14.0	7,040				
	Nov. 3, 1946	14.94	10,300	1958	July 19, 1958	13.53	6,320
	Nov. 7, 1946	13.05	4,720		July 31, 1958	16.25	14,200
	Apr. 20, 1947	12.6	3,700				
	Apr. 25, 1947	14.0	7,620	1959	Feb. 10, 1959	13.15	5,160
	June 30, 1947	13.1	6,170				
				1960	Mar. 30, 1960	13.72	6,750
1948	Mar. 21, 1948	12.1	3,320		Apr. 16, 1960	14.08	7,910
	July 26, 1948	15.19	11,200				
				1961	May 8, 1961	14.65	9,400
1949	Mar. 31, 1949	12.8	4,430		Aug. 11, 1961	16.05	13,600
	June 23, 1949	11.8	3,140		Sept.14, 1961	15.05	10,600
	July 20, 1949	13.93	5,880		Sept.25, 1961	13.42	5,880

SALT SPRING CREEK BASIN

5132. Salt Spring Creek near Gilead, Ill.

Location.--Lat 39°07'00", long 90°39'50", in SW¼ sec.8, T.11 S., R.2 W., at culvert on county road, 0.6 mile south of Gilead.

Drainage area.--1.20 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	16.45	374	1960	June 30, 1960	19.74	1,280
1957	June 14, 1957	18.71	720				
1958	Aug. 12, 1958	17.22	439	1961	July 25, 1961	18.90	750
1959	Aug. 5, 1959	18.99	744				

5134. Knox Branch near Elsberry, Mo.

Location.--Lat 39°08'30", long 90°52'46", in SE¼NE¼ sec.34, T.51 N., R.1 E., at culvert on Route B, 5½ miles southwest of Elsberry.

Drainage area.--1.17 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by estimated flow of 7 cfs and extended above on basis of slope-area measurement at 287 cfs.

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 11, 1954	3.68	400	1959	Aug. 17, 1959	3.92	485
				1960	June 30, 1960	4.20	580
1956	July 29, 1956	3.18	265				
1957	June 14, 1957	3.57	360	1961	May 7, 1961	3.65	385
1958	July 19, 1958	3.87	465				

KINGS LAKE BASIN

5134.5. Lost Creek tributary near Elsberry, Mo.

Location.--Lat 39°06'48", long 90°49'11", in NE¼SE¼ sec.7, T.50 N., R.2 E., 100 ft downstream from private road crossing, 4 miles southwest of Elsberry.

Drainage area.--0.33 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by estimated flow of 0.6 cfs and extended above on basis of slope-area measurement at 158 cfs.

Bankfull stage.--4 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Aug. 7, 1955	2.85	115	1959	Aug. 4, 1959	2.71	97
				1960	June 30, 1960	4.26	335
1956	Oct. 6, 1955	3.45	205				
1957	June 14, 1957	4.26	335	1961	May 7, 1961	4.00	292
1958	July 19, 1958	2.95	130				

5134.7. North Fork Lost Creek near Elsberry, Mo.

Location.--Lat 39°08'47", long 90°49'24", in NE¼ sec.31, T.51 N., R.2 E., 2½ miles southwest of Elsberry.

Drainage area.--2.23 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 16 cfs and extended above on basis of slope-area measurement at 380 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of North Fork Lost Creek near Elsberry, Mo.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 11, 1954	2.13	680	1959	Aug. 5, 1959	3.51	1,220
				1960	June 30, 1960	2.80	990
1956	July 29, 1956	1.90	520				
1957	Apr. 22, 1957	1.72	380	1961	May 7, 1961	1.85	480
1958	July 19, 1958	(a)	b100				

a Not determined; peak stage did not reach bottom of gage.
b Less than figure shown.

5135. Lost Creek at Elsberry, Mo.

Location.--Lat 39°09'20", long 90°48'20", in NW¼SE¼ sec.29, T.51 N., R.2 E., three-quarters of a mile southwest of Elsberry.

Drainage area.--12.2 sq mi.

Gage.--Recording. Altitude of gage is 450 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 170 cfs and extended above on basis of slope-area measurement at 3,880 cfs.

Remarks.--Base for partial-duration series, 300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 2, 1954	6.41	665	1958	June 25, 1958	4.85	321
	Oct. 11, 1954	8.77	1,340		July 19, 1958	8.42	1,590
	Jan. 4, 1955	5.06	355		July 30, 1958	7.70	1,240
	May 26, 1955	5.99	565				
	May 28, 1955	5.31	405	1959	Feb. 10, 1959	5.40	445
	July 14, 1955	7.25	865		Aug. 4, 1959	6.61	810
	Aug. 7, 1955	9.39	2,190		Aug. 17, 1959	7.03	970
					Aug. 29, 1959	5.80	560
1956	Oct. 6, 1955	7.86	1,330				
	Apr. 29, 1956	8.12	1,430	1960	Oct. 10, 1959	9.53	2,260
	July 18, 1956	5.71	530		Mar. 27, 1960	5.47	458
	July 29, 1956	9.34	2,130		Mar. 30, 1960	4.80	310
					May 6, 1960	4.93	343
1957	Mar. 24, 1957	5.03	360		May 25, 1960	9.30	2,130
	Apr. 8, 1957	4.99	345		June 30, 1960	11.48	3,880
	May 13, 1957	5.29	420		July 12, 1960	4.86	321
	May 17, 1957	4.89	325				
	May 19, 1957	7.06	970	1961	Apr. 25, 1961	5.01	354
	May 21, 1957	7.56	1,200		May 5, 1961	8.95	1,950
	May 22, 1957	6.42	740		May 8, 1961	10.50	3,000
	June 14, 1957	10.88	3,340				

5136. Camp Creek near Elsberry, Mo.

Location.--Lat 39°06'56", long 90°46'23", in southwest portion of Survey 1724, T.50 N., R.2 E., at culvert on State Highway 79, 3.6 miles south of Elsberry.

Drainage area.--1.50 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 90 cfs and extended above on basis of slope-area measurement at 668 cfs.

Bankfull stage.--5 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Aug. 7, 1955	3.74	440	1959	Aug. 4, 1959	2.95	200
				1960	June 30, 1960	3.94	530
1956	July 29, 1956	3.37	320				
1957	May 21, 1957	4.77	950	1961	May 7, 1961	4.39	710
1958	July 19, 1958	3.54	370				

5136.5. Hurricane Creek near Elsberry, Mo.

Location.--Lat 39°06'29", long 90°46'13", in southwest portion of Survey 1724, T.50 N., R.2 E., at culvert on State Highway 79, 4.1 miles south of Elsberry.

Drainage area.--3.06 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 210 cfs and extended above on basis of culvert flow measurement at 1,620 cfs.

Bankfull stage.--8 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Aug. 7, 1955	7.76	780	1959	Aug. 4, 1959	5.79	280
				1960	Oct. 10, 1959	7.56	960
1956	July 29, 1956	8.43	1,070				
1957	June 14, 1957	9.56	1,620	1961	May 7, 1961	5.46	200
1958	July 19, 1958	7.70	760				

CUIVRE RIVER BASIN

5142. Reid Branch near Bowling Green, Mo.

Location.--Lat 39°15'15", long 91°02'50", in SE¼ west part of Survey No. 1685, T.52 N., R.1 W., upstream from culvert on U.S. Highway 61, 3.9 miles south of Cyrene, and 10 miles south of Bowling Green.

Drainage area.--0.54 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by culvert-flow measurements between 140 and 500 cfs.

Bankfull stage.--8 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 22, 1955	3.37	66	1959	July 17, 1959	a6.0	280
				1960	May 25, 1960	8.15	498
1956	July 3, 1956	4.65	162				
1957	June 8, 1957	4.57	156	1961	July 25, 1961	6.97	390
1958	July 19, 1958	5.37	223				

a About.

5145. Cuivre River near Troy, Mo.

Location.--Lat 39°00'59", long 90°59'00", in SE¼ sec.14, T.49 N., R.1 W., on downstream side of center pier of bridge on U.S. Highway 61, 1¼ miles downstream from confluence of North and West Forks, and 2 miles north of Troy.

Drainage area.--903 sq mi.

Gage.--Nonrecording prior to July 11, 1939; recording thereafter. Prior to Oct. 1, 1930, at site 3 miles downstream at datum 4.31 ft lower. Datum of gage is 450.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 101,000 cfs.

Bankfull stage.--21 ft.

Historical data.--Flood of October 1941 exceeded the previously known maximum flood of December 1895 by 5 or 6 ft at Frenchmens Bluff, 3 miles downstream, and is highest flood since Frenchmens Bluff bridge was built in 1888.

Remarks.--Base for partial-duration series, 20,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 14, 1922	24.50	44,200	1941	Apr. 20, 1941	26.4	41,300
	Apr. 8, 1922	23.30	36,700				
	Apr. 15, 1922	21.00	24,800	1942	Oct. 5, 1941	33.4	120,000
					Oct. 31, 1941	24.20	22,700
1923	Mar. 12, 1923	22.46	32,200		June 26, 1942	24.00	21,900
	Aug. 17, 1923	22.40	31,600				
				1943	Dec. 27, 1942	27.58	41,500
1924	Dec. 13, 1923	20.42	22,400		May 11, 1943	24.34	23,100
					May 18, 1943	27.00	37,000
1925	Mar. 19, 1925	20.24	21,600				
				1944	Apr. 11, 1944	25.86	30,500
1926	Nov. 6, 1925	21.20	25,700		Apr. 22, 1944	26.92	36,400
	Apr. 7, 1926	22.90	34,400				
	Sept. 5, 1926	25.40	50,000	1945	Mar. 26, 1945	24.9	25,600
					May 15, 1945	24.53	23,900
1927	Oct. 1, 1926	21.45	26,600		Sept.23, 1945	23.60	20,500
	Oct. 3, 1926	20.40	22,400		Sept.29, 1945	23.48	20,100
	Nov. 15, 1926	20.95	24,800				
	Mar. 9, 1927	23.00	34,900	1946	Jan. 6, 1946	24.0	21,900
	Apr. 1, 1927	23.40	37,300				
	Apr. 13, 1927	23.40	37,300	1947	Nov. 1, 1946	26.00	30,000
	May 8, 1927	20.00	20,800		Nov. 3, 1946	24.80	24,200
	May 25, 1927	20.35	22,400		Apr. 25, 1947	27.1	37,200
1928	Apr. 6, 1928	22.15	30,500	1948	July 26, 1948	23.11	18,000
	June 20, 1928	23.77	39,700				
				1949	Jan. 24, 1949	24.30	21,000
1929	Oct. 9, 1928	20.85	24,000		July 21, 1949	25.88	29,200
	Mar. 16, 1929	24.40	43,500				
	May 3, 1929	20.00	20,800	1950	Dec. 22, 1949	23.94	19,400
	May 13, 1929	21.20	25,700				
	May 18, 1929	25.75	52,600	1951	Feb. 21, 1951	25.80	28,600
	June 13, 1929	20.00	20,800		Mar. 18, 1951	25.49	26,900
1930	Jan. 2, 1930	19.10	18,100	1952	Apr. 12, 1952	19.51	10,300
1931	May 20, 1931	23.58	21,300	1953	May 5, 1953	17.70	8,050
1932	Aug. 13, 1932	20.20	13,900	1954	July 2, 1954	7.88	1,960
1933	May 13, 1933	24.22	26,200	1955	July 15, 1955	21.48	13,100
1934	Sept.29, 1934	20.20	13,900	1956	Apr. 29, 1956	19.25	9,290
1935	May 15, 1935	24.78	30,000	1957	June 8, 1957	23.95	21,000
1936	Nov. 5, 1935	22.69	19,000	1958	July 20, 1958	25.51	20,200
					Aug. 1, 1958	26.54	23,100
1937	Nov. 3, 1936	25.80	36,900				
				1959	Feb. 10, 1959	24.96	19,200
1938	Apr. 9, 1938	23.7	23,300				
				1960	Oct. 11, 1959	24.46	21,700
1939	Mar. 12, 1939	23.80	23,900		Mar. 28, 1960	25.13	24,700
	Apr. 16, 1939	25.03	31,300				
				1961	May 8, 1961	25.32	25,700
1940	June 28, 1940	15.20	8,540				

5147. Dry Branch near Wentzville, Mo.

Location.--Lat 38°49'10", long 90°54'20", in NW¼ sec.22, T.47 N., R.1 E., at bridge on Point Prairie Road 3 miles northwest of Wentzville.

Drainage area.--0.97 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown, except for 1957.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	June 10, 1955	12.44	-	1959	-	(a)	-
				1960	June 29, 1960	12.64	-
1956	-	(a)	-				
1957	June 15, 1957	15.42	753	1961	May 8, 1961	12.02	-
1958	-	(a)	-				

a Not determined; peak stage did not reach bottom of gage.

ILLINOIS RIVER BASIN

5150. Kankakee River near North Liberty, Ind.

Location.--Lat 41°33'50", long 86°29'50", on line between secs. 11 and 23, T.36 N., R.1 W., on left bank at downstream side of bridge on St. Joseph County highway named "New Road," 4 miles northwest of North Liberty.

Drainage area.--152 sq mi.

Gage.--Nonrecording prior to June 26, 1956; recording thereafter. Datum of gage is 680.04 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Relation affected by varying amounts of backwater caused by return flow from overbank storage. Frequent current-meter measurements necessary to define relationship during these periods.

Remarks.--Base for partial-duration series, 400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 11, 1951	6.15	a520	1956	Apr. 30, 1956	6.92	530
					May 12, 1956	7.97	619
1952	Oct. 24, 1951	6.6	526				
	Nov. 14, 1951	6.97	570	1957	Apr. 27, 1957	6.90	530
	Nov. 23, 1951	5.8	445				
	Jan. 2, 1952	6.1	500	1958	Dec. 20, 1957	6.40	480
	Jan. 15, 1952	6.6	515		Feb. 28, 1958	5.89	460
	Feb. 4, 1952	5.5	400				
				1959	Feb. 15, 1959	5.60	415
1953	Mar. 16, 1953	4.42	260		Feb. 28, 1959	5.90	460
					Mar. 15, 1959	6.02	440
1954	Apr. 28, 1954	b7.64	c360		Mar. 27, 1959	6.44	480
					Apr. 29, 1959	6.07	450
1955	Oct. 10, 1954	d8.64	686				
	Dec. 28, 1954	6.0	480	1960	Jan. 13, 1960	7.05	480
	Jan. 7, 1955	e7.3	c510		Feb. 11, 1960	7.53	530
	Feb. 21, 1955	5.5	400		Mar. 31, 1960	7.78	566
1956	Feb. 25, 1956	5.7	430	1961	Apr. 25, 1961	7.86	560

a Annual peak only.
b Occurred on Apr. 26, 1954.
c Daily mean discharge.
d Occurred on Oct. 12, 1954.
e Occurred on Jan. 6, 1955.

5155. Kankakee River at Davis, Ind.

Location.--Lat 41°24', long 86°42', in sec.13, T.34 N., R.3 W., on left bank at downstream side of bridge on U.S. Highway 30 at Davis, half a mile downstream from Mill Creek, and 4 miles east of Hanna.

Drainage area.--508 sq mi.

Gage.--Nonrecording prior to Nov. 4, 1953; recording thereafter. Prior to Apr. 19, 1931, at site half a mile downstream at different datum. Datum of gage is 664.68 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 520 cfs at former site. Defined by current-meter measurements at present site.

Bankfull stage.--10 ft.

Remarks.--Records for 1926-29 furnished by Indiana Department of Conservation. Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Feb. 26, 1926	7.9	1,220
	Apr. 8, 1926	7.6	1,130
1927	Feb. 6, 1927	7.0	990
	Apr. 20, 1927	7.8	1,180
	May 26, 1927	7.6	1,130
	June 5, 1927	7.2	1,030
1928	Dec. 1, 1927	9.0	1,550
	Dec. 9, 1927	9.4	1,670
	Dec. 15, 1927	9.50	1,700
	Jan. 3, 1928	7.0	990
	Jan. 21, 1928	7.3	1,050
1929	May 4, 1929	9.4	a1,670
1932	Nov. 21, 1931	7.95	1,020
	Mar. 27, 1932	7.98	1,020
1933	Dec. 25, 1932	8.4	1,090
	Mar. 21, 1933	7.6	942
	Apr. 2, 1933	8.6	1,130
	Apr. 18, 1933	8.6	1,130
	May 12, 1933	9.43	1,290
	July 2, 1933	7.5	924
1934	Apr. 5, 1934	7.04	840
1935	Jan. 9, 1935	7.7	980
	Mar. 11, 1935	8.1	1,060
	May 14, 1935	8.1	1,060
	May 30, 1935	8.79	1,200
1936	Feb. 27, 1936	8.20	1,080
	May 3, 1936	7.4	920
1937	Dec. 31, 1936	7.78	1,000
	Jan. 9, 1937	7.4	910
	Apr. 16, 1937	7.4	910
1938	Feb. 19, 1938	7.7	970
	Mar. 3, 1938	7.7	970
	Apr. 10, 1938	8.8	1,200
	May 20, 1938	7.9	1,010
	July 2, 1938	9.05	1,260
1939	Feb. 20, 1939	8.8	1,100
	Mar. 13, 1939	9.29	1,210
	Apr. 20, 1939	8.6	1,060
	June 30, 1939	7.8	900
1940	May 3, 1940	8.95	1,140
1941	Apr. 21, 1941	6.70	680
1942	Nov. 8, 1941	8.0	902
	Feb. 6, 1942	9.82	1,240
	Mar. 18, 1942	9.8	1,240
1942	Apr. 11, 1942	9.1	1,110
1943	Dec. 29, 1942	9.1	1,060
	Feb. 7, 1943	8.5	954
	Mar. 17, 1943	9.2	1,080
	May 21, 1943	10.52	1,320
1944	Mar. 16, 1944	9.7	1,170
	Apr. 13, 1944	9.76	1,190
	May 26, 1944	8.9	1,030
1945	May 18, 1945	9.02	995
1946	Mar. 7, 1946	8.70	938
1947	Apr. 12, 1947	9.0	1,050
	May 1, 1947	9.53	1,140
	June 3, 1947	9.3	1,100
1948	Feb. 29, 1948	9.1	1,040
	Mar. 23, 1948	9.9	1,190
	May 16, 1948	10.15	1,240
1949	Feb. 16, 1949	9.00	945
1950	Dec. 23, 1949	9.0	945
	Jan. 27, 1950	9.7	1,070
	Apr. 12, 1950	10.8	1,300
	June 17, 1950	11.14	1,380
	July 20, 1950	9.2	1,050
1951	Jan. 4, 1951	8.9	1,000
	Feb. 20, 1951	8.4	907
	Apr. 15, 1951	8.6	944
	May 12, 1951	9.1	1,040
	July 10, 1951	9.37	1,100
1952	Oct. 26, 1951	8.9	1,000
	Nov. 15, 1951	9.6	1,140
	Jan. 3, 1952	9.5	1,120
	Jan. 21, 1952	10.02	1,300
	Mar. 20, 1952	8.7	1,030
	Apr. 15, 1952	9.5	1,190
	June 15, 1952	8.9	1,070
1953	Mar. 16, 1953	8.14	850
1954	Mar. 26, 1954	8.87	1,000
	Apr. 12, 1954	8.61	944
	Apr. 28, 1954	9.68	1,160
	July 8, 1954	8.92	1,000
1955	Oct. 17, 1954	11.76	1,620
	Jan. 7, 1955	10.15	1,260
	Feb. 21, 1955	8.72	1,080
1956	Feb. 26, 1956	9.08	993
	Apr. 30, 1956	10.22	1,200

a Annual peak only.

Peak stages and discharges of Kankakee River at Davis, Ind.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 13, 1956	10.47	1,260	1959	Apr. 30, 1959	9.93	1,090
1957	Apr. 29, 1957	10.43	1,240	1960	Nov. 15, 1959	9.10	950
					Jan. 15, 1960	9.77	1,070
1958	Dec. 21, 1957	9.71	1,100		Feb. 12, 1960	10.54	1,190
	Mar. 1, 1958	9.45	1,050		Apr. 3, 1960	10.60	1,350
	June 14, 1958	8.87	957		Apr. 19, 1960	10.02	1,160
					June 14, 1960	9.11	993
1959	Feb. 14, 1959	10.04	1,100				
	Feb. 28, 1959	9.98	1,100	1961	Apr. 27, 1961	10.84	1,240
	Mar. 28, 1959	10.34	1,150				

5160. Yellow River near Bremen, Ind.

Location.--Lat 41°25', long 86°10', on line between secs. 3 and 10, T.34 N., R.3 E., on left bank at downstream side of bridge, 0.5 mile downstream from Bunch ditch, 2 miles southwest of Bremen, and 4 miles upstream from Dausman ditch.

Drainage area.--132 sq mi.

Gage.--Recording. Datum of gage is 784.63 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 25, 1956	12.04	1,250	1959	Mar. 28, 1959	12.26	1,120
	Mar. 6, 1956	8.86	806		Apr. 2, 1959	10.19	873
	Apr. 30, 1956	12.70	1,360		Apr. 29, 1959	12.16	1,110
	May 13, 1956	12.94	1,380				
				1960	Jan. 13, 1960	11.73	1,050
1957	Apr. 27, 1957	9.46	890		Feb. 11, 1960	12.78	1,180
					Mar. 30, 1960	13.07	1,220
1958	Dec. 20, 1957	10.76	1,070		Apr. 18, 1960	12.35	1,140
	Aug. 16, 1958	10.03	960		June 14, 1960	10.14	861
1959	Feb. 10, 1959	11.08	1,120	1961	Mar. 9, 1961	10.26	885
	Feb. 14, 1959	11.81	1,100		Mar. 14, 1961	11.28	1,000
	Feb. 23, 1959	11.08	981		Apr. 23, 1961	12.79	1,180

5165. Yellow River at Plymouth, Ind.

Location.--Lat 41°20'25", long 86°18'16", in NW¼ sec.13, T.33 N., R.2 E., on left bank, 50 ft upstream from LaPorte Street footbridge in Plymouth, 1.1 miles downstream from Elmer Seltenright (formerly Baker) ditch, and 8.1 miles upstream from Wolf Creek.

Drainage area.--284 sq mi.

Gage.--Nonrecording prior to Aug. 27, 1959; recording thereafter. Datum of gage is 764.78 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Defined by current-meter measurements; large shifts in relation occur.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges of Yellow River at Plymouth, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 17, 1949	11.17	1,880	1955	Oct. 12,13,1954	17.13	5,390
					Jan. 7, 1955	11.4	1,760
1950	Jan. 16, 1950	10.84	1,710				
	Jan. 27, 1950	11.4	1,980	1956	Feb. 27, 1956	11.37	1,760
	Mar. 9, 1950	11.3	1,930		May 1, 1956	12.50	2,200
	Mar. 30, 1950	12.02	2,300		May 14, 1956	12.28	2,120
	Apr. 6, 1950	13.18	2,800				
	Apr. 12, 1950	11.16	1,880	1957	Apr. 29, 1957	9.36	1,140
1951	Jan. 6, 1951	10.94	1,750	1958	Dec. 21, 1957	10.70	1,600
	July 12, 1951	13.39	2,900				
				1959	Feb. 15, 1959	12.65	2,240
1952	Oct. 26, 1951	11.1	1,840		Feb. 25, 1959	10.66	1,600
	Nov. 15, 1951	10.82	1,710		Mar. 29, 1959	11.53	1,840
	Jan. 3, 1952	11.52	2,030		Apr. 30, 1959	11.62	1,870
	Jan. 16, 1952	10.4	1,560				
	Jan. 21, 1952	10.8	1,710	1960	Jan. 15, 1960	11.08	1,700
	June 15, 1952	10.5	1,590		Feb. 12, 1960	12.13	2,040
					Mar. 31, 1960	12.75	2,340
1953	Mar. 16, 1953	9.10	1,160		Apr. 19, 1960	12.26	2,120
1954	Mar. 27, 1954	11.1	1,640	1961	Mar. 15, 1961	10.89	1,600
	Apr. 28, 1954	12.72	2,290		Apr. 25, 1961	12.48	2,200

5170. Yellow River at Knox, Ind.

Location.--Lat 41°18', long 86°37', in sec.14, T.33 N., R.2 W., on right bank 40 ft upstream from bridge on U.S. Highway 35 in Knox, 1½ miles downstream from Eagle Creek, and 9 miles upstream from mouth.

Drainage area.--425 sq mi.

Gage.--Nonrecording prior to July 18, 1952; recording thereafter. Datum of gage is 679.93 ft above mean sea level, datum of 1929, Lafayette supplementary adjustment of 1951 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Mar. 19, 1944	9.70	3,140	1953	Mar. 18, 1953	7.62	1,100
	Apr. 15, 1944	9.5	2,860				
	Apr. 26, 1944	9.1	2,340	1954	Apr. 29, 1954	8.97	2,060
	May 28, 1944	8.6	1,760				
				1955	Oct. 15, 1954	13.75	5,660
1945	Apr. 6, 1945	8.5	1,660		Jan. 9, 1955	8.66	1,850
	May 20, 1945	9.00	2,220				
				1956	May 3, 1956	9.03	2,130
1946	Oct. 5, 1945	8.84	2,040		May 15, 1956	8.98	2,200
1947	Apr. 24, 1947	8.73	2,100	1957	Apr. 30, 1957	7.79	1,220
1948	Mar. 2, 1948	8.3	1,730	1958	Dec. 23, 1957	8.12	1,430
	Mar. 25, 1948	8.72	2,040				
	May 15, 1948	8.5	1,880	1959	Feb. 14,15,1959	-	a2,550
					Feb. 26, 1959	8.28	1,710
1949	Feb. 18, 1949	8.70	1,850		Mar. 31, 1959	8.57	1,780
					May 2, 1959	8.63	1,780
1950	Jan. 18, 1950	8.6	1,780				
	Jan. 29, 1950	9.0	2,060	1960	Jan. 16, 1960	8.18	1,630
	Feb. 18, 1950	8.4	1,640		Feb. 14, 1960	8.80	2,260
	Mar. 11, 1950	8.9	1,990		Apr. 2, 1960	9.23	2,700
	Mar. 31, 1950	9.4	2,360		Apr. 20, 1960	9.05	2,480
	Apr. 7, 1950	10.42	3,160				
				1961	Mar. 17, 1961	8.08	1,600
1951	Jan. 7, 1951	8.5	1,710		Apr. 26, 1961	9.02	2,500
	July 14, 1951	9.54	2,440				
1952	Jan. 4, 1952	8.92	1,990				

a Daily mean discharge, estimated.

5175. Kankakee River at Dunns Bridge, Ind.

Location.--Lat 41°13'17", long 86°57'52", in sec.15, T.32 N., R.5 W., on left bank at downstream side of county highway bridge at Dunns Bridge, 1.8 miles north of Tefft, Jasper County, and 3.5 miles upstream from Davis ditch.

Drainage area.--1,308 sq mi.

Gage.--Nonrecording prior to July 17, 1956; recording thereafter. Datum of gage is 649.65 ft above mean sea level, datum of 1929, Lafayette supplementary adjustment of 1951 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 2,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 30, 1949	9.12	2,530	1955	Oct. 22, 1954	13.20	5,300
	Feb. 21, 1949	10.02	2,980		Jan. 10, 1955	10.45	3,320
					Mar. 6, 1955	9.76	3,000
1950	Jan. 30, 1950	11.30	3,690		Mar. 26, 1955	7.96	2,270
	Apr. 12, 1950	13.08	5,200				
	June 20, 1950	9.80	2,880	1956	Mar. 1, 1956	8.92	2,560
	July 24, 1950	9.18	2,580		May 17, 1956	11.36	3,800
1951	Jan. 9, 1951	9.37	2,710	1957	Apr. 29, 1957	10.22	3,100
	Feb. 25, 1951	9.43	2,710				
	Apr. 16, 1951	10.14	3,030	1958	Dec. 24, 1957	9.40	2,730
	May 15, 1951	9.33	2,670		Mar. 3, 1958	8.90	2,560
	July 16, 1951	10.50	3,230		June 16, 1958	8.93	2,560
1952	Oct. 29, 1951	9.38	2,710	1959	Feb. 17, 1959	-	a3,850
	Nov. 18, 1951	10.26	3,150		Apr. 4, 1959	10.36	3,420
	Dec. 8, 1951	9.34	2,670		May 5, 1959	10.21	3,330
	Jan. 6, 1952	10.42	3,200				
	Jan. 23, 1952	10.68	3,380	1960	Nov. 18, 1959	8.30	2,480
	Mar. 23, 1952	9.00	2,550		Jan. 18, 1960	9.05	2,760
	Apr. 17, 1952	9.73	2,850		Feb. 16, 1960	10.47	3,470
	May 28, 1952	8.83	2,470		Apr. 4, 1960	10.88	3,660
	June 17, 1952	9.38	2,710		Apr. 23, 1960	10.54	3,470
					June 18, 1960	8.84	2,680
1953	Mar. 19, 1953	8.08	2,190				
				1961	Mar. 18, 1961	8.88	2,720
1954	Mar. 30, 1954	9.10	2,590		Apr. 30, 1961	11.52	3,950
	Apr. 15, 1954	9.28	2,670				
	May 2, 1954	10.24	3,100				

a Daily mean discharge, estimated.

5180. Kankakee River at Shelby, Ind.

Location.--Lat 41°11', long 87°21', in sec.33, T.32 N., R.8 W., on left bank 25 ft downstream from Chicago, Indianapolis and Louisville Railway bridge, 1 mile south of Shelby, and 9 miles upstream from Beaver Lake Creek.

Drainage area.--1,753 sq mi.

Gage.--Nonrecording prior to Dec. 19, 1934, at site 400 ft upstream; recording thereafter. Datum of gage is 628.13 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,800 cfs. Dredging, subsequent channel deterioration, and moving the gage 400 ft downstream on Dec. 19, 1934, have caused changes in the stage-discharge relation.

Bankfull stage.--8 ft.

Remarks.--Records for 1923-30 furnished by Indiana Department of Conservation excepting 1926 maximum discharge, and all 1929 peak discharges. Base for partial-duration series, 2,900 cfs.

Peak stages and discharges of Kankakee River at Shelby, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Mar. 13, 1923	7.37	3,360	1944	Mar. 29, 1944	8.87	3,970
	Mar. 24, 1923	7.2	3,270		Apr. 26, 1944	9.35	4,820
1924	Jan. 12, 1924	-	a3,540	1945	May 23, 1945	8.50	3,550
	Feb. 6, 1924	7.4	3,380				
	Apr. 9, 1924	8.56	4,000	1946	Jan. 10, 1946	8.04	3,200
	June 30, 1924	7.2	3,270		Mar. 19, 1946	7.76	3,080
					June 22, 1946	7.58	2,960
1925	Mar. 23, 1925	7.48	3,420				
				1947	May 2, 1947	8.90	3,970
1926	Mar. 1, 1926	7.9	3,650		June 9, 1947	8.57	3,630
	Mar. 25, 1926	6.9	3,100				
	Apr. 10, 1926	9.1	4,630	1948	Mar. 1, 1948	8.06	3,180
	June 18, 1926	7.0	3,160		Mar. 30, 1948	8.96	4,100
					May 16, 1948	9.25	4,420
1927	Feb. 7, 1927	8.7	4,080				
	Mar. 24, 1927	7.1	3,220	1949	Feb. 23, 1949	8.57	3,500
	May 1, 1927	8.77	4,120				
	June 6, 1927	8.4	3,920	1950	Apr. 16, 1950	10.91	5,910
					June 22, 1950	8.48	3,240
1928	Dec. 28, 1927	11.40	7,200		July 26, 1950	7.95	2,950
	Feb. 18, 1928	7.0	3,160				
	Apr. 8, 1928	7.0	3,160	1951	Jan. 10, 1951	8.18	3,090
					Feb. 21, 1951	8.53	3,320
1929	Jan. 24, 1929	9.6	5,030		Apr. 15, 1951	9.06	3,890
	Mar. 3, 1929	7.6	3,570		May 14, 1951	8.45	3,240
	May 7, 1929	9.7	5,110		July 17, 1951	8.83	3,590
1930	Jan. 13, 1930	b10.0	4,270	1952	Oct. 31, 1951	8.08	3,020
	Feb. 26, 1930	8.2	4,010		Nov. 19, 1951	9.01	3,790
	Apr. 21, 1930	8.00	3,870		Jan. 22, 1952	9.24	3,990
					Mar. 24, 1952	8.21	3,090
1931	June 9, 1931	4.79	1,920		Apr. 18, 1952	8.57	3,410
					May 29, 1952	8.04	2,950
1932	Apr. 1, 1932	7.90	3,490		June 16, 1952	9.36	4,200
1933	Dec. 25, 1932	7.7	3,370	1953	Mar. 19, 1953	7.50	2,650
	Apr. 14, 1933	9.0	4,200				
	May 13, 1933	c9.49	4,480	1954	Mar. 31, Apr. 1, 1954	8.35	3,200
1934	Apr. 7, 1934	5.98	2,350		Apr. 16, 1954	8.57	3,340
					May 3, 1954	9.05	3,620
1935	Mar. 12, 1935	7.90	3,480				
	May 13, 1935	-	d3,200	1955	Oct. 27, 1954	10.60	5,040
					Jan. 9, 1955	9.05	3,620
1936	Feb. 27, 1936	-	d3,700		Mar. 6, 1955	8.64	3,340
1937	Jan. 18, 1937	7.51	3,160	1956	Mar. 2, 1956	8.20	3,070
	Apr. 28, 1937	8.10	3,530		May 12, 1956	10.10	4,540
1938	Feb. 24, 1938	7.56	3,220	1957	Apr. 30, 1957	9.85	4,240
	Apr. 13, 1938	8.26	3,670				
				1958	Dec. 26, 1957	8.77	3,480
1939	Mar. 16, 1939	8.95	4,020		June 14, 1958	9.18	3,480
	Apr. 24, 1939	8.80	3,880				
				1959	Feb. 16, 17, 1959	e11.25	d5,100
1940	May 9, 1940	8.22	3,600		Apr. 4, 1959	9.44	3,920
					May 6, 1959	9.33	3,840
1941	Apr. 23, 1941	5.63	2,150				
				1960	Jan. 19, 1960	8.33	3,130
1942	Feb. 10, 1942	9.22	4,260		Feb. 12, 1960	9.60	4,080
	Mar. 21, 1942	9.05	4,100		Apr. 7, 1960	9.68	4,160
					June 18, 1960	8.58	3,340
1943	Jan. 6, 1943	8.46	3,550				
	Feb. 12, 1943	8.24	3,340	1961	Mar. 23, 1961	8.27	3,130
	Mar. 21, 1943	8.72	3,740		May 1, 1961	10.22	4,640
	Mar. 25, 1943	10.02	6,350				

a Daily mean discharge.
b Backwater from ice, occurred on Jan. 22, 1930.
c Backwater from drift, occurred on May 16, 1933.
d Daily mean discharge, estimated.
e Backwater from ice, occurred on Feb. 18, 1959.

5190. Singleton ditch at Schneider, Ind.

Location.--Lat 41°12'44", long 87°26'44", on line between NE¼ sec.21 and NW¼ sec.22, T.32 N., R.9 W., on left bank 15 ft upstream from bridge on U.S. Highway 41, half a mile upstream from Bruce ditch, 1½ miles downstream from Cedar Creek, and 1 2/3 miles north of Schneider.

Drainage area.--122 sq mi.

Gage.--Nonrecording prior to Aug. 14, 1951; recording thereafter. Prior to Oct. 1, 1949, at datum 2.00 ft higher. Datum of gage is 623.67 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Dredging in 1950 and subsequent floods and channel deterioration have materially affected the stage-discharge relation.

Remarks.--Base for partial-duration series, 730 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 15, 1949	-	a550	1956	Feb. 25, 1956	9.62	1,000
1950	Dec. 22, 1949	10.5	1,030	1957	Apr. 28, 1957	10.27	1,110
	Jan. 14, 1950	-	a1,000		July 13, 1957	9.35	970
	Jan. 26, 1950	-	a900				
	Mar. 7, 1950	-	a900	1958	June 13, 1958	8.15	799
	Apr. 4, 1950	-	a1,000				
	Apr. 10, 1950	-	a1,100	1959	Feb. 10, 1959	9.45	970
	Apr. 25, 1950	-	a1,000		Feb. 14, 1959	10.45	1,120
					Feb. 23, 1959	10.33	1,110
1951	Feb. 16, 1951	7.8	743		Apr. 28, 1959	9.42	970
	Feb. 19, 1951	8.50	841		July 24, 1959	9.95	1,060
1952	Jan. 1, 1952	8.43	812	1960	Jan. 13, 1960	8.67	903
	June 15, 1952	9.82	1,010		Feb. 11, 1960	10.01	1,100
					Mar. 30, 1960	8.12	813
1953	(b)	8.39	812		Apr. 17, 1960	8.19	828
					June 13, 1960	9.88	1,080
1954	Mar. 25, 1954	9.04	810				
	Apr. 25, 1954	8.44	738	1961	Apr. 26, 1961	9.66	1,050
					Sept.24, 1961	8.12	813
1955	Oct. 11, 1954	10.10	953				
	Jan. 6, 1955	8.84	866				

a Daily mean discharge, estimated.
b Date unknown, probably Mar. 15, 1953.

5195. West Creek near Schneider, Ind.

Location.--Lat 41°12'52", long 87°29'36", in NW¼NE¼ sec.19, T.32 N., R.9 W., on left bank at downstream side of county highway bridge, 1.2 miles upstream from Singleton ditch, and 2¾ miles northwest of Schneider.

Drainage area.--54.5 sq mi.

Gage.--Nonrecording prior to June 11, 1956; recording thereafter. Datum of gage is 627.86 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges of West Creek near Schneider, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 13, 1949	4.58	504	1956	May 10, 1956	4.94	570
1950	Dec. 22, 1949	6.56	1,050	1957	Apr. 27, 1957	6.02	880
	Jan. 13, 1950	6.0	878		July 13, 1957	7.02	1,250
	Jan. 26, 1950	5.6	766				
	Feb. 15, 1950	-	a550	1958	Feb. 23, 1958	4.95	598
	Apr. 4, 1950	5.9	850		June 9, 1958	5.67	794
	Apr. 10, 1950	5.6	766		June 13, 1958	5.12	635
	Apr. 25, 1950	6.1	906		Aug. 15, 1958	4.45	510
1951	Feb. 11, 1951	5.1	626	1959	Feb. 15, 1959	-	1,150
	Feb. 16, 1951	5.1	626		Apr. 28, 1959	6.88	1,200
	Feb. 19, 1951	5.52	738		May 21, 1959	6.47	1,040
	May 12, 1951	4.8	548		July 23, 1959	5.96	880
1954	Mar. 25, 1954	6.10	1,000	1960	Jan. 13, 1960	5.43	710
	Apr. 25, 1954	5.5	738		Feb. 10, 1960	6.17	940
	July 7, 1954	5.8	822		Mar. 28, 1960	5.32	682
					Apr. 17, 1960	5.12	626
1955	Oct. 10, 1954	8.06	1,840				
	Jan. 5, 1955	5.81	822	1961	Apr. 25, 1961	6.01	880
					Sept.25, 1961	5.61	766
1956	Feb. 25, 1956	5.42	710				

a Daily mean discharge, estimated.

5200. Singleton ditch at Illinoi, Ill.

Location.--Lat 41°11'20", long 87°31'35", in SW¼NW¼ sec.8, T.31 N., R.15 E., on left bank 50 ft downstream from county highway bridge at Illinoi, beside the Cleveland, Cincinnati, Chicago & St. Louis Railway, and at Indiana-Illinois State line.

Drainage area.--219 sq mi.

Gage.--Nonrecording prior to Aug. 28, 1953; recording thereafter. Datum of gage is 620.33 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Dredging operations were carried out in the fall of 1948, which accounts for the large shift in rating at that time. Possibility of some overbank flow bypassing station in times of severe floods.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 1,100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	May 18, 1945	9.00	1,230	1951	Jan. 4, 1951	7.03	1,170
					Feb. 12, 1951	6.86	1,140
1946	Jan. 6, 1946	8.69	975		Feb. 16, 1951	8.00	1,470
					Feb. 19, 1951	8.85	1,710
1947	Apr. 7, 1947	8.9	1,120		Apr. 12, 1951	6.79	1,110
	May 1, 1947	9.25	1,410		May 11, 1951	7.30	1,260
					July 9, 1951	7.20	1,230
1948	Feb. 28, 1948	9.3	1,300				
	May 12, 1948	9.55	1,810	1952	Nov. 14, 1951	7.4	1,290
					Jan. 1, 1952	9.09	1,800
1949	Jan. 28, 1949	6.8	1,110		Jan. 20, 1952	7.6	1,350
	Feb. 15, 1949	7.03	1,170		Apr. 13, 1952	7.6	1,350
					June 15, 1952	9.46	1,740
1950	Dec. 23, 1949	9.1	1,800				
	Jan. 14, 1950	8.4	1,590	1953	Mar. 15, 1953	8.43	1,590
	Jan. 26, 1950	8.4	1,590				
	Feb. 15, 1950	7.4	1,290	1954	Mar. 25, 1954	9.17	1,830
	Mar. 2, 1950	7.3	1,260		Apr. 11, 1954	7.36	1,290
	Mar. 7, 1950	8.4	1,590		Apr. 25, 1954	7.72	1,380
	Mar. 27, 1950	7.1	1,200				
	Apr. 4, 1950	9.0	1,770	1955	Oct. 11, 1954	9.81	2,010
	Apr. 11, 1950	9.26	1,850		Jan. 6, 1955	8.46	1,620
	Apr. 26, 1950	9.2	1,810				

Peak stages and discharges of Singleton ditch at Illinoi, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 25, 1956	-	a1,600	1959	Mar. 27, 1959	7.48	1,320
	Apr. 29, 1956	7.53	1,320		Apr. 28, 1959	9.44	1,890
	May 11, 1956	7.62	1,350		May 21, 1959	7.34	1,260
					July 23, 1959	9.52	1,920
1957	Apr. 28, 1957	9.47	1,920				
	July 14, 1957	9.15	1,830	1960	Nov. 5, 1959	7.16	1,230
					Jan. 13, 1960	8.52	1,620
1958	June 9, 1958	7.73	1,380		Feb. 11, 1960	9.44	1,900
	June 13, 1958	7.95	1,470		Mar. 31, 1960	8.08	1,350
	July 14, 1958	6.77	1,120		Apr. 17, 1960	7.93	1,300
					June 13, 1960	8.83	1,540
1959	Feb. 10, 1959	8.66	1,680				
	Feb. 14, 1959	9.89	2,040	1961	Apr. 25, 1961	9.81	1,840
	Feb. 23, 1959	9.94	2,040		Sept.26, 1961	8.17	1,530

a Daily mean discharge, estimated.

5205. Kankakee River at Momence, Ill.

Location.--Lat 41°09'36", long 87°40'07", in NE¼ sec.24, T.31 N., R.13 E., on right bank a quarter of a mile downstream from highway bridge in Momence and 1¼ miles upstream from Tower Creek.

Drainage area.--2,340 sq mi, approximately.

Gage.--Nonrecording at bridge a quarter of a mile upstream at same datum prior to Aug. 1, 1938; recording thereafter. Datum of gage is 610.18 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown. Ice effect is at least as much as shown, and generally greater.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1915	July 11, 1915	3.94	-	4,910	1936	Feb. 28, 1936	-	-	4,900
					1937	May 1, 1937	4.28	-	4,630
1916	Jan. 21, 1916	7.6	2.6	8,500	1938	Jan. 29, 1938	6.56	2.4	-
1917	Jan. 14, 1917	6.6	3.0	-		Apr. 10, 1938	-	-	5,670
	Apr. 6, 1917	-	-	4,640	1939	Feb. 1, 1939	3.81	.4	-
1918	Feb. 18, 1918	4.7	.5	-		Mar. 13, 1939	-	-	6,060
	Feb. 25, 1918	-	-	6,300	1940	May 6, 1940	2.70	-	4,860
1919	Jan. 4, 1919	7.9	3.2	-					
	Mar. 20, 1919	-	-	7,340	1941	Feb. 21, 1941	2.81	1.0	-
1920	Dec. 11, 1919	4.5	.3	-		Apr. 22, 1941	-	-	2,910
	Apr. 22, 1920	-	-	5,940	1942	Jan. 5, 1942	4.58	1.0	-
						Feb. 10, 1942	-	-	6,310
1921	Dec. 27, 1920	5.2	1.9	-	1943	Jan. 23, 1943	6.79	2.4	-
	Mar. 25, 1921	-	-	2,970		May 21, 1943	-	-	8,450
1922	Jan. 22, 1922	5.8	.2	-	1944	Apr. 24, 1944	3.91	-	6,950
	Apr. 11, 1922	-	-	9,970	1945	May 19, 1945	2.94	-	4,940
1923	Feb. 15, 1923	5.2	1.4	-					
	Mar. 18, 1923	-	-	4,430	1946	Jan. 7, 1946	-	-	5,460
1924	Jan. 6, 1924	6.9	2.3	-		Jan. 31, 1946	4.41	1.4	-
	Mar. 30, 1924	-	-	6,800	1947	Apr. 30, 1947	3.48	-	6,260
1925	Feb. 8, 1925	5.1	1.3	-	1948	Feb. 24, 1948	5.47	2.0	-
	Mar. 20, 1925	-	-	4,430		May 15, 1948	-	-	6,260
					1949	Feb. 25, 1949	2.90	-	5,060
1926	Apr. 10, 1926	5.06	-	8,200	1950	Apr. 25, 1950	5.06	-	10,100
1927	Feb. 1, 1927	5.77	1.1	-					
	Apr. 20, 1927	-	-	7,210	1951	Feb. 19, 1951	7.06	-	8,400
1928	Dec. 15, 1927	-	-	8,690	1952	Dec. 18, 1951	6.44	-	-
	Jan. 4, 1928	7.9	2.6	-		June 14, 1952	-	-	6,960
1929	Jan. 24, 1929	7.06	1.5	9,650	1953	Mar. 15, 1953	2.64	-	4,560
1930	Jan. 15, 1930	-	-	5,920	1954	Mar. 25, 1954	2.87	-	4,960
	Jan. 25, 1930	8.09	3.6	-	1955	Jan. 6, 1955	-	-	5,880
						Jan. 28, 1955	4.76	-	-
1931	Dec. 31, 1930	3.8	.7	-					
	May 12, 1931	-	-	2,500	1956	Dec. 14, 1955	3.73	-	-
1932	Mar. 30, 1932	4.04	-	4,000		May 11, 1956	-	-	5,460
1933	Dec. 24, 1932	6.12	1.4	-	1957	July 13, 1957	3.99	-	6,960
	May 14, 1933	-	-	6,550	1958	June 14, 1958	3.20	-	5,670
1934	Feb. 1, 1934	5.8	2.4	-	1959	Feb. 18, 1959	-	-	7,100
	Apr. 7, 1934	-	-	2,760		Feb. 24, 1959	7.82	-	-
1935	Jan. 25, 1935	4.81	.4	-	1960	Feb. 11, 1960	3.57	-	6,520
	Mar. 10, 1935	-	-	4,910					
					1961	Apr. 25, 1961	3.74	-	6,740
1936	Feb. 25, 1936	6.66	2.4	-					

5210. Iroquois River at Rosebud, Ind.

Location.--Lat 41°02', long 87°11', in SW¼ sec.24, T.30 N., R.7 W., 100 ft downstream from bridge on county road, half a mile north of Rosebud, half a mile downstream from confluence of Swain and Dexter ditches, 1.5 miles upstream from Davidson ditch, and 2 miles east of Parr.

Drainage area.--30.3 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1953; recording thereafter. Datum of gage is 661.47 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 330 cfs.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 150 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 19, 1949	5.0	166	1952	June 14, 1952	6.6	225
	Jan. 28, 1949	5.0	166				
	Feb. 15, 1949	6.15	254	1953	Mar. 15, 1953	5.75	185
1950	Dec. 22, 1949	8.1	406	1954	Mar. 25, 1954	4.59	130
	Jan. 4, 1950	5.4	190				
	Jan. 14, 1950	6.6	286	1955	Jan. 6, 1955	4.84	126
	Jan. 16, 1950	5.9	230				
	Jan. 24, 1950	7.2	334	1956	Apr. 29, 1956	6.65	225
	Feb. 14, 1950	6.7	294				
	Mar. 1, 1950	4.7	150	1957	Apr. 18, 1957	5.87	190
	Mar. 28, 1950	5.3	184		Apr. 28, 1957	7.90	290
	Apr. 4, 1950	8.3	422		June 29, 1957	5.77	185
	Apr. 11, 1950	7.4	350		July 13, 1957	5.61	175
	Apr. 25, 1950	6.4	270				
	Sept.22, 1950	5.6	206	1958	Dec. 20, 1957	5.76	184
					June 10, 1958	8.45	308
1951	Jan. 3, 1951	5.4	165				
	Feb. 19, 1951	5.3	161	1959	Feb. 10, 1959	8.86	383
	Feb. 21, 1951	6.6	225		Feb. 13, 1959	7.61	292
	July 9, 1951	7.20	235				
				1960	Feb. 10, 1960	6.17	206
1952	Oct. 24, 1951	5.4	165		Mar. 30, 1960	5.77	184
	Nov. 14, 1951	5.7	180		Apr. 17, 1960	5.42	153
	Jan. 1, 1952	5.8	185				
	Apr. 23, 1952	7.30	263	1961	Apr. 24, 1961	6.09	203

5220. Iroquois River near North Marion, Ind.

Location.--Lat 40°58', long 87°07', in S½ sec.9, T.29 N., R.6 W., on left bank at upstream side of county highway bridge, 1¼ miles upstream from Fyan ditch, 2 miles east of North Marion, and 3½ miles northeast of Rensselaer.

Drainage area.--134 sq mi.

Gage.--Nonrecording prior to Sept. 6, 1955; recording thereafter. Datum of gage is 646.68 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--11 ft.

Remarks.--Water is diverted from Oliver ditch, a tributary, into Ryan ditch. Ryan ditch enters the Iroquois River 1½ miles below this station. Peak discharges probably not materially affected. Base for partial-duration series, 420 cfs.

Peak stages and discharges of Iroquois River near North Marion, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 20, 1949	9.2	456	1955	June 12, 1955	9.05	446
	Jan. 28, 1949	9.2	456				
	Feb. 16, 1949	11.06	630	1956	Feb. 26, 1956	8.96	446
					May 1, 1956	12.47	910
1950	Dec. 23, 1949	11.1	630				
	Jan. 5, 1950	10.5	564	1957	Apr. 11, 1957	9.39	482
	Jan. 16, 1950	11.6	710		Apr. 20, 1957	10.34	563
	Jan. 27, 1950	12.7	960		Apr. 29, 1957	13.72	1,230
	Feb. 16, 1950	12.2	835		May 15, 1957	8.93	437
	Mar. 7, 1950	9.9	512		June 30, 1957	9.36	482
	Mar. 29, 1950	10.3	544		July 15, 1957	11.86	770
	Apr. 5, 1950	13.1	1,060				
	Apr. 12, 1950	13.15	1,080	1958	Oct. 25, 1957	9.41	482
	Apr. 26, 1950	10.9	606		Dec. 21, 1957	11.08	690
					June 10, 1958	15.09	2,040
1951	Jan. 4, 1951	9.6	488		July 16, 1958	9.37	540
	Feb. 22, 1951	11.48	690		Aug. 16, 1958	7.63	464
	Mar. 31, 1951	9.3	464				
	Apr. 14, 1951	10.3	544	1959	Feb. 13, 1959	12.68	1,080
	May 12, 1951	9.5	488		Feb. 24, 1959	7.92	491
	July 11, 1951	11.88	610		Mar. 16, 1959	7.73	473
					Mar. 28, 1959	7.82	482
1952	Nov. 15, 1951	9.8	518		Apr. 29, 1959	9.11	611
	Jan. 2, 1952	10.5	581				
	Apr. 14, 1952	9.1	455	1960	Nov. 15, 1959	7.63	464
	Apr. 25, 1952	10.0	536		Feb. 7, 1960	7.54	455
	May 26, 1952	8.9	438		Feb. 12, 1960	10.90	818
	June 16, 1952	12.03	790		Mar. 31, 1960	11.08	843
					Apr. 18, 1960	10.49	770
1953	Mar. 16, 1953	10.08	545				
	Apr. 2, 1953	9.4	482	1961	Apr. 20, 1961	7.88	428
					Apr. 25, 1961	11.66	895
1954	Apr. 11, 1954	9.15	460		May 10, 1961	9.13	550
1955	Jan. 7, 1955	9.1	455				

5225. Iroquois River at Rensselaer, Ind.

Location.--Lat 40°56', long 87°08', in NE¼NW¼SE¼ sec.29, T.29 N., R.6 W., on right bank 20 ft downstream from bridge on State Highway 114, three-quarters of a mile east of Rensselaer, 1.5 miles downstream from Ryan ditch, and 5.5 miles upstream from Big Slough Creek.

Drainage area.--194 sq mi.

Gage.--Nonrecording prior to July 8, 1949; recording thereafter. Datum of gage is 642.29 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 650 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Spring 1910	a16	-	1950	Sept.22, 1950	9.67	781
1949	Jan. 20, 1949	10.3	877	1951	Jan. 4, 1951	9.67	781
	Jan. 28, 1949	10.1	843		Feb. 21, 1951	12.14	1,260
	Feb. 16, 1949	11.44	1,100		Mar. 31, 1951	9.35	736
					Apr. 14, 1951	10.14	843
1950	Dec. 23, 1949	11.40	970		May 12, 1951	9.27	721
	Jan. 5, 1950	10.74	951		July 10, 1951	12.75	1,190
	Jan. 16, 1950	11.77	1,190				
	Jan. 27, 1950	13.34	1,590	1952	Nov. 15, 1951	9.56	766
	Feb. 15, 1950	12.36	1,340		Jan. 2, 1952	10.32	877
	Mar. 1, 1950	9.1	694		Apr. 14, 1952	8.93	661
	Mar. 7, 1950	9.61	766		Apr. 25, 1952	9.57	766
	Mar. 29, 1950	9.66	781		May 25, 1952	9.24	709
	Apr. 5, 1950	13.37	1,620		June 16, 1952	11.59	1,070
	Apr. 11, 1950	13.27	1,590				
	Apr. 26, 1950	10.75	970	1953	Mar. 16, 1953	10.21	860

a About, from information by local residents.

