

Bulletin No. 28
IOWA HIGHWAY RESEARCH BOARD
Part Two

**MAGNITUDE AND FREQUENCY
OF IOWA FLOODS**

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GAGING-STATION RECORDS IN IOWA

Flood records for regular and partial-record gaging stations are contained in the following pages. Each listing contains the station number and name, descriptive paragraphs pertaining to the station, and a listing of the flood peaks available through the 1965 water year 2/.

2/ A water year is the period from October 1 to the following September 30 and has the same yearly designation as September.

Peaks above a base as well as annual peaks are listed. These provide the data for a partial-duration flood-frequency curve. Most of the material is self-explanatory and needs no discussion. However, a few items may be made clearer by the brief explanation which follows.

The part of the gaging-station number preceding the dash identifies the major drainage basin in which the station is located. The major basins, or Parts, are defined in the U.S. Geological Survey Water-Supply Papers. Iowa stations fall in two of these Parts--Part 5, the Hudson Bay and Upper Mississippi River basins and Part 6, the Missouri River basin (subdivided into two parts, 6-A and 6-B). The first digit in the number indicates the part number. The remaining digits are used to place the station in a downstream order with respect to other stations in the Part. Stations on tributaries that enter the main stream between two main-stream stations have number intermediate to those of the

main-stream stations. In numbering, no distinction is made between regular and partial-record gaging stations.

For some gaging stations which have been moved or discontinued a parenthetical statement is included under the name. Other information on location, size of drainage basin, type of gage, definition of the rating curve, and the base for the partial-duration series is contained in the paragraphs under the station names.

Flood data are tabulated following the descriptive paragraphs. At regular gaging stations all peaks are listed that exceed the selected base. At partial-record stations only the annual peaks are listed. In the table, a line extending across the four columns indicates a break in the continuity of the record sometimes involving a major change in gage location. Explanation of these events will be found in the descriptive paragraph for the gage. A line across the gage-height column indicates a change in location which would be defined in the paragraph describing the gage.

Not all gaging-station records were long enough (at end of 1962 water year) to be used in the frequency analysis. However, all Iowa records over two years in length and from a suitably rated gage have been included in the tables. A minimum of 5 years of peak-flow data (prior to 1962) were required for use in the flood-frequency study.

5-4530. Bear Creek at Ladora, Iowa

Location.--Lat 41 deg.45 min.00 sec., long 92 deg.11 min.00 sec., in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.7, T.80 N., R.11 W., on left bank 10 ft downstream from highway bridge, a quarter of a mile south of Ladora, and 2 $\frac{1}{2}$ miles upstream from Little Bear Creek.

Drainage area.--189 sq mi.

Gage.--Nonrecording prior to June 26, 1946; recording thereafter. Datum of gage is 754.94 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 25, 1946	13.1	9,050
	Mar. 6, 1946	9.4	3,830
	Mar. 26, 1946	7.8	2,260
	May 3, 1946	8.2	2,590
	June 19, 1946	7.9	2,340
	Sept. 22, 1946	7.73	2,200
1947	Apr. 5, 1947	7.42	2,260
	Apr. 10, 1947	7.68	2,570
	Apr. 20, 1947	7.36	2,200
	June 1, 1947	9.45	5,360
	June 5, 1947	10.90	7,610
	June 13, 1947	10.00	6,650
	June 21, 1947	8.67	3,830
	June 30, 1947	11.35	7,060
1948	Feb. 28, 1948	11.48	7,220
	Mar. 16, 1948	9.60	5,630
	Mar. 19, 1948	7.70	3,250
	July 21, 1948	7.72	3,270
1949	Feb. 24, 1949	^b 9.86	^a 2,500
	Mar. 4, 1949	8.74	3,930
1950	Mar. 4, 1950	^b 12.14	^a 6,500
	June 18, 1950	11.64	7,320
	June 24, 1950	11.15	6,840
1951	Feb. 17, 1951	^b 9.12	^a 2,500
	May 26, 1951	8.44	2,860

Bear Creek at Ladora, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	9.47	3,950
1952	Jan. 19, 1952	^b 10.74	^a 2,500
	Mar. 10, 1952	8.62	3,050
	May 23, 1952	7.56	2,180
1953	Feb. 20, 1953	^b 10.81	^a 4,800
	May 24, 1953	9.95	5,800
	June 8, 1953	8.71	4,170
	June 27, 1953	8.64	3,950
1954	Aug. 26, 1954	10.74	4,010
1955	Oct. 10, 1955	6.62	1,360
1956	July 7, 1956	9.60	2,950
1957	May 30, 1957	11.43	4,600
	July 28, 1957	8.93	2,440
1958	June 13, 1958	9.22	2,130
	Sept. 4, 1958	13.78	5,290
	Sept. 5, 1958	11.08	3,230
1959	Mar. 20, 1959	13.06	4,670
	Apr. 1, 1959	9.15	2,200
	Apr. 28, 1959	8.82	2,150
	May 21, 1959	11.39	3,480
	July 1, 1959	11.08	3,270
1960	Jan. 12, 1960	13.50	4,950
	Mar. 30, 1960	14.60	10,500
	May 6, 1960	12.10	5,940
	May 26, 1960	7.95	2,160
1961	Feb. 18, 1961	11.55	3,800
	Mar. 6, 1961	12.69	4,400
	Mar. 8, 1961	11.33	3,560
	Mar. 13, 1961	11.65	3,740
1962	Mar. 20, 1962	12.11	4,040
	July 14, 1962	10.60	3,160
	July 19, 1962	10.02	2,830

Bear Creek at Ladora, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 4, 1963	^b 10.78	^a 1,900
1964	June 23, 1964	10.93	3,320
1965	Mar. 17, 1965	^b 10.39	2,200
	Mar. 30, 1965	^b 11.77	3,500
	Apr. 1, 1965	11.34	3,580
	Apr. 6, 1965	10.45	3,050
	Sept. 21, 1965	11.12	3,240

a. About

b. Affected by ice

5-4177. Bear Creek near Monmouth, Iowa

Location.--Lat 42 deg.02 min.30 sec., long 90 deg.53 min.00 sec., in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.84 N., R.1 E., on right bank 15 ft downstream from highway bridge, 1.6 miles upstream from Rat Run, 2.8 miles south of Monmouth, and 8.2 miles upstream from mouth.

Drainage area.--61.3 sq mi.

Gage.--Recording. Datum of gage is 728.80 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)
1944	June	1944	^c 21.5	
1958	Feb. 24,	1958	^b 8.82	^a 700
1959	Mar. 20,	1959	11.5	2,120
1960	Jan. 12,	1960	11.56	2,440
	Mar. 30,	1960	10.95	2,080
	May 7,	1960	10.27	1,660
	June 5,	1960	10.07	1,540
1961	Mar. 4,	1961	9.67	1,590
1962	Nov. 16,	1961	10.10	1,830
	Mar. 19,	1962	10.38	2,010
1963	July 19,	1963	10.27	1,950
1964	July 3,	1964	6.76	318
1965	Sept.21,	1965	13.76	7,340

a About

b Affected by ice

c Maximum flood known

5-4630. Beaver Creek at New Hartford, Iowa

Location.--Lat 42 deg.34 min.20 sec., long 92 deg.36 min.55 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.28, T.90 N., R.15 W., on downstream side of center bridge pier on county 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.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Mar. 7, 1946	10.2	6,900
1947	June 13, 1947	13.5	18,000
1948	Feb. 28, 1948	10.9	9,240
1949	Mar. 5, 1949	10.18	6,900
1950	Mar. 7, 1950	^b 11.52	^a 5,000
	May 10, 1950	9.10	4,050
	June 10, 1950	8.82	3,410
	June 19, 1950	8.16	2,400
1951	Feb. 26, 1951	10.8	8,300
	Mar. 7, 1951	8.4	2,760
	Mar. 29, 1951	11.7	11,600
	Apr. 8, 1951	8.3	2,610
	Apr. 30, 1951	8.9	3,600
	June 3, 1951	9.5	5,050
	June 27, 1951	8.7	3,230
	July 9, 1951	8.5	2,910
	Aug. 27, 1951	10.9	8,550
1952	Apr. 1, 1952	7.30	1,510
1953	Aug. 5, 1953	7.60	1,720
1954	June 17, 1954	8.55	1,990

5-4630. Beaver Creek at New Hartford, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1955	July 11, 1955	5.02	510
1956	Mar. 21, 1956	^b 3.80	200
1957	May 31, 1957	7.65	1,160
1958	July 16, 1958	8.68	1,560
1959	Mar. 21, 1959	11.32	6,250
	Mar. 27, 1959	10.5	4,400
1960	Mar. 30, 1960	12.40	11,200
	Apr. 18, 1960	8.89	2,060
	May 7, 1960	10.10	3,670
1961	Mar. 5, 1961	8.49	2,010
	Mar. 26, 1961	9.52	3,440
	Apr. 24, 1961	8.65	2,190
1962	Mar. 28, 1962	11.98	9,610
1963	Mar. 17, 1963	^b 9.77	^a 3,400
1964	Sept. 9, 1964	6.12	655
1965	Mar. 2, 1965	^b 11.66	^a 2,400
	Apr. 2, 1965	^b 11.79	5,300
	Apr. 6, 1965	11.80	9,610
	May 27, 1965	10.28	4,830
	Sept. 9, 1965	9.91	3,430
	Sept. 21, 1965	9.67	3,060
	Sept. 29, 1965	8.76	2,020

a About

b Affected by ice

5-4735. Big Creek near Mount Pleasant, Iowa

Location.--Lat 41 deg.00 min.50 sec., long 91 deg.34 min.45 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ 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. Datum of gage is 630.53 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)
1956	Feb. 24, 1956	^b 6.52	^a 500
1957	Apr. 3, 1957	4.33	264
1958	Feb. 24, 1958	9.38	1,600
	June 9, 1958	9.24	1,540
1959	Feb. 23, 1959	^b 10.67	^a 1,150
1960	Oct. 5, 1960	11.37	2,310
	Oct. 6, 1960	10.83	2,080
	Mar. 29, 1960	15.30	4,460
	Apr. 17, 1960	11.12	2,190
	June 12, 1960	12.89	2,950
1961	Sept. 13, 1961	11.24	2,230
	Nov. 2, 1961	9.12	1,500
1962	Nov. 16, 1961	13.03	3,000
1962	Mar. 11, 1962	^b 11.90	2,400
	Mar. 19, 1962	9.42	1,600
	May 8, 1962	9.62	1,670
	May 11, 1962	9.68	1,700
	July 5, 1962	13.92	3,540
1963	Mar. 4, 1963	^b 11.18	^a 1,500
1964	June 20, 1964	8.57	1,250

5-4735. Big Creek near Mount Pleasant, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Mar. 17, 1965	12.07	2,580
	Aug. 26, 1965	14.29	3,940
	Aug. 30, 1965	9.99	1,960
	Sept. 7, 1965	13.53	3,560
	Sept. 14, 1965	10.55	2,180
	Sept. 21, 1965	18.22	6,150

a About

b Affected by ice

5-4821.7 Big Cedar Creek near Varina, Iowa

Location.--Lat. 42 deg. 41 min. 21 sec., long 94 deg. 47 min. 55 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T.91 N., R.34W., on left bank 5 ft. downstream from county highway bridge, 3.1 miles upstream from Drainage ditch 74, and 5.5 miles northeast of Varina.

Drainage area.--80.0 sq. mi.

Gage.--Recording. Datum of gage is 1,225.12 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

Water Year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 27, 1960	11.42	1,020
	June 16, 1960	8.27	466
1961	Mar. 25, 1961	11.88	1,460
1962	Mar. 31, 1962	c	^a 1,000
	July 2, 1962	8.91	665
	July 4, 1962	10.15	960
	July 28, 1962	7.89	452
	Aug. 31, 1962	13.68	2,080
1963	June 2, 1963	6.57	333
1964	May 6, 1964	6.23	291
1965	Apr. 8, 1965	10.17	1,060
	June 6, 1965	7.00	404

a About

c Maximum gage height 14.49 ft. Mar. 29 (ice jam)

6-4855. Big Sioux River at Akron, Iowa

Location.--Lat 42 deg. 49 min. 40 sec., long 96 deg. 33 min. 50 sec., in W $\frac{1}{2}$ sec. 31, T.93 N., R.48 W., on left bank 300 ft downstream from county highway bridge in Akron, and 2-3/4 miles upstream from Union Creek.

Drainage area.--9,030 sq mi.

Gage.--Recording. Prior to December 3, 1934, nonrecording. Datum of gage is 1,118.90 ft above mean sea level, datum of 1929.

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

Remarks.--Only annual peaks shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Sept. 18, 1926	19.4	
1929	Mar. 15, 1929	18.6	20,800
1930	June 6, 1930	9.9	3,740
1931	Aug. 9, 1931	5.6	1,390
1932	Mar. 1, 1932	18.0	16,900
1933	Sept. 5, 1933	17.8	14,200
1934	June 8, 1934	16.1	10,600
1935	Mar. 10, 1935		^a 3,000
1936	Mar. 12, 1936	18.6	18,000
1937	May 26, 1937	13.1	5,760
1938	July 4, 1938	17.5	12,700
1939	Mar. 17, 1939		^a 6,300
1940	Apr. 2, 1940	17.3	11,700
1941	Mar. 25, 1941	13.5	5,820
1942	June 4, 1942	19.2	21,400
1943	June 18, 1943	17.4	12,000

6-4855. Big Sioux River at Akron, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Feb. 29, 1944	18.2	15,900
1945	Mar. 14, 1945	17.4	12,300
1946	Mar. 5, 1946	15.3	8,970
1947	June 15, 1947	16.8	10,500
1948	Mar. 21, 1948	18.5	10,800
1949	Mar. 8, 1949	17.1	11,400
1950	June 18, 1950	13.4	5,450
1951	Apr. 6, 1951	19.66	28,800
1952	Apr. 1, 1952	19.75	33,000
1953	June 8, 1953	19.33	21,800
1954	June 22, 1954	19.95	21,700
1955	Mar. 11, 1955	12.25	4,940
1956	June 17, 1956	8.13	1,840
1957	June 21, 1957	19.57	19,400
1958	Apr. 8, 1958	5.98	1,120
1959	June 3, 1959	16.93	8,430
1960	Apr. 1, 1960	21.56	49,500
1961	Mar. 5, 1961	16.18	9,050
1962	Mar. 31, 1962	22.08	54,300
1963	Aug. 7, 1963	7.59	1,650
1964	Apr. 4, 1964	9.30	2,540

5-4635. Blackhawk Creek at Hudson, Iowa

Location.--Lat 42 deg.24 min.30 sec., long 92 deg.27 min.45 sec., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.27, T.88 N., R.14 W., on left bank 35 ft downstream from bridge on State Highway 58, 0.2 mile northwest of Chicago Great Western Railway tracks in the west edge of Hudson, and at mile 198.6 above mouth of Iowa River.

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.

Remarks.--Base for partial-duration series 1,200 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 1, 1952	10.63	^c 900
1953	Feb. 21, 1953	^b 15.46	^a 1,300
	June 13, 1953	12.57	1,550
	July 7, 1953	13.71	2,100
1954	June 2, 1954	12.73	1,590
	June 11, 1954	13.58	2,040
	Aug. 28, 1954	11.98	1,310
1955	Mar. 3, 1955	^b 11.86	^a 830
1956	Sept. 6, 1956	9.03	421
1957	May 30, 1957	14.57	2,490
	June 18, 1957	13.92	2,100
1958	June 15, 1958	12.58	1,330
	July 16, 1958	14.57	2,450
1959	Mar. 20, 1959	^b 16.56	^a 7,250
	Mar. 24, 1959	14.69	2,580
	Mar. 27, 1959	16.48	8,750
1960	Jan. 14, 1960	12.77	1,520
	Mar. 31, 1960	^b 16.93	^a 9,000
	Apr. 18, 1960	14.97	2,960
	May 8, 1960	14.75	2,710

5-4635. Blackhawk Creek at Hudson, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Feb. 20, 1961	^b 13.52	^a 1,400
	Feb. 23, 1961	14.93	2,950
	Mar. 7, 1961	14.09	2,310
	Mar. 15, 1961	12.35	1,480
	Mar. 26, 1961	11.88	1,320
1962	Mar. 28, 1962	15.70	5,400
	May 12, 1962	11.99	1,360
1963	Mar. 17, 1963	13.69	2,080
	July 20, 1963	12.00	1,360
1964	May 8, 1964	9.61	825
1965	Mar. 1, 1965	^b 15.27	^a 2,000
	Apr. 1, 1965	16.01	5,640
	Apr. 6, 1965	16.35	7,500
	July 10, 1965	14.01	2,140
	Sept. 10, 1965	14.32	2,440
	Sept. 22, 1965	13.84	2,150

a About

b Affected by ice

c April to September, 1952.

5-4810. Boone River near Webster City, Iowa

Location.--Lat 42 deg.26 min.00 sec., long 93 deg.48 min.15 sec., in NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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. Datum of gage is 989.57 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 10, 1918	^c 19.1	21,500
1932	June 18, 1932	16.0	15,000
1940	Aug. 15, 1940	4.40	^d 740
1941	June 3, 1941	5.4	1,500
1942	June 7, 1942	6.7	2,620
	June 30, 1942	7.52	3,060
1943	Mar. 16, 1943	6.71	2,410
1944	May 20, 1944	11.4	7,090
	June 14, 1944	13.70	10,200
1945	Mar. 13, 1945	9.26	4,820
	Apr. 17, 1945	7.42	3,130
	Apr. 24, 1945	9.18	4,730
	May 24, 1945	7.44	3,220
	June 2, 1945	9.21	4,810
	June 10, 1945	7.0	2,810
	Aug. 16, 1945	11.51	7,200
1946	Feb. 1946	^a 10.1	5,340
	Mar. 13, 1946	7.47	3,150
	May 26, 1946	10.67	6,730
1947	June 13, 1947	8.02	3,780
	June 18, 1947	8.05	3,800

5-4810. Boone River near Webster City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 25, 1947	12.75	9,340
	July 1, 1947	9.52	5,250
1948	Feb. 28, 1948	^b 8.4	^a 2,600
	Mar. 19, 1948	8.40	4,160
1949	Mar. 7, 1949	8.24	3,980
	Mar. 28, 1949	6.90	2,820
1950	Mar. 7, 1950	9.25	5,000
	June 18, 1950	8.10	3,890
	June 24, 1950	7.10	2,990
1951	Feb. 27, 1951	^b 9.2	^a 4,950
	Mar. 6, 1951	6.60	2,580
	Mar. 29, 1951	13.00	9,800
	Apr. 7, 1951	11.00	7,070
	Apr. 25, 1951	6.70	2,510
	May 2, 1951	9.85	5,630
	June 3, 1951	7.30	3,030
	June 15, 1951	8.08	3,830
	June 28, 1951	13.37	10,400
1952	Apr. 1, 1952	7.65	3,330
	July 9, 1952	8.10	3,830
	July 15, 1952	7.10	2,840
1953	May 1, 1953	5.72	1,760
1954	June 10, 1954	7.72	3,450
	June 22, 1954	18.55	20,300
	Aug. 27, 1954	7.04	2,790
1955	July 6, 1955	11.14	7,190
1956	May 30, 1956	4.32	890
1957	June 16, 1957	7.52	3,230
1958	July 15, 1958	9.47	5,300
1959	May 24, 1959	7.50	3,300
	June 1, 1959	7.40	3,210

5-4810. Boone River near Webster City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 29, 1960	12.10	8,960
1961	Mar. 28, 1961	9.80	5,860
1962	Mar. 31, 1962	13.15	10,600
	Sept. 3, 1962	9.56	5,620
1963	Apr. 29, 1963	7.52	3,520
1964	Aug. 1, 1964	7.77	3,820
1965	Mar. 1, 1965	e	^a 6,600
	Apr. 6, 1965	15.91	15,200
	May 27, 1965	7.91	4,010
	June 3, 1965	8.02	4,100
	June 6, 1965	8.12	4,060
	Sept. 22, 1965	11.48	8,060
	Sept. 29, 1965	10.11	6,240

a About

b Affected by ice

c Maximum stage known since 1896, from floodmarks, from information by local resident

d Maximum for period Mar. to Sept. 1940

e Unknown

6-6095. Boyer River at Logan, Iowa

Location.--Lat 41 deg. 38 min. 30 sec., long 95 deg. 47 min. 05 sec., in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.19, T.79 N., R.42 W., on left bank 9 ft downstream from Illinois Central Railroad bridge at Logan, 10.5 miles upstream from Willow Creek, and 15.8 miles upstream from mouth.

Drainage area.--871 sq mi.

Gage.--Nonrecording prior to October 22, 1946; recording thereafter. Datum of gage is 1,009.38 ft above mean sea level (Chicago and North Western Railway Co. benchmark).

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)	Discharge (cfs)
1918	June 5, 1918	17.9	8,710
1919	Apr. 23, 1919	17.8	8,620
	June 11, 1919	16.7	7,640
	June 21, 1919	16.0	7,040
	July 13, 1919	16.5	7,470
1920	Aug. 20, 1920	10.7	3,210
1921	Sept.10, 1921	13.5	6,890
1922	Feb. 22, 1922		6,900
	July 28, 1922	12.9	6,410
	Aug. 21, 1922	14.0	7,470
1923	June 18, 1923	15.6	9,200
1924	June 8, 1924	16.8	10,500
	June 24, 1924	19.0	13,200
1925	June 3, 1925	18.7	12,800
1938	Sept. 6, 1938	19.1	13,500
1939	July 3, 1939	15.0	9,000
1940	June 4, 1940	19.1	13,500
	July 9, 1940	19.2	13,600
1941	June 11, 1941	10.4	4,400

6-6095. Boyer River at Logan, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1942	June	28, 1942	19.0	13,400
	July	19, 1942	19.0	13,400
1943	May	15, 1943	19.2	13,400
	June	3, 1943	17.0	11,200
	Aug.	22, 1943	13.5	6,980
1944	June	4, 1944	13.0	6,700
	June	8, 1944	17.8	11,800
	June	12, 1944	18.2	12,300
1945	Apr.	23, 1945	19.1	13,000
	May	27, 1945	12.6	6,140
	June	1, 1945	16.6	10,300
	June	6, 1945	15.0	8,540
	June	9, 1945	16.7	10,400
	July	18, 1945	18.4	12,400
1946	Feb.	8, 1946	16.1	9,750
	Sept.	4, 1946	17.2	11,000
1947	June	1, 1947	12.7	6,670
	June	12, 1947	16.8	11,000
	June	22, 1947	18.2	12,600
1948	Feb.	27, 1948	15.2	9,630
	Mar.	16, 1948	13.5	7,840
	Mar.	18, 1948	15.0	9,400
	July	29, 1948	13.7	8,350
1949	Mar.	4, 1949	19.2	17,400
	June	27, 1949	13.2	7,960
	July	20, 1949	12.4	6,980
	Sept.	11, 1949	14.6	9,840
1950	Feb.	28, 1950	^b 19.4	16,000
	Mar.	4, 1950	12.0	6,500
	May	25, 1950	16.4	12,400
	June	2, 1950	16.5	12,600
	June	12, 1950	17.3	13,900
	June	18, 1950	20.0	18,800
	Aug.	12, 1950	17.5	14,000

6-6095. Boyer River at Logan, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 28, 1951	20.03	23,000
	May 1, 1951	19.76	22,500
	June 1, 1951	16.16	14,400
	June 18, 1951	18.53	19,200
	July 3, 1951	20.00	23,000
	Aug. 14, 1951	15.7	13,500
	Aug. 17, 1951	14.0	10,500
	Aug. 20, 1951	11.6	6,930
	Sept. 9, 1951	14.2	10,800
	Sept. 12, 1951	11.0	6,200
1952	Oct. 21, 1951	11.0	6,200
1952	Jan. 19, 1952	17.0	16,000
	June 21, 1952	19.50	19,000
	June 27, 1952	19.00	18,000
	July 7, 1952	14.20	9,900
1953	June 10, 1953	15.30	11,300
1954	Apr. 21, 1954	15.18	12,300
	June 21, 1954	18.80	17,700
	Aug. 22, 1954	10.82	6,360
1955	July 10, 1955	12.52	8,450
1956	May 13, 1956	11.7	7,440
1957	June 14, 1957	13.58	9,940
	June 16, 1957	22.67	23,600
	June 22, 1957	13.45	9,660
1958	July 2, 1958	18.70	17,400
1959	May 31, 1959	15.00	13,100
1960	Mar. 29, 1960	14.62	10,200
1961	May 31, 1961	11.08	6,360
	June 14, 1961	11.77	7,600
	June 27, 1961	15.40	14,800
	Aug. 1, 1961	11.40	6,840
1962	Mar. 28, 1962	13.70	12,400
	May 26, 1962	12.82	7,720
	May 29, 1962	12.64	7,440
	June 10, 1962	14.82	10,900
	Aug. 31, 1962	14.86	11,000

6-6095. Boyer River at Logan, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1963	June	8, 1963	11.66	7,800
	Aug.	6, 1963	11.30	6,680
1964	May	24, 1964	19.52	19,600
	May	26, 1964	16.34	14,200
	Aug.	28, 1964	14.28	10,600
1965	Mar.	1, 1965		c
	Mar.	17, 1965		c
	Mar.	31, 1965	15.93	13,600
	Apr.	3, 1965	11.98	6,970
	May	26, 1965	19.33	19,400
	Sept.	7, 1965	13.23	8,990

b Affected by ice

c Unknown

5-4215.5 Buffalo Creek above Winthrop, Iowa

Location.--Near northeast corner sec.25, T.89 N., R.8W, at bridge, 1.5 miles northeast of Winthrop, Buchanan County.

Drainage area.--68.2 sq mi. At site prior to 1957, 71.2 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary. Prior to 1957 at site 2 miles downstream at different datum.

Stage-discharge relation.--Defined by discharge measurements below and extended above 2,000 cfs by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 20, 1953	9.19	743
1954	May 1, 1954	8.68	676
1955	Feb. 20, 1955	6.90	445
1957	June 17, 1957	16.10	710
1958	May 31, 1958	16.92	960
1959	July 1, 1959	17.45	1,600
1960	Mar. 30, 1960	18.59	5,350
1961	Mar. 26, 1961	17.48	2,090
1962	May 6, 1962	18.33	4,260
1963	Mar. 17, 1963	17.25	1,760
1964	Apr. 4, 1964	15.55	612
1965	Apr. 2, 1965	17.95	3,080

5-4645. Cedar River at Cedar Rapids, Iowa

Location.--Lat 41 deg.58 min.20 sec., long 91 deg.40 min.05 sec.,
in SE $\frac{1}{4}$ NW $\frac{1}{4}$ 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 112.7 above mouth of Iowa River.

Drainage area.--6,510 sq mi.

Gage.--Nonrecording prior to Aug. 20, 1920; recording thereafter.
Datum of gage is 700.47 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 15,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June	^a 20	^a 65,000
1903	May 31, 1903	16.85	53,600
1904	Mar. 26, 1904	6.45	11,800
1905	Mar. 23, 1905	9.05	23,000
	May 20, 1905	8.1	19,000
1906	Feb. 28, 1906	8.4	19,400
	Mar. 30, 1906	17.6	55,700
1907	July 20, 1907	8.5	19,800
	Aug. 17, 1907	8.2	18,600
1908	May 30, 1908	8.8	21,000
	June 26, 1908	8.0	17,800
1909	Mar. 30, 1909	9.1	22,100
	Apr. 22, 1909	7.4	15,400
1910	Nov. 19, 1909	8.0	17,800
	Dec. 2, 1909	7.4	15,400
	Dec. 11, 1909	8.4	19,400
1910	Mar. 14, 1910	9.6	24,100
1911	Feb. 16, 1911	7.1	14,300
1912	Apr. 1, 1912	17.2	54,000

5-4645. Cedar River at Cedar Rapids, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1913	Mar. 18, 1913	9.2	22,500
1914	June 19, 1914	7.8	17,000
1915	Feb. 25, 1915	10.3	26,800
	Mar. 28, 1915	12.0	33,600
	June 2, 1915	11.5	31,600
	Sept. 28, 1915	9.4	23,300
1916	Mar. 30, 1916	10.0	25,700
	Apr. 25, 1916	7.4	15,400
	June 6, 1916	8.1	18,200
1917	Mar. 26, 1917	17.4	54,900
	June 13, 1917	8.3	19,000
1918	June 7, 1918	11.0	28,200
1919	Mar. 20, 1919	11.4	29,700
	Apr. 15, 1919	9.4	21,800
1920	Mar. 30, 1920	7.6	14,800
1921	June 1, 1921	8.40	17,900
1922	Feb. 27, 1922	9.1	21,000
1923	Apr. 4, 1923	7.80	16,000
1924	Aug. 22, 1924	10.54	26,300
1925	June 18, 1925	7.00	12,800
1926	Sept. 21, 1926	6.70	11,500
1927	May 25, 1927	6.77	11,800
1928	Feb. 12, 1928	9.5	22,200
	Aug. 29, 1928	11.05	29,200
1929	Mar. 18, 1929	20.00	64,000
	Apr. 20, 1929	9.3	21,400
1930	Feb. 24, 1930	6.90	12,200

5-4645. Cedar River at Cedar Rapids, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Sept. 26, 1931	4.10	3,270
1932	Nov. 28, 1931	8.4	17,900
1932	Apr. 2, 1932	8.73	19,100
	June 23, 1932	8.4	17,900
1933	Apr. 4, 1933	18.6	58,400
1934	Apr. 9, 1934	5.55	8,620
1935	Mar. 8, 1935	10.38	26,900
1936	Mar. 15, 1936	9.45	22,700
	Mar. 27, 1936	8.9	20,600
1937	Feb. 21, 1937	9.3	22,300
	Mar. 9, 1937	13.61	40,700
	June 17, 1937	9.6	23,500
1938	Sept. 21, 1938	6.93	12,900
1939	Mar. 18, 1939	8.67	19,700
1940	Apr. 4, 1940	4.86	5,540
1941	Mar. 21, 1941	8.0	17,100
1942	June 7, 1942	8.9	19,100
	Aug. 3, 1942	12.6	33,900
1943	Mar. 31, 1943	7.91	15,800
1944	May 25, 1944	8.5	17,900
	June 18, 1944	11.43	29,100
	June 23, 1944	9.2	20,300
1945	Mar. 19, 1945	17.09	52,300
	May 31, 1945	8.8	19,700
	June 5, 1945	9.2	21,200
1946	Jan. 9, 1946	10.8	27,100
	Mar. 11, 1946	9.2	21,200
	Mar. 17, 1946	9.9	23,700
	Sept. 24, 1946	7.8	16,200

5-4645. Cedar River at Cedar Rapids, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 16, 1947	8.3	18,000
	June 6, 1947	13.5	37,000
	June 16, 1947	18.23	56,200
	July 6, 1947	8.6	19,100
1948	Mar. 3, 1948	12.82	34,500
	Mar. 20, 1948	12.6	33,900
1949	Mar. 7, 1949	11.75	30,800
	Mar. 31, 1949	8.3	18,000
1950	Mar. 11, 1950	12.45	33,000
	Apr. 1, 1950	9.8	23,400
	June 26, 1950	7.9	16,600
1951	Feb. 27, 1951	^b 12.51	^a 30,000
	Mar. 31, 1951	13.54	39,300
	Apr. 11, 1951	17.22	54,100
	May 2, 1951	13.45	38,900
	June 3, 1951	8.42	19,400
	June 30, 1951	12.00	33,300
	July 10, 1951	8.35	19,400
	Aug. 30, 1951	7.56	16,300
1952	Apr. 5, 1952	10.40	27,000
1953	Aug. 10, 1953	7.29	15,200
1954	June 26, 1954	14.02	41,400
1955	Mar. 5, 1955	^b 5.67	^a 8,100
1956	Apr. 6, 1956	4.69	5,400
1957	June 20, 1957	6.00	9,900
1958	June 13, 1958	4.58	5,240
1959	Mar. 21, 1959	8.75	21,000
	Mar. 30, 1959	9.77	25,800

5-4645. Cedar River at Cedar Rapids, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Jan. 13, 1960	8.60	20,400
	Apr. 2, 1960	16.75	55,100
	May 7, 1960	11.59	32,400
1961	Mar. 8, 1961	7.62	17,600
	Mar. 31, 1961	19.66	73,000
1962	Apr. 2, 1962	15.15	50,000
	Sept. 7, 1962	8.11	18,900
1963	Mar. 19, 1963	7.26	15,600
1964	May 8, 1964	4.43	4,270
1965	Mar. 6, 1965	11.19	32,100
	Apr. 10, 1965	18.51	66,800
	Sept. 26, 1965	10.04	27,200

a About

b Affected by ice

5-4577. Cedar River at Charles City, Iowa

Location.--Lat 43 deg.03 min.45 sec., long 92 deg.40 min.25 sec., in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.12, T.95 N., R.16 W., on right bank 500 ft downstream from bridge on U.S. Highway 18 (St. Mary's Street) in Charles City, 13.1 miles upstream from Little Cedar River, and at mile 252.9 above mouth of Iowa River (U.S. Geological Survey river profile).

Drainage area.--1,054 sq mi.

Gage.--Nonrecording prior to October 1964; recording thereafter. 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 prior to 1965. Base for partial duration series, 2,500 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Sept. 7, 1946	16.05	15,100
1947	Apr. 11, 1947	10.44	7,470
1948	Feb. 28, 1948	17.00	16,500
1949	Mar. 6, 1949	13.00	10,800
1950	Mar. 28, 1950	18.3	20,000
1951	Apr. 8, 1951	18.9	21,400
1952	Apr. 1, 1952	14.6	12,600
1953	Aug. 4, 1953	14.35	12,300
1961	Mar. 27, 1961	21.53	28,000
1962	Mar. 30, 1962	18.0	18,500
1965	Mar. 2, 1965	^b 21.64	^a 14,700
	Apr. 2, 1965	^b 10.35	^a 4,000
	Apr. 7, 1965	19.14	21,000
	Apr. 12, 1965	14.51	12,800
	July 10, 1965	6.88	3,790
	Sept. 21, 1965	9.00	5,820
	Sept. 30, 1965	14.95	13,400

a About

b Affected by ice

5-4650. Cedar River near Conesville, Iowa

Location.--Lat 41 deg.24 min.30 sec., long 91 deg.17 min.15 sec., in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.2, T.76 N., R.4 W., on right bank 10 ft downstream from highway bridge, 3.4 miles northeast of Conesville, 4.5 miles downstream from Wapsinonoc Creek, 10.7 miles upstream from mouth, and at mile 39.8 above mouth of Iowa River.

Drainage area.--7,785 sq mi.

Gage.--Nonrecording prior to Feb. 2, 1940, and from Apr. 11, 1952 to July 1, 1954; recording remainder of time. Datum of gage is 581.95 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial duration series, 12,000 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1929	March	1929	15.8	
1940	Mar. 19,	1940	7.11	5,490
	Apr. 5,	1940	7.11	5,490
1941	Mar. 24,	1941	10.68	13,200
1942	Aug. 6,	1942	13.37	31,300
1943	Apr. 2,	1943	11.45	17,400
1944	May 27,	1944	12.5	23,500
	June 20,	1944	13.1	29,600
	June 27,	1944	13.93	44,500
1945	Mar. 21,	1945	14.45	50,900
	June 2,	1945	12.3	22,200
	June 8,	1945	12.4	23,000
1946	Jan. 10,	1946	^b 14.62	32,000
	Mar. 13,	1946	12.2	21,500
	Mar. 19,	1946	12.3	25,900
1947	June 8,	1947	14.2	37,200
	June 18,	1947	15.35	60,000
	July 7,	1947	12.4	20,300
1948	Mar. 5,	1948	14.00	42,600

5-4650. Cedar River near Conesville, Iowa

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 22, 1948	13.65	37,000
1949	Mar. 10, 1949	13.69	28,700
1950	Mar. 13, 1950	14.10	34,100
	Apr. 3, 1950	12.8	21,000
1951	Mar. 2, 1951	13.35	25,700
	Apr. 3, 1951	14.27	41,300
	Apr. 13, 1951	15.10	54,100
	May 5, 1951	13.86	32,600
	July 3, 1951	13.50	26,600
	July 13, 1951	13.58	27,600
1952	Mar. 13, 1952	12.54	20,000
	Apr. 7, 1952	13.14	23,700
1953	Feb. 21, 1953	12.87	22,400
1954	June 28, 1954	14.80	36,600
1955	Oct. 11, 1954	10.26	10,700
1956	Apr. 3, 1956	7.90	5,580
1957	June 21, 1957	9.89	9,950
1958	June 14, 1958	9.04	7,800
1959	Apr. 1, 1959	13.45	26,100
1960	Jan. 16, 1960	13.22	24,400
	Apr. 4, 1960	15.60	58,800
	May 9, 1960	13.90	29,000
1961	Apr. 2, 1961	16.62	70,800
1962	Nov. 17, 1961	12.96	21,500
1962	Mar. 21, 1962	13.30	24,100
	Apr. 5, 1962	15.34	47,700
	July 15, 1962	12.98	21,500

5-4650. Cedar River near Conesville, Iowa

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 24, 1963	11.82	15,500
1964	June 23, 1964	8.42	6,440
1965	Mar. 8, 1965	14.67	37,000
	Apr. 12, 1965	16.85	68,100
	Sept. 22, 1965	14.10	29,000
	Sept. 28, 1965	13.82	26,200

b Affected by ice

5-4585. Cedar River at Janesville, Iowa
(Published as Red Cedar River at Janesville, 1905-6)

Location.--Lat 42 deg.39 min.00 sec., long 92 deg.27 min.50 sec., in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.35, T.91 N., R.14 W., on left bank 300 ft downstream from county highway bridge at Janesville, 3.7 miles upstream from West Fork Cedar River, and at mile 207.8 above mouth of Iowa River.

Drainage area.--1,661 sq mi.

Gage.--Recording. Datum of gage is 868.26 ft above mean sea level, datum of 1929. Prior to July 26, 1919, nonrecording gage at site 1,000 ft downstream at datum 4.0 ft lower, July 26, 1919, to Sept. 30, 1927, Nov. 14, 1932, to Sept. 30, 1942, Apr. 26, 1946, to Nov. 10, 1949, nonrecording gage at highway bridge 300 ft upstream at the same datum.