Peak stages and discharges of Iroquois River at Rensselaer, Ind.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Apr. 1, 1953	9.59	766	1958	June 10, 1958	16.54	2,550
					July 16, 1958	10.64	810
1954	Apr. 12, 1954	8.71	608				
				1959	Feb. 13, 1959	13.73	1,400
1955	Jan. 6, 1955	9.14	664		Apr. 29, 1959	11.39	938
	June 12, 1955	9.03	650				
				1960	Nov. 15, 1959	9.07	650
1956	Apr. 30, 1956	12.78	1,440		Feb. 12, 1960	11.96	1,190
					Mar. 31, 1960	12.20	1,230
1957	Apr. 19, 1957	9.90	800		Apr. 18, 1960	11.67	1,130
	Apr. 29, 1957	13.21	1,560				
	June 29, 1957	9.64	746	1961	Apr. 20, 1961	9.21	680
	July 14, 1957	11.90	1,190		Apr. 25, 1961	12.77	1,350
	July 18, 1957	11.64	1,120		May 10, 1961	10.50	890
1958	Dec. 21, 1957	10.88	970				

5230. Bice ditch near South Marion, Ind.

Location.--Lat 40°52', long 87°06', on line between secs. 15 and 22, T.28 N., R.6 W., on left bank at upstream side of bridge on State Highway 16, 2 miles upstream from Big Slough Creek, 3 miles southeast of South Marion, and 5 miles southeast of Rensselaer.

Drainage area.--22.6 sq mi.

Gage.--Nonrecording prior to Aug. 5, 1955; recording thereafter. Datum of gage is 653.30 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 340 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 15, 1949	9.09	410	1955	June 11, 1955	10.16	353
1950	Jan. 4, 1950	8.2	346	1956	Apr. 29, 1956	10.75	504
	Jan. 26, 1950	8.4	360				
	Apr. 4, 1950	10.0	484	1957	June 13, 1957	10.36	458
	June 10, 1950	8.2	346				
	June 25, 1950	9.1	410	1958	Dec. 20, 1957	9.96	418
	July 19, 1950	10.06	490		June 10, 1958	11.90	746
					June 13, 1958	12.02	780
1951	Feb. 21, 1951	9.92	475				
	July 9, 1951	11.43	610	1959	Feb. 10, 1959	10.62	480
					Apr. 27, 1959	9.47	372
1952	June 14, 1952	10.80	556				
				1960	Apr. 17, 1960	8.17	346
1953	Apr. 1, 1953	8.4	360				
	July 5, 1953	8.65	374	1961	May 9, 1961	7.39	290
1954	June 22, 1954	8.12	339				

5235. Big Slough Creek near Collegeville, Ind.

Location.--Lat 40°53', long 87°09', in $SW\frac{1}{4}NW\frac{1}{4}$ sec.7, T.28 N., R.6 W., on right bank on downstream side of bridge on State Highway 53, $1\frac{1}{2}$ miles south of Collegeville, $2\frac{1}{2}$ miles upstream from mouth, and $2\frac{3}{4}$ miles downstream from Bice ditch.

Drainage area.--84.1 sq mi.

Gage.--Nonrecording prior to Jan. 1, 1952, and Oct. 1, 1952, to Aug. 4, 1955; recording since Aug. 5, 1955. Prior to Oct. 8, 1958, at datum 3.00 ft higher. Datum of gage is 634.75 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 450 cfs.

Peak stages and discharges of Big Slough Creek near Collegeville, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	March 1913	a13.7	-	1955	Jan. 6, 1955	9.5	465
					Apr. 20, 1955	9.8	510
1927	-	a12.5	-		May 23, 1955	10.8	670
					June 8, 1955	9.9	525
1949	Jan. 5, 1949	9.0	465		June 11, 1955	12.4	1,110
	Jan. 19, 1949	11.0	820				
	Jan. 28, 1949	-	b650	1956	Apr. 29, 1956	13.00	1,470
	Feb. 15, 1949	11.26	880		May 22, 1956	10.66	650
					May 28, 1956	9.68	525
1950	Dec. 22, 1949	11.2	850				
	Jan. 4, 1950	11.2	850	1957	Apr. 18, 1957	12.07	930
	Jan. 16, 1950	10.8	730		Apr. 28, 1957	10.85	670
	Jan. 26, 1950	11.7	1,000		June 29, 1957	11.50	810
	Feb. 14, 1950	11.0	790		July 14, 1957	12.96	1,470
	Apr. 4, 1950	12.3	1,180				
	Apr. 11, 1950	11.1	820	1958	Oct. 24, 1957	9.58	480
	Apr. 25, 1950	10.9	760		Dec. 20, 1957	12.67	940
	June 25, 1950	11.5	940		Feb. 28, 1958	9.65	480
	July 20, 1950	11.2	850		June 10, 1958	13.5	1,870
	Sept.22, 1950	9.9	465		June 13, 1958	13.7	2,030
1951	Jan. 3, 1951	10.3	580	1959	Feb. 10, 1959	c14.18	b1,800
	Feb. 21, 1951	11.9	1,060		Apr. 28, 1959	12.15	1,030
	May 11, 1951	9.2	450				
	July 10, 1951	13.22	1,450	1960	Feb. 11, 1960	d10.39	540
					Mar. 31, 1960	d10.85	570
1953	Apr. 1, 1953	10.50	655		Apr. 18, 1960	d10.95	e600
	July 6, 1953	9.9	530				
				1961	Apr. 23, 1961	f10.52	e810
1954	June 22, 1954	8.84	390		May 9, 1961	9.85	960

a From information by State Department of Indiana; annual peak only.
b Daily mean discharge, estimated. c Backwater from ice. d Backwater from Iroquois River. e About. f Occurred on Apr. 24, 1961, backwater from Iroquois River.

5240. Carpenter Creek at Egypt, Ind.

Location.--Lat 40°52', long 87°12', on line between SW¼ sec.15 and NW¼ sec.22, T.28 N., R.7 W., on left bank on downstream side of bridge on State Highway 16, 0.5 mile north of Egypt, 2¾ miles upstream from mouth, and 4 miles southwest of Collegeville.

Drainage area.--48.1 sq mi.

Gage.--Nonrecording prior to Jan. 1, 1952, and Oct. 1, 1952, to Sept. 5, 1955; recording since Sept. 6, 1955. Datum of gage is 641.79 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,700 cfs.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 5, 1949	9.0	669	1955	June 8, 1955	9.80	984
	Jan. 19, 1949	9.8	919		June 11, 1955	9.70	934
	Jan. 28, 1949	9.3	759				
	Feb. 15, 1949	10.14	1,160	1956	Apr. 29, 1956	9.93	1,040
1950	Dec. 22, 1949	9.4	804	1957	July 13, 1957	9.42	810
	Jan. 4, 1950	9.6	884				
	Jan. 14, 1950	9.1	699	1958	Dec. 20, 1957	9.67	934
	Jan. 26, 1950	9.7	934		June 10, 1958	11.66	3,720
	Feb. 14, 1950	8.9	639		June 13, 1958	11.19	2,690
	Apr. 4, 1950	10.3	1,300		June 25, 1958	9.86	1,040
	Apr. 25, 1950	9.4	804				
	June 25, 1950	9.7	934	1959	Jan. 30, 1959	9.20	694
	July 20, 1950	9.0	669		Feb. 10, 1959	11.17	2,690
					Feb. 13, 1959	9.38	784
1951	Jan. 3, 1951	a9.5	-		Apr. 27, 1959	10.46	1,520
	Feb. 17, 1951	8.8	609				
	Feb. 21, 1951	10.2	1,230	1960	Feb. 10, 1960	9.18	694
	July 9, 1951	10.92	2,150		Apr. 17, 1960	9.40	784
1953	Apr. 1, 1953	9.19	735	1961	May 9, 1961	9.13	655
	July 6, 1953	9.21	735				
1954	June 22, 1954	8.95	655				

a Backwater from ice.

5245. Iroquois River near Foresman, Ind.

Location.--Lat 40°52', long 87°18', on line between secs. 14 and 15, T.28 N., R.8 W., on right bank at downstream side of bridge on State Highway 55, a quarter of a mile north of intersection of Highways 16 and 55, 0.6 mile west of Foresman, and 3 miles east of Brook.

Drainage area.--452 sq mi; 410 sq mi prior to Sept. 7, 1955.

Gage.--Nonrecording Dec. 22, 1948, to Sept. 6, 1955, at site 2.5 miles upstream at datum 3.54 ft higher; recording thereafter. Datum of gage is 624.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Discharge at present site adjusted for rate of change of stage above 8 ft.

Bankfull stage.--12 ft at present site.

Historical data.--Flood of 1913 was 3.0 ft higher than the 1943 flood at U.S. Highway 41 bridge, 9½ miles downstream. The 1943 high water at U.S. Highway 41 bridge was the highest since 1913. The foregoing information was furnished by the State Highway Department of Indiana. Flood in 1933 reached a stage of 21.3 ft at present site, from information by local residents.

Remarks.--Base for partial-duration series, 1,300 cfs. At present site, peak stage frequently occurs at different time than peak discharge.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 20, 1949	14.2	1,780	1955	Apr. 21, 1955	12.6	1,330
	Jan. 29, 1949	14.3	1,820		June 12, 1955	14.7	1,970
	Feb. 16, 1949	15.22	2,190				
				1956	Apr. 30, 1956	18.29	2,880
1950	Dec. 22, 1949	15.4	2,280		May 30, 1956	13.35	1,360
	Jan. 5, 1950	15.6	2,020				
	Jan. 16, 1950	16.4	2,340	1957	Apr. 11, 1957	13.77	1,470
	Jan. 26, 1950	18.2	3,250		Apr. 28, 1957	18.62	3,210
	Feb. 16, 1950	17.1	2,630		June 30, 1957	14.65	1,700
	Apr. 6, 1950	17.9	3,070		July 13, 1957	17.83	3,150
	Apr. 26, 1950	15.4	1,940				
	June 26, 1950	13.7	1,350	1958	Dec. 21, 1957	17.08	2,450
					June 14, 1958	24.42	5,930
1951	Jan. 4, 1951	13.6	1,390		June 25, 1958	15.21	1,990
	Feb. 22, 1951	16.8	2,500		July 16, 1958	15.08	1,820
	Apr. 15, 1951	13.6	1,470				
	July 11, 1951	18.90	2,950	1959	Feb. 13, 1959	20.35	3,440
					Mar. 16, 1959	14.07	1,440
1952	Nov. 15, 1951	12.6	1,310		Apr. 27, 1959	19.05	3,010
	Jan. 2, 1952	13.1	1,460				
	June 16, 1952	15.07	2,120	1960	Nov. 16, 1959	13.29	1,340
					Feb. 12, 1960	-	a2,500
1953	Mar. 17, 1953	13.4	1,550		Mar.30-31,1960	17.84	2,590
	Apr. 2, 1953	13.50	1,580		Apr. 18, 1960	17.10	2,570
					June 18, 1960	14.28	1,390
1954	Apr. 13, 1954	11.10	990				
				1961	Apr.25,26,1961	16.93	2,180
1955	Mar. 6, 1955	-	a1,330		May 10,11,1961	15.43	1,770

a Daily mean discharge, estimated.

5250. Iroquois River at Iroquois, Ill.

Location.--Lat 40°49'25", long 87°34'55", in SE¼ sec.15, T.27 N., R.11 W., on left bank at upstream side of bridge on U.S. Highway 52 at Iroquois, 500 ft upstream from Cleveland, Cincinnati, Chicago & St. Louis Railway bridge, and 4½ miles downstream from Indiana-Illinois State line.

Drainage area.--682 sq mi.

Gage.--Nonrecording prior to Aug. 5, 1945; recording thereafter. Datum of gage is 614.34 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Lowest point on profile of present highway (constructed about 1930) is at about 27 ft, gage datum. Statement of local resident indicates this highway never has been submerged, but at least one flood probably was within a foot of this elevation.

Remarks.--Base for partial-duration series, 1,700 cfs. Only annual peaks are shown for 1958-61.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Apr. 6, 1945	12.5	1,780	1951	Apr. 2, 1951	-	a1,730
	May 20, 1945	18.27	3,570		Apr. 15, 1951	-	a2,480
	July 15, 1945	12.3	1,700		May 14, 1951	-	a1,750
					July 10, 1951	23.30	6,460
1946	Oct. 4, 1945	16.19	2,820				
	Jan. 10, 1946	15.4	2,550	1952	Nov. 15, 1951	-	a2,020
	Mar. 18, 1946	14.0	2,120		Jan. 3, 1952	-	2,050
					Apr. 15, 1952	-	a1,810
1947	Apr. 24, 1947	12.4	1,720		Apr. 26, 1952	-	a2,080
	May 3, 1947	12.6	1,800		May 28, 1952	-	a1,810
	May 23, 1947	13.1	1,920		June 17, 1952	15.50	2,580
	June 5, 1947	13.97	2,150				
				1953	Mar. 19, 1953	15.60	2,610
1948	Mar. 1, 1948	14.3	2,270		Apr. 4, 1953	-	a2,290
	Mar. 24, 1948	15.18	2,510		July 7, 1953	15.80	2,200
	May 16, 1948	14.7	2,390				
				1954	Apr. 13, 1954	12.21	1,370
1949	Jan. 22, 1949	14.4	2,240				
	Jan. 29, 1949	15.6	2,700	1955	Apr. 22, 1955	-	a1,850
	Feb. 18, 1949	16.20	2,820		June 13, 1955	15.95	2,250
	July 22, 1949	13.4	2,000				
				1956	May 2, 1956	19.01	3,990
1950	Dec. 24, 1949	17.7	3,410		May 12, 1956	-	a1,870
	Jan. 16, 1950	19.9	4,040		May 31, 1956	-	a1,750
	Jan. 28, 1950	20.2	4,590				
	Feb. 16, 1950	19.2	4,090	1957	Apr. 11, 1957	-	a1,720
	Mar. 8, 1950	13.1	1,840		Apr. 29, 1957	-	a4,560
	Apr. 6, 1950	20.54	4,740		July 1, 1957	-	2,010
	Apr. 26, 1950	18.2	3,630		July 13, 1957	22.79	5,600
	June 20, 1950	12.8	1,750				
	June 27, 1950	14.6	2,290	1958	June 13, 1958	26.31	10,400
	July 21, 1951	13.0	1,810	1959	Feb. 13, 1959	b22.51	c5,400
				1960	Apr. 1, 1960	18.21	3,580
1951	Jan. 4, 1951	-	a1,900				
	Feb. 22, 1951	-	a4,590	1961	Apr. 27, 1961	16.31	2,720

a Daily mean discharge.
b Backwater from ice.
c About.

5250.5. Iroquois River tributary near Sheldon, Ill.

Location.--Lat 40°46'30", long 87°38'40", in NE¼NW¼ sec.6, T.26 N., R.11 W., at culvert on Toledo, Peoria and Western Railroad, 4.2 miles west of Sheldon.

Drainage area.--10.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Iroquois River tributary near Sheldon, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	14.86	167	1960	June 23, 1960	13.96	115
1957	July 13, 1957	21.16	1,950				
1958	June 10, 1958	17.16	621	1961	Apr. 22, 1961	13.25	62
1959	Apr. 27, 1959	15.96	395				

5255. Sugar Creek at Milford, Ill.

Location.--Lat 40°37'50", long 87°43'25", in N½ sec.16, T.25 N., R.12 W., near right bank on downstream side of highway bridge, 200 ft downstream from Mud Creek and 1 mile west of Milford.

Drainage area.--430 sq mi.

Gage.--Nonrecording and crest-stage gage. Datum of gage is 622.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,200 cfs and extended above.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 19, 1949	16.5	4,120	1955	June 12, 1955	12.89	1,720
	Jan. 28, 1949	16.7	4,370				
	Feb. 15, 1949	17.90	7,900	1956	Apr. 30, 1956	16.70	4,180
					May 29, 1956	14.82	2,800
1950	Dec. 22, 1949	19.28	14,900				
	Jan. 5, 1950	18.9	12,900	1957	Apr. 29, 1957	17.40	5,050
	Jan. 11, 1950	15.6	3,240		May 12, 1957	15.05	2,970
	Jan. 14, 1950	17.2	5,200		June 29, 1957	17.98	5,650
	Jan. 26, 1950	18.0	8,400		July 13, 1957	23.22	16,700
	Feb. 15, 1950	17.6	6,600				
	Apr. 4, 1950	18.7	11,900	1958	Dec. 20, 1957	17.50	4,000
	Apr. 26, 1950	17.2	5,200		June 11, 1958	19.20	6,050
	June 20, 1950	15.2	2,960		June 13, 1958	20.70	9,450
	June 26, 1950	14.8	2,720		July 16, 1958	15.15	2,630
1951	Jan. 3, 1951	17.21	4,500	1959	Feb. 10, 1959	23.74	a9,000
	Feb. 19, 1951	16.48	4,500		Apr. 28, 1959	18.26	4,700
	Feb. 21, 1951	20.90	22,900				
	July 10, 1951	16.94	6,600	1960	Feb. 11, 1960	15.62	3,390
					Mar. 29, 1960	16.35	4,070
1952	Nov. 14, 1951	15.00	2,840		Apr. 18, 1960	14.60	2,740
	Apr. 14, 1952	14.46	2,570		June 24, 1960	17.30	4,950
	Apr. 24, 1952	14.88	2,780				
	June 14, 1952	19.23	14,400	1961	Mar. 14, 1961	14.35	2,640
					Apr. 23, 1961	15.50	3,310
1953	July 6, 1953	20.95	8,800		May 10, 1961	14.85	2,850
1954	Apr. 12, 1954	13.60	1,890				

a About.

5260. Iroquois River near Chebanse, Ill.

Location.--Lat 41°00'29", long 87°49'22", in SW¼ sec.10, T.29 N., R.13 W., near center of left span on downstream side of highway bridge, 3 miles downstream from Beaver Creek, 4½ miles east of Chebanse, and 6 miles upstream from mouth.

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

Gage.--Nonrecording. Datum of gage is 597.99 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Flood in spring of 1913 reached maximum stage known.

Remarks.--Base for partial-duration series, 6,200 cfs. Only annual peaks are shown for 1958-61.

Peak stages and discharges of Iroquois River near Chebanse, Ill.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1913	Spring 1913	a19.6	-	a34,000
1924	Dec. 7, 1923	8.4	-	7,260
	Dec. 16, 1923	9.2	-	8,380
	Feb. 6, 1924	11.02	-	11,000
	Apr. 1, 1924	10.6	-	10,400
	June 28, 1924	9.4	-	8,660
1925	Dec. 24, 1924	9.2	b1.5	-
	Feb. 11, 1925	7.8	-	6,420
	Mar. 21, 1925	8.86	-	8,030
1926	Feb. 27, 1926	8.8	-	7,880
	Apr. 9, 1926	10.9	-	11,600
	Sept. 5, 1926	8.9	-	7,880
	Sept. 28, 1926	11.77	-	12,900
1927	Oct. 6, 1926	16.30	-	21,800
	Feb. 6, 1927	12.3	-	13,600
	Mar. 23, 1927	12.6	-	14,200
	Apr. 3, 1927	8.6	-	7,590
	Apr. 19, 1927	11.6	-	12,500
	May 21, 1927	14.9	-	18,700
1928	Dec. 10, 1927	12.0	-	13,200
	Feb. 16, 1928	7.8	-	6,580
	July 5, 1928	12.12	-	13,400
1929	Jan. 24, 1929	12.06	.6	12,300
	Mar. 1, 1929	9.0	.6	7,400
	Mar. 17, 1929	9.8	-	9,510
	Apr. 12, 1929	9.4	-	8,900
	May 4, 1929	7.9	-	6,580
	June 14, 1929	11.0	-	11,300
1930	Jan. 3, 1930	10.0	-	9,510
	Feb. 27, 1930	9.1	-	8,100
	Apr. 19, 1930	9.97	-	9,830
1931	May 11, 1931	5.05	-	3,100
1932	Jan. 19, 1932	7.22	-	5,680
1933	Dec. 26, 1932	7.9	-	6,360
	Mar. 22, 1933	10.3	-	9,980
	Apr. 3, 1933	12.3	-	13,200
	Apr. 20, 1933	7.8	-	6,220
	May 13, 1933	18.1	-	27,000
1934	Oct. 3, 1933	5.90	-	3,960
1935	Jan. 11, 1935	10.1	-	9,660
	Mar. 12, 1935	8.6	-	7,350
	Mar. 26, 1935	7.8	-	6,220
	May 10, 1935	10.10	-	9,660
1936	Feb. 28, 1936	13.9	3.2	11,000
	May 4, 1936	12.57	-	13,700
1937	Jan. 2, 1937	8.9	-	7,800
	Jan. 11, 1937	9.64	-	8,860
	Jan. 17, 1937	9.2	-	8,250
	Apr. 8, 1937	9.0	-	7,950
	Apr. 27, 1937	9.2	-	8,250
	June 27, 1937	8.4	-	7,060
1938	Feb. 21, 1938	8.4	-	7,060
	Mar. 18, 1938	9.7	-	9,020
	Mar. 24, 1938	8.9	-	7,800
	Apr. 1, 1938	9.3	-	8,400
	Apr. 10, 1938	10.95	-	11,100
	July 5, 1938	10.3	-	9,980
1939	Feb. 13, 1939	9.4	1.5	6,300
	Feb. 22, 1939	10.3	-	9,980
	Mar. 14, 1939	13.80	-	15,700
	Apr. 18, 1939	13.0	-	14,400
	July 20, 1939	10.4	-	10,100
1940	May 4, 1940	7.70	-	6,080
1941	Apr. 21, 1941	6.67	-	4,780
1942	Feb. 9, 1942	15.60	-	18,900
1942	Mar. 11, 1942	7.9	-	6,360
	Mar. 19, 1942	13.4	-	15,100
	Apr. 11, 1942	9.0	-	7,950
	Aug. 28, 1942	8.8	-	7,650
1943	Nov. 12, 1942	8.5	-	7,200
	Dec. 30, 1942	12.6	-	13,700
	Jan. 26, 1943	8.1	-	6,640
	Feb. 7, 1943	9.4	-	8,550
	Mar. 19, 1943	10.2	-	9,820
	May 12, 1943	15.0	-	18,200
	May 20, 1943	17.68	-	25,100
1944	Apr. 14, 1944	14.09	-	16,400
	Apr. 25, 1944	12.1	-	12,900
	May 27, 1944	9.6	-	8,860
1945	Apr. 5, 1945	7.9	-	6,360
	May 18, 1945	11.60	-	12,100
1946	Oct. 4, 1945	8.0	-	6,500
	Jan. 7, 1946	10.07	-	9,660
	Mar. 19, 1946	9.1	-	8,100
	June 14, 1946	8.4	-	7,060
	June 22, 1946	9.6	-	8,860
1947	May 3, 1947	10.19	-	9,820
	June 4, 1947	8.2	-	6,780
	June 10, 1947	-	-	c9,000
1948	Feb. 29, 1948	9.0	-	8,100
	Mar. 22, 1948	10.49	-	10,300
	Apr. 9, 1948	8.2	-	6,920
	May 16, 1948	8.1	-	6,640
1949	Jan. 22, 1949	7.8	-	6,220
	Jan. 29, 1949	9.2	-	8,250
	Feb. 18, 1949	9.52	-	8,700
1950	Dec. 24, 1949	12.5	-	14,200
	Jan. 7, 1950	10.1	-	9,850
	Jan. 16, 1950	12.2	-	13,700
	Jan. 27, 1950	13.01	-	15,200
	Feb. 16, 1950	12.4	-	14,000
	Apr. 6, 1950	12.6	-	14,400
	Apr. 26, 1950	12.8	-	14,800
	June 21, 1950	8.5	-	7,220
1951	Jan. 5, 1951	9.74	-	9,140
	Feb. 23, 1951	14.00	-	17,000
	Apr. 14, 1951	9.27	-	8,460
	July 11, 1951	15.10	-	19,100
1952	Nov. 15, 1951	-	-	d8,140
	Jan. 2, 1952	10.06	-	9,850
	Apr. 15, 1952	-	-	d7,370
	Apr. 25, 1952	-	-	d8,140
	May 28, 1952	-	-	d6,220
	June 16, 1952	-	-	d8,800
	June 24, 1952	-	-	d6,220
1953	Mar. 16, 1953	-	-	d8,460
	Apr. 3,4, 1953	-	-	d6,220
	July 8, 1953	11.48	-	11,800
1954	Apr. 13, 1954	7.30	-	5,530
1955	Apr. 21, 1955	8.57	-	7,370
	May 29, 1955	-	-	d7,070
	June 13, 1955	-	-	d6,220
1956	May 2, 1956	10.65	-	10,800
	May 30,31, 1956	-	-	d6,920
1957	Apr. 29, 1957	-	-	d18,200
	May 14,15, 1957	-	-	d7,070
	July 1, 1957	-	-	d8,970
	July 15, 1957	15.53	-	19,900
1958	June 15, 1958	16.06	-	21,800
1959	Feb. 13, 1959	e17.02	-	a23,500
1960	Mar. 31, 1960	10.77	-	11,300
1961	Apr. 25, 1961	8.60	-	7,460

a About. b Greater than figure shown. c Estimated. d Daily mean discharge.
e Backwater from ice.

5261.5. Kankakee River tributary near Bourbonnais, Ill.

Location.--Lat 41°11'35", long 87°57'00", in SW¼ sec.3, T.31 N., R.11 E., at culvert on State Highway 113N, 4½ miles northwest of Bourbonnais.

Drainage area.--0.192 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 24, 1956	14.52	44	1960	Aug. 4, 1960	14.19	32.3
1957	July 13, 1957	18.21	233				
1958	June 8, 1958	16.90	153	1961	Sept.14, 1961	13.52	13
1959	Apr. 27, 1959	15.67	94				

5265. Terry Creek near Custer Park, Ill.

Location.--Lat 41°14'00", long 88°05'55", near southwest corner of SE¼ sec.20, T.32 N., R.10 E., on right bank at downstream side of bridge on State Highway 113S, a third of a mile upstream from mouth, and 1.7 miles southeast of Custer Park.

Drainage area.--12.0 sq mi.

Gage.--Recording. Datum of gage is 542.39 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 22, 1949	5.55	137	1957	June 14, 1957	5.02	100
	Jan. 26, 1950	5.35	125		June 28, 1957	5.48	124
	Apr. 4, 1950	5.6	116		July 13, 1957	11.15	545
	Apr. 25, 1950	a b6.42	162		July 22, 1957	5.00	100
					Aug. 3, 1957	5.24	112
1951	Feb. 19, 1951	6.16	152				
	Feb. 22, 1951	b6.46	-	1958	June 8, 1958	7.41	285
	June 19, 1951	5.99	141		June 13, 1958	6.48	222
	July 9, 1951	5.64	119		July 14, 1958	6.55	222
1952	June 14, 1952	5.77	125	1959	Feb. 10, 1959	-	d140
					Feb. 14, 1959	c6.98	-
1953	Feb. 20, 1953	5.26	102		Apr. 28, 1959	5.72	104
	July 6, 1953	6.23	150		May 4, 1959	5.71	104
1954	Mar. 25, 1954	5.23	112	1960	Feb. 10, 1960	4.96	118
					June 13, 1960	5.60	155
1955	Oct. 11, 1954	4.43	71		June 16, 1960	4.86	114
1956	Feb. 20, 1955	c4.43	-	1961	Sept.25, 1961	4.59	101
	Feb. 24, 1956	6.11	154				

a Occurred at different time than peak discharge.
b Backwater from Kankakee River.
c Backwater from ice.
d About.

5270.5. Prairie Creek near Frankfort, Ill.

Location.--Lat 41°26'15", long 87°50'40", in NW¼ sec.15, T.34 N., R.12 E., at culvert on county road, 4.0 miles south of Frankfort.

Drainage area.--0.830 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 10, 1956	13.26	164	1960	Mar. 16, 1960	11.82	55
1957	July 13, 1957	17.22	784				
1958	July 2, 1958	11.94	61	1961	Sept.23, 1961	13.55	200
1959	Apr. 28, 1959	12.64	117				

5275. Kankakee River near Wilmington, Ill.
(Published as "at Custer Park " prior to 1934)

Location.--Lat 41°20'48", long 88°11'11", in NW¼ sec.15, T.33 N., R.9 E., on right bank 0.4 mile downstream from Prairie Creek and 5 miles downstream from Wilmington.

Drainage area.--5,250 sq mi, approximately.

Gage.--Nonrecording at Wabash Railroad bridge in Custer Park, at datum 530.96 ft above mean sea level, datum of 1929, prior to February 1935; recording at present site and datum thereafter. Datum of gage is 510.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--At Custer Park, but not at the present site, the flood of 1866 appears to have been higher than those of 1883 and 1887. The floods of 1883 and 1887 reached the maximum stage known at present site.

Remarks.--Gage heights listed for the years 1915 to 1933 are from gage at Custer Park. The corresponding discharges have been adjusted to the Wilmington site by multiplying the Custer Park discharge by the square root of the drainage-area ratio. Base for partial-duration series, 13,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1883	-	16.73	-	-	1921	Mar. 30, 1921	8.30	-	7,270
1887	-	16.73	-	-	1922	Nov. 23, 1921	10.1	-	13,100
						Mar. 20, 1922	10.9	-	15,600
1915	July 11, 1915	12.70	-	22,400		Apr. 3, 1922	13.1	-	24,300
	Aug. 3, 1915	10.7	-	14,500		Apr. 11, 1922	15.15	-	34,300
1916	Jan. 4, 1916	10.3	-	13,100	1923	Mar. 18, 1923	11.16	-	16,400
	Jan. 21, 1916	11.6	1.0	14,500					
	Feb. 2, 1916	11.9	1.2	14,500	1924	Dec. 16, 1923	10.6	-	14,800
	May 17, 1916	10.4	-	14,100		Feb. 7, 1924	13.0	1.7	16,600
						Mar. 31, 1924	11.74	-	18,900
1917	June 10, 1917	10.86	-	15,600		June 29, 1924	11.3	-	17,000
						Aug. 9, 1924	11.4	-	17,000
1918	Feb. 14, 1918	14.2	a.6	-					
	Feb. 15, 1918	13.63	-	26,600	1925	Mar. 21, 1925	10.52	-	14,100
1919	Dec. 25, 1918	10.4	-	14,100	1926	Feb. 26, 1926	10.5	-	14,100
	Mar. 18, 1919	12.78	-	22,800		Apr. 9, 1926	12.32	-	20,900
	May 6, 1919	10.4	-	14,100					
					1927	Oct. 5, 1926	14.0	-	28,400
1920	Mar. 12, 1920	13.3	-	25,100		Feb. 5, 1927	14.92	1.0	29,100
	Apr. 20, 1920	13.48	-	26,200		Mar. 23, 1927	12.2	-	20,400

a Greater than figure shown.

Peak stages and discharges of Kankakee River near Wilmington, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1927	Apr. 5, 1927	10.3	-	13,500	1943	May 12, 1943	8.0	-	41,000
	Apr. 20, 1927	14.0	-	28,400		May 21, 1943	8.87	-	48,000
	Apr. 30, 1927	10.7	-	14,800					
	May 21, 1927	13.3	-	25,100	1944	Mar. 15, 1944	4.8	-	16,700
	June 4, 1927	11.3	-	16,700		Mar. 29, 1944	4.45	-	14,500
						Apr. 12, 1944	7.1	-	33,800
1928	Dec. 3, 1927	11.8	-	18,900		Apr. 23, 1944	7.10	-	33,800
	Dec. 9, 1927	12.99	0.1	24,000		May 27, 1944	4.30	-	13,600
	Dec. 14, 1927	12.9	-	23,300		June 2, 1944	4.30	-	13,600
	Jan. 12, 1928	10.2	.1	13,100					
	July 5, 1928	12.2	-	20,400	1945	May 18, 1945	5.47	-	21,600
1929	Jan. 23, 1929	13.80	.6	24,800	1946	Jan. 9, 1946	5.21	-	19,500
	Mar. 2, 1929	12.1	.5	18,100		Feb. 19, 1946	8.80	4.9	-
	Mar. 16, 1929	12.4	-	21,600		Mar. 18, 1946	4.60	-	15,400
	Apr. 12, 1929	12.0	-	19,500		June 21, 1946	4.30	-	13,600
	May 5, 1929	11.0	-	16,100					
	June 13, 1929	11.5	-	17,700	1947	Apr. 6, 1947	5.2	-	19,500
						Apr. 30, 1947	5.0	-	18,100
1930	Jan. 4, 1930	12.3	1.6	14,500		June 2, 1947	4.50	-	14,800
	Jan. 15, 1930	11.3	.3	15,600		June 8, 1947	5.40	-	21,600
	Feb. 25, 1930	10.7	-	15,000					
	Apr. 21, 1930	11.29	-	17,200	1948	Feb. 28, 1948	6.00	a.4	-
						Feb. 28, 1948	5.7	-	23,000
1931	May 12, 1931	8.20	-	6,510		Mar. 20, 1948	5.2	-	19,500
						Mar. 22, 1948	4.9	-	17,400
1932	Mar. 28, 1932	9.51	-	10,600		May 10, 1948	5.2	-	19,500
1933	Mar. 21, 1933	11.0	-	15,600	1949	Jan. 28, 1949	4.8	-	16,700
	Apr. 1, 1933	13.0	-	23,800		Feb. 1, 1949	11.57	a7.8	-
	May 13, 1933	15.41	-	35,300		Feb. 19, 1949	-	-	14,000
						Feb. 25, 1949	-	-	13,900
1934	Apr. 2, 1934	-	-	b7,000					
					1950	Dec. 23, 1949	5.6	-	22,300
1935	Jan. 11, 1935	-	-	b14,700		Jan. 7, 1950	4.50	-	14,800
	Feb. 15, 1935	6.9	a3.1	-		Jan. 14, 1950	5.8	-	23,800
	Feb. 25, 1935	4.55	-	15,100		Jan. 26, 1950	6.4	-	28,300
	Mar. 10, 1935	4.55	-	15,100		Feb. 16, 1950	5.7	-	23,000
	Mar. 25, 1935	4.25	-	13,300		Mar. 3, 1950	11.39	a7.7	-
	May 9, 1935	5.03	-	17,500		Mar. 7, 1950	5.0	-	18,100
						Apr. 4, 1950	6.0	-	25,300
1936	Feb. 29, 1936	9.54	4.5	16,000		Apr. 10, 1950	6.8	-	31,400
	May 4, 1936	5.0	-	17,500		Apr. 25, 1950	7.6	-	37,800
1937	Jan. 11, 1937	4.45	-	14,500	1951	Feb. 19, 1951	c10.83	-	d30,000
	Jan. 27, 1937	9.47	a5.7	-					
	Apr. 6, 1937	4.30	-	13,600	1952	Jan. 31, 1952	c9.43	-	-
	May 1, 1937	4.65	-	15,100		June 14, 1952	6.46	-	29,000
1938	Mar. 19, 1938	4.35	-	13,900	1953	July 6, 1953	5.17	-	19,500
	Mar. 26, 1938	4.25	-	13,300					
	Apr. 10, 1938	5.33	-	19,600	1954	Mar. 25, 1954	4.53	-	15,000
1939	Feb. 20, 1939	4.9	.4	15,000	1955	Jan. 6, 1955	4.38	-	14,400
	Mar. 14, 1939	6.02	-	24,600		Feb. 20, 1955	c7.13	-	-
	Apr. 19, 1939	5.5	-	21,600					
	June 11, 1939	4.9	-	16,800	1956	May 2, 1956	4.70	-	16,200
1940	May 4, 1940	3.93	-	11,100	1957	July 13, 1957	11.40	-	75,900
1941	Apr. 22, 1941	3.31	-	8,290	1958	Jan. 9, 1958	c9.92	-	-
						June 14, 1958	6.72	-	30,600
1942	Feb. 7, 1942	8.69	-	46,600					
	Mar. 17, 1942	5.8	-	23,800	1959	Feb. 13, 1959	c9.52	-	-
	Apr. 10, 1942	4.65	-	15,800		Feb. 14, 1959	-	-	30,000
	Aug. 28, 1942	4.35	-	13,900					
					1960	Jan. 23, 1960	c9.13	-	-
1943	Dec. 28, 1942	7.1	-	33,800		Feb. 11, 1960	5.25	-	19,500
	Feb. 6, 1943	10.06	5.5	15,000					
	Mar. 16, 1943	5.4	-	20,900	1961	Apr. 26, 1961	4.86	-	17,000
	Apr. 27, 1943	5.1	-	18,800					

a Greater than figure shown.
b Estimated.
c Ice jam.
d About.

5280. Des Plaines River near Gurnee, Ill.

Location.--Lat 42°20'40", long 87°56'30", in SW¼ sec.27, T.45 N., R.11 E., at upstream side of bridge on State Highway 120, 2½ miles southwest of Gurnee, 2½ miles upstream from Bull Creek, and 6 miles downstream from Mill Creek.

Drainage area.--215 sq mi.

Gage.--Nonrecording prior to May 26, 1946; recording thereafter. Datum of gage is 650.3 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown after 1958.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Jan. 11, 1946	7.86	-	1,580	1951	Apr. 1, 1951	6.48	-	980
	Mar. 8, 1946	6.7	-	1,200		Apr. 15, 1951	5.46	-	724
	Mar. 18, 1946	6.3	-	1,080		May 12, 1951	4.57	-	511
1947	Apr. 6, 1947	4.55	-	565	1952	Nov. 14, 1951	8.07	-	1,460
	Apr. 24, 1947	5.05	-	665		Jan. 20, 1952	7.40	-	1,230
	June 3, 1947	5.78	-	931		Mar. 14, 1952	7.83	-	1,480
						Apr. 15, 1952	8.36	-	1,830
1948	Feb. 20, 1948	5.10	0.1	650					
	Feb. 28, 1948	6.4	-	1,040	1953	Mar. 16, 1953	3.97	-	391
	Mar. 21, 1948	9.21	-	2,620					
	May 12, 1948	8.1	-	1,720	1954	Apr. 27, 1954	4.93	-	540
						June 7, 1954	6.56	-	960
1949	Feb. 20, 1949	5.4	.2	700		July 8, 1954	6.57	-	960
	Feb. 25, 1949	-	-	1,300					
	Feb. 27, 1949	7.44	-	-	1955	Jan. 9, 1955	6.96	-	1,100
						Mar. 3, 1955	5.39	-	645
1950	Jan. 25, 1950	4.65	-	555					
	Mar. 8, 1950	6.8	-	1,180	1956	May 2, 1956	4.33	-	420
	Mar. 29, 1950	6.2	-	980					
	Apr. 5, 1950	5.6	-	808	1957	May 21, 1957	5.83	-	745
	Apr. 12, 1950	5.5	-	780					
	Apr. 26, 1950	8.2	-	1,780	1958	Mar. 3, 1958	6.20	-	845
	Apr. 25, 1950	8.22	-	-					
					1960	Apr. 3, 1960	10.64	-	4,070
1951	Feb. 28, 1951	8.42	-	1,600	1961	Mar. 21, 1961	6.55	-	960
	Mar. 19, 1951	5.11	-	632					

5285. Buffalo Creek near Wheeling, Ill.

Location.--Lat 42°09'05", long 87°57'25", in NE¼NW¼ sec.4, T.42 N., R.11 E., on left bank at downstream side of highway bridge, 1 mile downstream from unnamed tributary, and 2.5 miles west of Wheeling.

Drainage area.--19.4 sq mi.

Gage.--Recording. Datum of gage is 658.60 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges of Buffalo Creek near Wheeling, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 15, 1953	3.38	55	1959	Feb. 24, 1959	-	320
					Apr. 28, 1959	3.80	163
1954	Apr. 25, 1954	5.40	268				
	June 3, 1954	5.27	252	1960	Dec. 28, 1959	4.21	209
	June 22, 1954	4.03	108		Jan. 13, 1960	4.61	263
	July 7, 1954	4.17	120		Feb. 11, 1960	3.35	122
					Mar. 29, 1960	5.60	457
1955	Oct. 10, 1954	4.62	161		Apr. 17, 1960	3.75	174
	Jan. 5, 1955	4.59	159		July 2, 1960	3.83	174
	Feb. 27, 1955	4.11	112				
				1961	Mar. 13, 1961	3.74	185
1956	Apr. 29, 1956	3.20	110		Apr. 26, 1961	3.19	115
					Sept.13, 1961	3.80	192
1957	May 20, 1957	3.78	144		Sept.25, 1961	4.82	370
	July 12, 1957	6.26	430				
1958	Feb. 27, 1958	3.65	130				

5290. Des Plaines River near Des Plaines, Ill.

Location.--Lat 42°04'55", long 87°53'25", in SE¼SE¼ sec.25, T.42 N., R.11 E., on right bank 50 ft upstream from dam No. 2 of the Cook County Forest Preserve, 0.3 mile downstream from Lake Avenue Bridge, 1.2 miles upstream from Central Road Bridge, and 2½ miles north of Des Plaines.

Drainage area.--359 sq mi.

Gage.--Nonrecording to April 1941; recording thereafter. Datum of gage is 626.31 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Controlled by masonry dam below 2,200 cfs.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	July 4, 1938	a9.0	5,000	1948	Feb. 28, 1948	3.4	1,870
					Mar. 16, 1948	3.9	2,110
1941	Mar. 3, 1941	2.70	1,140		Mar. 22, 1948	6.82	3,490
	Mar. 16, 1941	2.92	1,430		May 14, 1948	3.8	2,070
	Apr. 6, 1941	2.65	1,080				
	Apr. 20, 1941	2.72	1,160	1949	Feb. 20, 1949	2.37	1,040
					Feb. 25, 1949	3.07	1,700
1942	Oct. 24, 1941	3.75	2,060		Mar. 31, 1949	2.34	1,010
	Nov. 2, 1941	3.30	1,750				
	Mar. 20, 1942	3.10	1,560	1950	Mar. 8, 1950	3.4	1,870
	June 7, 1942	2.68	1,120		Mar. 27, 1950	3.2	1,760
					Apr. 4, 1950	3.5	1,920
1943	Feb. 25, 1943	b5.15	-		Apr. 11, 1950	2.34	1,010
	Feb. 25, 1943	4.80	2,470		Apr. 25, 1950	7.78	4,040
	Mar. 3, 1943	2.70	1,140				
	Mar. 16, 1943	4.5	2,350	1951	Feb. 26, 1951	4.69	2,410
	May 21, 1943	3.10	1,560		Mar. 30, 1951	2.82	1,540
					Apr. 12, 1951	2.51	1,330
1944	Mar. 15, 1944	4.84	2,470		May 11, 1951	2.44	1,280
	Apr. 25, 1944	2.72	1,160				
				1952	Nov. 15, 1951	5.37	2,690
1945	May 17, 1945	3.38	1,830		Jan. 21, 1952	3.57	1,970
	July 2, 1945	2.68	1,120		Mar. 19, 1952	4.31	2,090
					Apr. 15, 1952	4.90	2,290
1946	Jan. 10, 1946	4.87	2,510		June 17, 1952	2.87	1,600
	Mar. 6, 1946	4.0	2,150				
	Mar. 19, 1946	2.9	1,580	1953	Mar. 15, 1953	1.82	669
1947	Apr. 6, 1947	3.1	1,700	1954	Apr. 26, 1954	3.72	1,770
	Apr. 20, 1947	3.1	1,700		June 4, 1954	3.16	1,770
	Apr. 25, 1947	2.65	1,370		July 8, 1954	2.52	1,330
	May 18, 1947	2.48	1,180				
	June 2, 1947	3.48	1,920	1955	Oct. 11, 1954	3.25	1,800

a From floodmarks.
b Backwater from ice, greater than 0.4 ft.

Peak stages and discharges of Des Plaines River near Des Plaines, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Jan. 6, 1955	3.08	1,720	1959	Apr. 28, 1959	2.35	1,190
	Mar. 4, 1955	2.26	1,100	1960	Dec. 29, 1959	2.42	1,240
1956	Apr. 29, 1956	2.03	880		Jan. 18, 1960	4.20	2,010
1957	May 20, 1957	2.82	1,540		Apr. 2, 1960	8.56	4,670
	July 13, 1957	5.18	2,610		Apr. 18, 1960	3.06	1,720
1958	Mar. 1, 1958	2.30	1,140	1961	Mar. 21, 1961	2.31	1,150
	Mar. 6, 1958	2.38	1,220		Sept.25, 1961	2.19	1,040

5295. McDonald Creek near Mount Prospect, Ill.

Location.--Lat 42°05'42", long 87°54'46", in NW¼NE¼ sec.26, T.42 N., R.11 E., on right bank at downstream side of bridge on McDonald Road, 2 miles upstream from mouth, and 2.5 miles northeast of Mount Prospect.

Drainage area.--7.52 sq mi.

Gage.--Recording. Datum of gage is 638.12 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark.)

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 40 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 15, 1953	4.42	27	1957	July 23, 1957	4.98	73
1954	Mar. 25, 1954	5.85	79	1958	Feb. 28, 1958	4.12	103
	Apr. 25, 1954	-	-		June 13, 1958	3.49	52
	June 3, 1954	6.46	103		July 3, 1958	3.84	85
	July 7, 1954	4.93	54	1959	Feb. 24, 1959	4.80	76
1955	Oct. 11, 1954	7.31	146	1960	Dec. 28, 1959	4.68	63
	Jan. 6, 1955	5.51	68		Jan. 13, 1960	5.78	122
	Feb. 20, 1955	5.20	59		Mar. 30, 1960	7.03	261
	Feb. 27, 1955	4.55	42		Apr. 17, 1960	5.71	137
	June 11, 1955	4.98	48		May 17, 1960	4.02	46
1956	Apr. 29, 1956	4.66	45		July 3, 1960	4.15	53
1957	May 11, 1957	4.98	73	1961	Mar. 14, 1961	4.86	70
	May 19, 1957	6.56	194		Apr. 25, 1961	4.24	53
	June 1, 1957	4.32	45		Sept.14, 1961	4.56	59
	June 15, 1957	4.77	62		Sept.26, 1961	6.60	194
	July 13, 1957	8.04	430				

5300. Weller Creek at Des Plaines, Ill.

Location.--Lat 42°02'57", long 87°57'05", in NW¼NW¼ sec.18, T.41 N., R.12 E., on right bank at downstream side of bridge on State Highway 58 in Des Plaines, 2 miles west of U.S. Highway 45, and 3.0 miles upstream from mouth.

Drainage area.--13.1 sq mi.

Gage.--Recording. Datum of gage is 635.02 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 190 cfs and extended above by logarithmic plotting.

Remarks.--Prior to Nov. 15, 1958, effluent from Arlington Heights sewage treatment plant entered Weller Creek above station. Base for partial-duration series, 150 cfs.

Peak stages and discharges of Weller Creek at Des Plaines, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 19, 1951	6.59	245	1956	Oct. 6, 1955	6.60	233
	Mar. 29, 1951	5.33	169		Apr. 27, 1956	5.15	164
	Apr. 11, 1951	5.38	175		Apr. 29, 1956	6.60	245
	June 21, 1951	5.13	158		Aug. 12, 1956	6.48	221
	July 8, 1951	5.42	158		Aug. 29, 1956	6.39	215
1952	Nov. 13, 1951	5.56	169	1957	Jan. 22, 1957	5.44	175
	Jan. 17, 1952	5.12	158		May 11, 1957	7.60	179
	Mar. 11, 1952	5.77	197		May 19, 1957	7.75	187
	Mar. 18, 1952	5.11	158		July 13, 1957	12.37	668
	Apr. 13, 1952	6.71	251		July 22, 1957	8.70	223
	June 13, 1952	5.31	169				
	June 17, 1952	7.93	328	1958	June 13, 1958	8.62	223
	July 18, 1952	6.35	209		July 2, 1958	7.82	187
1953	June 10, 1953	5.26	169	1959	July 30, 1959	7.91	206
1954	Mar. 25, 1954	9.08	412	1960	Jan. 12, 1960	6.90	170
	Apr. 25, 1954	9.84	461		Apr. 16, 1960	10.96	355
	June 3, 1954	8.74	384		July 2, 1960	9.07	260
	July 3, 1954	5.39	175		July 26, 1960	6.38	156
	July 7, 1954	5.21	164		Aug. 9, 1960	8.59	235
	July 29, 1954	5.37	158		Aug. 19, 1960	6.67	164
1955	Oct. 10, 1954	10.83	535	1961	June 8, 1961	9.01	422
	May 24, 1955	6.31	209		Sept. 2, 1961	7.19	314
	June 9, 1955	6.40	215		Sept.14, 1961	11.48	596
	June 11, 1955	8.42	342		Sept.25, 1961	9.70	468

5305. Willow Creek near Park Ridge, Ill.

Location.--Lat 41°59'22", long 87°52'24", in SW¼NE¼ sec.4, T.40 N., R.12 E., on right bank at downstream side of bridge on Byron Street, 0.4 mile south of State Highway 72, 1.2 miles upstream from mouth, and 2½ miles southwest of Park Ridge.

Drainage area.--19.6 sq mi.

Gage.--Recording. Datum of gage is 620.95 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 140 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 19, 1951	6.23	234	1955	Oct. 11, 1954	8.32	738
	Mar. 30, 1951	5.28	145		Jan. 6, 1955	5.85	176
	Apr. 12, 1951	5.61	164		June 11, 1955	6.31	179
	May 11, 1951	5.52	157				
	July 22, 1951	5.75	174	1956	Oct. 6, 1955	6.73	302
					Apr. 29, 1956	6.41	253
1952	Nov. 13, 1951	5.53	160		May 10, 1956	5.79	174
	Jan. 17, 1952	5.50	157				
	Jan. 20, 1952	5.51	157	1957	May 19, 1957	6.32	240
	Mar. 12, 1952	6.05	192		June 15, 1957	5.85	189
	Mar. 19, 1952	5.83	178		July 13, 1957	9.40	1,300
	Apr. 13, 1952	6.07	199				
				1958	Oct. 23, 1957	5.80	170
1953	Mar. 15, 1953	4.94	109		Feb. 27, 1958	-	210
					June 13, 1958	6.99	310
1954	Mar. 25, 1954	5.59	148		July 2, 1958	6.61	246
	Apr. 25, 1954	7.15	380				
	June 3, 1954	6.81	310				

5308. Des Plaines River at Forest Park, Ill.

Location.--Lat 41°52'05", long 87°49'39", in SE¼SE¼ sec.14, T.39 N., R.12 E., at bridge in Forest Home Cemetery, a quarter of a mile above Roosevelt Road in Forest Park.

Drainage area.--470 sq mi.

Gage.--Crest-stage gage. Datum of gage is 606.68 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,100 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Apr. 26, 1954	7.46	3,020	1958	Mar. 1, 1958	4.01	1,320
1955	Oct. 11, 1954	8.8	3,800	1959	Apr. 28, 1959	3.62	1,200
				1960	Apr. 2, 1960	8.80	3,800
1956	Apr. 30, 1956	4.90	1,700				
1957	July 14, 1957	9.25	4,080	1961	Sept.26, 1961	6.26	2,330

5310. Salt Creek near Arlington Heights, Ill.

Location.--Lat 42°03'02", long 88°00'37", on north boundary of sec.17, T.41 N., R.11 E., on right bank at downstream side of bridge on State Highway 58, 2¾ miles southwest of Arlington Heights.

Drainage area.--32.5 sq mi.

Gage.--Recording. Datum of gage is 681.32 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 19, 1951	8.0	350	1957	May 19, 1957	7.55	278
	Mar. 3, 1951	4.86	200		July 13, 1957	9.82	572
	Mar. 18, 1951	4.66	182		July 22, 1957	7.75	294
	Mar. 30, 1951	5.09	223				
	Apr. 12, 1951	5.27	236	1958	July 3, 1958	7.03	200
	May 11, 1951	4.78	196				
				1959	Feb. 24, 1959	7.86	350
1952	Jan. 17, 1952	6.38	290		Mar. 6, 1959	6.23	292
	Jan. 20, 1952	6.10	260		Mar. 15, 1959	5.92	268
	Mar. 12, 1952	6.54	360		Mar. 26, 1959	5.00	203
	Mar. 19, 1952	6.06	320		Apr. 28, 1959	5.02	203
	Apr. 13, 1952	7.18	430				
				1960	Dec. 28, 1959	7.47	290
1953	Mar. 15, 1953	-	139		Jan. 13, 1960	8.26	388
	June 10, 1953	4.33	-		Mar. 30, 1960	9.37	721
					Apr. 17, 1960	8.21	381
1954	Mar. 25, 1954	6.38	251		May 17, 1960	6.53	209
	Apr. 25, 1954	8.43	540		July 3, 1960	7.42	280
	June 3, 1954	6.26	242				
				1961	Mar. 13, 1961	6.94	237
1955	Oct. 10, 1954	8.28	516		June 8, 1961	6.68	223
	Jan. 6, 1955	6.42	251		Sept.14, 1961	8.34	406
	June 11, 1955	6.92	302		Sept.25, 1961	8.96	551
1956	Apr. 29, 1956	5.60	188				

5311. Meacham Creek at Medinah, Ill.

Location.--Lat 41°58'42", long 88°03'00", in SW¼ sec.1, T.40 N., R.10 E., at culvert on Chicago, Milwaukee, St. Paul and Pacific Railroad, 0.2 mile east of Medinah.

Drainage area.--3.12 sq mi.

Gage.--Crest-stage gage. Datum of gage is 698.33 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	12.58	-	1960	Mar. 16, 1960	12.77	-
1957	May 19, 1957	12.21	-				
1958	June 13, 1958	11.95	-	1961	Sept.14, 1961	12.64	-
1959	Feb. 10, 1959	12.27	-				

5315. Salt Creek at Western Springs, Ill.

Location.--Lat 41°49'35", long 87°54'00", on boundary between secs. 31 and 32, T.39 N., R.12 E., on left bank at upstream side of bridge on Wolf Road, in Cook County Forest Preserve, half a mile north of Western Springs, and 9 miles upstream from mouth.

Drainage area.--114 sq mi.