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

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1905	May 17, 1905	7.7	5,840
1906	Mar. 27, 1906	14.2	27,100
1915	May 31, 1915	8.9	7,220
1916	Mar. 16, 1916	8.9	7,220
	Mar. 27, 1916	10.4	10,400
	Apr. 22, 1916	10.4	10,400
	June 2, 1916	11.0	12,100
1917	Mar. 24, 1917	13.8	21,900
	June 25, 1917	12.6	17,300
1918	Mar. 20, 1918	9.0	7,400
1919	Apr. 10, 1919	8.7	6,870
	Apr. 18, 1919	7.5	5,130
1920	Mar. 19, 1920	6.8	5,410
	Mar. 28, 1920	7.3	6,190
1921	May 29, 1921	11.5	15,300

5-4585. Cedar River at Janesville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Apr. 4, 1923	6.2	4,630
1924	Aug. 22, 1924	6.0	4,410
1925	June 15, 1925	7.7	6,860
1926	Mar. 22, 1926	5.6	4,010
1927	May 28, 1927	6.2	4,630
1929	Mar. 16, 1929	^a 16.0	^c
1933	Feb. 27, 1933	^b 7.1	5,500
	Apr. 1, 1933	16.0	33,300
1934	Apr. 6, 1934	9.9	11,200
1935	Mar. 5, 1935	9.1	9,580
	Mar. 8, 1935	8.6	8,530
	Mar. 18, 1935	7.9	7,200
1936	Mar. 15, 1936	7.7	6,840
	Mar. 24, 1936	9.8	11,200
1937	Mar. 8, 1937	^b 11.0	12,000
1938	May 29, 1938	6.7	5,310
	Sept. 17, 1938	6.8	8,910
1939	Mar. 17, 1939	^b 9.4	7,500
1940	Apr. 1, 1940	6.0	4,410
1941	Mar. 12, 1941	^b 11.1	8,740
	Apr. 20, 1941	8.7	8,890
1942	Mar. 23, 1942	7.7	6,860
	June 3, 1942	8.3	7,950
	June 7, 1942	7.6	6,690
	July 2, 1942	8.4	8,140
	July 16, 1942	9.3	10,100
1945	Mar. 17, 1945	16.2	34,300

5-4585. Cedar River at Janesville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Sept. 9, 1946	11.3	14,700
1947	Apr. 8, 1947	8.1	7,650
	Apr. 13, 1947	9.3	9,820
	June 13, 1947	10.14	12,200
	June 18, 1947	7.5	6,520
1948	Mar. 1, 1948	14.1	25,100
	Mar. 19, 1948	8.7	9,330
1949	Mar. 7, 1949	^b 11.4	^a 14,000
	Mar. 29, 1949	8.5	8,850
	Apr. 2, 1949	8.0	7,930
1950	Mar. 9, 1950	^b 11.75	^a 11,600
	Mar. 28, 1950	12.7	20,200
1951	Mar. 1, 1951	6.67	6,440
	Mar. 30, 1951	^b 6.37	^a 5,200
	Apr. 9, 1951	14.05	25,000
	Apr. 29, 1951	12.43	19,300
	June 5, 1951	6.16	5,650
	June 27, 1951	7.77	8,360
1952	Mar. 21, 1952	6.30	5,800
	Apr. 2, 1952	10.74	14,700
1953	June 16, 1953	8.36	9,500
	Aug. 6, 1953	10.80	15,000
1954	June 22, 1954	12.08	18,400
1955	Mar. 14, 1955	5.16	4,430
1956	Apr. 5, 1956	4.46	3,530
1957	May 31, 1957	3.10	1,890
1958	Feb. 25, 1958	^b 2.73	^a 1,100
1959	Mar. 27, 1959	6.78	6,620
	June 25, 1959	5.83	5,210
1960	Mar. 30, 1960	10.46	13,200

5-4585. Cedar River at Janesville, Iowa-(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	May 24, 1960	6.38	6,040
	June 26, 1960	5.71	5,080
1961	Mar. 28, 1961	16.33	37,000
	Aug. 3, 1961	6.66	6,210
1962	Mar. 31, 1962	13.86	24,000
	Apr. 9, 1962	8.35	8,200
	Sept. 2, 1962	11.94	16,200
1963	Mar. 19, 1963	^b 9.65	^a 6,200
	May 11, 1963	6.30	5,830
	May 14, 1963	6.07	5,160
1964	June 23, 1964	2.53	1,240
1965	Mar. 3, 1965	^b 16.33	^a 15,000
	Apr. 7, 1965	14.33	29,200
	Apr. 13, 1965	10.66	13,900
	Sept. 22, 1965	8.80	9,290

a About

b Affected by ice

c Discharge not determined

5-4575. Cedar River at Mitchell, Iowa

Location.--Lat 43 deg.18 min.55 sec., long 92 deg.52 min.45 sec., in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.8, T.98 N., R.17 W., in tailrace of hydroelectric plant of Central States Power & Light Corporation at Mitchell, 7.1 miles downstream from Deer Creek, 11.3 miles upstream from Rock Creek, and at mile 282.0 above mouth of Iowa River.

Drainage area.--826.sq mi.

Gage--Nonrecording. Datum of gage is 1,000 ft above mean sea level (levels by Central States Power & Light Corporation).

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)
1933	July 2, 1933	84.0	^c 1,520
1934	Apr. 4, 1934	89.7	13,000
1935	Mar. 16,17, 1935	88.3	9,400
1936	Mar. 17, 1936	88.0	8,680
1937	Mar. 7, 1937		^d 9,000
1938	Sept.14,15, 1938	88.6	10,200
1939	Mar. 14, 1939	87.7	7,990
1940	Mar. 30, 1940	85.7	4,130
1941	Apr. 18, 1941	89.1	11,300
1942	June 29, 1942	89.1	11,400
1961	Mar. 27, 1961	93.6	20,500
1962	Mar. 30, 1962	91.9	19,000

c Maximum for period July 1 to September 30, 1933

d Estimated

5-4640. Cedar River at Waterloo, Iowa

Location.--Lat 42 deg.29 min.40 sec., long 92 deg.20 min.00 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ 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, 1 mile downstream from Blackhawk Creek, and at mile 188.0 above mouth of Iowa River.

Drainage area.--5,146 sq mi.

Gage.--Recording. Datum of gage is 824.14 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 13,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 16, 1929	20	65,000
1933	Apr. 2, 1933	19.5	61,000
1941	Apr. 21, 1941	9.23	11,700
1942	June 4, 1942	12.2	23,000
	Aug. 1, 1942	12.1	22,600
1943	Mar. 18, 1943	9.90	14,700
	Mar. 28, 1943	10.75	17,700
1944	May 22, 1944	10.36	16,200
	June 17, 1944	13.25	26,400
1945	May 17, 1945	18.33	53,300
	Apr. 26, 1945	9.4	13,100
	May 25, 1945	11.2	19,400
	May 28, 1945	11.8	21,100
	June 2, 1945	12.8	24,700
	Aug. 17, 1945	9.6	14,000
1946	Jan. 6, 1946	12.99	25,200
	Mar. 8, 1946	12.66	24,200
	Mar. 14, 1946	12.00	21,900
1947	Apr. 13, 1947	10.73	18,100
	June 2, 1947	12.70	24,800
	June 13, 1947	18.70	55,600

5-4640. Cedar River at Waterloo, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 19, 1947	11.57	20,900
	July 3, 1947	10.77	18,200
1948	Mar. 1, 1948	15.85	38,200
	Mar. 20, 1948	14.33	30,900
1949	Mar. 8, 1949	12.21	23,100
	Mar. 29, 1949	10.30	16,600
1950	Mar. 8, 1950	15.90	38,400
	Mar. 29, 1950	13.70	28,400
1951	Feb. 28, 1951	11.83	21,600
	Mar. 30, 1951	15.05	33,900
	Apr. 9, 1951	18.83	56,400
	Apr. 30, 1951	16.97	44,400
	June 4, 1951	9.95	15,400
	June 27, 1951	17.01	44,400
	July 10, 1951	9.73	14,400
	Aug. 27, 1951	10.50	17,100
1952	Mar. 22, 1952	9.62	14,100
	Apr. 2, 1952	13.57	28,000
1953	Aug. 7, 1953	11.29	19,800
1954	June 23, 1954	18.40	49,400
1955	Mar. 14, 1955	7.40	6,590
1956	Apr. 4, 1956	7.09	5,920
1957	May 31, 1957	7.65	7,680
1958	July 17, 1958	6.67	4,320
1959	Mar. 28, 1959	13.15	24,700
1960	Mar. 31, 1960	18.10	48,100
	May 8, 1960	10.82	17,000
1961	Mar. 6, 1961	9.49	13,100
	Mar. 29, 1961	21.86	76,700

5-4640. Cedar River at Waterloo, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Mar. 31, 1962	19.26	51,200
	Sept. 3, 1962	13.66	27,500
1963	Mar. 20, 1963	10.05	14,600
	May 12, 1963	10.50	16,200
1964	Sept. 12, 1964	6.66	4,210
1965	Mar. 4, 1965	14.72	31,500
	Apr. 8, 1965	21.67	69,500
	Sept. 23, 1965	13.91	28,300

5-4890. Cedar Creek near Bussey, Iowa

Location.--Lat 41 deg.13 min.10 sec., long 92 deg.54 min.25 sec., on south line in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.11, 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.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1946	June	1946	28.05	31,500
1948	Feb. 28,	1948	24.90	15,900
	Mar. 16,	1948	19.98	5,760
	Mar. 20,	1948	19.18	5,040
1949	Feb. 24,	1949	21.58	7,800
	June 25,	1949	20.28	6,130
1950	Feb. 9,	1950	17.92	4,150
	Feb. 28,	1950	19.48	5,350
	May 9,	1950	27.50	29,300
	June 19,	1950	18.65	4,690
1951	May 11,	1951	20.02	5,800
	May 26,	1951	21.37	7,680
	July 3,	1951	18.00	4,200
1952	June 3,	1952	19.83	5,620
	June 21,	1952	25.72	20,100
1953	Nov. 18,	1952	19.18	5,080
1953	Mar. 31,	1953	20.12	5,920
1954	Aug. 26,	1954	16.44	3,460
1955	Feb. 20,	1955	16.46	3,500
1956	Aug. 9,	1956	17.20	3,980

5-4890. Cedar Creek near Bussey, Iowa.--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Apr. 3, 1957	17.37	4,060
1958	July 2, 1958	28.06	29,000
	July 4, 1958	17.60	4,140
	July 20, 1958	18.63	4,560
1959	Mar. 20, 1959	20.25	6,090
	Mar. 27, 1959	18.92	4,860
	Apr. 1, 1959	19.78	5,650
	Apr. 20, 1959	19.48	5,360
	May 21, 1959	22.84	11,000
	May 30, 1959		^a 9,000
1960	Jan. 13, 1960	19.58	5,450
	Mar. 30, 1960	25.71	18,800
	Apr. 18, 1960	18.34	4,500
	May 7, 1960	25.00	16,000
	May 17, 1960	19.32	5,180
	May 25, 1960	20.62	6,630
1961	Mar. 6, 1961	19.60	5,370
	Mar. 14, 1961	19.90	5,580
	Mar. 27, 1961	17.50	4,100
	Sept. 13, 1961	27.54	20,800
1962	Nov. 3, 1961	24.60	12,300
	Nov. 16, 1961	24.23	11,400
1962	Mar. 20, 1962	21.75	8,620
	May 30, 1962	18.60	4,660
	June 11, 1962	23.06	11,800
1963	Mar. 19, 1963	17.91	4,300
1964	June 16, 1964	20.27	6,350
1965	Mar. 18, 1965	20.51	6,500
	Apr. 6, 1965	19.81	5,660
	Apr. 9, 1965	18.14	4,220
	Apr. 26, 1965	20.11	5,980
	Sept. 22, 1965	24.18	11,400

a About

6-9040. Chariton River near Centerville, Iowa
(Discontinued September 30, 1959)

Location.--Lat. 40 deg. 44 min. 20 sec., long. 92 deg. 48 min. 05 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T.69N., R.17 W., on left bank 10 feet downstream from bridge on State Highway 2, 3.5 mile downstream from Cooper Creek, and 3 miles east of Centerville.

Drainage area.--708 sq. mi.

Gage.--Recording. Datum of gage is 825.68 feet above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 18,000 cfs and extended by logarithmic plotting.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1938	June 2, 1938	9.8	^c 1,730
1939	Mar. 13, 1939	23.4	16,500
	Apr. 16, 1939	16.2	4,680
	Aug. 11, 1939	14.8	3,900
1940	May 10, 1940	10.5	2,150
1941	June 3, 1941	13.9	3,380
	June 9, 1941	15.2	4,080
1942	Nov. 1, 1941	13.9	3,530
1942	June 23, 1942	15.4	4,140
1943	Dec. 27, 1942	14.5	4,060
1943	May 17, 1943	21.9	9,610
	June 13, 1943	19.8	7,100
1944	Apr. 15, 1944	14.5	3,980
	Apr. 24, 1944	22.6	13,000
	May 3, 1944	14.1	3,790
	May 5, 1944	16.2	4,930
	June 11, 1944	21.2	8,410
1945	Oct. 3, 1944	13.4	3,450
1945	Feb. 14, 1945	14.2	3,820
	Mar. 25, 1945	13.6	3,540
	Apr. 16, 1945	15.6	4,580
	Apr. 18, 1945	19.8	7,080
	May 17, 1945	22.6	12,600
	June 16, 1945	14.7	4,080

6-9040. Chariton River near Centerville, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 5, 1946	18.7	6,240
	Jan. 7, 1946	23.2	14,000
	Mar. 17, 1946	14.7	4,050
	Mar. 23, 1946	15.9	4,730
	June 20, 1946	24.2	21,700
	July 17, 1946	23.4	17,100
	Aug. 25, 1946	13.0	3,240
	Aug. 28, 1946	13.3	3,340
1947	Oct. 25, 1946	12.6	3,050
1947	Mar. 14, 1947	12.7	3,110
	Apr. 5, 1947	22.6	13,200
	Apr. 20, 1947	12.5	3,020
	Apr. 23, 1947	12.8	3,160
	May 29, 1947	13.1	3,290
	June 7, 1947	23.9	20,300
	June 13, 1947	14.5	3,980
	June 18, 1947	13.2	3,340
1948	June 23, 1947	22.9	14,400
	Feb. 28, 1948	13.5	3,760
	Mar. 1, 1948	13.6	3,820
1949	Mar. 19, 1948	14.8	4,510
	Feb. 24, 1949	^b 16.0	3,600
	Feb. 27, 1949	^b 17.96	4,010
	June 25, 1949	14.9	4,790
	July 21, 1949	12.1	3,200
1950	June 14, 1950	11.9	3,100
	June 21, 1950	21.8	10,800
1951	Feb. 19, 1951	12.11	3,500
	Apr. 7, 1951	11.60	3,270
	May 12, 1951	15.27	5,160
	June 24, 1951	11.41	3,180
1952	Mar. 13, 1952	12.80	3,850
	June 3, 1952	13.25	4,050
	June 21, 1952	15.16	5,110
1953	Apr. 3, 1953	13.99	4,450
1954	June 4, 1954	6.02	930
1955	Oct. 5, 1954	10.03	2,550

6-9040. Chariton River near Centerville, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Aug. 2, 1956	10.2	2,640
1957	July 29, 1957	11.37	3,180
1958	July 31, 1958	13.50	3,140
	Sept. 10, 1958	13.10	3,040
1959	Feb. 27, 1959	^b 12.77	^a 3,100
	Mar. 22, 1959	13.06	3,750
	Mar. 26, 1959	12.59	3,510
	Apr. 1, 1959	11.78	3,130
	Apr. 20, 1959	13.99	4,200
	May 22, 1959	23.20	14,100
	June 1, 1959	17.90	6,810

a About

b Affected by ice

c Maximum for period May to September, 1938

6-9039. Chariton River near Rathbun, Iowa

Location.--Lat 40 deg. 48 min. 40 sec., long 92 deg. 53 min. 00 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 1., T. 69 N., R. 18 W., on left bank 5 ft. downstream from highway bridge, 0.8 mile northeast of Rathbun, 1.0 mile upstream from Walnut Creek, and 1.3 miles downstream from Buck Branch.

Drainage area.--551 sq mi.

Gage.--Nonrecording prior to November 16, 1960; recording thereafter. Datum of gage is 843.27 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)	
1957	Apr. 5, 1957	13.72	1,500	
1958	Aug. 4, 1958	17.3	2,070	
1959	Mar. 21, 1959	19.51	4,100	
	Apr. 3, 1959	18.9	3,160	
	Apr. 22, 1959	19.72	4,420	
	May 22, 1959	24.0	16,600	
	May 31, 1959	21.1	7,100	
1960	Jan. 15, 1960	20.0	4,900	
	Mar. 31, 1960	25.3	21,800	
	Apr. 19, 1960	19.6	4,260	
	May 7, 1960	22.0	9,400	
	May 19, 1960	19.0	3,300	
1961	Mar. 9, 1961	19.18	3,620	
	Mar. 15, 1961	19.80	4,580	
	Sept. 15, 1961	23.09	13,000	
1962	Nov. 4, 1961	23.10	12,200	
	Nov. 18, 1961	22.25	10,000	
1962	Mar. 20, 1962	20.84	6,500	
1963	Mar. 6, 1963	19.90	4,760	
1964	June 24, 1964	19.22	4,200	
1965	Mar. 19, 1965	^b 20.30	4,300	
	Apr. 10, 1965	19.94	5,190	
	Sept. 22, 1965	22.98	10,000	

b Affected by ice

5-4543. Clear Creek near Coralville, Iowa

Location.--Lat 41 deg.40 min.35 sec., long 91 deg.35 min.55 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.6, T.79 N., R.6 W., on left bank about 50 ft upstream from highway bridge, 1.2 miles west of Coralville, 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.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 20, 1953	^b 11.18	^a 1,800
	May 25, 1953	9.3	1,010
1954	Aug. 26, 1954	8.10	730
1955	Feb. 21, 1955	^b 9.70	^a 850
1956	Aug. 30, 1956	9.52	900
1957	Jan. 22, 1957	^b 6.28	^a 300
1958	Sept. 5, 1958	9.69	1,020
1959	Feb. 27, 1959	^b 11.34	^a 1,500
	Mar. 20, 1959	11.68	2,880
	Mar. 26, 1959	10.22	1,040
	Apr. 28, 1959	10.25	1,040
1960	Jan. 13, 1960	11.79	3,060
	Mar. 31, 1960	11.63	2,740
	June 2, 1960	10.08	1,150
	June 4, 1960	10.06	1,120
	July 9, 1960	10.27	1,240
	July 14, 1960	10.90	1,840
1961	Mar. 5, 1961	11.84	3,020
	Mar. 14, 1961	^a 10.5	1,180
1962	Nov. 16, 1961	10.99	1,410

Clear Creek near Coralville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Mar. 20, 1962	12.03	2,740
	May 29, 1962	13.31	5,390
	July 14, 1962	13.10	4,160
1963	Mar. 4, 1963	^b 10.83	^a 700
1964	June 24, 1964	10.47	1,280
1965	Jan. 22, 1965	10.98	1,190
	Apr. 6, 1965	11.12	1,600
	Apr. 24, 1965	12.50	4,060
	July 10, 1965	10.67	1,360
	Sept. 21, 1965	13.47	4,000

a About

b Affected by ice

5-4117. Crane Creek near Lourdes, Iowa

Location.--NW $\frac{1}{4}$ sec.6, T.97 N., R.12 W., at bridge on State Highway 272, 1 mile southwest of Lourdes, Howard County.

Drainage area.--75.8 sq mi.

Gage--Crest-stage gage. Datum is arbitrary.

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)
1953	June 13, 1953	12.00	3,200
1954	June 21, 1954	10.61	2,620
1955	Mar. 15, 1955	9.85	1,430
1956	Apr. 1, 1956	9.23	1,330
1957	Mar. 24, 1957	7.60	580
1958	Apr. 7, 1958	6.39	336
1959	Mar. 31, 1959	9.28	1,370
1960	June 23, 1960	12.13	5,960
1961	Mar. 26, 1961	11.12	3,890
1962	Aug. 31, 1962	15.70	11,900
1963	May 13, 1963	9.20	1,310
1964	Apr. 3, 1964	8.00	710
1965	Sept. 30, 1965	11.69	4,360

5-4116.5 Crane Creek tributary near Saratoga, Iowa

Location.--Near southeast corner sec.21, T.99 N., R.13 W., on left downstream wingwall at bridge on State Highway 9, 1 mile east of Saratoga, Howard County.

Drainage area.--4.06 sq mi.

Gage.--Crest stage gage. Datum is arbitrary.

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)
1953	June 13, 1953	5.77	1,050
1954	June 21, 1954	5.41	777
1955	Mar. 15, 1955	3.79	157
1956	Apr. 1, 1956	4.43	316
1957	July 16, 1957	4.44	320
1958	Apr. 7, 1958	2.38	22
1959	Mar. 26, 1959	5.34	734
1960	June 23, 1960	5.97	1,210
1961	Mar. 26, 1961	6.02	700
1962	Aug. 31, 1962	6.32	1,830
1963	May 13, 1963	4.28	270
1964	May 24, 1964	3.84	167
1965	Sept. 30, 1965	5.86	1,120

6-8090. Davids Creek near Hamlin, Iowa

Location.--Lat 41 deg. 40 min. 25 sec., long 94 deg. 48 min. 20 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.9, T.79 N., R.34 W., on left bank 20 ft downstream from bridge on State Highway 64, 5.2 miles east of Hamlin, and 8 miles upstream from mouth and East Nishnabotna River.

Drainage area.--26.0 sq mi.

Gage.--Recording. Datum of gage is 1,266.54 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 500 cfs and extended above on bases of slope area measurement of peak flow.

Remarks.--Base for partial-duration series, 400 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1952	June	21, 1952	10.72	435
	June	27, 1952	12.55	760
	July	7, 1952	10.85	450
	Aug.	15, 1952	13.07	c 860
	Aug.	29, 1952	11.27	526
1953	Feb.	19, 1953	10.55	420
	June	4, 1953	11.18	510
	June	10, 1953	11.46	558
1954	Aug.	23, 1954	8.89	199
1955	Apr.	23, 1955	10.27	378
1956	June	6, 1956	11.34	406
	Aug.	16, 1956	11.31	406
	Sept.	4, 1956	12.41	574
1957	June	16, 1957	14.80	1,160
1958	July	2, 1958	19.35	22,700
	July	3, 1958	14.84	1,190
	July	19, 1958	12.26	625
	Sept.	5, 1958	11.08	425
1959	May	29, 1959	9.66	240
1960	Mar.	29, 1960	b 12.94	a 600
	Aug.	7, 1960	10.70	453

6-8090. Davids Creek near Hamlin, Iowa--continued

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1961	Feb. 22, 1961	10.90	468	
	Sept. 30, 1961	10.32	427	
1962	June 8, 1962	13.62	882	
	June 19, 1962	10.43	434	
1963	May 4, 1963	8.91	322	
1964	Apr. 2, 1964	10.22	846	
	Apr. 13, 1964	9.82	698	
	June 20, 1964	10.59	1,010	
	June 22, 1964	13.54	3,000	
1965	Mar. 1, 1965	^b 14.63	^a 2,600	
	Mar. 17, 1965	^b 14.46	^a 1,600	
	Mar. 31, 1965	10.30	900	
	Apr. 5, 1965	11.87	1,730	
	June 22, 1965	9.51	741	

a About

b Affected by ice

c Maximum during period June to September

6-4834.4 Dawson Creek near Sibley, Iowa

Location.--Near northwest corner sec. 20, T.99 N., R.41 W., at culvert on County Road "D", 2 miles southeast of Sibley, Osceola County.

Drainage area.--4.35 sq. mi.

Gage--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	5.31	460
1953	June 7, 1953	6.21	4,290
1954	June 30, 1954	5.25	400
1955	Apr. 23, 1955	4.71	110
1956	Aug. 13, 1956	4.06	52
1957	July 3, 1957	4.81	140
1958	June 4, 1958	4.01	140
1959	May 30, 1959	5.73	1,290
1960	Mar. 30, 1960	5.27	440
1961	Mar. 27, 1961	4.67	110
1962	July 5, 1962	4.66	113
1963	July 24, 1963	5.16	328
1964	May 12, 1964	4.47	72
1965	Aug. 21, 1965	4.66	108

5-4855. Des Moines River below Raccoon River, at Des Moines, Iowa

Location.--Lat 41 deg.34 min.30 sec., long 93 deg.35 min.40 sec., in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.78 N., R.24 W., on right bank 10 ft downstream from South East 14th Street bridge, 0.8 mile downstream from Raccoon River and Scott Street Dam, and at mile 200.7 upstream from mouth.

Drainage area.--9,879 sq mi.

Gage.--Recording. Datum of gage is 762.52 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1951, and Oct. 1, 1953, to Sept. 30, 1959, recording above Scott Street Dam, 0.8 mile upstream at datum 11.16 ft higher. Oct. 1, 1951, to Sept. 30, 1953, Oct. 1, 1959 to Sept. 30, 1961, nonrecording at present site and datum.

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

Remarks.--Base for partial-duration series, 15,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 30, 1940	6.9	8,990
1941	June 16, 1941		^c 13,000
1942	May 12, 1942	9.03	17,000
1943	Aug. 17, 1943	8.0	15,100
1944	May 4, 1944	8.60	16,700
	May 24, 1944	17.60	53,200
	June 17, 1944	16.20	45,500
1945	Mar. 17, 1945	12.38	27,000
	Apr. 17, 1945	10.46	21,700
	Apr. 28, 1945	11.21	23,900
	May 15, 1945	8.91	17,400
	May 25, 1945	12.62	28,400
	June 4, 1945		28,900
1946	Mar. 16, 1946	9.37	19,100
	May 29, 1946	10.82	22,800
	June 20, 1946	8.86	17,300
	Sept. 10, 1946	8.70	15,300
1947	Apr. 13, 1947		17,000

5-4855. Des Moines River below Raccoon River, at Des Moines,
Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 6, 1947	15.08	7,800
	June 13, 1947	18.60	59,200
	June 23, 1947	d	39,200
	June 26, 1947	20.8	77,000
1948	Mar. 20, 1948	15.69	44,400
1949	Mar. 7, 1949	12.58	28,100
	Mar. 29, 1949	8.38	17,200
1950	Mar. 8, 1950	8.14	16,800
	May 11, 1950	8.15	16,000
	June 21, 1950	11.56	24,800
1951	Mar. 31, 1951	17.75	54,800
	Apr. 27, 1951	10.82	22,500
	May 5, 1951	15.64	42,000
	June 4, 1951	13.80	33,100
	June 21, 1951	8.15	16,600
	July 4, 1951		33,400
1952	Mar. 23, 1952	18.4	16,700
	Apr. 1, 1952	22.5	28,900
	June 27, 1952	19.7	20,800
	July 12, 1952	20.0	21,600
1953	June 12, 1953	24.5	34,200
1954	June 16, 1954	8.64	16,900
	June 24, 1954	20.08	67,300
	Aug. 22, 1954	8.54	16,500
	Aug. 26, 1954	10.55	20,800
	Aug. 29, 1954	12.50	26,300
1955	July 11, 1955	7.27	11,600
1956	Sept. 5, 1956	5.71	3,850
1957	June 19, 1957	11.60	25,700
1958	July 4, 1958	14.96	39,000
	July 20, 1958	9.34	19,100
	Sept. 7, 1958	8.00	16,000

5-4855. Des Moines River below Raccoon River at Des Moines, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1959	June 3, 1959	12.82	27,700
1960	Apr. 2, 1960	28.86	68,900
	Apr. 18, 1960	18.35	15,500
	May 7, 1960	22.50	26,300
	May 26, 1960	22.20	25,300
1961	Mar. 31, 1961	25.10	37,600
1962	Apr. 3, 1962	27.35	48,600
	May 30, 1962	19.38	18,700
	June 9, 1962	18.75	17,400
	Sept. 6, 1962	21.99	25,000
1963	Apr. 29, 1963	18.06	15,800
	May 15, 1963	18.15	16,200
1964	June 23, 1964	20.62	19,800
1965	Mar. 3, 1965	18.29	16,400
	Mar. 18, 1965	21.70	22,000
	Apr. 2, 1965	22.00	24,500
	Apr. 11, 1965	29.78	65,500
	May 29, 1965	21.20	22,100
	June 8, 1965	19.14	16,800
	Sept. 24, 1965	18.95	17,700

c Maximum daily, estimated

d Maximum stage known since at least 1893

5-4815. Des Moines River near Boone, Iowa

Location.--Lat 42 deg.04 min.40 sec., long 93 deg.55 min.55 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.24, T.84 N.; R.27 W., on left bank 30 ft upstream from Boone Water Department dam, 2 miles northwest of Boone, 2.2 miles upstream from Bluff Creek, and at mile 258.8 upstream from mouth.

Drainage area.--5,511 sq mi.

Gage.--Recording. Datum of gage is 872.16 ft above mean sea level, adjustment of 1929. Prior to May 1, 1920 nonrecording at site 2.5 miles downstream at datum 7.87 ft lower, Apr. 9, 1920, to Sept. 13, 1924, nonrecording 1.3 miles upstream at datum 1.65 ft lower. Oct. 9, 1924, to Jan. 10, 1933, nonrecording 0.3 mile upstream at datum 6.69 ft lower. Jan. 11, 1933, to Sept. 30, 1934, nonrecording at present site at datum 0.41 ft lower. Oct. 1, 1934, to Feb. 6, 1935, nonrecording at present site and datum.

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

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	^b 7.6	^b 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

5-4815. Des Moines River near Boone, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
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	<u>14.9</u>	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	<u>7.0</u>	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

5-4815. Des Moines River near Boone, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
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	5,410
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	May 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	b 7.5	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

5-4815. Des Moines River near Boone, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 15, 1952	7.44	11,100
	July 10, 1952	8.68	13,200
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
1955	July 10, 1955	4.10	6,390
1956	May 31, 1956	1.11	1,550
1957	June 16, 1957	5.35	8,300
1958	July 16, 1958	6.22	9,500
1959	June 1, 1959	8.91	13,200
1960	Mar. 31, 1960	17.08	29,800
	May 27, 1960	8.00	11,800
1961	Mar. 29, 1961	15.47	26,200
1962	Apr. 2, 1962	17.04	30,000
	Sept. 3, 1962	13.52	21,600
1963	Apr. 30, 1963	5.12	7,530
1964	Aug. 2, 1964	6.18	8,980
1965	Apr. 9, 1965	22.89	51,600
	May 27, 1965	10.14	15,500
	June 6, 1965	8.52	12,400
	Sept. 22, 1965	9.41	14,100
	Sept. 30, 1965	10.32	15,800

b Affected by ice

5-4820. Des Moines River at Des Moines, Iowa
(Discontinued Sept. 30, 1961)

Location.--Lat 41 deg.36 min.45 sec., long 93 deg.37 min.15 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ 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 Racoon River, 4.5 miles downstream from Beaver Creek, and at mile 204.3 upstream from mouth.

Drainage area.--6,245 sq mi.

Gage.--Recording. Datum of gage is 773.68 ft above mean sea level, datum of 1929, and at city datum. Prior to Aug. 21, 1941 nonrecording on recording gages at several sites within 3 miles of the present site and at various datums.

Stage-discharge relation.--Defined by current-meter measurements for present gage location. 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..

Remarks.--Base for partial-duration series, 10,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1893	May 12, 1893	9.8	
1894	Mar. 6, 1894	3.6	
1897	Mar. 23, 1897	16.0	
1898	June 11, 1898	7.9	
1899	Apr. 11, 1899	9.1	
1900	Mar. 13, 1900	6.3	
1901	Mar. 20, 1901	9.4	
1902	July 10, 1902	20.1	32,900
1903	May 31, 1903	22.8	42,000
1904	June 4, 1904	7.9	
1905	May 19, 1905	9.6	

5-4820. Des Moines River at Des Moines, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1906	Mar. 30, 1906	<u>10.8</u>	13,700
1907	July 15, 1907	11.6	
1908	June 25, 1908	14.9	
1909	July 9, 1909	14.6	
1910	Nov. 18, 1909	11.9	
1911	Feb. 18, 1911	<u>6.6</u>	
1912	Apr. 1, 1912	17.1	
1913	May 16, 1913	10.8	
1914	Sept. 17, 1914	8.3	
1915	June 1, 1915	16.0	29,000
1916	Mar. 28, 1916	10.1	17,200
1917	June 10, 1917	16.2	26,800
1918	June 7, 1918	16.5	27,300
1919	Apr. 25, 1919	11.2	16,900
1920	July 12, 1920	10.1	18,700
1921	Feb. 18, 1921	8.5	10,700
1922	Apr. 13, 1922	9.6	12,000
1923	Mar. 28, 1923	8.2	8,000
1924	Mar. 30, 1924	8.3	7,570
1925	June 18, 1925	5.1	4,920
1926	Sept. 20, 1926	13.1	12,000
1927	Feb. 7, 1927	8.4	12,800

5-4820. Des Moines River at Des Moines, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Aug. 27, 1928	5.7	5,700
1929	Mar. 18, 1929	<u>16.1</u>	23,300
1930	June 16, 1930	5.9	6,140
1931	Sept. 28, 1931	3.5	2,290
1932	Mar. 5, 1932	14.62	28,500
1933	Apr. 4, 1933	<u>16.1</u>	30,600
1934	Apr. 7, 1934	4.40	5,370
1935	July 2, 1935	13.3	17,600
1936	Mar. 14, 1936	c	13,600
1937	Mar. 7, 1937	13.2	14,400
	June 18, 1937	5.10	15,800
1938	Sept. 20, 1938	14.70	24,800
1939	Mar. 16, 1939	4.00	13,400
1940	Aug. 28, 1940	3.00	6,810
1941	June 16, 1941	<u>3.33</u>	8,100
1942	Nov. 10, 1941	17.1	9,330
1943	Feb. 24, 1943	^b 19.02	^a 9,500
1944	May 23, 1944	24.4	34,000
	June 17, 1944	23.4	29,100
1945	Mar. 18, 1945	19.5	15,500
	Apr. 19, 1945	18.5	12,500
	Apr. 27, 1945	19.5	15,400
	May 25, 1945	19.6	15,800
	June 4, 1945	20.4	18,700
	Aug. 20, 1945	18.3	12,100
1946	Mar. 16, 1946	18.0	10,900

5-4820. Des Moines River at Des Moines, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Mar. 29, 1946	19.78	16,900
	June 21, 1946	17.8	11,000
1947	June 6, 1947	18.1	11,700
	June 13, 1947	21.3	20,200
	June 26, 1947	26.5	39,500
	July 3, 1947	21.2	21,300
1948	Mar. 2, 1948	^b 20.5	^a 12,000
	Mar. 19, 1948	21.21	20,300
1949	Mar. 8, 1949	19.43	15,300
	Mar. 30, 1949	18.4	12,400
1950	Mar. 9, 1950	17.73	10,600
	June 22, 1950	17.67	10,600
1951	Mar. 1, 1951	^b 19.0	^a 12,000
	Mar. 31, 1951	23.80	32,400
	Apr. 10, 1951	22.68	31,900
	Apr. 27, 1951	19.25	14,700
	May 4, 1951	22.54	26,600
	June 5, 1951	19.02	14,100
	July 4, 1951	20.40	18,500
	July 14, 1951	17.59	10,600
1952	Mar. 23, 1951	17.47	10,400
	Apr. 3, 1952	20.20	17,800
	Apr. 17, 1952	18.30	12,400
	July 12, 1952	18.87	13,900
1953	June 12, 1953	17.90	11,400
1954	June 13, 1954	19.06	14,300
	June 24, 1954	30.16	60,200
	Aug. 29, 1954	19.92	16,800
1955	Oct. 15, 1954	16.02	6,840
1956	May 30, 1956	13.44	1,420
1957	June 17, 1957	17.15	9,680

5-4820. Des Moines River at Des Moines, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	July 17, 1958	16.83	8,480
1959	May 26, 1959	17.42	10,300
	June 3, 1959	19.72	16,100
1960	Apr. 1, 1960	25.25	36,200
	May 7, 1960	18.61	13,100
	May 27, 1960	19.25	14,600
1961	Mar. 31, 1961	22.55	26,700

a About

b Affected by ice

c Maximum gage height 11.23 ft. March 13

5-4805. Des Moines River at Fort Dodge, Iowa
(Published as "At Kalo", 1913-27)

Location.--Lat 42 deg.30 min.25 sec., long 94 deg.12 min.00 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ 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 in Fort Dodge, and 2,000 ft downstream from Lizard Creek, and at mile 314.6 upstream from mouth.

Drainage area.--4,190 sq mi.

Gage.--Recording. Datum of gage is 969.38 ft above mean sea level, datum of 1929. Apr. 22, 1905 to July 19, 1906, non-recording at bridge, 3,000 ft downstream, at different datum. Oct. 18, 1913, to Oct. 20, 1921, June 20 to Sept. 30, 1927 nonrecording and Oct. 21, 1921, to June 19, 1927, recording, at site 7 miles downstream at Kalo, at different datum. Oct. 1, 1946, to Dec. 7, 1949, nonrecording at bridge 1,800 ft upstream from present site, at present datum.

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

Remarks.--Base for partial-duration series, 8,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1905	May 17,18, 1905	7.0	c6,460
1906	Mar. 26, 1906	9.9	d12,000
1914	June 20, 1914	7.4	6,530
1915	Mar. 22, 1915	8.6	9,120
	Mar. 26, 1915	9.1	9,970
	May 30, 1915	14.0	18,500
1916	Mar. 29, 1916	10.2	11,900
1917	Mar. 22, 1917	12.9	17,100
	June 8, 1917	9.8	11,200
1918	June 4, 1918	10.1	11,400
	June 7, 1918	8.8	9,460
1919	Apr. 18, 1919	8.2	8,440
	June 24, 1919	9.2	10,200

5-4805. Des Moines River at Fort Dodge, Iowa-(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1920	July 10, 1920	11.38	14,200
1921	May 28, 1921	7.2	6,600
1922	Apr. 13, 1922	7.5	7,500
1923	Mar. 25, 1923	6.38	4,160
1924	Apr. 5, 1924	4.52	3,320
1925	Mar. 9, 1925	^b 7.6	4,200
1926	Sept. 21, 1926	5.03	3,990
1927	Apr. 22, 1927	8.45	8,870
1947	June 23, 1947	19.7	34,000
1948	Feb. 27, 1948	9.89	13,000
1949	Mar. 6, 1949	8.42	9,250
1950	Mar. 8, 1950	^b 6.70	6,850
1951	Apr. 8, 1951	12.13	22,300
	May 2, 1951	11.28	19,900
	July 1, 1951	7.88	10,800
1952	Apr. 2, 1952	8.75	13,100
	July 8, 1952	7.15	9,100
1953	June 13, 1953	7.14	8,850
1954	June 11, 1954	7.15	9,150
	June 21, 1954	19.28	35,400
1955	Apr. 26, 1955	6.30	6,840
1956	Mar. 28, 1956	4.97	3,400
1957	May 30, 1957	5.42	4,400
1958	July 14, 1958	7.97	7,450

5-4805. Des Moines River at Fort Dodge, Iowa--(Continued)

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1959	May	22, 1959	9.17	9,680
	May	31, 1959	8.67	8,730
1960	Mar.	29, 1960	11.28	16,200
	May	26, 1960	8.81	10,700
1961	Mar.	28, 1961	12.83	20,500
1962	Apr.	1, 1962	13.34	21,800
	Sept.	1, 1962	11.47	17,400
1963	July	9, 1963	7.00	7,000
1964	July	31, 1964	8.67	10,700
	Sept.	13, 1964	7.66	8,610
1965	Apr.	8, 1965	17.79	35,600
	May	26, 1965	8.64	10,800
	June	5, 1965	7.84	8,930
	Sept.	28, 1965	7.82	8,770

b Affected by ice

c Maximum for period May to September, 1905

d Maximum for period Oct., Nov., 1905 and Apr. to June, 1906

5-4905. Des Moines River at Keosauqua, Iowa

Location.--Lat.40 deg.43 min.45 sec., long 91 deg.57 min.45 sec., in SE $\frac{1}{4}$ SW $\frac{1}{4}$ 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 51.3 upstream from mouth.