Gage.--Nonrecording prior to July 27, 1946; recording thereafter. Datum of gage is 624.93 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 9, 1946	6.24	775	1952	Mar. 20, 1952	6.02	695
	Mar. 8, 1946	6.1	750		Apr. 15, 1952	6.39	824
	Mar. 18, 1946	4.8	500	1953	June 10, 1953	5.30	506
1947	Apr. 7, 1947	6.96	1,000				
	Apr. 22, 1947	6.45	854	1954	Mar. 25, 1954	6.48	824
	June 3, 1947	6.50	872		Apr. 27, 1954	7.18	1,140
1948	Feb. 20, 1948	a6.4	530		June 5, 1954	5.78	544
	Feb. 29, 1948	5.8	676	1955	Oct. 11, 1954	8.27	1,710
	Mar. 20, 1948	8.06	1,920		Jan. 7, 1955	5.59	586
	May 12, 1948	6.50	872		June 12, 1955	6.37	806
1949	Feb. 13, 1949	6.35	836	1956	May 1, 1956	5.55	586
	Feb. 20, 1949	5.0	512		May 11, 1956	5.74	624
	June 17, 1949	5.3	570	1957	May 21, 1957	5.80	638
1950	Jan. 15, 1950	5.2	506		July 14, 1957	7.39	1,020
	Mar. 8, 1950	5.85	652				
	Mar. 29, 1950	6.15	740	1958	Feb. 28, 1958	5.75	624
	Apr. 6, 1950	6.15	740		June 13, 1958	6.93	778
	Apr. 12, 1950	5.65	598		July 3, 1958	6.08	550
	Apr. 25, 1950	7.36	1,360				
	June 3, 1950	5.6	586	1959	Feb. 24, 1959	-	a1,200
1951	Feb. 19, 1951	-	b1,200		Apr. 28, 1959	5.62	586
	Mar. 20, 1951	4.70	430	1960	Dec. 30, 1959	5.31	525
	Apr. 1, 1951	5.17	506		Jan. 15, 1960	7.06	1,080
	Apr. 14, 1951	5.93	680		Apr. 1, 1960	7.16	1,220
	May 11, 1951	6.36	806		Apr. 19, 1960	6.33	789
1952	Nov. 15, 1951	5.21	506	1961	Sept.14, 1961	8.08	1,430
	Jan. 19, 1952	6.63	925		Sept.25, 1961	7.43	1,060
	Mar. 14, 1952	6.42	824				

a Backwater from ice, 1.3 ft.
b About.

5320. Addison Creek at Bellwood, Ill.

Location.--Lat 41°52'48", long 87°52'07", in SE¼ sec.9, T.39 N., R.12 E., on right bank at downstream side of bridge on Washington Boulevard in Bellwood, 500 ft upstream from Chicago Great Western Railway bridge, and 3.2 miles upstream from mouth.

Drainage area.--18.2 sq mi.

Gage.--Nonrecording prior to Oct. 26, 1951, at datum 2.00 ft higher; recording thereafter. Datum of gage is 617.65 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 190 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 130 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 19, 1951	6.64	295	1958	Apr. 24, 1958	2.95	141
	Apr. 12, 1951	4.75	147		June 13, 1958	6.58	405
	May 11, 1951	5.07	165		July 2, 1958	5.08	294
					July 14, 1958	3.05	144
1952	Apr. 13, 1952	3.34	200				
				1959	Feb. 23, 1959	3.54	182
1953	Dec. 11, 1952	2.25	-		Apr. 28, 1959	2.93	138
	Mar. 15, 1953	1.67	57		May 23, 1959	4.21	229
					June 25, 1959	4.76	273
1954	Mar. 25, 1954	6.39	548		July 1, 1959	3.28	163
	Apr. 25, 1954	5.17	404		July 23, 1959	3.28	163
	June 4, 1954	3.55	218				
	Aug. 18, 1954	4.10	277	1960	Oct. 6, 1959	2.91	148
					Jan. 12, 1960	5.07	295
1955	Oct. 11, 1954	9.48	598		Jan. 15, 1960	3.08	148
	June 11, 1955	3.07	178		Mar. 28, 1960	2.85	130
					Mar. 30, 1960	2.92	134
1956	Apr. 29, 1956	3.25	188		July 2, 1960	5.08	295
	May 9, 1956	3.50	213		Aug. 19, 1960	3.23	160
	July 19, 1956	3.65	228				
				1961	June 10, 1961	4.67	266
1957	May 19, 1957	4.08	277		Aug. 31, 1961	6.04	361
	June 22, 1957	2.77	143		Sept. 2, 1961	4.01	214
	July 13, 1957	8.69	560		Sept. 5, 1961	2.93	138
	July 29, 1957	3.25	153		Sept.14, 1961	8.93	588
	Aug. 3, 1957	5.64	332		Sept.24, 1961	6.31	383
	Aug. 10, 1957	4.03	211				

5325. Des Plaines River at Riverside, Ill.

Location.--Lat 41°49'20", long 87°49'15", in SW¼SW¼ sec.36, T.39 N., R.12 E., on left bank 200 ft northwest of Riverside-Lyons boundary, 300 ft downstream from Barry Point Road Bridge in Riverside, 500 ft downstream from Hoffman Dam, 4,000 ft downstream from Salt Creek, and 1½ miles downstream from Chicago, Burlington & Quincy Railroad bridge.

Drainage area.--635 sq mi.

Gage.--Nonrecording to November 1946; recording thereafter. Prior to Dec. 9, 1943, at site half a mile downstream at datum 15.06 ft lower. Dec. 9, 1943, to Nov. 27, 1946, at site 300 ft upstream. Datum of gage is 594.68 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Shifts are reported to have occurred about 1900 and about 1913.

Remarks.--Records prior to December 1943 furnished by Sanitary District of Chicago. On basis of overlapping records for 1944-46, peak stages at gage used prior to 1944 are approximately equal to 9 ft plus 1.4 times the gage height on present gage. Base for partial-duration series, 1,700 cfs. Only annual peaks are shown prior to 1944 and after 1950.

Peak stages and discharges of Des Plaines River at Riverside, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)
1887	Feb. 9, 1887	20.2	-
1888	Mar. 22, 1888	17.1	-
1889	July 28, 1889	16.6	-
1892	June 24, 1892	21.3	-
1893	Mar. 4, 1893	18.8	-
1894	Mar. 6, 1894	18.8	-
1895	Feb. 28, 1895	15.4	-
1896	Dec. 21, 1895	18.4	-
1897	Jan. 7, 1897	19.6	-
1898	Mar. 13, 1898	19.7	-
1899	June 1, 1899	17.8	-
1900	Mar. 13, 1900	17.8	-
1901	Mar. 20, 1901	18.5	-
1902	May 26, 1902	19.0	-
1903	Mar. 21, 1903	19.6	-
1904	Mar. 25, 1904	21.4	-
1905	May 12, 1905	19.9	-
1906	Feb. 26, 1906	18.6	-
1907	Jan. 20, 1907	19.5	-
1908	Mar. 7, 1908	21.5	-
1909	May 1, 1909	22.0	-
1910	Mar. 7, 1910	20.4	-
1911	Feb. 16, 1911	15.5	-
1912	Mar. 29, 1912	19.3	-
1913	Mar. 25, 1913	19.2	-
1914	May 14, 1914	15.9	1,790
1915	May 31, 1915	17.5	3,090
1916	Jan. 22, 1916	21.1	6,480
1917	Mar. 17, 1917	16.1	1,900
1918	Feb. 15, 1918	20.4	5,790
1919	Mar. 18, 1919	22.2	7,450
1920	Mar. 26, 1920	20.7	6,110
1921	Apr. 28, 1921	17.6	3,260
1922	Dec. 18, 1921	18.5	4,070
1923	Aug. 13, 1923	18.4	3,950
1924	Aug. 8, 1924	19.7	5,170
1925	Feb. 27, 1925	18.6	4,090
1926	Apr. 10, 1926	18.4	3,930
1927	Nov. 18, 1926	18.0	3,580
1928	July 5, 1928	19.0	4,500
1929	Apr. 2, 1929	18.8	4,280
1930	Apr. 21, 1930	16.5	2,180
1931	June 24, 1931	16.5	2,200
1932	Mar. 29, 1932	16.9	2,560
1933	May 9, 1933	19.8	5,220
1934	Jan. 6, 1934	12.4	200
1935	May 14, 1935	18.4	3,910
1936	Sept.17, 1936	19.7	5,160
1937	Feb. 28, 1937	18.0	3,580
1938	July 3, 1938	20.1	5,540
1939	Feb. 21, 1939	17.2	2,840
1940	Mar. 4, 1940	17.0	2,660
1941	Mar. 17, 1941	18.0	3,580
1942	Nov. 3, 1941	17.7	3,320
1943	Mar. 17, 1943	18.2	3,820
1944	Mar. 16, 1944	7.40	4,480
	Apr. 25, 1944	5.00	1,890
1945	May 4, 1945	5.10	1,990
	May 17, 1945	6.70	3,670
1946	Jan. 7, 1946	6.4	3,340
	Mar. 7, 1946	6.44	3,370
	Mar. 18, 1946	5.50	2,410
1947	Apr. 6, 1947	6.85	3,780
	Apr. 21, 1947	6.1	3,010
	June 2, 1947	6.5	3,410
1948	Feb. 29, 1948	5.6	2,530
	Mar. 20, 1948	8.28	6,510
	May 11, 1948	6.0	2,880
1949	Feb. 25, 1949	4.95	1,840
	Apr. 1, 1949	4.80	1,700
	June 16, 1949	5.02	1,890
1950	Mar. 8, 1950	5.7	2,580
	Mar. 28, 1950	5.9	2,780
	Apr. 5, 1950	6.0	2,880
	Apr. 12, 1950	5.35	2,240
	Apr. 26, 1950	8.15	6,340
1951	Feb. 27, 1951	5.95	3,100
1952	Apr. 15, 1952	6.52	3,620
1953	Mar. 15, 1953	4.50	1,470
1954	Apr. 26, 1954	6.78	3,980
1955	Oct. 11, 1954	8.15	6,340
1956	Apr. 30, 1956	5.46	2,460
1957	July 14, 1957	8.00	5,950
1958	June 13, 1958	5.12	2,100
1959	Apr. 28, 1959	4.71	1,680
1960	Jan. 25, 1960	a8.89	-
	Apr. 3, 1960	-	5,500
1961	Sept.14, 1961	6.98	4,690

a Ice jam.

5330. Flag Creek near Willow Springs, Ill.

Location.--Lat 41°44'20", long 87°53'48", in SE¼NE¼ sec.31, T.38 N., P.12 E., on left bank at upstream side of bridge on German Church Road, 1.1 miles northwest of Willow Springs, and 2.3 miles upstream from mouth.

Drainage area.--16.2 sq mi.

Gage.--Recording. Datum of gage is 609.64 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 220 cfs.

Peak stages and discharges of Flag Creek near Willow Springs, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Aug. 6, 1951	4.33	472	1957	July 13, 1957	6.89	1,350
	Sept.26, 1951	4.59	540		Aug. 3, 1957	4.07	410
					Aug. 14, 1957	3.32	249
1952	Nov. 13, 1951	4.07	398				
	Jan. 14, 1952	3.51	275	1958	June 13, 1958	3.96	398
	Jan. 19, 1952	3.92	361				
	Mar. 10, 1952	3.51	275	1959	Mar. 27, 1959	3.66	325
	Mar. 18, 1952	3.48	275		Apr. 28, 1959	7.53	1,550
	Apr. 13, 1952	3.77	327		May 23, 1959	3.29	257
					June 26, 1959	4.70	575
1953	June 10, 1953	3.61	306		July 1, 1959	3.84	365
	Aug. 2, 1953	3.36	236		July 19, 1959	3.47	286
					July 23, 1959	3.40	276
1954	Mar. 25, 1954	5.42	770				
	Apr. 6, 1954	3.34	246	1960	Dec. 27, 1959	3.45	265
	Apr. 25, 1954	3.54	285		Jan. 12, 1960	5.50	800
	June 3, 1954	3.48	275		Jan. 15, 1960	3.35	246
					Mar. 27, 1960	4.15	442
1955	Oct. 3, 1954	4.50	515		Apr. 17, 1960	4.49	510
	Oct. 10, 1954	6.88	1,300		July 3, 1960	3.72	316
	May 28, 1955	3.47	265				
	June 9, 1955	3.41	255	1961	Aug. 10, 1961	4.07	385
	June 11, 1955	3.75	327		Sept. 3, 1961	4.32	460
					Sept.14, 1961	9.98	2,680
1956	Apr. 29, 1956	3.50	275		Sept.25, 1961	5.55	725
	May 11, 1956	3.57	285				

5335. Des Plaines River at Lemont, Ill.

Location.--Lat 41°40'54", long 88°00'19", in SE¼NW¼ sec.20, T.37 N., R.11 E., at Stephens Street Bridge, a quarter of a mile north of Lemont and 11 miles upstream from Chicago Sanitary and Ship Canal.

Drainage area.--687 sq mi.

Gage.--Nonrecording. Datum of gage is 583.67 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--During high-water periods part of flow spills into Chicago Sanitary and Ship Canal at Willow Springs, 7 miles above station, and since February 1941 at two additional points, 1 mile and 1½ miles above station, respectively. Many peaks shown below are maximum observed. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	June 1, 1915	-	2,490	1931	June 25, 1931	4.95	2,170
				1932	Mar. 30, 1932	5.19	2,500
1916	June 10, 1916	-	3,380	1933	May 9, 1933	6.23	4,850
1917	Mar. 19, 1917	-	2,960	1934	Oct. 22, 1933	3.02	239
1918	Mar. 2, 1918	-	2,700	1935	May 14, 1935	5.62	3,280
1919	Mar. 18, 1919	6.50	5,520				
1920	Mar. 27, 1920	-	4,330	1936	Feb. 27, 1936	a6.11	-
					Sept.17, 1936	-	4,190
1921	Apr. 28, 1921	-	2,620	1937	Jan. 3, 1937	5.47	3,070
1922	Dec. 19, 1921	-	3,540	1938	July 4, 1938	6.44	5,440
1923	Aug. 13, 1923	-	3,750	1939	Feb. 13, 1939	4.96	2,000
1924	Aug. 9, 1924	-	4,360	1940	Mar. 5, 1940	3.95	1,140
1925	Feb. 28, 1925	6.0	4,270				
				1941	Mar. 12, 1941	4.77	1,720
1926	Feb. 28, 1926	-	3,450	1942	Nov. 2, 1941	4.80	1,780
1927	Nov. 19, 1926	5.78	3,750	1943	Mar. 17, 1943	5.52	3,110
1928	July 5, 1928	6.00	4,270	1944	Mar. 17, 1944	5.05	2,170
1929	Mar. 5, 1929	-	3,750				
1930	Apr. 22, 1930	5.00	2,170				

a Ice jam.

5345. North Branch Chicago River at Deerfield, Ill.

Location.--Lat 42°09'09", long 87°49'05", in NW¼NE¼ sec.3, T.42 N., R.12 E., on left bank at downstream side of bridge on county line road, 1.7 miles southeast of Deerfield, and 5.7 miles upstream from Skokie River.

Drainage area.--20.7 sq mi.

Gage.--Recording. Datum of gage is 638.88 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 15, 1953	7.43	79	1958	Feb. 27, 1958	8.81	178
1954	Mar. 25, 1954	9.35	247	1959	Feb. 24, 1959	8.33	136
	Apr. 25, 1954	9.26	233		Mar. 15, 1959	8.36	158
	June 3, 1954	9.15	220		Mar. 27, 1959	8.19	125
	July 7, 1954	8.98	201		Apr. 28, 1959	9.63	292
1955	Oct. 11, 1954	9.08	211	1960	Nov. 5, 1959	8.12	126
	Dec. 28, 1954	8.02	112		Dec. 28, 1959	8.85	184
	Jan. 6, 1955	8.89	189		Jan. 13, 1960	9.31	240
	Feb. 20, 1955	8.31	132		Feb. 6, 1960	8.25	136
	Mar. 4, 1955	8.20	128		Mar. 30, 1960	9.59	284
	June 11, 1955	9.36	247		Apr. 17, 1960	9.08	213
					May 17, 1960	8.29	139
1956	Apr. 29, 1956	9.06	207		July 3, 1960	8.28	139
1957	May 11, 1957	8.93	195	1961	Mar. 14, 1961	8.80	178
	May 19, 1957	9.59	284		Apr. 25, 1961	8.13	129
	July 13, 1957	8.97	195		Sept.14, 1961	7.75	108
	Aug. 10, 1957	9.00	201		Sept.25, 1961	8.51	153

5350. Skokie River at Lake Forest, Ill.

Location.--Lat 42°13'57", long 87°50'41", in NW¼SW¼ sec.4, T.43 N., R.12 E., on left bank at downstream side of bridge on State Highway 59 A at Lake Forest, 12 miles upstream from mouth.

Drainage area.--12.8 sq mi.

Gage.--Recording. Datum of gage is 648.69 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 140 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Nov. 13, 1951	7.16	321	1955	June 11, 1955	5.91	173
	Jan. 17, 1952	4.80	149				
	Mar. 11, 1952	5.62	201	1956	Apr. 29, 1956	4.82	155
	Mar. 18, 1952	4.95	161				
	Apr. 13, 1952	6.62	273	1957	May 19, 1957	5.61	201
	June 17, 1952	6.62	257				
				1958	Feb. 25, 1958	3.98	-
1953	Mar. 14, 1953	3.83	92		Feb. 27, 1958	3.74	98
1954	Mar. 25, 1954	5.56	201	1959	Apr. 28, 1959	7.08	313
	Apr. 25, 1954	6.38	257				
	June 3, 1954	6.32	222	1960	Jan. 12, 1960	5.43	187
	July 7, 1954	6.52	236		Mar. 29, 1960	6.30	250
					Apr. 17, 1960	4.78	149
1955	Oct. 10, 1954	5.42	188		July 2, 1960	4.71	143
	Jan. 5, 1955	5.40	194				
	Feb. 20, 1955	4.86	161	1961	Sept.25, 1961	4.89	155

5355. West Fork of North Branch Chicago River at Northbrook, Ill.

Location.--Lat 42°08'18", long 87°50'04", in SW¼SE¼ sec.4, T.42 N., R.12 E., on left bank at upstream side of bridge on State Highway 68, 2.0 miles northwest of Northbrook, and 7.9 miles upstream from mouth.

Drainage area.--11.5 sq mi.

Gage.--Recording. Datum of gage is 637.98 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 330 cfs and extended above.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 14, 1953	6.10	86	1957	Aug. 10, 1957	9.05	630
1954	Mar. 25, 1954	8.56	411	1958	Feb. 27, 1958	6.84	159
	Apr. 25, 1954	8.23	314		June 13, 1958	6.07	103
	June 3, 1954	8.09	280				
	July 7, 1954	7.61	192	1959	Feb. 23, 1959	6.57	153
1955	Oct. 11, 1954	8.18	301		Mar. 15, 1959	6.50	150
	Jan. 5, 1955	7.46	174		Mar. 26, 1959	6.22	123
	Feb. 20, 1955	7.18	150		Apr. 28, 1959	8.42	366
	Feb. 27, 1955	6.64	108	1960	Oct. 6, 1959	5.42	102
	Mar. 4, 1955	6.85	116		Nov. 4, 1959	5.45	100
	May 24, 1955	6.87	116		Dec. 27, 1959	6.17	131
	June 11, 1955	8.54	404		Jan. 12, 1960	7.09	185
					Feb. 6, 1960	6.02	126
1956	Apr. 28, 1956	7.25	199		Mar. 29, 1960	8.01	275
	Apr. 29, 1956	7.52	-		Apr. 17, 1960	7.55	230
					May 17, 1960	6.14	131
1957	Apr. 25, 1957	5.99	113		July 3, 1960	6.28	141
	May 11, 1957	7.84	248				
	May 19, 1957	8.43	369	1961	Mar. 13, 1961	6.29	370
	June 14, 1957	6.06	116		Apr. 25, 1961	4.77	122
	July 13, 1957	9.65	930		Sept.14, 1961	6.49	415
	July 29, 1957	6.39	136		Sept.25, 1961	6.87	502
	Aug. 3, 1957	5.78	106				

5360. North Branch Chicago River at Niles, Ill.

Location.--Lat 42°00'44", long 87°47'45", in SW¼SE¼ sec.30, T.41 N., R.13 E., on right bank at downstream side of bridge on Touhy Avenue in Niles, 3.6 miles downstream from West Fork of North Branch, 7.9 miles upstream from North Shore Channel, and 15.6 miles upstream from mouth.

Drainage area.--102 sq mi.

Gage.--Recording. Datum of gage is 601.99 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 19, 1951	6.64	842	1952	June 17, 1952	6.48	617
	Mar. 19, 1951	5.06	528				
	Mar. 31, 1951	5.31	566	1953	May 15, 1953	5.23	428
	Apr. 13, 1951	5.92	668				
	May 11, 1951	7.12	952	1954	Mar. 26, 1954	7.16	736
	July 10, 1951	5.44	540		Apr. 26, 1954	8.56	1,510
					June 4, 1954	6.39	785
1952	Nov. 15, 1951	6.90	683		July 7, 1954	5.39	585
	Jan. 20, 1952	6.93	683				
	Mar. 13, 1952	7.31	718	1955	Oct. 11, 1954	9.01	1,700
	Mar. 19, 1952	6.85	633		Jan. 6, 1955	5.91	685
	Apr. 14, 1952	7.89	870		Feb. 21, 1955	5.12	525

Peak stages and discharges of North Branch Chicago River at Niles, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	June 12, 1955	6.67	860	1960	Dec. 28, 1959	6.32	671
					Jan. 13, 1960	7.26	975
1956	Oct. 6, 1955	5.05	505		Jan. 15, 1960	6.50	720
	Apr. 29, 1956	7.26	1,030		Mar. 31, 1960	8.15	1,340
					Apr. 17, 1960	7.50	1,050
1957	May 20, 1957	7.12	905		July 3, 1960	6.56	750
	July 13, 1957	9.28	1,850				
	Aug. 11, 1957	5.78	566	1961	Mar. 14, 1961	5.80	554
					June 8, 1961	6.31	671
1958	Feb. 28, 1958	6.15	647		Sept.14, 1961	7.92	1,210
					Sept.25, 1961	8.12	1,290
1959	Feb. 24, 1959	5.89	577				
	Apr. 29, 1959	6.37	695				

5363.5. Stony Creek (East) at Chicago Ridge, Ill.

Location.--Lat 41°42'08", long 87°45'34", in NW¼NW¼ sec.16, T.37 N., R.13 E., at Central Avenue Bridge at east edge of Chicago Ridge.

Gage.--Crest-stage gage. Datum of gage is 586.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 25, 1954	1.07	-	1958	Feb. 25, 1958	3.57	-
1955	Jan. 5, 1955	4.22	-	1959	May 1959	a4.42	-
				1960	Jan. 12, 1960	.80	-
1956	-	4.17	-				
1957	July 13, 1957	3.09	-	1961	-	(b)	-

a Probably backwater from construction downstream.
b Not determined; peak stage did not reach bottom of gage.

5364. Stony Creek (East) at Blue Island, Ill.

Location.--Lat 41°39'18", long 87°41'17", in NW¼SE¼ sec.36, T.37 N., R.13 E., at Vermont Street Bridge, 1.5 miles west of U.S. Highway 54 in Blue Island.

Drainage area.--18.1 sq mi.

Gage.--Crest-stage gage. Datum of gage is 583.34 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown, except for 1955.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 25, 1954	0.71	-	1958	Feb. 25, 1958	2.12	-
				1959	Apr. 28, 1959	1.98	-
1955	Oct. 10, 1954	5.88	a432	1960	Jan. 12, 1960	1.32	-
1956	-	4.11	-	1961	Sept.24, 1961	2.23	-
1957	July 13, 1957	4.51	-				

a Result of indirect measurement.

5365. Tinley Creek near Palos Park, Ill.

Location.--Lat 41°38'48", long 87°45'59", in SW¼SE¼ sec.32, T.37 N., R.13 E., on left bank at downstream side of 135th Street Bridge, 1.5 miles west of State Highway 50, 1.5 miles upstream from mouth, and 3 miles southeast of Palos Park.

Drainage area.--11.3 sq mi.

Gage.--Recording. Datum of gage is 607.40 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 230 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Sept.26, 1951	7.99	505	1956	Apr. 29, 1956	5.23	345
					May 10, 1956	5.01	310
1952	Nov. 13, 1951	6.92	405		May 12, 1956	6.43	510
	Jan. 15, 1952	6.46	365				
	Apr. 12, 1952	5.41	255	1957	Apr. 25, 1957	5.94	285
	June 14, 1952	5.27	240		June 18, 1957	5.35	236
					June 28, 1957	8.90	585
1953	May 22, 1953	6.22	322		July 13, 1957	10.02	695
	June 10, 1953	8.43	530				
				1958	Aug. 15, 1958	5.26	227
1954	Mar. 25, 1954	6.74	367				
	July 7, 1954	6.41	340	1959	Apr. 28, 1959	7.64	455
1955	Oct. 10, 1954	10.30	1,120	1960	Jan. 12, 1960	6.48	345
	Jan. 5, 1955	5.26	345		Mar. 27, 1960	6.95	395
	Mar. 3, 1955	5.08	317				
	June 11, 1955	4.53	250	1961	Apr. 25, 1961	7.14	438
					Sept.14, 1961	5.74	258
1956	Feb. 24, 1956	5.61	394		Sept.25, 1961	7.25	453

5375. Long Run near Lemont, Ill.

Location.--Lat 41°38'33", long 87°59'57", in SW¼SE¼ sec.32, T.37 N., R.11 E., on left bank at downstream side of highway bridge, 2 miles south of Lemont, and 5.4 miles upstream from mouth.

Drainage area.--20.8 sq mi.

Gage.--Recording. Datum of gage is 637.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 260 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Sept.27, 1951	6.36	390	1955	Feb. 19, 1955	5.35	285
					June 9, 1955	6.55	479
1952	Nov. 14, 1951	5.62	274				
	Jan. 1, 1952	5.55	268	1956	Feb. 24, 1956	5.80	348
	Jan. 15, 1952	-	-		May 10, 1956	5.61	320
	Jan. 19, 1952	5.50	261				
	Mar. 10, 1952	5.65	281	1957	Apr. 25, 1957	5.70	295
	Mar. 18, 1952	5.54	268		July 13, 1957	9.37	2,390
	Apr. 13, 1952	5.56	268				
	June 13, 1952	8.18	1,000	1958	June 13, 1958	5.99	358
1953	Mar. 12, 1953	5.58	320	1959	Apr. 28, 1959	6.22	397
	May 1, 1953	6.12	390				
	June 10, 1953	6.85	495	1960	Jan. 12, 1960	6.55	477
					Mar. 27, 1960	6.01	358
1954	Mar. 25, 1954	7.14	658				
				1961	Apr. 25, 1961	7.87	1,000
1955	Oct. 3, 1954	5.93	366		Sept.14, 1961	6.45	452
	Oct. 10, 1954	9.91	3,160		Sept.25, 1961	7.02	605
	Jan. 5, 1955	5.37	285				

5380. Des Plaines River at Joliet, Ill.

Location.--Lat 41°31'54", long 88°05'05", in SE¼NE¼ sec.9, T.35 N., R.10 E., at Jackson Street Bridge in Joliet.

Drainage area.--762 sq mi.

Gage.--Recording. Datum of gage is 524.31 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 17,000 cfs and extended above.

Remarks.--The flow is regulated by the operation of the powerplant of the Metropolitan Sanitary District of Greater Chicago at Lockport, which utilizes the flow of the Chicago drainage canal, and by the operation of the Economy Light and Power Co.'s dam, 100 ft upstream. Water is diverted to the Illinois and Michigan Canal at the dam. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	Aug. 3, 1915	-	a10,980	1924	Aug. 9, 1924	7.82	17,000
				1925	Feb. 25, 1925	6.48	13,200
1916	June 10, 1916	-	a13,200				
1917	July 24, 1917	-	a10,600	1926	Apr. 11, 1926	7.46	16,100
1918	Feb. 15, 1918	-	a12,500	1927	Apr. 19, 1927	7.40	15,800
1919	May 5, 1919	9.03	21,800	1928	July 3, 1928	7.90	17,500
1920	Mar. 27, 1920	8.27	19,000	1929	Apr. 1, 1929	8.92	21,000
				1930	Apr. 2, 1930	7.92	16,500
1921	Apr. 29, 1921	7.30	15,500				
1922	Apr. 11, 1922	7.80	17,000	1931	June 23, 1931	-	b15,000
1923	Aug. 14, 1923	6.98	14,600	1932	Nov. 22, 1931	7.37	13,400

a Maximum daily.
b Estimated.

5383. Marley Creek near Mokena, Ill.

Location.--Lat 41°34', long 87°54', in SE¼SE¼ sec.36, T.36 N., R.11 E., 200 ft south of U.S. Highway 6, 0.5 mile southwest of intersection with 179th Street, and 2.4 miles northwest of Mokena.

Drainage area.--8.38 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown, except for 1955.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 25, 1954	7.31	-	1958	June 13, 1958	5.42	-
1955	Oct. 10, 1954	10.8	a501	1959	Apr. 28, 1959	6.59	-
				1960	Mar. 27, 1960	6.39	-
1956	Feb. 24, 1956	6.51	-				
1957	July 13, 1957	8.00	-	1961	Sept.24, 1961	7.22	-

a Result of indirect measurement.

5385. Spring Creek at Joliet, Ill.

Location.--Lat 41°31'47", long 88°04'00", in NE¼SE¼ sec.10, T.35 N., R.10 E., at Benton Street Bridge in Joliet, half a mile upstream from mouth.

Drainage area.--19.7 sq mi.

Gage.--Nonrecording. Altitude of gage is 538 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 170 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Spring Creek at Joliet, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	June 11, 1926	6.80	1,160	1931	May 20, 1931	1.90	125
1927	July 1, 1927	4.40	530	1932	Nov. 22, 1931	2.96	325
1928	Nov. 28, 1927	2.80	242	1933	July 8, 1933	2.80	287
1929	Mar. 15, 1929	3.58	545				
1930	Feb. 22, 1930	2.12	160				

5390. Hickory Creek at Joliet, Ill.

Location.--Lat 41°31'10", long 88°04'10", in SW¼NE¼ sec.15, T.35 N., R.10 E., on right bank at Third Avenue in Joliet, 0.25 mile downstream from Spring Creek, and 1¾ miles upstream from mouth.

Drainage area.--107 sq mi.

Gage.--Nonrecording prior to Oct. 10, 1946; recording thereafter. Datum of gage is 527.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,300 cfs and extended above.

Historical data.--The flood of 1902 is reported to have reached a stage about half a foot higher than that of 1947. A floodmark at elevation 9.46 ft was identified in March 1943 as having been the highest in the preceding 13 years. The Survey Report for Flood Control (Illinois Division of Waterways, 1950) states that major floods occurred in 1867, 1902, 1907, 1911, 1926, 1941, 1942 and 1947; and that flood of 1902 is said to be the most severe.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	-	-	a16,700	1951	May 10, 1951	-	c2,400
1926	-	-	b9,000	1952	Nov. 14, 1951	5.52	2,050
					Jan. 20, 1952	5.43	2,000
1942	-	-	a9,000		Mar. 19, 1952	4.83	1,480
					Apr. 13, 1952	4.68	1,360
1945	Apr. 2, 1945	5.49	1,780		June 13, 1952	7.02	3,580
	May 8, 1945	5.6	2,040				
	May 15, 1945	5.2	1,730	1953	Mar. 15, 1953	4.77	1,400
	Sept.28, 1945	4.9	1,510		June 10, 1953	5.78	2,350
1946	Oct. 1, 1945	4.9	1,510	1954	Mar. 25, 1954	6.59	3,150
	Jan. 5, 1946	5.04	1,430		Apr. 22, 1954	4.85	1,480
	Jan. 9, 1946	5.0	1,570		Apr. 25, 1954	4.97	1,560
	Aug. 17, 1946	5.0	1,570		July 7, 1954	4.84	1,480
1947	Apr. 5, 1947	10.68	10,200	1955	Oct. 11, 1954	9.82	8,130
	June 1, 1947	6.9	3,030		Jan. 5, 1955	5.32	1,870
1948	Feb. 28, 1948	5.35	1,920	1956	Feb. 25, 1956	5.15	1,740
	Mar. 19, 1948	7.67	4,370		Apr. 29, 1956	5.24	1,820
	May 10, 1948	6.1	2,650		May 10, 1954	5.73	2,300
1949	Feb. 13, 1949	5.87	2,400	1957	Apr. 25, 1957	4.85	1,480
	Mar. 31, 1949	4.95	1,560		June 28, 1957	6.99	3,580
					July 13, 1957	12.77	15,200
1950	Dec. 22, 1949	5.50	2,050				
	Jan. 13, 1950	5.90	2,450	1958	June 9, 1958	4.35	1,980
	Mar. 5, 1950	5.55	2,100		June 13, 1958	3.77	1,380
	Mar. 26, 1950	4.70	1,360		Aug. 15, 1958	4.30	1,920
	Apr. 4, 1950	5.95	2,500				
	Apr. 25, 1950	7.32	3,910	1959	Feb. 23, 1959	4.08	1,710
	June 2, 1950	4.95	1,560		Apr. 28, 1959	5.12	2,870
	June 24, 1950	4.75	1,400				
	July 17, 1950	5.90	2,450	1960	Jan. 13, 1960	4.16	1,760
					Mar. 27, 1960	4.35	1,980
1951	Feb. 19, 1951	6.00	2,550				
	Apr. 12, 1951	4.65	1,320	1961	Sept.24, 1961	7.40	4,560

a Estimated.
b Estimated in excess of figure shown.
c About.

5405. Du Page River at Troy, Ill.

Location.--Lat 41°31'20", long 88°11'35", in SE¼SW¼ sec.10, T.35 N., R.9 E., at Troy (formerly known as Grinton), 400 ft upstream from U.S. Highway 52, and 3.8 miles downstream from Lilly Cache Creek.

Drainage area.--325 sq mi.

Gage.--Nonrecording to April 1941; recording thereafter. Datum of gage is 564.62 ft above mean sea level, datum of 1929 (Illinois Division of Waterways bench mark).

Stage-discharge relation.--Controlled by masonry dam below 5,000 cfs. Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Mar. 3, 1941	4.0	1,440	1951	Feb. 19, 1951	6.40	4,230
	Mar. 11, 1941	4.10	1,730		Apr. 13, 1951	4.07	1,460
					May 11, 1951	5.26	2,800
1942	Oct. 3, 1941	4.35	1,820		July 9, 1951	4.29	1,730
	Oct. 7, 1941	4.60	2,070				
	Nov. 1, 1941	4.40	1,870	1952	Jan. 20, 1952	4.87	2,340
	Feb. 6, 1942	6.46	4,360		Mar. 11, 1952	4.68	2,170
	Feb. 16, 1942	4.05	1,460		Mar. 19, 1952	4.29	1,730
	Mar. 17, 1942	4.45	1,920		Apr. 13, 1952	4.45	1,900
					June 14, 1952	4.92	2,390
1943	Dec. 27, 1942	4.75	2,220				
	Feb. 7, 1943	-	a1,800	1953	June 10, 1953	7.02	5,100
	Mar. 15, 1943	5.05	2,550				
	May 11, 1943	4.30	1,770	1954	Mar. 25, 1954	6.11	3,830
	May 21, 1943	5.14	2,640		Apr. 26, 1954	4.11	1,520
					June 3, 1954	4.34	1,780
1944	Mar. 15, 1944	4.75	2,220				
				1955	Oct. 11, 1954	11.06	12,000
1945	May 17, 1945	4.34	1,820		Jan. 6, 1955	4.04	1,580
	May 28, 1945	4.00	1,400		Feb. 20, 1955	4.12	1,630
					Feb. 27, 1955	3.95	1,480
1946	Jan. 5, 1946	6.01	3,700		May 28, 1955	5.57	3,220
	Jan. 9, 1946	4.60	2,060		June 11, 1955	4.31	a1,830
	Mar. 5, 1946	4.40	1,820				
				1956	Feb. 24, 1956	4.85	-
1947	Feb. 15, 1947	b4.30	1,500		Feb. 25, 1956	4.23	1,780
	Apr. 5, 1947	7.10	5,200		May 11, 1956	4.34	1,880
	Apr. 20, 1947	4.75	2,180				
	June 2, 1947	4.65	2,080	1957	July 13, 1957	7.66	6,040
1948	Feb. 28, 1948	4.75	2,180	1958	Feb. 28, 1958	4.37	1,880
	Mar. 16, 1948	-	a1,600		June 13, 1958	5.30	2,880
	Mar. 19, 1948	10.10	11,000		July 3, 1958	3.81	1,330
	May 10, 1948	4.15	1,560				
				1959	Feb. 15, 1959	-	d1,800
1949	Jan. 28, 1949	4.10	1,510		Feb. 23, 1959	4.77	2,280
	Feb. 13, 1949	c8.15	4,500		Mar. 6, 1959	4.44	1,980
					Apr. 28, 1959	6.49	4,360
1950	Jan. 14, 1950	3.95	1,350				
	Mar. 5, 1950	4.90	2,390	1960	Dec. 28, 1959	3.89	1,430
	Mar. 28, 1950	3.90	1,300		Jan. 13, 1960	5.76	3,460
	Apr. 4, 1950	4.15	1,560		Mar. 30, 1960	5.52	3,100
	Apr. 11, 1950	3.90	1,300		Apr. 17, 1960	4.48	2,030
	Apr. 25, 1950	9.25	9,070				
				1961	Sept.15, 1961	4.69	2,230
1951	Feb. 19, 1951	6.62	-		Sept.26, 1961	6.88	4,920

a Estimated.
b Backwater from ice, 0.2 ft.
c Backwater from ice, 1.6 ft.
d About.

5420. Mazon River near Coal City, Ill.

Location.--Lat 41°17'10", long 88°21'35", in SW¼SW¼ sec.31, T.33 N., R.8 E., on right bank at downstream side of bridge on State Highway 113S, a quarter of a mile downstream from Johnny Run, and 4 miles west of Coal City.

Drainage area.--470 sq mi.

Gage.--Nonrecording prior to May 1, 1940; recording thereafter. Datum of gage is 527.41 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Flood of Aug. 8, 1924, reached the maximum stage known.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Aug. 8, 1924	a21	-	1950	Dec. 22, 1949	11.7	7,990
					Jan. 14, 1950	10.4	6,360
1940	Apr. 30, 1940	5.07	1,090		Jan. 26, 1950	10.4	6,360
					Mar. 6, 1950	9.3	5,070
1941	June 4, 1941	6.39	1,820		Apr. 4, 1950	11.4	7,600
					Apr. 10, 1950	9.8	5,640
1942	Oct. 7, 1941	11.2	6,770		Apr. 25, 1950	18.50	17,300
	Nov. 1, 1941	9.2	4,570				
	Feb. 7, 1942	17.28	14,000	1951	Feb. 19, 1951	14.11	11,100
	Apr. 7, 1942	9.5	4,900		Apr. 12, 1951	8.64	4,300
	Aug. 28, 1942	15.6	11,900		July 9, 1951	12.97	9,680
1943	Dec. 28, 1942	15.0	11,900	1952	Nov. 14, 1951	9.97	5,880
	Feb. 4, 1943	b8.9	4,200		Jan. 1, 1952	8.98	4,740
	Feb. 6, 1943	12.0	8,380		Apr. 13, 1952	9.21	4,960
	Mar. 16, 1943	10.3	6,240		June 14, 1952	8.47	4,190
	Apr. 27, 1943	16.0	13,400				
	Apr. 30, 1943	8.4	4,080	1953	Mar. 13, 1953	9.37	5,180
	May 12, 1943	16.13	13,600		Mar. 15, 1953	8.43	4,080
	May 21, 1943	15.30	12,400				
				1954	Mar. 25, 1954	13.48	10,300
1944	Mar. 15, 1944	10.3	6,240		Apr. 22, 1954	8.80	4,520
	Apr. 12, 1944	14.5	11,200				
	Apr. 23, 1944	16.22	13,700	1955	Apr. 20, 1955	8.06	3,760
1945	May 8, 1945	9.0	4,740	1956	July 16, 1956	6.32	2,070
	May 15, 1945	12.01	7,900				
				1957	Apr. 26, 1957	11.53	6,700
1946	Jan. 5, 1946	10.2	5,810		June 15, 1957	10.00	5,200
	June 13, 1946	14.76	11,600		June 19, 1957	12.64	7,800
	June 20, 1946	10.5	6,050		June 29, 1957	11.14	6,300
					July 14, 1957	11.20	6,400
1947	Apr. 5, 1947	15.31	12,500				
	Apr. 30, 1947	11.1	6,890	1958	June 10, 1958	11.85	7,000
	June 2, 1947	9.8	5,640		June 13, 1958	11.42	6,600
	June 8, 1947	9.0	4,740		July 15, 1958	19.70	17,600
1948	Feb. 28, 1948	11.2	7,340	1959	Apr. 28, 1959	13.04	8,200
	Mar. 16, 1948	8.4	4,080				
	Mar. 19, 1948	11.84	8,120	1960	Feb. 11, 1960	9.60	4,840
	May 11, 1948	8.4	4,080		Mar. 30, 1960	9.86	5,110
					June 14, 1960	10.58	5,800
1949	Jan. 28, 1949	8.6	4,300				
	Feb. 13, 1949	11.20	7,340	1961	Sept.26, 1961	10.33	5,500

a About.
b Backwater from ice, 0.4 ft.

5435. Illinois River at Marseilles, Ill.
(Published as "at Morris" 1919-39)

Location.--Lat 41°19'40", long 88°43'10", in SE¼SW¼ sec.13, T.33 N., R.4 E., on right bank 0.4 mile downstream from dam in Marseilles, 6.9 miles upstream from Fox River, and at mile 246.6.

Drainage area.--7,640 sq mi.

Gage.--Nonrecording to January 1935; recording thereafter. Prior to Oct. 1, 1939, at Morris 16.6 miles upstream, at datum 478.5 ft above mean sea level, datum of 1929. Datum of present gage is 462.91 ft above mean sea level, datum of 1929. Readings prior to March 1916, originally observed to other datums, have been adjusted.

Stage-discharge relation.--Defined by current-meter measurements. For very high stages, a shift in the stage-discharge relation occurred in December 1932. The earlier relation, defined by current-meter measurements made in 1920 and 1922, is here assumed to be applicable also to the period 1892 to 1918. This assumption is supported by results of current-meter measurements by Sanitary District of Chicago in 1892, by Corps of Engineers in 1900, and by a measurement at Minooka on Mar. 26, 1904.

Remarks.--Since Jan. 17, 1900, flow has included diversion from Lake Michigan through Chicago Sanitary and Ship Canal. Gage heights to December 1904 taken from House Document 263, 59th Congress, 1st session; January 1905 to February 1916, from Flood Control Report, Illinois Division of Waterways, 1929; March 1916 to September 1919, from reports of U.S. Weather Bureau. Base for partial-duration series, 20,000 cfs. Only annual peaks are shown prior to 1950. Figures shown are not adjusted for Lake Michigan diversion.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1831	-	26.2	-	1931	June 23, 1931	11.30	22,500
				1932	Nov. 23, 1931	13.2	27,800
1892	May 6, 1892	21.6	72,500	1933	Apr. 2, 1933	19.1	62,300
				1934	Apr. 3, 1934	8.7	15,400
1894	Mar. 8, 1894	9.6	18,000	1935	May 13, 1935	14.84	36,000
1895	Mar. 2, 1895	6.2	9,640				
				1936	Feb. 25, 1936	a15.21	-
1896	Dec. 22, 1895	16.1	39,500		Feb. 27, 1936	-	36,400
1897	Jan. 5, 1897	15.8	38,000	1937	Apr. 27, 1937	12.28	26,400
1898	Mar. 28, 1898	17.1	44,500	1938	Apr. 11, 1938	14.62	35,100
				1939	Mar. 15, 1939	15.38	38,800
1900	Mar. 12, 1900	19.5	57,600	1940	Mar. 3, 1940	5.26	21,100
1904	Mar. 26, 1904	20.4	63,700	1941	Mar. 11, 1941	4.67	18,500
1905	May 13, 1905	14.6	32,600	1942	Feb. 7, 1942	13.94	74,400
				1943	May 21, 1943	13.82	73,800
1906	Jan. 23, 1906	10.5	20,400	1944	Apr. 24, 1944	11.26	56,100
1907	Jan. 19, 1907	16.0	39,000	1945	May 17, 1945	8.99	42,300
1908	Mar. 7, 1908	22.2	77,000				
1909	Apr. 23, 1909	14.4	31,800	1946	Jan. 6, 1946	9.15	43,500
1910	Jan. 20, 1910	14.1	30,600	1947	Apr. 6, 1947	13.57	72,000
				1948	Mar. 20, 1948	12.60	64,400
1911	Sept.22, 1911	12.8	26,600	1949	Feb. 13, 1949	8.31	38,200
1912	Mar. 27, 1912	14.7	33,000	1950	Apr. 26, 1950	14.91	83,300
1913	Mar. 28, 1913	18.9	54,000				
1914	May 13, 1914	12.6	26,000	1951	Jan. 4, 1951	5.04	20,300
1915	Aug. 4, 1915	17.3	45,500		Feb. 12, 1951	5.30	21,900
					Feb. 19, 1951	10.63	51,900
1916	Jan. 21, 1916	23.9	40,000		Apr. 1, 1951	5.39	22,400
1917	June 10, 1917	13.4	28,400		Apr. 13, 1951	7.20	32,000
1918	Feb. 15, 1918	17.9	48,500		Apr. 29, 1951	5.05	20,300
1919	Mar. 18, 1919	20.3	63,000		May 11, 1951	8.93	41,700
1920	Apr. 21, 1920	17.80	48,000		July 10, 1951	8.45	38,800
1921	Apr. 27, 1921	10.20	19,500	1952	Nov. 14, 1951	7.66	34,800
1922	Apr. 12, 1922	20.10	60,600		Jan. 2, 1952	5.80	24,500
1923	Mar. 16, 1923	13.00	27,200		Jan. 20, 1952	6.98	30,900
1924	Aug. 10, 1924	18.40	51,200		Mar. 11, 1952	5.77	24,500
1925	Mar. 22, 1925	11.7	23,600		Mar. 19, 1952	7.00	30,900
					Mar. 24, 1952	7.35	33,100
1926	Apr. 11, 1926	16.40	41,000		Apr. 13, 1952	7.78	35,400
1927	Apr. 20, 1927	19.40	56,700		Apr. 24, 1952	5.22	21,300
1928	Dec. 15, 1927	15.70	37,500		June 15, 1952	9.30	44,100
1929	Mar. 17, 1929	17.5	46,500				
1930	Apr. 22, 1930	15.2	35,100	1953	Mar. 15, 1953	7.30	32,600

a Backwater from [illegible], greater than 0.3 ft.

Peak stages and discharges of Illinois River at Marseilles, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 11, 1953	5.02	20,300	1957	July 23, 1957	5.42	22,400
	July 6, 1953	6.49	28,200				
				1958	Dec. 23, 1957	5.07	20,800
1954	Mar. 26, 1954	9.40	44,700		Feb. 28, 1958	5.72	23,900
	Apr. 12, 1954	5.08	20,800		June 11, 1958	8.21	37,700
	Apr. 22, 1954	5.89	25,000		June 14, 1958	10.06	48,900
	Apr. 25, 1954	6.09	26,000		July 16, 1958	8.86	41,700
	June 3, 1954	5.75	24,500				
	July 7, 1954	5.76	24,500	1959	Feb. 14, 1959	9.04	42,300
					Feb. 24, 1959	7.48	33,700
1955	Oct. 12, 1954	11.39	56,600		Feb. 27, 1959	6.38	27,700
	Jan. 6, 1955	6.53	28,200		Mar. 6, 1959	6.73	29,300
	Feb. 20, 1955	5.88	25,000		Mar. 27, 1959	5.27	21,900
	Feb. 27, 1955	5.67	23,900		Apr. 2, 1959	5.09	20,800
	Apr. 25, 1955	5.65	23,400		Apr. 29, 1959	10.25	49,500
	May 29, 1955	5.17	21,300		May 4, 1959	7.22	32,000
	June 13, 1955	5.78	24,500		May 21, 1959	5.49	22,900
1956	Feb. 25, 1956	6.97	30,900	1960	Dec. 28, 1959	5.62	23,400
	May 1, 1956	6.15	26,600		Jan. 13, 1960	7.44	33,100
	May 10, 1956	5.63	23,400		Feb. 11, 1960	7.34	32,600
					Mar. 31, 1960	8.96	42,300
1957	Feb. 28, 1957	5.33	21,900		Apr. 18, 1960	7.41	33,100
	Apr. 28, 1957	8.90	41,700		June 15, 1960	5.88	25,000
	May 14, 1957	5.46	22,900				
	May 19, 1957	6.19	26,600	1961	Apr. 25, 1961	6.80	29,800
	June 13, 1957	5.00	20,300		Aug. 5, 1961	5.02	20,300
	June 18, 1957	4.99	20,300		Sept.14, 1961	6.48	28,200
	June 29, 1957	6.68	29,300		Sept.26, 1961	10.21	49,500
	July 14, 1957	15.20	93,900				

5465. Fox River at Wilmot, Wis.

Location.--Lat 42°30'40", long 88°10'45", in SW¼ sec.30, T.1 N., R.20 E., on downstream side of highway bridge, 400 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, approximately.

Gage.--Nonrecording and concrete control. Datum of gage is 735.22 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,500 cfs.

Remarks.--Control is a broad-crested concrete dam. November 1941 to Apr. 13, 1949, 3 stoplog gates, and since Apr. 14, 1949, 3 lift gates, all 6 ft wide, in Wilmot Dam have been in operation; discharge through gates computed by weir and orifice formulas and added to flow over dam. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 29, 1940	7.84	3,150	1951	Mar. 1, 1951	7.59	3,660
				1952	Mar. 20, 1952	7.73	4,010
1941	Mar. 23, 1941	7.28	2,130	1953	Feb. 24, 1953	6.60	1,780
1942	Mar. 18, 1942	6.92	1,610	1954	June 5, 1954	6.70	2,050
1943	Mar. 17, 1943	8.7	5,700	1955	June 13, 1955	6.54	1,810
1944	Mar. 16, 1944	7.6	3,100				
1945	June 29, 1945	6.81	2,130	1956	May 12, 1956	6.35	1,680
				1957	June 15, 1957	5.95	1,350
1946	Jan. 7, 1946	7.90	4,170	1958	Feb. 28, 1958	5.70	1,010
1947	June 3, 1947	6.9	2,070	1959	Mar. 21, 1959	7.28	3,010
1948	Mar. 21, 1948	8.3	5,000	1960	Mar. 31, 1960	9.25	7,520
1949	Mar. 10, 1949	7.01	2,400				
1950	Mar. 29, 1950	7.00	2,400	1961	Mar. 23, 1961	6.77	2,220

5485. Fox River at Johnsburg, Ill.

Location.--Lat 42°22'35", long 88°14'15", in SW¼SW¼ sec.18, T.45 N., R.9 E., on left bank just upstream from highway bridge in Johnsburg, 5 miles upstream from dam of Illinois Division of Waterways.

Gage.--Nonrecording prior to Dec. 14, 1939; recording thereafter. Datum of gage is 735.20 ft above mean sea level, datum of 1929 (levels by Illinois Division of Waterways).

Remarks.--Stage regulated by dam below station. Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Sept. 1, 1940	2.27	-	1951	Mar. 7, 1951	3.71	-
				1952	Mar. 22, 1952	4.01	-
1941	Mar. 25, 1941	2.14	-	1953	May 5, 1953	2.37	-
1942	Mar. 18, 1942	2.17	-	1954	Apr. 27, 1954	2.83	-
1943	Mar. 23, 1943	3.69	-	1955	June 14, 1955	2.75	-
1944	Mar. 18, 1944	3.46	-				
1945	June 1, 1945	2.47	-	1956	May 15, 1956	2.41	-
				1957	May 19, 1957	2.40	-
1946	Mar. 19, 1946	3.40	-	1958	Apr. 10, 1958	2.04	-
1947	June 6, 1947	2.77	-	1959	Apr. 1, 1959	3.18	-
1948	Mar. 24, 1948	4.57	-	1960	Apr. 6, 1960	5.39	-
1949	Mar. 9, 1949	2.71	-				
1950	Apr. 29, 1950	3.09	-	1961	Mar. 17, 1961	2.68	-

5490. Boone Creek near McHenry, Ill.

Location.--Lat 42°19'15", long 88°18'45", in W½ sec.4, T.44 N., R.8 E., on left bank at upstream side of county highway bridge, half a mile west of Clemens School, 2½ miles southwest of McHenry, and 4 miles upstream from mouth.

Drainage area.--15.3 sq mi.

Gage.--Recording. Datum of gage is 769.63 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 18, 1949	3.00	132	1955	Mar. 3, 1955	3.97	187
	Feb. 24, 1949	4.52	246		June 9, 1955	2.83	116
1950	Jan. 25, 1950	2.70	112	1956	Feb. 24, 1956	1.78	59
	Mar. 5, 1950	3.4	164				
	Apr. 25, 1950	3.80	190	1957	July 30, 1957	2.38	90
	June 3, 1950	2.70	112				
				1958	Nov. 19, 1957	1.27	34
1951	July 9, 1951	2.78	118				
				1959	Feb. 17, 1959	2.33	-
1952	Nov. 14, 1951	3.02	103		Feb. 23, 1959	3.11	137
	Mar. 11, 1952	3.81	186				
	Apr. 13, 1952	2.86	122	1960	Jan. 12, 1960	2.72	113
					Mar. 29, 1960	3.30	149
1953	July 4, 1953	1.72	52		Apr. 17, 1960	2.51	101
1954	Apr. 25, 1954	3.71	167	1961	Oct. 31, 1960	1.86	64

5495. Fox River near McHenry, Ill.

Location.--Lat 42°18'35", long 88°15'05", in NW¼ sec.12, T.44 N., R.8 E., on right bank of main channel, 300 ft upstream from McHenry Dam and 2½ miles downstream from McHenry.

Gage.--Recording. Datum of gage is 735.15 ft above mean sea level, datum of 1929 (levels by Illinois Division of Waterways).

Remarks.--Stage regulated by dam below station. Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Mar. 18, May 5, 1942	1.98	-	1952	Mar. 22, 1952	3.25	-
				1953	May 5, 1953	2.36	-
1943	Mar. 22, 1943	2.92	-	1954	June 29, 1954	2.65	-
1944	Mar. 18, 1944	2.77	-	1955	June 11, 1955	2.48	-
1945	June 1, 1945	2.24	-				
				1956	May 6, 1956	2.33	-
1946	Mar. 20, 1946	2.82	-	1957	May 19, 1957	2.45	-
1947	June 2, 1947	2.30	-	1958	Apr. 10, 1958	2.16	-
1948	Mar. 24, 1948	3.76	-	1959	Apr. 1, 1959	2.79	-
1949	Mar. 9, 1949	2.40	-	1960	Apr. 5, 1960	4.29	-
1950	Apr. 29, 1950	2.59	-				
				1961	Sept. 25, 1961	2.42	-
1951	Mar. 4, 1951	3.22	-				

5499. Fox River tributary near Cary, Ill.

Location.--Lat 42°11'55", long 88°15'50", in SE¼ sec.14, T.43 N., R.8 E., at culvert on Cary-Algonquin road, 1.3 miles southwest of Cary.

Drainage area.--0.070 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 25, 1956	13.16	5	1960	Mar. 30, 1960	14.22	13.0
1957	July 29, 1957	15.12	31				
1958	January 1958	(a)	b2	1961	Mar. 13, 1961	13.82	11.5
1959	Feb. 10, 1959	14.54	22.4				

a Peak stage did not reach bottom of gage.
b Less than figure shown.

5500. Fox River at Algonquin, Ill.

Location.--Lat 42°09'59", long 88°17'25", in NW¼ sec.34, T.43 N., R.8 E., 20 ft upstream from Chicago Street Bridge at Algonquin and 400 ft upstream from Crystal Lake outlet.

Drainage area.--1,364 sq mi.

Gage.--Nonrecording to October 1933; recording thereafter. Datum of gage is 729.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Controlled by concrete dam. Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,500 cfs. Only annual peaks are shown for 1926 and after 1950.

Peak stages and discharges of Fox River at Algonquin, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	Oct. 3, 1915	2.9	2,440	1937	Jan. 8, 1937	2.43	1,850
	Jan. 28, 1916	3.5	3,650		Feb. 21, 1937	2.52	1,990
	Feb. 27, 1916	2.40	1,610		Mar. 8, 1937	3.32	3,300
	Apr. 1, 1916	4.50	5,850		Apr. 8, 1937	2.46	1,900
	June 12-15,1916	2.8	2,260		May 1, 1937	3.05	2,890
					June 26, 1937	2.75	2,360
1917	Mar. 28, 1917	2.80	2,260				
	May 5, 1917	2.35	1,540	1938	Jan. 25, 1938	2.48	1,930
					Feb. 10, 1938	4.15	5,160
1918	Mar. 6, 1918	4.4	5,750		Mar. 26, 1938	2.52	1,990
	Mar. 14, 1918	4.43	5,600		July 5, 1938	4.42	5,630
					Aug. 25, 1938	2.25	1,580
1919	Mar. 21, 1919	4.00	4,800		Sept.24, 1938	3.15	3,080
	May 5, 1919	3.0	2,910				
				1939	Feb. 20, 1939	2.29	1,640
1920	Nov. 15, 1919	2.30	1,650		Mar. 13, 1939	2.38	1,720
	Mar. 19, 1920	4.0	4,810		Mar. 20, 1939	2.37	1,760
	Mar. 30, 1920	4.16	5,050				
				1940	Sept. 2, 1940	2.86	2,540
1921	Mar. 18, 1921	2.20	1,510				
	May 1, 1921	4.15	4,950	1941	Mar. 26, 1941	2.90	2,620
					Apr. 20, 1941	2.49	2,110
1922	Dec. 24, 1921	2.60	2,120				
	Mar. 4, 1922	3.0	2,800	1942	Oct. 10, 1941	2.29	1,780
	Apr. 15, 1922	3.04	2,820		Oct. 24, 1941	2.36	1,900
					Nov. 6, 1941	2.50	2,130
1923	Mar. 14, 1923	2.30	1,800		Mar. 20, 1941	2.81	2,470
	Apr. 13, 1923	3.3	3,280		June 13, 1942	2.12	1,520
1924	Apr. 4, 1924	3.50	3,660	1943	Jan. 3, 1943	2.44	2,030
	July 2, 1924	2.50	1,960		Mar. 2, 1943	3.20	3,440
	Aug. 22, 1924	3.50	3,660		Mar. 20, 1943	3.75	4,640
					May 21, 1943	2.36	1,900
1925	Feb. 26, 1925	2.44	1,880				
				1944	Mar. 4, 1944	2.65	2,390
1926	Apr. 22, 1926	2.92	2,620		Mar. 18, 1944	3.46	3,970
					Apr. 27, 1944	2.65	2,390
1927	Oct. 7, 1926	2.7	2,280				
	Nov. 20, 1926	2.8	2,450	1945	May 17, 1945	2.58	2,300
	Nov. 30, 1926	2.7	2,280		June 3, 1945	2.37	1,910
	Feb. 16, 1927	3.01	2,720				
	Apr. 30, 1927	2.8	2,450	1946	Oct. 3, 1945	2.21	1,660
	May 14, 1927	2.50	1,960		Jan. 12, 1946	3.15	3,340
	June 5, 1927	2.60	2,120		Mar. 18, 1946	3.35	3,760
1928	Mar. 17, 1928	2.45	1,880	1947	Apr. 21, 1947	2.27	2,070
	Apr. 10, 1928	3.17	3,080		June 7, 1947	2.50	2,500
	July 7, 1928	3.1	2,980				
				1948	Mar. 7, 1948	2.41	2,320
1929	Nov.21-25,1928	2.9	2,620		Mar. 24, 1948	3.48	4,680
	Dec. 19, 1928	2.8	2,450		May 16, 1948	2.70	2,910
	Mar.16,21,1929	4.37	5,450				
	June18-24,1929	2.35	1,720	1949	Mar. 9, 1949	2.52	2,580
					Apr. 3, 1949	1.98	1,520
1930	Feb.27 to	2.69	2,260				
	Mar. 1, 1930			1950	Mar. 8, 1950	2.20	1,930
	Apr. 26, 1930	2.60	2,120		Mar. 11, 1950	2.35	2,230
	May 6, 1930	2.60	2,120		Apr. 5, 1950	2.75	3,090
					Apr. 29, 1950	2.87	3,310
1931	Mar. 30, 1931	1.67	755		June 1950	1.97	1,500
					July 26, 1950	2.03	1,610
1932	Nov. 28, 1931	2.20	1,500				
	Jan. 16, 1932	2.25	1,580	1951	Mar. 8, 1951	-	3,900
	Apr. 2, 1932	2.47	1,880		Mar. 9, 1951	3.15	-
				1952	Mar. 24, 1952	-	4,400
1933	Apr. 12, 1933	2.9	2,620		Mar. 25, 1952	3.29	-
	May 14, 1933	3.37	3,470	1953	Mar. 2, 1953	2.22	1,870
				1954	Apr. 28, 1954	2.46	2,400
1934	Nov. 5, 1933	1.92	1,090	1955	June 15, 1955	2.49	2,470
1935	Mar. 13, 1935	3.07	2,840	1956	May 15, 1956	2.17	1,770
	July 3, 1935	2.22	1,530	1957	May 20, 1957	2.26	1,960
				1958	Mar. 9, 1958	1.86	1,260
1936	Mar. 16, 1936	3.02	2,750	1959	Apr. 3, 1959	2.83	3,340
	Sept.17, 1936	2.24	1,560	1960	Apr. 6, 1960	4.01	6,610
1937	Jan. 2, 1937	2.34	1,710	1961	Mar. 19, 1961	2.53	2,760

5505. Poplar Creek at Elgin, Ill.

Location.--Lat 42°01'35", long 88°15'20", in SE¼NW¼ sec.19, T.41 N., R.9 E., on right bank just upstream from bridge on U.S. Highway 20 in Elgin, 2 miles upstream from mouth.

Drainage area.--35.8 sq mi.

Gage.--Recording. Datum of gage is 716.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 140 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Nov. 13, 1951	3.28	214	1957	May 19, 1957	3.29	224
	Jan. 17, 1952	3.59	275		July 13, 1957	3.72	286
	Mar. 11, 1952	3.82	303		July 22, 1957	3.08	191
	Mar. 19, 1952	3.52	235				
	Apr. 13, 1952	3.60	268	1958	Feb. 28, 1958	3.16	210
					July 3, 1958	3.00	189
1953	June 10, 1953	3.65	282				
				1959	Feb. 23, 1959	3.96	258
1954	Mar. 25, 1954	3.46	252		Mar. 2, 1959	3.13	209
	Apr. 25, 1954	3.83	310		Mar. 6, 1959	3.38	244
	June 3, 1954	3.22	217		Mar. 15, 1959	2.89	173
	July 7, 1954	2.96	182				
				1960	Dec. 27, 1959	3.08	202
1955	Oct. 10, 1954	3.72	291		Jan. 12, 1960	3.49	266
	Jan. 5, 1955	3.22	217		Mar. 30, 1960	3.88	340
	Feb. 20, 1955	-	-		Apr. 17, 1960	3.52	288
	Feb. 27, 1955	3.13	203				
	June 11, 1955	3.26	217	1961	Apr. 25, 1961	2.38	156
					June 10, 1961	2.61	178
1956	Apr. 29, 1956	2.64	141		Sept.14, 1961	2.44	167
	May 10, 1956	2.89	175		Sept.25, 1961	3.12	327

5525. Fox River at Dayton, Ill.
(Published as "at Wedron," prior to April 1925)

Location.--Lat 41°23'14", long 88°47'21", in SE¼ sec.29, T.34 N., R.4 E., on right bank in tailwater of plant of North Counties Hydro-Electric Co. in Dayton, 5.6 miles upstream from mouth.

Drainage area.--2,570 sq mi.

Gage.--Nonrecording prior to Apr. 11, 1951; recording thereafter. Prior to Apr. 13, 1925, at Wedron, 4 miles upstream, at datum 496.80 ft above mean sea level, Memphis datum. Datum of present gage is 462.30 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 15,000 cfs and extended above on basis of flow over dam at 47,100 cfs.

Remarks.--Gage heights listed for the years 1915 to 1924 are from gage at Wedron. Gage-height record at Dayton furnished by North Counties Hydro-Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Power Commission project. Construction of dam at Dayton believed to have only negligible effect on flood-frequency characteristics. Base for partial-duration series, 5,000 cfs. Only annual peaks are shown prior to 1951.

Peak stages and discharges of Fox River at Dayton, Ill.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1915	June 13, 1915	10.0	-	6,450
1916	Jan. 22, 1916	17.7	a3.6	-
	Mar. 27, 1916	-	-	17,800
1917	Mar. 14, 1917	11.6	-	10,200
1918	Feb. 15, 1918	13.4	-	15,500
1919	Mar. 18, 1919	13.55	-	16,000
1920	Mar. 26, 1920	14.2	-	17,900
1921	Apr. 27, 1921	10.3	-	6,740
1922	Dec. 18, 1921	-	-	8,680
	Jan. 4, 1922	14.8	a3.7	-
1923	Mar. 23, 1923	10.7	-	7,720
1924	Aug. 9, 1924	11.6	-	10,100
1926	Sept.23, 1926	15.8	-	18,000
1927	Feb. 5, 1927	14.4	-	14,000
1928	July 4, 1928	11.5	-	7,500
1929	Mar. 31, 1929	15.5	-	17,100
1930	Apr. 21, 1930	10.4	-	5,700
1931	June 24, 1931	9.3	-	4,050
1932	Nov. 22, 1931	11.5	-	7,700
1933	Dec. 24, 1932	12.7	a.7	-
	May 13, 1933	-	-	8,620
1934	Nov. 7, 1933	7.5	-	1,780
1935	Mar. 11, 1935	11.7	-	7,860
1936	Feb. 24, 1936	13.1	a.7	-
	Feb. 26, 1936	-	-	9,180
1937	Feb. 21, 1937	-	-	20,100
	Feb. 25, 1937	17.1	a.6	-
1938	Jan. 25, 1938	17.5	-	23,100
1939	Mar. 13, 1939	12.1	-	8,590
1940	Mar. 3, 1940	13.8	-	12,400
1941	Mar. 11, 1941	10.1	-	5,270
1942	Mar. 17, 1942	11.87	-	8,110
1943	Mar. 8, 1943	31.70	a18.6	-
	May 21, 1943	-	-	10,600
1944	Mar. 15, 1944	15.83	-	18,000
1945	June 28, 1945	13.32	-	10,900
1946	Jan. 6, 1946	18.45	a5.3	-
	Jan. 10, 1946	-	-	10,500
1947	Apr. 6, 1947	15.2	-	16,200
1948	Mar. 19, 1948	19.65	-	29,000
1949	Feb. 14, 1949	14.10	-	12,700
1950	Apr. 25, 1950	16.76	-	20,600
1951	Feb. 20, 1951	16.48	-	9,500
	Feb. 26, 1951	10.75	-	6,450
	Apr. 12, 1951	11.41	-	7,460
	May 11, 1951	14.26	-	13,200
	July 9, 1951	14.55	-	14,000
	Aug. 7, 1951	10.24	-	5,490
1951	Sept.27, 1951	10.44	-	5,810
1952	Nov. 14, 1951	12.63	-	9,500
	Jan. 20, 1952	12.52	-	6,500
	Jan. 25, 1952	19.38	-	5,500
	Jan. 30, 1952	32.04	-	-
	Mar. 11, 1952	12.16	-	8,820
	Mar. 19, 1952	12.68	-	9,700
	Apr. 14, 1952	12.98	-	10,300
	June 14, 1952	13.10	-	10,500
1953	June 11, 1953	10.61	-	6,130
1954	Mar. 25, 1954	12.50	-	10,200
	June 1, 1954	10.25	-	5,790
	June 4, 1954	12.92	-	11,000
	July 7, 1954	11.28	-	7,850
	Aug. 19, 1954	10.40	-	6,150
1955	Oct. 11, 1954	24.63	-	47,100
	Jan. 6, 1955	11.59	-	8,420
	Feb. 21, 1955	15.18	-	16,300
	Feb. 27, 1955	12.12	-	9,400
	Apr. 20, 1955	11.11	-	7,470
	June 5, 1955	10.25	-	5,790
1956	Feb. 25, 1956	10.05	-	5,450
	Feb. 25, 1956	12.42	-	-
	May 7, 1956	9.87	-	5,280
	May 12, 1956	10.15	-	5,790
1957	July 13, 1957	10.02	-	5,450
1958	Feb. 28, 1958	13.33	-	-
	Feb. 28, 1958	10.05	-	5,450
	June 8, 1958	9.88	-	5,280
	June 14, 1958	12.48	-	10,200
	July 3, 1958	11.39	-	8,040
	July 14, 1958	9.82	-	5,110
1959	Feb. 14, 1959	10.74	-	6,710
	Feb. 24, 1959	12.10	-	9,400
	Mar. 6, 1959	11.64	-	8,420
	Mar. 16, 1959	10.30	-	5,970
	Mar. 27, 1959	10.52	-	6,330
	Apr. 28, 1959	13.03	-	11,200
1960	Dec. 28, 1959	10.29	-	5,970
	Jan. 15, 1960	-	-	9,500
	Jan. 25, 1960	36.47	-	-
	Mar. 31, 1960	14.79	-	15,300
	Apr. 18, 1960	14.83	-	15,300
	May 17, 1960	10.56	-	6,520
1961	Sept.26, 1961	11.36	-	8,040

a Greater than figure shown.

5540. North Fork Vermilion River near Charlotte, Ill.

Location.--Lat 40°50'08", long 88°17'58", in SE¼SE¼ sec.4, T.27 N., R.8 E., on right bank at downstream side of Foreman highway bridge, half a mile downstream from Illinois Central Railroad bridge, 1¼ miles northwest of Charlotte, 5½ miles north of Chatsworth, and 15 miles upstream from confluence with South Fork.

Drainage area.--184 sq mi.

Gage.--Recording. Prior to Oct. 1, 1954, at datum 2.00 ft higher. Datum of gage is 638.00 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements. Greatly affected by rate of change of stage.

Remarks.--Base for partial-duration series, 800 cfs. Only annual peaks are shown prior to 1951.

Peak stages and discharges of North Fork Vermilion River near Charlotte, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 18, 1943	-	2,400	1956	July 16, 1956	5.96	1,170
	Aug. 4, 1943	13.78	-				
1944	Apr. 23, 1944	13.75	2,370	1957	Apr. 4, 1957	4.90	840
1945	May 15, 1945	-	2,080		Apr. 9, 1957	5.35	990
	May 17, 1945	12.73	-		Apr. 18, 1957	11.12	2,880
					Apr. 26, 1957	14.70	4,350
1946	June 20, 1946	12.19	1,680		May 13, 1957	5.86	955
1947	Apr. 30, 1947	12.21	1,440		July 13, 1957	7.85	1,530
1948	Mar. 22, 1948	11.90	1,160				
1949	Jan. 28, 1949	11.61	1,040	1958	Dec. 20, 1957	5.81	955
1950	Apr. 25, 1950	13.56	1,910		June 10, 1958	13.28	3,650
					June 13, 1958	14.26	4,150
1951	Feb. 21, 1951	13.77	2,050		July 15, 1958	14.12	3,700
	June 28, 1951	11.90	810				
	July 10, 1951	15.01	2,180	1959	Feb. 10, 1959	13.18	1,450
					Feb. 13, 1959	-	1,150
1952	Nov. 14, 1951	12.08	858		Feb. 23, 1959	5.43	880
	Apr. 13, 1952	11.86	810		Mar. 6, 1959	6.44	1,130
	Apr. 24, 1952	12.68	1,050		Apr. 27, 1959	11.58	2,940
1953	Mar. 15, 1953	12.50	978	1960	Dec. 28, 1959	5.66	955
					Feb. 6, 1960	5.37	880
1954	May 29, 1954	12.12	680		Feb. 10, 1960	9.64	2,160
					Mar. 28, 1960	8.50	1,840
1955	Jan. 6, 1955	12.73	1,150				
				1961	Apr. 22, 1961	5.57	955
1956	Apr. 29, 1956	10.14	2,540		Sept. 25, 1961	6.59	1,060
	June 23, 1956	9.72	2,400				

5545. Vermilion River at Pontiac, Ill.

Location.--Lat 40°52'40", long 88°38'10", in SW¼ sec.22, T.28 N., R.5 E., near center of span on downstream side of Vermilion Street Bridge in Pontiac, 0.1 mile upstream from Gulf, Mobile, and Ohio Railroad and State Highway 116, three-quarters of a mile upstream from Turtle Creek, and 1½ miles downstream from Wabash Railroad.

Drainage area.--568 sq mi.

Gage.--Nonrecording. Datum of gage is 619.45 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The flood of May 1933 is maximum known for period 1911-42.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	May 1933	17.0	all,000	1946	June 21, 1946	9.15	3,260
					July 12, 1946	8.4	2,820
1943	Nov. 12, 1942	7.2	2,280				
	Nov. 25, 1942	7.2	2,280	1947	May 1, 1947	10.38	3,950
	Dec. 29, 1942	10.4	4,020		June 9, 1947	7.8	2,540
	Feb. 8, 1943	6.7	2,020				
	Mar. 18, 1943	6.9	2,130	1948	Feb. 29, 1948	7.6	2,460
	Apr. 28, 1943	8.8	3,020		Mar. 23, 1948	7.75	2,540
	May 12, 1943	13.2	6,010				
	May 19, 1943	14.81	7,300	1949	Jan. 29, 1949	6.05	1,600
	Aug. 5, 1943	15.90	8,170				
				1950	Dec. 23, 1949	8.9	3,180
1944	Mar. 17, 1944	7.2	2,280		Jan. 15, 1950	9.1	3,310
	Mar. 30, 1944	6.9	2,130		Jan. 27, 1950	11.1	4,740
	Apr. 13, 1944	13.8	6,490		Feb. 15, 1950	10.1	4,000
	Apr. 24, 1944	15.45	7,770		Apr. 5, 1950	8.3	2,790
					Apr. 26, 1950	12.92	6,120
1945	Apr. 4, 1945	6.7	2,020				
	May 9, 1945	7.0	2,180	1951	Feb. 22, 1951	12.22	5,570
	May 18, 1945	9.65	3,500		Apr. 14, 1951	7.30	2,200
					June 30, 1951	7.57	2,370
1946	Jan. 7, 1946	8.3	2,770		July 10, 1951	17.90	13,600

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Peak stages and discharges of Vermilion River at Pontiac, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Nov. 15, 1951	6.90	2,110	1957	May 14, 1957	6.91	2,110
	Apr. 14, 1952	7.60	2,530		July 14, 1957	9.06	3,440
	Apr. 25, 1952	9.00	3,370		July 23, 1957	9.04	3,370
	June 5, 1952	6.92	2,110				
	June 24, 1952	7.96	2,770	1958	Dec. 21, 1957	7.04	2,170
					June 11, 1958	12.62	5,890
1953	Mar. 17, 1953	7.06	2,230		June 14, 1958	14.87	7,710
	July 8, 1953	7.47	2,470		July 15, 1958	15.84	8,670
1954	Apr. 13, 1954	6.87	2,110	1959	Feb. 11, 1959	13.00	-
					Feb. 13, 1959	-	a3,800
1955	Jan. 7, 1955	8.07	2,770		Mar. 6, 1959	6.80	2,060
	Feb. 21, 1955	7.38	2,410		Apr. 28, 1959	12.54	5,820
	Apr. 21, 1955	7.43	2,410				
				1960	Dec. 28, 1959	6.78	2,060
1956	Apr. 30, 1956	9.88	4,000		Feb. 11, 1960	10.40	4,350
	June 23, 1956	8.70	3,190		Mar. 30, 1960	11.10	4,840
					June 14, 1960	7.33	2,350
1957	Apr. 19, 1957	11.20	4,910		June 17, 1960	7.18	2,290
	Apr. 23, 1957	8.62	3,130				
	Apr. 28, 1957	17.20	12,000	1961	Sept.26, 1961	9.30	3,580

5546. Mud Creek tributary near Odell, Ill.

Location.--Lat 41°00'50", long 88°38'36", in NW¼ sec.3, T.29 N., R.5 E., at culvert on county road, 6 miles west and half a mile north of Odell.

Drainage area.--0.137 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Not defined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July 8, 1956	13.78	-	1960	Feb. 10, 1960	11.98	-
1957	July 13, 1957	13.57	-				
1958	July 14, 1958	14.25	-	1961	Sept.26, 1961	11.54	-
1959	Apr. 27, 1959	12.99	-				

5550. Vermilion River at Streator, Ill.

Location.--Lat 41°05'35", long 88°50'05", in SE¼ sec.2, T.30 N., R.3 E., at South Bloomington Street Bridge in Streator.

Drainage area.--1,080 sq mi, approximately.

Gage.--Nonrecording. Prior to September 1925, at old bridge 300 ft upstream at datum 0.7 ft higher. Datum of gage is 555.61 ft above mean sea level, datum of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs and extended above.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges of Vermilion River at Streator, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	Feb. 5, 1915	9.7	4,010	1926	Apr. 9, 1926	12.2	5,700
	Aug. 1, 1915	9.0	3,450		Apr. 24, 1926	9.2	3,120
	Aug. 3, 1915	18.7	12,300		Sept. 5, 1926	13.6	6,870
	Sept.19, 1915	9.0	3,450		Sept.15, 1926	11.9	5,340
					Sept.25, 1926	16.4	9,700
1916	Jan. 2, 1916	9.2	3,610				
	Jan. 21, 1916	23.3	16,900	1927	Oct. 2, 1926	19.8	12,700
	Jan. 31, 1916	11.5	5,550		Nov. 15, 1926	17.3	10,100
	May 16, 1916	9.6	3,930		Nov. 26, 1926	10.8	4,350
	June 23, 1916	9.1	3,530		Feb. 5, 1927	19.6	12,400
					Mar. 21, 1927	11.7	4,990
1917	Mar. 13, 1917	11.4	5,460		Apr. 4, 1927	9.6	3,400
	June 6, 1917	12.2	6,110		Apr. 19, 1927	18.8	11,800
					Apr. 29, 1927	9.6	3,400
1918	Feb. 15, 1918	11.4	5,400		May 19, 1927	17.8	10,600
					May 23, 1927	18.1	11,000
1919	Mar. 17, 1919	13.1	6,920		June 2, 1927	10.0	3,710
	May 5, 1919	9.4	3,800		June 4, 1927	16.7	9,650
1920	Mar. 12, 1920	14.0	7,820	1928	Oct. 1, 1927	9.4	3,260
	Apr. 20, 1920	23.5	17,100		Nov. 30, 1927	10.0	3,600
					Dec. 14, 1927	13.0	6,200
1922	Apr. 11, 1922	19.1	12,700		Jan. 12, 1928	9.8	3,550
1923	May 18, 1923	7.8	2,570	1929	Feb. 27, 1929	13.2	6,280
					Mar. 5, 1929	9.7	3,390
1924	Mar. 31, 1924	9.2	3,610		Mar. 16, 1929	14.5	7,550
	June 25, 1924	10.5	4,680		Apr. 11, 1929	9.2	3,120
	June 28, 1924	12.6	6,410				
	Aug. 9, 1924	10.7	4,840	1930	Feb. 24, 1930	10.7	4,270
	Aug. 22, 1924	8.6	3,150		Apr. 19, 1930	12.0	5,310
1925	Feb. 9, 1925	8.1	2,710	1931	June 7, 1931	6.9	1,690

5554. Vermilion River tributary at Lowell, Ill.

Location.--Lat 41°14'30", long 89°00'35", in SE¼ sec.17, T.32 N., R.2 E., at culvert on county road, 0.6 mile south of Lowell.

Drainage area.--0.126 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 28, 1956	11.68	23	1960	Apr. 17, 1960	11.43	17.1
1957	June 12, 1957	11.28	14				
1958	July 14, 1958	16.22	177	1961	June 7, 1961	11.50	18
1959	Feb. 10, 1959	10.92	13				

5555. Vermilion River at Lowell, Ill.

Location.--Lat 41°15'18", long 89°00'44", in NE¼SE¼ sec.8, T.32 N., R.2 E., near center of span on downstream side of bridge on State Highway 178, 0.2 mile north of Lowell, and 10 miles upstream from mouth.

Drainage area.--1,230 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 500.61 ft above mean sea level, datum of 1929. Prior to Aug. 20, 1952, at site 500 ft downstream at same datum.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Maximum stage known, about 16 ft during ice jam, date unknown.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges of Vermilion River at Lowell, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)
1931	June 7, 1931	5.38	3,910
1932	Nov. 23, 1931	6.97	7,510
	May 8, 1932	6.3	5,510
	Aug. 2, 1932	6.2	5,290
1933	Dec. 24, 1932	6.4	5,740
	Feb. 23, 1933	7.1	7,490
	Apr. 1, 1933	9.1	14,000
	May 12, 1933	10.76	22,200
1934	Oct. 23, 1933	5.06	3,370
1935	Jan. 9, 1935	6.9	6,960
	Feb. 25, 1935	6.8	6,700
	Mar. 25, 1935	6.5	5,970
	May 3, 1935	8.3	11,000
	May 9, 1935	8.66	13,000
	July 2, 1935	6.4	5,740
1936	Feb. 25, 1936	8.58	12,600
	Feb. 27, 1936	8.2	10,700
1937	Jan. 9, 1937	6.2	5,290
	Feb. 21, 1937	6.5	5,970
	May 4, 1937	6.3	5,510
	June 26, 1937	6.72	6,480
1938	Apr. 7, 1938	6.4	5,740
	Apr. 10, 1938	7.44	8,490
	Sept.14, 1938	6.1	5,070
1939	Feb. 20, 1939	6.2	5,290
	Mar. 12, 1939	7.65	9,140
	Apr. 18, 1939	6.8	6,700
1940	Mar. 3, 1940	5.07	3,170
1941	June 14, 1941	4.95	2,770
1942	Oct. 7, 1941	7.5	8,610
	Feb. 7, 1942	10.48	20,700
	Mar. 17, 1942	7.8	9,500
	Apr. 7, 1942	6.3	5,510
	Aug. 27, 1942	7.2	7,760
1943	Nov. 23, 1942	6.6	6,210
	Dec. 28, 1942	8.8	12,800
	Jan. 2, 1943	6.1	5,070
	Feb. 6, 1943	7.6	8,900
	Mar. 16, 1943	6.3	5,510
	Apr. 27, 1943	9.6	16,000
	May 12, 1943	9.75	17,300
	May 21, 1943	10.65	21,400
	Aug. 5, 1943	8.4	11,300
1944	Mar. 15, 1944	7.7	9,200
	Mar. 29, 1944	6.2	5,290
	Apr. 12, 1944	9.3	14,800
	Apr. 24, 1944	10.91	22,300
	May 24, 1944	6.3	5,510
1945	May 17, 1945	7.78	9,500
1946	Jan. 6, 1946	8.3	11,000
	Jan. 9, 1946	6.9	6,960
	June 13, 1946	7.6	8,900
1946	June 20, 1946	8.50	11,600
	July 11, 1946	7.0	7,220
1947	Apr. 5, 1947	9.40	15,600
	Apr. 24, 1947	6.1	5,070
	Apr. 30, 1947	7.4	8,320
	June 2, 1947	6.7	6,450
	June 8, 1947	7.6	8,900
1948	Feb. 28, 1948	7.5	8,320
	Mar. 16, 1948	6.7	6,210
	Mar. 19, 1948	8.22	10,700
1949	Feb. 13, 1949	7.3	8,040
	July 29, 1949	7.50	8,610
1950	Dec. 22, 1949	6.8	6,700
	Jan. 14, 1950	7.7	9,200
	Jan. 26, 1950	7.9	9,800
	Feb. 14, 1950	6.6	6,210
	Mar. 6, 1950	6.6	6,210
	Apr. 4, 1950	7.0	7,220
	Apr. 25, 1950	11.10	23,300
	June 19, 1950	6.3	5,510
	July 18, 1950	7.4	8,320
1951	Jan. 3, 1951	6.12	5,070
	Feb. 12, 1951	6.42	5,740
	Feb. 19, 1951	9.34	14,700
	Apr. 12, 1951	7.08	7,490
	July 10, 1951	12.70	27,700
	Aug. 30, 1951	6.82	6,700
	Sept.26, 1951	6.15	5,070
1952	Nov. 14, 1951	7.32	7,760
	Mar. 11, 1952	6.20	5,070
	Apr. 13, 1952	8.61	12,100
	June 14, 1952	6.75	6,700
	June 22, 1952	7.01	7,220
1953	July 6, 1953	8.20	5,540
1954	Mar. 25, 1954	9.40	9,000
	June 3, 1954	8.68	6,870
1955	Apr. 21, 1955	8.92	7,450
1956	Apr. 30, 1956	7.60	4,040
1957	Apr. 19, 1957	8.32	5,790
	Apr. 30, 1957	11.05	15,100
	May 19, 1957	7.98	5,050
	June 28, 1957	9.45	9,000
1958	June 14, 1958	9.70	10,000
	July 15, 1958	15.30	33,500
1959	Feb. 11, 1959	9.34	8,680
	Feb. 14, 1959	9.60	9,670
	Apr. 28, 1959	11.10	15,500
1960	Feb. 11, 1960	8.82	7,120
	Mar. 30, 1960	12.10	19,500
1961	Sept.15, 1961	9.98	11,100
	Sept.26, 1961	10.35	12,600

5565. Bureau Creek at Princeton, Ill.

Location.--Lat 41°21'55", long 89°29'55", in SW¼SE¼ sec.18, T.16 N., R.9 E., on right bank 500 ft downstream from bridge on U.S. Highways 6 and 34, 0.6 mile downstream from Eperson Run, and 1½ miles west of Princeton.

Drainage area.--186 sq mi.

Gage.--Nonrecording prior to July 18, 1940; recording thereafter. Datum of gage is 555.24 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1937	Feb. 21, 1937	14.53	-	8,300	1949	Jan. 5, 1949	10.3	1.4	2,400
	Apr. 5, 1937	9.5	-	1,820		Feb. 13, 1949	a14.0	b3.1	-
	Apr. 21, 1937	10.7	-	2,430		Feb. 14, 1949	10.9	-	4,190
						Feb. 18, 1949	11.24	-	4,540
1938	Jan. 24, 1938	15.88	-	11,800		Feb. 24, 1949	8.9	-	2,400
	Jan. 30, 1938	11.8	2.0	2,000					
	Feb. 6, 1938	9.9	-	2,120	1950	Mar. 5, 1950	9.3	-	2,800
	June 1, 1938	10.0	-	2,190		Apr. 11, 1950	7.9	-	2,000
	June 24, 1938	9.9	-	2,120		Apr. 25, 1950	12.09	-	5,730
	Sept. 8, 1938	10.8	-	2,800		June 13, 1950	8.7	-	2,440
1939	Feb. 10, 1939	12.6	1.1	3,500	1951	Feb. 19, 1951	11.78		4,400
	Mar. 12, 1939	13.3	-	5,980		May 11, 1951	10.47	-	3,970
	Aug. 8, 1939	13.80	-	6,840		July 9, 1951	12.17	-	5,870
						July 28, 1951	9.03	-	2,780
1940	Mar. 3, 1940	11.66	-	2,910		Aug. 7, 1951	9.30	-	2,990
1941	Feb. 14, 1941	11.8	-	3,000	1952	Jan. 19, 1952	7.61	-	1,880
	July 23, 1941	12.77	-	4,510		Mar. 11, 1952	8.16		2,590
						June 12, 1952	6.98	-	1,870
1942	Oct. 3, 1941	11.63	-	2,830		July 3, 1952	7.06	-	1,930
	Oct. 6, 1941	9.5	-	1,850					
	Feb. 6, 1942	10.5	-	2,300	1953	July 6, 1953	7.37	-	2,110
	Mar. 16, 1942	10.9	-	2,480					
	June 12, 1942	11.4	-	2,720	1954	June 1, 1954	8.12	-	2,180
1943	Mar. 16, 1943	11.4	-	3,480	1955	Oct. 11, 1954	12.16	-	5,410
	May 20, 1943	11.96	-	4,120		Jan. 6, 1955	7.54	-	1,940
						Feb. 20, 1955	9.80	-	3,520
1944	Mar. 15, 1944	13.13	-	5,660		Feb. 27, 1955	8.80	-	2,800
						June 11, 1955	7.91	-	2,200
1945	June 28, 1945	14.12	-	8,370					
					1956	July 20, 1956	7.83	-	2,200
1946	Jan. 6, 1946	12.88	-	6,430					
	Jan. 9, 1946	10.4	-	3,430	1957	Apr. 27, 1957	6.10	-	1,350
	Mar. 5, 1946	10.5	-	3,510					
	June 12, 1946	10.0	-	3,150	1958	Feb. 25, 1958	10.58	-	-
	July 9, 1946	8.0	-	1,860		June 13, 1958	9.61	-	3,220
						July 5, 1958	7.81		2,000
1947	Apr. 5, 1947	11.07	-	4,420		July 14, 1958	8.76	-	2,640
	Apr. 20, 1947	8.6	-	2,220					
	June 8, 1947	9.6	-	2,900	1959	Feb. 23, 1959	8.95	-	2,300
1948	Feb. 28, 1948	10.7	-	3,970	1960	Jan. 12, 1960	10.13	-	3,700
	Mar. 15, 1948	9.2	-	2,590		Mar. 31, 1960	12.32	-	6,120
	Mar. 19, 1948	11.30	-	4,540		Apr. 17, 1960	9.52	-	3,200
1949	Dec. 29, 1948	9.1	-	2,520	1961	Sept.14, 1961	4.88	-	515

a Ice jam.
b Greater than figure shown.

5570. West Bureau Creek at Wyanet, Ill.

Location.--Lat 41°21'54", long 89°34'08", at northeast corner of sec.21, T.16 N., R.8 E., at bridge on U.S. Highways 6 and 34, half a mile east of Wyanet.

Drainage area.--83.3 sq mi.

Gage.--Nonrecording prior to Feb. 20, 1939; recording thereafter. Datum of gage is 573.14 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 3,900 cfs and extended above.

Historical data.--The peak of Oct. 11, 1931, is maximum stage known, from information by Illinois Division of Highways.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Oct. 11, 1931	a14.5	-	1948	June 6, 1948	7.0	1,520
1937	Feb. 21, 1937	9.15	2,990	1949	Feb. 13, 1949	10.15	4,090
					Feb. 18, 1949	10.1	4,090
1938	Jan. 24, 1938	12.90	5,910				
	Jan. 30, 1938	7.5	1,790	1950	Feb. 28, 1950	8.3	2,420
					Mar. 4, 1950	7.3	1,790
1939	Feb. 9, 1939	7.1	1,570		Apr. 24, 1950	9.00	2,870
	Mar. 12, 1939	10.52	3,920		June 16, 1950	7.3	1,740
	July 7, 1939	9.2	3,050		June 18, 1950	7.8	2,010
	Aug. 8, 1939	9.8	3,550				
				1951	Feb. 18, 1951	-	b2,500
1940	Mar. 2, 1940	7.74	2,060		May 10, 1951	9.01	2,870
					June 1, 1951	7.34	1,740
1941	July 23, 1941	9.23	2,940		June 21, 1951	8.93	2,780
					July 8, 1951	12.48	6,620
1942	Oct. 3, 1941	10.00	3,560		Aug. 6, 1951	9.28	3,350
	Feb. 6, 1942	7.8	1,930		Aug. 29, 1951	9.88	3,760
	Mar. 16, 1942	8.4	2,380				
	June 12, 1942	8.1	2,170	1952	Mar. 10, 1952	7.19	1,690
	Sept. 9, 1942	7.7	1,930		June 12, 1952	9.28	3,050
					June 13, 1952	9.65	3,450
1943	Feb. 6, 1943	7.1	1,570		July 2, 1952	7.80	2,010
	Apr. 27, 1943	7.8	1,970				
	Apr. 29, 1943	7.0	1,520	1953	July 6, 1953	6.44	1,340
	May 20, 1943	7.90	2,050				
	Aug. 3, 1943	7.7	1,910	1954	June 1, 1954	7.14	1,640
1944	Mar. 15, 1944	10.11	3,980	1955	Oct. 10, 1954	9.05	2,870
	June 14, 1944	9.0	2,860		Feb. 27, 1955	8.50	2,450
					June 11, 1955	7.62	1,890
1945	June 28, 1945	8.56	2,510				
				1956	Apr. 27, 1956	6.30	1,190
1946	Jan. 5, 1946	11.74	5,740				
	Jan. 9, 1946	9.2	3,050	1957	Feb. 9, 1957	6.64	1,340
	Mar. 5, 1946	10.9	4,860				
	June 13, 1946	10.6	4,530	1958	June 13, 1958	7.15	1,670
1947	Apr. 5, 1947	9.00	2,970	1959	Feb. 23, 1959	7.77	1,430
	June 1, 1947	7.0	1,620		Feb. 23, 1959	8.45	-
	June 7, 1947	8.6	2,650				
	Aug. 29, 1947	7.7	2,030	1960	Jan. 12, 1960	8.32	1,780
					Mar. 29, 1960	9.81	2,920
1948	Feb. 27, 1948	9.6	3,460				
	Mar. 14, 1948	8.3	2,420	1961	Aug. 4, 1961	7.94	1,450
	Mar. 19, 1948	10.44	4,420				

a From information by Illinois Division of Highways.
b About.

5571. Bureau Creek tributary near Wyanet, Ill.

Location.--Lat 41°18'40", long 89°35'20", in SE¼ sec.5, T.15 N., R.8 E., at culvert on county road, 3.6 miles south of Wyanet.

Drainage area.--0.377 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 24, 1956	20.05	59	1960	Aug. 18, 1960	20.30	68
1957	July 22, 1957	19.95	56				
1958	July 3, 1958	21.94	121	1961	Aug. 4, 1961	a22.86	80
1959	Aug. 3, 1959	19.23	36				

a Backwater from debris.

5575. East Bureau Creek near Bureau, Ill.

Location.--Lat 41°20'06", long 89°22'53", in SW¼SE¼ sec.30, T.16 N., R.10 E., at county road bridge, half a mile downstream from Brush Creek, 2½ miles upstream from mouth, and 3½ miles north of Bureau.

Drainage area.--101 sq mi.

Gage.--Nonrecording prior to Apr. 10, 1941; recording thereafter. Prior to Oct. 1, 1939, at datum 30.00 ft lower. Gage heights given herein adjusted to present datum. Datum of gage is 484.45 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 2,300 cfs and extended above. Subject to frequent shifts.

Remarks.--Base for partial-duration series, 1,100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Feb. 21, 1937	15.07	3,860	1946	Jan. 5, 1946	14.0	3,120
					Jan. 9, 1946	12.0	2,030
1938	Jan. 24, 1938	17.39	6,200		Mar. 5, 1946	11.2	1,630
	Jan. 30, 1938	11.6	1,180		June 12, 1946	14.11	3,180
	July 25, 1938	16.5	5,550		June 17, 1946	12.4	2,240
	July 31, 1938	14.8	3,600		June 19, 1946	13.2	2,680
					July 9, 1946	10.7	1,380
1939	Feb. 10, 1939	11.4	1,100				
	Mar. 12, 1939	15.00	3,780	1947	Apr. 5, 1947	14.63	3,420
	Aug. 8, 1939	12.2	1,460		Apr. 20, 1947	10.20	1,180
1940	Mar. 3, 1940	11.09	1,000	1948	Feb. 16, 1948	10.9	1,480
					Feb. 28, 1948	11.0	1,480
1941	May 31, 1941	13.6	2,440		Mar. 14, 1948	12.5	2,180
	July 23, 1941	14.45	3,360		Mar. 19, 1948	15.10	3,720
1942	Oct. 6, 1941	13.3	2,740	1949	Jan. 4, 1949	11.0	1,580
	Feb. 6, 1942	11.9	1,980		Jan. 27, 1949	10.35	1,180
	Mar. 16, 1942	11.1	1,580		Feb. 13, 1949	14.81	3,480
	July 13, 1942	13.84	3,010		July 21, 1949	12.3	2,030
	Aug. 2, 1942	10.9	1,480				
				1950	Jan. 13, 1950	11.2	2,110
1943	Feb. 6, 1943	11.2	1,630		Mar. 5, 1950	11.8	2,270
	Apr. 27, 1943	12.41	2,240		Apr. 11, 1950	10.35	1,380
	May 11, 1943	11.5	1,780		Apr. 25, 1950	14.73	5,010
	May 16, 1943	11.25	1,630		June 13, 1950	11.5	2,030
	May 20, 1943	12.17	2,130		June 16, 1950	10.85	1,570
					June 18, 1950	10.40	1,280
1944	Mar. 12, 1944	13.2	2,680				
	June 18, 1944	13.22	2,680	1951	Jan. 2, 1951	10.56	1,350
					Feb. 12, 1951	16.41	2,400
1945	Aug. 14, 1945	9.86	980		Feb. 18, 1951	11.80	2,510

Peak stages and discharges of East Bureau Creek near Bureau, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 10, 1951	11.50	2,270	1955	Feb. 20, 1955	10.57	1,530
	July 8, 1951	14.59	4,740		Feb. 27, 1955	10.78	1,720
	Aug. 6, 1951	10.77	1,180				
	Aug. 29, 1951	12.48	2,350	1956	Feb. 24, 1956	9.80	1,020
1952	Nov. 13, 1951	10.57	1,530	1957	Jan. 22, 1957	9.48	845
	Mar. 10, 1952	10.48	1,500		Jan. 22, 1957	9.73	-
	June 8, 1952	10.33	1,380				
	June 12, 1952	13.87	4,290	1958	July 2, 1958	10.50	1,180
	June 13, 1952	12.45	3,000		July 14, 1958	11.50	1,910
1953	July 5, 1953	12.85	3,340	1959	Feb. 23, 1959	11.25	950
	July 21, 1953	12.16	2,840				
				1960	Mar. 30, 1960	14.19	4,230
1954	Mar. 25, 1954	14.53	4,830		Apr. 17, 1960	10.60	1,230
	June 1, 1954	11.65	2,510				
	June 3, 1954	11.56	2,430	1961	Sept.13, 1961	9.30	415

5580. Bureau Creek at Bureau, Ill.

Location.--Lat 41°16'40", long 89°23'00", in SE¼SW¼ sec.18, T.15 N., R.10 E., at bridge on State Highway 29, 1 mile southwest of Bureau, and 2¼ miles downstream from East Bureau Creek.

Drainage area.--481 sq mi.

Gage.--Nonrecording. Crest-stage gage since October 1946. Datum of gage is 449.22 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs. Subject to frequent shifts, and occasionally affected by backwater from Illinois River.

Historical data.--Maximum stage known, about 13 ft sometime during spring of 1921.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1941	Feb. 13, 1941	9.99	-	3,420	1947	Apr. 24, 1947	10.50	-	3,280
						June 2, 1947	10.80	-	4,450
1942	Oct. 4, 1941	9.8	-	3,700		June 8, 1947	10.95	-	5,040
	Oct. 7, 1941	10.17	-	4,900		June 10, 1947	10.50	-	3,280
	Mar. 17, 1942	9.9	-	4,000					
					1948	Feb. 28, 1948	12.0	-	9,350
1943	Feb. 6, 1943	10.8	0.9	3,500		Mar. 14, 1948	11.5	-	7,180
	Feb. 10, 1943	10.4	.6	3,100		Mar. 20, 1948	12.38	-	12,300
	Mar. 16, 1943	9.90	-	3,490		July 22, 1948	11.0	-	5,000
	Apr. 27, 1943	10.2	-	4,540					
	May 11, 1943	10.00	-	3,840	1949	Jan. 5, 1949	11.2	-	5,700
	May 16, 1943	10.00	.05	a3,650		Feb. 13, 1949	12.75	1.5	6,300
	May 21, 1943	10.92	.7	a4,590		Feb. 19, 1949	12.3	.8	7,000
						July 21, 1949	11.1	-	5,350
1944	May 15, 1944	11.93	-	10,500					
	June 19, 1944	10.30	-	3,610	1950	Jan. 13, 1950	10.6	-	3,130
						Mar. 5, 1950	11.2	-	5,180
1945	May 18, 1945	10.55	-	3,150		Apr. 11, 1950	10.4	-	3,630
	June 29, 1945	12.0	-	8,730		Apr. 25, 1950	11.80	-	8,830
						June 14, 1950	11.3	-	6,680
1946	Jan. 6, 1946	11.83	-	7,960		June 18, 1950	10.4	-	3,630
	Jan. 9, 1946	11.00	-	4,880					
	Mar. 5, 1946	10.70	-	4,830	1951	Feb. 12, 1951	11.10	-	5,880
	June 13, 1946	10.60	-	4,350		Feb. 19, 1951	13.10	-	b14,000
	June 18, 1946	10.35	-	3,240		May 11, 1951	11.17	-	6,280
						June 22, 1951	10.11	-	3,090
1947	Mar. 14, 1947	10.45	-	3,100		July 9, 1951	13.00	-	18,000
	Apr. 5, 1947	11.96	-	9,150		Aug. 7, 1951	12.00	-	8,380
	Apr. 20, 1947	10.70	-	4,060		Aug. 29, 1951	11.01	-	4,480

a Stage-discharge relation affected by backwater from a downstream confluence.
b About.

5580.5. Coffee Creek tributary near Florid, Ill.

Location.--Lat 41°14'25", long 89°18'00", in SE¼ sec.14, T.32 N., R.2 W., at culvert on county road, 1.5 miles northwest of Florid.

Drainage area.--0.034 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Partly defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	-	(a)	-	1960	Mar. 30, 1960	13.80	-
1957	Apr. 3, 1957	13.42	21				
1958	July 14, 1958	16.53	122	1961	-	(a)	-
1959	Feb. 10, 1959	13.89	-				

a Peak stage did not reach bottom of gage.

5580.75. Coffee Creek tributary near Hennepin, Ill.

Location.--Lat 41°14'35", long 89°18'25", near center of sec.14, T.32 N., R.2 W., at culvert on county road, 1.9 miles southeast of Hennepin.

Drainage area.--0.222 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 24, 1956	18.54	48	1960	Apr. 17, 1960	18.87	61
1957	July 22, 1957	19.16	71.4				
1958	July 14, 1958	27.54	373	1961	Aug. 4, 1961	17.61	20.5
1959	Feb. 10, 1959	17.83	26				

5585. Crow Creek (West) near Henry, Ill.

Location.--Lat 41°09'00", long 89°25'00", in SW¼SE¼ sec.36, T.14 N., R.9 E., on right bank at downstream side of bridge No. 7, 2 miles upstream from Sugar Grove Creek, 2.4 miles west of State Highway 29, and 3.6 miles northwest of Henry.

Drainage area.--55.3 sq mi.

Gage.--Recording. Datum of gage is 520.61 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 760 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 13, 1950	6.4	1,300	1951	July 9, 1951	9.04	2,650
	Mar. 5, 1950	6.2	1,130		July 22, 1951	5.26	858
	Apr. 25, 1950	8.15	2,170		Aug. 6, 1951	5.27	858
					Aug. 29, 1951	5.92	1,090
1951	Jan. 2, 1951	5.83	1,050				
	Feb. 19, 1951	8.48	2,350	1952	June 14, 1952	6.14	1,640

Peak stages and discharges of Crow Creek (West) near Henry, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Aug. 21, 1952	4.91	1,180	1957	Jan. 22, 1957	2.70	-
					June 12, 1957	2.50	565
1953	June 13, 1953	5.85	1,520				
	July 5, 1953	4.58	1,080	1958	Feb. 24, 1958	5.71	-
					Feb. 25, 1958	3.22	830
1954	Mar. 25, 1954	7.99	2,400		June 10, 1958	5.01	1,570
	June 1, 1954	5.71	1,650				
	June 3, 1954	6.63	2,020	1959	Feb. 14, 1959	4.20	580
1955	Feb. 20, 1955	4.57	1,400	1960	Mar. 30, 1960	7.41	2,270
	Apr. 19, 1955	4.26	1,280		Apr. 17, 1960	6.81	2,040
	Apr. 24, 1955	3.12	790		May 26, 1960	8.34	2,680
	June 5, 1955	4.72	1,440				
	June 11, 1955	6.74	2,300	1961	Sept.14, 1961	3.65	680
1956	Feb. 24, 1956	4.61	1,400				

5590. Gimlet Creek at Sparland, Ill.

Location.--Lat 41°01'35", long 89°26'20", in SE¼NW¼ sec.14, T.12 N., R.9 E., on left bank 120 ft upstream from bridge on State Highway 29, and 200 ft upstream from Rock Island Railroad bridge in Sparland.

Drainage area.--5.42 sq mi.

Gage.--Nonrecording at site 120 ft downstream prior to June 21, 1946; recording thereafter. Datum of gage is 454.55 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and extended above on basis of slope-area measurement and logarithmic plotting.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Aug. 20, 1924	a10	-	1955	Oct. 10, 1954	4.23	670
					Feb. 19, 1955	4.16	630
1946	Jan. 4, 1946	4.00	1,210		May 28, 1955	4.58	790
1947	Apr. 29, 1947	4.82	1,690		June 5, 1955	5.83	1,090
					June 11, 1955	6.08	1,220
1950	Apr. 24, 1950	5.1	1,010				
	July 17, 1950	6.49	1,710	1956	Feb. 24, 1956	3.75	390
	Sept.21, 1950	4.5	770				
				1957	July 22, 1957	4.99	895
1951	Feb. 18, 1951	4.10	595				
	July 8, 1951	5.79	1,290	1958	June 13, 1958	4.56	728
	Aug. 29, 1951	5.68	1,140		July 2, 1958	8.45	2,650
	Sept.26, 1951	4.14	520		July 14, 1958	4.44	710
1952	June 13, 1952	4.72	850	1959	Feb. 9, 1959	b3.08	-
	Aug. 20, 1952	6.86	1,950		Apr. 26, 1959	2.55	216
1953	July 5, 1953	3.90	650	1960	Mar. 30, 1960	3.87	495
1954	Mar. 25, 1954	4.83	910	1961	Aug. 4, 1961	4.99	895
	June 1, 1954	5.28	1,070		Sept.23, 1961	4.08	570
	June 2, 1954	4.88	930				
	Aug. 4, 1954	4.18	650				

a About; maximum known.
b Ice jam.

5595. Crow Creek near Washburn, Ill.

Location.--Lat 40°57'15", long 89°18'30", in SW¼ sec.23, T.29 N., R.2 W., on left bank at downstream side of highway bridge, 200 ft downstream from Atchison, Topeka & Santa Fe Railway bridge, 2.0 miles downstream from unnamed tributary, and 2½ miles northwest of Washburn.

Drainage area.--123 sq mi.

Gage.--Nonrecording prior to July 2, 1945; recording thereafter. Datum of gage is 557.70 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,100 cfs and extended above.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	May 15, 1945	5.81	1,450	1952	June 14, 1952	6.10	1,700
	Sept.28, 1945	5.3	1,220		June 21, 1952	6.37	1,850
1946	Jan. 5, 1946	7.36	2,340	1953	June 13, 1953	5.63	1,450
	Jan. 9, 1946	5.0	1,100		July 6, 1953	5.21	1,250
	June 20, 1946	6.0	1,550	1954	Mar. 25, 1954	5.20	1,220
1947	Apr. 5, 1947	9.15	3,750		May 28, 1954	11.85	5,750
	Apr. 30, 1947	5.25	1,140		June 1, 1954	6.25	1,550
	May 17, 1947	5.6	1,320		June 3, 1954	8.35	2,660
	June 2, 1947	5.6	1,320				
	June 6, 1947	5.15	1,100	1955	Feb. 19, 1955	a7.06	-
					Apr. 20, 1955	6.00	1,650
1948	Feb. 27, 1948	6.8	1,980		June 5, 1955	4.88	1,120
	Mar. 16, 1948	6.2	1,620		June 11, 1955	5.51	1,400
	Mar. 19, 1948	8.14	2,840	1956	July 8, 1956	4.08	700
1949	Jan. 27, 1949	5.25	1,320				
	Feb. 13, 1949	7.60	2,480	1957	May 19, 1957	6.32	1,800
	June 29, 1949	5.20	1,120		June 28, 1957	7.01	2,180
1950	Jan. 13, 1950	4.80	1,010	1958	Feb. 24, 1958	4.83	1,080
	Jan. 25, 1950	4.85	1,030		June 10, 1958	5.03	1,100
	Apr. 4, 1950	6.2	1,670		June 13, 1958	7.42	2,360
	Apr. 25, 1950	9.06	3,660		June 17, 1958	5.01	1,100
	June 19, 1950	4.90	1,060		July 3, 1958	-	1,150
	July 17, 1950	6.4	1,820		July 14, 1958	5.55	1,450
	Sept.21, 1950	7.4	2,340	1959	Feb. 10, 1959	a7.69	1,350
1951	Jan. 2, 1951	6.32	1,720		Feb. 13, 1959	-	1,250
	Feb. 11, 1951	5.72	1,420		Mar. 6, 1959	4.85	1,080
	Feb. 19, 1951	8.27	3,000		Apr. 27, 1959	5.10	1,200
	Apr. 12, 1951	5.48	1,320				
	July 9, 1951	10.40	4,850	1960	Mar. 30, 1960	9.00	3,570
	Sept.26, 1951	5.64	1,370				
				1961	Sept.14, 1961	5.73	1,500
1952	Jan. 1, 1952	5.43	1,100		Sept.24, 1961	8.10	2,600
	Apr. 13, 1952	6.55	1,950				

a Affected by ice.