Drainage area.--14,038 sq mi

Gage.--Nonrecording prior to Dec. 24,1933; recording thereafter. Datum of gage is 557.36 ft above mean sea level, datum of 1929 (levels by Iowa Highway Commission).

Stage-discharge relation.--Defined by current-meter measurements below 125,000 cfs and above by logarithmic plotting.

Remarks.--Base for partial-duration series, 25,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June 1, 1851	24	
1903	June 1, 1903	27.8	146,000
1904	Apr. 26, 1904	13.4	44,200
1905	Mar. 1, 1905	9.9	28,100
	June 10, 1905	23.8	108,000
	July 2, 1905	10.8	31,700
1906	Feb. 25, 1906	11.4	33,700
1910	Apr. 6, 1910	5.0	^c 11,800
1911	Sept.29, 1911	5.8	^d 14,100
1912	Apr. 4, 1912	16.7	56,500
1913	May 21, 1913	9.3	26,600
1914	Sept.18, 1914	10.8	31,900
1915	Aug. 3, 1915	18.6	67,600
1916	Oct. 2, 1915	10.1	29,400
1916	Feb. 23, 1916	10.7	31,500
	Mar. 27, 1916	14.6	46,400

5-4905. Des Moines River at Keosauqua, Iowa--(Continued)

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1916	May	14, 1916	10.3	30,100
	May	24, 1916	11.0	32,600
1917	Mar.	30, 1917	9.3	26,600
	June	6, 1917	16.0	51,000
	June	14, 1917	18.7	68,200
1918	May	29, 1918	9.2	26,200
	June	11, 1918	13.2	40,700
	June	25, 1918	13.6	42,200
1919	Mar.	16, 1919	14.4	45,400
	Apr.	27, 1919	11.0	32,600
	May	8, 1919	13.6	42,200
	June	8, 1919	12.0	36,300
1920	Mar.	26, 1920	14.1	44,100
	Apr.	21, 1920	11.2	33,300
	May	15, 1920	10.2	29,700
	July	14, 1920	11.2	33,300
1921	Sept.	21, 1921	9.45	27,100
1922	May	28, 1922	9.6	27,600
1923	Mar.	27, 1923	9.2	26,200
1924	Mar.	5, 1924	9.3	26,600
	June	28, 1924	13.1	40,400
1925	June	16, 1925	7.6	20,800
1926	June	16, 1926	9.6	27,600
	Sept.	9, 1926	10.1	29,400
	Sept.	15, 1926	12.4	37,800
	Sept.	25, 1926	11.8	35,600
1927	Apr.	16, 1927	9.3	26,600
	Apr.	19, 1927	14.0	43,700
	May	25, 1927	10.4	30,400
	June	4, 1927	9.2	26,200
1928	Aug.	4, 1928	7.3	19,800
1929	Nov.	17, 1928	11.0	32,600

5-4905. Des Moines River at Keosauqua, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 17, 1929	13.5	41,800
	Apr. 20, 1929	10.4	30,400
	Apr. 25, 1929	11.7	35,200
1930	June 15, 1930	10.1	29,400
1931	July 3, 1931	7.2	19,500
1932	Oct. 8, 1931	9.2	26,200
	Nov. 25, 1931	11.7	35,200
1932	Jan. 4, 1932	10.6	31,200
	June 27, 1932	8.9	25,200
	July 10, 1932	10.2	29,700
	Aug. 14, 1932	8.9	25,200
1933	Apr. 8, 1933	11.3	33,700
1934	Apr. 4, 1934	4.1	9,880
1935	June 4, 1935	10.7	31,600
	June 19, 1935	12.5	39,000
	June 29, 1935	15.9	54,400
	July 6, 1935	14.6	48,300
1936	Mar. 6, 1936	9.39	26,900
1937	Feb. 21, 1937	^b 13.9	30,900
	Mar. 6, 1937	14.87	50,600
1938	Sept. 25, 1938	9.05	25,100
1939	Mar. 12, 1939	14.30	46,900
1940	Aug. 18, 1940	6.28	15,600
1941	June 11, 1941	9.30	26,200
1942	Oct. 10, 1941	10.1	29,300
	Nov. 4, 1941	10.37	30,100
1942	Jan. 27, 1942	9.7	27,300
1943	May 17, 1943	11.71	35,300
	June 13, 1943	10.4	30,100

5-4905. Des Moines River at Keosauqua, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Apr. 15, 1944	10.0	29,600
	Apr. 23, 1944	15.3	55,500
	May 6, 1944	11.3	35,500
	May 25, 1944	18.30	72,300
	June 20, 1944	14.2	49,900
1945	Mar. 19, 1945	12.6	39,800
	Mar. 27, 1945	10.1	32,200
	Apr. 19, 1945	13.4	47,300
	May 17, 1945	13.88	49,500
	May 28, 1945	11.8	39,800
	June 9, 1945	10.9	35,600
	June 16, 1945	10.5	33,600
	June 22, 1945	9.0	27,100
1946	Jan. 8, 1946	13.8	49,600
	Mar. 17, 1946	11.5	37,000
	Mar. 24, 1946	9.6	27,500
	June 18, 1946	19.50	78,300
	July 18, 1946	14.8	51,000
1947	Apr. 6, 1947	14.2	47,900
	Apr. 13, 1947	10.9	32,200
	Apr. 22, 1947	11.0	32,600
	June 8, 1947	25.1	123,000
	June 16, 1947	25.14	124,000
	June 24, 1947	17.8	71,000
	June 30, 1947	19.4	80,200
1948	Feb. 28, 1948	9.7	30,500
	Mar. 17, 1948	8.8	26,400
	Mar. 19, 1948	13.1	46,200
	Mar. 23, 1948	14.38	52,800
1949	Feb. 27, 1949	8.4	25,000
	Mar. 6, 1949	9.1	27,900
	Mar. 11, 1949	9.9	31,300
	Mar. 27, 1949	9.2	28,000
	Mar. 31, 1949	9.97	31,700
	June 24, 1949	9.1	27,000
1950	Mar. 2, 1950	8.9	27,000
	May 11, 1950	10.6	34,400
	June 19, 1950	11.40	38,100

5-4905. Des Moines River at Keosauqua, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Apr. 4, 1951	14.38	53,000
	Apr. 28, 1951	10.07	32,200
	May 10, 1951	16.45	63,500
	May 28, 1951	10.72	34,900
	June 8, 1951	12.26	42,400
	June 22, 1951	10.07	32,200
	July 5, 1951	12.14	41,400
1952	Mar. 13, 1952	11.57	39,000
	Mar. 20, 1952	8.69	26,200
	Apr. 6, 1952	9.63	30,000
	June 24, 1952	12.45	42,900
1953	Apr. 1, 1953	9.95	31,600
	June 15, 1953	9.71	30,300
1954	June 29, 1954	16.14	60,800
	Sept. 2, 1954	8.66	25,800
1955	Oct. 10, 1954	7.57	22,100
1956	Aug. 10, 1956	4.46	11,600
1957	June 21, 1957	7.44	21,300
1958	July 5, 1958	10.50	33,800
1959	Mar. 21, 1959	8.63	25,800
	Mar. 28, 1959	8.66	26,200
	May 24, 1959	10.60	34,300
	June 1, 1959	12.08	41,400
	July 3, 1959	9.58	29,900
1960	Jan. 15, 1960	12.0	40,900
	Apr. 2, 1960	18.34	73,800
	May 7, 1960	16.15	62,400
	May 25, 1960	11.56	39,000
1961	Feb. 19, 1961	10.57	34,300
	Mar. 8, 1961	9.82	30,800
	Mar. 16, 1961	10.18	32,500
	Apr. 4, 1961	10.83	35,200
	Sept. 19, 1961	10.95	36,100

5-4905. Des Moines River at Keosauqua, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Nov. 3, 1961	10.94	35,600
	Nov. 16, 1961	12.56	43,900
1962	Mar. 22, 1962	12.62	43,900
	Apr. 7, 1962	14.10	51,400
	May 8, 1962	9.16	28,200
	May 31, 1962	8.88	27,000
	June 13, 1962	12.82	44,900
1963	Mar. 19, 1963	7.97	23,500
	May 1, 1963	7.97	23,500
1964	June 25, 1964	8.86	27,000
1965	May 17, 1965	^b 13.60	^a 39,000
	Apr. 12, 1965	19.36	79,800
	Apr. 26, 1965	10.30	33,000
	June 6, 1965	8.45	25,300
	Sept. 21, 1965	14.28	50,800

a About

b Affected by ice

c Maximum for period April to September 1910

d Maximum for period October to December 1910 and August to September 1911

5-4895. Des Moines River at Ottumwa, Iowa
(Published as "at Eldon", 1930-35)

Location.--Lat 41 deg.00 min.40 sec., long 92 deg.24 min.40 sec., in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.25, T.72 N., R.14 W., on right bank 15 ft downstream from Wabash Railroad Bridge at Ottumwa, 6.5 miles upstream from Village Creek, 9.5 miles downstream from South Avery Creek, and at mile 94.1 upstream from mouth.

Drainage area.--13,374 sq mi.

Gage.--Nonrecording prior to Apr. 1, 1935; recording thereafter. Datum of gage is 622.00 ft above mean sea level, datum of 1929. Prior to Sept. 30, 1930, at Market Street Bridge half a mile upstream at datum 0.83 ft higher. Oct. 1, 1930, to Mar. 31, 1935 at Eldon 15 miles downstream at different datum. Apr. 1, 1935, to Oct. 25, 1963 at site 1,100 ft downstream at Vine Street bridge at datum 0.77 ft higher.

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

Remarks.--Base for partial-duration series, 25,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	19.4	^a 140,000
1917	June 10, 1917	16.8	62,200
1918	June 10, 1918	14.0	43,500
	June 25, 1918	11.4	34,400
1919	Mar. 17, 1919	12.4	39,000
	Apr. 26, 1919	11.1	33,000
	May 7, 1919	14.4	45,900
	June 7, 1919	12.3	38,500
	June 12, 1919	9.4	26,100
1920	Mar. 16, 1920	9.4	27,200
	Mar. 26, 1920	12.4	35,700
	Apr. 20, 1920	12.0	34,000
	May 16, 1920	11.0	30,000
	July 16, 1920	10.8	29,200
1921	Sept. 17, 1921	12.2	34,800
1922	May 27, 1922	10.5	28,000

5-4895. Des Moines River at Ottumwa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Mar. 27, 1923	10.3	27,300
1924	Mar. 3, 1924	9.9	25,700
	Mar. 5, 1924	10.0	26,100
	June 28, 1924	12.8	37,600
1925	June 16, 1925	7.0	14,900
1926	June 15, 1926	11.3	31,300
	Sept. 25, 1926	12.5	36,200
1927	Apr. 21, 1927	13.0	38,600
	May 23, 1927	9.9	25,700
1928	Feb. 8, 1928	9.6	24,500
1929	Mar. 17, 1929	14.5	46,700
	Apr. 25, 1929	10.2	26,800
1930	June 16, 1930	10.6	28,400
1931	June 23, 1931	8.09	11,400
1932	Nov. 26, 1931	14.99	35,100
1932	Jan. 3, 1932	11.7	32,600
	Mar. 7, 1932	11.3	31,300
	June 27, 1932	9.8	25,300
	July 10, 1932	9.9	25,700
1933	Apr. 8, 1933	14.68	35,400
1934	Apr. 10, 1934	5.16	5,020
1935	June 4, 1935	10.2	29,200
	June 21, 1935	11.1	33,000
	June 29, 1935	15.45	53,200
	July 5, 1935	14.2	47,400
1936	Mar. 5, 1936	9.50	27,800
1937	Feb. 21, 1937		29,200
	Mar. 6, 1937	14.77	50,300
1938	Sept. 24, 1938	8.82	25,300

5-4895. Des Moines River at Ottumwa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Mar. 14, 1939	12.47	39,800
1940	Aug. 17, 1940	5.57	14,000
1941	June 11, 1941	8.83	22,800
1942	Nov. 3, 1941	9.96	29,000
1942	Jan. 27, 1942	9.7	28,000
1943	May 17, 1943	10.7	32,100
1944	Apr. 24, 1944	11.2	33,500
	May 5, 1944	10.9	32,700
	May 24, 1944	17.5	73,200
	June 11, 1944	12.6	39,200
	June 19, 1944	14.3	46,500
1945	Mar. 19, 1945	12.4	38,400
	Mar. 27, 1945	10.2	30,000
	Apr. 18, 1945	13.44	42,500
	May 17, 1945	13.0	40,900
	May 28, 1945	12.0	37,000
1946	Jan. 8, 1946	14.34	46,600
	Mar. 19, 1946	10.6	31,500
	June 20, 1946	13.8	44,200
	July 17, 1946	12.5	38,300
1947	Apr. 5, 1947	13.1	41,100
	Apr. 13, 1947	11.5	34,400
	Apr. 22, 1947	11.4	33,500
	May 31, 1947	11.4	34,000
	June 7, 1947	^c 20.2	135,000
	June 15, 1947	20.1	130,700
	June 28, 1947	16.6	70,200
1948	Feb. 28, 1948	11.0	31,800
	Mar. 23, 1948	14.74	52,900
1949	Mar. 10, 1949	10.84	31,300
	June 26, 1949	9.3	25,500
1950	Mar. 1, 1950	9.8	26,600
	May 11, 1950	11.68	34,600

5-4895. Des Moines River at Ottumwa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1950	June 20, 1950	10.8	30,600
1951	Apr. 4, 1951	15.15	55,200
	Apr. 14, 1951	13.93	45,400
	Apr. 28, 1951	9.92	27,000
	May 6, 1951	14.07	46,600
	May 27, 1951	11.68	34,600
	June 7, 1951	12.63	38,700
	July 4, 1951	13.15	41,500
1952	Mar. 13, 1952	11.28	32,800
	Apr. 5, 1952	10.28	28,600
	June 23, 1952	13.38	42,500
1953	Apr. 1, 1953	10.04	27,400
	June 14, 1953	10.51	29,400
1954	June 23, 1954	16.89	61,400
	Sept. 1, 1954	9.32	25,100
1955	July 12, 1955	5.79	13,800
1956	Aug. 9, 1956	4.39	9,720
1957	June 18, 1957	8.09	22,000
1958	July 4, 1958	10.86	33,500
	July 20, 1958	8.78	25,100
1959	May 23, 1959	10.76	32,900
	June 1, 1959	12.12	38,600
	July 3, 1959	10.05	29,600
1960	Jan. 14, 1960	11.55	36,300
	Apr. 1, 1960	17.49	70,500
	May 7, 1960	13.12	43,400
	May 27, 1960	12.10	38,600
1961	Feb. 19, 1961	^b 13.70	^a 41,400
	Mar. 8, 1961	9.45	27,200
	Mar. 15, 1961	11.7	34,500
	Apr. 3, 1961	11.75	37,200
	Sept. 15, 1961	10.85	32,900
1962	Nov. 2, 1961	9.85	28,800
	Nov. 18, 1961	11.45	35,400

5-4895. Des Moines River at Ottumwa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Mar. 21, 1962	13.50	45,400
	Apr. 6, 1962	14.47	51,000
	May 8, 1962	8.92	25,300
	May 31, 1962	9.42	27,200
	June 13, 1962	13.30	44,400
1963	May 1, 1963	8.62	22,700
1964	June 24, 1964	9.91	26,200
1965	Mar. 17, 1965	12.63	37,400
	Apr. 11, 1965	18.33	78,600
	Sept. 21, 1965	13.65	37,400

a About

b Affected by ice

c Maximum stage known since at least 1850

5-4816.5 Des Moines River near Saylorville, Iowa

Location.--Lat 41 deg.41 min.50 sec., long 93 deg.40 min.05 sec., near center of sec.5, T.79 N., R.24 W., near center of span on downstream side of highway bridge, 2.0 miles west of Saylorville, 2.0 miles downstream from Rock Creek, 2.2 miles upstream from Beaver Creek, and at mile 211.4 upstream from mouth.

Drainage area.--5,841 sq mi.

Gage.--Nonrecording. Datum of gage is 787.54 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 8,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 24, 1954	^c 24.5	60,000
1962	Apr. 3, 1962	21.10	31,000
	July 8, 1962	14.25	9,690
	July 15, 1962	13.56	8,720
	Sept. 5, 1962	19.10	21,800
1963	May 1, 1963	13.20	8,100
1964	Sept. 15, 1964	13.31	8,250
1965	Apr. 10, 1965	24.02	47,400
	May 29, 1965	18.00	19,100
	June 5, 1965	16.66	15,200
	Sept. 24, 1965	16.48	14,800

c Maximum stage known since at least 1893 from floodmarks.

5-4885. Des Moines River near Tracy, Iowa

Location.--Lat 41 deg. 16 min.55 sec., long 92 deg.51 min.30 sec., in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.19, T.75 N., R.17 W., on right bank 250 ft upstream from abandoned Bellefontaine 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, and at mile 130.4 upstream from mouth.

Drainage area.--12,479 sq mi.

Gage.--Nonrecording prior to June 26, 1940 and from June 30, 1952 to Nov. 4, 1960; recording remainder of time. Datum of gage is 670.91 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 20,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	a25	a130,000
1920	Mar. 16, 1920	13.0	25,900
	Mar. 27, 1920	13.7	28,200
	Apr. 20, 1920	12.5	24,200
	May 14, 1920	15.0	32,800
	July 15, 1920	13.6	27,900
1921	Sept. 17, 1921	13.3	26,900
1922	Apr. 13, 1922	12.4	23,100
	May 27, 1922	13.4	26,600
1923	Mar. 26, 1923	13.3	26,300
1924	Mar. 4, 1924	12.6	23,800
	Mar. 31, 1924	12.0	21,700
	June 27, 1924	16.5	38,200
1925	June 23, 1925	8.7	11,500
1926	June 15, 1926	13.0	25,200
	Sept. 24, 1926	16.3	37,500
1927	Apr. 20, 1927	15.8	35,500
	Apr. 30, 1927	11.7	20,700
	May 24, 1927	11.9	21,400
1928	Aug. 4, 1928	11.4	19,700

5-4885. Des Moines River near Tracy, Iowa--(Continued)

Water year	Peak stages and discharges		
	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 16, 1929	18.6	45,500
1930	June 17, 1930	16.4	33,500
1931	June 22, 1931	9.0	11,800
1932	Nov. 26, 1931	16.5	34,000
1933	Apr. 7, 1933	16.7	35,000
1934	Apr. 9, 1934	5.5	4,950
1935	June 3, 1935	15.4	26,900
	June 20, 1935	15.7	28,000
	June 28, 1935	20.2	54,600
	July 4, 1935	18.6	43,300
1936	Mar. 5, 1936	14.2	23,100
1937	Mar. 5, 1937	17.9	38,900
1938	Sept. 23, 1938	15.2	26,200
1939	Mar. 13, 1939	17.5	36,600
1940	Aug. 15, 1940	9.3	11,600
1941	June 11, 1941	13.8	21,500
1942	Nov. 2, 1941	15.7	28,000
1942	Jan. 26, 1942	13.4	20,900
	May 14, 1942	14.4	23,700
	July 15, 1942	13.2	20,400
	July 20, 1942	13.2	20,400
1943	May 17, 1943	15.7	28,000
	June 13, 1943	13.4	20,900
1944	Apr. 24, 1944	16.1	29,000
	May 4, 1944	16.8	32,200
	May 23, 1944	21.6	75,000
	June 10, 1944	17.3	36,500
	June 13, 1944	17.3	36,500
	June 19, 1944	18.9	46,200

5-4885. Des Moines River near Tracy, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 17, 1945	18.5	39,300
	Mar. 26, 1945	15.8	29,400
	Apr. 5, 1945	13.0	20,000
	Apr. 18, 1945	18.8	41,400
	Apr. 29, 1945	14.5	24,000
	May 16, 1945	16.6	32,000
	May 27, 1945	17.7	37,300
	June 10, 1945	16.4	31,100
	June 21, 1945	14.2	23,200
1946	Jan. 6, 1946	18.8	40,700
	Mar. 17, 1946	15.3	27,000
	Mar. 27, 1946	14.3	23,400
	May 31, 1946	13.6	21,300
	June 20, 1946	17.8	35,400
	Aug. 26, 1946	13.1	20,300
1947	Mar. 13, 1947	13.3	20,800
	Apr. 6, 1947	17.1	33,600
	Apr. 12, 1947	16.6	31,800
	Apr. 21, 1947	16.0	29,500
	May 30, 1947	16.8	32,500
	June 6, 1947	25.8	125,200
	June 14, 1947	^c 26.5	155,000
	June 23, 1947	20.7	66,200
	June 27, 1947	21.5	76,000
1948	Feb. 28, 1948	14.4	25,400
	Mar. 17, 1948	13.7	23,000
	Mar. 22, 1948	20.1	59,700
1949	Mar. 5, 1949	^b 19.6	^a 27,000
	Mar. 9, 1949	15.4	29,300
	June 25, 1949	13.6	22,600
1950	Mar. 1, 1950	16.0	31,700
	May 10, 1950	15.6	30,100
	June 20, 1950	14.9	26,900
1951	Apr. 2, 1951	19.81	56,300
	May 5, 1951	18.74	46,800
	May 26, 1951	15.89	81,300
	June 9, 1951	16.79	35,300
	July 3, 1951	16.87	35,800

5-4885. Des Moines River near Tracy, Iowa--(Continued)

Water year	Peak stages and discharges		Discharge (cfs)
	Date	Gage height (feet)	
1952	Mar. 13, 1952	14.93	27,300
	Mar. 23, 1952	13.23	21,300
	Apr. 4, 1952	15.25	28,500
	May 24, 1952	13.04	20,700
	June 22, 1952	17.40	38,400
	June 29, 1952	13.84	23,300
	July 14, 1952	12.91	20,400
1953	Feb. 21, 1953	12.93	20,100
	Mar. 31, 1953	13.26	21,600
	June 14, 1953	16.19	27,700
1954	June 17, 1954	14.02	23,500
	June 27, 1954	22.14	69,900
	Sept. 1, 1954	14.80	25,900
1955	July 12, 1955	10.63	14,300
1956	Aug. 20, 1956	5.80	4,480
1957	June 20, 1957	13.58	24,100
1958	July 3, 1958	16.64	28,200
	July 7, 1958	16.98	33,100
	July 21, 1958	14.12	22,900
1959	Mar. 20, 1959	13.20	21,300
	Mar. 27, 1959	13.85	22,900
	May 22, 1959	17.00	29,600
	May 31, 1959	17.92	38,900
	July 2, 1959	16.55	32,600
1960	Jan. 14, 1960	16.70	33,100
	Apr. 4, 1960	23.00	75,500
	Apr. 18, 1960	12.50	20,700
	May 7, 1960	17.80	38,400
	May 26, 1960	17.60	37,400
1961	Feb. 19, 1961	^b 15.81	^a 25,000
	Mar. 7, 1961	14.37	23,800
	Mar. 14, 1961	16.89	32,900
	Mar. 23, 1961	13.27	20,200
	Apr. 2, 1961	18.12	38,200
	Apr. 13, 1961	14.10	22,700
	Sept. 14, 1961	14.92	25,500
1962	Nov. 17, 1961	16.98	29,300

5-4885. Des Moines River near Tracy, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Mar. 20, 1962	19.34	42,300
	Apr. 5, 1962	20.69	50,600
	Apr. 21, 1962	13.47	20,800
	May 30, 1962	14.81	25,100
	June 12, 1962	19.68	45,800
	Sept. 8, 1962	14.07	23,800
1963	Mar. 5, 1963	^b 16.00	^a 22,000
	Apr. 30, 1963	13.87	22,100
1964	June 24, 1964	15.63	27,600
1965	Mar. 18, 1965	18.27	39,200
	Apr. 11, 1965	23.17	77,300
	Apr. 26, 1965	15.45	27,400
	May 31, 1965	13.57	21,000
	June 6, 1965	14.82	25,200
	Sept. 22, 1965	16.18	30,000

a About

b Affected by ice

c Maximum stage known since 1851

6-4840. Dry Creek at Hawarden, Iowa

Location.--Lat. 42 deg. 59 min. 45 sec., long. 96 deg. 28 min. 15 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T.94 N., R.48 W., on left bank 6 feet downstream from bridge on State Highway 10 at east edge of Hawarden and 1.7 miles upstream from mouth.

Drainage area.--48.4 sq. mi.

Gage.--Non-recording prior to October 30, 1949; recording thereafter. Datum of gage is 1,170.42 feet above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Stage-discharge relation.--Defined by current-meter measurements below 860 cfs. extended above on basis of contracted opening measurement of peak flow.

Remarks.--Base for partial-duration series 300 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1926	Sept.	1926	18.0	
1934			15.8	
1949	Mar.	5, 1949	13.10	686
1950	Mar.	24, 1950	^b 13.5	^a 500
1951	Mar.	27, 1951	^b 13.83	950
	Mar.	29, 1951	13.28	^c
	Apr.	3, 1951	9.92	319
	June	25, 1951	11.41	509
	July	3, 1951	13.28	850
1952	Mar.	18, 1952	11.0	451
	Mar.	30, 1952	14.14	1,020
	July	7, 1952	12.59	714
	Aug.	28, 1952	11.74	556
1953	June	7, 1953	17.57	10,900
1954	Mar.	18, 1954	11.24	479
	June	10, 1954	11.76	566
	June	19, 1954	12.14	630
1955	Mar.	9, 1955	6.96	81
1956	July	31, 1956	8.09	152
1957	July	4, 1957	12.00	606

6-4840. Dry Creek at Hawarden, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1958	Apr.	6, 1958	5.92	17
1959	May	28, 1959	11.18	376
	May	31, 1959	14.75	1,000
1960	Mar.	28, 1960	15.10	2,430
	Apr.	2, 1960	15.36	3,000
	Apr.	12, 1960	10.32	388
1961	Feb.	23, 1961	^b 13.04	^a 500
	Mar.	14, 1961	10.66	425
1962	Mar.	28, 1962	15.88	2,330
	June	17, 1962	11.33	730
	Aug.	30, 1962	9.07	360
1963	July	5, 1963	6.77	101
1964	May	24, 1964	6.99	123
1965	Apr.	1, 1965	8.80	1,760
	Apr.	6, 1965	8.94	2,000
	June	12, 1965	7.58	542
	June	29, 1965	7.92	810

a About

b Affected by ice

c Unknown

5-4488. East Branch Iowa River near Garner, Iowa

Location.--Near center of sec.25, T.96 N., R.24 W., at bridge on U.S. Highway 18, 0.2 miles west of east junction of Highways 18 and 69, and 1.2 miles west of Garner, Hancock County.

Drainage area.--45.1 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	7.38	352
1953	Mar. 13, 1953	5.55	189
1954	June 18, 1954	12.42	1,040
1955	July 6, 1955	5.14	155
1956		c	
1957	May 30, 1957	7.06	322
1958		c	
1959	May 21, 1959	10.36	709
1960	Mar. 24, 1960	9.69	650
1961	Mar. 26, 1961	12.81	1,120
1962	Aug. 31, 1962	9.30	440
1963	July 19, 1963	9.04	507
1964	Sept. 7, 1964	9.38	491
1965	Apr. 6, 1965	^b 12.89	^a 1,000

a About

b Affected by ice

c Peak stage did not reach bottom of gage

5-4486. East Branch Iowa River above Hayfield, Iowa

Location.--Near south quarter corner sec.4, T.96 N., R.24 W., at bridge, 1.5 miles southeast of Hayfield, Hancock County.

Drainage area.--2.23 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by current-meter measurements below and extended above 150 cfs by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 4, 1953	3.02	24.2
1954	June 19, 1954	7.15	209
1955	July 6, 1955	2.25	10.6
1956	July 2, 1956	2.05	8.0
1957		c	
1958	June 4, 1958	2.65	17.0
1959	May 21, 1959	6.77	186
1960	Mar. 29, 1960	4.67	75
1961	Mar. 26, 1961	70.3	196
1962	Aug. 31, 1962	3.34	31.1
1963	May 13, 1963	4.25	59
1964	Sept. 7, 1964	4.25	58
1965	Apr. 6, 1965	7.31	250

c Peak stage did not reach bottom of gage

5-4487. East Branch Iowa River near Hayfield, Iowa

Location.--NW $\frac{1}{4}$ sec.35, T.97 N., R.24 W., at bridge on County Road "B", 2 miles east of Hayfield, Hancock County.

Drainage area.--7.94 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

State-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)
1952	Mar. 29, 1952	6.45	122
1953	Aug. 4, 1953	7.26	172
1954	June 18, 1954	13.01	457
1955	July 6, 1955	6.50	51
1956	July 31, 1956	6.80	60
1957	June 23, 1957	7.11	69
1958	June 4, 1958	9.52	187
1959	May 21, 1959	11.89	357
1960	Mar. 29, 1960	6.33	34
1961	Mar. 26, 1961	12.16	260
1962	July 5, 1962	9.17	166
1963	July 19, 1963	8.90	173
1964	Sept. 7, 1964	10.73	220
1965	Apr. 6, 1965	^b 13.67	370

b Affected by ice

5-4490. East Branch Iowa River near Klemme, Iowa
(Published as "East Fork Iowa River near Klemme". 1948-58)

Location.--Lat 43 deg.00 min.30 sec., long 93 deg.37 min.35 sec.,
in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T.95 N., R.24 W., on left bank 15 feet down-
stream from highway bridge, 1.0 mile west of Klemme, and 18.2
miles upstream from confluence with West Branch Iowa River, and
at mile 345.3 above mouth of Iowa River.

Drainage area.--133 sq mi.

Gage.--Recording. Datum of gage is 1,179.02 ft above mean sea
level, datum of 1929. Prior to Oct. 1, 1955, nonrecording gage
at site 0.6 mile upstream at datum 1.11 ft higher.

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

Remarks.--Base for partial-duration in series, 700 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1944	June	1944	9.96	2,550
1948	Mar. 15,	1948	4.68	^c 238
1949	Mar. 7,	1949	^b 7.3	^a 685
1950	Mar. 26,	1950	^b 7.02	^a 500
1951	Mar. 29,	1951	^b 8.59	1,000
	Apr. 7,	1951	8.61	1,940
	June 26,	1951	10.80	3,440
1952	Mar. 30,	1952	7.60	900
1953	June 8,	1953	5.70	385
1954	June 19,	1954	^d 11.2	5,960
	June 21,	1954	10.74	4,820
1955	July 5,	1955	5.47	348
1956	Mar. 26,	1956	^b 4.91	^a 150
1957	June 23,	1957	4.75	176
1958	June 4,	1958	6.08	355
1959	May 21,	1959	8.25	1,100

East Branch Iowa River near Klemme, Iowa--(Continued)

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1959	May 31, 1959	8.12	1,020	
1960	Mar. 28, 1960	8.25	1,100	
1961	Mar. 26, 1961	9.40	3,250	
1962	Mar. 30, 1962	^b 9.05	^a 1,600	
	July 5, 1962	8.53	1,420	
	July 20, 1962	8.20	1,090	
	Aug. 31, 1962	8.84	1,830	
1963	July 6, 1963	8.48	950	
	July 20, 1963	8.44	922	
1964	Sept. 9, 1964	8.09	972	
1965	Apr. 8, 1965	9.94	4,090	
	June 6, 1965	7.63	728	
	Sept.19, 1965	9.39	2,080	
	Sept.29, 1965	8.48	1,090	

a About

b Affected by ice

c Maximum for period April to September 1948

d Maximum stage known

5-4489. East Branch Iowa River tributary near Garner, Iowa

Location.--Near center sec.27, T.96 N., R.24 W., at culvert on
U.S. Highway 18, 2.1 miles west of Garner, Hancock County.

Drainage area.--5.98 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary. Gage removed 7-21-58
Reestablished 5-21-59.

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)
1952	Mar. 29, 1952	4.92	83
1953	Mar. 13, 1953	4.36	62
1954	June 17, 1954	6.71	206
1955		c	
1956		c	
1957		c	
1958		c	
1959	May 21, 1959	5.22	167
1960	Mar. 29, 1960	5.22	160
1961	Mar. 26, 1961	7.05	155
1962	Aug. 31, 1962	5.25	78
1963	June 9, 1963	4.51	39
1964	Sept. 7, 1964	5.88	104
1965	Apr. 6, 1965	^b 9.15	^a 170

a About

b Affected by ice

c Peak stage did not reach bottom of gage

5-4780. East Fork Des Moines River near Burt, Iowa

Location.--Lat 43 deg.12 min.35 sec., long 94 deg.10 min.40 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ 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, and 389.7 miles upstream from mouth of Des Moines River.

Drainage area.--462 sq mi.

Gage.--Recording. Datum of gage is 1,114.42 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)
1952	Mar. 22, 1952	10.88	1,260
	Mar. 31, 1952	11.42	1,680
1953	June 13, 1953	10.36	1,060
1954	June 21, 1954	12.67	3,870
1955	Apr. 26, 1955	9.58	670
1956	Aug. 3, 1956	6.71	244
1957	June 1, 1957	7.97	392
1958	June 4, 1958	9.52	365
1959	May 23, 1959	10.13	675
1960	May 22, 1960	11.72	2,120
1961	Mar. 27, 1961	12.05	2,800
1962	Apr. 1, 1962	11.86	2,600
	July 21, 1962	11.02	1,050
	Sept. 1, 1962	11.27	1,310
1963	July 6, 1963	11.72	1,270
	July 22, 1963	11.67	1,720

5-4780. East Fork Des Moines River near Burt, Iowa

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Sept. 9, 1964	11.75	1,650
1965	Apr. 6, 1965	14.21	5,000
	Apr. 9, 1965	13.46	4,930
	May 8, 1965	10.95	1,270

5-4790. East Fork Des Moines River at Dakota City, Iowa
(Published as "Near Hardy", 1940-54)

Location.--Lat 42 deg.43 min.25 sec., long 94 deg.11 min.30 sec., in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.91 N., R.28 W., on right bank 50 ft upstream from old mill dam, in city park at east edge of Dakota City, 500 ft upstream from highway bridge, 0.6 mile downstream from bridge on State Highway 3, 3.4 miles upstream from confluence with West Fork Des Moines River, and 333.8 miles upstream from mouth of 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. Prior to Oct. 1, 1954 nonrecording at site 8 miles upstream at different datum.

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

Remarks.--Flood of June 21, 1954 reached stage of 24.02 ft (discharge 17,400 cfs.) at present site. Base for partial-duration series, 2,200 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sept. 1938	17.4	^a 22,000
1940	Aug. 30, 1940	4.8	608
1941	June 15, 1941	9.7	2,300
1942	Nov. 7, 1941	11.39	3,580
1943	July 7, 1943	9.72	2,360
1944	May 23, 1944	12.6	4,680
	June 14, 1944	14.6	9,200
1945	Mar. 11, 1945	10.3	2,720
	Mar. 17, 1945	10.9	3,140
	Apr. 17, 1945	9.6	2,300
	Apr. 23, 1945	10.0	2,520
	May 22, 1945	10.7	3,000
	June 16, 1945	10.7	3,000
	Aug. 15, 1945	13.7	6,820
1946	May 24, 1946	13.36	6,160

5-4790. East Fork Des Moines River at Dakota City, Iowa-(Con't)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 12, 1947	10.0	2,520
	May 17, 1947	9.4	2,200
	June 23, 1947	15.4	11,800
1948	Feb. 28, 1948	^b 12.6	3,860
	Mar. 18, 1948	10.5	3,000
1949	Mar. 6, 1949	^b 12.6	3,000
	Apr. 1, 1949	11.1	3,290
1950	July 19, 1950	9.6	2,300
1951	Mar. 29, 1951	12.36	4,700
	Apr. 9, 1951	14.95	10,800
	July 1, 1951	12.96	5,600
1952	Apr. 2, 1952	13.00	5,600
	July 8, 1952	10.04	2,540
1953	Aug. 5, 1953	8.96	2,000
1954	June 21, 1954	16.95	18,800
1955	June 9, 1955	11.23	1,640
1956	Mar. 27, 1956	9.60	1,640
1957	May 30, 1957	10.31	1,060
1958	July 14, 1958	10.78	1,360
1959	May 22, 1959	16.97	6,860
1960	Mar. 29, 1960	^b 17.49	^a 4,300
	May 26, 1960	14.28	4,130
1961	Mar. 28, 1961	19.12	9,440
1962	Apr. 1, 1962	20.48	11,400
	Sept. 2, 1962	15.54	5,260
1963	July 9, 1963	14.83	4,580
	July 25, 1963	12.57	2,740

5-4790. East Fork Des Moines River at Dakota City, Iowa-(Con't)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Sept.13, 1964	14.03	3,780
	Sept.26, 1964	12.43	2,520
1965	Apr. 9, 1965	23.13	15,700
	May 26, 1965	12.09	2,370

a About

b Affected by ice

5-4830. East Fork Hardin Creek near Churdan, Iowa

Location.--Lat 42 deg.06 min.25 sec., long 94 deg.22 min.10 sec., in SE $\frac{1}{4}$ SW $\frac{1}{4}$ 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. 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 above by logarithmic plotting.

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

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	July 14, 1952	4.33	79
1953	June 10, 1953	5.17	105
1954	Aug. 26, 1954	7.73	329
1955	Oct. 13, 1954	6.15	224
1955	July 10, 1955	6.60	252
1956	May 13, 1956	4.42	112
1957	June 14, 1957	6.57	216
	June 16, 1957	8.82	371
1958	July 19, 1958	6.10	186
1959	May 31, 1959	7.36	288
1960	Mar. 29, 1960	^b 7.63	^a 300
	Apr. 24, 1960	8.04	350
	May 5, 1960	8.92	413
	May 25, 1960	6.30	231
1961	Feb. 22, 1961	^b 5.41	^a 150
1962	Mar. 25, 1962	6.06	231
	July 14, 1962	7.46	315
1963	Apr. 29, 1963	7.78	^a 300

5-4830. East Fork Hardin Creek near Churdan, Iowa

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 13, 1964	5.36	172
1965	Mar. 31, 1965	^b 8.28	^a 300
	Apr. 5, 1965	6.13	214

a About

b Affected by ice

6-8092.1 East Nishnabotna River near Atlantic, Iowa

Location.--Lat 41 deg. 22 min. 30 sec., long 95 deg. 04 min. 00 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.23, T.76 N., R.37 W., on downstream side of bridge on county road, 3.4 miles southwest of junction of State Highways 83 and 6 in Atlantic and 3.9 miles upstream from Turkey Creek.

Drainage area.--432 sq mi.

Gage.--Recording. Datum of gage is 1,110.83 ft above mean sea level (State Highway Commission benchmark).

Stage-discharge relation.--Defined by current-water measurements below 4,000 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Feb. 22, 1961	13.08	4,120
	Mar. 14, 1961	12.85	3,800
1962	Mar. 23, 1962	12.90	6,270
	May 26, 1962	11.30	3,970
	May 29, 1962	14.34	8,310
	June 10, 1962	12.32	4,980
1963	Mar. 11, 1963	11.50	4,090
1964	Apr. 2, 1964	13.24	6,720
	Apr. 13, 1964	12.61	6,270
	May 26, 1964	14.90	8,980
	June 20, 1964	17.10	13,000
	June 22, 1964	18.16	15,200
	July 3, 1964	12.08	4,720
	July 11, 1964	13.40	6,570
1965	Mar. 1, 1965	20.43	20,500
	Mar. 17, 1965	20.10	19,400
	Mar. 31, 1965	14.24	7,810
	Apr. 5, 1965	16.80	12,300
	June 8, 1965	11.54	4,020

6-8095. East Nishnabotna River at Red Oak, Iowa

Location.--Lat 41 deg. 00 min. 55 sec., long 95 deg. 14 min. 15 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.29, T.72 N., R.38 W., on right bank 10 ft downstream from bridge on U.S. Highway 34, 0.5 mile west of Red Oak, and 0.9 mile upstream from Red Oak Creek.

Drainage area.--894 sq mi.

Gage.--Recording. Datum of gage is 1,010.45 ft above mean sea level unadjusted. Prior to July 5, 1925, nonrecording gage 0.5 mile downstream at datum 0.40 ft lower. May 29, 1936, to Nov. 13, 1952 nonrecording gage at present site and datum with supplementary recording gage in operation above 3.2 ft gage height July 30, 1939, to Nov. 13, 1952.

Stage-discharge relation.--Defined by current-meter measurements below 14,000 cfs and extended above on basis of an overflow profile and extended channel rating.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1917	June	7, 1917	21.7	23,500
1918	May	29, 1918	13.6	3,740
1919	June	13, 1919	13.1	3,300
1920	Apr.	21, 1920	12.6	2,920
1921	Sept.	21, 1921	12.4	2,800
1922	Sept.	2, 1922	13.6	3,740
1923	Sept.	29, 1923	12.2	2,700
1924	June	9, 1924	16.5	6,800
	June	26, 1924	18.2	10,000
1925	June	25, 1925	10.0	1,850
1936	Sept.	16, 1936	14.8	3,800
1937	Feb.	19, 1937	15.7	4,800
	Mar.	4, 1937	18.6	9,600
1938	Sept.	14, 1938	14.9	3,810
1939	Aug.	12, 1939	18.2	9,070
1940	Aug.	13, 1940	15.83	5,000

6-8095. East Nishnabotna River at Red Oak, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1941	June 4, 1941	15.5	4,580
	June 10, 1941	15.4	4,550
1942	May 12, 1942	15.9	5,100
	June 29, 1942	16.1	5,300
	July 20, 1942	18.4	8,100
1943	Feb. 4, 1943	17.9	8,610
	May 16, 1943	16.8	6,810
1944	May 22, 1944	17.7	8,200
	June 14, 1944	16.0	5,900
	Aug. 2, 1944	17.9	8,500
1945	Mar. 11, 1945	15.5	5,400
	Apr. 24, 1945	16.5	6,400
	May 15, 1945	17.6	8,000
	May 23, 1945	20.5	16,100
	May 28, 1945	15.8	8,000
	June 1, 1945	17.0	9,800
	June 7, 1945	17.2	10,100
	June 16, 1945	14.5	6,300
1946	Jan. 6, 1946	^b 16.4	6,400
	Feb. 6, 1946	18.2	12,000
	Mar. 6, 1946	13.5	5,350
	Mar. 13, 1946	12.9	4,850
	May 3, 1946	12.6	4,600
	June 18, 1946	14.3	6,090
	Aug. 26, 1946	18.2	12,000
	Oct. 18, 1946	14.3	6,800
1947	Oct. 1, 1946	13.8	5,000
1947	Apr. 11, 1947	16.1	8,900
	May 15, 1947	12.5	5,150
	June 2, 1947	19.0	13,900
	June 5, 1947	18.7	13,400
	June 13, 1947	23.2	36,200
	June 18, 1947	12.1	7,100
	June 23, 1947	19.6	15,800
1948	Feb. 28, 1948	15.8	12,400
	Mar. 19, 1948	18.9	18,400
	July 21, 1948	12.0	7,000
	July 28, 1948	10.3	5,200

6-8095. East Nishnabotna River at Red Oak, Iowa--continued

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1949	Mar. 5, 1949	17.7	15,800	
	Mar. 22, 1949	9.8	4,720	
	June 2, 1949	9.6	4,540	
	July 20, 1949	9.8	4,720	
1950	Feb. 9, 1950	10.5	6,550	
	Feb. 28, 1950	11.8	8,580	
	May 9, 1950	11.2	7,620	
	June 18, 1950	11.4	7,940	
1951	Mar. 29, 1951	14.31	10,700	
	Apr. 25, 1951	9.55	4,850	
	May 1, 1951	16.97	15,200	
	June 2, 1951	14.1	10,400	
	June 8, 1951	13.7	9,920	
	July 3, 1951	14.9	11,600	
	Aug. 20, 1951	10.9	6,190	
1952	Mar. 11, 1952	10.56	5,860	
	Mar. 31, 1952	11.58	7,020	
	June 22, 1952	15.53	12,600	
	June 27, 1952	13.54	9,500	
	July 3, 1952	9.95	5,250	
	July 7, 1952	11.28	6,660	
	Aug. 15, 1952	10.22	5,450	
	Aug. 29, 1952	12.58	8,280	
1953	June 10, 1953	7.77	3,250	
1954	Aug. 23, 1954	14.08	10,400	
1955	Mar. 3, 1955	13.58	9,640	
	Apr. 24, 1955	10.19	5,450	
1956	Sept. 5, 1956	12.57	7,630	
1957	May 30, 1957	11.35	6,780	
	June 17, 1957	15.12	11,800	
1958	Feb. 24, 1958	^b 12.17	7,710	
	July 3, 1958	22.27	35,600	
	July 19, 1958	13.20	9,700	
	Aug. 1, 1958	10.30	5,960	
	Sept. 7, 1958	18.58	19,900	

6-8095. East Nishnabotna River at Red Oak, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Feb. 27, 1959	^b 9.25	^a 4,800
	May 3, 1959	10.35	6,080
	May 29, 1959	15.14	12,700
1960	Mar. 30, 1960	16.40	15,100
	May 25, 1960	9.25	5,000
1961	Feb. 23, 1961	10.88	6,880
	Mar. 15, 1961	12.25	8,510
1962	Mar. 23, 1962	12.00	9,460
	May 29, 1962	15.28	13,000
	June 9, 1962	11.61	7,730
1963	Mar. 11, 1963	10.90	8,920
1964	Apr. 2, 1964	10.87	10,700
	Apr. 13, 1964	10.38	9,700
	May 26, 1964	14.43	11,600
	June 20, 1964	15.00	13,200
	June 23, 1964	15.96	14,300
	July 3, 1964	9.33	5,000
	July 11, 1964	12.77	9,320
1965	Mar. 2, 1965	19.40	22,200
	Mar. 17, 1965	17.01	16,300
	Apr. 1, 1965	11.94	8,170
	Apr. 5, 1965	14.96	12,400
	June 29, 1965	11.42	7,500

a About

b Affected by ice

6-8191.9 East Fork One Hundred and Two River near Bedford, Iowa

Location.--Lat. 40 deg. 38 min. 00 sec., long. 94 deg. 44 min. 55 sec., in NE¹/₄NE¹/₄ sec. 9, T.67 N., R.34 W., on left bank on downstream side of County highway bridge, a quarter of a mile upstream from Daugherty Creek and 2.8 miles southwest of junction at U.S. Highways 2 and 148 in Bedford.

Drainage area.--92.1 sq. mi.

Gage.--Recording. Datum of gage is 1,062.51 feet above mean sea level (levels by Crops of Engineers).

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Jan. 12, 1960	15.95	5,400
	Mar. 29, 1960	14.50	3,120
	June 30, 1960	14.29	4,120
	Aug. 25, 1960	11.11	2,140
	Aug. 29, 1960	11.81	2,530
1961	Mar. 13, 1961	11.00	2,240
	Mar. 27, 1961	12.20	2,760
1962	Oct. 12, 1961	11.04	2,240
	Nov. 16, 1961	11.29	2,360
1963	April 29, 1963	9.46	2,230
1964	May 8, 1964	9.53	2,330
	June 21, 1964	11.16	3,180
	Sept. 6, 1964	11.75	3,490
1965	June 4, 1965	8.98	2,300
	June 8, 1965	12.20	4,330
	July 1, 1965	9.40	2,540
	Sept. 21, 1965	9.08	2,670

6-8118. East Tarkio Creek near Stanton, Iowa

Location.--W $\frac{1}{2}$ sec.34, T.73 N., R.37 W., at bridge, 7 miles north of Stanton, Montgomery County.

Drainage area.--4.66 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	June	22, 1952	6.49	234
1953	June	9, 1953	5.26	136
1954	Aug.	23, 1954	5.41	146
1955	Mar.	2, 1955	7.21	313
1956	July	7, 1956	7.56	357
1957	May	15, 1957	6.07	196
1958	Aug.	28, 1958	12.21	1,960
1959	May	19, 1959	9.08	588
1960	June	30, 1960	11.94	1,750
1961			c	
1962	May	28, 1962	8.81	542
1963			c	
1964	June	22, 1964	9.62	695
1965	June	8, 1965	9.41	652

c Peak stage did not reach bottom of gage

5-4555. English River at Kalona, Iowa

Location.--Lat 41 deg.28 min.10 sec., long 91 deg.43 min.00 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ 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, 4.5 miles downstream from Smith Creek, 13.3 miles upstream from mouth, and 67.0 miles above mouth of Iowa River.

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.

Remarks.--Base for partial-duration series, 2,800 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 30, 1930	19.9	18,500
1940	Mar. 19, 1940	7.35	1,400
1941	July 2, 1941	10.0	2,490
1942	Nov. 2, 1941	11.8	3,340
1943	Feb. 5, 1943	^b 13.8	3,960
	May 1, 1943	11.1	3,000
	May 17, 1943	12.8	4,030
	Aug. 5, 1943	18.11	10,700
1944	Apr. 16, 1944	11.9	3,660
	Apr. 23, 1944	15.3	6,070
	May 22, 1944	15.9	6,810
	May 27, 1944	13.8	4,730
	June 17, 1944	13.2	4,290
1945	Apr. 17, 1945	11.7	3,720
	May 16, 1945	12.8	4,300
	May 18, 1945	11.9	3,790
	June 1, 1945	11.5	3,530
	June 12, 1945	12.7	4,280
1946	Jan. 7, 1946	19.74	16,400
	Mar. 18, 1946	11.3	3,530
	May 5, 1946	13.2	4,860
	June 20, 1946	15.3	6,400

English River at Kalona, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Mar. 13, 1947	10.4	2,860
	Apr. 6, 1947	16.6	7,900
	Apr. 11, 1947	12.3	3,950
	Apr. 21, 1947	14.6	5,620
	May 30, 1947	10.8	3,230
	June 3, 1947	13.3	4,830
	June 7, 1947	14.6	5,880
	June 15, 1947	13.4	4,940
	June 23, 1947	11.7	3,790
	July 2, 1947	14.1	5,470
1948	Feb. 29, 1948	15.7	6,680
	Mar. 17, 1948	15.6	6,630
	Mar. 20, 1948	13.9	5,040
	July 22, 1948	12.8	4,290
1949	Jan. 17, 1949	10.2	2,870
	Feb. 26, 1949	^b 15.7	^a 4,000
	Mar. 6, 1949	14.3	5,770
1950	Mar. 7, 1950	16.1	8,550
	June 19, 1950	17.33	9,450
	June 25, 1950	10.6	3,110
1951	Feb. 19, 1951	^b 12.26	^a 3,700
	Mar. 30, 1951	11.84	3,860
	Apr. 8, 1951	11.61	3,740
	May 11, 1951	10.46	3,080
	May 27, 1951	12.70	4,490
	June 26, 1951	11.24	3,500
	July 4, 1951	10.82	3,260
	July 10, 1951	11.06	3,440
	Aug. 26, 1951	14.74	6,130
	Nov. 13, 1951	12.09	3,930
1952	Mar. 12, 1952	15.47	6,840
	Mar. 19, 1952	10.12	2,870
	May 24, 1952	11.02	3,380
	June 21, 1952	10.18	2,920

English River at Kalona, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 21, 1953	14.43	5,860
	Mar. 31, 1953	10.27	2,970
1954	Aug. 27, 1954	8.90	2,270
1955	Oct. 10, 1954	11.35	3,620
1955	Apr. 20, 1955	10.83	3,260
	Apr. 25, 1955	13.4	5,020
1956	Aug. 31, 1956	10.78	2,730
1957	July 15, 1957	9.17	2,000
1958	May 31, 1958	9.75	2,200
1959	Feb. 23, 1959	^b 12.80	^a 3,300
	Feb. 25, 1959	12.23	3,590
	Mar. 21, 1959	17.12	8,960
	Apr. 29, 1959	11.19	3,170
	May 30, 1959	12.54	4,000
	Dec. 27, 1959	11.32	3,030
1960	Jan. 14, 1960	17.59	9,700
	Mar. 31, 1960	19.89	18,500
	May 8, 1960	15.14	6,010
	June 21, 1960	11.94	3,390
	July 10, 1960	11.53	3,150
	July 14, 1960	15.01	5,900
1961	Feb. 23, 1961	11.10	2,910
	Mar. 5, 1961	11.22	2,970
	Mar. 7, 1961	13.69	4,680
	Mar. 14, 1961	15.20	6,120
	Sept. 15, 1961	13.28	4,340
1962	Nov. 4, 1961	15.63	6,560
	Nov. 17, 1961	17.07	8,700
	Nov. 23, 1961	11.24	2,970
1962	Mar. 21, 1962	18.53	12,000
	May 29, 1962	18.80	13,200
1963	Mar. 8, 1963	^b 12.76	^a 3,000

English River at Kalona, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	June 24, 1964	10.73	3,030
1965	Mar. 13, 1965	14.97	5,620
	Apr. 7, 1965	13.80	4,300
	Apr. 25, 1965	17.65	9,300
	July 2, 1965	11.27	3,190
	July 7, 1965	11.40	3,240
	July 10, 1965	16.31	7,020
	Aug. 31, 1965	16.31	6,900
	Sept. 9, 1965	13.60	4,500
	Sept. 21, 1965	21.45	20,000

a About

b Affected by ice

5-4943. Fox River at Bloomfield, Iowa

Location.--Lat 40 deg.46 min.10 sec., long 92 deg.25 min.10 sec., in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.13, T.69 N., R.14 W., on left bank 15 ft downstream from highway bridge 1.25 miles north of Bloomfield, and 8.6 miles downstream from North Fox Creek.

Drainage area.--87.7 sq mi.

Gage.--Recording. 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 above on basis of slope-area measurement of May 6, 1960 flood.

Remarks.--Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1958.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 30, 1953	12.22	1,640
1954	May 28, 1954	9.94	1,060
1955	Apr. 24, 1955	14.57	2,360
1956	July 31, 1956	8.87	827
1957	Apr. 21, 1957	9.26	913
1958	June 12, 1958	17.15	2,930
	July 31, 1958	19.18	3,970
1959	Aug. 5, 1959	21.62	5,660
	Sept. 1, 1959	16.48	3,300
1960	Oct. 5, 1959	20.87	6,130
1960	Mar. 29, 1960	20.71	5,990
	May 6, 1960	24.02	8,600
	May 25, 1960	15.85	2,960
1961	Mar. 13, 1961	10.65	1,160
1962	Nov. 2, 1961	13.98	2,200
	Nov. 16, 1961	19.88	5,430
1963	Mar. 4, 1963	14.59	2,440

5-4943. Fox River at Bloomfield, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 20, 1964	11.98	1,550
1965	Mar. 17, 1965	17.60	3,780
	Apr. 8, 1965	19.67	5,060
	Apr. 11, 1965	16.57	3,180
	Apr. 15, 1965	14.12	2,140
	Sept. 21, 1965	20.75	4,590

5-4945. Fox River at Cantril, Iowa
(Discontinued Sept. 1951)

Location.--Lat. 40 deg.39 min.20 sec., long. 92 deg.03 min.30 sec.,
in SW $\frac{1}{4}$ sec.30, T.68 N., R.10 W., on left bank 5 ft downstream
from bridge on State Highway 2, 0.25 mile upstream from Bone
Run, and 1 mile northeast of Cantril.

Drainage area.--161 sq mi.

Gage.--Nonrecording prior to Nov. 8, 1940; recording thereafter.
Datum of gage is 657.98 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			
Water year	Date	Gage height (feet)	Discharge (cfs)
1920		17.9	^a 10,500
1941	June 10, 1941	13.7	3,980
1942	Oct. 9, 1942	15.4	5,220
1943	May 16, 1943	15.4	5,640
	June 11, 1943	15.2	5,460
1944	Apr. 23, 1944	16.9	7,460
1945	May 15, 1945	15.9	5,780
1946	Jan. 5, 1946	^b 15.6	5,430
	June 18, 1946	18.9	16,500
	July 18, 1946	18.7	15,000
1947	Apr. 5, 1947	14.7	4,820
	June 5, 1947	16.0	5,880
	June 6, 1947		4,360
	June 13, 1947	15.4	5,250
1948	Mar. 19, 1948	16.0	5,880
1949	June 24, 1949	11.45	3,270
1950	June 15, 1950	17.4	10,000
	June 19, 1950	15.5	6,380

5-4945. Fox River at Cantril, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1951	June 25, 1951	14.93	5,780
	July 20, 1951	15.82	6,500
	July 22, 1951	14.28	5,160

a About

b Affected by ice

6-6001. Floyd River at Alton, Iowa

Location.--Lat 42 deg. 58 min. 40 sec., long 96 deg. 00 min. 00 sec., in NE $\frac{1}{4}$ sec.11, T.94 N., R.44 W., on left bank at downstream side of Chicago and North Western Railway Co., bridge at east edge of Alton, 29 miles upstream from confluence with West Branch Floyd River and at mile 51.6 upstream from mouth.

Drainage area.--265 sq mi.

Gage.--Recording. Datum of gage is 1,269.55 ft above mean sea level, datum of 1929.

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)
1953	June 7 or 8, 1953		^a 45,500
1956	July 11, 1956	9.45	287
1957	July 4, 1957	10.54	440
1958	June 3, 1958	9.82	336
1959	June 1, 1959	12.77	1,130
	Aug. 2, 1959	12.72	1,110
1960	Mar. 28, 1960	17.27	4,150
	Apr. 2, 1960	16.06	2,740
	Aug. 28, 1960	12.12	830
1961	Mar. 3, 1961	^b 15.73	^a 2,100
	Mar. 18, 1961	13.08	1,150
1962	Mar. 28, 1962	18.35	12,200
	June 5, 1962	12.41	930
1963	Mar. 17, 1963	^b 8.80	^a 150
1964	July 11, 1964	10.89	565
1965	Mar. 16, 1965		^c
	Apr. 1, 1965	17.36	5,340

a About

b Affected by ice

c Unknown

6-6005. Floyd River at James, Iowa

Location.--Lat 42 deg. 34 min. 30 sec., long 96 deg. 18 min. 45 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T.90N., R.46W., on right bank at downstream side of highway bridge at James, 9.0 miles upstream from mouth and 13.3 miles downstream from West Branch Floyd River.

Drainage area.--882 sq mi.

Gage.--Nonrecording prior to September 11, 1938, June 9 to November 15, 1953, and October 1, 1955 to May 22, 1957; recording remainder of time. Datum of gage is 1,102.59 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 16,000 cfs and extended above on basis of contracted-opening of flow-over-embankment measurement of peak flow.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1935	June 28, 1935	15.2	1,460
1936	Mar. 10, 1936	^b 18.1	4,050
1937	May 27, 1937	17.2	3,570
1938	Sept. 15, 1938	16.5	2,060
1939	Mar. 12, 1939	^b 16.1	1,300
1940	June 5, 1940	15.4	1,390
1941	Mar. 11, 1944	16.2	1,720
1942	June 4, 1942	18.8	6,280
1943	June 17, 1943	15.2	1,360
1944	Feb. 27, 1944	17.4	3,600
	May 13, 1944	18.8	7,440
	June 13, 1944	18.1	5,150
	July 7, 1944	17.7	4,350
	July 12, 1944	17.2	3,320
1945	Mar. 12, 1945	18.4	5,320
1946	Mar. 1, 1946	15.3	1,400

6-6005. Floyd River at James, Iowa--continued

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1947	June 25, 1947	17.8	3,240	
1948	Mar. 17, 1948	17.1	2,710	
1949	Mar. 5, 1949	18.1	4,520	
	Sept. 12, 1949	18.1	2,720	
1950	June 19, 1950	19.2	4,840	
1951	Mar. 28, 1951	19.94	8,320	
	Apr. 5, 1951	18.55	5,380	
	May 3, 1951	17.37	3,520	
	May 20, 1951	17.10	2,520	
	June 19, 1951	17.65	3,040	
	June 29, 1951	17.76	3,160	
	July 5, 1951	19.95	5,980	
	Aug. 15, 1951	19.35	5,020	
	Sept. 12, 1951	19.98	6,180	
1952	Feb. 14, 1952	18.15	4,300	
	Mar. 13, 1952	17.49	3,290	
	Mar. 20, 1952	18.58	5,240	
	Mar. 31, 1952	20.32	13,900	
	July 7, 1952	19.12	4,700	
1953	June 8, 1953	25.30	71,500	
1954	Mar. 19, 1954	18.61	4,800	
	June 22, 1954	19.88	6,250	
1955	July 10, 1955	16.25	2,260	
1956	July 13, 1956	8.60	318	
1957	July 5, 1957	13.83	1,330	
1958	May 31, 1958	13.12	970	
1959	June 1, 1959	17.59	1,920	
1960	Mar. 29, 1960	21.93	15,100	
	Apr. 2, 1960	20.83	9,480	
	May 22, 1960	17.22	2,710	

6-6005. Floyd River at James, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1961	Mar.	2, 1961	18.00	2,870
1962	Mar.	29, 1962	22.41	20,600
1963	June	2, 1963	18.33	3,810
1964	Sept.	9, 1964	11.66	726
1965	Mar.	16, 1965		^c
	Apr.	2, 1965	20.20	7,500

b Affected by ice

c Unknown

5-4641.37 Four Mile Creek near Traer, Iowa

Location.--Lat 42 deg.12 min.05 sec., long 92 deg.33 min.45 sec., near center of sec.2, T.85N., R.15 W., on left bank 10 ft downstream from highway bridge, 2 miles upstream from mouth and 5 miles west of Traer.

Drainage area.--19.5 sq mi.

Gage.--Recording. Datum of gage is 905.87 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			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	July 18, 1963	11.24	287
1964	Apr. 2, 1964	9.48	157
1965	Mar. 1, 1965	11.91	600
	Apr. 5, 1965	11.92	555
	July 9, 1965	11.59	456

5-4641.33 Half Mile Creek near Gladbrook, Iowa

Location.--Lat 42 deg.12 min.40 sec., long 92 deg.36 min.40 sec.,
in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.86 N., R.15 W., on right bank 10 ft down-
stream from highway bridge, 3/4 mile upstream from mouth, and
7 miles northeast of Gladbrook.

Drainage area.--1.33 sq mi.

Gage.-- Recording. Datum of gage is 948.16 ft above mean sea level,
datum of 1929.

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)
1963	July 18, 1963	6.84	126
1964	Apr. 2, 1964	5.61	55.7
1965	July 9, 1965	9.24	307

5-4828. Happy Run at Churdan, Iowa

Location.--Near southwest corner sec.17, T.85 N., R.31 W.,
at bridge near west city limits of Churdan, Greene County.

Drainage area.--7.58 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by current-meter measurements
and logarithmic extension above 100 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 19, 1952	6.25	54
1953		c	
1954	Aug. 26, 1954	7.87	116
1955	July 10, 1955	7.80	113
1956		c	
1957	June 17, 1957	7.81	71
1958		c	
1959	June 1, 1959	7.70	77
1960	May 6, 1960	6.50	48
1961	Sept.30, 1961	6.42	46
1962	Mar. 25, 1962	8.57	150
1963		c	
1964	Apr. 13, 1964	7.27	61
1965	Sept.27, 1965	7.77	80

c Peak stage did not reach bottom of gage

5-4826. Hardin Creek at Farnhamville, Iowa

Location.--Near northeast corner sec.14, T.86 N., R.31.W., at bridge on State Highway 175 near west city limits of Farnhamville, Calhoun County.

Drainage area.--43.7 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	8.09	318
1953	July 14, 1953	8.44	429
1954	Aug. 26, 1954	10.48	2,000
1955	Mar. 11, 1955	8.76	557
1956	Mar. 21, 1956	6.78	118
1957	June 16, 1957	7.90	270
1958	June 7, 1958	7.69	225
1959	June 1, 1959	9.06	700
1960	Mar. 29, 1960	9.75	840
1961	Sept. 30, 1961	7.91	272
1962	July 14, 1962	9.20	812
1963	May 13, 1963	9.55	995
1964	Apr. 13, 1964	8.54	466
1965	May 26, 1965	9.78	1,110

5-4829. Hardin Creek near Farlin, Iowa

Location.--Near north quarter corner sec.14, T.84 N., R.31 W.,
at bridge, 1.5 miles northeast of Farlin, Greene County.

Drainage area.--101 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	Mar. 29, 1951	12.97	2,270
1952	Mar. 29, 1952	9.11	472
1953	July 14, 1953	7.96	300
1954	Aug. 27, 1954	12.57	1,810
1955	July 10, 1955	10.03	631
1956		c	
1957	June 17, 1957	10.59	743
1958		c	
1959	June 1, 1959	11.40	980
1960	Mar. 29, 1960	13.32	1,960
1961	Mar. 27, 1961	8.86	324
1962	Mar. 26, 1962	12.48	2,000
1963	May 13, 1963	10.87	930
1964	Apr. 13, 1964	9.39	615
1965	Sept. 27, 1965	9.79	703

c Peak stage did not reach bottom of gage

5-4209.6 Harter Creek near Independence, Iowa

(Discontinued September 30, 1963)

Location.--Near south quarter corner sec.22 T.89 N., R.9 W., at bridge, 0.2 mile west of State Highway 150, 2 miles north of Independence, Buchanan County.

Drainage area.--6.17 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 10, 1952	6.31	162
1953	Feb. 20, 1953	7.43	420
1954	Apr. 30, 1954	6.74	238
1955	Feb. 20, 1955	5.67	90
1956		c	
1957	June 17, 1957	8.18	750
1958	Feb. 28, 1958	5.51	77
1959	Mar. 26, 1959	9.17	1,450
1960	May 7, 1960	8.35	842
1961	Aug. 7, 1961	8.07	695
1962	May 5, 1962	9.96	2,280
1963	Mar. 18, 1963	6.91	275

c Peak stage did not reach bottom of gage

6-9035 Honey Creek near Russell, Iowa
(Discontinued September 30, 1962)

Location.--Lat 40 deg. 55 min. 25 sec., long 93 deg. 07 min. 55 sec., in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.26, T.71 N., R.20 W., on left bank 15 ft downstream from highway bridge, 0.7 mile upstream from Chariton River, and 5.5 miles southeast of Russell.

Drainage area.--13.2 sq mi.

Gage.--Recording. Datum of gage is 901.73 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Stage-discharge relation--Defined by current meter measurements below 40 cfs and extended above on basis of contracted-opening and flow over road measurement of peak flow.

Remarks.--Base for partial-duration series, 250 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1952	June 21, 1952	9.86	^c 586
1953	Mar. 30, 1953	8.37	388
	June 10, 1953	7.32	265
1954	Apr. 26, 1954	7.10	245
1955	Feb. 19, 1955	6.27	170
1956	July 31, 1956	7.34	265
1957	Apr. 22, 1957	7.17	263
	May 21, 1957	7.11	254
1958	Feb. 24, 1958	7.20	273
	July 2, 1958	8.86	638
	July 4, 1958	8.32	418
	July 30, 1958	8.84	394
	Sept. 23, 1958	7.12	264
1959	Mar. 19, 1959	^b 8.19	^a 470
	Mar. 26, 1959	^b 7.97	^a 400
	Apr. 1, 1959	8.48	669
	Apr. 20, 1959	^d 8.40	^a 450
	Apr. 27, 1959	7.26	296
	May 21, 1959	11.26	4,100
	May 30, 1959	8.89	645
	Sept. 27, 1959	7.06	270

6-9035. Honey Creek near Russell, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1960	Dec.	28, 1959	d 7.49	a 260
	Jan.	12, 1960	8.51	669
	Mar.	28, 1960	9.16	1,080
	Apr.	16, 1960	8.92	900
	May	6, 1960	9.33	1,260
	May	16, 1960	d 7.57	a 1,000
	May	20, 1960	7.51	340
	May	24, 1960	7.28	303
1961	Feb.	18, 1961	d 8.30	a 450
	Mar.	6, 1961	9.51	1,390
	Mar.	13, 1961	d 8.58	a 450
	Mar.	27, 1961	d 7.97	448
	Sept.	13, 1961	d 9.88	a 1,000
	Sept.	30, 1961	d 8.00	a 400
1962	Nov.	2, 1961	d 9.66	a 1,000
	Nov.	13, 1961	7.68	382
	Nov.	16, 1961	d 9.55	a 1,100
	May	29, 1962	d 8.18	a 300
	June	11, 1962	7.27	296

- a About
 b Affected by ice
 c Maximum for period June to September
 d Backwater from Chariton River

6-6105. Indian Creek at Council Bluffs, Iowa

Location.--Lat. 41 deg. 17 min. 40 sec., long 95 deg. 49 min. 55 sec., in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.18, T. 75N., R.43 W., on downstream side of left pile bent of bridge on Mud Hollow Road at north edge of Council Bluffs, 8.8 miles upstream from mouth.

Drainage area.--7.99 sq mi.

Gage--Recording. Datum of gage is 1,038.86 ft above mean sea level (city of Council Bluffs benchmark). Prior to Apr. 12, 1955, nonrecording gage at site a quarter of a mile downstream at different datum.

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)
1955	July	8, 1955	9.16	543
1956	July	7, 1956	10.21	769
	July	13, 1956	9.86	718
1957	June	7, 1957	10.15	943
	June	15, 1957	13.79	2,050
1958	July	29, 1958	14.16	2,200
1959	May	2, 1959	14.08	2,160
	May	9, 1959	9.75	845
	May	18, 1959	10.92	1,120
	July	17, 1959	11.27	1,230
	Aug.	2, 1959	11.50	1,290
	Aug.	22, 1959	9.37	753
1960	May	24, 1960	10.18	943
	June	20, 1960	10.62	1,050
	Aug.	5, 1960	9.76	845
1961	May	30, 1961	6.65	302
1962	July	21, 1962	8.50	570
1963	June	6, 1963	3.65	56
1964	May	26, 1964	7.57	422
1965	Sept.	7, 1965	15.36	2,980

5-4712. Indian Creek near Mingo, Iowa

Location.--Lat 41 deg.48 min.20 sec., long 93 deg.18 min.25 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.81 N., R.21 W., on right bank 30 ft downstream from bridge on State Highway 117, 0.7 mile downstream from Wolf Creek, 2.2 miles upstream from Byers Branch, and 3 $\frac{3}{4}$ miles northwest of Mingo.

Drainage area.--276 sq mi.

Gage.--Recording. Datum of gage is 810.47 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)
1944	May 20, 1944	21.4	
1958	June 13, 1958	11.50	1,700
	July 3, 1958	12.03	1,920
	July 5, 1958	13.03	^c 2,800
1959	Mar. 20, 1959	13.50	3,400
	Mar. 27, 1959	11.17	1,560
	May 31, 1959	12.85	2,420
1960	Mar. 30, 1960	15.05	5,700
	Apr. 18, 1960	11.56	1,820
	May 7, 1960	15.07	5,860
	July 12, 1960	13.74	3,680
1961	Feb. 18, 1961	12.66	2,520
	Feb. 23, 1961	12.34	2,210
	Aug. 1, 1961	13.20	3,040
1962	Oct. 1, 1961	12.34	2,210
1962	Mar. 26, 1962	12.75	2,600
	May 8, 1962	13.91	3,960
	May 29, 1962	13.28	3,160
	July 15, 1962	11.79	1,920
1963	May 12, 1963	13.45	3,280
1964	June 23, 1964	14.32	3,680
	July 11, 1964	12.30	2,080

5-4712. Indian Creek near Mingo, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Feb. 20, 1965	^b 13.00	^a 2,000
	Mar. 17, 1965	13.42	3,000
	Apr. 1, 1965	13.80	3,820
	Apr. 6, 1965	14.32	4,610
	Apr. 24, 1965	10.97	1,550

a About

b Affected by ice

c Maximum for period May to September, 1958

5-4525. Iowa River near Belle Plaine, Iowa
(Discontinued Sept. 30, 1959)

Location.--Lat 41 deg.51 min.20 sec., long 92 deg.14 min.20 sec.,
in NW $\frac{1}{4}$ sec.5, T.81 N., R 12 W., on right bank 5 ft downstream
from State Highway 212 bridge, 0.5 mile downstream from Walnut
Creek, 2.7 miles south of Belle Plaine and at mile 159.0

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.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 5, 1918	17.9	43,000
1940	Mar. 19, 1940	^b 9.46	2,430
1941	Mar. 22, 1941	^b 12.40	4,280
1942	Nov. 2, 1941	13.0	5,620
1942	June 6, 1942	14.4	9,450
	June 11, 1942	13.2	6,200
	June 16, 1942	12.5	5,100
1943	Feb. 24, 1943	12.8	5,580
	Mar. 16, 1943	13.7	6,890
	May 16, 1943	12.8	5,680
	Aug. 4, 1943	12.7	5,540
1944	May 77, 1944	13.0	5,990
	May 21, 1944	16.9	31,800
	June 16, 1944	16.8	31,600
1945	Mar. 19, 1945	14.1	8,770
	Mar. 28, 1945	12.7	5,390
	Apr. 19, 1945	13.3	6,380
	May 17, 1945	12.5	5,100
	June 6, 1945	13.4	6,560
	June 10, 1945	13.6	7,290
1946	Jan. 6, 1946	16.2	25,000

Iowa River near Belle Plaine, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Feb. 6, 1946	^b 13.6	5,100
	Mar. 17, 1946	13.7	7,390
	Sept. 23, 1946	13.6	7,190
1947	Apr. 11, 1947	13.8	7,590
	Apr. 20, 1947	13.2	6,200
	May 29, 1947	12.6	5,160
	June 2, 1947	16.5	27,600
	June 5, 1947	16.9	32,000
	June 14, 1947	17.1	34,000
	June 24, 1947	15.5	17,900
1948	Feb. 28, 1948	^b 15.1	12,000
	Mar. 17, 1948	14.4	10,400
	Mar. 19, 1948	15.5	18,100
	Mar. 30, 1948	13.1	5,890
1949	Mar. 8, 1949	^c	14,000
1950	Mar. 7, 1950	^b 15.8	18,300
	June 22, 1950	14.1	8,730
	June 25, 1950	14.8	12,600
1951	Feb. 26, 1951	^b 14.33	^a 7,000
	Mar. 2, 1951	13.15	6,200
	Mar. 31, 1951	15.72	20,100
	Apr. 12, 1951	14.06	8,730
	Apr. 28, 1951	12.87	5,650
	May 6, 1951	13.25	6,200
	June 5, 1951	15.24	15,700
	June 22, 1951	12.46	5,060
	July 9, 1951	14.36	10,100
1952	Mar. 14, 1952	14.58	11,300
	Apr. 5, 1952	12.65	5,650
1953	Feb. 21, 1953	^b 13.82	^a 6,500
1954	June 15, 1954	12.86	6,000
	June 20, 1954	13.90	8,010
	June 28, 1954	14.50	10,700
	Aug. 27, 1954	13.79	7,160
	Aug. 31, 1954	14.27	8,350

Iowa River near Belle Plaine, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 11, 1955	11.02	3,600
1956	May 14, 1956	10.37	2,590
1957	May 31, 1957	13.38	5,240
	June 20, 1957	14.21	6,950
	July 7, 1957	13.49	5,400
1958	July 16, 1958	14.45	7,200
	Sept. 4, 1958	13.94	6,080
	Sept. 6, 1958	13.54	5,370
1959	Mar. 3, 1959	13.15	5,210
	Mar. 14, 1959	13.16	5,210
	Mar. 23, 1959	15.37	14,100
	Mar. 27, 1959	15.02	11,300
	Apr. 28, 1959	13.28	5,370
	May 21, 1959	13.48	5,400
	July 1, 1959	12.72	5,370

a About

b Affected by ice

c Maximum gage height 15.58 ft. Mar. 7 (Backwater from ice)

5-4545. Iowa River at Iowa City, Iowa

Location.--Lat 41 deg.39 min.25 sec., long 91 deg.32 min.25 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.9, T.79 N., R.6 W., on right bank 25 ft downstream from Hydraulics Laboratory of State University of Iowa in Iowa City, 175 ft downstream from University Dam, 0.9 mile upstream from Ralston Creek, 3.6 miles downstream from Clear Creek, and at mile 74.2.

Drainage area.--3,271 sq mi.

Gage.--Recording. Datum of gage is 39.00 ft above Iowa City datum and 627.27 ft above mean sea level, datum of 1929. June 1, 1903 to July 21, 1906, nonrecording gage 1,200 ft upstream at datum 3.05 ft higher. Nov. 29, 1907, to Oct. 29, 1913, nonrecording gage 200 ft upstream at different datum. Oct. 30, 1913, to Nov. 18, 1921, nonrecording gage at site 2,600 ft downstream at datum 0.2 ft higher. Nov. 19, 1921 to Sept. 30, 1922, recording gage at present site at datum 1.0 ft higher. Oct. 1, 1930 to Sept. 30, 1934, at present site at Iowa City datum.