5600. Illinois River at Peoria, Ill.
(Published as "near Peoria" 1903-6; and as "at Pekin" 1938-39)

Location.--Lat 40°42'08", long 89°33'52", in NW¼ sec.2, T.8 N., R.8 E., at foot of Grant Street, in Peoria, 2.2 miles upstream from Farm Creek, 4.5 miles upstream from Kickapoo Creek, and at mile 164.2.

Drainage area.--13,500 sq mi.

Gage.--Nonrecording. Datum of gage is 428.39 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to January 1910, at Lower Free Bridge, 1.9 miles downstream, at same datum. Readings prior to January 1873, originally observed to datum 0.5 ft higher, have been adjusted. Auxiliary gage at Pekin, 9.3 miles downstream, used October 1929 to September 1938.

Stage-discharge relation.--Defined by current-meter measurements below 59,000 cfs. Stage-fall-discharge relation defined below 53,000 cfs for various fall conditions from October 1929 to September 1938. For determination of discharge, this station was displaced in 1939 by station at Kingston Mines.

Historical data.--Flood of 1844 is maximum known prior to May 1943.

Remarks.--Gage heights to December 1904 taken from House Document 263, 69th Congress, 1st session; January 1905 to February 1910, and 1951-61, from reports of U.S. Weather Bureau; October 1938 to September 1950, from unpublished records of Corps of Engineers. Since Jan. 17, 1900, flow has included diversion from Lake Michigan through Chicago Sanitary and Ship Canal. Discharge for Mar. 15, 1939, is unadjusted value from records at Pekin. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1844	-	a26.6	-	1910	Mar. 12, 1910	17.6	31,200
1867	Feb. 20, 1867	21.8	-	1911	Feb. 21-23, 1911	14.80	20,200
1868	May 12, 1868	16.2	-	1912	Apr. 1-4, 1912	20.00	42,800
1869	July 1, 1869	19.7	-	1913	Mar. 30-Apr. 2, 1913	22.45	55,000
1870	Mar. 29-31, 1870	16.8	-	1914	Apr. 7, 1914	15.55	22,900
1871	Mar. 19, 1871	16.3	-	1915	Aug. 8, 1915	18.60	35,800
1873	Apr. 13, 1873	15.4	-	1916	Jan. 25, 1916	b23.2	c48,000
1874	Feb. 19, 1874	13.8	-	1917	June 15-17, 1917	18.35	34,800
1875	Apr. 1, 1875	12.8	-	1918	Feb. 20, 1918	19.85	41,800
1876	Apr. 7, 1876	16.6	-	1919	Mar. 23, 1919	23.35	54,000
1877	Apr. 5, 1877	15.5	-	1920	Apr. 25, 1920	23.15	53,000
1884	Mar. 29-31, 1884	17.8	-	1921	May 2-4, 1921	16.45	25,100
1885	Mar. 20, 1885	15.0	-	1922	Apr. 15-17, 1922	24.80	56,700
1886	Feb. 19, 1886	16.0	-	1923	Mar. 26, 1923	17.40	26,700
1887	Feb. 19, 1887	18.8	-	1924	Aug. 24, 1924	21.00	39,000
1888	Mar. 30, 1888	14.1	-	1925	Mar. 26, 1925	16.5	24,000
1889	June 23-25, 1889	11.0	-	1926	Apr. 15, 1926	20.4	36,600
1890	June 25, 1890	13.3	-	1927	Oct. 9, 1926	25.05	58,300
1891	Apr. 17-19, 1891	15.0	-	1928	Dec. 18, 1927	d21.1	38,200
1892	May 9, 1892	21.9	-	1929	Mar. 22, 1929	22.75	46,900
1893	Mar. 12, 1893	19.6	-	1930	Apr. 25, 1930	-	40,700
1894	Mar. 14, 1894	12.3	-		Apr. 26, 1930	20.0	-
1895	Mar. 7, 1895	8.1	-	1931	June 12, 1931	-	18,600
1896	Dec. 31, 1895	15.0	-	1932	Jan. 22, 1932	17.73	30,300
1897	Mar. 24-27, 1897	18.3	-	1933	May 18, 1933	25.6	52,900
1898	Mar. 31, 1898	19.3	-	1934	Apr. 15, 1934	11.87	14,600
1899	Mar. 22, 1899	15.1	-	1935	May 16, 1935	21.60	40,100
1900	Mar. 16, 1900	19.9	-	1936	Mar. 5, 1936	20.00	-
1901	Mar. 31, 1901	17.7	-		Mar. 6, 1936	-	37,500
1902	July 22, 1902	21.0	-	1937	May 5, 1937	-	36,100
1903	Mar. 12, 1903	19.3	45,100		May 6, 1937	19.65	-
1904	Mar. 28, 1904	21.83	57,600	1938	Apr. 15, 1938	20.50	39,200
1905	May 19, 1905	17.9	39,100	1939	Mar. 15, 1939	-	37,600
1906	Mar. 7, 1906	15.9	29,100	1940	Mar. 18, 19, 1939	19.3	-
1907	Jan. 24, 1907	20.4	-		May 8, 1940	12.8	-
1908	Mar. 10, 1908	22.2	-	1941	Mar. 13, 1941	12.3	-
1909	May 5, 1909	17.8	-	1942	Feb. 12, 1942	20.9	-
				1943	May 23, 1943	28.8	-

a From floodmarks. b Backwater from ice, 2.2 ft. c About. d Backwater from ice, 0.3 ft.

Peak stages and discharges of Illinois River at Peoria, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Apr. 27, 1944	23.8	-	1953	Mar. 20, 1953	14.7	-
1945	May 23, 1945	20.0	-	1954	Mar. 29, 1954	15.5	-
				1955	Oct. 16, 1954	17.7	-
1946	Jan. 12, 1946	20.6	-				
1947	June 12, 1947	19.6	-	1956	May 8, 1956	13.7	-
1948	Mar. 24, 1948	22.5	-	1957	May 3, 1957	19.7	-
1949	Feb. 26, 1949	17.9	-	1958	June 19, 1958	19.45	-
1950	Apr. 29, 1950	25.0	-	1959	Feb. 18, 1959	18.76	-
				1960	Apr. 5, 1960	21.6	-
1951	Feb. 26, 1951	e20.9	-				
1952	Mar. 25, 1952	18.5	-	1961	Sept.29, 1961	18.74	-

e Maximum observed; probably higher earlier in February.

5605. Farm Creek at Farmdale, Ill.

Location.--Lat 40°39'55", long 89°30'15", in NE¼SE¼ sec.36, T.2? N., R.4 W., on left bank 200 ft downstream from bridge, 0.2 mile southeast of Farmdale, 0.2 mile upstream from Lake Erie & Western Railroad bridge, and 0.3 mile downstream from Toledo, Peoria & Western Railroad bridge.

Drainage area.--27.6 sq mi.

Gage.--Recording. Datum of gage is 530.12 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--High flow regulated by Farmdale Dam, 1 mile upstream, beginning in September 1950. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Jan. 27, 1949	3.55	554	1956	Feb. 24, 1956	2.94	324
1950	Apr. 24, 1950	7.58	-	1957	May 19, 1957	3.70	600
				1958	Feb. 23, 1958	a3.89	-
1951	Jan. 2, 1951	4.18	900		June 13, 1958	-	500
1952	Dec. 31, 1951	a4.52	-	1959	Feb. 9, 1959	a4.73	-
	June 14, 1952	-	435		May 19, 1959	-	482
1953	July 6, 1953	3.13	419	1960	Apr. 17, 1960	3.53	518
1954	Aug. 25, 1954	3.11	520				
1955	Feb. 19, 1955	a4.97	522	1961	Sept.14, 1961	4.12	810

a Ice jam.

5610. Ackerman Creek at Farmdale, Ill.

Location.--Lat 40°39'43", long 89°30'13", in SE¼SE¼ sec.36, T.26 N., R.4 W., on right bank at upstream side of New York, Chicago and St. Louis Railroad bridge, 0.3 mile upstream from mouth, and 0.45 mile southeast of Farmdale.

Drainage area.--11.8 sq mi.

Gage.--Recording. Datum of gage is 527.22 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 210 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 400 cfs.

Peak stages and discharges of Ackerman Creek at Farmdale, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 28, 1954	8.81	1,110	1958	June 12, 1958	7.40	380
1955	Jan. 5, 1955	7.40	530	1959	Feb. 10, 1959	6.16	-
	Feb. 19, 1955	7.35	510		Mar. 5, 1959	6.05	102
1956	Apr. 29, 1956	5.73	111	1960	Mar. 30, 1960	6.38	158
1957	May 13, 1957	8.35	805	1961	Sept.13, 1961	9.25	1,310
	May 18, 1957	7.85	580				
	July 17, 1957	8.53	880				

5615. Fondulac Creek near East Peoria, Ill.

Location.--Lat 40°40'38", long 89°31'52", on line between SW¼ and SE¼ sec.26, T.26 N., R.4 W., on left bank at upstream side of bridge on U.S. Highway 24, 0.2 mile upstream from New York, Chicago and St. Louis Railroad bridge, 0.4 mile upstream from mouth, and 3 miles northeast of East Peoria.

Drainage area.--5.47 sq mi.

Gage.--Nonrecording prior to Aug. 5, 1948; recording thereafter. Datum of gage is 505.00 ft above mean sea level (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 160 cfs and extended above.

Remarks.--High flow regulated by Fondulac Dam, 0.5 mile upstream. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	July 25, 1948	3.83	496	1955	Feb. 19, 1955	2.95	230
1949	Jan. 27, 1949	2.65	-				
	Feb. 8, 1949	-	220	1956	Apr. 29, 1956	2.45	190
1950	Feb. 28, 1950	3.33	-	1957	May 18, 1957	2.81	308
	Apr. 24, 1950	-	256	1958	Feb. 23, 1958	2.98	-
					July 31, 1958	-	328
1951	Feb. 11, 1951	2.75	279	1959	May 18, 1959	3.05	390
1952	June 13, 1952	2.41	176	1960	May 25, 1960	2.85	318
1953	July 5, 1953	2.70	272				
1954	Aug. 25, 1954	2.66	259	1961	Sept.23, 1961	3.04	384

5620. Farm Creek at East Peoria, Ill.

Location.--Lat 40°40'04", long 89°34'40", in SW¼NW¼ sec.33, T.2? N., R.4 W., on left bank 30 ft upstream from Main Street Bridge in East Peoria, 300 ft downstream from Coal Creek, 400 ft upstream from Peoria and Pekin Union Railway bridge, 1,300 ft upstream from entrance to Farm Creek diversion channel, and 1.3 miles upstream from mouth.

Drainage area.--60.9 sq mi.

Gage.--Nonrecording to September 1948; recording thereafter. Prior to August 1945, gage was located on Peoria and Pekin Union Railway bridge, 400 ft downstream, at same datum. Datum of gage is 450.39 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 4,200 cfs and extended above on basis of velocity-area studies and slope-area measurement. Subject to frequent shifts.

Remarks.--High flow regulated by Farmdale and Fondulac Dams beginning in September 1950. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	-	a15.6	-	1953	July 6, 1953	6.01	5,670
				1954	Aug. 25, 1954	2.02	1,330
1943	Aug. 3, 1943	8.05	10,100	1955	Feb. 19, 1955	-	1,260
1944	Apr. 22, 1944	9.27	10,900		Mar. 26, 1955	2.31	-
1945	June 16, 1945	11.00	14,300				
				1956	Aug. 13, 1956	1.88	2,020
1946	June 19, 1946	7.50	4,320	1957	May 13,18,1957	b2.62	3,530
1947	Apr. 29, 1947	15.00	22,000	1958	Oct. 23, 1957	1.42	1,230
1948	July 25, 1948	8.82	6,540	1959	Feb. 12, 1959	3.26	-
1949	Jan. 27, 1949	4.99	1,590		Mar. 26, 1959	-	2,210
1950	Apr. 24, 1950	8.33	5,670	1960	Mar. 28, 1960	1.63	-
					Mar. 30, 1960	-	1,020
1951	July 9, 1951	7.63	5,120				
1952	June 8, 1952	5.38	2,290	1961	Sept.13, 1961	3.83	5,620

a Present site; from information by Corps of Engineers.
b Occurred May 13, 1957.

5630. Kickapoo Creek near Kickapoo, Ill.

Location.--Lat 40°48'00", long 89°48'00", in SW¼SE¼ sec.34, T.10 N., F.6 E., on left bank at downstream side of bridge on U.S. Highway 150, three-quarters of a mile upstream from West Fork Kickapoo Creek, and 2½ miles northwest of Kickapoo.

Drainage area.--120 sq mi.

Gage.--Nonrecording prior to June 8, 1945; recording thereafter. Datum of gage is 514.85 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 7,300 cfs and extended above.

Remarks.--Base for partial-duration series, 2,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	May 7, 1945	9.89	3,320	1951	June 28, 1951	9.35	2,920
	May 15, 1945	9.0	2,600		July 9, 1951	9.81	3,340
	May 16, 1945	9.5	3,000		July 22, 1951	15.35	18,400
	June 10, 1945	9.4	2,920				
	June 16, 1945	9.8	3,240	1952	June 14, 1952	11.05	3,800
					Aug. 21, 1952	10.29	3,160
1946	Jan. 5, 1946	11.91	5,840				
	Jan. 9, 1946	9.0	2,500	1953	July 21, 1953	10.48	2,420
1947	Nov. 3, 1946	9.2	2,760	1954	May 28, 1954	11.10	3,550
	Apr. 5, 1947	8.9	2,530		June 1, 1954	11.41	3,950
	June 1, 1947	9.1	2,600		Aug. 26, 1954	10.84	3,220
	June 6, 1947	9.5	2,760				
	June 8, 1947	9.6	2,840	1955	Jan. 5, 1955	9.44	2,920
	June 18, 1947	10.37	3,800		Feb. 19, 1955	12.15	6,340
					Apr. 19, 1955	12.21	6,340
1948	Feb. 27, 1948	10.1	3,610		Apr. 24, 1955	13.00	8,590
	Mar. 16, 1948	10.4	3,800		May 28, 1955	11.60	5,230
	Mar. 19, 1948	13.15	9,340		June 11, 1955	9.65	3,080
	July 25, 1948	11.1	4,210				
				1956	May 27, 1956	6.70	1,300
1949	Feb. 13, 1949	12.45	6,150				
	Feb. 17, 1949	11.0	3,430	1957	June 14, 1957	12.64	7,310
1950	Dec. 21, 1949	9.9	2,410	1958	June 13, 1958	12.51	6,300
	Apr. 25, 1950	11.90	4,800		July 2, 1958	14.05	12,100
	June 19, 1950	10.6	3,020				
	July 17, 1950	12.80	7,320	1959	Feb. 10, 1959	11.92	4,800
					Apr. 26, 1959	12.40	6,000
1951	Jan. 2, 1951	10.97	4,430				
	Feb. 11, 1951	10.47	3,900	1960	Mar. 30, 1960	-	a10,000
	Feb. 16, 1951	9.48	3,000		May 17, 1960	11.89	4,800
	Feb. 17, 1951	9.53	3,000		May 26, 1960	11.66	4,430
	Feb. 18, 1951	12.07	6,130				
	Feb. 20, 1951	10.11	3,520	1961	Sept.23, 1961	14.95	17,100

a About.

5631. Kickapoo Creek tributary near Kickapoo, Ill.

Location.--Lat 40°47'40", long 89°46'30", in NW¼ sec.1, T.9 N., R.6 E., at culvert on U.S. Highway 150, 1.2 miles west of Kickapoo.

Drainage area.--0.061 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Kickapoo Creek tributary near Kickapoo, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 28, 1956	16.24	62	1960	June 12, 1960	16.69	74
1957	July 16, 1957	14.50	23				
1958	July 2, 1958	15.67	48	1961	Sept.23, 1961	14.32	20
1959	Apr. 26, 1959	21.52	248				

5635. Kickapoo Creek at Peoria, Ill.

Location.--Lat 40°40'52", long 89°39'19", in NW¼NW¼ sec.13, T.8 N., R.7 E., on right bank at downstream side of pier of bridge on State Highway 116, half a mile west of Peoria, 1.5 miles downstream from Dry Run, and 4 miles upstream from mouth.

Drainage area.--296 sq mi.

Gage.--Recording. Datum of gage is 448.37 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	May 1927	a24.6	-	1951	Feb. 19, 1951	16.39	8,200
					Apr. 12, 1951	10.32	3,230
1943	Dec. 27, 1942	11.6	4,260		July 9, 1951	11.35	3,860
	Feb. 4, 1943	9.9	3,240		July 22, 1951	21.41	18,600
	Apr. 27, 1943	12.0	4,500				
	May 11, 1943	15.2	7,010	1952	June 14, 1952	11.06	4,200
	May 21, 1943	16.47	8,440		June 21, 1952	11.72	4,560
	June 21, 1943	14.2	6,140				
				1953	July 6, 1953	12.44	4,980
1944	Mar. 15, 1944	17.57	10,200				
	Apr. 22, 1944	15.5	7,310	1954	Mar. 25, 1954	14.92	6,890
	May 1, 1944	12.4	4,780		May 29, 1954	13.71	5,450
	May 3, 1944	10.3	3,480		June 1, 1954	15.71	7,320
					June 3, 1954	11.04	3,620
1945	May 15, 1945	11.4	3,860				
	May 17, 1945	11.3	3,800	1955	Feb. 20, 1955	15.47	7,100
	June 16, 1945	14.02	5,690		Apr. 20, 1955	11.05	3,620
					Apr. 24, 1955	14.86	6,480
1946	Jan. 5, 1946	17.69	10,400		May 28, 1955	11.38	3,860
1947	Apr. 6, 1947	11.8	4,100	1956	Feb. 24, 1956	7.48	1,880
	Apr. 30, 1947	13.02	4,850				
				1957	June 15, 1957	9.13	2,630
1948	Feb. 28, 1948	13.5	5,290				
	Mar. 16, 1948	11.8	4,100	1958	May 13, 1958	10.22	3,660
	Mar. 19, 1948	20.17	15,200		June 13, 1958	16.21	8,120
	July 26, 1948	11.3	3,800		July 3, 1958	16.31	8,230
1949	Feb. 13, 1949	14.76	6,380	1959	Feb. 10, 1959	14.23	6,290
	Feb. 18, 1949	-	b4,000		Apr. 27, 1959	12.37	4,500
					May 19, 1959	10.57	3,380
1950	Jan. 24, 1950	11.6	3,980				
	Apr. 25, 1950	20.38	15,800	1960	Mar. 31, 1960	18.96	12,600
	June 19, 1950	18.0	10,700		May 17, 1960	13.87	5,610
	July 18, 1950	19.7	14,100		May 26, 1960	16.59	8,460
					June 13, 1960	10.83	3,500
1951	Jan. 3, 1951	12.28	4,430				
	Feb. 12, 1951	12.51	4,570	1961	Sept.13, 1961	12.81	4,780
	Feb. 16, 1951	10.27	3,230		Sept.24, 1961	17.02	9,020

a From information by Corps of Engineers.
b Estimated.

5645. Money Creek above Lake Bloomington, Ill.

Location.--Lat 40°37'13", long 88°54'59", in SE¼SW¼ sec.18, T.25 N., R.3 E., on left bank 200 ft north of line between secs. 18 and 19, 1 mile upstream from Lake Bloomington, and 4 miles northeast of Hudson.

Drainage area.--51.9 sq mi.

Gage.--Recording. Datum of gage is 715.77 ft above mean sea level, datum of 1929 (Warren & Van Praag, Inc., bench mark).

Stage-discharge relation.--Defined by current-meter measurements and flood-routing study.

Remarks.--Base for partial-duration series, 430 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Oct. 22, 1933	2.00	96	1945	June 25, 1945	5.15	504
1935	May 3, 1935	6.25	870	1946	Dec. 30, 1945	5.35	548
	May 9, 1935	7.18	1,440		Jan. 5, 1946	5.90	850
	May 13, 1935	5.60	630		Feb. 14, 1946	-	456
	June 26, 1935	5.45	586		June 13, 1946	6.55	990
					June 20, 1946	7.39	1,740
1936	Feb. 24, 1936	6.70	1,110				
	Feb. 26, 1936	7.22	1,440	1947	Apr. 30, 1947	9.16	3,900
	May 2, 1936	7.22	1,440		June 7, 1947	5.95	735
	Sept.27, 1936	5.05	494				
				1948	Feb. 28, 1948	5.80	690
1937	Nov. 2, 1936	6.55	1,000		Mar. 22, 1948	5.30	550
	June 14, 1937	4.95	474				
	June 26, 1937	6.05	790	1949	Jan. 28, 1949	5.50	600
					June 29, 1949	5.55	615
1938	Jan. 24, 1938	4.38	381				
				1950	Dec. 22, 1949	6.75	1,120
1939	Mar. 12, 1939	6.48	980		Jan. 14, 1950	6.25	850
	Apr. 15, 1939	5.80	690		Jan. 26, 1950	6.20	830
	June 11, 1939	5.00	484		Feb. 13, 1950	5.75	675
					Apr. 4, 1950	4.85	450
1940	Mar. 3, 1940	4.97	474		Apr. 25, 1950	7.44	1,720
					June 19, 1950	5.85	705
1941	June 12, 1941	6.82	1,140				
				1951	Feb. 19, 1951	-	1,200
1942	Oct. 6, 1941	4.75	439		Feb. 21, 1951	6.14	810
	Feb. 6, 1942	6.50	982		Apr. 12, 1951	4.92	460
	Mar. 17, 1942	6.84	1,170		July 9, 1951	6.73	1,120
	Apr. 8, 1942	4.95	473				
				1952	Apr. 13, 1952	5.11	504
1943	Dec. 27, 1942	-	a1,000		Apr. 23, 1952	6.06	770
	Feb. 6, 1943	4.90	465				
	May 8, 1943	5.30	548	1953	Apr. 1, 1953	4.95	482
	May 11, 1943	7.00	1,350		July 6, 1953	5.48	600
	May 18, 1943	7.59	2,050				
	May 20, 1943	5.48	595	1954	Apr. 11, 1954	5.89	720
	Aug. 3, 1943	7.46	1,880				
				1955	Feb. 19, 1955	5.64	645
1944	Apr. 11, 1944	7.35	1,740				
	Apr. 15, 1944	5.35	560	1956	May 28, 1956	5.17	515
	Apr. 23, 1944	7.52	1,930				
				1957	Apr. 27, 1957	6.47	945
1945	May 15, 1945	6.15	810				
	May 20, 1945	5.70	645	1958	June 14, 1958	-	b740
	June 16, 1945	6.10	790		Aug. 3, 1958	4.92	460

a Estimated.
b About.

5650. Hickory Creek above Lake Bloomington, Ill.

Location.--Lat 40°38'15", long 88°57'00", in SE¼ sec.11, T.25 N., R.2 E., on left bank 300 ft downstream from an unnamed tributary, a quarter of a mile upstream from backwater from Lake Bloomington, and 3 miles northeast of Hudson.

Drainage area.--10.1 sq mi.

Gage.--Recording. Datum of gage is 716.0 ft above mean sea level.

Stage-discharge relation.--Controlled by concrete weir below about 300 cfs. Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 120 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Feb. 9, 1939	3.34	216	1949	Jan. 27, 1949	2.88	142
	Mar. 12, 1939	2.80	136				
	Apr. 15, 1939	3.98	350	1950	Jan. 13, 1950	3.39	226
	June 10, 1939	2.73	128		Jan. 24, 1950	5.45	802
	July 17, 1939	3.10	181		Jan. 25, 1950	4.45	470
					Feb. 13, 1950	3.02	163
1940	Mar. 2, 1940	2.60	111		Apr. 25, 1950	5.59	855
					June 19, 1950	4.50	485
1941	June 9, 1941	1.86	43		July 17, 1950	2.82	135
1942	Feb. 6, 1942	4.91	593	1951	Feb. 11, 1951	3.99	a300
	Mar. 16, 1942	4.25	410		Feb. 19, 1951	4.03	392
	Apr. 6, 1942	3.50	246		Apr. 11, 1951	3.07	181
	June 5, 1942	2.75	130		Apr. 28, 1951	5.64	890
	Aug. 27, 1942	3.39	227		June 19, 1951	5.96	1,010
					June 27, 1951	4.42	485
1943	Nov. 9, 1942	3.15	188		July 9, 1951	7.57	1,690
	Dec. 27, 1942	4.30	430				
	Feb. 6, 1943	3.50	247	1952	Apr. 13, 1952	2.56	102
	May 11, 1943	5.70	898				
	May 16, 1943	4.10	390	1953	July 5, 1953	5.80	930
	May 18, 1943	6.12	1,060		July 16, 1953	3.01	162
	May 20, 1943	3.32	215				
	Aug. 3, 1943	7.12	1,460	1954	Apr. 10, 1954	2.87	141
					Apr. 15, 1954	2.83	135
1944	Apr. 11, 1944	5.40	785		May 28, 1954	4.64	530
	Apr. 15, 1944	2.78	135				
	Apr. 22, 1944	6.14	1,050	1955	Apr. 20, 1955	3.74	286
	June 14, 1944	2.92	153				
				1956	Apr. 26, 1956	3.93	342
1945	May 14, 1945	4.95	628		Apr. 29, 1956	5.02	645
	May 20, 1945	4.30	430		May 28, 1956	3.64	276
	June 16, 1945	3.06	174		May 28, 1956	3.20	196
	June 30, 1945	5.10	680				
	July 5, 1945	3.60	266	1957	Apr. 18, 1957	2.93	150
	July 13, 1945	3.90	330		Apr. 22, 1957	2.89	144
	Aug. 5, 1945	4.70	545		Apr. 24, 1957	4.22	405
					Apr. 25, 1957	3.67	276
1946	Dec. 30, 1945	3.12	183		Apr. 26, 1957	5.51	820
	Jan. 4, 1946	2.90	152		Apr. 28, 1957	5.27	732
	June 12, 1946	4.35	442		May 13, 1957	2.79	130
	June 18, 1946	5.72	890		July 22, 1957	3.41	228
1947	Apr. 30, 1947	4.60	515	1958	Oct. 23, 1957	3.76	296
	June 7, 1947	5.08	680		June 10, 1958	3.95	342
					June 13, 1958	4.31	430
1948	Feb. 27, 1948	3.86	318				
	July 25, 1948	3.00	165				

a About.

5660. East Branch Panther Creek near Gridley, Ill.

Location.--Lat 40°46'00", long 88°54'35", between secs. 29 and 30, T.27 N., R.3 E., on left bank at downstream side of highway bridge, 2 miles northwest of Gridley, and 9 miles upstream from mouth.

Drainage area.--6.3 sq mi, approximately.

Gage.--Recording. Datum of gage is 707.89 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 120 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 13, 1950	6.2	124	1955	June 11, 1955	4.97	78
	Jan. 24, 1950	6.1	120				
	Apr. 3, 1950	6.7	149	1956	May 28, 1956	6.10	120
	Apr. 25, 1950	8.25	279				
	July 17, 1950	8.32	285	1957	Apr. 26, 1957	5.86	112
	July 19, 1950	6.3	129				
				1958	June 13, 1958	6.83	124
1951	Feb. 19, 1951	-	a200		Aug. 7, 1958	7.77	179
	June 21, 1951	7.70	219				
	June 27, 1951	6.78	155	1959	Mar. 6, 1959	5.56	140
	July 9, 1951	10.68	1,470		Apr. 27, 1959	6.24	170
1952	Nov. 13, 1951	7.52	203	1960	Mar. 29, 1960	6.44	125
	Apr. 13, 1952	7.18	179				
				1961	Sept.25, 1961	6.43	b121
1953	July 22, 1953	5.94	112				
1954	June 3, 1954	6.92	161				

a About.
b Annual peak only.

5665. East Branch Panther Creek at El Paso, Ill.

Location.--Lat 40°45'15", long 89°00'20", on line between secs. 32 and 33, T.27 N., R.2 E., on left bank at downstream side of highway bridge, 0.7 mile upstream from Illinois Central Railroad bridge, 0.9 mile north of El Paso, and 4 miles upstream from mouth.

Drainage area.--28.8 sq mi.

Gage.--Recording. Datum of gage is 688.08 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,600 cfs and extended above.

Remarks.--Base for partial-duration series, 350 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 13, 1950	6.2	422	1954	May 28, 1954	7.32	592
	Jan. 24, 1950	6.2	422		June 3, 1954	5.95	417
	Apr. 4, 1950	6.3	436				
	Apr. 25, 1950	8.2	722	1955	Apr. 20, 1955	4.62	252
	June 19, 1950	6.0	394				
	July 17, 1950	9.27	916	1956	May 29, 1956	4.75	268
	July 19, 1950	6.8	510				
				1957	Apr. 26, 1957	5.68	378
1951	Jan. 2, 1951	6.15	390		May 13, 1957	5.79	391
	Feb. 18, 1951	9.30	916				
	Apr. 11, 1951	6.54	464	1958	Aug. 8, 1958	6.13	354
	June 21, 1951	7.19	562				
	June 27, 1951	8.42	754	1959	Apr. 26, 1959	6.03	417
	July 9, 1951	14.21	5,300				
				1960	Mar. 29, 1960	6.07	430
1952	Nov. 13, 1951	6.34	436		June 13, 1960	7.91	680
	Apr. 13, 1952	7.67	626				
				1961	Sept.25, 1961	5.68	378
1953	July 5, 1953	6.14	408				

5670. Panther Creek near El Paso, Ill.

Location.--Lat 40°46'05", long 89°04'30", in center of sec.26, T.27 N., R.1 E., on right bank at downstream side of highway bridge, just downstream from East Branch Panther Creek, 2 miles upstream from West Fork, and 3¾ miles northwest of El Paso.

Drainage area.--95.0 sq mi.

Gage.--Recording. Datum of gage is 658.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 14, 1950	7.45	985	1954	May 28, 1954	8.73	1,950
	Jan. 26, 1950	7.8	1,290		June 3, 1954	8.71	1,900
	Apr. 4, 1950	7.45	985				
	Apr. 25, 1950	9.15	2,730	1955	Apr. 20, 1955	7.44	825
	June 19, 1950	7.8	1,060				
	July 17, 1950	9.57	2,910	1956	May 28, 1956	6.53	525
1951	Jan. 2, 1951	7.76	1,080	1957	June 22, 1957	7.15	762
	Feb. 19, 1951	9.85	3,020				
	Apr. 12, 1951	7.81	1,110	1958	June 13, 1958	8.33	1,420
	June 21, 1951	7.83	1,140		June 17, 1958	7.88	1,020
	June 27, 1951	8.27	1,480		Aug. 8, 1958	8.44	1,650
	July 9, 1951	15.15	10,900				
				1959	Feb. 13, 1959	-	a960
1952	Nov. 14, 1951	7.71	1,040		Apr. 27, 1959	9.82	3,020
	Apr. 13, 1952	9.15	2,350		May 26, 1959	9.09	2,350
	June 14, 1952	8.27	1,480		May 31, 1959	8.19	1,460
	June 22, 1952	7.83	1,140				
				1960	Mar. 29, 1960	8.82	2,000
1953	July 6, 1953	7.55	780		June 13, 1960	9.34	2,500
1954	Apr. 22, 1954	7.45	825	1961	Sept.25, 1961	8.85	b2,050

a About.
b Annual peak only.

5675. Mackinaw River near Congerville, Ill.

Location.--Lat 40°37'25", long 89°14'30", in NE¼SW¼ sec.17, T.25 N., R.1 W., on right bank at downstream side of bridge on U.S. Highway 150, 900 ft downstream from New York, Chicago & St. Louis Railroad bridge, a quarter of a mile downstream from Walnut Creek, and 2 miles northwest of Congerville.

Drainage area.--764 sq mi.

Gage.--Nonrecording prior to July 12, 1945; recording thereafter. Datum of gage is 607.01 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The flood of April 1944 probably exceeded that of May 1943, but definite information is not available.

Remarks.--Base for partial-duration series, 3,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 1943	a16.2	-	1947	Apr. 5, 1947	12.2	6,400
					Apr. 30, 1947	16.02	15,500
1945	June 16, 1945	12.16	6,300		June 7, 1947	11.7	5,650
1946	Dec. 30, 1945	9.9	3,940	1948	Feb. 28, 1948	12.18	6,400
	Jan. 5, 1946	13.5	8,900		Mar. 16, 1948	10.2	4,160
	June 13, 1946	12.3	6,550		Mar. 20, 1948	11.0	4,800
	June 20, 1946	15.60	14,300		Mar. 23, 1948	8.7	3,220

a From records of Corps of Engineers.

Peak stages and discharges of Mackinaw River near Congerville, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Apr. 7, 1948	8.7	3,220	1953	July 6, 1953	12.09	6,250
	July 26, 1948	11.2	5,020	1954	Apr. 12, 1954	9.50	3,700
1949	Jan. 28, 1949	9.2	3,520		Apr. 22, 1954	9.43	3,640
	Feb. 13, 1949	11.69	5,650		May 29, 1954	13.65	9,100
1950	Dec. 24, 1949	9.6	3,760		June 3, 1954	11.21	5,020
	Jan. 15, 1950	11.4	5,240	1955	Jan. 6, 1955	9.83	3,880
	Jan. 26, 1950	13.6	9,100		Feb. 20, 1955	10.33	4,240
	Feb. 15, 1950	11.5	5,350		Apr. 20, 1955	11.28	5,130
	Apr. 4, 1950	10.8	4,640				
	Apr. 26, 1950	14.74	11,800	1956	May 29, 1956	7.93	2,740
	June 19, 1950	12.8	7,500				
	July 18, 1950	14.1	10,400	1957	Apr. 29, 1957	14.44	11,100
	July 20, 1950	11.7	5,650		May 13, 1957	9.78	3,880
					May 20, 1957	9.25	3,520
1951	Jan. 3, 1951	10.44	4,320				
	Feb. 19, 1951	15.71	14,600	1958	June 14, 1958	12.37	6,700
	Apr. 12, 1951	12.26	6,550				
	June 20, 1951	9.80	3,880	1959	Feb. 11, 1959	-	b7,800
	June 28, 1951	12.53	6,900		Apr. 28, 1959	11.71	5,430
	July 9, 1951	19.41	36,000				
				1960	Mar. 30, 1960	14.32	10,000
1952	Nov. 13, 1951	9.68	3,790		June 13, 1960	9.40	3,450
	Apr. 13, 1952	13.54	8,900		June 25, 1960	9.03	3,210
	Apr. 25, 1952	9.90	3,940				
	June 14, 1952	11.07	4,910	1961	Sept.14, 1961	12.86	7,150
	June 22, 1952	10.37	4,320		Sept.25, 1961	14.87	11,700
1953	Apr. 2, 1953	8.74	3,220				

b About.

5680. Mackinaw River near Green Valley, Ill.

Location.--Lat 40°26'43", long 89°39'10", in SE¼NW¼ sec.15, T.23 N., R.5 W., near center of span on downstream side of bridge on State Highway 29, 3 miles north of Green Valley, and 13 miles upstream from mouth.

Drainage area.--1,100 sq mi, approximately.

Gage.--Nonrecording. Prior to Jan. 17, 1933, on railroad bridge, 255 ft upstream. Prior to Oct. 1, 1952, at datum 2.00 ft higher. Datum of gage is 479.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--At the Bollinger bridge, about 23 miles upstream from the gage, a flood in 1883 is said to have reached an elevation of 563.6 ft, and to have been about 5.1 ft higher than the flood of 1943.

Remarks.--Base for partial-duration series, 3,800 cfs. Only annual peaks are shown after 1958.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1920	-	a12.5	-	1926	Apr. 10, 1926	8.6	4,800
					Sept. 5, 1926	10.58	8,120
1922	Jan. 5, 1922	8.2	4,400		Sept.16, 1926	8.5	4,700
	Mar. 15, 1922	8.0	4,220		Sept.26, 1926	9.2	5,450
	Apr. 2, 1922	10.11	6,690				
	Apr. 13, 1922	10.1	6,830	1927	Oct. 5, 1926	12.0	13,000
					Nov. 17, 1926	10.9	9,140
1923	Mar. 13, 1923	8.60	4,800		Nov. 27, 1926	10.5	7,650
	May 12, 1923	7.7	3,900		Feb. 6, 1927	10.5	7,650
	May 16, 1923	7.6	3,800		Mar. 23, 1927	10.4	7,430
	May 18, 1923	7.8	4,000		Apr. 6, 1927	7.6	3,800
					Apr. 20, 1927	12.8	16,200
1924	Jan. 31, 1924	8.0	4,200		May 19, 1927	14.80	24,300
	Feb. 5, 1924	9.2	5,450		June 5, 1927	10.6	7,890
	Mar. 29, 1924	7.8	4,000				
	June 28, 1924	12.2	13,800	1928	Dec. 13, 1927	8.90	5,070
	July 12, 1924	7.6	3,800		Feb. 7, 1928	8.1	4,300
	Aug. 22, 1924	13.54	19,300		July 4, 1928	7.6	3,800
1925	Feb. 9, 1925	7.65	3,800	1929	Jan. 23, 1929	b10.7	6,600

a From information by W. A. McCully, foreman of highway bridge constructior.
b Backwater from ice, 0.7 ft.

Peak stages and discharges of Mackinaw River near Green Valley, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Feb. 27, 1929	c10.6	5,300
	Mar. 17, 1929	8.9	5,110
	July 2, 1929	8.4	4,600
	July 6, 1929	11.19	10,200
	July 9, 1929	10.8	8,430
1930	Feb. 25, 1930	7.57	3,750
1931	Sept.15, 1931	6.88	3,050
1932	Nov. 23, 1931	7.32	3,450
1933	Apr. 3, 1933	10.4	9,470
	May 12, 1933	12.02	19,700
	May 18, 1933	9.1	6,400
	May 20, 1933	8.3	5,020
1934	Oct. 22, 1933	6.99	3,370
1935	Feb. 27, 1935	8.2	4,870
	May 5, 1935	9.8	7,810
	May 11, 1935	10.42	9,470
	June 19, 1935	7.7	4,180
	June 30, 1935	7.9	4,440
1936	Feb. 27, 1936	11.85	17,900
1937	Nov. 2, 1936	7.5	3,920
	Feb. 21, 1937	7.99	4,570
	June 17, 1937	7.5	3,920
1938	Jan. 25, 1938	8.0	4,570
	Apr. 11, 1938	7.4	3,810
	June 26, 1938	8.70	5,680
1939	Mar. 15, 1939	8.6	5,600
	Apr. 18, 1939	8.71	5,760
	July 7, 1939	8.4	5,300
1940	Mar. 5, 1940	5.55	2,420
1941	June 14, 1941	6.29	3,280
1942	Oct. 9, 1941	8.6	5,820
	Feb. 8, 1942	11.52	14,000
	Feb. 17, 1942	7.2	3,890
	Mar. 20, 1942	9.2	6,970
	Apr. 8, 1942	9.6	7,800
	June 26, 1942	7.6	4,350
1943	Nov. 23, 1942	7.4	4,110
	Dec. 28, 1942	10.1	8,940
	Jan. 24, 1943	7.0	4,020
	Feb. 4, 1943	7.2	4,260
	Feb. 8, 1943	7.6	4,740
	Apr. 29, 1943	7.8	5,530
	May 13, 1943	11.10	13,200
	May 19, 1943	12.23	18,200
	Aug. 6, 1943	11.1	13,600
1944	Mar. 16, 1944	7.8	5,240
	Apr. 13, 1944	10.3	12,200
	Apr. 24, 1944	12.50	26,400
1945	Apr. 3, 1945	6.8	3,940
1945	May 17, 1945	7.86	5,400
	May 21, 1945	7.0	4,160
	June 17, 1945	7.9	5,400
	July 1, 1945	7.2	4,400
1946	Jan. 7, 1946	8.9	7,600
	June 15, 1946	7.4	4,660
	June 21, 1946	11.50	17,800
1947	Apr. 7, 1947	6.8	4,310
	May 1, 1947	11.32	15,600
	June 8, 1947	8.9	7,600
1948	Feb. 29, 1948	6.9	4,400
	Apr. 8, 1948	6.6	4,130
	July 27, 1948	7.27	4,800
1949	June 15, 1949	6.96	4,400
1950	Dec. 22, 1949	7.0	4,490
	Jan. 16, 1950	7.7	5,270
	Jan. 27, 1950	9.3	8,800
	Feb. 16, 1950	7.4	5,380
	Apr. 6, 1950	6.9	4,830
	Apr. 25, 1950	10.41	12,600
	June 20, 1950	8.4	6,640
	July 20, 1950	8.0	6,080
	Sept.22, 1950	6.5	4,390
1951	Jan. 3, 1951	6.98	4,940
	Feb. 21, 1951	10.90	14,400
	Apr. 14, 1951	8.39	6,640
	June 29, 1951	8.61	6,980
	July 10, 1951	13.12	31,000
	July 22, 1951	6.25	4,320
1952	Nov. 14, 1951	6.12	4,230
	Apr. 15, 1952	8.38	6,700
	Apr. 23, 1952	6.50	4,590
	June 15, 1952	6.29	4,410
	June 23, 1952	5.99	4,140
1953	Apr. 1, 1953	8.04	4,400
	July 7, 1953	8.62	4,990
1954	Apr. 12, 1954	7.43	3,850
	Apr. 23, 1954	8.03	4,400
	May 30, 1954	8.39	4,790
	June 4, 1954	7.88	4,310
1955	Jan. 6, 1955	8.06	4,500
	Feb. 20, 1955	8.48	5,020
	Apr. 21, 1955	8.13	4,640
1956	May 27, 1956	9.00	5,520
	May 29, 1956	8.94	5,420
1957	Apr. 30, 1957	11.60	9,280
1958	June 14, 1958	9.39	5,950
1960	Mar. 31, 1960	11.66	9,550
1961	Sept.27, 1961	11.14	8,200

c Backwater from ice, 1.5 ft.

5685. Illinois River at Kingston Mines, Ill.

Location.--Lat 40°33'10", long 89°46'40", in SE¼SE¼ sec.26, T.7 N., R.6 E., on right bank at Kingston Mines, 2.3 miles downstream from Mackinaw River, and at mile 145.3.

Drainage area.--15,200 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 1, 1942; recording thereafter. Prior to Oct. 1, 1940, at datum 1.65 ft higher. Datum of gage is 428.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Auxiliary recording gage at mouth of Copperas Creek, 7.9 miles downstream.

Stage-fall-discharge relation.--Defined by current-meter measurements.

Remarks.--Since Jan. 17, 1900, flow has included diversion from Lake Michigan through Chicago Sanitary and Ship Canal. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 6, 1940	8.50	-	1951	Feb. 23, 1951	-	47,500
	Mar. 9, 1940	-	19,700		Feb. 24, 1951	18.56	-
1941	Apr. 24, 1941	9.65	19,500	1952	Apr. 17, 1952	-	40,000
1942	Feb. 9, 1942	-	53,600		Apr. 19, 1952	16.02	-
	Feb. 13, 1942	17.85	-	1953	Mar. 20, 1953	-	27,300
1943	May 23, 1943	-	83,100		Mar. 22, 1953	12.46	-
	May 25, 1943	26.02	-	1954	Mar. 29, 1954	-	30,400
1944	Apr. 26, 1944	-	64,200		June 7, 1954	13.66	-
	Apr. 28, 1944	21.36	-	1955	Oct. 16, 1954	-	38,200
1945	May 23, 1945	17.43	44,600		Oct. 17, 1954	14.58	-
1946	Jan. 11, 1946	-	51,200	1956	May 7, 1956	11.51	24,700
	Jan. 12, 1946	17.90	-	1957	May 2, 1957	-	44,600
1947	Apr. 9, 1947	-	47,500		May 3, 1957	17.12	-
	June 12, 1947	17.34	-	1958	June 18, 1958	-	42,700
1948	Mar. 23, 1948	-	57,700		June 19, 1958	17.00	-
	Mar. 24, 1948	19.43	-	1959	Feb. 16, 1959	-	38,300
1949	Feb. 22, 1949	-	34,100		Feb. 19, 1959	16.75	-
	Feb. 26, 1949	15.48	-	1960	Apr. 3, 1960	-	50,800
1950	Apr. 28, 1950	-	71,400		Apr. 5, 1960	19.34	-
	Apr. 29, 1950	21.50	-	1961	Sept.29, 1961	16.57	39,300

5686. Copperas Creek tributary at Banner, Ill.

Location.--Lat 40°30'55", long 89°54'55", in NW¼SW¼ sec.11, T.6 N., R.5 E., at culvert on U.S. Highway 24, 0.3 mile west of Banner.

Drainage area.--0.399 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 29, 1956	13.76	194	1960	Apr. 17, 1960	12.14	59
1957	June 11, 1957	12.58	94				
1958	July 19, 1958	12.92	120	1961	July 21, 1961	12.73	103
1959	Mar. 26, 1959	12.25	67				

5686.5. Duck Creek near Canton, Ill.

Location.--Lat 40°32'45", long 89°59'35", in E½ sec.36, T.7 N., R.4 E., at culvert on State Highway 9, 2 miles southeast of Canton.

Drainage area.--0.419 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Partly defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 13, 1956	11.37	31	1960	Mar. 30, 1960	9.88	-
1957	Jan. 22, 1957	11.54	38				
1958	July 3, 1958	11.40	142	1961	June 30, 1961	10.69	-
1959	May 31, 1959	11.07	100				

5695. Spoon River at London Mills, Ill.

Location.--Lat 40°42'51", long 90°16'00", in NW¼ sec.3, T.8 N., R.2 E., on left bank at downstream side of highway bridge in London Mills, 0.5 mile upstream from Minneapolis & St. Louis Railway bridge, 1.4 miles upstream from Cedar Creek, and 2.8 miles downstream from Littlers Creek.

Drainage area.--1,070 sq mi, approximately.

Gage.--Nonrecording prior to July 14, 1945; recording thereafter. Datum of gage is 508.97 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 20,000 cfs and extended above.

Historical data.--Flood of Aug. 26, 1924, reached maximum stage known, from information by local residents.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Aug. 26, 1924	a27.08	-	1948	Mar. 20, 1948	22.48	27,000
					July 26, 1948	17.25	7,550
1943	Dec. 28, 1942	16.9	6,380				
	Feb. 4, 1943	b17.0	-	1949	Jan. 16, 1949	14.79	5,060
	Feb. 6, 1943	16.4	5,970		Feb. 16, 1949	18.7	9,500
	May 21, 1943	16.90	6,540		Feb. 21, 1949	18.91	9,900
	July 5, 1943	16.0	5,480				
				1950	Jan. 14, 1950	15.18	5,460
1944	Mar. 15, 1944	19.56	11,600		Jan. 24, 1950	15.76	5,940
	Apr. 23, 1944	19.0	10,100		Mar. 1, 1950	16.50	6,590
	May 3, 1944	16.2	5,630		Mar. 6, 1950	-	c5,000
					Apr. 25, 1950	21.75	23,200
1945	May 8, 1945	16.5	5,900		June 16, 1950	16.41	6,480
	May 17, 1945	19.5	11,500		June 19, 1950	20.68	17,400
	June 16, 1945	20.92	16,200		July 18, 1950	21.07	19,400
1946	Jan. 7, 1946	20.18	14,100	1951	Jan. 3, 1951	14.96	5,300
	June 13, 1946	17.14	6,940		Feb. 21, 1951	19.93	14,100
	June 19, 1946	16.50	5,900		Apr. 12, 1951	15.04	5,300
					May 11, 1951	15.30	5,540
1947	Apr. 6, 1947	17.71	7,850		July 12, 1951	16.56	6,710
	June 7, 1947	17.06	6,940		July 22, 1951	23.73	35,300
	June 18, 1947	15.22	4,870				
	July 1, 1947	16.52	6,110	1952	June 14, 1952	15.62	5,170
					June 22, 1952	17.04	5,900
1948	Feb. 28, 1948	17.81	8,050				
	Mar. 17, 1948	17.98	8,450	1953	July 6, 1953	15.28	4,950

a From information by local residents.
b Backwater from ice, greater than 0.6 ft.
c Estimated.

Peak stages and discharges of Spoon River at London Mills, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 26, 1954	18.65	7,900	1958	Feb. 27, 1958	14.86	4,660
	Apr. 6, 1954	16.64	5,180		June 13, 1958	19.35	11,200
	Apr. 21, 1954	15.86	4,610		July 3, 1958	17.81	7,780
	June 2, 1954	19.71	10,300	1959	Feb. 11, 1959	d18.65	-
1955	Jan. 6, 1955	18.86	8,500		Feb. 14, 1959	-	f7,800
	Feb. 20, 1955	20.33	12,400				
	Apr. 25, 1955	15.95	5,450	1960	Oct. 7, 1959	17.20	6,390
	June 12, 1955	15.91	5,380		Mar. 31, 1960	21.42	19,400
					Apr. 17, 1960	17.94	7,320
1956	Feb. 25, 1956	15.58	5,240		May 26, 1960	15.41	4,760
	July 5, 1956	16.13	5,540		June 5, 1960	16.13	5,280
	July 9, 1956	18.68	9,500		June 13, 1960	15.44	4,760
1957	Jan. 22, 1957	d16.24	-	1961	Sept.14, 1961	16.94	6,040
	June 14, 1957	e15.30	4,950		Sept.25, 1961	21.70	12,900

d Backwater from ice.
e From floodmark.
f About.

5698.25. Cedar Creek tributary at St. Augustine, Ill.

Location.--Lat 40°43'20", long 90°24'40", in E½ sec.32, T.9 N., R.1 E., at culvert on Chicago, Burlington & Quincy Railroad, 0.1 mile north of St. Augustine.

Drainage area.--4.04 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 13, 1956	16.64	351	1960	Mar. 16, 1960	17.19	400
1957	June 28, 1957	17.6	424				
1958	Dec. 25, 1957	16.08	315	1961	Sept.23, 1961	a20.0	500
1959	Feb. 10, 1959	15.67	273				

a Backwater from debris.

5700. Spoon River at Seville, Ill.

Location.--Lat 40°29'10", long 90°20'34", in SW¼ sec.24, T.6 N., R.1 E., near center of span on downstream side of highway bridge in Seville.

Drainage area.--1,600 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 467.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 6,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1883	-	33.0	(a)	-	1917	Mar. 16, 1917	18.2	-	9,700
						June 5, 1917	18.2	-	10,400
1911	September 1911	25.8	-	-		June 15, 1917	20.40	-	11,600
1916	Jan. 23, 1916	26.0	0.2	21,500	1919	Mar. 18, 1919	15.6	-	6,970
	Jan. 28, 1916	17.2	-	9,200		June 4, 1919	17.75	-	10,000
	Feb. 18, 1916	13.8	-	6,140					
	Mar. 28, 1916	14.1	-	6,350	1920	Mar. 12, 1920	20.40	0.2	11,400

a Backwater from ice; amount of backwater not known.

Peak stages and discharges of Spoon River at Seville, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1920	Apr. 22, 1920	18.7	-	9,480
1921	Mar. 9, 1921	11.36	-	4,530
1922	July 12, 1922	14.41	-	6,130
1923	Mar. 13, 1923	14.74	-	7,040
1924	June 25, 1924	18.6	-	9,390
	June 30, 1924	25.7	-	21,300
	Aug. 22, 1924	30.77	-	37,300
1925	Feb. 9, 1925	16.4	2.3	6,560
1926	June 12, 1926	18.7	-	9,650
	June 14, 1926	20.4	-	11,200
	Sept. 4, 1926	27.10	-	25,200
	Sept.11, 1926	21.9	-	13,600
	Sept.17, 1926	20.3	-	11,100
1927	Oct. 2, 1926	19.4	-	10,800
	Nov. 16, 1926	20.8	-	12,200
	Nov. 26, 1926	15.8	-	7,110
	Feb. 7, 1927	18.7	.5	9,000
	Mar. 12, 1927	17.6	-	8,530
	Mar. 21, 1927	15.2	-	6,930
	Apr. 21, 1927	17.4	-	8,790
	May 10, 1927	14.8	-	6,410
	May 20, 1927	26.96	-	24,900
	May 24, 1927	23.5	-	15,600
	June 5, 1927	22.9	-	14,500
	June 12, 1927	17.3	-	8,290
	Sept. 9, 1927	16.9	-	7,970
1928	Oct. 4, 1927	23.90	-	16,000
	Oct. 14, 1927	18.3	-	9,350
	Jan. 12, 1928	15.3	-	6,760
	Jan. 15, 1928	14.5	-	6,380
	June 30, 1928	16.6	-	7,730
	July 6, 1928	18.1	-	9,060
1929	Nov. 19, 1928	16.7	-	7,810
	Jan. 22, 1929	19.0	.7	9,100
	Feb. 27, 1929	23.8	.6	15,000
	Mar. 16, 1929	19.0	-	9,750
	Apr. 3, 1929	21.7	-	13,000
	Apr. 26, 1929	18.2	-	9,030
	June 12, 1929	18.3	-	9,120
	July 2, 1929	15.2	-	6,690
	July 7, 1929	19.4	-	10,800
	July 11, 1929	15.7	-	7,330
	July 15, 1929	24.32	-	17,500
1930	Feb. 14, 1930	14.20	-	6,240
1931	June 7, 1931	10.36	-	3,560
1932	Nov. 22, 1931	15.86	-	7,980
1933	Dec. 26, 1932	15.9	-	7,820
	Apr. 2, 1933	16.1	-	8,060
	May 13, 1933	24.29	-	17,300
	May 17, 1933	16.2	-	7,740
	May 21, 1933	14.9	-	6,860
	May 27, 1933	14.7	-	6,620
1934	July 15, 1934	11.80	-	4,710
1935	Dec. 1, 1934	14.7	-	6,340
	Jan. 10, 1935	15.8	-	7,110
	Feb. 15, 1935	14.7	-	6,340
	Feb. 26, 1935	15.9	-	7,180
	May 5, 1935	19.3	-	10,000
	May 11, 1935	19.80	-	10,000
	May 13, 1935	15.5	-	6,900
	May 29, 1935	16.1	-	7,330
	June 20, 1935	17.3	-	8,290
	July 5, 1935	15.0	-	6,550
	July 25, 1935	18.7	-	9,480
1936	Feb. 29, 1936	24.81	-	18,800
	Sept.16, 1936	16.3	-	7,050
1937	Jan. 21, 1937	16.32	b1.3	-
	July 13, 1937	15.32	-	6,690
1938	Jan. 24, 1938	23.90	-	16,500
	Jan. 26, 1938	24.93	b1.1	-
	Apr. 8, 1938	17.3	-	7,480
	Apr. 11, 1938	18.0	-	8,440
1939	Mar. 14, 1939	16.0	-	6,940
	Apr. 17, 1939	17.47	-	8,200
1940	Mar. 3, 1940	17.30	-	8,060
1941	June 10, 1941	16.96	-	7,300
1942	Oct. 12, 1941	20.6	-	10,200
	Feb. 8, 1942	22.44	-	13,000
	Mar. 18, 1942	20.9	-	10,600
	July 8, 1942	20.8	-	10,400
1943	Dec. 29, 1942	18.1	-	7,980
	Feb. 6, 1943	18.6	-	8,380
	May 20, 1943	22.17	-	12,900
	July 5, 1943	15.9	-	6,330
1944	Mar. 17, 1944	23.95	-	16,600
	Apr. 25, 1944	23.8	-	16,200
	May 3, 1944	16.8	-	6,960
1945	May 10, 1945	16.7	-	6,890
	May 18, 1945	23.3	-	15,000
	June 18, 1945	25.50	-	20,700
1946	Jan. 7, 1946	24.55	-	17,700
	June 14, 1946	23.3	-	15,000
	June 19, 1946	21.6	-	11,600
1947	Apr. 7, 1947	21.0	-	10,800
	Apr. 30, 1947	21.74	-	12,000
	June 8, 1947	20.5	-	10,000
	June 19, 1947	19.0	-	8,700
	June 30, 1947	19.0	-	8,700
1948	Feb. 19, 1948	15.5	-	6,120
	Mar. 1, 1948	19.5	-	9,180
	Mar. 21, 1948	28.05	-	27,900
	July 26, 1948	19.2	-	9,500
1949	Jan. 17, 1949	15.8	-	6,260
	Feb. 16, 1949	21.00	-	10,600
	Feb. 21, 1949	19.5	-	9,020
1950	Jan. 25, 1950	16.1	-	6,470
	Mar. 2, 1950	16.7	-	6,890
	Apr. 26, 1950	26.4	-	23,200
	June 17, 1950	16.1	-	6,470
	June 20, 1950	26.40	-	23,200
	July 19, 1950	24.7	-	18,600
1951	Feb. 20, 1951	26.37	-	23,200
	Apr. 13, 1951	16.76	-	6,960
	May 12, 1951	15.76	-	6,260
	July 13, 1951	16.07	-	6,470
	July 25, 1951	25.80	-	21,500
1952	Mar. 20, 1952	15.50	-	6,050
	June 15, 1952	16.72	-	6,890
	June 23, 1952	19.65	-	9,180
	Aug. 15, 1952	16.40	-	6,680
1953	July 6, 1953	14.64	-	5,420
1954	Mar. 27, 1954	20.58	-	10,200
	Apr. 8, 1954	19.05	-	8,700
	Apr. 22, 1954	17.12	-	6,400
	June 3, 1954	22.50	-	13,200
1955	Jan. 8, 1955	21.27	-	11,200
	Feb. 21, 1955	23.32	-	15,000
	Feb. 28, 1955	15.50	-	6,050
	Apr. 25, 1955	16.60	-	6,820
	June 12, 1955	16.50	-	6,750

b Greater than figure shown.