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

Remarks.--Flow regulated by Coralville Reservoir since Sept. 17, 1958 (capacity, 492,000 acre-ft). Base for partial-duration series, 6,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1851	June 1851	^a 24.1	70,000
1881	July 17, 1881	21.1	51,000
1903	June 3, 1903	15.0	22,500
1904	Mar. 25, 1904	8.3	9,880
1905	Mar. 24, 1905	6.7	6,830
	May 24, 1905	8.0	8,490
	June 10, 1905	8.8	9,740
1906	Mar. 2, 1906	10.2	11,900
	Apr. 5, 1906	7.6	7,960
1907	July 15, 1907		^c 13,000
1908	June 3, 1908		^c 6,000
1909	July 7, 1909		^c 12,500

Iowa River at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Mar. 9, 1910		^c 12,600
1911	Feb. 17, 1911		^c 17,200
1912	Apr. 4, 1912		^c 20,000
1913	Mar. 24, 1913		^c 7,030
1914	Sept. 15, 1914	10.6	9,620
1915	Feb. 18, 1915		^c 20,000
	Feb. 25, 1915		^c 20,000
	June 4, 1915	10.9	9,470
	July 28, 1915	11.0	9,600
	Aug. 2, 1915	10.8	9,340
	Sept. 29, 1915	12.5	11,600
1916	Mar. 26, 1916	13.5	16,100
1917	Mar. 29, 1917		^c 17,500
	June 16, 1917		^c 17,500
1918	May 27, 1918	12.7	14,200
	June 8, 1918	19.6	42,500
	July 7, 1918	8.7	7,220
1919	Mar. 20, 1919	10.0	9,370
	Apr. 28, 1919	9.2	7,970
	May 7, 1919	12.0	13,800
	June 9, 1919	8.6	7,080
1920	Nov. 13, 1919	8.2	6,570
1920	Mar. 18, 1920	9.4	8,300
	Mar. 26, 1920	9.3	8,130
	Apr. 23, 1920	8.3	6,690
	May 16, 1920	8.2	6,570
1921	Sept. 21, 1921	12.7	15,600
1922	Apr. 11, 1922	6.6	5,880
1923	Apr. 7, 1923	9.7	8,590

Iowa River at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Mar. 10, 1924	8.9	7,670
	June 8, 1924	9.8	8,900
	July 1, 1924	15.3	19,900
	July 24, 1924	9.2	8,060
	July 27, 1924	10.4	9,660
	Aug. 6, 1924	7.6	6,290
	Aug. 22, 1924	7.4	6,000
1925	Mar. 21, 1925	3.44	1,590
1926	Sept. 23, 1926	14.5	17,800
1927	May 13, 1927	8.2	6,900
	May 24, 1927	11.1	10,900
	June 21, 1927	9.2	8,110
1928	Oct. 6, 1927	10.6	10,000
1928	Feb. 14, 1928	9.9	9,120
	Mar. 13, 1928	8.2	6,900
1929	Mar. 16, 1929	16.1	21,900
	Aug. 2, 1929	11.5	11,600
	Aug. 7, 1929	9.3	8,160
1930	Feb. 22, 1930	9.6	8,380
	Feb. 24, 1930	9.2	7,900
	June 15, 1930	13.3	13,600
1931	Sept. 28, 1931	4.1	2,790
1932	Dec. 1, 1931	9.2	7,880
1933	Apr. 10, 1933	10.0	8,700
	May 26, 1933	8.8	7,240
1934	July 17, 1934		2,140
1935	Mar. 11, 1935	9.8	8,710
	June 19, 1935	7.7	6,350
	June 26, 1935	9.3	8,110
	July 4, 1935	9.3	8,110
1936	Mar. 15, 1936	12.0	12,900

Iowa River at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Feb. 23, 1937	13.7	7,380
	Mar. 7, 1937	14.6	17,100
1938	Jan. 24, 1938	^b 6.78	5,000
1939	Mar. 12, 1939	10.4	9,870
	Mar. 16, 1939	9.8	9,090
1940	Mar. 21, 1940	4.2	3,020
1941	Mar. 21, 1941	8.5	7,490
	Sept. 8, 1941	8.5	7,310
1942	Nov. 6, 1941	7.6	6,350
1942	June 13, 1942	8.9	7,800
1943	Mar. 16, 1943	7.8	6,580
	May 20, 1943	7.8	6,580
	June 2, 1943	11.1	10,600
	Aug. 7, 1943	8.2	7,040
1944	Apr. 23, 1944	7.8	6,570
	May 24, 1944	18.0	31,100
	June 19, 1944	16.1	23,500
1945	Mar. 26, 1945	10.3	9,560
	Apr. 23, 1945	7.9	6,690
	May 21, 1945	7.4	6,210
	June 10, 1945	10.3	9,530
1946	Jan. 5, 1946	^b 13.0	10,800
	Jan. 9, 1946	13.3	14,800
	Mar. 20, 1946	9.9	9,040
1947	Apr. 20, 1947	10.4	9,690
	June 8, 1947	17.3	28,100
	June 17, 1947	18.6	33,800
1948	Feb. 28, 1948	10.1	^a 8,200
	Mar. 1, 1948	13.4	11,000
	Mar. 19, 1948	14.5	18,000
1949	Mar. 5, 1949	^b 8.9	^a 6,500
	Mar. 10, 1949	13.0	14,100

Iowa River at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 16, 1950	8.4	7,480
	Mar. 11, 1950	12.8	13,700
	June 27, 1950	10.8	10,500
	July 2, 1950	11.4	11,400
1951	Mar. 5, 1951	^b 9.45	^a 8,000
	Apr. 3, 1951	13.70	15,700
	Apr. 15, 1951	10.53	10,200
	May 11, 1951	9.19	8,460
	June 8, 1951	11.98	12,300
	July 12, 1951	10.01	9,500
1952	Mar. 17, 1952	10.70	10,400
1953	Feb. 20, 1953	11.85	11,900
1954	July 3, 1954	8.31	7,690
	Sept. 5, 1954	7.17	6,340
1955	Apr. 24, 1955	5.65	4,600
1956	Aug. 31, 1956	3.95	3,100
1957	June 25, 1957	5.70	4,700
1958	Sept. 7, 1958	5.95	5,000
1959	Apr. 14, 1959	10.40	^d 9,380
1960	Apr. 16, 1960	11.28	^d 10,700
1961	Mar. 13, 1961	10.73	^d 9,940
1962	July 14, 1962	12.35	^d 12,300
1963	Mar. 20, 1963	9.18	^d 8,220
1964	June 27, 1964	3.74	^d 3,000
1965	Apr. 24, 1965	11.74	^d 11,100

a About

b Affected by ice

c Estimated from power-plant records

d Regulated flow

5-4557. Iowa River near Lone Tree, Iowa

Location.--Lat 41 deg.25 min.35 sec., long 91 deg.28 min.20 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.6, T.76 N., R.5 W., on left bank 10 ft downstream from county highway bridge, 5 miles southwest of Lone Tree, 6 miles downstream from English River, and at mile 47.2.

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.

Remarks.--Flow regulated by Coralville Reservoir (capacity 492,000 acre-ft) since Sept. 17, 1958. Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 25, 1944	19.94	
1957	June 25, 1957	9.14	4,550
1958	Sept. 7, 1958	10.63	6,610
1959	Mar. 21, 1959	15.97	^d 16,600
1960	Apr. 1, 1960	17.90	^d 28,100
1961	Mar. 15, 1961	16.06	^d 17,000
1962	Mar. 21, 1962	17.68	^d 26,600
1963	Mar. 20, 1963	13.18	^d 10,700
1964	June 24, 1964	9.69	^d 5,770
1965	Sept. 22, 1965	20.27	^d 31,200

d Regulated flow

5-4531. Iowa River at Marengo, Iowa

Location.--Lat 41 deg.48 min.35 sec., long 92 deg.04 min.20 sec., in NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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, 4.9 miles upstream from Hilton Creek, and at mile 139.4.

Drainage area.--2,794 sq mi.

Gage.--Recording. Datum of gage is 720.52 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)	Discharge (cfs)
1957	June 22, 1957	14.82	7,060
1958	July 17, 1958	14.77	7,060
	Sept. 4, 1958	16.34	11,000
1959	Mar. 21, 1959	16.62	14,000
	Mar. 24, 1959	16.92	15,400
	May. 21, 1959	14.58	7,390
	July 1, 1959	14.18	6,490
1960	Jan. 14, 1960	16.89	14,000
	Mar. 31, 1960	19.21	30,800
	Apr. 21, 1960	14.44	6,960
	May 10, 1960	16.03	13,500
1961	Feb. 18, 1961	^b 16.80	^a 6,200
	Mar. 8, 1961	16.32	11,500
	Apr. 4, 1961	14.13	6,460
1962	Mar. 20, 1962	16.59	12,700
	Mar. 25, 1962	16.83	15,000
	July 15, 1962	15.58	9,900
	July 20, 1962	16.46	12,300
1963	Mar. 15, 1963	^b 15.10	^a 7,700
	Mar. 19, 1963	13.95	6,600
1964	June 23, 1964	14.08	6,040

Iowa River at Marengo, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Mar. 18, 1965	^b 16.75	7,000
	Apr. 7, 1965	17.84	19,900
	Apr. 25, 1965	15.03	7,770
	Sept. 21, 1965	15.19	8,830

a About

b Affected by ice

5-4515. Iowa River at Marshalltown, Iowa

Location.--Lat 42 deg.04 min.05 sec., long 92 deg.54 min.05 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ 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 bridge on State Highway 14, 2.0 miles upstream from Linn Creek, and at mile 222.6. Records include flow of Burnett Creek.

Drainage area.--1,564 sq mi, including that of Burnett Creek.

Gage.--Recording. Datum of gage is 853.10 ft above mean sea level, datum of 1929. Oct. 25, 1902, to Aug. 8, 1903, non-recording gage at site 1 mile upstream at different datum. May 21, 1915, to Sept. 30, 1927, Feb. 1, 1933, to May 8, 1934, and May 9 to Sept. 1, 1934 nonrecording gage, at site 1,000 ft upstream at present datum. Sept. 2-20, 1934, nonrecording gage at site 1,000 ft downstream at different datum.

Stage-discharge relation.--Defined by current-meter measurements below 19,000 cfs and extended above on basis of velocity-area study.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 29, 1903	6.80	7,760
1915	June 1, 1915	13.8	^c 9,440
1916	Mar. 29, 1916	9.5	3,620
1917	Mar. 27, 1917	14.6	13,000
	June 10, 1917	13.5	9,300
1918	May 25, 1918	12.9	7,750
	June 4, 1918	17.7	42,000
	June 22, 1918	11.2	5,060
1919	Mar. 17, 1919	13.0	7,480
	Apr. 14, 1919	12.2	6,300
1920	Oct. 6, 1919	12.4	6,520
1921	Sept. 17, 1921	13.4	8,500
1922	Feb. 24, 1922	11.7	5,710

Iowa River at Marshalltown, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Apr. 4, 1923	10.5	4,350
1924	June 29, 1924	13.6	9,060
	Aug. 23, 1924	11.4	5,200
1925	June 19, 1925	7.6	2,480
1926	Sept. 19, 1926	13.9	10,000
1927	Feb. 12, 1927	12.2	6,300
	June 9, 1927	13.0	7,610
1929	Mar. 26, 1929	^b 18.0	^a 14,500
	Aug. 3, 1929	15.0	15,500
1930	Apr. 1, 1930	10.6	4,480
1933	Apr. 4, 1933	15.5	17,100
1934	Jan. 24, 1934	6.3	1,400
1935	Mar. 5, 1935	15.7	12,500
	June 26, 1935	13.0	6,960
1936	Mar. 9, 1936	13.6	8,450
1937	Mar. 6, 1937	13.8	9,130
	June 15, 1937	12.7	6,280
1938	May 6, 1938	11.3	4,540
1939	Mar. 13, 1939	13.8	9,080
1940	June 23, 1940	7.9	2,200
1941	Sept. 8, 1941	9.6	2,900
1942	June 3, 1942	15.8	18,100
	June 13, 1942	12.8	5,870
	Sept. 15, 1942	12.1	5,300
1943	Feb. 27, 1943	12.1	4,960
1944	May 3, 1944	12.9	6,090

Iowa River at Marshalltown, Iowa--(Continued)

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1944	May 20, 1944	15.9	18,900	
	June 13, 1944	13.5	6,340	
	June 17, 1944	13.4	6,290	
1945	Mar. 16, 1945	14.1	8,340	
	Apr. 17, 1945	12.4	5,150	
	June 2, 1945	13.9	7,880	
1946	Jan. 6, 1946	^b 15.6	^a 14,300	
	Mar. 13, 1946	13.6	7,050	
1947	June 2, 1947	15.7	14,400	
	June 5, 1947	15.0	11,000	
	June 13, 1947	16.8	20,500	
	June 18, 1947	14.8	10,100	
	June 22, 1947	15.3	11,900	
	July 1, 1947	14.4	8,760	
1948	Feb. 28, 1948	15.8	15,000	
	Mar. 17, 1948	15.0	10,600	
	Mar. 19, 1948	15.2	11,400	
	Mar. 28, 1948	13.8	7,240	
1949	Mar. 5, 1949	14.8	10,000	
1950	Mar. 7, 1950	15.8	14,800	
	June 10, 1950	13.1	5,950	
	June 19, 1950	15.1	11,200	
	June 24, 1950	12.5	5,120	
1951	Feb. 26, 1951	^b 16.05	^a 10,000	
	Mar. 29, 1951	16.13	15,200	
	Apr. 8, 1951	14.20	7,000	
	May 3, 1951	13.60	5,760	
	June 2, 1951	15.95	14,500	
	July 4, 1951	13.93	6,300	
	July 9, 1951	13.15	5,150	
	Aug. 27, 1951	14.10	6,750	
1952	Mar. 11, 1952	13.99	6,500	
1953	Feb. 21, 1953	^b 16.70	^a 7,000	
1954	June 2, 1954	14.21	6,520	

Iowa River at Marshalltown, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 11, 1954	15.21	8,850
	June 16, 1954	16.02	11,200
	June 25, 1954	15.51	9,700
	Aug. 28, 1954	16.09	11,500
1955	Feb. 20, 1955	11.75	3,290
1956	May 13, 1956	9.89	2,160
1957	May 30, 1957	13.93	5,220
	June 16, 1957	15.24	7,800
	July 4, 1957	14.42	6,300
1958	June 13, 1958	14.11	5,550
1959	Mar. 20, 1959	15.48	9,700
	Mar. 27, 1959	15.57	10,000
1960	Mar. 31, 1960	17.51	21,500
	Apr. 18, 1960	14.12	6,340
	May 7, 1960	15.66	10,300
	May 26, 1960	13.77	5,070
1961	Feb. 18, 1961	^b 13.63	^a 5,100
	Feb. 23, 1961	13.95	6,170
	Mar. 7, 1961	13.32	5,070
	Mar. 15, 1961	13.31	5,070
	Mar. 31, 1961	14.81	7,850
	Sept. 30, 1961	13.47	5,370
1962	Mar. 29, 1962	15.90	9,400
	July 15, 1962	16.17	8,560
	July 20, 1962	14.10	5,420
1963	Mar. 16, 1963	12.64	3,890
1964	May 8, 1964	10.40	2,320
1965	Mar. 2, 1965	^b 16.53	^a 9,100
	Apr. 6, 1965	17.63	17,400
	July 9, 1965	13.72	5,490
	Sept. 23, 1965	15.21	6,640

a About

b Affected by ice

c Maximum for period May to September, 1915.

5-4495. Iowa River near Rowan, Iowa

Location.--Lat 42 deg.45 min.35 sec., long 93 deg.37 min.15 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.25, T.92 N., R.24 W., on left bank, 10 ft downstream from highway bridge, 3.8 miles northwest of Rowan, 10.7 miles downstream from confluence of East and West Branches, and at mile 316.4.

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.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1941	June 5, 1941	9.4	1,450
	June 14, 1941	8.8	1,250
1942	Nov. 4, 1941	9.0	1,320
1943	Mar. 27, 1943	8.9	1,280
1944	May 22, 1944	10.3	2,160
	June 14, 1944	12.0	3,840
1945	Mar. 13, 1945	^b 11.8	^a 2,200
	Apr. 14, 1945	8.9	1,360
	Apr. 25, 1945	9.6	1,670
	June 3, 1945	9.5	1,620
	Aug. 15, 1945	11.5	3,120
1946	Jan. 6, 1946	^b 9.26	^a 1,360
	Mar. 14, 1946	9.0	1,400
	May 27, 1946	9.6	1,660
1947	Apr. 13, 1947	9.4	1,580
	June 14, 1947	8.5	1,200
	June 26, 1947	10.0	1,860
	July 2, 1947	10.5	2,170
	July 7, 1947	10.6	2,240
1948	Feb. 29, 1948	^b 10.9	^a 1,940
	Mar. 18, 1948	10.6	2,240

5-4495. Iowa River near Rowan, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 7, 1949	^b 12.02	^a 1,230
	Mar. 28, 1949	9.4	1,580
1950	Mar. 28, 1950	^b 11.06	^a 1,800
1951	Feb. 26, 1951	^b 11.09	^a 2,200
	Mar. 29, 1951	^b 12.78	^a 3,300
	Apr. 7, 1951	12.38	4,230
	May 3, 1951	10.10	1,860
	June 28, 1951	13.18	5,610
	July 10, 1951	9.85	1,700
	July 22, 1951	9.17	1,400
1952	Feb. 14, 1952	^b 9.17	^a 1,250
	Mar. 21, 1952	9.32	1,450
	Mar. 31, 1952	10.61	2,200
	June 16, 1952	8.75	1,220
	July 9, 1952	9.30	1,400
1953	May 2, 1953	6.87	645
1954	June 21, 1954	14.88	8,460
	Aug. 27, 1954	8.78	1,220
1955	July 7, 1955	6.54	551
1956	Mar. 28, 1956	^b 5.7	^a 300
1957	May 31, 1957	6.43	492
1958	May 27, 1958	6.77	530
1959	May 24, 1959	9.87	1,420
	June 2, 1959	10.07	1,540
1960	Mar. 30, 1960	^b 12.11	^a 2,900
1961	Mar. 28, 1961	12.81	5,580
1962	Mar. 29, 1962	^b 12.60	^a 4,050
	July 7, 1962	9.46	1,530
	July 22, 1962	9.35	1,530
	Sept. 2, 1962	11.21	3,090

5-4495. Iowa River near Rowan, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 20, 1963	9.29	1,260
	July 8, 1963	10.22	1,820
	July 22, 1963	9.55	1,390
1964	Sept.11, 1964	9.82	1,520
1965	Apr. 7, 1965	c	^a 6,700
	Sept.21, 1965	11.86	4,100
	Sept.30, 1965	10.98	2,750

a About

b Affected by ice

c Max. Gage height 14.62 ft., April 6, 1965

5-4655. Iowa River at Wapello, Iowa

Location.--Lat 41 deg.10 min.40 sec., long 91 deg.10 min.55 sec., in NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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 13.0 miles downstream from Cedar River, and at mile 16.0.

Drainage area.--12,499 sq mi.

Gage.--Nonrecording prior to Apr. 16, 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.

Remarks.--Peak daily discharge for 1903-11, 1912-14 was estimated by Corps of Engineers from Mississippi River records. Since peak discharge at this station rarely exceeds the peak daily discharge by more than five percent, these estimates are listed as annual flood peaks. Highflows regulated by Coralville Flood Control Reservoir (capacity 492,000 acre-ft) since Sept. 17, 1958. Base for partial-duration series, 20,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1903	June 3, 1903		^a 88,700
1904	Mar. 27, 1904		^a 20,600
1905	Mar. 26, 1905		^a 37,800
1906	Apr. 2, 1906		^a 73,800
1907	July 23, 1907		^a 37,300
1908	June 2, 1908		^a 32,400
1909	Apr. 2, 1909		^a 31,800
1910	Mar. 17, 1910		^a 37,600
1911	Feb. 19, 1911		^a 29,400
1912	Apr. 3, 1912	14.3	^a 58,000
1913	Mar. 21, 1913		^a 35,000
1914	June 22, 1914		^a 27,000

5-4655. Iowa River at Wapello, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1915	Feb. 26, 27, 1915	11.5	41,800
	Apr. 1, 1915	10.3	35,300
	June 6, 1915	10.6	36,800
	July 31, 1915	7.7	22,700
1916	Oct. 2, 1915	10.6	36,800
1916	Jan. 28, 1916	8.4	25,800
	Mar. 28, 1916	12.7	48,900
	June 10, 1916	7.5	22,100
1917	Mar. 29, 1917	13.2	52,000
	June 15, 1917	11.9	44,100
1918	Feb. 14, 1918	7.6	22,500
	May 29, 1918	9.8	32,700
	June 8, 1918	15.0	77,000
1919	Mar. 23, 1919	10.8	38,100
	Apr. 19, 1919	9.7	32,200
	May 7, 1919	10.3	35,200
	June 8, 1919	7.4	21,600
	June 27, 1919	7.4	21,600
1920	Nov. 13, 1919	7.8	23,400
1920	Mar. 18, 1920	7.2	20,900
	Mar. 29, 1920	9.7	32,200
	Apr. 20, 1920	7.9	23,800
	May 15, 1920	7.3	21,300
1921	Sept. 24, 1921	9.6	32,400
1922	Mar. 2, 1922	8.6	26,500
	Apr. 13, 1922	7.6	22,500
1923	Apr. 7, 1923	9.6	31,700
1924	June 28, 1924	11.3	40,700
	July 24, 1924	8.6	26,900
	Aug. 23, 1924	10.4	35,500
1925	June 21, 1925	5.2	12,900
1926	Sept. 25, 1926	11.8	43,500

5-4655. Iowa River at Wapello, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Feb. 5, 1927	7.6	22,500
	Apr. 20, 1927	9.7	32,200
	May 26, 1927	10.1	34,200
	June 22, 1927	8.3	25,600
1928	Oct. 9, 1927	9.1	29,200
1928	Feb. 16, 1928	9.2	28,800
	Mar. 15, 1928	8.0	24,200
	Sept. 3, 1928	9.0	28,800
1929	Nov. 20, 1928	8.8	27,800
1929	Mar. 21, 1929	14.6	72,200
	Apr. 13, 1929	8.1	24,600
	Apr. 21, 1929	8.8	27,800
	Apr. 26, 1929	8.6	26,900
	May 4, 1929	9.4	30,700
1930	Feb. 27, 1930	8.5	26,500
	June 17, 1930	13.5	52,200
1931	Sept. 27, 28, 1931	3.1	6,740
1932	Dec. 2, 1931	8.8	27,800
1932	Apr. 5, 1932	8.3	25,600
	June 27, 1932	8.0	24,200
1933	Apr. 7, 1933	15.4	62,000
	May 24, 1933	9.2	28,600
1934	Apr. 11, 1934	3.3	7,230
1935	Mar. 12, 1935	11.0	35,500
	June 21, 1935	8.0	21,600
	June 29, 1935	8.1	22,100
1936	Mar. 18, 1936	11.6	36,500
1937	Feb. 23, 1937	^b 12.24	37,600
	Mar. 7, 1937	14.6	53,800
	June 21, 1937	8.9	25,600
1938	June 15, 1938	8.2	21,200
1939	Mar. 14, 1939	11.3	37,000

5-4655. Iowa River at Wapello, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 21, 1940	3.7	7,780
1941	Mar. 25, 1941	7.1	16,600
1942	Nov. 6, 1941	8.5	24,100
1942	June 15, 1942	9.3	27,200
	Aug. 7, 1942	11.1	36,300
1943	Mar. 1, 1943	8.0	21,700
	Mar. 25, 1943	8.3	22,800
	Apr. 3, 1943	7.8	20,600
	May 19, 1943	8.0	21,500
	Aug. 4, 1943	8.7	24,400
1944	Mar. 17, 1944	7.7	21,000
	Apr. 25, 1944	9.7	29,000
	May 12, 1944	7.7	20,100
	May 25, 1944	14.7	54,100
	June 21, 1944	14.2	51,800
	June 28, 1944	13.0	45,400
1945	Mar. 22, 1945	14.8	56,400
	Apr. 20, 1945	8.4	23,800
	May 18, 1945	8.5	24,000
	June 3, 1945	9.8	30,100
1946	Jan. 8, 1946	14.0	51,400
	Mar. 14, 1946	9.5	28,700
	Mar. 20, 1946	11.4	37,700
	June 21, 1946	8.0	22,200
1947	Apr. 8, 1947	10.2	31,800
	Apr. 22, 1947	11.0	35,800
	June 9, 1947	16.5	71,000
	June 18, 1947	16.1	94,000
1948	Mar. 1, 1948	11.1	36,200
	Mar. 7, 1948	12.0	40,800
	Mar. 21, 1948	14.7	60,000
1949	Mar. 11, 1949	12.7	44,300
	Apr. 3, 1949	8.8	25,800
1950	Mar. 14, 1950	12.8	44,800
	Apr. 4, 1950	8.5	23,800

5-4655. Iowa River at Wapello, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1950	June 21, 1950	8.6	25,000
	June 28, 1950	8.2	23,400
1951	Feb. 20, 1951	^b 10.12	^a 27,000
	Feb. 27, 1951	8.46	24,600
	Mar. 3, 1951	10.30	32,300
	Apr. 4, 1951	13.75	50,300
	Apr. 14, 1951	16.14	67,000
	May 15, 1951	11.95	40,800
	May 11, 1951	10.28	32,300
	June 10, 1951	9.77	29,800
	July 4, 1951	11.06	36,300
1952	July 14, 1951	9.86	30,300
	Nov. 14, 1951	7.43	20,200
1952	Jan. 20, 1952	^b 11.76	^a 21,000
	May 14, 1952	12.10	41,300
	Apr. 8, 1952	10.46	33,300
1953	Feb. 23, 1953	10.42	32,800
1954	June 29, 1954	11.98	40,800
1955	Apr. 25, 1955	8.26	23,000
1956	Sept. 1, 1956	4.18	9,340
1957	June 22, 1957	5.89	14,200
1958	Feb. 27, 1958	^b 6.48	^a 13,000
1959	Mar. 22, 1959	11.52	^d 37,200
1960	Apr. 5, 1960	17.02	^d 69,000
1961	Apr. 3, 1961	16.85	^d 68,000
1962	Apr. 6, 1962	15.38	^d 53,700
1963	Mar. 21, 1963	9.16	^d 25,100

5-4655. Iowa River at Wapello, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	June 25, 1964	5.25	^d 11,800
1965	Apr. 13, 1965	17.25	^d 70,800

a About

b Affected by ice

d Regulated flow

5-4580. Little Cedar River near Ionia, Iowa

Location.--Lat 43 deg.02 min.00 sec., long 92 deg.30 min.10 sec., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.95 N., R.14 W., on left bank 12 ft downstream from highway bridge, 2.5 miles west of Ionia, 6.4 miles upstream from mouth, and 246.2 miles above mouth of Iowa River.

Drainage area.--306 sq mi.

Gage.--Recording. Datum of gage is 973.35 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.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 22, 1954	11.37	4,600
1955	June 3, 1955	7.54	1,500
1956	Apr. 2, 1956	6.78	1,160
1957	July 23, 1957	6.19	890
1958	July 15, 1958	5.53	632
1959	Mar. 26, 1959	7.63	1,710
	May 20, 1959	7.30	1,830
	May 31, 1959	7.27	1,830
1960	Mar. 30, 1960	8.42	2,650
	May 7, 1960	6.89	1,530
	June 25, 1960	9.19	2,790
	Aug. 30, 1960	6.95	1,340
1961	Mar. 4, 1961	6.52	1,370
	Mar. 27, 1961	15.58	10,800
	Aug. 2, 1961	11.43	5,310
1962	Mar. 29, 1962	14.27	8,720
	Apr. 7, 1962	7.61	1,940
	Sept. 1, 1962	15.14	9,000
1963	Oct. 10, 1962	7.65	1,940

5-4580. Little Cedar River near Ionia, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 18, 1963	^b 7.93	^a 2,000
	Mar. 26, 1963	6.89	1,510
	May 10, 1963	8.37	2,520
	May 13, 1963	9.65	3,510
1964	Sept. 10, 1964	5.15	572
1965	Mar. 2, 1965	11.37	5,100
	Apr. 6, 1965	12.11	6,250
	Apr. 11, 1965	9.79	3,860
	July 10, 1965	7.70	1,820
	Sept. 21, 1965	10.38	3,850
	Sept. 30, 1965	13.55	7,380

a About

b Affected by ice

c Maximum for period June to September 1954.

5-4145. Little Maquoketa River near Durango, Iowa

Location.--Lat 42 deg.33 min.25 sec., long 90 deg.44 min.45 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T.89 N., R.2 E., on left bank 10 ft upstream from highway bridge, 1 $\frac{1}{2}$ miles east of Durango, 5 miles northwest of Dubuque, and at mile 6.1.

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.

Remarks.--Base for partial-duration series, 5,100 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1925	June 15, 1925	^c 22.1	^a 29,000
1935	Mar. 4, 1935	13.63	5,430
1936	Mar. 10, 1936	6.11	791
1937	Feb. 20, 1937	18.2	13,000
	Mar. 6, 1937	14.2	6,000
	June 21, 1937	20.75	21,000
1938	Sept. 21, 1938	17.3	7,850
1938	July 10, 1938	11.67	5,950
1938	Apr. 24, 1938	9.5	7,800
1938	Apr. 6, 1938	11.12	1,600
1938	Jan. 22, 1938	10.98	5,000
1940	June 24, 1940	10.47	5,130
1941	Mar. 22, 1941	10.83	3,840
1942	June 29, 1942	13.10	3,640
1942	May 29, 1942	13.31	5,390
1942	Mar. 20, 1942	13.03	6,820
1944	Feb. 26, 1944	13.7	5,800
1944	Mar. 14, 1944	13.3	5,200
Peak stages and discharges			
1944	June 16, 1944	15.4	7,100
1944	June 26, 1944	17.0	17,600

Little Maquoketa River near Durango, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1945	July 21, 1945	12.60	4,720
1946	Jan. 5, 1946	16.3	9,000
	Mar. 6, 1946	17.05	10,400
1947	Apr. 10, 1947	13.4	5,100
	June 5, 1947	16.2	8,620
	June 13, 1947	21.23	23,000
	June 17, 1947	13.1	5,120
	July 5, 1947	14.0	5,900
	July 13, 1947	14.6	6,200
1948	Feb. 27, 1948	17.40	11,300
	Mar. 15, 1948	13.8	5,740
	Mar. 19, 1948	13.5	5,420
	May 10, 1948	14.6	6,400
1949	Mar. 4, 1949	13.94	5,790
1950	Mar. 5, 1950	14.80	6,550
1951	Feb. 25, 1951	^b 14.76	5,500
	July 8, 1951	19.98	14,800
1952	Aug. 20, 1952	14.22	6,180
1953	Feb. 20, 1953	18.40	11,100
1954	June 1, 1954	14.35	6,460
	June 21, 1954	13.49	5,750
1955	Feb. 20, 1955	12.93	5,120
1956	July 8, 1956	10.67	3,490
1957	July 31, 1957	11.93	4,330
1958	Feb. 24, 1958	9.12	2,190
1959	Mar. 19, 1959	^b 14.44	^a 5,400
	Apr. 1, 1959	15.95	8,200
1960	Jan. 12, 1960	18.76	13,400
	Mar. 30, 1960	16.48	9,000
	May 6, 1960	17.48	10,700

Little Maquoketa River near Durango, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Sept. 13, 1961	12.70	4,110
1962	Oct. 29, 1961	17.94	11,400
	Nov. 2, 1961	18.70	13,100
	Nov. 2, 1961	15.95	7,900
	Nov. 16, 1961	16.60	8,980
	May 29, 1962	14.38	5,680
1963	Mar. 16, 1963	14.73	6,040
1964	Apr. 2, 1964	10.84	2,800
1965	Feb. 20, 1965	14.03	5,830
	Feb. 28, 1965	16.41	8,860

a About

b Affected by ice

c Maximum stage known

5-4143.5 Little Maquoketa River near Graf, Iowa

Location.--SE $\frac{1}{4}$ Sec.20, T.89 N, R.1 E., at bridge about 300 feet downstream from Illinois Central RR bridge, 0.5 mile northeast of Graf, Dubuque County.

Drainage area.--41.5 sq mi.

Gage.--Crest-state gage. Datum is arbitrary.

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)
1951	July	8, 1951	15.78	7,220
1952	Aug.	20, 1952	9.30	1,850
1953	Feb.	20, 1953	13.41	4,500
1954	May	31, 1954	11.79	3,250
1955	Feb.	19,20, 1955	9.26	1,830
1956	July	8, 1956	10.65	2,690
1957	Jan.	21, 1957	8.54	1,520
1958			c	
1959	Apr.	1, 1959	13.10	4,590
1960	Jan.	12, 1960	13.93	5,280
1961	Sept.	13, 1961	8.36	1,560
1963	Nov.	2, 1962	13.18	4,660
1963	Mar.	18, 1963	11.43	3,300
1964	Apr.	2, 1964	10.69	2,810
1965	Feb.	28, 1965	8.16	1,300

c Peak stage did not reach bottom of gage

5-4146. Little Maquoketa River tributary at Dubuque, Iowa

Location.--Near northwest corner sec.11, T.89 N., R.2 E., at bridge on State Highway 3 bridge near north city limits of Dubuque, Dubuque County.

Drainage area.--1.51 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by current-meter, indirect measurements, and step-backwater computation.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 8, 1951	7.90	1,070
1952	Aug. 20, 1952	6.82	368
1953	July 26, 1953	6.87	388
1954	June 21, 1954	6.10	190
1955	June 2, 1955	5.48	107
1956	Aug. 30, 1956	6.92	408
1957	July 31, 1957	7.98	1,120
1958	Aug. 20, 1958	7.26	576
1959	Oct. 9, 1958	5.91	162
1960	Jan. 12, 1960	6.51	698
1961		c	
1963	Nov. 2, 1962	5.03	278
1964	Oct. 8, 1963	6.07	561
1964	Apr. 2, 1964	4.77	225
1965	Feb. 28, 1965	4.07	111

c Peak stage did not reach bottom of gage

5-3887. Little Paint Creek tributary near Waterville, Iowa

Location.--On south line near southeast corner sec.1, T.97 N., R.4W., at culvert 3.5 miles northeast of Waterville, Allamakee County.

Drainage area.--1.09 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by current-meter measurements and step-back-water computations.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 26, 1953	2.79	137
1954	Apr. 30, 1954	3.89	310
1955	July 4, 1955	4.25	383
1956	May 6, 1956	4.02	336
1957		c	
1958	Feb. 24, 1958	2.85	144
1959	June 28, 1959	4.34	404
1960	Mar. 27, 1960	4.10	352
1961		c	
1962	Mar. 28, 1962	1.99	129
1963		c	
1964	May 15, 1964	2.73	180
1965		c	

c Peak stage did not reach bottom of gage

6-6066. Little Sioux River at Correctionville, Iowa

Location.--Lat 42 deg. 28 min. 20 sec., long 95 deg. 47 min. 50 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.1, T.88N., R.43 W., on right bank 10 ft upstream from bridge on State Highway 31, 0.2 mile upstream from Bacon Creek, 0.5 mile west of Correctionville, 0.8 mile downstream from Pierson Creek, and at mile 56.0.

Drainage area.--2,500 sq mi.

Gage.--Recording. Datum of gage is 1,096.49 ft above mean sea level, datum of 1929. May 28, 1918 to July 1, 1925, and October 29, 1928, to July 15, 1929 nonrecording gage 0.2 mile downstream at datum 1.25 ft lower. July 16, 1929, to July 2, 1932, and June 15, 1936, to November 7, 1938, nonrecording gage at present site and datum.

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

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1891	June 23,24, 1891	29.34	
1919	Mar. 18, 1919	14.9	5,500
	June 12, 1919	19.6	10,700
	June 28, 1919	15.1	5,640
	July 13, 1919	17.6	8,350
1920	Mar. 13, 1920	17.4	8,920
	June 1, 1920	14.2	5,100
	June 7, 1920	14.8	5,440
1921	May 27, 1921	11.7	3,960
1922	Mar. 13, 1922	9.0	2,520
1923	Mar. 26, 1923	c	2,000
1924	June 29, 1924	13.9	4,950
	Aug. 15, 1924	12.4	4,200
1925	June 4, 1925	9.3	2,190
1929	Mar. 14, 1929	16.3	6,250
	Mar. 18, 1929	15.7	6,170

6-6066. Little Sioux River at Correctionville, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1930	June	13, 1930	11.2	2,990
1931	July	17, 1931	10.3	2,540
1932	Apr.	21, 1932	17.7	6,560
	May	26, 1932	14.5	4,330
1937	May	31, 1937	16.4	5,500
	June	19, 1937	17.0	5,950
	Aug.	19, 1937	15.7	5,030
1938	Sept.	8, 1938	15.4	4,380
	Sept.	21, 1938	18.9	7,250
1939	Mar.	12, 1939	^b 15.23	2,200
1940	Aug.	26, 1940	16.2	4,730
1941	Sept.	15, 1941	17.0	4,740
1942	June	19, 1942	15.3	3,800
1943	July	4, 1943	18.5	6,530
1944	May	19, 1944	19.4	8,500
	June	12, 1944	21.1	13,000
	July	7, 1944	17.4	5,450
	July	15, 1944	16.6	4,560
1945	Mar.	13, 1945	19.6	8,220
	May	29, 1945	16.6	4,630
	June	12, 1945	18.1	6,190
	June	15, 1945	19.1	7,420
	Aug.	5, 1945	21.9	14,800
1946	Feb.	5, 1946	17.7	5,870
1947	May	1, 1947	20.3	10,400
	June	24, 1947	19.0	7,670
	July	1, 1947	15.5	4,440
	July	5, 1947	15.7	4,550
1948	Feb.	27, 1948	18.7	7,770

6-6066. Little Sioux River at Correctionville, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 6, 1949	^b 16.32	4,150
1950	June 18, 1950	18.7	6,860
1951	Mar. 29, 1951	19.47	7,990
	Apr. 7, 1951	22.58	17,900
	May 6, 1951	17.74	5,700
	July 6, 1951	17.21	5,200
	Aug. 14, 1951	18.36	6,480
	Aug. 17, 1951	18.51	6,600
	Aug. 20, 1951	15.84	4,060
	Sept. 12, 1951	16.89	4,920
1952	Mar. 13, 1952	17.07	5,100
	Mar. 20, 1952	17.06	5,100
	Apr. 1, 1952	19.30	7,680
	Apr. 4, 1952	20.37	10,400
	July 7, 1952	17.66	5,700
1953	June 12, 1953	22.09	17,500
	June 25, 1953	16.95	5,260
1954	June 21, 1954	23.36	20,900
1955	July 10, 1955	15.60	4,280
1956	May 31, 1956	7.05	452
1957	June 22, 1957	16.76	5,700
1958	June 3, 1958	11.85	2,060
1959	May 28, 1959	18.56	7,240
	May 31, 1959	19.30	8,280
	June 11, 1959	16.8	5,200
1960	Mar. 29, 1960	22.57	16,000
	May 22, 1960	18.53	7,100
	May 26, 1960	20.38	10,400
	Aug. 28, 1960	16.00	4,540

6-6066. Little Sioux River at Correctionville, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Mar. 14, 1961	15.68	4,340
	Mar. 29, 1961	22.32	16,400
	June 14, 1961	16.11	4,640
	Aug. 9, 1961	19.04	7,800
1962	Mar. 30, 1962	23.14	19,800
	July 14, 1962	15.55	4,500
1963	June 2, 1963	21.54	13,500
1964	May 6, 1964	16.15	4,720
1965	Apr. 7, 1965	25.86	29,800

b Affected by ice

c Maximum gage height 11.3 ft., March 25

6-6056. Little Sioux River at Gillett Grove, Iowa

Location.--Lat 43 deg. 01 min. 05 sec., long 95 deg. 02 min. 45 sec., in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.25, T.95 N., R.36 W., on left bank 5 ft downstream from highway bridge, 0.2 mile northwest of Gillett Grove, 0.9 mile above Elk Creek, and at mile 146.1.

Drainage area.--1,334 sq mi.

Gage.--Recording. Datum of gage is 1,266.84 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1953	June	9, 1953	17.87	^a 15,000
1959	June	3, 1959	13.23	4,500
1960	Mar.	30, 1960	13.78	5,140
	Apr.	3, 1960	13.64	4,880
	May	22, 1960	13.39	4,640
	May	28, 1960	12.28	3,440
1961	Mar.	26, 1961	16.93	12,900
1962	Mar.	31, 1962	15.70	9,680
	July	7, 1962	13.61	4,880
1963	Mar.	18, 1963	^b 9.50	^a 1,100•
1964	Sept.	11, 1964	13.20	3,980
1965	Apr.	7, 1965	18.67	20,200

a About

b Affected by ice

6-6067. Little Sioux River near Kennebec, Iowa

Location.--Lat 42 deg. 04 min. 55 sec., long 96 deg. 00 min. 50 sec., in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.18 T.84 N., R.44 W., near left bank on downstream side of pier of bridge on Monona County Highway A, 1.1 miles south of Kennebec, 5.5 miles northeast of Onawa, and 6.0 miles upstream from Maple River and at mile 22.0.

Drainage area.--2,738 sq mi.

Gage.--Nonrecording prior to May 24, 1950; recording thereafter. Datum of gage is 1,027.02 ft above mean sea level (Monona County Highway Department benchmark). Prior to October 12, 1959 at datum 0.87 ft higher.

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

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1940	June 4, 1940	20.8	4,120
	July 29, 1940	21.8	
1941	Sept. 16, 1941	20.9	3,850
1942	June 2, 1942	20.5	4,010
	June 6, 1942	21.6	4,880
1943	Feb. 27, 1943	20.7	4,170
	July 8, 1943	23.6	6,310
1944	May 20, 1944	25.0	10,800
	June 13, 1944	24.85	10,600
	July 7, 1944	20.2	4,710
	July 18, 1944	19.3	4,140
	Aug. 1, 1944	19.2	4,070
1945	Mar. 13, 1945	24.8	8,400
	May 31, 1945	23.1	6,820
	June 13, 1945	21.7	5,940
	June 17, 1945	24.1	8,200
	Aug. 7, 1945	25.0	8,590
1946	Feb. 6, 1946	^b 23.4	6,000
1947	May 2, 1947	22.9	8,390
	May 6, 1947	18.8	4,860
	June 25, 1947	22.4	7,940

6-6067. Little Sioux River near Kennebec, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1948	Feb.	28, 1948	24.2	7,870
	Mar.	16, 1948	21.4	5,590
1949	Mar.	4, 1949	^b 24.0	5,300
1950	June	12, 1950	19.1	4,470
	June	18, 1950	22.4	6,140
1951	Mar.	28, 1951	24.86	^a 8,400
	Apr.	11, 1951	24.33	12,000
	May	1, 1951	18.92	5,330
	June	8, 1951	17.22	4,640
	June	19, 1951	17.12	4,570
	July	3, 1951	21.30	7,000
	Aug.	15, 1951	22.30	^a 6,500
	Aug.	17, 1951	22.15	^a 7,800
	Aug.	21, 1951	17.81	5,090
	Sept.	12, 1951	19.43	6,460
1952	Feb.	13, 1952	^b 17.73	^a 4,500
	Mar.	13, 1952	18.15	5,710
	Mar.	20, 1952	17.35	5,070
	Apr.	2, 1952	20.32	7,650
	Apr.	5, 1952	21.67	9,170
	July	7, 1952	19.77	7,150
1953	June	14, 1953	23.97	11,500
	June	26, 1953	16.88	4,660
1954	June	22, 1954	26.18	13,500
1955	Mar.	11, 1955	14.15	3,430
1956	June	6, 1956	6.99	464
1957	June	23, 1957	15.53	4,300
1958	Feb.	28, 1958	10.92	1,900
1959	May	29, 1959	17.84	5,260
	May	31, 1959	19.90	7,040
	June	11, 1959	16.8	4,600

6-6067. Little Sioux River near Kennebec, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 30, 1960	23.26	16,400
	May 27, 1960	19.57	9,610
	Aug. 29, 1960	14.53	4,140
1961	Mar. 30, 1961	20.70	14,500
	June 15, 1961	15.23	5,180
	Aug. 10, 1961	17.07	5,810
1962	Mar. 31, 1962	c	^a 19,000
	July 14, 1962	18.13	8,260
	July 20, 1962	14.71	4,730
	Sept. 1, 1962	15.16	5,180
1963	June 2, 1963	23.00	15,700
	June 5, 1963	16.58	5,000
1964	May 26, 1964	18.02	7,450
1965	Mar. 18, 1965		d
	Apr. 8, 1965	26.50	29,700

a About

b Affected by ice

c Maximum gage height 22.40 ft. Mar. 28 (backwater from Maple River)

d Unknown

6-6051. Little Sioux River at Spencer, Iowa

Location.--Lat 43 deg. 08 min., long 95 deg. 08 min., in sec.18, T.96 N., R.36 W., at bridge on U.S. Highways 18 and 71 at Spencer, three-quarters of a mile downstream from Ocheyedan River, and at mile 160.3.

Drainage area.--990 sq mi.

Gage.--Nonrecording. Datum of gage is 1,294.56 ft above mean sea level, datum to 1929. Prior to September 17, 1937 at datum 0.40 ft lower.

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)
1937	June 14, 1937		3,250
1938	Sept. 16, 1938		5,000
1939	Aug. 11, 1939		1,080
1940	June 24, 1940		503
1941	Mar. 10, 1941		1,340
1942	Aug. 31, 1942		2,170
1953	June 8, 1953	20.20	30,000
1965	Apr. 6, 1965	17.37	16,700

6-6075. Little Sioux River near Turin, Iowa
(Published as "near Blencoe" 1939-42)

Location.--Lat 41 deg. 57 min. 55 sec., long 95 deg. 58 min. 20 sec., in NW¹/₄NE¹/₄ sec.33, T.83 N., R.44 W., on downstream side of left pier at bridge on Brown's grade, 1.0 mile east of gaging station on Monona-Harrison ditch near Turin, 2.5 miles downstream from Maple River, 3.8 miles south of Turin, 6.2 miles northeast of Blencoe, and 13.5 miles upstream from mouth.

Drainage area.--3,526 sq mi. Prior to January 15, 1958, 4,426 sq mi. (combined area above this station and above Monona-Harrison ditch 1.0 mile west).

Gage.--Nonrecording prior to September 8, 1958; recording thereafter. Datum of gage is 1,019.85 ft above mean sea level, datum of 1929 (Corps of Engineer's benchmark). Records published prior to January 15, 1958, not equivalent.

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

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1959	May 29, 1959	19.17	8,550
	May 31, 1959	21.80	14,000
	June 11, 1959	14.78	6,370
1960	Mar. 30, 1960	25.08	23,900
	May 23, 1960	16.88	7,680
	May 27, 1960	19.40	11,200
	June 16, 1960	16.20	6,840
	Aug. 29, 1960	13.60	4,520
1961	Mar. 4, 1961	13.92	5,270
	Mar. 15, 1961	15.32	6,470
	Mar. 30, 1961	21.02	14,000
	June 15, 1961	15.83	6,920
	Aug. 10, 1961	16.20	7,300
1962	Mar. 29, 1962	23.97	24,400
	May 23, 1962	12.52	4,590
	June 10, 1962	12.57	4,680
	July 8, 1962	12.47	4,590
	July 14, 1962	17.32	9,360
	July 20, 1962	13.68	5,580
	Sept. 1, 1962	19.63	12,600
1963	June 2, 1963	23.30	19,400
	June 5, 1963	19.65	12,600
1964	May 26, 1964	19.95	13,200
1965	Mar. 17, 1965		c
	Apr. 8, 1965	26.05	27,100

5-4206.2 Little Wapsipinicon River near Acme, Iowa

Location.--At north quarter corner sec.10, T.98 N., R.14 W.,
at bridge on County Road "D", 2.5 miles south of State Highway
9 and 1 mile north of Acme, Howard County.

Drainage area.--7.76 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June	13, 1953	6.74	668
1954	June	21, 1954	7.19	822
1955	Aug.	1, 1955	6.63	635
1956	Apr.	1, 1956	5.60	420
1957	Mar.	24, 1957	3.77	167
1958	Apr.	7, 1958	3.66	155
1959	Mar.	26, 1959	5.75	250
1960	Mar.	29, 1960	6.04	302
1961	Mar.	27, 1961	7.19	700
1962	Aug.	31, 1962	9.02	2,380
1964	Oct.	10, 1963	4.68	285
1964	May	24, 1964	4.80	302
1965	Sept.	30, 1965	7.53	965

5-4206.4 Little Wapsipinicon River at Elma, Iowa

Location.--NW $\frac{1}{4}$ sec.12, T.97 N., R.14 W., at bridge on County road "A" near west city limits of Elma, Howard County.

Drainage area.--37.3 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June 13, 1953	10.60	3,010
1954	June 21, 1954	10.59	3,000
1955	Mar. 15, 1955	7.00	450
1956	Apr. 1, 1956	5.91	259
1957	Mar. 24, 1957	4.21	88
1958	Apr. 7, 1958	5.02	154
1959	Mar. 26, 1959	7.43	559
1960	June 23, 1960	9.09	1,380
1961	July 31, 1961	10.10	2,400
1962	Aug. 31, 1962	12.53	5,740
1963	May 13, 1963	8.29	890
1964	May 24, 1964	5.59	217
1965	Spet.30, 1965	9.46	1,720

5-4206. Little Wapsipinicon River tributary near Riceville, Iowa

Location.--Near south quarter corner sec.27, T.99 N., R.14 W.,
at culvert 0.4 mile south of State Highway 9, and 3.5 miles
east of Riceville, Howard County.

Drainage area.--0.90 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June	13, 1953	4.21	141
1954	Aug.	24, 1954	4.60	300
1955	Aug.	1, 1955	4.59	295
1956	Apr.	1, 1956	4.14	124
1957	May	30, 1957	4.17	131
1958	Apr.	7, 1958	3.29	28
1959	Mar.	26, 1959	4.57	284
1960	June	23, 1960	4.22	144
1961	Mar.	26, 1961	4.85	150
1962	Aug.	31, 1962	5.03	703
1964	Oct.	8, 1963	3.69	54
1964	May	24, 1964	4.00	95
1965	Sept.	30, 1965	4.72	382

5-4800. Lizard Creek near Clare, Iowa
(Published as "North Lizard Creek nr. Clare, 1940-54)

Location.--Lat 42 deg.32 min.40 sec., long 94 deg.20 min.45 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ 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 South Lizard Creek.

Drainage area.--257 sq mi.

Gage.--Nonrecording prior to May 6, 1953; recording thereafter. 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 by logarithmic plotting above 4,500 cfs.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 26, 1940	4.8	374
1941	June 14, 1941	5.1	442
1942	June 5, 1942	6.65	1,060
1943	Feb. 22, 1943	7.4	1,440
1944	May 20, 1944	11.11	4,410
	June 13, 1944	9.2	2,640
1945	Mar. 11, 1945	7.42	1,570
	Apr. 24, 1945	6.7	1,270
	May 22, 1945	6.7	1,310
	June 1, 1945	6.8	1,310
1946	May 25, 1946	9.18	2,750
1947	June 19, 1947	6.1	1,030
	June 23, 1947	16.0	10,000
	June 30, 1947	8.5	2,170
1948	Feb. 28, 1948	7.2	1,370
	Mar. 18, 1948	7.5	1,550
1949	Mar. 5, 1949		1,700

5-4800. Lizard Creek near Clare, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1950	June 25, 1950	5.7	870
1951	Mar. 28, 1951	10.42	3,620
	May 2, 1951	8.79	2,390
	June 18, 1951	7.1	1,430
1952	Mar. 30, 1952	7.15	1,470
	July 8, 1952	7.11	1,430
1953	June 28, 1953	6.54	1,190
1954	June 11, 1954	11.06	4,150
	June 20, 1954	13.21	6,210
	Aug. 27, 1954	7.29	1,530
1955	Apr. 25, 1955	5.29	660
1956	May 31, 1956	3.74	147
1957	May 21, 1957	4.75	399
1958	June 3, 1958	7.71	1,740
1959	June 1, 1959	7.67	1,740
1960	Mar. 29, 1960	10.01	3,650
1961	Mar. 26, 1961	9.08	2,900
1962	Mar. 28, 1962	9.55	3,360
	July 3, 1962	6.27	1,080
	July 5, 1962	7.22	1,630
	Sept. 1, 1962	11.90	5,400
1963	June 6, 1963	6.15	995
1964	May 24, 1964	5.29	560
1965	Apr. 7, 1965	11.10	4,670
	Sept. 29, 1965	6.19	1,020

6-6072. Maple River at Mapleton, Iowa

Location.--Lat 42 deg. 09 min. 30 sec., long 95 deg. 48 min. 25 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T.85 N., R.43 W., on right pier on downstream side of bridge on State Highway 175, 80 ft downstream from Chicago & Northwestern Railway Co., bridge, 0.5 mile southwest of Mapleton, 12.5 miles northeast of Turin, 14.9 miles upstream from mouth, and 30.9 miles upstream from mouth of Little Sioux River.

Drainage area.--669 sq mi.

Gage.--Nonrecording prior to August 20, 1952, and from June 21, 1954 to September 20, 1956; recording remainder of time. Datum of gage is 1,085.86 ft above mean sea level, datum of 1929. June 21, 1954, to September 6, 1955 at site 1.4 miles upstream at datum 4.05 ft higher.

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

Remarks.--Only annual peaks are shown for 1942-50. Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1942	June 30, 1942	20.3	5,480
1943	June 16, 1943	18.8	3,940
1944	June 13, 1944		4,730
1945	Aug. 7, 1945	21.0	7,570
1946	May 24, 1946	17.5	5,460
1947	June 22, 1947	17.0	4,800
1948	Feb. 27, 1948	21.1	9,400
1949	Mar. 4, 1949	^b 19.2	7,000
1950	June 12, 1950	22.1	13,000
1951	Mar. 27, 1951	20.1	10,800
	May 1, 1951	14.27	4,790
	June 19, 1951	16.50	6,800
	June 23, 1951	14.60	5,040
	July 3, 1951	13.45	4,100
	Aug. 15, 1951	17.27	7,630

6-6072. Maple River at Mapleton, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 13, 1952	11.95	4,360
	June 21, 1952	14.68	7,060
	June 27, 1952	19.05	13,400
	July 7, 1952	14.25	6,700
1953	June 25, 1953	17.66	11,500
1954	May 27, 1954	14.00	6,460
	June 20, 1954	20.4	15,600
1955	July 10, 1955	13.0	^a 6,800
1956	June 6, 1956	10.24	3,260
1957	June 14, 1957	9.95	2,820
1958	Feb. 27, 1958	^b 8.6	^a 1,800
1959	May 28, 1959	13.18	5,520
	May 31, 1959	19.70	14,000
1960	Mar. 30, 1960	17.90	11,400
	June 15, 1960	12.80	5,670
1961	June 13, 1961	9.36	4,280
1962	Mar. 28, 1962	16.05	13,500
	July 14, 1962	10.13	4,580
	Aug. 31, 1962	15.40	11,800
1963	June 2, 1963	11.02	5,480
	June 4, 1963	15.50	12,000
1964	May 25, 1964	15.36	11,800
1965	Apr. 1, 1965	12.14	9,240

a About

b Affected by ice

6-6073. Maple River at Turin, Iowa

Location.--Lat 42 deg. 01 min., long 95 deg. 57 min., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.10, T.83 N., R.44 W., at bridge on State Highway 37, 0.7 mile east of Turin.

Drainage area.--734 sq mi.

Gage.--Nonrecording. Datum of gage 1,028.45 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)
1936	Mar.	1936	^b 20.2	^a 2,900
1939	July	4, 1939	^c 16.0	1,910
1940	June	4, 1940	19.4	2,920
1941	Sept.	16, 1941	^d 15.5	889

a About

b Affected by ice

c Maximum for period April to September, 1939

d Backwater from Little Sioux River

5-4175. Maquoketa River near Delhi, Iowa.
(Discontinued September, 1940)

Location.--Lat 42 deg.24 min.30 sec., long 91 deg.20 min.45 sec.,
in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.29, T.88 N., R.4 W., in tailrace of Interstate
Power Co.'s hydroelectric plant, 1.5 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. and reviewed by the
Geological Survey. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 14, 1929	89.82	^c 7,360
1933	Mar. 30, 1933	88.5	5,350
1934	Aug.11,23, Sept. 14, 22, 1934	82.9	531
1935	Mar. 5, 1935	88.0	4,700
1936	Mar. 11, 1936	86.4	2,990
1937	Mar. 4, 1937	89.2	6,740
1938	Feb. 6, 1938	88.0	5,300
1939	May 27, 1939	84.6	1,640
1940	June 23, 1940	86.1	3,330

c Discharge measurement

Note.--Maxima are mean discharges for periods of several hours
during the day except that for Mar. 30, 1933, which is
momentary maximum discharge.

5-4170. Maquoketa River near Manchester, Iowa

Location.--Lat 42 deg.27 min.25 sec., long 91 deg.25 min.55 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.9, T.88 N., R.5 W., on left bank 2 miles south-east of Manchester and 4.7 miles downstream from Honey and Prairie Creeks.

Drainage area.--305 sq mi.

Gage.--Recording. 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 velocity-area studies.

Remarks.--Base for partial-duration series, 2,600 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1925	June 15, 1925		^c 25,400
1929	Nov. 18, 1928		2,640
	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	^b 11.78	3,500
	Mar. 5, 1937	14.20	8,150
	June 21, 1937	8.8	2,730
1938	Feb. 6, 1938	12.08	5,860
	Sept. 14, 1938	11.2	4,980
1939	May 27, 1939	7.68	1,790
1940	June 23, 1940	8.92	2,770

Maquoketa River near Manchester, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Apr. 4, 1941	11.3	4,850
	Sept. 8, 1941	14.65	8,880
1942	Oct. 7, 1941	10.8	4,330
	Nov. 1, 1941	12.40	6,140
1942	June 4, 1942	11.0	4,520
	June 12, 1942	10.3	3,840
	Sept. 14, 1942	9.9	3,460
1943	Feb. 23, 1943	9.3	3,000
	Mar. 16, 1943	11.69	5,320
1944	June 16, 1944	13.96	8,010
1945	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	14.86	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
	June 1, 1947	14.3	8,380
	June 5, 1947	14.2	8,260
	June 13, 1947	21.36	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
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
	Feb. 29, 1951	13.90	7,940

Maquoketa River near Manchester, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1951	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
1952	Mar. 11, 1952	9.12	2,780
1953	Feb. 20, 1953	10.66	4,260
1954	May 1, 1954	9.60	3,230
1955	Feb. 20, 1955	^b 9.32	^a 2,500
1956	May 28, 1956	8.21	2,060
1957	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 7, 1960	13.85	7,740
	May 17, 1960	12.50	6,100
1961	Mar. 26, 1961	10.28	3,750
	Sept. 13, 1961	9.36	2,910
1962	Oct. 1, 1961	10.04	3,480
	Oct. 30, 1961	10.45	3,850
	Nov. 23, 1961	12.53	6,100
	Nov. 17, 1961	10.20	3,660
1962	Mar. 28, 1962	11.25	4,670
	May 6, 1962	9.86	3,390
	May 8, 1962	12.76	6,460
	May 13, 1962	9.61	3,120
	July 21, 1962	10.44	3,855

Maquoketa River near Manchester, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 16, 1963	9.48	3,030
1964	Apr. 3, 1964	8.04	1,840
1965	Mar. 1, 1965	^b 12.77	^a 4,200
	Apr. 1, 1965	11.64	5,150

a About

^b Affected by ice

c Peak flow determined by Prof. F. A. Nagler, Univ. of Iowa,
maximum flood known.

5-4185. Maquoketa River near Maquoketa, Iowa
(Published as "below North Fork Maquoketa
River near Maquoketa" prior to 1940)

Location.--Lat. 42 deg.05 min.05 sec., long 90 deg.37 min.55 sec.,
in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T.84 N., R.3 E., on right bank 500 ft up-
stream from bridge on State Highway 62, 1,200 ft upstream
from Prairie Creek, 2.0 miles northeast of Maquoketa, 2.2
miles downstream from North Fork, and at mile 28.0.

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
below 45,000 cfs.

Remarks.--Base for partial-duration series, 9,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1903		23.5	43,200
1914	Sept. 15, 1914	17.0	13,700
1915	Sept. 28, 1915	19.6	18,400
1916	Jan. 22, 1916	15.6	12,500
	Jan. 27, 1916	14.9	11,000
	Mar. 27, 1916	22.6	39,100
1917	Mar. 14, 1917	13.8	9,270
	June 13, 1917	16.9	16,300
1918	Feb. 15, 1918	15.8	13,000
1919	Mar. 17, 1919	16.8	16,000
	May 4, 1919	15.6	12,500
	July 10, 1919	15.0	11,200
1920	Nov. 11, 1919	15.3	11,800
	Dec. 11, 1919	15.3	11,800
1920	Mar. 13, 1920	15.0	11,200
	May 23, 1920	15.5	12,300
1921	Sept. 17, 1921	15.2	11,000
1922	Feb. 24, 1922	18.9	23,400

Maquoketa River near Maquoketa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1922	July 23, 1922	14.7	10,200
1923	Apr. 4, 1923	20.6	30,300
1924	Aug. 20, 1924	19.8	19,300
1925	June 17, 1925	19.67	26,600
1926	Mar. 1, 1926	12.9	8,320
1927	Feb. 5, 1927	13.9	9,700
	May 10, 1927	14.9	11,200
	May 24, 1927	16.0	12,900
	June 21, 1927	14.9	11,200
1928	Feb. 7, 1928	^b 17.64	13,600
	Mar. 13, 1928	15.4	12,100
1929	Mar. 14, 1929	20.6	30,300
1930	Feb. 20, 1930	12.9	8,320
1931	Sept. 25, 1931	11.0	6,090
1932	Oct. 11, 1931	14.2	10,200
	Mar. 26, 1932	15.0	11,400
1933	May 21, 1933	13.5	9,130
1934	July 6, 1934	13.85	7,680
1935	Mar. 5, 1935	15.47	12,200
	Mar. 11, 1935	13.6	9,270
1936	Mar. 11, 1936	14.13	10,000
1937	Feb. 21, 1937	^b 22.18	25,100
	Mar. 6, 1937	20.08	27,500
	Apr. 5, 1937	13.6	9,190
	June 13, 1937	15.6	12,800
	June 21, 1937	17.7	18,500
1938	Jan. 24, 1938	^b 16.33	9,800
	Feb. 6, 1938	^b 18.48	13,600

Maquoketa River near Maquoketa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1939	July 17, 1939	13.21	8,610
1940	June 23, 1940	18.30	17,600
1941	Mar. 21, 1941	15.4	11,800
	June 1, 1941	14.3	9,430
	June 12, 1941	17.2	17,300
	Sept. 9, 1941	22.08	25,600
1942	Aug. 2, 1942	11.94	7,060
1943	Mar. 16, 1943	18.30	21,200
	June 2, 1943	15.2	10,800
1944	Mar. 15, 1944	14.0	9,540
	June 27, 1944	24.70	48,000
1945	Mar. 26, 1945	13.9	9,460
	Aug. 15, 1945	15.92	12,600
1946	Jan. 6, 1946	22.17	37,100
	Mar. 6, 1946	14.6	10,600
1947	Apr. 6, 1947	14.4	10,400
	Apr. 11, 1947	13.8	9,590
	June 2, 1947	16.7	16,100
	June 6, 1947	15.5	12,800
	June 14, 1947	19.96	28,000
	July 6, 1947	14.8	11,100
1948	Feb. 28, 1948	20.02	28,200
	Mar. 16, 1948	15.5	12,700
	Mar. 20, 1948	17.0	16,900
1949	Mar. 5, 1949	18.29	21,600
1950	Mar. 7, 1950	18.14	21,000
	Sept. 21, 1950	17.1	13,800
1951	Feb. 26, 1951	18.20	21,200
	Mar. 30, 1951	14.72	12,500
	July 9, 1951	18.43	19,100
1952	Jan. 19, 1952	12.26	9,080

Maquoketa River near Maquoketa, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 11, 1952	15.57	14,000
1953	Feb. 20, 1953	21.61	33,900
1954	Aug. 18, 1954	8.52	4,980
1955	Feb. 20, 1955	15.04	13,000
1956	Aug. 30, 1956	11.70	8,170
1957	May 31, 1957	8.73	5,140
1958	Feb. 24, 1958	^b 10.8	^a 5,000
1959	Mar. 21, 1959	17.58	19,200
	Mar. 27, 1959	14.88	12,800
1960	Jan 13, 1960	18.91	23,700
	Mar. 30, 1960	18.91	23,700
	May 7, 1960	17.12	18,600
1961	Sept. 14, 1961	14.24	10,400
1962	Nov. 4, 1961	17.47	19,600
	Nov. 17, 1961	15.96	15,900
1962	Mar. 20, 1962	17.21	19,100
	May 30, 1962	14.26	13,000
1963	Mar. 17, 1963	14.81	13,500
	Mar. 20, 1963	13.28	11,000
	July 19, 1963	14.83	13,500
1964	June 20, 1964	11.25	8,340
1965	Apr. 1, 1965	12.45	9,880
	Sept. 10, 1965	12.15	9,500
	Sept. 22, 1965	20.98	23,300

a About

b Affected by ice

5-4836. Middle Raccoon River at Panora, Iowa

Location.--Lat 41 deg.41 min.15 sec., long 94 deg.22 min.15 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.5, T.79 N., R.30 W., on left bank 15 ft downstream from highway bridge, 0.2 mile southwest of Panora and 1.5 miles upstream from Andy's Branch.

Drainage area.--440 sq mi.

Gage.--Datum of gage is 991.20 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,500 cfs and above by logarithmic plotting.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 10, 1953	14.3	^a 14,000
1958	July 2, 1958	11.87	^a 9,150
	July 3, 1958	8.95	4,200
	July 19, 1958	8.07	3,090
1959	June 1, 1959	7.50	2,480
1960	Mar. 31, 1960	9.68	5,320
	May 7, 1960	8.33	3,740
1961	June 16, 1961	7.82	2,730
1962	Mar. 26, 1962	9.29	4,620
	June 10, 1962	8.85	3,940
1963	Aug. 7, 1963	9.05	4,200
1964	June 22, 1964	10.47	6,300
1965	Mar. 2, 1965	^b 11.54	^a 4,600
	Mar. 17, 1965	10.87	6,890
	Apr. 2, 1965	8.49	3,540
	Apr. 5, 1965	9.35	4,690
	May 27, 1965	7.90	2,840

a About

b Affected by ice

c Maximum for period June to September

5-4864.9 Middle River near Indianola, Iowa

Location.--Lat 41 deg.25 min.25 sec., long 93 deg.35 min.05 sec., in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.35, T.77 N., R.24 W., on right bank 10 ft downstream from county highway bridge, 0.5 mile upstream from Cavitt Creek, and 4.5 miles northwest of Indianola.

Drainage area.--503 sq mi.

Gage.--Recording. Datum of gage is 776.15 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Oct.1, 1962, recording or nonrecording at site 1.6 miles downstream at datum 2.81 ft lower.

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

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1940	July 31, 1940	12.40	2,400
1941	June 9, 1941	19.73	8,240
	Sept. 16, 1941	17.0	5,060
1942	Nov. 1, 1941	19.5	7,960
	Dec. 24, 1941	16.5	4,750
1942	May 11, 1942	17.7	5,740
	July 19, 1942	17.5	5,540
1943	May 16, 1943	15.54	4,150
1944	May 22, 1944	20.3	9,490
1945	Mar. 15, 1945	19.36	7,860
	Apr. 16, 1945	19.0	7,280
	May 15, 1945	17.4	5,000
1946	Jan. 5, 1946	^b 21.8	6,900
	June 20, 1946	18.4	6,550
	Aug. 25, 1946	18.90	7,190
1947	Apr. 5, 1947	18.8	7,650
	Apr. 11, 1947	19.8	9,250
	May 29, 1947	19.0	7,950
	June 5, 1947	25.0	21,800
	June 13, 1947	26.40	34,000
	June 21, 1947	19.1	8,100

5-4864.9 Middle River near Indianola, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 19, 1948	17.40	5,840
1949	June 25, 1949	15.67	4,670
1950	Feb. 28, 1950	^b 16.8	4,600
	June 19, 1950	16.47	5,600
1951	Mar. 28, 1951	16.4	5,520
	May 1, 1951	19.37	8,520
	May 26, 1951	17.3	6,270
	June 8, 1951	15.65	4,920
1952	Mar. 13, 1952	15.65	4,920
	May 23, 1952	16.71	5,760
	June 22, 1952	22.20	14,400
	Aug. 15, 1952	16.26	5,440
1953	June 10, 1953	17.53	6,450
1954	June 1, 1954	17.55	6,540
	June 12, 1954	16.28	5,440
	June 16, 1954	16.80	5,840
1955	July 10, 1955	11.88	2,850
1956	Aug. 18, 1956	11.48	2,650
1957	May 11, 1957	12.90	3,350
1958	July 2, 1958	17.54	6,090
	Sept. 8, 1958	19.22	8,260
1959	May 21, 1959	17.13	6,090
	May 30, 1959	^a 17.2	^a 6,000
	July 1, 1959	19.52	8,650
1960	Jan. 13, 1960	19.44	8,520
	Mar. 30, 1960	20.43	9,900
	May 25, 1960	15.26	4,710
1961	Feb. 18, 1961	^b 18.6	^a 6,500
	Mar. 13, 1961	16.97	5,520
	Sept. 13, 1961	16.76	5,360
1962	Nov. 16, 1961	16.27	5,440

5-4864.9 Middle River near Indianola, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Mar. 20, 1962	19.42	8,520
	May 29, 1962	16.16	5,360
	June 10, 1962	15.14	4,570
1963	Mar. 4, 1963	^b 19.61	^a 4,500
1964	June 23, 1964	16.45	4,810
	Sept. 7, 1964	18.13	5,960
1965	Mar. 17, 1965	20.45	9,700
	Apr. 6, 1965	21.00	9,120
	Apr. 9, 1965	15.93	4,570
	Sept. 21, 1965	17.33	5,460

a About

b Affected by ice

6-8077.2 Middle Silver Creek near Avoca, Iowa

Location.--Near north quarter corner sec.17, T.77 N., R.40W., at bridge on State Highway 83, 7 miles west of Avoca, Pottawattamie County.

Drainage area.--3.21 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by step-backwater computations and on indirect measurement at 642 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1953			c	
1954			c	
1955	July	9, 1955	8.73	642
1956	Sept.	5, 1956	5.37	233
1957	June	16, 1957	8.51	629
1958	Aug.	13, 1958	9.36	815
1959	May	2, 1959	8.10	563
1960	May	24, 1960	7.16	429
1961	June	27, 1961	6.83	387
1962	May	20, 1962	7.00	408
1963	June	5, 1963	7.79	516
1964	June	22, 1964	6.39	335
1965			c	

c Peak stage did not reach bottom of gage

6-8077.6 Middle Silver Creek near Oakland, Iowa

Location.--Near east quarter corner sec.4, T.75 N., R.41 W., at bridge, 8.5 miles northwest of Oakland, Pottawattamie County.

Drainage area.--25.7 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June	10, 1953	9.53	991
1954	Aug.	22, 1954	8.27	759
1955	July	9, 1955	9.94	1,070
1956	Aug.	17, 1956	7.56	631
1957	June	16, 1957	9.81	1,040
1958	Sept.	5, 1958	12.28	1,450
1959	May	28, 1959	9.24	1,030
1960	May	25, 1960	8.15	898
1961	June	12, 1961	7.15	778
1962	July	13, 1962	5.55	586
1963	June	5, 1963	6.55	706
1964			c	
1965	June	29, 1965	8.31	917

c Peak stage did not reach bottom of gage

6-8077.8 Middle Silver Creek at Treynor, Iowa

Location.--Near northeast corner Sec.1, T.74 N., R.42 W., at bridge on County Road "F", 1 mile north of Treynor, Pottawattamie County.

Drainage area.--42.7 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June	10, 1953	12.28	1,700
1954	June	21, 1954	9.80	1,180
1955	Mar.	2, 1955	10.32	1,280
1956			c	
1957	June	16, 1957	10.01	1,220
1958	Sept.	5, 1958	16.01	2,600
1959	June	28, 1959	11.89	1,620
1960	Aug.	28, 1960	13.84	2,060
1961	Feb.	22, 1961	9.84	1,320
1962	July	27, 1962	9.00	1,020
1963	June	5, 1963	8.26	1,110
1964	June	22, 1964	8.82	1,320
1965	June	29, 1965	9.24	1,390

c Peak stage did not reach bottom of gage

6-6024. Monona-Harrison ditch near Turin, Iowa
(Published as "near Blencoe" 1939-42)

Location.--Lat 41 deg. 57 min. 55 sec., long 95 deg. 59 min. 30 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.32, T.83 N., R.44 W., on right pier at downstream side of bridge on Brown's grade, 1.0 mile west of gaging station on Little Sioux River near Turin, 4 miles southwest of Turin, 5.2 miles northeast of Blencoe, and 12.5 miles upstream from mouth.

Drainage area.--900 sq mi.

Gage.--Recording. Datum of gage is 1,020.00 ft above mean sea level, datum of 1929. Prior to May 7, 1942, nonrecording gage at site 4.8 miles downstream at datum 10.40 ft lower. May 7, 1942 to October 13, 1953, nonrecording gage at same site and datum. Records prior to January 1958 not equivalent.

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

Remarks.--Monona-Harrison ditch is a dug channel and is a continuation of West Fork ditch, paralleling Little Sioux River, and empties into the Missouri River $1\frac{1}{2}$ miles upstream from mouth of Little Sioux River. Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1958	July 2, 1958	6.01	1,400
1959	May 29, 1959	14.72	8,570
	May 31, 1959	13.73	9,120
1960	Mar. 30, 1960	16.32	10,400
	Apr. 2, 1960	13.95	7,800
	May 22, 1960	10.58	4,480
	May 27, 1960	10.02	4,000
	Aug. 6, 1960	8.82	3,060
	Aug. 29, 1960	11.96	5,700
1961	Mar. 15, 1961	8.13	3,170
1962	Mar. 28, 1962	16.09	11,400
	June 4, 1962	7.40	2,700
	June 10, 1962	10.45	4,960
	July 14, 1962	11.60	6,100
	July 20, 1962	^a 9.6	^b 4,500
1963	June 2, 1963	16.87	12,400
	June 5, 1963	11.51	6,400
1964	May 6, 1964	12.01	7,580
	May 26, 1964	16.10	11,400

6-6024. Monona-Harrison ditch near Turin, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Apr. 1, 1965	^b 19.54	^a 9,000
	Apr. 7, 1965	11.43	5,870

a About

b Affected by ice

6-8080. Mule Creek near Malvern, Iowa

Location.--Lat 40 deg. 56 min. 40 sec., long 95 deg. 35 min. 40 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T.71 N., R.41 W., on right bank 170 ft upstream from highway bridge, 1.8 miles upstream from mouth, and 4.4 miles south of Malvern.

Drainage area.--10.6 sq mi.

Gage.--Recording. Datum of gage is 974.20 ft above mean sea level (levels by Soil Conservation Service). Prior to Oct. 1, 1965 at site 180 ft. downstream.

Stage-discharge relation.--Defined by current-meter measurements below 510 cfs and extended above on basis of slope-area measurement of peak flow.

Remarks.--Base for partial-duration series, 300 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1954	Aug.	21, 1954	15.84	^c 2,070
	Aug.	23, 1954	14.19	1,680
1955	Mar.	1, 1955	7.51	411
1956	July	11, 1956	7.55	398
	July	15, 1956	15.54	1,990
	Aug.	18, 1956	^a 10.4	867
1957	May	29, 1957	12.58	1,310
	June	7, 1957	9.80	849
	June	15, 1957	6.30	334
	June	17, 1957	7.40	479
	July	1, 1957	8.70	678
1958	July	19, 1958	6.92	334
	July	30, 1958	12.35	1,180
1959	May	2, 1959	6.62	332
	May	18, 1959	11.50	1,180
	May	29, 1959	8.07	549
	Sept.	18, 1959	7.57	472
1960	Aug.	28, 1960	8.22	565
	Sept.	24, 1960	7.30	428
1961	June	27, 1961	8.12	549
1962	May	28, 1962	10.00	886

6-8080. Mule Creek near Malvern, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Sept. 10, 1963	6.00	256
1964	May 26, 1964	10.86	1,060
	June 14, 1964	8.57	632
1965	Mar. 1, 1965	10.58	1,000
	May 22, 1965	14.10	1,820
	July 19, 1965	10.25	542
	Sept. 7, 1965	8.39	303

a About

c Maximum during period June to September

6-8100. Nishnabotna River above Hamburg, Iowa

Location.--Lat 40 deg. 38 min. 00 sec., long 95 deg. 37 min. 35 sec., in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.11, T.67 N., R.42 W., on left bank 1,200 ft downstream from Chicago, Burlington, & Quincy Railroad bridge, 1.6 miles downstream from confluence of East Nishnabotna and West Nishnabotna Rivers, and 2 miles northeast of Hamburg.

Drainage area.--2,806 sq mi.