Peak stages and discharges of Spoon River at Seville, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Feb. 25, 1956	15.90	-	6,330	1960	Oct. 6, 1959	18.60	-	8,060
	July 10, 1956	17.48	-	7,500		Mar. 31, 1960	26.00	-	19,400
	Aug. 13, 1956	16.38	-	6,680		Apr. 17, 1960	20.20	-	9,520
						May 26, 1960	16.40	-	6,350
1957	Jan. 23, 1957	15.33	-	-		June 6, 1960	16.31	-	6,280
	June 15, 1957	14.86	-	5,630		June 13, 1960	16.76	-	6,650
						June 23, 1960	20.35	-	9,740
1958	June 14, 1958	23.23	-	14,800					
	July 4, 1958	20.25	-	9,270	1961	Sept.14, 1961	20.08	-	9,410
						Sept.26, 1961	26.26	-	18,000
1959	Feb. 13, 1959	-	-	11,500					
	Feb. 25, 1959	16.00	-	6,050					

5705. Illinois River at Havana, Ill.

Location.--Lat 40°17'55", long 90°04'05", in NW¼ sec.1, T.21 N., R.9 W., at highway bridge in Havana, 0.6 mile downstream from Spoon River, and at mile 119.9.

Drainage area.--17,700 sq mi.

Gage.--Nonrecording. Datum of gage is 424.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 64,000 cfs for the period October 1921 to September 1927. Undefined for other periods because of the effects of river improvements.

Historical data.--Flood of May 1943 is maximum stage known since 1840.

Remarks.--Data to December 1904 taken from House Document 263, 59th Congress, 1st session; January 1907 to March 1917, from Flood-Control Report, Illinois Division of Waterways, 1929; April 1917 to September 1921, October 1928 to September 1961, from reports of U.S. Weather Bureau. Since Jan. 17, 1900, flow has included diversion from Lake Michigan through Chicago Sanitary and Ship Canal. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1844	-	a22.2	-	1911	Mar. 1, 1911	12.3	-
				1912	Apr. 4, 1912	17.2	-
1849	-	a22.0	-	1913	Apr. 4, 1913	20.2	-
				1914	Apr. 15, 1914	13.1	-
1858	-	a21.8	-	1915	Aug. 10, 1915	14.9	-
1879	Apr.18-20, 1879	11.4	-	1916	Jan. 31, 1916	19.8	-
1880	May 15-18, 1880	13.3	-	1917	June 17, 1917	17.3	-
				1918	Feb.24-27, 1918	15.3	-
1881	Mar. 21, 1881	15.7	-	1919	Mar. 27, 1919	18.6	-
				1920	Apr.26-28, 1920	19.7	-
1883	-	a20.6	-				
				1921	May 5, 1921	13.9	-
1887	-	b16.7	-	1922	Apr. 20, 1922	22.4	65,000
				1923	Mar.27-29, 1923	14.3	29,300
1890	-	b11.1	-	1924	Aug. 25, 1924	18.7	45,100
				1925	Mar.27-30, 1925	14.0	28,300
1892	-	b17.8	-				
				1926	Sept.19, 1926	19.3	46,000
1896	Jan. 1-3, 1896	12.6	-	1927	Oct.11-14, 1926	23.1	74,600
1897	Mar.27-29, 1897	16.0	-	1928	Dec. 19, 1927	18.1	-
1898	Apr. 2, 1898	18.0	-	1929	Apr. 5, 1929	19.5	-
1899	Mar. 22, 1899	13.7	-	1930	Mar. 4, 1930	16.5	-
1900	Mar. 18, 1900	17.4	-				
				1931	June 14-17, 1931	11.7	-
1901	Apr. 2-4, 1901	15.3	-	1932	Jan. 23-26, 1932	15.0	-
1902	July 24, 1902	19.2	-	1933	May 23, 1933	23.1	-
1903	Mar. 14, 1903	17.1	-	1934	Oct. 31, 1933	9.8	-
1904	Apr. 1, 1904	19.9	-		Apr. 15, 1934	9.8	-
				1935	May 17, 1935	20.0	-
1907	Jan. 27, 1907	17.6	-				
1908	July 17, 1908	20.2	-	1936	Mar. 3, 1936	18.0	-
1909	May 8, 1909	15.2	-	1937	May 6-9, 1937	16.5	-
1910	Mar. 15, 1910	14.4	-	1938	Apr. 15, 1938	19.2	-

a From floodmarks.
b From fragmentary gage-height record.

Peak stages and discharges of Illinois River at Havana, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Mar. 20, 1939	17.9	-	1951	Feb. 24, 1951	19.3	-
1940	Mar. 7, 1940	11.8	-	1952	Apr. 24, 1952	16.6	-
				1953	Mar. 24, 1953	13.0	-
1941	June 17, 1941	11.0	-	1954	June 6, 1954	14.3	-
1942	Feb. 19, 1942	18.7	-	1955	Oct. 18, 1954	15.0	-
1943	May 25, 1943	27.3	-				
1944	Apr. 29, 1944	23.3	-	1956	May 8, 1956	11.9	-
1945	May 23, 1945	18.2	-	1957	May 4-6, 1957	17.6	-
				1958	June 20, 1958	17.00	-
1946	Jan. 13, 1946	18.6	-	1959	Feb. 19, 1959	17.70	-
1947	June 13-15,1947	18.7	-	1960	Apr. 6, 1960	19.95	-
1948	Mar. 24, 1948	19.8	-				
1949	Feb.24-28,1949	16.6	-	1961	Sept.30, 1961	17.1	-
1950	Apr. 30, 1950	21.0	-				

5710. Sangamon River at Mahomet, Ill.

Location.--Lat 40°11'30", long 88°24'00", in NE¼SW¼ sec.15, T.20 N., R.7 E., on right bank at downstream side of bridge on U.S. Highway 150 in Mahomet, 0.7 mile upstream from Cleveland, Cincinnati, Chicago & St. Louis Railway bridge.

Drainage area.--356 sq mi.

Gage.--Nonrecording prior to Dec. 21, 1948; recording thereafter. Datum of gage is 665.11 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 21, 1948	11.51	2,400	1953	Mar. 16, 1953	10.06	1,760
	Apr. 8, 1948	9.9	1,740		Apr. 2, 1953	11.84	2,470
1949	Jan. 28, 1949	11.2	2,240	1954	Apr. 12, 1954	7.73	1,020
	Feb. 15, 1949	11.95	2,560				
	Feb. 23, 1949	9.9	1,740	1955	May 30, 1955	9.42	1,340
	May 24, 1949	9.5	1,600				
				1956	May 28, 1956	19.96	14,600
1950	Dec. 23, 1949	16.63	8,200		July 18, 1956	10.29	1,670
	Jan. 4, 1950	13.2	3,440				
	Jan. 11, 1950	11.8	2,470	1957	Apr. 12, 1957	11.19	2,100
	Jan. 14, 1950	14.4	4,500		Apr. 28, 1957	15.29	5,850
	Jan. 26, 1950	13.8	3,960		May 15, 1957	12.35	2,830
	Feb. 15, 1950	12.9	3,200		June 29. 1957	10.61	1,840
	Apr. 5, 1950	14.5	4,590		July 14, 1957	10.41	1,760
	Apr. 26, 1950	13.6	3,780				
	June 20, 1950	11.8	2,320	1958	June 14, 1958	13.89	4,100
	July 4, 1950	14.1	3,960		July 11, 1958	11.42	1,910
					Aug. 2, 1958	13.82	4,000
1951	Jan. 3, 1951	11.89	2,520		Aug. 8, 1958	11.00	1,740
	Feb. 13, 1951	10.63	1,400				
	Feb. 22, 1951	16.88	9,100	1959	Feb. 11, 1959	17.51	7,600
	Apr. 13, 1951	10.60	1,950				
	July 10, 1951	15.22	5,250	1960	Mar. 31, 1960	12.22	2,480
					June 23, 1960	13.01	3,200
1952	Nov. 15, 1951	10.81	1,910				
	Apr. 14, 1952	11.10	2,150	1961	Apr. 22, 1961	13.84	4,000
	June 23, 1952	12.92	3,200		May 8, 1961	13.40	3,600

5715. Goose Creek near De Land, Ill.

Location.--Lat 40°05'40", long 88°37'52", in NW¼ sec.22, T.19 N., R.5 E., on right bank at downstream side of highway bridge, 2 miles southeast of De Land and 4.5 miles upstream from mouth.

Drainage area.--47.3 sq mi.

Gage.--Recording. Datum of gage is 663.44 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	June 28, 1951	9.17	559	1957	Apr. 27, 1957	7.38	482
	July 9, 1951	10.52	863		June 28, 1957	6.15	339
1952	Nov. 13, 1951	6.75	317	1958	June 11, 1958	8.84	755
	Apr. 13, 1952	7.03	333		June 13, 1958	6.35	370
	June 22, 1952	8.06	438		June 17, 1958	6.06	340
1953	Mar. 15, 1953	10.01	788		July 11, 1958	11.77	2,890
	Mar. 31, 1953	7.71	415		July 15, 1958	6.62	390
1954	June 7, 1954	11.21	1,400		Aug. 2, 1958	7.94	590
1955	June 11, 1955	6.63	347	1959	Jan. 30, 1959	-	320
1956	May 28, 1956	6.35	326		Feb. 10, 1959	12.13	3,340

5720. Sangamon River at Monticello, Ill.

Location.--Lat 40°01'40", long 88°35'25", in SW¼ sec.12, T.18 N., R.5 E., at center of span on downstream side of Illinois Central Railroad bridge, half a mile west of Monticello.

Drainage area.--550 sq mi.

Gage.--Nonrecording. Datum of gage is 625.89 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 14, 1908	15.36	9,600	1916	Jan. 5, 1916	10.5	1,860
					Jan. 24, 1916	11.1	2,340
1909	Feb. 25, 1909	11.2	3,120		Jan. 31, 1916	13.84	6,580
	Apr. 14, 1909	11.1	2,880				
	Apr. 22, 1909	10.6	2,430	1917	June 9, 1917	12.16	3,830
	July 12, 1909	15.12	9,120				
				1918	Feb. 14, 1918	14.50	8,100
1910	Jan. 21, 1910	10.23	2,120		June 25, 1918	11.7	3,080
1911	Jan. 14, 1911	a10.4	-	1919	Dec. 25, 1918	10.9	2,160
	Jan. 28, 1911	10.0	1,840		Mar. 18, 1919	13.2	5,440
	Apr. 16, 1911	10.11	2,020		June 25, 1919	15.20	9,020
1912	Nov. 20, 1911	10.2	2,120	1920	Mar. 15, 1920	11.2	2,500
	Feb. 27, 1912	10.8	2,760		Mar. 28, 1920	11.0	2,250
	Mar. 20, 1912	14.31	7,840		Apr. 21, 1920	15.17	9,750
	Mar. 29, 1912	12.2	4,160		May 13, 1920	10.8	2,090
	Apr. 20, 1912	10.3	2,220		May 18, 1920	13.3	5,620
	Apr. 30, 1912	12.0	4,120				
				1921	May 27, 1921	10.6	1,930
1913	Mar. 25, 1913	17.7	16,700		Sept. 4, 1921	10.5	1,980
1915	Aug. 1, 1915	13.87	5,990	1922	Apr. 13, 1922	13.45	5,820
	Aug. 17, 1915	11.9	2,800				
	Aug. 21, 1915	12.4	3,530	1923	Mar. 16, 1923	13.42	5,250
	Sept.20, 1915	10.5	1,860		May 14, 1923	13.2	5,440

a Backwater from ice, greater than 0.5 ft.

Peak stages and discharges of Sangamon River at Monticello, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)
1923	May 18, 1923	13.3	5,610
	Aug. 11, 1923	12.3	3,980
1924	Dec. 8, 1923	11.3	2,550
	Dec. 14, 1923	11.7	3,080
	Feb. 7, 1924	11.2	2,440
	Mar. 31, 1924	11.2	2,440
	June 8, 1924	10.9	2,160
	June 30, 1924	13.3	5,610
	Aug. 21, 1924	13.41	5,250
	Aug. 25, 1924	11.9	3,380
	Sept. 2, 1924	10.5	1,860
1925	Feb. 9, 1925	10.8	2,080
	Mar. 19, 1925	10.90	2,060
1926	Feb. 27, 1926	10.9	2,330
	Apr. 8, 1926	13.4	5,800
	Sept. 7, 1926	13.3	5,580
	Sept.28, 1926	12.7	4,630
1927	Oct. 4, 1926	18.50	19,000
	Nov. 18, 1926	11.8	3,320
	Feb. 3, 1927	12.0	3,600
	Mar. 22, 1927	13.6	6,180
	Apr. 4, 1927	11.8	3,320
	Apr. 21, 1927	13.8	6,580
	May 21, 1927	12.2	3,880
	May 27, 1927	11.3	2,670
	June 5, 1927	11.0	2,250
1928	Dec. 1, 1927	12.96	5,000
	Dec. 10, 1927	12.6	4,330
1929	Jan. 23, 1929	12.9	4,940
	Mar. 18, 1929	11.2	2,350
	Apr. 3, 1929	11.2	2,350
	Apr. 11, 1929	12.6	4,200
	May 6, 1929	11.0	2,060
	May 20, 1929	11.4	2,460
	July 7, 1929	15.11	9,500
1930	Jan. 4, 1930	11.6	2,810
	Jan. 15, 1930	11.6	2,810
	Feb. 26, 1930	11.3	2,460
	Apr. 24, 1930	11.0	2,060
1931	Sept.19, 1931	10.53	1,740
1932	Jan. 19, 1932	10.22	1,530
1933	Mar. 19, 1933	13.1	5,200
	Apr. 3, 1933	11.5	2,530
	May 12, 1933	14.42	7,920
	May 23, 1933	11.7	2,780
1934	Apr. 1, 1934	8.26	704
1935	Jan. 12, 1935	12.04	3,130
	May 6, 1935	11.3	2,300
	May 12, 1935	12.1	3,360
	June 21, 1935	11.1	2,090
1936	Feb. 26, 1936	14.22	7,400
	May 4, 1936	11.6	2,650
1937	Nov. 3, 1936	11.2	2,190
	Dec. 31, 1936	10.8	1,820
	Jan. 9, 1937	12.1	3,360
	Jan. 15, 1937	12.0	3,210
	June 17, 1937	11.2	2,190
	June 28, 1937	12.37	3,730
1938	Mar. 18, 1938	12.1	3,360
	Mar. 26, 1938	12.0	3,210
	Mar. 31, 1938	12.6	4,200
	Apr. 9, 1938	12.86	4,930
	June 11, 1938	11.4	2,410
	June 29, 1938	11.3	2,300
1939	Feb. 14, 1939	12.2	3,520
	Feb. 22, 1939	13.0	5,000
1939	Mar. 13, 1939	15.99	11,900
	Apr. 17, 1939	13.0	5,000
1940	Mar. 5, 1940	11.88	3,000
1941	June 15, 1941	10.89	1,670
1942	Oct. 9, 1941	12.1	3,290
	Nov. 3, 1941	11.9	2,910
	Nov. 7, 1941	11.5	2,240
	Feb. 6, 1942	12.98	5,000
	Mar. 19, 1942	12.8	4,620
	Apr. 10, 1942	11.2	1,890
1943	Nov. 11, 1942	11.2	1,980
	Nov. 25, 1942	11.9	2,910
	Dec. 30, 1942	12.7	4,430
	Feb. 6, 1943	11.5	2,240
	Mar. 17, 1943	11.6	2,390
	May 13, 1943	12.6	4,240
	May 18, 1943	17.67	16,600
	June 17, 1943	11.2	1,890
	Aug. 6, 1943	12.7	4,430
1944	Apr. 13, 1944	15.26	10,000
	Apr. 25, 1944	13.5	5,800
	May 24, 1944	12.0	3,100
1945	Apr. 2, 1945	11.3	1,960
	Apr. 14, 1945	11.3	1,960
	May 19, 1945	11.4	2,110
	June 19, 1945	12.09	3,290
1946	Dec. 31, 1945	11.4	2,060
	Jan. 8, 1946	12.3	3,670
	Feb. 14, 1946	11.2	1,860
	Mar. 18, 1946	11.4	2,110
	May 5, 1946	11.5	2,170
	June 20, 1946	12.96	5,000
1947	May 2, 1947	12.62	4,050
	June 10, 1947	12.3	3,330
1948	Mar. 1, 1948	11.6	1,940
	Mar. 23, 1948	12.68	3,640
1949	Jan. 29, 1949	12.3	2,920
	Feb. 15, 1949	12.65	3,460
	Feb. 25, 1949	11.7	2,050
1950	Dec. 23, 1949	14.77	8,600
	Jan. 4, 1950	13.2	4,740
	Jan. 16, 1950	13.7	5,860
	Jan. 26, 1950	13.2	4,740
	Feb. 16, 1950	12.5	3,350
	Apr. 6, 1950	13.2	4,740
	Apr. 27, 1950	12.6	3,540
	June 22, 1950	12.0	2,480
	July 5, 1950	12.5	3,350
1951	Jan. 5, 1951	12.00	2,480
	Feb. 21, 1951	15.00	9,100
	Apr. 14, 1951	11.74	2,010
	July 9, 1951	12.71	3,730
	July 12, 1951	13.53	5,390
1952	Nov. 16, 1951	11.81	2,010
	Apr. 16, 1952	11.82	2,150
	Apr. 24, 1952	11.61	1,890
	June 25, 1952	12.52	3,350
1953	Mar. 15, 1953	11.66	2,010
	Apr. 3, 1953	12.17	2,820
1954	June 8, 1954	13.04	4,320
1955	May 31, 1955	10.88	1,370
1956	May 29, 1956	16.56	13,600
1957	Apr. 29, 1957	14.48	7,850
	May 16, 1957	12.30	2,990

Peak stages and discharges of Sangamon River at Monticello, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	June 29, 1957	12.15	2,480	1960	Apr. 1, 1960	13.30	2,970
					June 25, 1960	13.70	3,510
1958	June 11, 1958	13.46	3,230				
	June 16, 1958	14.16	4,250	1961	Apr. 25, 1961	14.74	5,060
	July 12, 1958	14.65	4,880		May 8, 1961	17.40	11,000
	Aug. 3, 1958	13.61	3,370		June 9, 1961	12.18	1,860
	Aug. 8, 1958	12.45	2,110				
1959	Feb. 10, 1959	17.49	11,200				

5721. Wildcat Creek tributary near Monticello, Ill.

Location.--Lat 40°01'37", long 88°38'24", in SW¼SE¼ sec.9, T.18 N., R.5 E., at culvert on State Highway 47, 3.6 miles west of Monticello.

Drainage area.--0.100 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Oct. 6, 1955	12.56	28	1960	June 23, 1960	12.95	40.4
1957	June 17, 1957	12.58	30				
1958	May 15, 1958	13.67	64	1961	May 8, 1961	a14.74	16
1959	Feb. 10, 1959	12.81	36				

a Backwater from debris.

5725. Sangamon River near Oakley, Ill.

Location.--Lat 39°55'09", long 88°48'09", in SE¼NE¼ sec.24, T.17 N., R.3 E., near center of span on downstream side of bridge, 2.4 miles downstream from Friends Creek, 3 miles north of Oakley, and about 4½ miles upstream from Lake Decatur.

Drainage area.--750 sq mi.

Gage.--Nonrecording. Datum of gage is 603.00 ft above mean sea level, datum of 1929 (levels by Warren & Van Praag, Inc.).

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Flood of May 18, 1943, reached maximum stage known.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 18, 1943	a21.85	-	1957	Apr. 30, 1957	16.20	7,400
1951	July 13, 1951	14.97	4,500	1958	June 17, 1958	14.66	4,200
					July 13, 1958	15.82	6,150
1952	June 26, 1952	14.00	3,020		Aug. 5, 1958	14.27	3,370
1953	Mar. 15, 1953	13.98	3,020	1959	Feb. 11, 1959	18.45	13,700
	Apr. 2, 1953	14.09	3,140				
				1960	Apr. 2, 1960	14.50	3,650
1954	June 10, 1954	14.00	3,020		June 26, 1960	-	3,950
1955	June 12, 1955	13.35	2,390	1961	Apr. 26, 1961	15.80	6,150
					May 9, 1961	18.85	15,300
1956	May 30, 1956	17.72	11,800				

a From floodmark.

5740. South Fork Sangamon River near Nokomis, Ill.

Location.--Lat 39°21'12", long 89°15'05", in NE¼SE¼ sec.36, T.11 N., R.2 W., on right bank at downstream side of highway bridge, 0.7 mile upstream from small tributary, and 4.0 miles northeast of Nokomis.

Drainage area.--10.8 sq mi.

Gage.--Recording. Datum of gage is 641.35 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 600 cfs and extended above on basis of estimate made by slope-area study.

Remarks.--Base for partial-duration series, 330 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951 a/	Feb. 6, 1951	8.85	607	1957	July 14, 1957	6.97	340
	Feb. 16, 1951	7.56	511		July 16, 1957	8.53	590
	Feb. 20, 1951	5.56	351		July 17, 1957	8.52	590
	Mar. 17, 1951	5.54	343		Aug. 3, 1957	11.10	1,650
	Apr. 6, 1951	10.94	1,510				
	Apr. 11, 1951	8.69	599	1958	Dec. 19, 1957	8.38	570
	June 27, 1951	6.44	415		June 10, 1958	8.53	590
	June 28, 1951	10.73	1,390		July 27, 1958	9.24	780
					July 31, 1958	11.87	2,280
1952	Feb. 4, 1952	7.43	495				
	Mar. 11, 1952	7.39	495	1959	Nov. 25, 1958	8.01	413
	Apr. 12, 1952	5.48	343		Jan. 21, 1959	9.40	587
					Feb. 9, 1959	11.62	1,270
1953	Mar. 31, 1953	5.31	327		Mar. 15, 1959	9.04	529
					Aug. 4, 1959	9.65	622
1954	June 1, 1954	5.75	367		Aug. 6, 1959	11.81	1,380
					Aug. 18, 1959	9.02	516
1955	July 1, 1955	8.97	640				
				1960	Mar. 27, 1960	9.69	641
1956	Apr. 29, 1956	7.95	398		May 25, 1960	9.01	529
	Aug. 9, 1956	8.78	570		June 21, 1960	10.62	860
					June 23, 1960	10.40	805
1957	Apr. 3, 1957	7.19	364		July 1, 1960	8.62	480
	Apr. 26, 1957	7.63	417		Sept. 9, 1960	7.52	363
	June 14, 1957	10.71	1,390				
	June 28, 1957	14.84	8,600	1961	May 8, 1961	9.15	556

a December 1950 to September 1951.

5745. Flat Branch near Taylorville, Ill.

Location.--Lat 39°33'14", long 89°15'12", in SE¼SE¼ sec.24, T.13 N., R.2 W., on right bank at downstream side of bridge on State Highway 29, 1.4 miles east of Taylorville, and 1.8 miles upstream from mouth.

Drainage area.--276 sq mi.

Gage.--Recording. Datum of gage is 562.44 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 23, 1949	-	2,400	1951	Mar. 19, 1951	11.09	1,560
	Jan. 5, 1950	16.77	9,400		Apr. 8, 1951	11.22	1,620
	Jan. 11, 1950	-	2,500		Apr. 13, 1951	12.10	2,230
	Jan. 14, 1950	-	3,080		June 29, 1951	16.02	7,350
	Feb. 15, 1950	-	2,000				
	Feb. 23, 1950	-	1,740	1952	Apr. 14, 1952	11.01	1,500
	Apr. 5, 1950	-	1,800		June 23, 1952	11.81	2,000
	June 15, 1950	-	4,160				
	June 20, 1950	-	2,230	1953	Apr. 3, 1953	9.30	660
	July 4, 1950	-	2,600				
				1954	Apr. 17, 1954	8.55	457
1951	Feb. 9, 1951	10.90	1,440				
	Feb. 22, 1951	12.22	2,310	1955	July 16, 1955	11.57	1,860

Peak stages and discharges of Flat Branch near Taylorville, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 3, 1956	11.66	1,930	1959	Feb. 11, 1959	15.47	5,750
1957	Apr. 6, 1957	12.45	2,340	1960	Mar. 31, 1960	12.51	2,410
	Apr. 29, 1957	12.95	2,810		May 27, 1960	11.18	1,700
	June 15, 1957	15.89	6,350		June 21, 1960	11.67	1,950
	June 29, 1957	19.55	13,000		June 24, 1960	14.63	4,460
	July 17, 1957	11.75	2,000				
				1961	May 10, 1961	13.17	3,000
1958	Dec. 22, 1957	11.25	1,700		July 29, 1961	12.89	2,720
	Aug. 1, 1958	15.05	5,000				

5755. South Fork Sangamon River at Kincaid, Ill.

(Published as "near Taylorville" prior to May 1917, and as "at powerplant, near Taylorville" May 1917 to October 1929)

Location.--Lat 39°34'40", long 89°23'30", in SW¼NE¼ sec.14, T.13 N., R.3 W., on right bank 200 ft upstream from Chicago & Illinois Midland Railway bridge, 300 ft upstream from bridge on State Highway 104, 1 mile southeast of Kincaid, and 6 miles downstream from Bear Creek.

Drainage area.--510 sq mi.

Gage.--Nonrecording prior to July 18, 1945; recording thereafter. Datum of gage "near Taylorville" changed by an unknown amount Aug. 8, 1914. May 1917 to Sept. 30, 1930, at railroad bridge 200 ft downstream, and Aug. 17, 1931, to Nov. 21, 1933, at highway bridge 300 ft downstream, both at present datum. Datum of Kincaid gage is 538.65 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--At Kincaid, the flood of January 1916 reached a stage of 27.3 ft, from statements by local residents.

Remarks.--Peaks prior to 1917 are for site "near Taylorsville." Gage height listed for 1909 peak has been adjusted by +2.0 ft to refer it to datum used September 1909 to December 1912. Base for partial-duration series, 2,800 cfs. Only annual peaks are shown prior to 1917.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 6, 1908	-	3,300	1924	Dec. 15, 1923	20.10	6,000
1909	July 8, 1909	12.2	2,060		Feb. 2, 1924	17.4	3,570
1910	Jan.20, May 25, 1910	11.0	1,700		Mar. 31, 1924	17.2	3,250
				1925	Mar. 17, 1925	17.15	3,410
1911	Sept.30, 1911	15.9	4,140				
1912	Mar. 17, 1912	12.7	2,540	1926	Apr. 10, 1926	18.0	3,520
					Sept. 6, 1926	16.8	2,850
1915	Aug. 22, 1915	14.8	7,150		Sept.12, 1926	21.75	6,720
1916	Jan. 31, 1916	16.1	9,660				
				1927	Oct. 3, 1926	26.5	13,300
1917	June 6, 1917	26.88	14,100		Feb. 3, 1927	19.5	4,780
					Mar. 21, 1927	21.8	6,710
1918	Feb. 12, 1918	18.2	3,760		Apr. 2, 1927	21.3	6,220
	May 10, 1918	18.4	3,920		Apr. 17, 1927	20.0	5,320
					May 12, 1927	18.6	4,000
1919	June 5, 1919	16.32	2,600		May 21, 1927	19.1	4,510
					May 26, 1927	24.3	13,200
1920	Mar. 28, 1920	18.2	3,640		May 31, 1927	21.2	6,400
	May 19, 1920	19.5	4,800		June 14, 1927	17.1	3,000
	June 2, 1920	19.1	4,230				
				1929	Jan. 23, 1929	17.7	3,360
1921	Mar. 30, 1921	16.85	2,720		Mar. 17, 1929	17.7	3,340
					May 4, 1929	20.4	5,210
1922	Nov. 22, 1921	18.6	3,880		May 15, 1929	23.4	8,280
	Mar. 15, 1922	26.60	13,500		July 16, 1929	16.8	2,850
	Mar. 21, 1922	19.5	4,510				
	Apr. 2, 1922	22.3	7,510	1930	Jan. 16, 1930	21.50	6,700
	Apr. 9, 1922	24.9	15,600				
	Apr. 18, 1922	23.6	10,700	1932	Aug. 17, 1932	14.01	1,470
1923	Mar. 19, 1923	21.0	6,900	1933	Jan. 24, 1933	17.8	3,580

Peak stages and discharges of South Fork Sangamon River at Kincaid, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Apr. 3, 1933	16.8	3,060	1951	Apr. 14, 1951	18.73	4,060
	May 17, 1933	17.76	3,710		June 30, 1951	22.72	7,590
	May 27, 1933	17.6	3,520				
				1952	Apr. 15, 1952	15.84	2,370
1943	May 19, 1943	26.7	25,000				
				1953	Apr. 4, 1953	13.17	1,110
1945	Apr. 3, 1945	19.63	4,970				
	June 19, 1945	17.9	3,460	1954	Apr. 18, 1954	11.75	749
1946	Aug. 17, 1946	16.45	2,800	1955	July 19, 1955	14.77	1,600
1947	Nov. 4, 1946	17.3	3,320	1956	Aug. 6, 1956	14.57	1,550
	Apr. 27, 1947	17.5	3,450				
	May 1, 1947	20.2	5,270	1957	Apr. 8, 1957	18.38	4,270
	June 8, 1947	23.14	7,920		Apr. 29, 1957	20.60	5,720
	June 22, 1947	17.1	3,060		June 16, 1957	24.63	9,900
					June 29, 1957	30.02	21,500
1948	Mar. 25, 1948	19.08	4,610		July 18, 1957	17.78	3,910
1949	Jan. 25, 1949	17.5	3,520	1958	Aug. 2, 1958	25.84	11,900
	Feb. 17, 1949	19.44	4,820				
	Feb. 24, 1949	16.6	2,930	1959	Feb. 12, 1959	22.10	6,510
					Aug. 7, 1959	17.63	3,060
1950	Jan. 6, 1950	23.53	8,400				
	Jan. 15, 1950	20.3	5,250	1960	Apr. 1, 1960	20.16	4,560
	Feb. 15, 1950	17.6	3,400		June 26, 1960	20.50	4,800
	Feb. 25, 1950	16.7	2,860				
	Apr. 6, 1950	16.8	2,920	1961	May 11, 1961	19.29	3,910
	June 16, 1950	20.2	5,160		July 31, 1961	18.02	3,100
1951	Feb. 21, 1951	18.73	4,090				

5760. South Fork Sangamon River near Rochester, Ill.

Location.--Lat 39°45'50", long 89°33'45", in NW¼SE¼ sec.8, T.15 N., R.4 W., on left bank at downstream side of bridge on State Highway 29, 300 ft downstream from Baltimore & Ohio Railroad bridge, and 1.1 miles northwest of Rochester.

Drainage area.--809 sq mi.

Gage.--Recording. Datum of gage is 511.30 ft above mean sea level, datum of 1929. Since May 19, 1950, auxiliary nonrecording gage at bridge 1 mile upstream, and prior to May 19, 1950, auxiliary nonrecording gage at bridge 4 miles downstream.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Diversion above station for municipal supply at Springfield beginning Apr. 14, 1955. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 8, 1950	25.43	7,950	1956	Aug. 10, 1956	-	2,150
				1957	July 1, 1957	28.36	18,100
1951	July 2, 1951	25.24	7,160	1958	Aug. 3, 1958	28.14	14,300
1952	June 23, 1952	19.80	3,080	1959	Feb. 13, 1959	24.28	a6,000
1953	Mar. 15, 1953	-	1,230	1960	Apr. 2, 1960	-	5,300
	Apr. 6, 1953	15.96	-		June 25, 1960	23.50	-
1954	Apr. 15, 1954	9.83	971				
1955	May 29, 1955	16.14	2,330	1961	May 13, 1961	22.73	4,360
1956	June 3, 1956	17.37	-				

a About.

5765. Sangamon River at Riverton, Ill.

Location.--Lat 39°50'34", long 89°32'52", in NE¼ sec.16, T.16 N., R.4 W., near center of span on upstream side of bridge on U.S. Highway 36 at Riverton, 4½ miles downstream from South Fork.

Drainage area.--2,560 sq mi, approximately.

Gage.--Nonrecording. Prior to Aug. 14, 1934, on Wabash Railway bridge 1,450 ft downstream at datum 5.61 ft lower. Datum of gage is 508.38 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The high water of 1875 is said to have been about half a foot lower than high water of 1883.

Remarks.--Some regulation at municipal reservoirs at Decatur (since 1922) and at Springfield (since 1934). Base for partial-duration series, 6,500 cfs. Only annual peaks are shown after 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1883	- -	a32	-	1926	June 18, 1926	20.9	6,570
					Sept.11, 1926	30.15	32,900
1908	May 9, 1908	26.52	19,100				
				1927	Oct. 4, 1926	32.04	41,000
1909	Apr. 23, 1909	22.6	9,270		Nov. 29, 1926	22.3	8,560
	July 15, 1909	24.31	13,200		Feb. 6, 1927	23.8	11,200
					Mar. 21, 1927	25.5	14,800
1910	Jan. 21, 1910	21.20	7,020		Apr. 6, 1927	25.0	13,800
					Apr. 21, 1927	25.5	14,800
1911	Jan. 16, 1911	21.6	8,010		May 11, 1927	22.2	8,400
	Apr. 15, 1911	21.0	7,060		May 29, 1927	26.1	16,400
	Sept.30, 1911	27.22	21,200		June 14, 1927	22.9	9,530
1912	Feb. 28, 1912	22.0	8,300	1929	Jan. 25, 1929	24.0	11,400
	Mar. 23, 1912	25.30	b15,800		Apr. 14, 1929	23.6	11,500
	Apr. 19, 1912	21.5	7,580		Apr. 23, 1929	22.5	9,240
	Apr. 30, 1912	24.6	14,000		May 5, 1929	23.5	11,300
					May 20, 1929	24.80	14,000
1915	Feb. 6, 1915	21.0	7,180		June 14, 1929	21.1	7,100
	May 30, 1915	23.2	10,700		July 12, 1929	23.0	10,100
	July 14, 1915	21.2	7,450				
	Aug. 24, 1915	26.85	18,600	1930	Jan. 19, 1930	d23.6	10,300
					Feb. 28, 1930	22.52	9,800
1916	Jan. 22, 1916	22.2	8,780				
	Feb. 2, 1916	28.03	23,800	1931	July 5, 1931	11.53	1,040
1917	Mar. 15, 1917	23.4	11,100	1933	Apr. 3, 1933	24.2	13,000
	June 6, 1917	27.80	23,100		May 16, 1933	26.05	18,700
1918	Feb. 14, 1918	22.9	9,880	1934	Sept.30, 1934	15.59	2,540
	Feb. 19, 1918	21.8	8,010				
	May 11, 1918	22.83	9,980	1935	May 16, 1935	18.98	12,700
1919	Mar. 23, 1919	21.7	8,010	1936	Feb. 28, 1936	19.38	13,300
	June 6, 1919	21.1	6,930				
	June 29, 1919	23.37	11,100	1937	Jan. 17, 1937	19.63	13,800
					Feb. 9, 1937	16.1	6,680
1920	Mar. 20, 1920	21.6	8,010		Feb. 23, 1937	16.6	7,430
	Mar. 29, 1920	22.6	9,620		June 17, 1937	18.1	10,700
	Apr. 21, 1920	22.2	8,540				
	May 14, 1920	25.32	15,800	1938	Apr. 2, 1938	20.0	16,400
	June 3, 1920	23.1	10,300		Apr. 10, 1938	21.86	21,000
1921	Mar. 30, 1921	22.5	9,080	1939	Feb. 13, 1939	16.1	6,680
	Apr. 28, 1921	22.1	8,370		Feb. 22, 1939	17.7	9,600
					Mar. 15, 1939	23.36	25,900
1922	Nov. 25, 1921	21.2	6,970		Apr. 22, 1939	18.0	10,400
	Mar. 17, 1922	27.6	22,500				
	Apr. 11, 1922	28.22	22,700	1940	May 6, 1940	10.60	2,840
1923	Mar. 20, 1923	23.62	11,000	1941	June 16, 1941	13.13	4,260
1924	June 28, 1924	22.90	9,500	1942	Nov. 10, 1941	19.1	13,700
					Feb. 8, 1942	20.83	17,400
1925	Dec. 26, 1924	c22.3	8,200		Apr. 13, 1942	16.3	6,950
	Mar. 20, 1925	23.31	10,200		July 14, 1942	19.5	14,800
1926	Apr. 9, 1926	25.6	15,200	1943	Nov. 25, 1942	17.8	9,800

a About. b Maximum peak discharge; maximum discharge during year, 21,200 cfs at 12:01 a.m. Oct. 1, 1911; stage falling. c Backwater from ice, 0.3 ft. d Backwater from ice, 0.5 ft.

Peak stages and discharges of Sangamon River at Riverton, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Dec. 30, 1942	18.7	12,500	1949	Jan. 30, 1949	18.70	12,500
	Mar. 21, 1943	16.9	8,000		Feb. 23, 1949	18.5	11,900
	May 19, 1943	31.52	68,700				
	June 9, 1943	16.3	6,950	1950	Dec. 28, 1949	19.1	13,700
					Jan. 16, 1950	21.69	21,800
1944	Apr. 12, 1944	21.7	21,800		Jan. 30, 1950	17.6	9,400
	Apr. 25, 1944	23.89	30,600		Feb. 18, 1950	17.5	9,200
					Apr. 10, 1950	17.6	9,400
1945	Apr. 5, 1945	20.36	17,600		June 21, 1950	19.0	13,400
	Apr. 16, 1945	16.9	8,000				
	May 18, 1945	16.2	6,810	1951	June 29, 1951	23.46	29,000
	June 18, 1945	18.7	12,500	1952	Apr. 15, 1952	17.73	9,600
				1953	Apr. 6, 1953	-	5,500
1946	Jan. 8, 1946	17.59	9,400	1954	June 12, 1954	8.85	1,830
	Feb. 20, 1946	16.5	7,260	1955	May 29, 1955	13.49	4,520
	May 8, 1946	16.1	6,680				
	May 19, 1946	16.4	7,100	1956	June 3, 1956	17.04	8,200
				1957	July 1, 1957	21.94	22,600
1947	Nov. 5, 1946	18.0	10,400	1958	Aug. 4, 1958	21.36	20,600
	May 3, 1947	18.8	12,800	1959	Feb. 14, 1959	21.33	20,300
	June 9, 1947	19.94	16,100	1960	June 23, 1960	20.63	18,200
	June 22, 1947	17.1	8,400				
				1961	May 11, 1961	21.21	20,000
1948	Mar. 27, 1948	19.07	13,700				

5775. Spring Creek near Springfield, Ill.

Location.--Lat 39°48'57", long 89°41'57", in NW¼NE¼ sec.30, T.16 N., R.5 W., on right bank at downstream side of bridge on State Highway 125, 0.8 mile downstream from Chicago and North Western Railway bridge, and 1.9 miles west of intersection of Jefferson Street (Highway 125) and MacArthur Boulevard in Springfield.

Drainage area.--107 sq mi.

Gage.--Nonrecording prior to Dec. 22, 1948; recording thereafter. Datum of gage is 524.65 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	July 26, 1948	9.05	1,050	1957	Apr. 20, 1957	8.17	1,090
					Apr. 24, 1957	10.02	3,000
1949	Jan. 27, 1949	8.14	639		May 13, 1957	7.89	950
					May 17, 1957	9.22	950
1950	Dec. 22, 1949	8.4	729		June 15, 1957	8.78	1,600
	Jan. 14, 1950	8.85	855		July 14, 1957	8.74	1,560
	Jan. 26, 1950	8.2	667				
	June 19, 1950	8.7	823	1958	June 10, 1958	11.13	3,320
	July 3, 1950	8.0	613		June 13, 1958	8.85	920
					July 27, 1958	8.46	695
1951	Feb. 7, 1951	8.08	639		Aug. 2, 1958	9.42	1,300
	Feb. 19, 1951	9.70	1,040				
	Apr. 29, 1951	8.83	725	1959	Feb. 10, 1959	10.76	3,230
	June 28, 1951	12.16	3,030		Aug. 6, 1959	10.50	2,480
					Sept.26, 1959	10.06	2,220
1952	Apr. 23, 1952	-	-				
	July 2, 1952	8.45	729	1960	Oct. 5, 1959	8.91	1,070
					Oct. 11, 1959	9.97	2,060
1953	Mar. 15, 1953	5.43	217		Mar. 30, 1960	12.70	6,750
					Apr. 16, 1960	9.73	2,280
1954	Aug. 19, 1954	5.50	225		June 21, 1960	9.31	1,800
					June 23, 1960	11.87	5,130
1955	May 28, 1955	8.42	729				
				1961	Apr. 25, 1961	8.48	820
1956	Aug. 1, 1956	9.11	905		May 8, 1961	9.18	1,300
	Aug. 10, 1956	8.93	835		July 30, 1961	8.44	790
					Aug. 3, 1961	8.84	1,040
1957	Apr. 4, 1957	7.73	880		Sept.14, 1961	8.09	605
	Apr. 9, 1957	7.96	975				

5777. Sangamon River tributary at Andrew, Ill.

Location.--Lat 39°53'45", long 89°38'50", near center of sec.27, T.17 N., R.5 W., at culvert on Andrew road, 0.5 mile west of Andrew.

Drainage area.--1.49 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 28, 1956	12.24	117	1960	Mar. 29, 1960	15.47	448
1957	Apr. 24, 1957	14.46	325				
1958	June 10, 1958	16.15	530	1961	May 7, 1961	15.14	409
1959	Jan. 20, 1959	12.60	148				

5785. Salt Creek near Rowell, Ill.
(Published as "near Kenney" 1908-13)

Location.--Lat 40°06'54", long 89°02'57", in NE¼SE¼ sec.11, T.19 N., R.1 E., on right bank at downstream side of county highway bridge, half a mile upstream from U.S. Highway 54, three-quarters of a mile upstream from Illinois Central Railroad bridge and Ten Mile Creek, and 3.2 miles northwest of Rowell.

Drainage area.--334 sq mi.

Gage.--Nonrecording prior to November 1942; recording thereafter. Datum of gage is 610.00 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to January 1913, at site 6½ miles downstream at datum 603.72 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--The flood of October 1926 reached a stage of about 17½ ft at the site of the former station near Kenney, or about 1½ ft higher than flood of May 18, 1943. The high water of 1882 is said to have been about 1 ft lower than that of the 1926 flood.

Remarks.--Peaks prior to 1943 are for station "near Kenney." Base for partial-duration series, 1,300 cfs. Only annual peaks are shown prior to 1943.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 13, 1908	15.0	5,840	1948	Mar. 21, 1948	18.70	2,480
1909	Feb. 24, 1909	8.5	2,190		July 26, 1948	16.8	1,320
1910	Jan. 21, 1910	9.0	2,430	1949	Jan. 28, 1949	17.76	1,810
1911	Sept.25, 1911	9.8	2,850		Feb. 23, 1949	17.1	1,440
1912	Mar. 19, 1912	13.0	4,680	1950	Dec. 23, 1949	21.77	6,890
1943	Nov. 25, 1942	19.0	2,520		Jan. 6, 1950	17.8	1,810
	Dec. 29, 1942	17.8	2,010		Jan. 15, 1950	20.5	4,810
	May 13, 1943	18.50	2,500		Jan. 26, 1950	19.9	3,970
	May 18, 1943	24.77	12,400		Feb. 15, 1950	17.4	1,590
	Aug. 5, 1943	20.25	4,460		Apr. 5, 1950	20.3	4,530
1944	Apr. 12, 1944	22.94	8,850		Apr. 26, 1950	20.7	5,110
	Apr. 24, 1944	21.7	6,720		June 21, 1950	18.0	1,930
1945	June 19, 1945	16.58	1,380	1951	Jan. 3, 1951	16.76	1,320
1946	Jan. 7, 1946	18.83	3,040		Feb. 22, 1951	23.23	9,390
	May 5, 1946	17.1	1,710		Apr. 13, 1951	18.07	1,990
	June 14, 1946	16.7	1,380		June 28, 1951	17.60	1,690
	June 21, 1946	16.9	1,460		July 9, 1951	19.42	3,290
1947	May 2, 1947	17.36	1,600		Aug. 29, 1951	17.34	1,540
	June 10, 1947	16.6	1,320	1952	Apr. 15, 1952	18.41	2,210
	July 1, 1947	17.2	1,520		June 22, 1952	18.92	2,700
1948	Feb. 29, 1948	16.6	1,320		June 24, 1952	19.29	3,170
				1953	Mar. 17, 1953	17.04	1,400
					Apr. 2, 1953	18.35	2,210

Peak stages and discharges of Salt Creek near Rowell, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 8, 1954	14.80	829	1958	July 11, 1958	21.10	5,730
					Aug. 4, 1958	19.09	2,930
1955	June 11, 1955	16.75	1,320				
				1959	Feb. 11, 1959	24.84	7,500
1956	May 28, 1956	23.67	10,300				
				1960	Mar. 31, 1960	18.74	2,290
1957	Apr. 28, 1957	22.45	7,950		June 25, 1960	18.68	2,210
	May 12, 1957	17.43	2,210				
	June 18, 1957	17.35	1,590	1961	Apr. 24, 1961	19.52	3,420
					May 8, 1961	23.72	10,300
1958	June 12, 1958	17.77	1,810				

5795. Lake Fork near Cornland, Ill.

Location.--Lat 39°57'00", long 89°23'10", in SW¼ sec.1, T.17 N., R.3 W., near center of span on upstream side of bridge on U.S. Highway 54, 100 ft upstream from Illinois Central Railroad bridge, 2 miles northeast of Cornland, 8 miles downstream from Jones Fork, and 14 miles upstream from mouth.

Drainage area.--207 sq mi.

Gage.--Nonrecording. Datum of gage is 555.06 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 1943	23.4	29,000	1952	June 22, 1952	13.23	1,060
1948	Mar. 24, 1948	12.9	1,310	1953	Mar. 15, 1953	14.44	1,340
	June 27, 1948	13.90	1,660				
				1954	June 1, 1954	4.94	152
1949	Jan. 28, 1949	-	a1,200				
	Feb. 22, 1949	13.1	1,110	1955	June 12, 1955	12.68	1,020
1950	Dec. 24, 1949	15.9	1,730	1956	Oct. 7, 1955	10.25	680
	Jan. 5, 1950	13.6	1,200				
	Jan. 15, 1950	17.52	2,440	1957	Apr. 5, 1957	12.09	1,120
	Jan. 26, 1950	16.1	1,790		Apr. 9, 1957	12.96	1,300
	Apr. 5, 1950	14.0	1,270		Apr. 28, 1957	18.65	3,760
	Apr. 26, 1950	16.3	1,870		June 15, 1957	14.23	1,650
	June 14, 1950	13.0	1,090				
	June 19, 1950	14.3	1,330	1958	June 11, 1958	15.32	1,740
					July 13, 1958	15.36	1,760
1951	Jan. 3, 1951	13.90	1,180		July 28, 1958	16.10	1,970
	Feb. 12, 1951	13.10	1,110				
	Feb. 22, 1951	17.30	2,280	1959	Feb. 10, 1959	21.00	4,900
	Apr. 13, 1951	13.50	1,130				
	June 29, 1951	21.60	4,570	1960	Mar. 30, 1960	15.04	1,800
					June 25, 1960	15.81	2,060
1952	Apr. 13, 1952	12.95	1,060				
	Apr. 23, 1952	15.07	1,520	1961	May 9, 1961	18.40	3,250

a Estimated daily mean discharge.

5797.5. Kickapoo Creek tributary at Heyworth, Ill.

Location.--Lat 40°19'05", long 88°58'55", in NW¼SW¼ sec.34, T.22 N., R.2 E., at culvert on Illinois Central Railroad, 0.3 mile north of Heyworth.

Drainage area.--3.06 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Kickapoo Creek tributary at Heyworth, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 27, 1956	22.00	2,400	1960	June 23, 1960	13.18	362
1957	Apr. 27, 1957	a13.37	259				
1958	July 14, 1958	13.22	363	1961	May 7, 1961	14.59	636
1959	Feb. 10, 1959	14.58	616				

a Backwater from ice or vegetation.

5800. Kickapoo Creek at Waynesville, Ill.

Location.--Lat 40°15'20", long 89°07'40", on line between secs. 19 and 20, T.21 N., R.1 E., near center of span on downstream side of bridge, 0.5 mile downstream from Rock Creek, and 0.7 mile north of Waynesville on Waynesville-McLean Road.

Drainage area.--227 sq mi.

Gage.--Nonrecording and crest-stage gage. Datum of gage is 620.24 ft above mean sea level (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Feb. 17, 1948	11.2	2,070	1952	June 14, 1952	10.50	1,580
	Feb. 28, 1948	11.8	2,860		June 23, 1952	11.67	2,570
	Mar. 21, 1948	12.0	3,000				
	Apr. 7, 1948	10.6	1,640	1953	Apr. 1, 1953	11.77	2,700
	July 26, 1948	11.4	2,240		July 17, 1953	11.25	2,070
1949	Jan. 28, 1949	13.19	5,060	1954	Apr. 11, 1954	10.00	1,300
	Feb. 15, 1949	9.48	1,430				
	June 15, 1949	9.31	1,340	1955	Jan. 6, 1955	10.10	1,340
	July 30, 1949	11.3	2,150		Feb. 19, 1955	-	1,500
					June 11, 1955	10.22	1,420
1950	Dec. 22, 1949	13.1	4,880				
	Jan. 10, 1950	10.8	1,770	1956	May 27, 1956	14.01	6,500
	Jan. 14, 1950	12.9	4,520		Aug. 1, 1956	10.78	1,770
	Jan. 26, 1950	13.1	4,880				
	Feb. 13, 1950	12.2	3,300	1957	Apr. 27, 1957	12.40	3,630
	Apr. 4, 1950	12.5	3,800				
	Apr. 25, 1950	15.02	8,300	1958	June 11, 1958	11.75	2,290
	June 15, 1950	11.0	1,910		June 13, 1958	11.93	2,440
	June 19, 1950	12.8	4,340		July 11, 1958	11.85	2,290
					Aug. 2, 1958	11.40	1,840
1951	Jan. 3, 1951	11.40	2,150				
	Feb. 6, 1951	10.41	1,470	1959	Feb. 10, 1959	14.80	7,900
	Feb. 12, 1951	11.05	1,840				
	Feb. 19, 1951	13.40	5,240	1960	Mar. 30, 1960	12.60	4,060
	Feb. 21, 1951	12.50	3,630		June 23, 1960	12.80	4,380
	Apr. 12, 1951	11.67	2,570				
	July 9, 1951	11.32	2,150	1961	Apr. 22, 1961	12.54	4,340
					May 8, 1961	13.52	6,140
1952	Apr. 13, 1952	11.40	2,240		Aug. 5, 1961	10.70	1,690
	June 9, 1952	10.27	1,470				

5805. Kickapoo Creek near Lincoln, Ill.

Location.--Lat 40°11'30", long 89°21'40", in NE¼NW¼ sec.18, T.20 N., R.2 W., on left bank at downstream side of highway bridge, 1,000 ft upstream from Illinois Terminal Electric Railroad, 3 miles north of Lincoln, and 7½ miles upstream from mouth.

Drainage area.--306 sq mi.

Gage.--Nonrecording prior to Sept. 18, 1945; recording thereafter. Datum of gage is 557.08 ft above mean sea level (Corps of Engineers bench mark).