Gage.--Nonrecording prior to November 16, 1950, recording thereafter. Prior to October 1, 1923, at site 6 miles downstream at different datum. October 5, 1928, to September 6, 1929, at site 1,000 ft upstream at datum 0.42 ft higher. September 7, 1929 to June 5, 1947, at present site and datum. June 6 to July 22, 1947, at site 1,000 ft upstream at different datum. July 23, 1947, to November 16, 1950, at present site and datum. Datum of gage is 894.17 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 9,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1917	June 7, 1917	21	
1922	Apr. 12, 1922	16.7	11,800
1923	Mar. 27, 1923	16.0	8,800
1929	Mar. 13, 1929	22.3	21,100
	July 6, 1929	18.2	9,500
	July 15, 1929	19.1	11,100
1930	Feb. 8, 1930	^b 13.8	3,020
1931	June 22, 1931	18.1	9,350
1932	Nov. 25, 1931	19.1	11,100
1932	Aug. 16, 1932	19.1	10,300
1933	Jan. 22, 1933	17.1	8,020
1934	June 9, 1934	14.6	5,620
1935	June 26, 1935	17.5	8,500
1936	Mar. 5, 1936	22.2	20,600
1937	Mar. 5, 1937	21.6	16,500

6-8100. Nishnabotna River above Hamburg, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1938	Aug.	28, 1938	17.9	9,060
	Sept.	14, 1938	18.2	9,650
1939	Mar.	12, 1939	^b 23.0	22,100
	Aug.	11, 1939	17.9	9,060
1940	Aug.	8, 1940	18.4	9,800
	Aug.	12, 1940	18.9	10,700
	Aug.	14, 1940	18.2	9,500
	Aug.	17, 1940	18.4	9,800
1941	June	9, 1941	20.4	14,600
	Sept.	15, 1941	19.1	11,100
1942	Oct.	22, 1941	18.8	10,500
	June	20, 1942	19.2	11,700
	June	25, 1942	19.2	11,400
1943	May	16, 1943	19.1	11,100
	June	3, 1943	18.6	10,100
	June	5, 1943	18.6	10,100
	Aug.	3, 1943	18.9	10,700
1944	May	26, 1944	17.9	9,060
	June	4, 1944	19.5	11,600
	June	9, 1944	18.8	9,200
	June	15, 1944	20.8	11,800
1945	Mar.	11, 1945	^b 18.6	9,350
	Apr.	23, 1945	18.8	10,500
	May	15, 1945	18.4	9,800
	May	23, 1945	22.6	21,000
	June	3, 1945	18.0	9,200
1946	Feb.	6, 1946	18.9	10,700
	June	18, 1946	19.1	11,100
	Sept.	4, 1946	19.7	11,300
1947	Apr.	10, 1947	19.5	9,800
	June	2, 1947	<u>19.8</u>	11,200
	June	6, 1947	23.0	28,700
	June	14, 1947	25.7	52,100
	June	24, 1947	<u>26.0</u>	55,500

6-8100. Nishnabotna River above Hamburg, Iowa--continued

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1948	Feb. 28, 1948	21.5	17,600	
	Mar. 20, 1948	24.5	36,300	
1949	Mar. 7, 1949	25.9	32,200	
	June 2, 1949	19.2	12,000	
	June 28, 1949	18.5	9,950	
1950	Feb. 9, 1950	18.4	10,500	
	May 10, 1950	22.5	19,900	
	June 19, 1950	18.4	10,500	
	Aug. 12, 1950	19.2	12,000	
1951	Mar. 29, 1951	21.46	16,200	
	May 2, 1951	24.51	23,800	
	June 3, 1951	24.32	23,200	
	June 8, 1951	21.0	14,500	
	June 20, 1951	17.9	9,170	
	July 4, 1951	21.89	16,600	
1952	Mar. 13, 1952	18.2	10,700	
	June 23, 1952	20.92	12,800	
	June 28, 1952	20.6	12,300	
	Aug. 29, 1952	20.20	11,800	
1953	June 9, 1953	14.65	5,440	
1954	Aug. 23, 1954	21.32	12,600	
1955	Apr. 24, 1955	18.8	12,000	
	July 9, 1955	18.64	10,600	
1956	July 8, 1956	20.90	13,500	
	Sept. 6, 1956	18.38	9,760	
1957	June 7, 1957	18.90	13,400	
	June 16, 1957	21.59	^a 20,400	
1958	July 6, 1958	22.75	14,600	
	July 19, 1958	19.45	10,000	
	July 30, 1958	20.43	11,300	
	Aug. 6, 1958	20.53	11,400	
	Sept. 6, 1958	20.55	10,300	
1959	May 19, 1959	17.90	9,640	
	May 29, 1959	21.70	15,400	

6-8100. Nishnabotna River above Hamburg, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 31, 1960	24.56	23,900
1961	Feb. 23, 1961	18.30	9,240
	Mar. 13, 1961	21.33	14,400
	Mar. 15, 1961	20.35	12,600
1962	Mar. 23, 1962	21.60	16,200
	May 29, 1962	^c 23.62	^a 18,000
	June 9, 1962	19.05	9,500
1963	Mar. 12, 1963	22.02	15,600
1964	May 26, 1964	23.32	19,900
	June 20, 1964	22.02	16,200
	June 23, 1964	22.72	17,300
	July 11, 1964	21.80	15,400
1965	Mar. 2, 1965	24.83	24,700
	Mar. 17, 1965	24.20	22,600
	Apr. 1, 1965	18.90	10,100
	Apr. 5, 1965	21.45	14,800
	May 22, 1965	20.69	13,200
	June 29, 1965	22.30	17,000
	July 19, 1965	20.05	11,300

a About

b Affected by ice

c Backwater from Missouri River

6.8170. Nodaway River at Clarinda, Iowa

Location.--Lat. 40 deg. 44' min. 10 sec., long. 95 deg. 00 min. 30 sec., in NE¼ sec. 32, T.69N., R.36W., on downstream side of center bridge on State Highway 2, 0.5 mile downstream from Neele Branch, 1.2 miles east of city square of Clarinda, and 7.5 miles upstream from East Nodaway River.

Drainage area.--762 sq. mi.

Gage.--Nonrecording prior to March 27, 1957; recording thereafter. Datum of gage is 960.36 feet 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 an overflow profile and extended channel rating.

Remarks.--Base for partial-duration series 5,000 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1903	August	1903	^c 25.4	
1918	May	29, 1918	9.7	^d 4,630
1919	Apr.	11, 1919	13.0	7,900
	Apr.	24, 1919	10.2	5,100
	Sept.	30, 1919	11.8	5,460
1920	May	12, 1920	11.3	5,140
1921	June	3, 1921	7.2	2,140
1922	July	29, 1922	11.0	4,900
1923	June	9, 1923	6.1	1,600
1924	June	9, 1924	16.4	9,840
	June	27, 1924	15.0	8,400
1925	June	14, 1925	12.0	^e 5,700
1936	Sept.	12, 1936	7.2	^f 2,440
1937	Feb.	19, 1937	11.4	6,300
	Mar.	4, 1937	17.0	12,100
	May	21, 1937	16.5	11,600
	May	26, 1937	9.7	4,630

6-8170. Nodaway River at Clarinda, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1938	May	31, 1938	14.7	9,600
	June	11, 1938	11.3	6,200
	Aug.	31, 1938	11.3	6,200
1939	Mar.	12, 1939	17.6	13,000
	July	5, 1939	13.5	7,050
	Aug.	11, 1939	12.6	6,240
1940	Aug.	13, 1940	10.9	4,690
1941	June	3, 1941	15.2	8,760
	June	9, 1941	18.0	11,000
	Sept.	15, 1941	15.8	9,120
1942	Oct.	7, 1941	16.0	9,300
	Nov.	1, 1941	12.0	5,700
1942	May	11, 1942	15.0	8,400
	May	22, 1942	12.9	6,510
	June	20, 1942	14.9	8,310
1943	Feb.	3, 1943	11.5	5,300
	June	16, 1943	13.8	7,320
	Aug.	3, 1943	13.8	7,320
1944	May	3, 1944	12.9	6,510
	May	26, 1944	13.3	6,870
	June	4, 1944	16.6	9,660
	June	8, 1944	14.2	7,500
1945	Mar.	11, 1945	11.0	5,900
	Mar.	15, 1945	13.8	8,700
	May	14, 1945	15.9	10,900
	May	21, 1945	14.0	8,700
1946	Mar.	26, 1946	11.6	6,500
	June	18, 1946	15.8	11,100
1947	Apr.	10, 1947	11.7	7,200
	May	29, 1947	11.5	7,200
	June	2, 1947	10.9	6,400
	June	5, 1947	21.3	17,200
	June	13, 1947	25.3	31,100
	June	18, 1947	17.6	12,600
	June	21, 1947	18.0	13,200
1948	Feb.	27, 1948	10.3	5,200
	Mar.	19, 1948	17.4	12,800
	July	22, 1948	10.6	5,450

6-8170. Nodaway River at Clarinda, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1949	Feb.	23, 1949	11.5	6,350
	Mar.	4, 1949	13.1	8,000
	June	1, 1949	16.0	11,000
1950	Feb.	28, 1950	12.0	6,900
	May	9, 1950	19.8	15,400
1951	Mar.	28, 1951	15.5	10,400
	Apr.	30, 1951	13.0	7,700
	May	1, 1951	19.5	15,000
	June	2, 1951	14.4	8,740
	June	15, 1951	18.0	13,000
	July	3, 1951	18.1	13,100
1952	Mar.	11, 1952	10.0	5,130
	May	22, 1952	11.0	6,080
	June	22, 1952	17.15	13,400
1953	Apr.	30, 1953	5.6	1,630
1954	Aug.	23, 1954	10.13	3,930
1955	July	9, 1955	13.50	7,100
1956	July	7, 1956	10.0	3,850
1957	May	30, 1957	10.45	6,980
	June	17, 1957	9.86	6,150
1958	July	3, 1958	15.85	13,800
	July	30, 1958	15.56	13,600
	Sept.	7, 1958	10.26	6,810
	Sept.	10, 1958	12.60	9,880
1959	Feb.	24, 1959	^b 11.27	^a 6,500
	May	11, 1959	11.79	8,990
	May	30, 1959	14.97	13,200
	June	30, 1959	11.70	8,830
	Aug.	6, 1959	14.00	11,700
1960	Jan.	12, 1960	16.90	14,900
	Mar.	30, 1960	18.88	16,900
	June	30, 1960	12.40	9,620
	Aug.	29, 1960	13.80	11,400
	Sept.	18, 1960	13.82	11,400

6-8170. Nodaway River at Clarinda, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Feb. 23, 1961	11.85	8,820
	Mar. 13, 1961	12.08	10,100
	Mar. 27, 1961	9.35	5,380
	Apr. 11, 1961	13.20	10,700
	Sept. 13, 1961	10.65	7,120
1962	Mar. 19, 1962	12.05	9,100
	May 29, 1962	16.10	17,300
	July 21, 1962	10.76	7,740
1963	Mar. 4, 1963	10.32	6,840
	Mar. 11, 1963	9.34	5,320
	Apr. 29, 1963	11.10	9,540
1964	Apr. 13, 1964	12.04	9,900
	May 8, 1964	10.36	7,020
	May 26, 1964	10.88	7,920
	June 14, 1964	11.61	9,180
	June 20, 1964	13.64	12,800
	June 23, 1964	15.50	16,200
	July 3, 1964	9.15	5,180
	July 12, 1964	9.39	5,460
1965	Feb. 20, 1965	9.60	5,910
	Mar. 1, 1965	16.68	18,300
	Mar. 17, 1965	16.36	17,700
	Apr. 5, 1965	10.16	6,590
	May 8, 1965	10.06	6,410
	June 8, 1965	9.31	5,330
	June 29, 1965	12.45	10,700
	July 1, 1965	10.13	6,530
	Sept. 21, 1965	9.81	7,760

a About

b Affected by ice

c Maximum stage known

d Maximum for period May to September, 1918

e Maximum for period October 1, 1924, to July 4, 1925

f Maximum for period May 26 to September 30, 1936

5-4552. North Fork English River near Guernsey, Iowa

Location.--Near southwest corner sec. 17, T.79 N., R.13 W, at bridge, 2.25 miles west of Guernsey, Poweshiek County.

Drainage area.--68.7 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	May 24, 1953	11.70	7,000
1954	Aug. 26, 1954	11.35	6,300
1955	Feb. 20, 1955	9.86	4,280
1956	June 20, 1956	5.72	700
1957	July 3, 1957	11.39	2,200
1958	Sept. 10, 1958	11.21	2,130
1959	Mar. 20, 1959	12.65	d
1960	Mar. 30, 1960	13.63	d
1961	Mar. 6, 1961	11.98	d
1962	May 29, 1962	7.11	1,650
1963	Apr. 28, 1963	8.48	d
1964	June 22, 1964	6.64	d
1965	Sept. 21, 1965	8.65	d

d Discharge not determined

5-4551.5 North Fork English River near Montezuma, Iowa

Location.--SW $\frac{1}{4}$ sec.13, T.79N., R.15W., at bridge on U.S. Highway 63, 5 miles northwest of Montezuma, Poweshiek County.

Drainage area.--34.0 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	Mar. 24, 1953	13.25	4,240
1954	Aug. 26, 1954	7.47	1,270
1955		c	
1956	June 20, 1956	7.08	1,120
1957	July 28, 1957	12.22	3,700
1958	May 31, 1958	9.13	1,940
1959	Mar. 20, 1959	13.18	4,190
1960	Mar. 30, 1960	11.60	d
1961	Mar. 13, 1961	12.95	d
1962		c	
1963	Apr. 28, 1963	8.04	d
1964		c	
1965	July 9, 1965	12.23	d

c Peak stage did not reach bottom of gage

d Discharge not determined

5-4144.5 North Fork Little Maquoketa River near Rickardsville, Iowa

Location.--Near northwest corner sec.28, T.90 N., R1 E., at bridge
1 mile northeast of Rickardsville, Dubuque County.

Drainage area.--22.8 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	July 8, 1951	10.84	3,510
1952	Aug. 20, 1952	10.63	3,040
1953	Feb. 19, 1953	9.70	2,190
1954	May 31, 1954	8.34	1,460
1955	Feb. 19 or 20, 1955	7.07	964
1956		c	
1957	July 31, 1957	8.90	1,720
1958	Aug. 20, 1958	7.96	1,300
1959	Mar. 19, 1959	10.39	2,790
1960	Mar. 30, 1960	10.84	3,330
1961	Feb. 18, 1961	7.36	1,010
1962	Oct. 30, 1961	11.43	4,320
1963	Mar. 18, 1963	7.49	1,070
1964	May 24, 1964	5.71	551
1965	Sept. 21, 1965	6.90	865

5-4825. North Raccoon River near Jefferson, Iowa
(Published as "Raccoon River near Jefferson", 1940-55)

Location.--Lat 41 deg.59 min.20 sec., long 94 deg.22 min.30 sec., in SW $\frac{1}{4}$ NW $\frac{1}{4}$ 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.--Recording. Datum of gage is 967.09 ft above mean sea level, datum of 1929. Prior to Apr. 22, 1946, nonrecording gage at site 4 miles upstream at different datum. Apr. 22 to June 25, 1946, nonrecording, June 26, 1946 to Sept.30, 1955, recording, and Oct. 1, 1955, to Apr. 30, 1958, nonrecording at present site and datum.

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

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 28, 1940	10.9	4,030
1941	June 14, 1941	9.1	2,420
1942	July 15, 1942	10.5	3,590
1943	Aug. 13, 1943	15.5	9,480
1944	May 22, 1944	15.4	9,860
	June 14, 1944	16.2	11,900
1945	Mar. 12, 1945	12.9	6,880
	Apr. 18, 1945	10.6	4,130
	Apr. 25, 1945	14.2	8,700
	May 24, 1945	13.1	7,120
	June 3, 1945	14.3	8,780
	June 10, 1945	13.5	7,630
	Aug. 8, 1945	10.7	4,230
1946	Mar. 16, 1946	11.5	5,160
	May 28, 1946	13.4	7,310
1947	June 14, 1947	12.4	5,780
	June 23, 1947	22.3	29,100
	July 8, 1947	11.6	5,420

5-4825. North Raccoon River near Jefferson, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 20, 1948	13.8	8,630
1949	Mar. 7, 1949	14.8	10,100
1950	June 19, 1950	12.0	6,050
	June 23, 1950	11.1	4,710
1951	Mar. 29, 1951	17.39	16,000
	May 3, 1951	15.62	11,800
	June 3, 1951	12.88	6,720
	June 21, 1951	12.25	5,800
	July 4, 1951	12.58	6,320
	Aug. 18, 1951	12.41	6,060
	Aug. 30, 1951	12.97	6,860
1952	Apr. 1, 1952	12.80	6,580
	July 11, 1952	12.51	6,190
1953	July 1, 1953	10.10	3,490
1954	June 13, 1954	11.09	4,670
	June 22, 1954	19.52	21,300
	Aug. 29, 1954	14.19	9,360
1955	Apr. 26, 1955	9.78	3,580
1956	May 13, 1956	5.4	650
1957	June 16, 1957	13.49	7,800
1958	June 7, 1958	11.70	4,720
1959	June 3, 1959	15.06	9,800
1960	Mar. 31, 1960	19.43	18,600
	May 28, 1960	13.45	6,960
1961	Mar. 29, 1961	13.19	6,680
1962	Mar. 30, 1962	17.60	14,300
	June 10, 1962	11.90	5,050
	Sept. 4, 1962	16.33	11,700

5-4825. North Raccoon River near Jefferson, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	May 14, 1963	12.34	5,510
1964	May 8, 1964	8.61	2,280
1965	Apr. 5, 1965	15.29	9,890
	May 27, 1965	14.94	9,300
	Sept. 30, 1965	12.38	5,610

5-4823. North Raccoon River near Sac City, Iowa

Location.--Lat 42 deg. 20 min. 20 sec., long 94 deg. 59 min. 10 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T.87 N., R.36 W., on right bank 15 ft downstream from highway bridge, 0.2 mile upstream from Indian Creek, and 4.5 miles south of Sac City.

Drainage area.--713 sq.mi.

Gage.--Recording. Datum of gage is 1,144.60 ft. above mean sea level, datum of 1929 (levels by Iowa Natural Resources Council).

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1958	June 4, 1958	13.44	^c 4,560
1959	May 31, 1959	14.51	5,200
1960	Mar. 30, 1960	16.73	9,020
	May 22, 1960	9.68	2,100
	May 26, 1960	10.94	2,840
	June 19, 1960	10.47	2,640
1961	Mar. 28, 1961	13.16	4,420
1962	Mar. 29, 1962	15.83	7,730
	June 9, 1962	9.96	2,010
	July 5, 1962	10.32	2,160
	Sept. 1, 1962	18.12	10,800
1963	June 3, 1963	9.32	1,910
1964	May 7, 1964	7.47	1,100
1965	Apr. 6, 1965	15.59	6,960
	Sept. 28, 1965	9.82	2,020

c Maximum for period June to September

5-4860. North River near Norwalk, Iowa

Location.--Lat 41 deg.27 min.25 sec., long 93 deg.39 min.10 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.20, T.77 N., R.24 W., on left bank 10 ft downstream from highway bridge, 1-3/4 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.

Gage.--Recording. Datum of gage is 788.45 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 12, 1946 nonrecording at same site and datum. Jan. 7, to Oct. 11, 1960, nonrecording at site 2.1 miles upstream at different datum.

Stage-discharge relation.--Defined at current-meter measurements below 9,100 cfs and above on basis of area-velocity studies.

Remarks.--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 1, 1940	14.74	986
1941	Sept. 17, 1941	17.4	1,530
1942	Oct. 9, 1941	19.8	2,250
	Nov. 2, 1941	20.4	3,800
	Dec. 25, 1941	19.0	2,040
1942	May 7, 1942	18.5	1,820
	May 12, 1942	20.62	4,350
	July 21, 1942	20.0	3,020
1943	Feb. 5, 1943	^b 20.0	1,710
	June 18, 1943	20.51	3,720
1944	May 5, 1944	19.8	2,430
	May 22, 1944	20.3	2,430
	May 27, 1944	20.45	3,830
	June 12, 1944	20.1	2,970
1945	Mar. 17, 1945	19.7	2,290
	Apr. 5, 1945	19.8	2,430
	Apr. 17, 1945	19.9	2,590
	May 16, 1945	19.9	2,590
1946	Mar. 27, 1946	19.6	2,170

5-4860. North River near Norwalk, Iowa--(continued)

Peak stages and discharges			
Water Year	Date	Gage height (feet)	Discharge (cfs)
1946	Aug. 26, 1946	21.87	10,200
1947	Oct. 20, 1946	20.0	2,800
	Apr. 6, 1947	19.9	2,600
	Apr. 11, 1947	20.8	5,040
	May 30, 1947	20.6	4,370
	June 5, 1947	24.4	26,000
	June 13, 1947	25.3	32,000
	June 24, 1947	21.1	6,080
	July 7, 1947	19.3	2,080
1948	Mar. 19, 1948	21.36	7,200
1949	Mar. 5, 1949	18.68	1,860
1950	Mar. 2, 1950	^b 20.8	^a 2,500
	Mar. 6, 1950	20.32	3,430
	June 16, 1950	19.4	1,800
	June 20, 1950	20.6	2,260
1951	Mar. 30, 1951	19.77	2,380
	May 2, 1951	20.52	3,970
	May 27, 1951	20.25	3,300
	June 4, 1951	19.11	1,760
	June 9, 1951	19.40	1,980
	July 4, 1951	19.89	2,600
1952	Mar. 12, 1952	20.48	3,970
	May 25, 1952	19.79	2,440
	June 23, 1952	20.80	5,670
	June 29, 1952	18.96	1,820
	Aug. 17, 1952	19.22	1,820
1953	June 11, 1953	19.64	1,940
1954	May 31, 1954	18.45	1,600
1955	July 11, 1955	^c	^a 1,400
1956	Aug. 8, 1956	16.85	1,140
1957	May 11, 1957	18.26	1,410
1958	July 6, 1958	20.77	3,180

5-4860. North River near Norwalk, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	July 21, 1958	20.20	2,220
1959	May 22, 1959	19.63	1,810
	May 31, 1959	20.33	2,660
	July 1, 1959	<u>22.60</u>	9,460
1960	Jan. 13, 1960	19.76	4,580
	Mar. 30, 1960	^b 21.0	^a 6,800
	May 7, 1960	17.8	2,500
	May 25, 1960	<u>17.37</u>	2,600
1961	Mar. 19, 1961	19.92	2,290
	Mar. 29, 1961	19.19	1,730
	Apr. 14, 1961	20.05	2,480
	June 8, 1961	20.18	2,130
	June 15, 1961	19.90	1,910
1962	Nov. 17, 1961	19.58	1,990
1962	Mar. 21, 1962	^b 21.87	^a 5,200
	May 31, 1962	20.30	2,830
	June 11, 1962	20.29	2,830
1963	Mar. 13, 1963	^b 19.97	^a 1,800
	May 1, 1963	19.72	2,080
1964	June 25, 1964	20.23	2,130
1965	Mar. 18, 1965	^b 22.86	^a 8,000
	Apr. 2, 1965	20.23	2,040
	Apr. 6, 1965	21.20	4,330
	July 2, 1965	20.84	2,770

a About

b Affected by ice

c No gage height record

5-4725. North Skunk River near Sigourney, Iowa

Location.--Lat 41 deg.18 min.05 sec., long 92 deg.12 min.10 sec., in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.14, T.75 N., R.12 W., on right bank 20 ft downstream from bridge on State Highway 149, 2 $\frac{1}{2}$ 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.

Remarks.--Base for partial-duration series, 3,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 1944	22.8	14,500
1946	Jan. 7, 1946	22.57	14,000
1947	June 15, 1947	21.8	12,000
1948	Mar. 1, 1948	19.4	^b 6,610
	Mar. 19, 1948	19.5	7,660
1949	Feb. 27, 1949		
	Mar. 8, 1949	19.65	6,920
	Mar. 24, 1949	19.53	6,760
1950	Mar. 8, 1950	18.84	5,810
1951	May 29, 1951	16.4	3,820
	July 3, 1951	19.98	7,460
1952	Mar. 13, 1952	20.16	7,660
1953	Feb. 24, 1953	16.43	3,820
1954	Apr. 30, 1954	11.65	1,830
1955	Apr. 24, 1955	18.18	5,180
1956	June 20, 1956	7.98	880
1957	July 8, 1957	15.81	3,490

5-4725. North Skunk River near Sigourney, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Feb. 27, 1958	^c 12.26	2,040
1959	Mar. 22, 1959	19.83	7,270
	May 30, 1959	17.37	4,500
1960	Jan. 15, 1960	21.56	11,500
	Mar. 31, 1960	25.33	27,500
	May 9, 1960	18.76	5,810
	July 13, 1960	17.29	4,420
1961	Feb. 22, 1961	17.80	4,820
	Mar. 8, 1961	18.73	5,700
	Mar. 16, 1961	17.50	4,580
	Sept. 16, 1961	18.79	5,810
1962	Nov. 3, 1961	18.84	5,810
	Nov. 16, 1961	19.33	6,460
1962	Mar. 22, 1962	20.43	8,520
	May 29, 1962	18.94	5,930
1963	Aug. 7, 1963	16.36	3,820
1964	June 23, 1964	15.40	3,290
1965	Apr. 8, 1965	17.55	4,620
	Apr. 27, 1965	17.05	4,240
	July 7, 1965	17.95	4,960
	Sept. 21, 1965	22.57	11,200

b Affected by ice

c Maximum gage height (13.60 ft.) Feb. 27

6-6070. Odebolt Creek near Arthur, Iowa

Location.--Lat 42 deg. 20 min. 05 sec., long 95 deg. 22 min. 55 sec., in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.87 N., R.39 W., near center of span on downstream side of county road bridge, 700 ft south of State Highway 175, 2 miles west of Arthur, 4.5 miles east of Ida Grove, and 5 miles upstream from mouth.

Drainage area.--39.3 sq mi.

Gage.--Recording. Datum of gage is 1,258.57 ft above mean sea level, datum or 1929.

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

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 3, 1951	11.96	4,320
1958	Feb. 27, 1958	7.04	378
1959	May 31, 1959	12.18	5,160
1960	Mar. 29, 1960	^b 13.00	^a 700
1961	June 14, 1961	9.50	835
1962	Mar. 27, 1962	^b 11.98	^a 3,000
	July 14, 1962	9.82	805
	Aug. 30, 1962	13.78	5,200
1963	June 4, 1963	10.77	1,010
	June 6, 1963	9.24	700
1964	May 23, 1964	11.50	1,650
	May 25, 1964	11.61	1,720
1965	Apr. 3, 1965	11.14	1,360

a About

b Affected by ice

5-4551. Old Mans Creek near Iowa City, Iowa

Location.--Lat 41 deg.36 min.25 sec., long 91 deg.36 min.40 sec., in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T. 79N., R. 7W., near center of span on downstream side of highway bridge, 1.3 miles downstream from Old Womans Creek, 5 miles southwest of Iowa City and 8.6 miles upstream from mouth.

Drainage area.--201 sq mi.

Gage.--Nonrecording. Altitude of gage is 645 ft (from topographic map).

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)
1951	Aug. 28, 1951	10.6	1,530
1952	Mar. 12, 1952	13.2	5,230
1953	Feb. 20, 1953	12.6	3,510
1954	May 1, 1954	5.47	460
1955	Apr. 24, 1955	9.06	1,120
1956	Aug. 19, 1956	10.46	1,430
1957	Aug. 1, 1957	4.92	380
1958	Sept. 5, 1958	8.64	1,040
1959	Feb. 27, 1959	^b 10.9	^a 1,500
	Mar. 21, 1959	12.93	4,180
	Apr. 28, 1959	10.16	1,430
	May 30, 1959	11.14	1,710
1960	Jan. 14, 1960	12.68	3,770
	Mar. 31, 1960	13.58	6,840
	May 7, 1960	c	^a 2,000
1961	Mar. 5, 1961	c	^a 1,500
	Mar. 13, 1961	10.80	1,640
	July 27, 1961	13.72	^a 1,600
	Sept. 14, 1961	10.34	1,460

Old Mans Creek near Iowa City, Iowa--(Continued)

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1962	Nov. 4, 1961	11.52	1,920	
	Nov. 16, 1961	12.74	2,990	
	Mar. 20, 1962	13.35	4,180	
1962	May. 29, 1962	14.52	12,000	
	July 14, 1962	14.28	8,800	
1963	Mar. 4, 1963	^b 12.20	^a 1,400	
1964	June 20, 1964	10.42	1,480	
1965	Sept. 21, 1965	15.55	7,750	

a About

b Affected by ice

c No gage height record

6-4834.6 Otter Creek near Ashton, Iowa

Location.--Near SE $\frac{1}{4}$ sec. 2, T.98 N., R.42 W., at bridge, 2 miles northeast of Ashton, Osceola County

Drainage area.--88.0 sq. mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar.	29, 1952	9.88	2,100
1953	June	7, 1953	12.16	17,400
1954	June	20, 1954	11.17	6,320
1955	Apr.	23, 1955	7.14	393
1956	Aug.	13, 1956	7.62	489
1957	July	3, 1957	8.51	754
1958	Apr.	5, 1958	7.01	367
1959	May	30, 1959	10.27	2,880
1960	Mar.	30, 1960	9.37	1,300
1961	Mar.	27, 1961	7.01	367
1962	Mar.	31, 1962	10.65	3,990
1963	June	10, 1963	6.61	303
1964			c	
1965	Apr.	1, 1965	11.67	1,700

c Peak stage did not reach bottom of gage

6-4834.1 Otter Creek north of Sibley, Iowa

Location.--At northeast corner sec.25, T.100 N., R.41 W., at bridge on County Road "H", 4 miles north of Sibley, Osceola County.

Drainage area.--11.9 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	^b 6.95	^a 300
1953	June 7, 1953	8.06	982
1954	June 20, 1954	7.73	751
1955	Apr. 23, 1955	4.56	52
1956	Mar. 28, 1956	4.12	45
1957		c	
1958		c	
1959	May 30, 1959	7.62	674
1960	Mar. 30, 1960	6.60	229
1961		c	
1962	Mar. 31, 1962	8.49	1,410
1963		c	
1964		c	
1965	May 15, 1965	6.91	322

a About

b Affected by ice

c Peak stage did not reach bottom of gage

6-4834.3 Otter Creek at Sibley, Iowa

Location.--Near north quarter corner sec. 14 T.99N., R.42W., at bridge on old State Highway 3, 1 mile northwest of Sibley, Osceola County

Drainage area.--29.9 sq. mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	8.14	822
1953	June 7, 1953	9.82	5,400
1954	June 20, 1954	9.49	3,860
1955	Apr. 23, 1955	5.96	107
1956	Mar. 28, 1956	5.24	64
1957	Mar. 25, 1957	6.59	175
1958	June 4, 1958	6.12	120
1959	May 30, 1959	7.98	698
1960	Mar. 30, 1960	7.74	554
1961	Mar. 27, 1961	7.07	281
1962	Mar. 31, 1962	c	^a 2,000
1963		d	
1964		d	
1965	May 15, 1965	7.17	354

a About

c No gage-height record

d Peak stage did not reach bottom of gage

5-3885. Paint Creek at Waterville, Iowa

Location.--Lat 43 deg.12 min.35 sec., long 91 deg.18 min.20 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ 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.

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

Remarks.--Base for partial-duration series, 1400 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1951	Aug.	5, 1951	17.35	9,100
1953	July	26, 1953	8.53	2,840
1954	May	1, 1954	6.79	1,300
1955	Oct.	14, 1954	6.20	930
1955	July	4, 1955	6.20	930
1956	May	6, 1956	6.68	1,210
1957	June	17, 1957	8.33	2,650
1958	Feb.	24, 1958	6.40	1,030
1959	June	28, 1959	8.40	2,710
	Sept.	26, 1959	7.48	1,790
1960	Mar.	27, 1960	8.39	2,710
1961	Feb.	22, 1961	^b 8.07	^a 1,800
	Mar.	25, 1961	8.96	3,420
	Sept.	30, 1961	7.60	1,870
1962	Mar.	28, 1962	8.46	3,700
	Aug.	30, 1962	7.32	2,340
1963	Mar.	16, 1963	7.00	1,220
1964	Apr.	2, 1964	6.94	1,550
	May	16, 1964	8.32	3,010

Paint Creek at Waterville, Iowa--(Continued)

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1965	Mar.	1, 1965	^b 7.60	^a 1,900
	Apr.	3, 1965	7.32	1,920
	May	26, 1965	6.79	1,440
	Sept.	7, 1965	7.18	1,790

a About

b Affected by ice

5-3886. Paint Creek near Waterville, Iowa

Location.--Near center sec. 36, T.97 N., R.4 W., at abandoned road bridge, 3 miles southeast of Waterville, Allamakee County.

Drainage area.--56.0 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	Aug. 5, 1951	17.00	10,800
1953	July 26, 1953	12.89	3,900
1954	Apr. 30, 1954	9.83	1,920
1955	July 4, 1955	11.25	2,720
1956	May 6, 1956	11.06	2,590
1957	July 31, 1957	9.33	c
1958	Feb. 24, 1958	7.25	c
1959	Mar. 24, 1959	8.71	c
1960	Mar. 27, 1960	13.81	4,870
1961	Mar. 25, 1961	13.53	4,540
1962	Mar. 28, 1962	12.68	3,710
1963		d	
1964	May 15, 1964	11.98	3,040
1965	Apr. 3, 1965	10.35	2,190

c Discharge not determined

d Peak stage did not reach bottom of pipe

6-5999.5 Perry Creek near Hinton, Iowa

Location.--Near west quarter corner of sec. 11, T.90 N., R.
47 W., at bridge on State Highway 7, 4 miles west of Hinton,
Plymouth County.

Drainage area.--30.7 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June 7, 1953	17.93	4,980
1954	June 19, 1954	14.44	1,660
1955	May 26, 1955	8.93	350
1956		c	
1957	July 8, 1957	10.76	655
1958	May 31, 1958	15.50	2,350
1959	May 30, 1959	16.32	3,000
1960	Aug. 28, 1960	9.96	520
1961	Mar. 14, 1961	7.44	180
1962	Mar. 27, 1962	17.05	3,800
1963	June 4, 1963	8.56	305
1964	May 5, 1964	9.89	485
1965	Mar. 31, 1965	^b 11.01	^a 600

a About

b Affected by ice

c Peak stage did not reach bottom of gage

6-5998. Perry Creek near Merrill, Iowa

Location.--Near NW $\frac{1}{4}$ sec. 12, T.91 N., R.47 W., at bridge on County Road "M", 5 miles west of Merrill, Plymouth County.

Drainage area.--7.88 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by step-backwater computations and indirect measurements at 2,540 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 7, 1953	9.51	2,540
1954	June 19, 1954	5.84	169
1955	May 26, 1955	3.60	37
1956	Mar. 1, 1956	4.10	54
1957	May 11, 1957	5.66	151
1958	May 31, 1958	8.73	857
1959	May 30, 1959	8.81	932
1960	June 20, 1960	5.02	69
1961	Mar. 26, 1961	7.44	428
1962	Mar. 27, 1962	^b 12.22	^a 2,000
1963		^c	
1964	July 10, 1964	7.09	358
1965	Mar. 31, 1965	^b 7.32	^a 300

a About

b Affected by ice

c. Peak stage did not reach bottom of gage

6-6000. Perry Creek at 38th Street, Sioux City, Iowa

Location.--Lat 42 deg. 32 min. 05 sec., long 96 deg 24 min. 35 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T.89 N., R.47 W., on right upstream abutment of bridge on 38th Street in Sioux City, 3.6 miles upstream from mouth.

Drainage area.--65.1 sq mi.

Gage.--Non recording prior to May 20, 1954; recording thereafter. Datum of gage is 1,117.04 ft above mean sea level (city of Sioux City benchmark).

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

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Feb. 6, 1946	^b 8.44	^a 900
	May 18, 1946	8.05	1,070
	May 23, 1946	7.85	1,020
	Sept. 8, 1946	7.82	1,020
1947	June 22, 1947	4.42	246
1948	Feb. 16, 1948	7.53	935
	Feb. 17, 1948	7.30	881
	Feb. 27, 1948	9.34	1,470
	June 22, 1948	10.40	1,840
	July 29, 1948	9.54	1,540
	Aug. 14, 1948	14.12	3,350
1949	Mar. 4, 1949	7.77	900
	Mar. 24, 1949	7.11	827
	July 27, 1949	12.32	2,570
	Aug. 13, 1949	17.28	5,030
	Sept. 3, 1949	19.85	6,580
	Sept. 10, 1949	21.80	7,780
1950	Mar. 4, 1950	^b 10.5	1,600
	June 17, 1950	12.47	2,650
	July 12, 1950	17.75	5,380
	July 21, 1950	8.7	1,280
	Aug. 7, 1950	9.42	1,500
	Aug. 11, 1950	9.00	1,370

6-6000. Perry Creek at 38th Street, Sioux City, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1951	Mar.	25, 1951	7.62	962
	Mar.	27, 1951	10.97	2,050
	June	19, 1951	17.38	5,480
	Aug.	12, 1951	7.53	1,340
	Aug.	14, 1951	5.96	844
	Aug.	17, 1951	6.75	1,110
	Aug.	20, 1951	6.43	984
	Aug.	27, 1951	7.54	1,340
	Sept.	9, 1951	10.21	2,310
1952	Jan.	19, 1952	7.75	1,430
	Mar.	12, 1952	8.33	1,620
	Mar.	30, 1952	7.08	1,200
	June	8, 1952	8.32	1,610
	July	7, 1952	17.40	5,480
1953	June	7, 1953	12.56	3,470
1954	May	26, 1954	5.55	1,080
	May	31, 1954	6.30	1,300
	June	2, 1954	4.97	881
	June	19, 1954	13.75	4,010
1955	May	26, 1955	6.98	1,580
	July	9, 1955	15.40	4,880
1956	Aug.	4, 1956	4.88	865
	Aug.	18, 1956	9.42	2,440
1957	June	22, 1957	6.20	1,320
	July	8, 1957	7.90	1,920
1958	May	31, 1958	8.89	1,540
1959	May	30, 1959	12.14	2,660
1960	Mar.	29, 1960	10.70	2,140
	Apr.	1, 1960	13.05	3,020
	July	12, 1960	7.32	1,120
	Aug.	5, 1960	6.22	836
	Aug.	28, 1960	12.16	2,700

6-6000. Perry Creek at 38th Street, Sioux City, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Mar. 14, 1961	5.43	864
	June 14, 1961	13.20	3,540
	July 26, 1961	8.85	880
1962	Mar. 27, 1962	13.27	3,580
	June 7, 1962	10.50	2,480
	June 10, 1962	6.46	1,050
	July 27, 1962	8.40	1,750
1963	June 2, 1963	13.60	3,710
	June 5, 1963	6.65	1,200
1964	May 5, 1964	4.95	760
1965	Mar. 31, 1965	5.59	913

a About

b Affected by ice

5-4211. Pine Creek tributary near Winthrop, Iowa

Location.--SW $\frac{1}{4}$ sec. 27, T.89 N., R.8 W., at culvert, 1.4 miles north of U.S. Highway 20 and 2.5 miles northwest of Winthrop, Buchanan County.

Drainage area.--0.334 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952		c	
1953	July 26, 1953	6.30	137
1954	Aug. 30, 1954	4.41	50
1955	Feb. 19 or 20, 1955	3.70	29
1956		c	
1957	June 17, 1957	6.92	173
1958	Aug. 20, 1958	6.61	154
1959	June 24, 1959	8.67	304
1960	May 7, 1960	4.78	64
1961		c	
1962	May 5, 1962	6.24	140
1963	July 19, 1963	4.09	40
1964	Apr. 3, 1964	4.41	49
1965	Apr. 2, 1965	4.40	49

c Peak stage did not reach bottom of gage

5-4213. Pine Creek tributary No. 2 at Winthrop, Iowa

Location.--At north quarter corner sec.2, T.38 N., R.8 W., at culvert on U.S Highway 20 near west city limits of Winthrop, Buchanan County.