Stage-discharge relation.- Defined by current-meter measurements.

Historical data.--Flood of July 6, 1929, is reported by local residents to have reached the maximum stage known.

Remarks.--Base for partial-duration series, 1,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	July 6, 1929	a17.4	-	1951	Apr. 13, 1951	10.49	2,720
					June 28, 1951	9.21	1,660
1945	June 17, 1945	10.08	1,730		July 10, 1951	9.46	1,870
1946	Jan. 6, 1946	11.3	3,000	1952	Jan. 1, 1952	9.67	2,020
	Feb. 14, 1946	9.6	1,630		Apr. 14, 1952	11.28	3,590
	June 13, 1946	12.37	5,050		June 23, 1952	11.12	3,350
1947	Oct. 19, 1946	10.0	1,830	1953	Apr. 2, 1953	10.82	2,460
	Nov. 2, 1946	10.1	1,890				
	Nov. 4, 1946	10.2	1,960	1954	June 8, 1954	8.98	1,400
	May 1, 1947	11.29	3,300				
	June 9, 1947	10.2	1,960	1955	Feb. 20, 1955	-	1,600
1948	Feb. 18, 1948	9.9	1,770	1956	May 28, 1956	13.29	7,800
	Feb. 29, 1948	10.1	1,890		Aug. 2, 1956	10.33	2,590
	Mar. 22, 1948	9.7	1,690				
	July 27, 1948	10.33	2,030	1957	Apr. 27, 1957	11.29	4,110
					May 14, 1957	9.57	1,710
1949	Jan. 29, 1949	10.21	2,030				
				1958	June 12, 1958	9.87	1,970
1950	Dec. 23, 1949	12.4	5,190		June 14, 1958	10.40	2,700
	Jan. 15, 1950	12.0	4,510		July 12, 1958	-	-
	Jan. 27, 1950	12.0	4,510		July 28, 1958	10.29	2,550
	Feb. 14, 1950	10.5	2,300		Aug. 3, 1958	9.88	1,970
	Apr. 5, 1950	11.8	4,170				
	Apr. 26, 1950	13.66	7,400	1959	Feb. 10, 1959	13.59	7,760
	June 16, 1950	10.0	2,260				
	June 20, 1950	12.2	4,870	1960	Mar. 31, 1960	11.00	3,600
					June 23, 1960	12.88	6,640
1951	Jan. 3, 1951	10.87	3,130				
	Feb. 13, 1951	10.41	2,620	1961	Apr. 23, 1961	12.11	5,360
	Feb. 19, 1951	12.51	5,360		May 8, 1961	13.50	7,600

a From floodmarks.

5815. Sugar Creek near Hartsburg, Ill.

Location.--Lat 40°13'10", long 89°24'35", in NE¼NE¼ sec.3, T.20 N., R.3 W., on right bank at downstream side of bridge on State Highway 121, 100 ft upstream from Illinois Central Railroad bridge, 2½ miles southeast of Hartsburg, 4 miles northwest of Lincoln, and 7 miles downstream from West Fork.

Drainage area.--335 sq mi.

Gage.--Nonrecording to September 1945; recording thereafter. Datum of gage is 548.70 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges of Sugar Creek near Hartsburg, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Apr. 2, 1945	8.7	1,720	1952	Apr. 14, 1952	9.20	2,680
	May 16, 1945	9.1	1,860		Apr. 24, 1952	8.08	2,190
	June 17, 1945	12.08	4,150		June 15, 1952	9.38	2,780
					June 23, 1952	7.02	1,700
1946	Dec. 31, 1945	10.3	2,450				
	Jan. 6, 1946	11.4	3,300	1953	Apr. 2, 1953	9.28	2,730
	June 13, 1946	12.54	4,800		July 18, 1953	8.41	2,320
	June 20, 1946	11.4	3,200				
				1954	Apr. 12, 1954	9.96	3,070
1947	Apr. 30, 1947	14.44	8,500				
	June 9, 1947	10.6	2,420	1955	Feb. 20, 1955	7.57	1,960
1948	Feb. 18, 1948	10.2	2,180	1956	May 28, 1956	14.06	10,100
	Feb. 29, 1948	10.3	2,230		Aug. 1, 1956	7.39	1,970
	Apr. 8, 1948	10.66	2,570				
	July 27, 1948	9.1	1,780	1957	Apr. 27, 1957	11.93	4,400
					May 14, 1957	7.82	2,170
1949	Jan. 28, 1949	8.85	1,690				
				1958	June 11, 1958	7.46	2,020
1950	Dec. 23, 1949	11.8	3,590		June 14, 1958	10.90	4,320
	Jan. 14, 1950	11.3	3,150		July 27, 1958	7.01	1,770
	Jan. 25, 1950	11.2	3,070		Aug. 3, 1958	9.81	3,460
	Feb. 10, 1950	9.1	1,860				
	Feb. 14, 1950	10.3	2,450	1959	Feb. 10, 1959	13.31	7,650
	Apr. 4, 1950	8.8	1,750		Feb. 13, 1959	9.57	3,320
	Apr. 25, 1950	12.9	4,830				
	June 20, 1950	13.34	5,430	1960	Mar. 30, 1960	10.43	3,920
					June 22, 1960	7.20	1,870
1951	Jan. 3, 1951	10.64	2,630		June 24, 1960	13.05	6,930
	Feb. 13, 1951	-	-				
	Feb. 19, 1951	13.62	8,350	1961	Apr. 23, 1961	8.56	3,150
	Feb. 21, 1951	11.31	3,160		May 9, 1961	11.49	5,100
	Apr. 13, 1951	11.31	3,160		Sept.15, 1961	6.71	2,200
	June 29, 1951	10.50	2,570		Sept.26, 1961	6.03	1,850

5820. Salt Creek near Greenview, Ill.

Location.--Lat 40°08'01", long 89°44'08", in NE¼NE¼ sec.2, T.19 N., R.6 W., near center of span on downstream side of bridge on State Highway 29, 3.3 miles downstream from Pike Creek, 3.5 miles north of Greenview, and 5 miles upstream from mouth.

Drainage area.--1,800 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 479.00 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--From information by Albert Hull, gage observer, the maximum stage during period 1876-1950 occurred in July 1929, slightly exceeding that for May 1943. The third highest stage in this period appears to have occurred in 1938. Channel was dredged in 1904.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Oct. 7, 1941	13.5	8,110	1944	Apr. 25, 1944	17.38	22,000
	Feb. 8, 1942	17.20	17,100				
	Feb. 17, 1942	10.8	5,280	1945	June 18, 1945	12.72	7,260
	Mar. 18, 1942	14.4	9,450				
	Apr. 9, 1942	13.0	7,500	1946	Jan. 7, 1946	13.2	7,740
	June 27, 1942	11.0	5,460		June 14, 1946	14.42	10,400
	July 10, 1942	14.1	8,970		June 21, 1946	13.4	8,590
	July 15, 1942	13.0	7,500				
				1947	Nov. 4, 1946	10.6	5,420
1943	Nov. 11, 1942	10.9	5,370		May 1, 1947	16.00	15,000
	Nov. 25, 1942	14.9	10,300		June 9, 1947	13.2	8,280
	Dec. 29, 1942	15.2	10,900		June 20, 1947	10.4	5,260
	May 13, 1943	16.18	15,700				
	May 19, 1943	20.50	41,200	1948	Mar. 24, 1948	10.92	5,700
	Aug. 5, 1943	14.0	9,630		July 27, 1948	10.4	5,180
1944	Apr. 14, 1944	15.4	13,000	1949	Jan. 29, 1949	9.90	4,880

Peak stages and discharges of Salt Creek near Greenview, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 26, 1949	11.6	6,540	1955	Feb. 20, 1955	7.92	3,440
	Jan. 17, 1950	14.3	10,200				
	Jan. 27, 1950	13.6	8,880	1956	May 29, 1956	13.70	9,060
	Feb. 15, 1950	11.5	6,440				
	Apr. 6, 1950	12.1	7,040	1957	Apr. 30, 1957	16.65	17,400
	Apr. 27, 1950	14.82	11,200		May 15, 1957	11.06	6,050
	June 21, 1950	14.4	10,400				
				1958	June 15, 1958	12.85	9,260
1951	Feb. 8, 1951	11.90	a5,000		July 15, 1958	13.82	10,600
	Feb. 12, 1951	11.95	6,940		Aug. 3, 1958	13.01	9,260
	Feb. 20, 1951	16.60	17,400				
	Apr. 14, 1951	13.55	8,880	1959	Feb. 14, 1959	17.08	19,500
	June 30, 1951	15.50	13,300				
	July 10, 1951	10.88	5,870	1960	Apr. 1, 1960	13.97	10,600
					June 25, 1960	16.02	15,500
1952	Apr. 14, 1952	12.08	7,040		July 13, 1960	11.60	7,820
	Apr. 24, 1952	10.30	5,330				
	June 23, 1952	10.79	5,780	1961	Apr. 24, 1961	11.92	7,250
					May 10, 1961	17.47	26,900
1953	Apr. 2, 1953	11.60	6,540				
1954	Apr. 12, 1954	8.68	4,020				

a About.

5822. Cabiness Creek tributary near Petersburg, Ill.

Location.--Lat 40°02'00", long 89°46'35", in NE¼ sec.9, T.18 N., R.6 W., at culvert on county road, 3.8 miles northeast of Petersburg.

Drainage area.--0.846 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 9, 1956	12.45	49	1960	Mar. 29, 1960	13.29	80
1957	June 11, 1957	15.71	577				
1958	July 11, 1958	15.26	260	1961	May 8, 1961	15.42	269
1959	Aug. 6, 1959	15.23	219				

5825. Crane Creek near Easton, Ill.

Location.--Lat 40°14'46", long 89°51'40", in NE¼NW¼ sec.26, T.21 N., R.7 W., on right bank at downstream side of highway bridge, 0.1 mile downstream from confluence of Hardin and Central ditches, 1¼ miles upstream from Samuels ditch, and 1¼ miles northwest of Easton.

Drainage area.--28.7 sq mi.

Gage.--Nonrecording prior to Mar. 30, 1950; recording thereafter. Datum of gage is 486.78 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 130 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 21, 1949	6.5	295	1956	Oct. 6, 1955	3.24	55
	Jan. 24, 1950	6.0	262				
	June 14, 1950	4.0	139	1957	Apr. 27, 1957	3.96	110
	June 19, 1950	6.0	262				
	July 20, 1950	4.1	148	1958	July 28, 1958	5.49	140
					Aug. 2, 1958	6.10	176
1951	Feb. 19, 1951	6.95	327				
	June 8, 1951	4.48	133	1959	Feb. 10, 1959	9.08	425
	June 28, 1951	8.48	381		Feb. 13, 1959	5.54	143
	July 9, 1951	5.97	226				
				1960	Mar. 30, 1960	6.14	176
1952	June 22, 1952	4.31	114		July 13, 1960	5.58	146
1953	Apr. 1, 1953	2.74	68	1961	May 8, 1961	7.96	385
					Sept.14, 1961	5.34	131
1954	June 3, 1954	2.70	52				
1955	Feb. 19, 1955	3.42	108				

5830. Sangamon River near Oakford, Ill.

Location.--Lat 40°07'25", long 89°59'05", in NW¼SE¼ sec.3, T.19 N., R.8 W., at bridge on State Highway 97, just upstream from Chicago & Illinois Midland Railway bridge, three-quarters of a mile downstream from Crane Creek, and 1¾ miles northwest of Oakford.

Drainage area.--5,120 sq mi, approximately.

Gage.--Nonrecording prior to May 15, 1940; recording thereafter. Datum of gage is 452.88 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 1, 1939, at highway bridge, 2.4 miles upstream at datum 458.66 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Historical data.--Floods in February and March 1907, May 1908, and October 1911 are reported to have reached a stage of about 21 ft at old station 2.4 miles upstream. On basis of measured fall during discharge measurement of Mar. 16, 1939, these floods probably reached a stage of 23 ft at present site and datum.

Remarks.--A levee break upstream from the station affected the discharge (but not the stage-discharge relation) on May 19, 1943. This and other channel changes may have contributed to a variable relation between gage heights at present and former sites. Base for partial-duration series, 9,000 cfs. Only annual peaks are shown prior to 1926 and after 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Jan. 22, 1910	14.35	11,000	1918	Feb. 15, 1918	12.23	10,500
1911	Jan. 29, 1911	-	9,100	1921	Apr. 30, 1921	12.8	12,000
1912	Oct. 4, 1911	20.6	33,800	1922	Apr. 14, 1922	19.84	37,600
1915	Aug. 27, 1915	17.8	22,200	1926	Apr. 11, 1926	17.3	24,800
1916	Feb. 5, 1916	19.1	28,400		Sept.13, 1926	20.0	38,000
1917	June 9, 1917	19.9	33,300				

Peak stages and discharges of Sangamon River near Oakford, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Oct. 4, 1926	21.6	46,300	1942	Oct. 8, 1941	14.8	13,700
	Nov. 17, 1926	16.5	22,100		Nov. 12, 1941	15.4	14,900
	Feb. 7, 1927	16.2	21,100		Feb. 9, 1942	19.60	31,400
	Mar. 23, 1927	18.0	27,900		Mar. 19, 1942	15.8	15,700
	Apr. 8, 1927	16.4	21,800		Apr. 10, 1942	14.8	13,700
	Apr. 22, 1927	18.9	32,300		July 16, 1942	18.1	23,000
	May 30, 1927	18.4	29,700	1943	Nov. 11, 1942	12.0	9,000
1928	Oct. 6, 1927	17.1	24,100		Nov. 26, 1942	16.7	17,900
	Dec. 8, 1927	16.5	22,100		Dec. 30, 1942	17.3	19,700
	Feb. 12, 1928	13.7	14,900		Feb. 7, 1943	12.7	10,100
	Apr. 11, 1928	11.0	10,400		Mar. 23, 1943	13.2	10,900
					May 20, 1943	25.63	123,000
1929	Jan. 12, 1929	a13.2	9,100				
	Jan. 27, 1929	17.9	28,100	1944	Apr. 15, 1944	19.2	30,600
	Feb. 27, 1929	11.2	10,700		Apr. 26, 1944	20.92	44,700
	Mar. 18, 1929	11.4	10,900				
	Apr. 14, 1929	15.1	18,200	1945	Apr. 7, 1945	17.2	20,800
	May 7, 1929	14.1	15,700		Apr. 18, 1945	12.5	9,840
	May 22, 1929	16.9	23,800		May 17, 1945	13.9	12,300
	June 5, 1929	11.3	10,800		June 19, 1945	17.30	21,200
	June 14, 1929	10.7	9,870				
	July 8, 1929	18.37	30,100	1946	Jan. 11, 1946	15.60	15,700
	July 17, 1929	14.9	17,600		Feb. 21, 1946	12.7	10,200
					May 12, 1946	12.7	10,200
1931	Sept.18, 1931	5.52	3,480		June 15, 1946	13.1	10,900
					June 21, 1946	15.3	15,100
1932	Jan. 20, 1932	7.90	6,430				
				1947	Nov. 7, 1946	14.0	12,500
1933	Mar. 22, 1933	11.4	10,900		May 2, 1947	17.86	23,700
	Apr. 4, 1933	17.3	24,800		June 11, 1947	17.8	23,200
	May 18, 1933	18.46	30,200		June 25, 1947	14.7	13,900
					July 1, 1947	12.9	10,500
1934	Apr. 2, 1934	6.3	4,630				
				1948	Mar. 29, 1948	16.66	19,000
1935	Feb. 16, 1935	10.2	9,260		July 27, 1948	13.1	10,900
	Mar. 12, 1935	10.3	9,390				
	May 12, 1935	16.1	20,800	1949	Jan. 31, 1949	14.9	14,300
					Feb. 12, 1949	12.7	10,200
1936	Mar. 1, 1936	16.3	21,500		Feb. 23, 1949	16.07	17,200
	May 4, 1936	9.0	9,430				
				1950	Jan. 17, 1950	19.27	31,200
1937	Nov. 5, 1936	10.9	13,000		Feb. 15, 1950	14.4	13,300
	Jan. 21, 1937	13.7	20,300		Apr. 8, 1950	14.5	13,500
	Feb. 10, 1937	8.8	9,090		Apr. 27, 1950	14.8	14,100
	Feb. 23, 1937	11.3	13,900		June 22, 1950	16.7	19,000
	May 8, 1937	9.2	9,770		July 7, 1950	13.1	10,900
	June 20, 1937	10.4	12,000				
	July 14, 1937	10.0	11,200	1951	July 1, 1951	20.60	36,300
				1952	Apr. 16, 1952	15.28	15,100
1938	Apr. 12, 1938	17.7	34,600	1953	Apr. 3, 1953	12.92	10,500
	May 25, 1938	9.6	10,500	1954	Apr. 13, 1954	7.61	3,800
	June 12, 1938	11.7	9,260	1955	June 15, 1955	9.72	5,960
1939	Feb. 24, 1939	13.4	11,700	1956	May 29, 1956	12.62	10,000
	Mar. 16, 1939	20.9	42,800	1957	May 1, 1957	20.05	36,300
	Apr. 21, 1939	15.8	15,700	1958	Aug. 5, 1958	18.06	24,700
				1959	Feb. 14, 1959	20.16	37,900
1940	Mar. 5, 1940	9.80	6,720	1960	June 26, 1960	18.40	26,200
1941	June 13, 1941	9.59	5,670	1961	May 11, 1961	19.83	34,700

a Backwater from ice, 3.1 ft.

5845. La Moine River at Colmar, Ill.

Location.--Lat 40°19'45", long 90°53'55", in SE¼SW¼ sec.18, T.4 N., R.4 W., on right bank at upstream side of bridge on State Highway 61, a quarter of a mile downstream from Chicago, Burlington & Quincy Railroad bridge, 1 mile southwest of Colmar, and 1¾ miles upstream from Troublesome Creek.

Drainage area.--655 sq mi.

Gage.--Nonrecording prior to July 13, 1945; recording thereafter. Datum of gage is 491.53 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges of La Moine River at Colmar, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 21, 1945	20.0	5,280	1952	June 23, 1952	17.91	3,120
	Mar. 27, 1945	21.20	7,890		July 8, 1952	19.14	4,100
	Apr. 13, 1945	19.3	4,160				
	May 9, 1945	19.4	4,300	1953	Apr. 1, 1953	17.64	2,950
	May 17, 1945	20.7	6,750				
	June 10, 1945	19.6	4,600	1954	Mar. 26, 1954	21.09	8,650
	June 18, 1945	21.0	7,430		Apr. 22, 1954	17.89	3,270
	Sept.28, 1945	19.1	3,910		June 3, 1954	17.98	3,320
1946	Jan. 7, 1946	22.2	13,900	1955	Jan. 7, 1955	20.89	8,050
	Jan. 9, 1946	19.6	5,160		Feb. 21, 1955	21.68	11,000
	June 19, 1946	22.2	13,900		Apr. 25, 1955	20.28	3,910
					May 14, 1955	17.40	3,030
1947	Dec. 13, 1946	18.2	3,460				
	Apr. 6, 1947	21.72	11,100	1956	Aug. 15, 1956	15.26	2,310
	May 29, 1947	17.8	3,230				
	June 7, 1947	21.6	10,600	1957	June 11, 1957	17.40	3,090
	June 20, 1947	19.9	5,760		June 29, 1957	17.67	3,210
	July 1, 1947	20.1	6,210				
				1958	July 5, 1958	20.60	3,830
1948	Feb. 29, 1948	19.4	4,810				
	Mar. 17, 1948	20.3	6,700	1959	Feb. 12, 1959	-	6,600
	Mar. 21, 1948	22.1	13,300		June 1, 1959	17.72	3,210
	July 7, 1948	20.7	7,700		Aug. 8, 1959	23.00	5,600
	July 27, 1948	23.75	20,300				
				1960	Oct. 8, 1959	20.85	7,900
1949	Feb. 15, 1949	19.6	5,160		Mar. 30, 1960	22.97	16,700
	Feb. 20, 1949	20.91	8,200		Apr. 18, 1960	20.74	7,280
					May 26, 1960	18.13	3,160
1950	Apr. 4, 1950	19.0	4,000		June 13, 1960	19.19	3,920
	Apr. 27, 1950	20.2	6,100		June 24, 1960	22.86	16,200
	June 21, 1950	20.65	7,300		July 1, 1960	21.39	9,850
					Aug. 4, 1960	18.58	3,460
1951	Feb. 21, 1951	21.75	11,400				
	Mar. 30, 1951	19.72	4,910	1961	Apr. 22, 1961	20.16	6,220
	July 10, 1951	18.03	3,060		July 23, 1961	22.62	13,600
					Aug. 11, 1961	19.24	3,920
1952	Mar. 19, 1952	18.13	3,250		Sept.15, 1961	22.60	14,900
	Apr. 25, 1952	20.31	6,350		Sept.25, 1961	23.70	19,800
	May 18, 1952	18.46	3,640				

5850. La Moine River at Ripley, Ill.
(Published as Crooked Creek prior to 1932)

Location.--Lat 40°01'31", long 90°37'55", in NE¼ sec.33, T.1 N., R.2 W., on right bank at upstream side of bridge on U.S. Highway 24, a quarter of a mile east of Ripley and 2 miles upstream from Town Branch.

Drainage area.--1,310 sq mi, approximately.

Gage.--Nonrecording to January 1935; recording thereafter. Datum of gage is 431.1 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. During periods of backwater from Illinois River, discharge computed using Illinois River stages at Beardstown and LaGrange as a factor. Rate of change of stage used as a factor in computing discharge June 17, 1926, May 19, 1931, May 13, 1935, Apr. 19, 1941.

Remarks.--Base for partial-duration series, 5,700 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1921	Sept. 5, 1921	17.39	-	5,890	1928	June 8, 1928	-	-	4,600
1922	Apr. 11, 1922	18.26	a0.4	6,370	1929	Mar. 16, 1929	25.87	-	16,800
1923	Mar. 13, 1923	15.97	-	5,050	1930	Feb. 23, 1930	18.31	-	5,790
1924	July 25, 1924	25.0	-	12,500					
1925	Aug. 12, 1925	16.78	-	4,850	1931	May 19, 1931	15.72	-	4,600
					1932	Aug. 13, 1932	18.68	-	5,880
1926	June 17, 1926	21.54	-	8,850	1933	May 16, 1933	21.75	-	8,560
1927	Oct. 7, 1926	21.00	a.3	7,320	1934	June 18, 1934	8.78	-	1,280
1928	Jan. 12, 1928	16.34	b.9	-	1935	May 13, 1935	23.17	-	9,520

a Backwater from Illinois River.
b Greater than figure shown.

Peak stages and discharges of La Moine River at Ripley, Ill.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1936	Feb. 28, 1936	25.94	-	16,800	1955	Feb. 23, 1955	23.15	-	9,860
1937	Oct. 10, 1936	-	-	3,770		Apr. 26, 1955	22.05	-	8,000
	Jan. 21, 1937	16.54	b0.9	-		May 13, 1955	18.64	-	4,690
1938	May 21, 1938	23.36	-	9,740		May 29, 1955	22.25	-	8,300
1939	Apr. 18, 1939	22.21	-	8,420		July 23, 1955	19.41	-	5,200
1940	Mar. 5, 1940	14.29	-	3,140		Aug. 29, 1955	20.87	-	6,510
1941	Apr. 19, 1941	19.12	-	5,070	1956	Oct. 6, 1955	21.32	-	6,970
1942	Feb. 9, 1942	22.87	-	9,080		Apr. 29, 1956	17.88	-	4,330
1943	May 21, 1943	25.25	a.05	14,500					
1944	Apr. 25, 1944	26.03	-	17,100	1957	Apr. 28, 1957	20.80	-	6,400
1945	May 18, 1945	23.90	-	11,200		May 17, 1957	18.57	-	4,690
						June 12, 1957	20.77	-	6,400
1946	Jan. 9, 1946	25.44	-	15,300					
1947	June 8, 1947	25.98	-	17,100	1958	June 13, 1958	19.27	-	5,130
						Aug. 1, 1958	20.64	-	6,200
1948	Mar. 23, 1948	25.60	-	15,900					
	July 30, 1948	25.3	-	15,000	1959	Feb. 14, 1959	23.97	-	11,400
						Aug. 12, 1959	19.53	-	5,270
1949	Feb. 23, 1949	22.26	-	8,070					
					1960	Oct. 12, 1959	18.57	-	4,690
1950	June 19, 1950	22.15	-	7,790		Apr. 1, 1960	25.87	-	15,300
						Apr. 21, 1960	21.65	-	6,810
1951	Feb. 22, 1951	23.89	-	10,800		May 19, 1960	17.83	-	4,200
	Apr. 2, 1951	20.77	-	6,400		May 28, 1960	18.18	-	4,400
	Apr. 15, 1951	18.82	-	4,810		June 17, 1960	18.00	-	4,300
	June 27, 1951	18.07	-	4,450		June 26, 1960	25.43	-	13,800
	July 23, 1951	22.19	-	8,300		July 1, 1960	23.37	-	9,420
						July 13, 1960	17.80	-	4,200
1952	Mar. 10, 1952	18.15	-	4,490					
	Mar. 19, 1952	18.94	-	4,870	1961	Apr. 25, 1961	22.24	-	7,560
	Apr. 27, 1952	20.56	-	6,200		May 8, 1961	20.85	-	6,040
	May 25, 1952	21.41	-	7,100		May 14, 1961	19.32	-	4,980
						July 2, 1961	17.84	-	4,000
1953	Apr. 1, 1953	15.67	-	3,490		July 23, 1961	25.84	-	13,800
						Aug. 12, 1961	21.34	-	6,130
1954	Apr. 22, 1954	16.73	-	3,890		Sept.14, 1961	26.35	-	15,600
						Sept.26, 1961	27.43	-	18,600
1955	Jan. 11, 1955	18.89	-	4,870					

a Backwater from Illinois River.
b Greater than figure shown.

5852.2. Indian Creek tributary near Sinclair, Ill.

Location.--Lat 39°48'42", long 90°06'15", in NW¼ sec.27, T.16 N., R.9 W., at culvert on Gulf, Mobile, and Ohio Railroad, 1.0 mile northeast of Sinclair.

Drainage area.--2.04 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 9, 1956	18.55	788	1960	Mar. 30, 1960	19.18	882
1957	June 11, 1957	15.45	380				
1958	June 10, 1958	19.98	1,010	1961	May 8, 1961	15.56	389
1959	Feb. 10, 1959	17.80	680				

5855. Illinois River at Meredosia, Ill.
(Published as "at Beardstown" prior to 1939)

Location.--Lat 39°49'36", long 90°33'53", in SE¼NE¼ sec.21, T.16 N., R.13 W., on left bank 0.3 mile downstream from bridge on State Highway 104 in Meredosia, 4½ miles upstream from McKee Creek, and at mile 71.1.

Drainage area.--25,300 sq mi, approximately.

Gage.--Nonrecording at Beardstown prior to Oct. 1, 1938, at datum 419.89 ft above mean sea level, datum of 1929; recording at Meredosia thereafter at datum 418.00 ft above mean sea level, datum of 1929. Auxiliary gage at Wabash Railway bridge half a mile east of Valley City, 9½ miles downstream.

Stage-fall-discharge relation.--Defined by current-meter measurements. At Beardstown, stage-discharge relation defined by current-meter measurements below 92,000 cfs for the period October 1921 to September 1938. Undefined for other periods because of the effects of river improvements.

Remarks.--Gage heights to December 1904 taken from House Document 263, 59th Congress, 1st session; January 1905 to September 1921, from reports of U.S. Weather Bureau. Since Jan. 17, 1900, flow has included diversion from Lake Michigan through Chicago Sanitary and Ship Canal. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1844	-	a22.9	-	1915	Aug.30,31,1915	14.8	-
1849	-	a15.3	-	1916	Feb. 1, 1916	20.7	-
				1917	June 17, 1917	19.1	-
1851	-	a20.9	-	1918	Feb. 28, 1918	15.7	-
				1919	Mar. 29, 1919	19.5	-
1858	-	a22.1	-	1920	Apr. 27, 1920	21.3	-
1879	Apr. 23, 1879	11.7	-	1921	May 5, 1921	14.6	34,800
1880	May 18, 1880	13.4	-	1922	Apr. 20, 1922	25.1	93,100
				1923	Mar. 28, 1923	15.4	38,300
1881	Mar. 20, 1881	16.0	-	1924	July 4, 1924	19.1	55,400
1882	June 16, 1882	17.8	-		Aug. 28, 1924	19.1	55,400
1883	Feb. 25, 1883	21.8	-	1925	Mar. 28, 1925	15.4	38,600
1884	Apr. 2, 1884	16.6	-				
1885	Jan. 13, 1885	16.2	-	1926	Sept.19, 1926	22.2	71,200
				1927	Oct. 9, 1926	-	105,000
1886	Feb. 26, 1886	16.0	-		Oct. 12, 1926	26.2	-
1887	Feb. 23, 1887	16.5	-	1928	Dec. 15, 1927	19.2	59,200
1888	Apr. 4, 1888	13.5	-	1929	Apr. 6, 1929	21.2	-
1889	June 27,28,1889	12.0	-		Apr. 16, 1929	-	63,300
1890	Jan. 20, 1890	13.5	-	1930	Mar. 5, 1930	18.0	48,000
1891	Apr. 26, 1891	12.8	-	1931	June 15, 1931	11.5	23,300
1892	May 15, 1892	18.4	-	1932	Jan. 26, 1932	15.0	36,000
1893	Mar. 14, 1893	17.0	-	1933	May 23, 1933	25.5	90,800
1894	Mar. 22, 1894	9.8	-	1934	Apr.8-16, 1934	9.4	15,800
1895	Feb. 25, 1895	b9.3	-	1935	May 18, 1935	c22.4	70,800
1896	Jan. 3, 1896	b12.0	-	1936	Mar. 5, 1936	19.8	57,300
1897	Apr. 4, 1897	b17.8	-	1937	May 10, 1937	17.3	46,400
1898	Apr. 1, 1898	19.9	-	1938	Apr. 16, 1938	21.8	68,600
1899	Mar. 14, 1899	14.1	-	1939	Mar. 21, 1939	18.27	-
1900	Mar. 19, 1900	17.7	-		Mar. 22, 1939	-	69,500
				1940	Mar. 8, 1940	-	d25,600
1901	Apr. 6, 1901	15.2	-		Mar. 9, 1940	8.25	-
1902	July 26, 1902	18.0	-				
1903	Mar. 16, 1903	17.0	-	1941	June 17, 1941	-	26,000
1904	Apr. 4, 1904	20.0	-		June 18, 1941	8.58	-
1905	June 14, 1905	14.1	-	1942	Feb. 17, 1942	19.45	73,600
				1943	May 26, 1943	28.61	123,000
1906	Apr. 10, 1906	15.6	-	1944	Apr. 29, 1944	-	102,000
1907	Jan. 29, 1907	18.3	-		May 1, 1944	25.22	-
1908	May 24, 1908	20.6	-	1945	May 24, 1945	18.09	62,800
1909	May 10, 1909	15.5	-				
1910	Jan. 31, 1910	14.2	-	1946	Jan. 14, 1946	-	66,000
					Jan. 15, 1946	18.94	-
1911	Feb. 2, 1911	12.3	-	1947	June 11, 1947	-	68,300
1912	Apr. 4, 1912	18.8	-		June 14, 1947	20.68	-
1913	Apr. 5, 1913	21.8	-	1948	Mar. 31, 1948	20.70	-
1914	Apr. 16, 1914	13.4	-		Apr. 1, 1948	-	73,600

a Computed from floodmarks at Meredosia listed in House Document 263, 59th Congress, 1st session. b Estimated at Beardstown on basis of observed stages at Meredosia. c Occurred May 17, 1935. d Maximum daily mean.

Peak stages and discharges of Illinois River at Meredosia, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 27, 1949	16.91	59,800	1955	Feb. 27, 1955	-	37,700
1950	May 2, 1950	-	77,200				
	May 3, 1950	20.48	-	1956	June 2, 1956	9.53	29,700
				1957	May 6, 1957	18.21	66,300
1951	Feb. 28, 1951	20.15	77,800	1958	June 22, 1958	-	60,800
1952	Apr. 25, 1952	-	55,700		June 23, 1958	16.02	-
	Apr. 29, 1952	17.94	-	1959	Feb. 19, 1959	-	64,300
1953	Apr. 5, 1953	11.93	-		Feb. 20, 1959	18.12	-
	Apr. 7, 1953	-	35,200	1960	Apr. 7, 1960	-	73,000
1954	Apr. 24, 1954	-	33,300		Apr. 8, 1960	20.95	-
	Apr. 25, 1954	11.10	-				
1955	Feb. 26, 1955	11.89	-	1961	May 16, 1961	15.73	53,000

5857. Dry Fork tributary near Mount Sterling, Ill.

Location.--Lat 39°57'46", long 90°45'35", in SW¼ sec.21, T.1 S., R.3 W., at culvert on county road, 1.5 miles south of Mount Sterling.

Drainage area.--0.108 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	14.44	45	1960	June 23, 1960	12.96	23
1957	June 10, 1957	14.29	43				
1958	July 27, 1958	13.33	29	1961	June 30, 1961	17.30	74
1959	Feb. 10, 1959	12.56	16				

5860. North Fork Mauvaise Terre Creek near Jacksonville, Ill.

Location.--Lat 39°45'38", long 90°08'07", in SE¼NW¼ sec.8, T.15 N., R.9 W., on left bank at downstream side of bridge, 2½ miles north of Arnold, 4½ miles upstream from mouth, and 6 miles east of Jacksonville.

Drainage area.--30.0 sq mi.

Gage.--Nonrecording prior to Mar. 29, 1950; recording thereafter. Datum of gage is 579.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 150 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 22, 1949	8.1	650	1954	Aug. 19, 1954	6.27	94
	Jan. 13, 1950	7.1	180				
	June 19, 1950	7.4	300	1955	Apr. 23, 1955	7.10	180
	July 3, 1950	7.6	400		May 28, 1955	7.43	300
1951	Jan. 2, 1951	6.96	156	1956	Aug. 9, 1956	9.21	830
	Feb. 7, 1951	7.43	315				
	Feb. 19, 1951	9.01	1,250	1957	Apr. 4, 1957	7.11	193
	Mar. 18, 1951	7.06	173		Apr. 9, 1957	7.50	350
	June 17, 1951	7.94	570		Apr. 18, 1957	6.90	154
	June 28, 1951	10.68	2,870		Apr. 24, 1957	8.31	600
	Aug. 21, 1951	7.35	275		Apr. 28, 1957	7.55	280
					May 13, 1957	7.15	162
1952	Apr. 23, 1952	7.51	355		May 17, 1957	9.36	1,410
	June 22, 1952	6.94	153		May 21, 1957	7.83	425
					June 11, 1957	7.22	178
1953	June 13, 1953	5.80	75		June 14, 1957	9.44	1,450

Peak stages and discharges of North Fork Mauvaise Terre Creek near Jacksonville, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	June 28, 1957	7.26	186	1960	Apr. 16, 1960	8.92	840
					May 26, 1960	7.66	225
1958	Oct. 24, 1957	7.30	196		June 23, 1960	9.82	1,490
	June 1, 1958	7.32	154		June 29, 1960	7.90	310
	June 10, 1958	8.07	355				
	July 15, 1958	10.01	1,620	1961	Apr. 25, 1961	8.49	595
	Aug. 2, 1958	8.27	455		May 8, 1961	8.50	600
					June 9, 1961	7.81	274
1959	Feb. 10, 1959	-	-		July 24, 1961	7.25	150
	May 31, 1959	7.79	267		Aug. 2, 1961	9.25	1,080
					Aug. 10, 1961	7.37	162
1960	Oct. 11, 1959	7.40	168		Sept.14, 1961	8.35	525
	Mar. 30, 1960	10.23	1,850		Sept.25, 1961	8.07	385

5862. Illinois River tributary at Florence, Ill.

Location.--Lat 39°37'55", long 90°37'05", in N½ sec.15, T.5 S., R.2 W., at culvert on U.S. Highway 36, 0.7 mile northwest of Florence.

Drainage area.--0.508 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	17.12	201	1960	June 24, 1960	23.12	688
1957	Mar. 26, 1957	20.96	532				
1958	Oct. 24, 1957	20.58	498	1961	Aug. 10, 1961	23.71	746
1959	Sept.27, 1959	17.09	199				

5865. Hurricane Creek near Roodhouse, Ill.

Location.--Lat 39°29'20", long 90°25'00", in NE¼ sec.15, T.12 N., R.12 W., on left bank 150 ft downstream from bridge on State Highway 106, 2 miles west of Roodhouse, and 12 miles upstream from mouth.

Drainage area.--2.33 sq mi.

Gage.--Recording. Datum of gage is 597.16 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 73 cfs and extended above on basis of computation of peak flow through culvert and over highway embankment at 1,700 cfs.

Remarks.--Base for partial-duration series, 65 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Jan. 2, 1951	5.40	81	1955	May 26, 1955	7.81	95
	Feb. 18, 1951	7.18	157		July 23, 1955	8.31	115
	Feb. 20, 1951	5.88	99				
	June 27, 1951	7.04	147	1956	Aug. 8, 1956	7.52	175
	Aug. 20, 1951	9.10	310				
				1957	Apr. 24, 1957	5.10	70
1952	June 10, 1952	5.31	78		May 17, 1957	5.70	92
					May 21, 1957	6.21	111
1953	June 26, 1953	3.02	21		June 12, 1957	7.23	157
					June 14, 1957	11.77	1,700
1954	Aug. 8, 1954	6.96	66		July 29, 1957	6.96	147

Peak stages and discharges of Hurricane Creek near Roodhouse, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	June 13, 1958	6.61	127	1960	Apr. 15, 1960	7.88	202
	July 19, 1958	5.24	76		May 25, 1960	6.41	119
	July 30, 1958	7.20	157		June 28, 1960	6.97	119
1959	Feb. 9, 1959	7.38	163	1961	Apr. 24, 1961	6.74	103
	May 28, 1959	5.24	76		May 5, 1961	7.60	137
	May 30, 1959	8.33	233		May 7, 1961	8.74	209
	Aug. 29, 1959	7.36	169		July 23, 1961	6.06	83
					Aug. 1, 1961	8.47	202
1960	Oct. 10, 1959	5.28	78		Aug. 10, 1961	9.17	270
	Mar. 29, 1960	7.60	181		Sept. 13, 1961	7.18	132

5868.5. Bear Creek tributary near Reeders, Ill.

Location.--Lat 39°17'40", long 90°01'05", in SE¼ sec.19, T.10 N., R.8 W., at culvert on State Highway 108, 1.5 miles southeast of Reeders.

Drainage area.--0.020 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 28, 1956	17.04	5.30	1960	June 29, 1960	19.29	25.6
1957	June 28, 1957	19.72	29.4				
1958	July 15, 1958	18.38	22.1	1961	Aug. 10, 1961	17.87	15
1959	Feb. 10, 1959	17.14	6.13				

5870. Macoupin Creek near Kane, Ill.

Location.--Lat 39°14'00", long 90°23'45", in SE¼ sec.11, T.9 N., R.12 W., near center of span on downstream side of bridge on U.S. Highway 67 (alternate), 1.4 miles downstream from Link Branch, and 3½ miles northwest of Kane.

Drainage area.--875 sq mi.

Gage.--Nonrecording except for period May 17, 1940, to May 17, 1943, when gage was recording. Datum of gage is 426.77 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1928, at Chicago & Alton Railway bridge, 1.6 miles upstream, at datum 431.18 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. During 1923, channel was dredged from mouth to a point upstream from gage. At former site, after dredging, stage-discharge relation defined by current-meter measurements below 20,000 cfs; prior to dredging, defined by current-meter measurements below 8,300 cfs and extended parallel to subsequent rating.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	-	a29.5	-	1922	Apr. 18, 1922	21.6	9,320
1921	Mar. 29, Apr. 28, 1921	18.10	8,320	1923	Mar. 18, 1923	15.75	4,400
				1924	Dec. 16, 1923	16.1	7,850
1922	Nov. 21, 1921	19.1	5,100				
	Dec. 26, 1921	18.9	4,850	1925	Mar. 19, 1925	17.0	6,350
	Jan. 5, 1922	18.8	4,730				
	Mar. 15, 1922	22.2	20,800	1926	Oct. 4, 1925	18.6	8,900
	Apr. 1, 1922	20.8	7,750		Apr. 7, 1926	16.4	5,460
	Apr. 8, 1922	24.3	15,800		Sept. 5, 1926	19.80	11,700

a About.

Peak stages and discharges of Macoupin Creek near Kane, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Oct. 4, 1926	22.5	22,200
	Nov. 15, 1926	15.5	5,260
	Nov. 26, 1926	17.5	7,750
	Feb. 1, 1926	16.5	6,390
	Mar. 21, 1927	20.6	14,500
	Apr. 1, 1927	19.8	12,200
	Apr. 6, 1927	21.9	19,400
	Apr. 10, 1927	16.6	6,510
	Apr. 13, 1927	18.8	10,000
	Apr. 16, 1927	20.6	14,500
	May 11, 1927	15.8	5,580
	May 27, 1927	19.4	11,200
1928	Oct. 1, 1927	16.0	5,800
	Dec. 2, 1927	20.0	12,700
	Dec. 7, 1927	15.4	5,160
	Feb. 7, 1928	18.3	9,070
	Apr. 7, 1928	19.4	11,200
1929	Jan. 22, 1929	16.0	4,510
	Mar. 16, 1929	18.8	8,700
	Apr. 11, 1929	19.6	10,600
	Apr. 22, 1929	19.3	9,850
	May 5, 1929	20.7	13,700
	May 15, 1929	21.4	16,000
	May 18, 1929	20.6	13,400
1930	Jan. 2, 1930	16.7	5,230
	Jan. 14, 1930	19.1	9,350
1931	July 23, 1931	12.4	2,360
1932	Aug. 26, 1932	16.84	5,400
1933	Apr. 2, 1933	21.38	9,420
	May 16, 1933	20.9	8,000
	May 28, 1933	20.7	7,440
1941	Aug. 26, 1941	14.29	1,410
1942	Nov. 8, 1941	20.6	4,580
	Feb. 9, 1942	23.3	11,600
	June 22, 1942	21.1	5,460
	June 26, 1942	23.8	13,600
	July 10, 1942	25.01	19,500
1943	Nov. 24, 1942	22.6	9,320
	Dec. 27, 1942	22.9	10,300
	May 12, 1943	21.0	6,260
	May 18, 1943	28.5	40,000
	June 11, 1943	19.6	4,520
	June 17, 1943	19.6	4,520
1944	Apr. 12, 1944	24.2	18,200
	Apr. 24, 1944	25.71	25,400
1945	Mar. 28, 1945	20.9	6,380
	Apr. 3, 1945	23.9	14,400
1945	Apr. 16, 1945	21.5	7,800
	May 17, 1945	20.6	5,740
	June 10, 1945	25.33	20,700
	June 17, 1945	20.8	6,160
1946	Feb. 15, 1946	20.4	5,360
	Aug. 17, 1946	26.05	24,200
1947	Nov. 4, 1946	24.02	14,000
	Feb. 1, 1947	20.4	4,830
	Apr. 27, 1947	22.4	9,660
	July 3, 1947	20.5	5,010
1948	Mar. 23, 1948	20.60	5,200
1949	Jan. 24, 1949	20.8	6,940
	Jan. 28, 1949	20.4	6,110
	Feb. 17, 1949	19.8	5,360
	Feb. 22, 1949	19.8	5,360
	July 21, 1949	22.56	10,600
1950	Dec. 23, 1949	20.1	5,800
	Jan. 5, 1950	23.02	11,400
	Jan. 14, 1950	21.8	8,880
	Feb. 14, 1950	20.0	5,650
	Feb. 22, 1950	19.7	5,220
1951	Feb. 21, 1951	21.65	8,480
	Mar. 19, 1951	21.27	7,880
	Apr. 14, 1951	19.54	4,940
1952	Apr. 13, 1952	21.86	10,200
1953	June 26, 1953	14.50	2,810
1954	July 2, 1954	9.40	906
1955	Apr. 24, 1955	15.90	2,730
1956	Aug. 9, 1956	15.60	2,640
1957	Apr. 29, 1957	22.21	13,000
	May 24, 1957	20.95	8,900
	June 16, 1957	23.30	17,100
	June 30, 1957	23.42	17,500
1958	July 31, 1958	19.50	5,880
1959	Feb. 10, 1959	20.64	2,700
1960	Apr. 1, 1960	20.70	8,030
	May 26, 1960	19.80	6,320
	June 30, 1960	20.40	7,340
1961	May 10, 1961	22.21	13,000
	Aug. 11, 1961	25.05	24,300
	Sept.25, 1961	20.60	7,780

5875. Mississippi River at Alton, Ill.

Location.--Lat 38°53'06", long 90°10'51", in sec.14, T.5 N., R.10 W., near left bank in downstream end of intermediate lock wall of lock and dam 26 at Alton, 300 ft downstream from Missouri Illinois Bridge & Belt Railroad bridge, 7.7 miles upstream from Missouri River, and at mile 202.7 above Ohio River.

Drainage area.--171,500 sq mi, approximately.

Gage.--Nonrecording 1879 to Jan. 4, 1937, and Nov. 11, 1937, to Jan. 31, 1938; recording Jan. 5 to Nov. 10, 1937, and since Feb. 1, 1938. Prior to Mar. 20, 1933, at Grafton 15.3 miles upstream at datum 403.79 ft higher than present datum; Mar. 20, 1933, to Jan. 31, 1938, at present site at datum 395.48 ft higher than present datum. Datum of present gage is mean sea level, datum of 1929 (levels by Corps of Engineers). Since July 11, 1940, auxiliary recording gage 5.9 miles downstream; previously various combinations of gages were used. Gage heights listed herein are converted to present datum.

Stage-discharge relation.--Affected by backwater from Missouri River. Fall between auxiliary gage and reference gage used as a factor in computing discharge.

Bankfull stage.--421 ft.

Historical data.--Maximum stage known, 432.10 ft, present datum, in June 1844.

Remarks.--Alton gage-height record and discharge record January 1928 to February 1933 (published as "at Grafton" prior to January 1933), February 1938 to September 1939 furnished by Corps of Engineers. Natural flow of stream affected by many reservoirs and navigation dams in upper Mississippi River basin and by diversion through Chicago Sanitary and Ship Canal from Lake Michigan into Illinois River. Peak gage height usually occurs at different time than peak discharge. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1844	June 1844	a432.10	-	1921	May 13, 1921	416.8	-
				1922	Apr. 19, 1922	427.1	-
1851	June 1851	427.9	-	1923	June 17, 1923	412.2	-
				1924	July 3, 1924	418.3	-
1858	June 1858	428.2	b573,000	1925	June 25, 1925	411.6	-
1880	July 10, 1880	417.15	-	1926	Sept.30, 1926	416.8	-
				1927	Apr. 25, 1927	426.7	-
1881	May 5, 1881	423.92	-	1928	Apr. 9, 1928	-	216,000
					June 22, 1928	417.3	-
1888	June 19, 1888	420.40	-	1929	Apr. 29, 1929	425.6	365,000
				1930	June 21, 1930	412.0	186,000
1896	May 26, 1896	418.9	-				
1897	May 2, 1897	421.93	-	1931	June 14, 1931	408.0	145,000
1898	May 23, 1898	417.58	-	1932	Nov. 30, 1931	414.2	182,000
1899	May 26, 1899	416.4	-	1933	May 17, 1933	418.9	265,000
1900	Mar. 16, 1900	415.2	-	1934	Apr. 24, 1934	405.0	97,200
				1935	May 17, 1935	424.4	231,000
1901	Apr. 12, 1901	414.2	-				
1902	July 25, 1902	418.5	-	1936	Mar. 1, 1936	413.5	218,000
1903	June 9, 1903	429.3	-	1937	Mar. 15, 1937	414.9	255,000
1904	Apr. 29, 1904	424.4	-	1938	Apr. 11, 1938	416.9	268,000
1905	Sept.20, 1905	419.4	-	1939	Mar. 17, 1939	421.2	240,000
				1940	Apr. 19, 1940	407.10	137,000
1906	Apr. 14, 1906	416.6	-				
1907	July 25, 1907	417.6	-	1941	Apr. 21, 1941	417.27	220,000
1908	June 18, 1908	425.1	-	1942	June 22, 1942	423.72	253,000
1909	July 15, 1909	425.2	-	1943	May 24, 1943	429.91	437,000
1910	May 10, 1910	414.93	-	1944	Apr. 30, 1944	429.33	c394,600
				1945	June 13, 1945	424.14	308,000
1911	Feb. 23, 1911	412.9	-				
1912	Apr. 9, 1912	422.8	-	1946	Jan. 14, 1946	419.10	314,000
1913	Apr. 14, 1913	418.7	-	1947	July 3, 1947	429.40	380,000
1914	June 22, 1914	410.9	-	1948	Mar. 28, 1948	424.41	366,000
1915	June 4, 1915	422.1	-	1949	Mar. 13, 1949	415.08	219,000
				1950	June 24, 1950	417.20	261,000
1916	Jan. 31, 1916	421.6	-				
1917	June 14, 1917	423.5	-	1951	May 10, 1951	429.47	333,000
1918	June 16, 1918	414.1	-	1952	Apr. 30, 1952	424.47	340,000
1919	May 11, 1919	419.6	-	1953	Apr. 5, 1953	413.50	232,000
1920	Apr. 24, 1920	420.6	-	1954	May 19, 1954	409.58	198,000

a Maximum stage known.
b Computed by Corps of Engineers.
c Excludes diversion from Missouri River.

Peak stages and discharges of Mississippi River at Alton, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 28, 1955	409.66	212,000	1959	Apr. 8, 1959	413.31	221,000
				1960	Apr. 10, 1960	424.84	377,000
1956	Apr. 30, 1956	406.30	166,000				
1957	June 16, 1957	411.69	180,000	1961	Apr. 9, 1961	421.62	247,000
1958	July 21, 1958	418.98	209,000				

CAHOKIA CREEK BASIN

5878.5. Cahokia Creek tributary near Carpenter, Ill.

Location.--Lat 38°52'40", long 89°54'30", in SE¼SE¼ sec.18, T.5 N., R.7 W., at weir on James Love Farm, 1.2 miles southwest of Carpenter.

Drainage area.--0.452 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by model studies and verified by indirect measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	3.02	41	1960	June 30, 1960	4.14	172
1957	June 14, 1957	4.77	301				
1958	Sept.16, 1958	6.25	747	1961	Aug. 10, 1961	4.12	169
1959	Feb. 10, 1959	5.50	507				

5880. Indian Creek at Wanda, Ill.

Location.--Lat 38°50'30", long 90°01'59", in SE¼NW¼ sec.31, T.5 N., R.8 W., on right bank at upstream side of bridge on State Highway 159, three-quarters of a mile northeast of Wanda, 2¼ miles upstream from Cahokia Creek, and 5 miles west of Edwardsville.

Drainage area.--37.0 sq mi.

Gage.--Recording at datum 2.00 ft higher prior to Oct. 1, 1960; nonrecording thereafter. Datum of gage is 429.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Apr. 19, 1941	10.4	790	1946	Feb. 14, 1946	10.6	1,110
					Aug. 15, 1946	18.41	9,340
1942	July 9, 1942	15.74	3,900				
				1947	Nov. 1, 1946	15.46	4,840
1943	Dec. 27, 1942	12.8	1,520		Nov. 3, 1946	12.2	1,670
	May 15, 1943	10.5	1,010		Nov. 10, 1946	11.8	1,530
	May 17, 1943	15.69	4,160		Apr. 25, 1947	11.3	1,320
	May 19, 1943	10.7	1,050		Apr. 30, 1947	11.4	1,350
	June 6, 1943	12.0	1,400		July 1, 1947	11.9	1,570
	June 16, 1943	12.0	1,390				
				1948	July 26, 1948	12.32	1,720
1944	Apr. 11, 1944	10.5	1,000				
	Apr. 22, 1944	16.67	6,320	1949	Jan. 18, 1949	11.5	1,380
					Jan. 24, 1949	10.5	1,090
1945	Mar. 6, 1945	10.6	1,110		Jan. 28, 1949	10.5	1,110
	Apr. 13, 1945	12.08	1,620		Feb. 15, 1949	12.05	1,570
	Apr. 14, 1945	10.3	1,050		May 21, 1949	11.5	1,410
	June 7, 1945	10.8	1,170		June 29, 1949	11.5	1,380
	June 16, 1945	11.5	1,350				

Peak stages and discharges of Indian Creek at Wanda, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 22, 1949	10.2	1,030	1954	Sept.21, 1954	6.60	482
	Jan. 3, 1950	16.22	5,480				
	Jan. 13, 1950	12.1	1,620	1955	Oct. 11, 1954	9.42	870
	Feb. 13, 1950	10.6	1,110				
	Apr. 4, 1950	11.3	1,320	1956	May 31, 1956	6.57	482
1951	Feb. 6, 1951	11.99	1,570	1957	Apr. 27, 1957	11.80	1,490
	Feb. 16, 1951	11.55	1,410		June 15, 1957	17.62	7,750
	Feb. 21, 1951	10.58	1,110				
	June 20, 1951	12.95	2,120	1958	Sept.17, 1958	8.23	680
	June 28, 1951	10.24	1,030				
	July 23, 1951	11.34	1,320	1959	Feb. 10, 1959	13.43	2,400
1952	Apr. 1, 1952	12.73	1,940	1960	June 29, 1960	10.30	1,050
	Apr. 4, 1952	10.67	1,140		July 1, 1960	11.17	1,290
	June 10, 1952	14.77	3,680				
	July 16, 1952	12.85	2,000	1961	May 8, 1961	15.13	2,320
					Aug. 10, 1961	15.66	2,670
1953	Apr. 24, 1953	10.40	1,070				

5895. Canteen Creek at Caseyville, Ill.

Location.--Lat 38°38'35", long 90°01'00", in N½NW¼ sec.8, T.2 N., R.8 W., on right bank at upstream side of highway bridge at Caseyville, 100 ft upstream from Pennsylvania Railroad bridge, and 400 ft upstream from bridge on State Highway 157.

Drainage area.--22.5 sq mi.

Gage.--Recording. Datum of gage is 420.97 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 890 cfs and extended on basis of contracted-opening measurement at 10,200 cfs. Prior to channel improvement early in 1943 by removal of drift and brush, defined by current-meter measurements below 3,400 cfs.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	June 20, 1939	10.1	1,080	1947	Nov. 10, 1946	10.9	2,190
	June 26, 1939	8.9	834		Jan. 30, 1947	7.2	960
	Aug. 11, 1939	11.5	1,510		Apr. 25, 1947	7.7	1,080
	Aug. 18, 1939	13.3	2,390		Apr. 30, 1947	6.4	810
					June 30, 1947	11.87	2,570
1940	Aug. 4, 1940	6.8	502				
				1948	July 26, 1948	13.38	3,290
1941	Sept. 2, 1941	8.40	742		Aug. 13, 1948	9.7	1,790
1942	June 1, 1942	12.2	1,840	1949	Jan. 18, 1949	8.2	1,270
	June 7, 1942	9.6	974		Feb. 15, 1949	10.6	2,080
	June 26, 1942	11.4	1,470		June 14, 1949	8.7	1,420
	July 9, 1942	17.80	4,640		Aug. 2, 1949	9.4	1,650
	July 10, 1942	11.3	1,430		Aug. 11, 1949	11.08	2,320
	July 12, 1942	9.8	1,020				
				1950	Oct. 6, 1949	7.3	1,040
1943	Dec. 27, 1942	11.4	1,470		Oct. 11, 1949	6.5	875
	May 15, 1943	9.1	1,330		Jan. 4, 1950	11.54	2,480
	May 18, 1943	a12.31	2,090		Jan. 13, 1950	8.0	1,240
	June 10, 1943	7.1	802		Jan. 15, 1950	6.1	801
	June 15, 1943	7.2	824				
	July 31, 1943	10.6	1,860	1951	Feb. 6, 1951	8.51	1,390
	Aug. 8, 1943	7.4	870		Feb. 16, 1951	9.11	1,580
					June 16, 1951	7.57	1,120
1944	Apr. 22, 1944	9.33	1,390		June 20, 1951	12.67	2,970
					June 24, 1951	9.81	1,820
1945	Apr. 13, 1945	6.6	846		Aug. 20, 1951	7.16	1,010
	Apr. 14, 1945	6.5	828				
	May 15, 1945	11.16	2,290	1952	Apr. 1, 1952	-	-
					Apr. 4, 1952	6.06	801
1946	Aug. 5, 1946	8.3	1,280				
	Aug. 15, 1946	18.6	8,780	1953	May 17, 1953	3.61	327
	Aug. 16, 1946	20.54	10,000				

a Backwater from drift on Pennsylvania Railroad bridge, 1.1 ft.

Peak stages and discharges of Canteen Creek at Caseyville, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Sept.20, 1954	10.27	2,000	1957	Aug. 3, 1957	9.38	1,040
1955	July 5, 1955	10.50	2,080	1958	July 18, 1958	11.73	1,790
	July 23, 1955	8.22	1,300		July 19, 1958	11.17	1,610
	Sept.23, 1955	7.33	1,040		July 28, 1958	7.29	1,040
1956	May 30, 1956	9.56	1,750		Aug. 8, 1958	10.81	1,330
	June 20, 1956	11.61	2,520		Aug. 12, 1958	11.26	1,330
	June 24, 1956	8.22	1,300	1959	Nov. 16, 1958	8.69	1,010
	July 4, 1956	14.20	3,650		Jan. 21, 1959	-	750
	July 19, 1956	10.63	2,120		Feb. 10, 1959	11.92	1,510
1957	Apr. 3, 1957	9.25	1,610	1960	June 29, 1960	11.58	2,520
	Apr. 26, 1957	8.65	1,420		July 1, 1960	7.76	1,180
	May 21, 1957	9.59	1,750				
	May 22, 1957	12.00	2,680	1961	May 8, 1961	15.24	5,100
	June 12, 1957	9.53	1,720		July 25, 1961	11.19	2,360
	June 15, 1957	17.81	10,200		Aug. 10, 1961	-	-
	June 28, 1957	10.80	1,450				

KASKASKIA RIVER BASIN

5900. Kaskaskia River at Bondville, Ill.

Location.--Lat 40°06'47", long 88°20'55", in NW¼NW¼ sec.18, T.19 N., R.8 E., on left bank at downstream side of bridge on State Highway 10, 50 ft upstream from Illinois Central Railroad bridge, 100 ft upstream from Illinois Terminal Railroad bridge, 1 mile east of Bondville, and 3.8 miles west of Champaign.

Drainage area.--12.3 sq mi.

Gage.--Recording. Datum of gage is 689.89 ft above mean sea level, datum of 1929. March 1924 to October 1927, at Illinois Terminal Railroad bridge at different datum.

Stage-discharge relation.--Defined by current-meter measurements. At former site, defined by current-meter measurements below 210 cfs. Channel was dredged and cleared in 1928 and in 1947.

Remarks.--Base for partial-duration series, 160 cfs. Only annual peaks are shown prior to 1949.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Aug. 20, 1924	8.5	218	1954	June 7, 1954	7.73	337
1925	Dec. 18, 1924	6.9	182	1955	July 23, 1955	6.49	180
1926	Apr. 7, 1926	6.8	164				
1927	Oct. 3, 1926	8.3	170	1956	Oct. 6, 1955	6.80	207
1949	Jan. 27, 1949	7.8	237	1957	June 28, 1957	7.18	235
	Feb. 15, 1949	10.41	368	1958	June 10, 1958	8.77	396
1950	Dec. 22, 1949	9.51	320		June 17, 1958	6.12	165
	Jan. 4, 1950	9.2	304		July 11, 1958	11.82	774
	Jan. 10, 1950	6.9	196		Aug. 2, 1958	10.14	546
	Jan. 13, 1950	8.0	246		Aug. 7, 1958	10.16	486
	Apr. 4, 1950	6.8	191				
	July 17, 1950	7.5	223	1959	Jan. 30, 1959	6.62	199
					Feb. 10, 1959	13.50	1,160
1951	Feb. 6, 1951	6.53	187		May 22, 1959	9.13	433
	Feb. 16, 1951	5.92	178				
	Feb. 21, 1951	10.93	427	1960	June 16, 1960	9.84	522
	July 9, 1951	10.01	304		June 23, 1960	9.87	536
1952	June 22, 1952	8.23	218	1961	Apr. 22, 1961	8.90	460
					Apr. 25, 1961	8.85	450
1953	Mar. 14, 1953	6.95	228		May 8, 1961	11.59	800
	Mar. 31, 1953	7.73	299		June 8, 1961	5.75	191
1954	Apr. 11, 1954	6.19	207				

5905. Kaskaskia River at Ficklin, Ill.

Location.--Lat 39°48'00", long 88°21'55", in SW¼NW¼ sec.36, T.16 N., R.7 E., on left bank 0.25 mile upstream from Baltimore & Ohio Railroad bridge, 0.5 mile west of Ficklin, and 7 miles downstream from Twomile Slough.

Drainage area.--127 sq mi.

Gage.--Recording. Datum of gage is 642.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 9, 1954	8.95	1,140	1958	July 16, 1958	9.39	790
					Aug. 8, 1958	10.08	1,020
1955	July 24, 1955	10.08	1,020				
				1959	Jan. 30, 1959	8.81	630
1956	Oct. 7, 1955	8.82	630		Feb. 10, 1959	13.98	4,400
					Mar. 15, 1959	8.40	655
1957	Apr. 3, 1957	9.41	790		May 23, 1959	9.00	680
	Apr. 28, 1957	10.85	1,320				
	June 13, 1957	9.88	945	1960	Mar. 29, 1960	8.93	655
	June 28, 1957	10.76	1,320		June 23, 1960	11.38	1,640
1958	Dec. 20, 1957	9.18	610	1961	Apr. 22, 1961	9.09	880
	June 11, 1958	13.10	3,120		Apr. 25, 1961	10.75	1,640
	June 14, 1958	9.80	910		May 9, 1961	13.68	3,930
	July 12, 1958	11.47	1,700		June 9, 1961	9.63	790

5910. Kaskaskia River near Arcola, Ill.

Location.--Lat 39°40'52", long 88°22'34", on line between secs. 1 and 12, T.14 N., R.7 E., on upstream side of highway bridge 2 miles south of Chesterville and 3½ miles west of Arcola.

Drainage area.--390 sq mi.

Gage.--Nonrecording. Datum of gage is 626.4 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 7, 1908	17.6	3,980	1911	Sept.30, 1911	15.3	3,150
1909	July 15, 1909	16.0	3,400	1912	Mar. 1, 1912	11.5	1,780
1910	Jan. 19, 1910	12.0	1,960				

5915. Asa Creek at Sullivan, Ill.

Location.--Lat 39°37'11", long 88°36'17", in NW¼NW¼ sec.36, T.14 N., R.5 E., on right bank at downstream side of highway bridge, 0.4 mile upstream from Chicago & Eastern Illinois Railroad, 0.8 mile north of Sullivan, and 5½ miles upstream from mouth.

Drainage area.--7.93 sq mi.

Gage.--Recording. Datum of gage is 645.36 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 660 cfs and extended above on basis of velocity-area studies.

Remarks.--Base for partial-duration series, 160 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 20, 1951	5.19	375	1957	June 28, 1957	10.66	1,110
	June 28, 1951	6.44	472	1958	July 20, 1958	5.20	173
1952	June 22, 1952	5.40	402		July 31, 1958	5.40	189
1953	June 28, 1953	3.22	102	1959	Feb. 9, 1959	8.70	690
1954	Apr. 15, 1954	1.60	5.8	1960	June 16, 1960	4.42	166
1955	June 12, 1955	2.38	58		June 23, 1960	8.31	625
1956	May 28, 1956	3.55	172	1961	May 8, 1961	3.61	108
	June 19, 1956	6.66	515				

5920. Kaskaskia River at Shelbyville, Ill.

Location.--Lat 39°24'20", long 88°47'00", in SE¼SW¼ sec.8, T.11 N., R.4 E., on left bank 50 ft upstream from bridge on State Highway 16 at Shelbyville, 2,000 ft upstream from Chicago & Eastern Illinois Railroad bridge, and 7 miles upstream from Robinson Creek.

Drainage area.--1,030 sq mi, approximately.

Gage.--Nonrecording prior to Dec. 4, 1940, and June 1, 1950, to July 10, 1952; recording Dec. 4, 1940, to May 31, 1950, and since July 11, 1952. Prior to December 1914, at site 100 ft downstream at datum 531.11 ft above mean sea level, datum of 1929. Datum of gage is 535.78 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 3,800 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 8, 1908	25.8	18,000	1944	Apr. 12, 1944	16.9	13,400
1909	Apr. 14, 1909	20.8	7,580		Apr. 24, 1944	18.50	17,600
1910	Jan. 20, 1910	18.6	6,360	1945	Apr. 4, 1945	17.12	14,000
1911	Sept.30, 1911	22.8	8,780		May 18, 1945	12.5	4,270
1912	Mar. 21, 1912	19.4	6,740		June 13, 1945	12.9	4,550
1913	Mar. 21, 1913	19.5	-		June 19, 1945	13.2	4,800
1939	March 1939	20.0	-	1946	May 2, 1946	12.4	4,630
					May 12, 1946	11.6	4,130
1941	Sept. 2, 1941	8.64	2,220		May 18, 1946	12.64	4,750
1942	Nov. 9, 1941	13.5	5,350	1947	Apr. 27, 1947	11.8	4,260
	Feb. 11, 1942	13.2	4,800		May 1, 1947	13.7	5,500
	Apr. 12, 1942	12.3	4,130		June 7, 1947	17.26	13,300
	June 28, 1942	13.8	5,750				
	July 11, 1942	17.22	14,200	1948	Mar. 28, 1948	16.08	11,400
1943	Dec. 29, 1942	14.5	7,520	1949	Jan. 21, 1949	13.0	5,000
	May 12, 1943	14.9	8,380		Jan. 29, 1949	15.2	8,050
	May 19, 1943	21.17	25,000		Feb. 16, 1949	16.02	9,960

Peak stages and discharges of Kaskaskia River at Shelbyville, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Dec. 24, 1949	13.1	5,060	1955	Apr. 22, 1955	8.81	2,350
	Jan. 5, 1950	20.63	22,000				
	Jan. 15, 1950	17.7	13,300	1956	Feb. 25, 1956	10.63	3,520
	Jan. 27, 1950	11.3	3,950				
	Feb. 15, 1950	15.7	10,700	1957	Apr. 6, 1957	15.06	7,830
	Feb. 23, 1950	12.5	4,690		Apr. 30, 1957	14.28	6,340
	Apr. 6, 1950	12.0	4,380		June 16, 1957	16.95	12,400
	July 5, 1950	16.4	11,600		June 29, 1957	22.37	25,900
1951	Feb. 22, 1951	18.23	16,000	1958	June 16, 1958	15.13	9,000
	Apr. 14, 1951	11.90	4,320		July 16, 1958	14.29	7,220
	June 29, 1951	17.25	13,000		July 22, 1958	12.50	4,690
					Aug. 2, 1958	16.64	12,600
1952	Feb. 6, 1952	11.82	4,260				
	Apr. 14, 1952	11.96	4,380	1959	Feb. 11, 1959	18.50	16,200
	June 23, 1952	13.63	5,410				
				1960	Mar. 31, 1960	11.58	3,800
1953	Apr. 6, 1953	11.32	3,950		June 25, 1960	17.67	14,200
1954	Apr. 16, 1954	6.96	662	1961	May 12, 1961	16.53	11,200

5920.25. Mud Creek tributary near Tower Hill, Ill.

Location.--Lat 39°25'55", long 88°57'20", in NE¼ sec.3, T.11 N., R.2 E., at culvert on county road, 2.9 miles north of Tower Hill.

Drainage area.--0.212 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July 18, 1956	14.56	225	1960	June 23, 1960	15.03	450
1957	June 28, 1957	15.01	441				
1958	July 31, 1958	12.73	82	1961	July 29, 1961	13.62	127
1959	Feb. 10, 1959	13.00	96				

5925. Kaskaskia River at Vandalia, Ill.

Location.--Lat 38°57'35", long 89°05'20", in SE¼ sec.16, T.6 N., R.1 E., near center of span on upstream side of Gallatin Street Bridge in Vandalia, 3½ miles upstream from Hickory Creek, and at mile 160.85.

Drainage area.--1,980 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 453.30 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Greatly affected by variations in condition of nearby levees. For periods of effective levees, the relation is defined by current-meter measurements below 15,000 cfs. For other periods, various other stage-discharge relations are effective, depending upon nature and extent of levee breaks. Numerous current-meter measurements, up to 52,000 cfs, partly defined these relations.

Remarks.--Gage heights prior to Oct. 1, 1933, have been increased by 2.00 ft to compensate for change in datum. Base for partial-duration series, 7,000 cfs. Only annual peaks are shown prior to 1915 and after 1950.

Peak stages and discharges of Kaskaskia River at Vandalia, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)
1875	-	24.8	-
1882	-	24.0	-
1908	May 6, 1908	23.50	7,870
1909	Apr. 14, 1909	23.1	7,670
1910	Mar. 1, 1910	21.8	7,020
1911	May 1, 1911	19.1	5,670
1912	Oct. 4, 1911	22.0	13,000
1915	Feb. 3, 1915	20.8	8,880
	May 27, 1915	24.5	15,800
	July 13, 1915	19.6	7,320
	Aug. 21, 1915	24.7	15,800
1916	Jan. 4, 1916	a19.9	7,300
	Jan. 13, 1916	b23.1	10,000
	Jan. 31, 1916	24.0	14,400
	June 23, 1916	19.4	7,100
1917	June 2, 1917	21.0	9,180
	June 5, 1917	25.2	16,800
1918	Feb. 14, 1918	20.3	8,190
	Apr. 27, 1918	20.0	7,800
	May 11, 1918	20.8	8,880
1919	Dec. 23, 1918	19.5	7,210
	Mar. 19, 1919	22.10	11,000
	June 26, 1919	21.3	9,660
1920	Nov. 2, 1919	21.1	9,340
	Feb. 23, 1920	20.2	8,060
	Mar. 14, 1920	20.5	8,460
	Mar. 27, 1920	21.1	9,340
	May 19, 1920	23.0	12,600
1922	Mar. 15, 1922	23.9	c17,000
	Apr. 18, 1922	21.87	18,800
1923	Mar. 17, 1923	23.9	14,300
1924	Dec. 15, 1923	21.82	10,500
	Jan. 31, 1924	19.5	7,210
	Mar. 31, 1924	20.7	8,740
1925	Dec. 22, 1924	20.3	8,190
	Mar. 16, 1925	21.5	9,980
	Mar. 20, 1925	20.3	8,190
1926	Feb. 28, 1926	19.9	7,680
	Sept.17, 1926	20.47	8,460
1927	Oct. 4, 1926	-	20,000
	Feb. 2, 1927	20.3	8,190
	Mar. 20, 1927	22.4	20,000
	Apr. 2, 1927	20.6	15,500
	Apr. 16, 1927	20.6	15,500
	May 20, 1927	19.7	7,440
	May 31, 1927	21.9	10,600
1928	Oct. 4, 1927	21.5	9,980
	Dec. 1, 1927	22.8	12,200
	Feb. 7, 1928	19.7	7,440
	Apr. 8, 1928	20.8	8,880
	May 18, 1928	19.9	7,680
1929	Mar. 28, 1929	20.8	8,880
	Apr. 10, 1929	22.2	11,100
	Apr. 23, 1929	20.3	8,190
	May 6, 1929	21.6	10,100
	May 14, 1929	22.8	12,200
1930	Jan. 14, 1930	22.4	11,500
1931	Sept.18, 1931	8.3	1,270
1932	Jan. 24, 1932	17.42	5,550
1933	Apr. 2, 1933	20.2	8,180
	May 15, 1933	22.65	17,500
	May 21, 1933	21.5	14,600
1934	Aug. 19, 1934	14.76	4,250
1935	Mar. 13, 1935	20.2	8,600
	May 5, 1935	20.5	9,050
	May 16, 1935	21.89	11,200
1936	Feb. 28, 1936	19.2	7,150
	Mar. 26, 1936	19.33	7,290
1937	Jan. 15, 1937	23.96	-
	Jan. 15, 1937	-	14,900
	Feb. 2, 1937	18.2	7,830
	Feb. 10, 1937	18.0	7,490
	May 5, 1937	18.7	8,700
1938	Feb. 20, 1938	18.8	8,660
	Mar. 15, 1938	20.8	24,700
	Mar. 31, 1938	22.85	40,700
	Apr. 12, 1938	20.0	18,300
1939	Mar. 2, 1939	19.3	7,320
	Mar. 14, 1939	24.92	16,000
	Apr. 18, 1939	21.5	10,600
1940	May 3, 1940	18.90	6,760
1941	June 12, 1941	16.32	4,560
1942	Nov. 9, 1941	20.7	9,220
	Feb. 9, 1942	20.0	8,100
	Mar. 11, 1942	20.2	8,420
	Apr. 11, 1942	20.0	8,100
	June 29, 1942	20.3	8,580
	July 12, 1942	23.37	13,600
1943	Nov. 25, 1942	20.1	8,260
	Dec. 29, 1942	23.1	13,800
	May 8, 1943	23.9	15,700
	May 12, 1943	24.0	16,000
	May 17, 1943	25.33	-
	May 18, 1943	24.25	52,200
1944	Apr. 13, 1944	23.2	14,800
	Apr. 23, 1944	26.05	-
	Apr. 24, 1944	-	31,000
1945	Mar. 8, 1945	20.3	9,540
	Apr. 3, 1945	24.2	17,900
	Apr. 15, 1945	20.0	9,000
	May 17, 1945	20.9	10,600
	June 10, 1945	25.66	21,500
	June 17, 1945	23.0	15,000
1946	Feb. 16, 1946	20.6	c10,100
	May 4, 1946	22.12	13,000
	May 13, 1946	18.8	7,120
	May 18, 1946	21.4	11,600
	June 3, 1946	20.3	9,540
1947	Feb. 1, 1947	18.9	7,260
	Apr. 27, 1947	20.2	9,210
	May 24, 1947	18.9	7,260
	June 10, 1947	21.68	12,300
	July 2, 1947	20.4	9,560
1948	Mar. 28, 1948	24.58	19,000
1949	Jan. 7, 1949	20.2	9,210
	Jan. 21, 1949	22.3	13,400
	Jan. 28, 1949	22.3	13,400
	Feb. 16, 1949	26.30	25,000
1950	Oct. 14, 1949	19.1	7,390
	Dec. 24, 1949	20.0	8,870
	Jan. 4, 1950	27.1	-

a Backwater from ice, 0.3 ft.
b Backwater from ice, 1.6 ft.
c Estimated.

Peak stages and discharges of Kaskaskia River at Vandalia, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 4, 1950	-	51,300	1954	Apr. 19, 1954	4.48	505
	Jan. 15, 1950	21.4	23,000	1955	Apr. 25, 1955	15.53	5,000
	Jan. 28, 1950	18.8	8,800				
	Feb. 14, 1950	21.1	20,000	1956	Feb. 27, 1956	18.94	7,840
	Feb. 23, 1950	19.9	12,500	1957	June 16, 1957	25.72	-
	Apr. 5, 1950	19.5	11,200		June 29, 1957	-	62,700
	July 8, 1950	19.3	8,400	1958	Aug. 4, 1958	22.18	12,400
				1959	Feb. 12, 1959	23.89	17,200
1951	June 29, 1951	27.39	31,000	1960	June 30, 1960	21.90	11,800
1952	Apr. 15, 1952	20.71	10,500				
1953	Mar. 5, 1953	16.49	5,680	1961	May 9, 1961	27.20	35,000

5927. Hurricane Creek tributary near Witt, Ill.

Location.--Lat 39°13'00", long 89°15'15", in SE¼ sec.13, T.9 N., R.2 W., at culvert on county road, 5.9 miles southeast of Witt.

Drainage area.--0.144 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29, 1956	12.62	70	1960	June 23, 1960	12.25	54.4
1957	Aug. 3, 1957	13.91	132				
1958	May 31, 1958	12.87	81	1961	May 8, 1961	12.07	47
1959	Aug. 6, 1959	12.59	69				

5930. Kaskaskia River at Carlyle, Ill.

Location.--Lat 38°36'42", long 89°21'22", in SE¼ sec.18, T.2 N., R.2 W., on left bank at downstream side of bridge on U.S. Highway 50 at Carlyle, 16.5 miles upstream from Crooked Creek, and at mile 105.75.

Drainage area.--2,680 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 1, 1940; recording thereafter. Prior to July 1938, gage was at Baltimore & Ohio Railroad bridge, 400 ft downstream. Datum of gage is 402.92 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Gage heights January 1930 to April 1938 are from graphs based on gage heights furnished by Corps of Engineers. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1882	-	a32.5	-	1933	May 27, 1933	26.2	18,000
				1934	Mar. 29, 1934	17.3	3,330
1908	May 9, 1908	30.8	37,400	1935	May 23, 1935	24.7	13,600
1909	Apr. 18, 1909	25.4	16,000				
1910	Mar. 3, 1910	24.8	14,200	1936	Mar. 4, 1936	22.5	7,770
				1937	Jan. 17, 1937	26.6	19,200
1911	May 5, 1911	21.8	6,270	1938	Apr. 3, 1938	29.6	30,700
1912	Oct. 7, 1911	27.2	21,400	1939	Mar. 17, 1939	25.92	17,600
				1940	May 8, 1940	21.61	5,510
1915	Aug. 24, 1915	30.7	36,800				
				1941	Apr. 22, 1941	19.79	4,540
1930	Jan. 17, 1930	27.5	22,100	1942	July 16, 1942	24.98	12,500
				1943	May 21, 1943	33.70	54,400
1931	Sept. 3, 1931	18.8	3,940	1944	Apr. 26, 1944	27.72	24,800
1932	Jan. 25, 1932	22.8	8,500	1945	Apr. 4, 1945	27.86	25,600

a About.

Peak stages and discharges of Kaskaskia River at Carlyle, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	May 21, 1946	24.83	14,100	1955	Apr. 28, 1955	20.45	4,620
1947	May 2, 1947	24.32	12,400				
1948	Mar. 29, 1948	27.09	22,800	1956	Mar. 3, 1956	22.66	7,640
1949	Feb. 18, 1949	27.01	21,200	1957	July 2, 1957	30.56	33,400
1950	Jan. 7, 1950	31.17	40,700	1958	Aug. 7, 1958	24.76	12,300
				1959	Feb. 15, 1959	26.55	18,600
1951	July 2, 1951	25.95	17,500	1960	July 3, 1960	26.75	19,300
1952	Mar. 14, 1952	23.70	10,400				
1953	Mar. 9, 1953	20.00	4,300	1961	May 10, 1961	31.12	34,400
1954	Sept.20, 1954	9.58	746				

5940. Shoal Creek near Breese, Ill.

Location.--Lat 38°36'35", long 89°29'40", in SW¼SW¼ sec.13, T.2 N., R.4 W., near center of span on upstream side of bridge on U.S. Highway 50, 0.35 mile upstream from Baltimore & Ohio Railroad bridge, 1.7 miles east of Breese, and 7 miles upstream from Beaver Creek.

Drainage area.--760 sq mi, approximately.

Gage.--Nonrecording. Prior to Dec. 8, 1914, at railroad bridge 0.35 mile downstream at datum approximately 1⅝ ft lower. Datum of gage is 413.97 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements. At former site, defined by current-meter measurements below 4,100 cfs and extended parallel to subsequent rating.

Remarks.--Base for partial-duration series, 3,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1907	-	a22	-	1950	Feb. 16, 1950	18.5	7,650
					Feb. 25, 1950	17.1	4,800
1910	Jan. 17, 1910	17.9	4,670		Apr. 7, 1950	16.9	4,550
	Mar. 3, 1910	19.1	6,230		June 18, 1950	15.9	3,590
	May 27, 1910	18.0	4,810				
	Aug. 26, 1910	17.2	3,810	1951	Feb. 24, 1951	19.10	9,750
	Sept. 8, 1910	17.1	3,690		Mar. 15, 1951	16.00	3,670
					Apr. 10, 1951	17.05	4,670
1911	Oct. 9, 1910	19.0	6,100		Apr. 16, 1951	17.40	5,210
	May 4, 1911	17.2	3,810		July 1, 1951	19.70	11,800
1912	Oct. 6, 1911	19.9	7,270	1952	Feb. 7, 1952	15.80	3,520
	Mar. 2, 1912	18.2	5,060		Mar. 14, 1952	16.40	4,010
	Mar. 22, 1912	-	b6,100		Apr. 7, 1952	16.20	3,830
	Mar. 31, 1912	19.0	6,230		Apr. 16, 1952	17.80	5,870
	May 1, 1912	18.7	5,710				
				1953	May 19, 1953	-	a4,000
1913	Mar. 29, 1913	23.3	b22,000		June 28, 1953	-	a6,000
1943	May 19, 1943	25.6	52,000	1954	Sept.21, 1954	6.97	900
1946	Feb. 18, 1946	16.8	4,430	1955	Apr. 25, 1955	14.05	2,530
	Mar. 9, 1946	16.6	4,210				
	Aug. 18, 1946	19.00	8,900	1956	Feb. 26, 1956	13.61	2,370
1947	Nov. 4, 1946	19.00	8,900	1957	Apr. 8, 1957	17.55	6,050
	Nov. 14, 1946	16.6	4,330		May 1, 1957	18.59	8,500
	Dec. 16, 1946	16.0	3,670		May 26, 1957	17.96	7,000
	Apr. 30, 1947	17.6	5,520		June 17, 1957	22.48	22,600
	May 3, 1947	17.2	5,050		July 1, 1957	22.01	20,400
1948	Mar. 27, 1948	18.05	6,260	1958	Aug. 7, 1958	17.76	6,500
1949	Jan. 8, 1949	16.4	4,010	1959	Feb. 14, 1959	20.25	13,600
	Jan. 28, 1949	18.3	7,040				
	Feb. 17, 1949	19.21	10,400	1960	Apr. 4, 1960	20.50	14,600
					July 1, 1960	-	-
1950	Dec. 26, 1949	16.1	3,750				
	Jan. 6, 1950	22.63	23,100	1961	Mar. 16, 1961	16.35	4,040
	Jan. 17, 1950	19.1	9,750		May 10, 1961	21.33	17,600

a About.
b Estimated.

5942. Williams Creek near Cordes, Ill.

Location.--Lat 38°19'40", long 89°28'35", in NW¼ sec.30, T.2 S., R.3 W., at culvert on county road, 2.5 miles northwest of Cordes.

Drainage area.--1.84 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (fset)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Nov. 2, 1955	13.39	146	1960	Dec. 17, 1959	14.40	211
1957	June 8, 1957	16.56	491				
1958	Aug. 8, 1958	17.55	733	1961	Aug. 10, 1961	17.64	709
1959	Feb. 10, 1959	12.76	113				

5945. Silver Creek near Lebanon, Ill.

Location.--Lat 38°35'40", long 89°49'57", in NW¼ sec.25, T.2 N., R.7 W., at highway bridge 0.3 mile upstream from Baltimore and Ohio Railroad bridge, 1½ miles southwest of Lebanon, and 2¾ miles upstream from Little Silver Creek.

Drainage area.--335 sq mi.

Gage.--Nonrecording. Datum of gage is 416.20 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,800 cfs and extended above.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 7, 1908	15.9	5,240	1911	May 1, 1911	14.8	4,030
1909	Apr. 23, 1909	14.2	3,400	1912	Mar. 30, 1912	14.6	3,820
1910	Mar. 1, 1910	14.6	3,820				

5950. Kaskaskia River at New Athens, Ill.

Location.--Lat 38°19'22", long 89°52'57", in SW¼ sec.28, T.2 S., R.7 W., on left bank 0.5 mile downstream from bridge on State Highway 13 at New Athens and at mile 40.9.

Drainage area.--5,200 sq mi, approximately.

Gage.--Nonrecording at Illinois Central Railroad bridge 0.66 mile upstream prior to January 1935; recording thereafter. Datum of gage is 359.50 ft above mean sea level, datum of 1929. Since Oct. 1, 1937, auxiliary nonrecording gages on Mississippi River near mouth of Kaskaskia River 41 miles downstream.

Stage-fall-discharge relation.--Defined by current-meter measurements to 83,000 cfs.

Remarks.--Readings for auxiliary gages furnished by Corps of Engineers. Peak stages for which no discharge is shown in following table are affected by backwater from Mississippi River so that the associated discharge is less than the maximum for the year. Only annual peaks are shown.

Peak stages and discharges of Kaskaskia River at New Athens, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1898	Fall of 1898	34.5	-	1942	July 3, 1942	25.91	-
					July 16, 1942	-	20,800
1908	May 11, 1908	34.3	62,800	1943	May 23, 1943	39.35	83,000
1909	Apr. 20, 1909	26.8	31,700	1944	Apr. 28, 1944	-	39,500
1910	Mar. 6, 1910	25.3	23,200		Apr. 29, 1944	30.55	-
				1945	Apr. 6, 1945	29.70	-
1911	May 2, 1911	25.0	21,900		Apr. 7, 1945	-	38,800
1912	Apr. 3, 1912	28.2	33,500				
1913	Mar. 30, 1913	32.9	56,600	1946	Aug. 19, 1946	37.26	71,700
				1947	May 4, 1947	-	19,400
1915	Aug. 26, 1915	35.7	63,100		July 4, 1947	26.63	-
				1948	Apr. 1, 1948	28.05	31,900
1916	Feb. 3, 1916	33.3	54,800	1949	Jan. 30, 1949	28.26	35,900
1917	June 13, 1917	25.98	26,100	1950	Jan. 10, 1950	33.60	60,200
1918	Apr. 30, 1918	24.50	20,300				
1919	June 10, 1919	24.1	18,500	1951	Feb. 26, 1951	26.49	27,400
1920	Nov. 1, 1919	27.60	33,300	1952	Apr. 16, 1952	24.26	18,300
				1953	Mar. 17, 1953	18.51	7,150
1921	Apr. 4, 1921	22.88	13,300	1954	Sept.22, 1954	15.27	4,880
				1955	Mar. 2, 1955	17.69	6,590
1935	May 24, 1935	25.6	22,800				
				1956	Feb. 28, 1956	18.41	7,120
1936	Mar. 5, 1936	20.19	8,880	1957	June 20, 1957	31.08	48,700
1937	Jan. 21, 1937	26.01	24,600	1958	Aug. 13, 1958	25.45	21,900
1938	Apr. 5, 1938	30.05	44,000	1959	Feb. 19, 1959	25.53	24,100
1939	Apr. 22, 1939	24.46	18,600	1960	July 9, 1960	24.90	19,500
1940	May 4, 1940	18.0	6,950				
				1961	May 13, 1961	35.87	66,600
1941	Apr. 25, 1941	20.54	8,890				

MARYS RIVER BASIN

5955. Marys River near Sparta, Ill.

Location.--Lat 38°06'29", long 89°38'56", in NE¼SE¼ sec.9, T.5 S., R.5 W., on left bank at downstream side of bridge on State Highway 154, 0.3 mile downstream from small tributary, and 3.2 miles southeast of Sparta.

Drainage area.--17.8 sq mi.

Gage.--Recording. Datum of gage is 431.60 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs and extended above on basis of contracted-opening measurement.

Remarks.--Base for partial-duration series, 750 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Sept.13, 1949	13.44	1,260	1955	Mar. 21, 1955	13.08	990
1950	Oct. 4, 1949	12.8	810	1956	Nov. 16, 1955	12.79	810
	Oct. 12, 1949	13.4	1,260				
	Oct. 19, 1949	12.9	860	1957	Mar. 25, 1957	13.73	1,880
	Dec. 22, 1949	12.8	810		Apr. 3, 1957	14.00	2,360
	Jan. 3, 1950	13.83	2,060		May 23, 1957	14.32	3,050
	Jan. 26, 1950	12.9	860				
	Feb. 13, 1950	13.6	1,620	1958	Dec. 19, 1957	13.38	1,110
	Feb. 21, 1950	12.7	760		July 16, 1958	13.06	890
	May 10, 1950	12.7	760		July 18, 1958	14.63	4,000
					Aug. 12, 1958	15.04	5,320
1951	Feb. 6, 1951	13.30	1,160				
	Mar. 17, 1951	12.80	810	1959	Aug. 17, 1959	14.17	2,680
	Aug. 9, 1951	13.06	838				
				1960	Dec. 12, 1959	12.96	800
1952	Oct. 23, 1951	13.16	1,030		Dec. 18, 1959	13.10	940
	Mar. 11, 1952	13.12	990				
	Apr. 4, 1952	12.89	860	1961	Mar. 5, 1961	12.96	800
	Apr. 12, 1952	13.12	990		May 8, 1961	13.66	1,700
					Aug. 10, 1961	13.84	2,060
1953	Mar. 15, 1953	12.88	860				
1954	June 3, 1954	11.33	414				

5960. Big Muddy River near Benton, Ill.

Location.--Lat 37°59'40", long 88°58'30", in NE¼NW¼ sec.22, T.6 S., R.2 E., on right bank at downstream side of bridge on State Highway 14, a third of a mile upstream from Illinois Central Railroad bridge, 3 miles west of Benton, 4½ miles east of Christopher, and 9 miles upstream from Middle Fork Big Muddy River.

Drainage area.--498 sq mi.

Gage.--Nonrecording prior to Aug. 13, 1946; recording thereafter. Datum of gage is 365.51 ft above mean sea level, datum of 1929. Recording gage for station "at Plumfield" is used as an auxiliary gage for this station.

Stage-discharge relation.--Defined by current-meter measurements below 18,000 cfs and extended above by logarithmic plotting.

Bankfull stage.--8 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Aug. 17, 1946	-	28,200	1954	May 5, 1954	14.52	2,820
	Aug. 18, 1946	24.02	-	1955	Mar. 22, 1955	15.43	4,350
1947	Apr. 27, 1947	17.47	8,700				
1948	Jan. 4, 1948	17.43	7,300	1956	July 20, 1956	15.60	4,770
1949	Jan. 26, 1949	a20.58	15,300	1957	Apr. 6, 1957	20.14	16,400
1950	Jan. 6, 1950	a20.31	16,300	1958	Dec. 21, 1957	19.65	17,500
				1959	Jan. 24, 1959	14.60	2,870
1951	Feb. 22, 1951	-	7,320	1960	July 3, 1960	16.21	6,280
	Feb. 23, 1951	17.03	-				
1952	Mar. 13, 1952	17.25	7,860	1961	May 9, 1961	24.94	38,600
1953	Mar. 7, 1953	15.17	3,940				

a Occurred at different time than peak discharge.

5961. Andy Creek tributary at Valier, Ill.

Location.--Lat 38°01'15", long 89°02'40", in N½ sec.12, T.6 S., R.1 E., at culvert on Chicago, Burlington & Quincy Railroad, 0.5 mile north of Valier.

Drainage area.--1.00 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 17, 1956	13.20	222	1960	June 29, 1960	12.09	108
1957	Apr. 3, 1957	15.03	420				
1958	May 5, 1958	15.21	399	1961	May 7, 1961	a15.64	500
1959	Aug. 17, 1959	15.75	564				

a Backwater from debris.

5970. Big Muddy River at Plumfield, Ill.
(Published as "near Cambon" 1908-12)

Location.--Lat 37°54'05", long 89°00'50", in NW¼ sec.20, T.7 S., R.2 E., on left bank three-quarters of a mile upstream from bridge on State Highway 149 at Plumfield and 1.9 miles downstream from Middle Fork Big Muddy River.

Drainage area.--753 sq mi.

Gage.--Nonrecording prior to Nov. 13, 1938; recording thereafter. June 16, 1908, to Dec. 31, 1912, at site 1.7 miles upstream at different datum. Aug. 14, 1914, to July 12, 1932, at site a quarter of a mile downstream at different datum. July 13, 1932, to Nov. 12, 1938, at bridge three-quarters of a mile downstream at datum 4.14 ft lower. Datum of gage is 358.24 ft above mean sea level, datum of 1929. Auxiliary nonrecording gage at pumping plant at Zeigler, 4 miles downstream, since Feb. 14, 1937.

Stage-fall-discharge relation.--Defined by current-meter measurements. At previous sites, stage-discharge relation defined by current-meter measurements below 12,000 cfs, occasionally affected by backwater from Mississippi River or from tributary inflow below Zeigler Dam.

Remarks.--Only annual peaks are shown. Peak discharge frequently occurs at different time than peak stage.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Mar. 11, 1909	24.9	10,600	1937	Jan. 17, 1937	28.30	12,300
1910	Mar. 3, 1910	22.35	7,900	1938	Apr. 4, 1938	21.69	5,730
				1939	Apr. 20, 1939	21.56	10,900
1911	May 3, 1911	25.4	11,100	1940	Apr. 22, 1940	16.96	5,350
1912	Apr. 29, 1912	23.1	8,680				
				1941	Apr. 7, 1941	4.61	616
1915	Feb. 4, 1915	23.8	8,830	1942	Feb. 9, 1942	16.23	4,860
				1943	May 13, 1943	20.80	9,900
1916	Feb. 1, 1916	30.2	16,300	1944	Apr. 27, 1944	17.82	7,050
1917	Jan. 8, 1917	24.7	9,770	1945	Mar. 6, 1945	23.22	10,900
1918	May 15, 1918	24.4	9,330				
1919	Dec. 17, 1918	20.84	6,050	1946	Aug. 19, 1946	28.22	26,100
1920	Oct. 31, 1919	24.4	9,440	1947	Apr. 28, 1947	18.94	7,900
				1948	Jan. 5, 1948	19.56	8,380
1921	Mar. 31, 1921	19.4	4,880	1949	Jan. 26, 1949	25.90	17,600
1922	Apr. 2, 1922	25.10	10,200	1950	Jan. 6, 1950	-	14,800
1923	Mar. 19, 1923	22.96	9,000		Jan. 17, 1950	24.87	-
1924	Dec. 15, 1923	19.41	4,880				
1925	Mar. 21, 1925	12.55	1,670	1951	Feb. 23, 1951	20.36	8,320
				1952	Mar. 14, 1952	18.96	7,980
1926	Feb. 19, 1926	17.49	3,330	1953	Mar. 7, 1953	15.33	4,850
1927	Apr. 17, 1927	26.02	10,900	1954	May 7, 1954	9.26	1,760
1928	Dec. 17, 1927	24.5	8,900	1955	Mar. 24, 1955	16.83	5,770
1929	Jan. 27, 1929	23.06	8,100				
1930	Jan. 16, 1930	26.49	11,800	1956	Feb. 21, 1956	12.29	2,940
				1957	Apr. 6, 1957	24.50	13,700
1931	Sept. 6, 1931	17.78	3,660	1958	Dec. 22, 1957	22.38	12,200
1932	Jan. 20, 1932	22.6	7,600	1959	Aug. 19, 1959	15.48	4,450
1933	May 17, 1933	27.91	12,700	1960	Dec. 22, 1959	16.86	-
1934	Mar. 30, 1934	11.35	947		July 4, 1960	-	5,440
1935	Mar. 13, 1935	-	a13,700				
	Mar. 14, 1935	28.13	-	1961	May 10, 1961	29.67	42,900
1936	Apr. 10, 1936	17.38	3,190				

a Maximum daily mean.

5975. Crab Orchard Creek near Marion, Ill.

Location.--Lat 37°43'50", long 88°53'21", in NW¼NW¼ sec.21, T.9 S., R.3 E., near center of span on downstream side of bridge on State Highway 13, 2 miles downstream from Buckley Creek, and 2 miles east of Marion.

Drainage area.--31.9 sq mi.

Gage.--Nonrecording. Datum of gage is 415.82 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs and extended above.

Remarks.--Base for partial-duration series, 400 cfs.

Peak stages and discharges of Crab Orchard Creek near Marion, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Nov. 23, 1951	-	-	1958	Dec. 20, 1957	9.88	670
	Feb. 2, 1952	10.10	1,550		Dec. 26, 1957	9.60	520
	Mar. 11, 1952	10.20	1,700		Jan. 21, 1958	10.30	1,070
	Mar. 18, 1952	10.00	1,420		Mar. 24, 1958	9.88	670
	Apr. 13, 1952	10.30	1,850		Apr. 29, 1958	9.58	520
					July 18, 1958	11.20	2,550
1953	Mar. 22, 1953	9.09	670				
	Apr. 18, 1953	9.02	610	1959	Jan. 21, 1959	9.38	440
					Aug. 17, 1959	10.55	1,440
1954	May 2, 1954	8.65	450				
				1960	Dec. 17, 1959	-	-
1955	Mar. 1, 1955	8.72	480		Jan. 15, 1960	9.96	735
	Mar. 20, 1955	10.92	3,300		May 7, 1960	9.50	510
1956	Feb. 18, 1956	9.70	960	1961	Feb. 22, 1961	9.21	425
					Feb. 28, 1961	9.25	425
1957	Jan. 23, 1957	9.17	575		Mar. 6, 1961	9.35	480
	Feb. 8, 1957	9.68	915		Mar. 13, 1961	9.54	510
	Mar. 25, 1957	9.71	560		Mar. 22, 1961	9.80	640
	Apr. 3, 1957	11.30	2,750		Apr. 9, 1961	9.34	450
	Apr. 8, 1957	9.47	460		Apr. 12, 1961	9.18	425
	May 22, 1957	11.55	3,380		Apr. 16, 1961	9.15	425
	June 2, 1957	9.80	540		May 7, 1961	11.62	3,500
					June 15, 1961	10.70	1,630
1958	Nov. 18, 1957	9.70	560				

5990. Beaucoup Creek near Matthews, Ill.

Location.--Lat 37°58'00", long 89°21'00", in SW¼ sec.29, T.6 S., R.2 W., on right bank at downstream side of bridge on State Highway 13, 1¼ miles east of Matthews, 3½ miles upstream from Galum Creek, and 7 miles southwest of Du Quoin.

Drainage area.--291 sq mi.

Gage.--Nonrecording prior to July 25, 1946; recording thereafter. Datum of gage is 368.15 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 2,300 cfs. Only annual peaks are shown for 1946-47.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Aug. 17, 1946	23.24	18,100	1952	Mar. 12, 1952	19.27	5,250
1947	Apr. 26, 1947	20.12	7,860		Apr. 7, 1952	17.47	2,780
					Apr. 15, 1952	16.96	2,380
1948	Jan. 3, 1948	19.81	6,910				
				1953	Mar. 6, 1953	16.47	2,060
1949	Jan. 20, 1949	18.8	4,300				
	Jan. 25, 1949	21.94	13,800	1954	May 2, 1954	15.22	1,420
	Feb. 16, 1949	19.7	6,600				
	Mar. 29, 1949	17.6	2,870	1955	Mar. 23, 1955	16.46	2,060
1950	Oct. 9, 1949	17.3	2,600	1956	Feb. 27, 1956	14.42	1,320
	Oct. 14, 1949	17.9	3,150				
	Oct. 22, 1949	16.9	2,310	1957	Apr. 5, 1957	21.11	11,200
	Jan. 5, 1950	21.91	13,800		May 24, 1957	20.30	8,520
	Jan. 15, 1950	18.0	3,250				
	Jan. 28, 1950	17.8	3,050	1958	Dec. 21, 1957	20.88	10,500
	Feb. 14, 1950	20.4	8,850		Mar. 26, 1958	18.21	3,480
	Feb. 23, 1950	18.4	3,720		Apr. 30, 1958	17.22	2,530
	Apr. 5, 1950	18.4	3,720		May 7, 1958	17.65	2,870
	May 13, 1950	17.2	2,520		July 18, 1958	18.36	3,250
1951	Jan. 17, 1951	16.99	2,380	1959	Aug. 18, 1959	17.21	2,530
	Feb. 10, 1951	16.87	2,310				
	Feb. 18, 1951	17.88	3,150	1960	Dec. 20, 1959	18.15	3,480
	Feb. 22, 1951	18.06	3,360				
	Mar. 19, 1951	17.38	2,690	1961	Mar. 8, 1961	18.28	3,600
					May 9, 1961	23.41	18,800
1952	Oct. 26, 1951	17.28	2,600		Aug. 12, 1961	18.79	4,300
	Nov. 26, 1951	16.90	2,310				

5995. Big Muddy River at Murphysboro, Ill.

Location.--Lat 37°44'55", long 89°20'45", in SE¼ sec.8, T.9 S., R.2 W., on left bank just upstream from Lewis Creek, 0.1 mile upstream from Gulf, Mobile and Ohio Railroad bridge, at Murphysboro.

Drainage area.--2,170 sq mi, approximately.

Gage.--Nonrecording prior to July 11, 1933; recording thereafter. Prior to July 20, 1931, at South Twentieth Street Bridge 1,300 ft downstream at datum 5 ft lower. Datum of gage is 335.5 ft above mean sea level, datum of 1929. Auxiliary nonrecording gage 7,700 ft upstream since Oct. 6, 1931.

Stage-discharge relation.--Defined by current-meter measurements throughout the range of conditions as observed since 1931.

Remarks.--Discharges for annual floods of 1916 and 1917 based on results of current-meter measurements. For other years prior to 1931, discharge not computed because of effects of backwater from Mississippi River and lack of information on fall. Only annual peaks are shown. Peak discharge frequently occurs at different time than peak stage.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	Feb. 2, 1916	a34.9	28,000	1941	Apr. 24, 1941	12.57	-
1917	Jan. 10, 1917	33.3	15,600	1942	Feb. 11, 1942	21.58	8,950
1918	May 17, 1918	33.9	-	1943	May 14, 1943	-	14,300
1919	Dec. 19, 1918	28.1	-		May 26, 1943	32.65	-
1920	Nov. 5, 1919	34.0	-	1944	Apr. 16, 1944	-	9,950
					May 3, 1944	29.27	-
1921	Mar. 23, 1921	24.1	-	1945	Apr. 3, 1945	32.81	23,200
1922	Apr. 3, 1922	35.4	-				
1923	Mar. 21, 1923	31.8	-	1946	Aug. 22, 1946	33.17	20,100
1924	Dec. 17, 1923	26.6	-	1947	Apr. 29, 1947	-	13,900
					July 6, 1947	30.50	-
1926	Mar. 1, 1926	23.5	-	1948	Jan. 7, 1948	27.46	13,600
1927	Apr. 18, 1927	37.7	-	1949	Jan. 28, 1949	36.01	28,000
1928	Dec. 19, 1927	32.1	-	1950	Jan. 15, 1950	35.46	27,000
1929	May 19, 1929	31.7	-				
1930	Jan. 17, 1930	37.3	-	1951	Feb. 24, 1951	30.36	15,200
				1952	Mar. 16, 1952	28.36	13,000
1931	Sept. 6, 1931	14.95	6,310	1953	Mar. 8, 1953	19.22	6,810
1932	Jan. 26, 1932	25.97	12,300	1954	May 5, 1954	11.97	3,580
1933	May 18, 1933	33.77	23,100	1955	Mar. 25, 1955	24.24	11,300
1934	Mar. 29, 1934	7.45	2,400				
1935	Mar. 15, 1935	34.06	25,000	1956	Feb. 28, 1956	14.67	4,670
				1957	Apr. 8, 1957	33.86	23,700
1936	Apr. 12, 1936	15.51	5,880	1958	Dec. 24, 1957	30.08	17,800
1937	Jan. 18, 1937	33.86	25,100	1959	Aug. 22, 1959	22.17	10,200
1938	Apr. 5, 1938	23.98	10,600	1960	Dec. 22, 1959	25.26	12,500
1939	Apr. 21, 1939	30.38	16,200				
1940	Apr. 24, 1940	21.20	10,100	1961	May 11, 1961	37.97	33,300
1941	Apr. 7, 1941	-	1,530				

a Present site and datum.

SEXTON CREEK BASIN

5996.4. Green Creek tributary near Jonesboro, Ill.

Location.--Lat 37°27'55", long 89°18'40", in NE¼ sec.22, T.12 S., R.2 W., at culvert on State Highway 146, 2.5 miles northwest of Jonesboro.

Drainage area.--0.438 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by indirect computations of flow through culvert.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 15, 1956	12.14	86	1960	July 25, 1960	12.56	115
1957	May 22, 1957	15.01	329				
1958	July 18, 1958	15.94	425	1961	May 7, 1961	14.48	276
1959	Jan. 21, 1959	12.52	112				

6000. Big Creek near Wetaug, Ill.

Location.--Lat 37°19'00", long 89°07'55", in SW¼ sec.5, T.14 S., R.1 E., on left bank 300 ft upstream from highway bridge, 1 mile upstream from Little Creek, and 2 miles southeast of Wetaug.

Drainage area.--32.2 sq mi.

Gage.--Recording. Datum of gage is 336.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,500 cfs and extended on basis of contracted-opening measurement of flow in main channel and computed flow through breaks in levees.

Remarks.--Channel dredged and leveed prior to establishment of station. Changes in stage-discharge relation result from changes in conveyance capacity of the channel. Base for partial-duration series, 1,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Dec. 23, 1941	10.0	1,820	1950	Feb. 13, 1950	13.5	2,120
	Apr. 8, 1942	13.20	2,620		Mar. 27, 1950	13.3	2,060
	Aug. 23, 1942	10.3	1,900		Apr. 3, 1950	15.1	3,170
1943	Mar. 19, 1943	15.90	7,200		Apr. 29, 1950	14.6	2,720
	May 11, 1943	13.19	2,540	1951	Jan. 14, 1951	12.83	1,930
	May 18, 1943	10.7	1,900		Feb. 20, 1951	13.74	2,160
1944	Apr. 11, 1944	13.94	4,350	1952	Nov. 23, 1951	12.20	1,780
					Feb. 2, 1952	11.55	1,630
1945	Feb. 26, 1945	15.3	2,740		Mar. 10, 1952	14.33	2,340
	Mar. 6, 1945	16.32	3,800		Mar. 22, 1952	14.05	2,250
	Mar. 20, 1945	14.1	2,390				
	Mar. 31, 1945	11.4	1,750	1953	Apr. 18, 1953	9.75	1,240
	Apr. 2, 1945	15.2	2,700				
	Apr. 4, 1945	12.2	1,920	1954	June 3, 1954	13.15	2,030
	Apr. 14, 1945	12.1	1,900				
	Apr. 15, 1945	11.9	1,880	1955	Mar. 21, 1955	14.55	2,430
	June 17, 1945	11.9	1,860		Apr. 21, 1955	12.75	1,930
					May 13, 1955	15.47	2,830
1946	Jan. 9, 1946	13.5	2,230				
	Feb. 13, 1946	13.4	2,210	1956	Feb. 15, 1956	11.34	1,560
	May 25, 1946	15.94	3,260				
	Aug. 18, 1946	12.1	1,900	1957	Jan. 22, 1957	11.68	1,660
					Apr. 4, 1957	14.60	2,430
1947	Apr. 11, 1947	11.88	1,700		May 23, 1957	15.23	2,680
1948	Jan. 1, 1948	14.08	2,280	1958	Nov. 13, 1957	11.50	1,610
	Apr. 13, 1948	12.1	1,760		Nov. 18, 1957	12.77	1,930
	May 16, 1948	13.7	2,160		May 3, 1958	11.67	1,660
					July 18, 1958	15.13	2,630
1949	Jan. 24, 1949	13.49	2,100				
	Feb. 14, 1949	12.5	1,860	1959	Jan. 21, 1959	11.20	1,540
	Mar. 26, 1949	11.9	1,700				
				1960	Jan. 14, 1960	10.20	1,280
1950	Jan. 4, 1950	15.57	3,620				
	Jan. 10, 1950	13.6	2,150	1961	Feb. 22, 1961	11.97	1,730
	Jan. 13, 1950	12.8	1,930		May 7, 1961	14.43	2,370
	Jan. 26, 1950	13.0	1,980				

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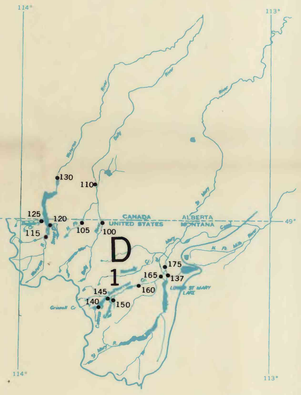

MAP OF HUDSON BAY BASIN IN MONTANA AND ALBERTA

0 10 20 30 40 MILES

INDEX MAP

EXPLANATION

4750 Gaging station

A Flood-frequency region boundary

2 Hydrologic area boundary

Frequency relations not defined

MAP OF THE HUDSON BAY AND UPPER MISSISSIPPI RIVER BASINS SHOWING GAGING STATIONS, HYDROLOGIC AREAS, AND FLOOD-FREQUENCY REGIONS

20 0 20 40 60 80 100 MILES

20 0 20 40 60 80 100 KILOMETERS

Base compiled, with some modification, from River Basin Maps, IACWR, Subcommittee on Hydrology

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