Drainage area.--0.704 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	July 26, 1953	5.78	27
1954	Aug. 30, 1954	5.90	36
1955		c	
1956	May 29, 1956	6.28	87
1957	June 17, 1957	6.50	135
1958	Aug. 20, 1958	6.04	51
1959	June 24, 1959	7.12	443
1960	Mar. 30, 1960	7.05	390
1961	Mar. 5, 1961	5.30	7.1
1962	May 29, 1962	6.37	104
1963		c	
1964	Apr. 3, 1964	5.89	35
1965	Mar. 5, 1965	5.50	13

c Peak stage did not reach bottom of gage

5-4212. Pine Creek near Winthrop, Iowa

Location.--SW $\frac{1}{4}$ sec.34, T.89 N., R.8 W., at Illinois Central RR bridge, 500 ft upstream from U.S. Highway 20 and 2.5 miles southwest of Winthrop, Buchanan County.

Drainage area.--28.3 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1950	Sept. 21, 1950	21.70	14,500
1951	June 2, 1951	18.74	10,600
1952	Mar. 10, 1952	13.47	1,090
1953	Feb. 20, 1953	13.43	1,070
1954	Apr. 30, 1954	12.35	650
1955	Feb. 20, 1955	12.19	590
1956		c	
1957	June 17, 1957	13.27	990
1958		c	
1959	June 25, 1959	13.94	1,360
1960	Mar. 30, 1960	15.17	2,450
1961	Mar. 5, 1961	12.82	800
1962	May 5, 1962	16.68	5,030
1963	Mar. 18, 1963	13.17	962
1964	Apr. 3, 1964	12.78	803
1965	Apr. 2, 1965	14.69	1,940

c Peak stage did not reach bottom of gage

5-4845. Raccoon River at Van Meter, Iowa

Location.--Lat 41 deg.32 min.00 sec., long 93 deg.57 min.10 sec., in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.78 N., R.27 W., 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 River, and 30 miles upstream from mouth.

Drainage area.--3,441 sq mi.

Gage.--Recording May 31, 1923 to Sept. 30, 1927 and since Aug.9, 1934; nonrecording remainder of time. Datum of gage is 841.16 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1915 datum 2.00 ft. higher.

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

Remarks.--Base for partial-duration series, 10,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1915	May 29, 1915	15.9	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	^b 12.2	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	June 8, 1924	12.3	12,400
	June 25, 1924	15.2	20,100
1925	Aug. 7, 1925	10.1	8,060

5-4845. Raccoon River at Van Meter, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
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
1932	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	^b 17.85	^a 14,000
	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
	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

5-4845. Raccoon River at Van Meter, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
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

5-4845. Raccoon River at Van Meter, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
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
1962	Mar. 31, 1962	17.23	19,700
	May 29, 1962	14.33	14,900
	June 11, 1962	12.42	11,900
	Sept. 7, 1962	11.45	10,400
1963	Apr. 29, 1963	12.62	12,200
1964	June 23, 1964	15.92	17,400
1965	Mar. 2, 1965	^b 14.73	^a 13,000
	Mar. 17, 1965	^b 18.20	^a 20,100
	Apr. 1, 1965	13.93	14,300
	Apr. 6, 1965	18.35	22,300
	May 30, 1965	11.20	10,400

a About

b Affected by ice

5-4550. Ralston Creek at Iowa City, Iowa

Location.--Lat 41 deg.39 min.50 sec., long 91 deg.30 min.45 sec., in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.11, T.79 N., R.6 W., on left bank 10 ft upstream from bridge on Rochester Avenue (Formerly State Highway 1), near east edge of Iowa City, and 2.2 miles upstream from mouth.

Drainage area.--3.01 sq mi.

Gage.--Recording. Datum of gage is 662.53 ft above mean sea level, datum of 1929. (University of Iowa 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)
1925	Sept. 8, 1925	4.15	266
1926	June 12, 1926	4.21	271
	Sept. 1, 1926	4.98	370
	Sept.22, 1926	5.03	370
1927	May 8, 1927	4.40	295
	May 18, 1927	4.92	357
	June 20, 1927	7.18	800
1928	Oct. 2, 1927	5.11	383
1928	June 24, 1928	3.72	216
	Aug. 3, 1928	4.58	319
	Aug. 23, 1928	4.88	357
1929	Oct. 17, 1928	3.88	238
1929	June 11, 1929	5.20	396
	June 30, 1929	4.10	260
	Aug. 2, 1929	5.00	370
1930	June 14, 1930	7.50	905
	Sept.25, 1930	7.53	905
1931	Sept.25, 1931	4.30	254
1932	Nov. 23, 1931	4.75	344
1932	June 17, 1932	4.77	344
	July 10, 1932	4.19	271
	Aug. 1, 1932	8.18	1,200

Ralston Creek at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Dec. 24, 1932	3.30	174
1934	July 12, 1934	4.00	249
1935	June 1, 1935	4.11	260
	June 15, 1935	4.22	271
	June 26, 1935	6.37	570
	Aug. 20, 1935	5.00	370
1936	Sept. 1, 1936	3.59	193
1937	Jan. 30, 1937	4.25	266
	Feb. 20, 1937	6.28	533
	Mar. 2, 1937	4.22	262
	May 26, 1937	3.93	230
	July 14, 1937	4.45	290
1938	Jan. 24, 1938	4.61	310
	Feb. 5, 1938	4.16	257
	May 17, 1938	4.30	274
	July 6, 1938	5.81	466
	Aug. 5, 1938	4.51	265
1939	Mar. 12, 1939	4.71	322
	July 16, 1939	4.34	275
	Aug. 8, 1939	3.96	231
1940	Aug. 13, 1940	3.00	87
1941	June 27, 1941	8.25	1,230
	June 28, 1941	6.65	615
	June 30, 1941	7.14	736
	July 29, 1941	5.04	260
	Sept. 8, 1941		220
1942	Oct. 22, 1941	7.39	816
1942	Sept. 8, 1942	7.41	824
1943	Dec. 26, 1942	^b 5.21	287
1943	Mar. 15, 1943	4.53	206
	Apr. 27, 1943	5.99	421
	June 1, 1943	7.72	960
1944	Jan. 27, 1944	6.48	554

Ralston Creek at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1945	June 10, 1945	4.00	155
1946	Jan. 5, 1946	^b 6.58	449
	Aug. 2, 1946	6.46	547
1947	June 30, 1947	6.61	465
	July 12, 1947	6.03	339
1948	Feb. 27, 1948	^b 5.46	385
	July 21, 1948	6.73	662
1949	June 23, 1949	3.37	125
1950	Mar. 4, 1950	3.59	225
	Mar. 5, 1950	3.51	210
	May 21, 1950	3.73	220
	July 1, 1950	8.32	1,250
	July 12, 1950	3.90	235
	July 30, 1950	3.62	225
1951	Feb. 18, 1951	^b 3.74	232
	Feb. 25, 1951	4.07	250
	July 8, 1951	4.81	328
1952	May 23, 1952	3.73	220
	June 14, 1952	3.56	202
1953	Nov. 17, 1952	3.93	240
1953	Feb. 5, 1953	3.65	291
	Feb. 19, 1953	4.65	312
	May 24, 1953	3.71	215
1954	Aug. 25, 1954	2.72	107
1955	Apr. 23, 1955	3.41	166
1956	July 18, 1956	9.06	1,690
	July 31, 1956	5.55	416
	Aug. 30, 1956	7.11	770
1957	Jan. 21, 1957	2.16	40
1958	June 13, 1958	3.79	226
	July 14, 1958	4.60	296

Ralston Creek at Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Oct. 8, 1959	7.03	755
	Mar. 19, 1959	5.06	362
	Apr. 27, 1959	3.60	206
	May 19, 1959	4.82	328
	May 30, 1959	4.30	276
	July 18, 1959	3.61	206
1960	Jan. 12, 1960	3.54	201
	June 1, 1960	3.77	221
	June 4, 1960	6.30	558
	July 12, 1960	3.93	241
1961	Nov. 15, 1960	5.70	448
1961	July 31, 1961	4.23	266
1962	Nov. 16, 1961	4.07	251
1962	May 29, 1962	3.94	241
	July 14, 1962	7.92	1,060
1963	May 12, 1963	3.14	158
1964	June 22, 1964	2.40	60.4
1965	Sept. 21, 1965	6.90	716

b Affected by ice

5-4540. Rapid Creek near Iowa City, Iowa

Location.--Lat 41 deg.42 min.00 sec., long 91 deg.29 min.05 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ 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. Datum of gage is 673.72 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Jan. 24, 1938	10.30	868
	Feb. 5, 1938	10.20	831
1939	Mar. 12, 1939	^b 12.05	1,800
	Aug. 8, 1939	9.56	623
1940	Mar. 17, 1940	8.52	372
1941	June 27, 1941	12.54	3,710
	June 30, 1941	11.28	1,980
	Sept. 8, 1941	10.53	1,210
1942	Oct. 22, 1941	11.32	2,090
	Oct. 31, 1941	9.78	697
1942	June 11, 1942	10.15	930
	Sept. 8, 1942	10.15	850
1943	Apr. 27, 1943	11.00	1,670
	Apr. 29, 1943	9.75	780
	June 1, 1943	11.48	2,200
1944	Jan. 27, 1944	10.80	1,370
	Feb. 22, 1944	10.61	1,350
	Apr. 23, 1944	9.34	635
	May 20, 1944	12.66	3,890
	May 21, 1944	9.87	785
1945	June 1, 1945	7.66	398

Rapid Creek near Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 5, 1946	b11.24	2,530
1947	June 30, 1947	10.72	1,390
	July 5, 1947	10.62	1,290
	July 12, 1947	10.46	1,140
1948	Feb. 27, 1948	10.89	1,830
	Mar. 15, 1948	b10.25	1,000
	Mar. 19, 1948	10.70	1,580
	July 21, 1948	11.17	2,180
1949	Feb. 24, 1949	b11.10	a1,200
	Mar. 4, 1949	b10.35	a750
1950	Jan. 13, 1950	10.08	770
	Feb. 28, 1950	10.64	1,030
	Mar. 5, 1950	10.45	865
	May 21, 1950	9.50	625
	July 1, 1950	12.45	2,780
	July 12, 1950	10.88	1,200
1951	Feb. 19, 1951	11.07	1,380
	Feb. 25, 1951	11.25	1,460
	July 8, 1951	10.35	900
1952	May 23, 1952	10.94	1,220
	June 8, 1952	9.36	607
1953	Feb. 5, 1953	10.97	1,200
	Feb. 20, 1953	13.05	3,800
	May 24, 1953	11.07	1,280
	July 6, 1953	9.66	680
	July 20, 1953	9.75	700
1954	Aug. 26, 1954	6.17	216
1955	Feb. 19, 1955	b10.50	a650
	Apr. 24, 1955	9.95	750
1956	July 18, 1956	12.27	2,620
	July 31, 1956	10.68	1,080
	Aug. 12, 1956	10.07	815
	Aug. 30, 1956	12.48	3,000
1957	Aug. 28, 1957	7.60	326

Rapid Creek near Iowa City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	June 13, 1958	9.15	509
1959	Oct. 9, 1958	11.74	1,980
1959	Mar. 19, 1959	12.51	^a 2,300
	Apr. 27, 1959	10.15	850
	May 30, 1959	9.50	655
	July 18, 1959	10.08	815
1960	Jan. 12, 1960	^b 10.97	^a 950
	Mar. 29, 1960	12.04	2,340
	May 6, 1960	11.70	1,730
	June 4, 1960	11.87	2,090
	July 12, 1960	11.22	1,450
1961	Oct. 31, 1960	10.47	952
	Nov. 15, 1960	11.26	1,450
1961	Mar. 4, 1961	11.17	1,410
	Aug. 1, 1961	11.19	1,450
	Sept. 13, 1961	9.63	675
1962	Nov. 2, 1961	9.75	725
	Nov. 16, 1961	11.61	1,830
1962	Mar. 19, 1962	11.19	1,450
	May 11, 1962	11.42	1,630
	May 29, 1962	10.93	1,260
	June 3, 1962	9.80	725
	July 14, 1962	13.64	5,200
1963	Mar. 4, 1963	^b 10.23	^a 800
	July 19, 1963	10.05	785
1964	June 22, 1964	5.82	176
1965	Jan. 22, 1965	^b 10.96	1,080
	Apr. 5, 1965	9.80	725
	May 23, 1965	14.10	6,100
	May 26, 1965	9.19	588
	Sept. 20, 1965	10.81	1,140
	Sept. 21, 1965	13.24	4,380

a About

b Affected by ice

5-4536. Rapid Creek below Morse, Iowa

Location.--Near northeast corner sec.21, T.80 N., R.5 W., at bridge, 1.5 miles southeast of Morse, Johnson County.

Drainage area.--7.84 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	July 8, 1951	17.22	223
1952	June 8, 1952	18.06	316
1953	Feb. 20, 1953	22.38	1,210
1954	Aug. 26, 1954	15.71	109
1955	Apr. 23, 1955	17.44	244
1956	Aug. 20, 1956	19.86	642
1957	Jan. 21, 1957	16.53	166
1958	Feb. 24, 1958	16.75	183
1959	Mar. 19, 1959	20.81	983
1960	June 4, 1960	21.38	1,160
1961	Mar. 4, 1961	21.78	1,300
1962	Nov. 16, 1961	19.59	650
1963	July 19, 1963	16.99	233
1964		c	
1965	May 23, 1965	25.48	2,750

c Peak stage did not reach bottom of gage

5-4537.5 Rapid Creek Southwest of Morse, Iowa

Location.--W $\frac{1}{2}$ Sec.21, T.80 N., R.5 W., at bridge, 2 miles southwest of Morse, Johnson County.

Drainage area.--14.8 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	July 8, 1951	20.64	307
1952	May 22, 1952	21.93	540
1953	Feb. 20, 1953	27.34	2,190
1954	Aug. 26, 1954	19.30	141
1955	Apr. 23, 1955	22.34	624
1956	Aug. 30, 1956	23.97	1,030
1957	Jan. 21, 1957	20.97	360
1958	Feb. 24, 1958	22.36	629
1959	Mar. 19, 1959	26.41	1,810
1960	June 4, 1960	26.13	1,700
1961	Mar. 4, 1961	24.47	1,180
1962	Nov. 16, 1961	24.41	1,160
1963	July 19, 1963	22.23	602
1964		c	
1965	May 23, 1965	29.42	4,260

c Peak stage did not reach bottom of gage
250

5-4539.5 Rapid Creek tributary near Iowa City, Iowa

Location.--NW $\frac{1}{4}$ sec.31, T.80 N., R.5 W., at bridge, 4 miles northeast of Iowa City, Johnson County.

Drainage area.--3.38 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	July 8, 1951	22.39	427
1952	May 23, 1952	22.26	408
1953	Feb. 19, 1953	23.09	578
1954	Apr. 30, 1954	18.48	52
1955	Apr. 23, 1955	19.88	142
1956	July 18, 1956	24.35	1,850
1957	Aug. 28, 1957	19.82	138
1958	June 13, 1958	21.09	263
1959	Oct. 8, 1958	23.70	840
1960	July 12, 1960	23.58	771
1961	Aug. 1, 1961	23.72	856
1962	July 14, 1962	24.19	1,480
1963	July 19, 1963	20.97	249
1964		c	
1965	Sept.21, 1965	26.40	^a 1,000

a About

b Peak stage did not reach bottom of gage

5-4539. Rapid Creek tributary near Oasis, Iowa

Location.--Near southwest corner sec.33, T.80 N., R.5 W., at bridge, 3 miles southwest of Oasis, Johnson County.

Drainage area.--0.93 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	July 8, 1951	13.58	223
1952	May 22, 1952	13.82	247
1953	May 24, 1953	15.00	373
1954		c	
1955	Oct. 10, 1954	12.35	112
1956	July 18, 1956	18.32	809
1957		c	
1958	June 13, 1958	13.62	227
1959	Oct. 8, 1958	16.83	598
1960	July 12, 1960	17.03	626
1961	Nov. 15, 1960	14.96	369
1962	July 14, 1962	16.95	615
1963		c	
1964		c	
1965	Sept.21, 1965	15.42	422

c Peak stage did not reach bottom of gage

5-4537. Rapid Creek tributary No. 4 near Oasis, Iowa

Location.--Near south quarter corner sec.22, T.80 N., R.5 W.,
at culvert, 2 miles northwest of Oasis, Johnson County.

Drainage area.--1.55 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1951	July 8, 1951	15.23	78
1952	May 23, 1952	15.47	97
1953	July 20, 1953	18.23	956
1954		c	
1955	Apr. 23, 1955	14.91	58
1956	Aug. 30, 1956	17.22	376
1957	Aug. 28, 1957	14.40	33
1958	Feb. 24, 1958	15.18	75
1959	Oct. 8, 1958	16.70	260
1960	July 12, 1960	16.85	290
1961	Nov. 15, 1960	15.75	124
1962	July 14, 1962	16.73	266
1963	July 19, 1963	15.13	71
1964		c	
1965	Sept.21, 1965	17.19	368

c Peak stage did not reach bottom of gage

5-4519. Richland Creek near Haven, Iowa

Location.--Lat 41 deg.53 min.55 sec., long 92 deg.28 min.35 sec., in SE $\frac{1}{4}$ NE $\frac{1}{4}$ 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 measurements.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1918	June	1918	14.3	
1950	Mar.	5, 1950	10.24	2,100
	Mar.	6, 1950	10.10	2,090
	June	18, 1950	10.92	2,560
1951	July	8, 1951	7.68	935
1952	Mar.	10, 1952	7.50	870
1953	Feb.	20, 1953	10.22	2,100
1954	Aug.	26, 1954	8.32	1,170
1955	Feb.	19, 1955	8.56	1,290
1956	Aug.	1, 1956	4.88	364
1957	May	31, 1957	5.87	509
1958	July	14, 1958	9.10	1,530
	Sept.	3, 1958	9.18	1,580
1959	Nov.	18, 1958	8.50	1,250
1959	Mar.	20, 1959	8.98	1,480
	Mar.	26, 1959	7.93	1,010
	Apr.	28, 1959	9.54	1,730
1960	Jan.	12, 1960	10.37	2,220
	Mar.	30, 1960	12.39	3,650

Richland Creek near Haven, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Feb. 18, 1961	9.60	1,960
	Mar. 6, 1961	10.33	2,240
	Mar. 8, 1961	7.5	1,220
	June 6, 1961	8.13	1,420
1962	Mar. 20, 1962	6.76	1,010
	July 14, 1962	9.19	1,810
1963	Mar. 12, 1963	5.86	785
1964	June 23, 1964	6.75	1,010
1965	Jan. 22, 1965	6.78	1,030
	Feb. 7, 1965	8.37	1,530
	Feb. 19, 1965	7.70	1,310
	Mar. 1, 1965	7.35	1,200
	Apr. 1, 1965	8.05	1,420
	Apr. 5, 1965	8.02	1,410
	Apr. 24, 1965	9.98	2,090
	June 5, 1965	7.98	1,390
	Sept. 21, 1965	7.62	1,200

6-4832.7 Rock River at Rock Rapids, Iowa

Location.--Lat 43 deg.26 min.13 sec., long 96 deg.09 min.58 sec., in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.100 N., R.45 W., on right bank at dam at north side of city park in Rock Rapids, a third of a mile upstream from Tom Creek, half a mile northeast of junction of U.S. Highway 75 and State Highway 9, and 42.8 miles upstream from mouth (determined by U.S. Geological Survey).

Drainage area.--788 sq mi.

Gage.--Recording. Datum of gage is 1,331.55 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 30, 1960	8.86	15,500
	Apr. 2, 1960	6.28	8,920
	Apr. 14, 1960	3.33	2,210
1961	Mar. 2, 1961	^b 3.82	^a 2,800
1962	Mar. 29, 1962	9.56	16,400
	Apr. 4, 1962	5.46	5,970
	May 23, 1962	4.58	4,290
	May 29, 1962	3.45	2,010
	June 18, 1962	3.64	2,330
	July 6, 1962	3.49	2,080
1963	June 11, 1963	3.18	1,550
1964	Sept. 7, 1964	2.88	1,110
1965	Apr. 2, 1965	4.47	4,000
	Apr. 7, 1965	7.68	11,400

a About

b Affected by ice

6-4835. Rock River near Rock Valley, Iowa

Location.--Lat. 43 deg. 12 min. 05 sec., long. 96 deg. 20 min. 15 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T.97 N., R.47 W., on downstream side of bridge on U.S. Highway 18, 1.8 miles west of Rock Valley and 15.9 miles upstream from mouth.

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

Gage.--Nonrecording prior to August 13, 1952; recording thereafter. Datum of gage is 1,211.81 feet 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)
1897		17.0	5,000
1949	Mar. 6, 1949	12.30	5,790
	Mar. 29, 1949	11.75	5,160
	Apr. 8, 1949	12.10	5,530
1950	Mar. 25, 1950	11.48	4,560
	Mar. 28, 1950	11.33	4,320
1951	Mar. 30, 1951	11.37	5,170
	Apr. 5, 1951	14.77	14,300
	June 30, 1951	11.08	4,740
	July 3, 1951	9.81	3,180
1952	Mar. 20, 1952	12.55	6,100
	Mar. 31, 1952	15.30	17,300
1953	Mar. 14, 1953	10.83	4,220
	May 27, 1953	10.27	3,520
	June 8, 1953	15.99	18,900
	June 29, 1953	9.95	3,150
	Aug. 6, 1953	10.83	4,220
1954	Mar. 20, 1954	12.11	5,300
	June 21, 1954	15.86	19,200
1955	Mar. 12, 1955	9.31	2,370
1956	July 2, 1956	7.59	1,160
1957	June 19, 1957	10.55	3,770
	July 3, 1957	9.97	3,050
1958	Apr. 7, 1958	6.18	545

6-4835. Rock River near Rock Valley, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1959	June	1, 1959	14.06	10,200
1960	Mar.	31, 1960	15.38	16,700
	Apr.	2, 1960	14.93	14,100
	Apr.	14, 1960	10.18	2,890
1961	Mar.	2, 1961	13.06	8,580
	Mar.	16, 1961	10.29	3,410
1962	Mar.	30, 1962	16.91	28,400
	Apr.	5, 1962	14.26	11,000
	May	24, 1962	11.02	4,260
	June	18, 1962	11.80	5,220
1963	June	12, 1963	7.56	1,300
1964	Sept.	8, 1964	7.70	1,390
1965	Apr.	2, 1965	13.91	11,200
	Apr.	7, 1965	14.94	15,700

5-4520. Salt Creek near Elberon, Iowa

Location.--Lat 41 deg.57 min.45 sec., long 92 deg.18 min.55 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ 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 and from June 14, 1947 to Feb. 10, 1949; recording remainder of time. 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.

Remarks.--Basic for partial-duration series, 1,700 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1944	June 16, 1944	19.9	^a 30,000
1946	Jan. 6, 1946	15.84	8,690
	Sept. 23, 1946	14.70	5,030
1947	Apr. 10, 1947	12.85	2,250
	June 1, 1947	16.10	16,700
	June 13, 1947	17.60	35,000
	June 22, 1947	13.60	4,000
1948	Feb. 28, 1948	^b 14.91	^a 2,400
	Mar. 17, 1948	14.00	4,670
	Mar. 19, 1948	14.40	5,820
1949	Mar. 5, 1949	^b 14.85	^a 3,500
1950	Mar. 7, 1950	15.50	10,500
	June 24, 1950	14.82	6,310
1951	Feb. 25, 1951	14.12	3,860
	Mar. 29, 1951	13.40	3,680
	June 2, 1951	13.67	4,250
	June 16, 1951	12.34	2,340
	July 8, 1951	12.56	2,600
	Aug. 27, 1951	12.78	2,810

Salt Creek near Elberon, Iowa

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 11, 1952	14.26	4,050
	Mar. 13, 1952	12.85	2,600
	May 23, 1952	11.50	1,750
1953	Feb. 20, 1953	^b 15.40	^a 7,000
	June 8, 1953	11.48	1,750
	June 12, 1953	13.70	4,250
1954	Aug. 26, 1954	15.21	5,410
1955	Oct. 10, 1954	11.83	1,360
1956	Aug. 1, 1956	13.82	3,610
1957	May 31, 1957	13.93	2,810
	June 17, 1957	12.77	1,790
	June 18, 1957	12.94	1,860
1958	July 15, 1958	16.12	6,600
	Aug. 16, 1958	13.75	2,020
	Sept. 6, 1958	13.44	1,770
1959	Mar. 20, 1959	15.60	6,580
	Mar. 27, 1959	14.75	4,470
1960	Jan. 13, 1960	^b 16.16	^a 6,400
	Mar. 30, 1960	^b 16.18	^a 5,700
	Apr. 17, 1960	14.00	^a 2,250
	May 7, 1960	15.60	5,200
1961	Feb. 19, 1961	^b 16.23	^a 7,200
	Feb. 23, 1961	13.85	2,900
	Mar. 6, 1961	15.15	5,750
	Mar. 14, 1961	14.20	3,520
	Mar. 15, 1961	13.40	2,240
	June 7, 1961	16.18	9,400
	Oct. 1, 1961	13.04	1,800
1962	Mar. 26, 1962	14.16	2,740
	July 14, 1962	14.39	2,980
1963	Mar. 13, 1963	^b 14.42	^a 1,900
1964	June 23, 1964	11.78	1,190

Salt Creek near Elberon, Iowa

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Feb. 7, 1965	^b 14.65	^a 2,000
	Feb. 10, 1965	^b 14.33	^a 1,800
	Mar. 2, 1965	^b 14.89	^a 2,500
	Apr. 1, 1965	15.75	4,680
	Apr. 5, 1965	15.15	3,900
	May 27, 1965	13.82	2,300
	May 31, 1965	13.82	2,300
	June 5, 1965	14.60	3,220
	July 9, 1965	13.36	1,840
	Sept. 21, 1965	13.84	2,320

a About

b Affected by ice

6-4834.2 Schutte Creek near Sibley, Iowa

Location.--Near northwest corner sec. 23, T.100 N., R.42 W., at culvert, 6 miles northwest of Sibley, Osceola County.

Drainage area.--1.43 sq. mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	4.49	175
1953	June 7, 1953	5.15	503
1954	June 19, 1954	4.04	86
1955	Apr. 23, 1955	3.84	62
1956	Aug. 13, 1956	3.55	46
1957	June 18, 1957	3.81	60
1958		c	
1959	May 30, 1959	3.84	62
1960	Mar. 30, 1960	4.17	100
1961	Mar. 27, 1961	3.76	54
1962	June 17, 1962	3.77	55
1963		c	
1964		c	
1965	May 15, 1965	4.47	168

c Peak stage did not reach bottom of gage

5-4615. Shell Rock River near Clarksville, Iowa
(Discontinued Sept., 1934)

Location.--Lat 42 deg.47 min.25 sec., long 92 deg.41 min.15 sec.,
on line between secs.12 & 13, T.92 N., R.16 W., at highway
bridge $1\frac{1}{4}$ miles northwest of Clarksville, 5.4 miles downstream
from Flood Creek, 20.9 miles above mouth, and at mile 226.8
above mouth of Iowa River.

Drainage area.--1,626 sq mi.

Gage.--Nonrecording. Altitude of gage is 916 feet above mean sea
level, from river profiles.

Stage-discharge relation.--Defined by current-meter measurements
below 10,000 cfs and by logarithmic plotting above.

Remarks.--Base for partial-duration series, 3,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1906	April	1906	16.5	^c 34,800
1915	May	30, 1915	11.5	11,400
1916	Mar.	16, 1916	8.4	6,800
	Mar.	25, 1916	11.9	11,600
	Apr.	21, 1916	8.4	6,570
	May	14, 1916	7.7	5,640
	June	2, 1916	12.8	14,500
1917	Mar.	22, 1917		17,400
	Mar.	28, 1917	5.8	3,680
	June	7, 1917	8.5	6,920
1918	Mar.	20, 1918		3,890
	May	10, 1918	7.0	5,020
	May	30, 1918	7.6	5,760
	June	4, 1918	6.2	4,110
	Aug.	17, 1918	10.4	9,380
1919	Oct.	28, 1918	6.1	4,000
1919	Feb.	14, 1919		4,400
	Mar.	16, 1919		10,000
	Apr.	11, 1919	9.2	7,680
	Apr.	16, 1919	8.7	7,020
	May	7, 1919	6.4	4,200
	June	11, 1919	9.6	8,230

5-4615. Shell Rock River near Clarksville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Mar. 26, 1920		4,090
	May 23, 1920	6.8	4,660
	Sept. 11, 1920	6.0	3,760
1921	Feb. 16, 1921		3,760
	May 28, 1921	9.3	7,860
1922	Feb. 23, 1922	^b 13.2	^a 14,200
	Mar. 6, 1922	6.2	3,980
	Apr. 11, 1922	7.1	5,140
1923	Apr. 4, 1923	6.1	3,870
1924	Oct. 2, 1923	6.9	4,780
1924	June 29, 1924	6.2	3,980
1925	June 13, 1925	9.6	8,240
1926	Aug. 19, 1926	6.8	4,660
1927	May 28, 1927	6.6	4,420
1933	Mar. 31, 1933	16.7	23,800
	May 20, 1933	6.4	4,330
1934	Apr. 4, 1934	5.5	3,360
1961	Mar. 28, 1961		33,400
1962	Mar. 30, 1962		15,800

a About

b Affected by ice

c Maximum for period May to September 1915.

5-4605. Shell Rock River at Marble Rock, Iowa
(Published as at Greene, 1933-42)
(Discontinued Sept. 1953)

Location.--Lat 42 deg.58 min.00 sec., long 92 deg.52 min.15 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.8, T.94 N., R.17 W., on left bank 20 ft above dam at Marble Rock, 1.1 mile upstream from Ackley Creek, 9.3 miles downstream from Winnebago River, and at mile 247.1 above mouth of Iowa River.

Drainage area.--1,318 sq mi at site used 1933-42; 1,357 sq mi.

Gage.--Nonrecording. Datum of gage is 960.39 ft above mean sea level, datum of 1929. Nonrecording gage at Greene 5.7 miles downstream at different datum. Oct. 1, 1942 to Mar. 12, 1945 and June 6, 1946, recording gage at present site and datum. March 13, 1945, to June 5, 1946, nonrecording gage at present site and datum. Discontinued in September 1953.

Stage-discharge relation.--Defined by current-meter measurements at Marble Rock; extended by logarithmic plotting above 23,000 cfs at Greene.

Remarks.--Records at two sites not corrected for 29 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)
1934	Apr. 4, 1934	94.2	3,760
1935	Mar. 5, 1935	97.5	6,910
1936	Mar. 12, 1936	97.1	6,470
	Mar. 17,18, 1936	97.2	6,580
	Sept.15, 1936	96.0	5,340
1937	Mar. 6,7,1937	105.9	10,000
1938	June 1, 1938	95.2	4,590
	June 25, 1938	101.7	13,400
	Sept.15, 1938	97.7	7,130
1939	Mar. 14, 1939	98.8	8,390
1940	Aug. 25, 1940	93.5	3,070
1941	Mar. 9, 1941	94.6	4,110

5-4605. Shell Rock River at Marble Rock, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Apr. 20, 1941	95.0	4,430
	May 30, 1941	96.7	6,040
	June 3, 1941	98.9	8,510
	June 12, 1941	98.5	8,030
1942	Nov. 2, 1941	96.0	5,340
1942	June 1, 1942	97.4	6,800
	June 3, 1942	95.4	4,770
	June 28, 1942	95.7	5,040
	July 30, 1942	95.0	4,430
1943	Mar. 16, 1943	5.97	9,340
	Mar. 26, 1943	4.1	5,150
1944	May 3, 1944	4.2	5,440
	May 22, 1944	4.1	5,130
	June 12, 1944	8.28	15,900
	June 18, 1944	5.1	7,180
1945	May 13, 1945	6.6	11,000
	Mar. 15, 1945	7.78	14,400
	Apr. 23, 1945	4.8	6,540
	May 22, 1945	3.9	4,730
	May 25, 1945	4.8	6,680
	June 1, 1945	5.6	8,380
	June 10, 1945	6.1	9,660
	Aug. 14, 1945	4.5	5,900
1946	Mar. 6, 1946	4.39	5,730
	Mar. 13, 1946	4.0	4,930
1947	Apr. 10, 1947	5.1	7,270
	June 13, 1947	5.2	7,500
	June 17, 1947	6.36	10,300
	June 29, 1947	5.6	8,430
	July 1, 1947	5.8	8,910
	July 6, 1947	3.7	4,340
1948	Feb. 28, 1948	^b 8.56	14,000
1949	Mar. 5, 1949	5.46	8,190
	Mar. 22, 1949	3.9	4,630
	Mar. 25, 1949	4.8	6,610
	Mar. 27, 1949	4.8	6,610

5-4605. Shell Rock River at Marble Rock, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1949	June 25, 1949	4.2	5,330
1950	Mar. 7, 1950	7.75	14,400
	Mar. 27, 1950	7.4	13,200
1951	Feb. 26, 1951	6.05	9,410
	Mar. 30, 1951	4.12	5,130
	Apr. 7, 1951	9.35	22,700
	Apr. 29, 1951	4.04	11,900
	June 2, 1951	3.47	11,500
	June 28, 1951	2.21	8,980
1952	Mar. 19, 1952	4.18	5,330
	Mar. 30, 1952	5.51	8,190
1953	Aug. 4, 1953	3.83	4,630
1961	Mar. 28, 1961	12.7	32,000
1962	Mar. 30, 1962	7.9	14,200

b Affected by ice

5-4590. Shell Rock River near Northwood, Iowa

Location.--Lat 43 deg.24 min.50 sec., long 93 deg.13 min. 10 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.9, T.99 N., R.20 W., on right bank 50 ft downstream from county highway bridge, 2 miles south of Northwood, 3.7 miles upstream from Elk Creek, and at mile 291.7 above mouth of Iowa River.

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.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Mar. 13, 1946	^b 9.7	^a 1,400
1947	Apr. 11, 1947	6.9	^a 926
1948	Mar. 20, 1948	^b 10.3	^a 1,600
1949	Mar. 31, 1949	7.6	1,230
1950	Mar. 28, 1950	^b 9.72	^a 1,800
1951	Apr. 10, 1951	9.55	2,430
	May 3, 1951	7.19	1,010
1952	Apr. 2, 1952	8.26	1,470
1953	Aug. 4, 1953	7.54	1,060
1954	June 22, 1954	7.96	1,360
1955	June 4, 1955	6.00	502
1956	Apr. 1, 1956	^b 7.37	^a 800
1957	May 29, 1957	6.44	655
1958	Apr. 6, 1958	5.54	348
1959	May 31, 1959	6.58	655

5-4590. Shell Rock River near Northwood, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 30, 1960	^b 7.76	^a 800
1961	Mar. 26, 1961	^b 11.68	^a 3,000
1962	Apr. 3, 1962	^b 9.53	^a 2,000
1963	Mar. 23, 1963	^b 9.78	^a 1,600
1964	Apr. 22, 1964	5.43	353
1965	Apr. 8, 1965	12.07	3,400
	Sept. 30, 1965	7.92	1,170

a About

b Affected by ice

5-4620. Shell Rock River at Shell Rock, Iowa

Location.--Lat 42 deg.42 min.50 sec., long 92 deg.34 min.55 sec.,
in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.91 N., R.15 W., on right bank 400 ft up-
stream from bridge on State Highway 3 in Shell Rock, 10.5 miles
upstream from mouth, and at mile 216.4 above mouth of Iowa River.

Drainage area.--1,746 sq mi.

Gage.--Recording. Datum of gage is 885.34 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			
Water year	Date	Gage height (feet)	Discharge (cfs)
1856		17.7	^b 45,000
1953	Aug. 4, 1953	8.79	^c 4,720
1954	June 22, 1954	14.00	21,300
	Aug. 24, 1954	9.56	5,840
1955	June 5, 1955	6.27	2,640
1956	Apr. 2, 1956	6.50	2,800
1957	May 31, 1957	5.74	2,200
1958	June 4, 1958	7.99	1,650
1959	Mar. 27, 1959	11.03	7,630
	June 1, 1959	10.19	5,430
1960	Mar. 30, 1960	11.54	10,100
	May 7, 1960	9.17	4,040
1961	Mar. 5, 1961	9.51	4,740
	Mar. 28, 1961	16.26	33,500
1962	Mar. 30, 1962	13.64	16,400
	Sept. 2, 1962	13.39	14,600
1963	Mar. 18, 1963	10.43	6,080
	Mar. 26, 1963	9.98	5,060
	May 11, 1963	12.70	13,600

5-4620. Shell Rock River at Shell Rock, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	May 14, 1963	10.67	6,820
	June 10, 1963	10.65	6,820
	July 20, 1963	10.92	7,500
1964	Sept. 10, 1964	9.70	2,500
1965	Mar. 2, 1965	^b 14.50	16,000
	Apr. 2, 1965	12.21	10,100
	Apr. 7, 1965	15.09	24,400
	Apr. 13, 1965	14.18	18,500
	Sept. 21, 1965	11.57	8,330
	Sept. 30, 1965	12.05	9,850

a About

b Affected by ice

c Maximum for period June to Sept. 1953

5-4700. Skunk River near Ames, Iowa

Location.--Lat 42 deg.04 min.05 sec., long 93 deg.37 min.05 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.23, T.84 N., R.24 W., on left bank 2.5 miles north of Ames, 3.5 miles downstream from Keigley Branch, 5.2 miles upstream from Squaw Creek, and at mile 228.1.

Drainage area.--315 sq mi.

Gage.--Nonrecording prior to Aug. 25, 1921; recording thereafter. 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.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Sept.17, 1921	9.2	3,540
1922	Feb. 23, 1922	9.0	3,370
1923	Mar. 28, 1923	6.22	1,670
	Sept.28, 1923	6.0	1,530
1924	Mar. 30, 1924	6.3	1,680
	June 28, 1924	8.21	3,010
	Aug. 9, 1924	6.0	1,500
1925	Aug. 7, 1925	5.0	905
1926	Sept. 8, 1926	6.5	1,900
	Sept.19, 1926	8.26	3,120
1927	Feb. 5, 1927	7.4	2,460
1931	Nov. 24, 1930	11.2	5,230
1933	Apr. 1, 1933	6.47	1,990
1934	Jan. 22, 1934	^b 5.39	^a 600
1935	Feb. 15, 1935	^b 7.8	2,490
	Mar. 5, 1935	9.0	3,490
	June 19, 1935	6.5	1,900
	June 25, 1935	8.4	2,960
	July 24, 1935	7.0	2,190

5-4700. Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Mar. 10, 1936	7.7	2,580
1937	Mar. 6, 1937	^a 8.4	3,000
1938	May 4, 1938	8.3	2,890
	May 17, 1938	6.5	1,880
	June 29, 1938	5.8	1,540
1939	Mar. 14, 1939	^b 10.5	3,230
1940	Aug. 13, 1940	7.3	2,320
1941	Sept. 8, 1941	8.6	3,050
1942	Nov. 1, 1941	5.9	1,630
1942	Sept. 14, 1942	8.1	2,530
1943	June 16, 1943	6.5	1,910
	July 31, 1943	10.3	4,500
1944	May 20, 1944	13.9	8,060
	June 12, 1944	8.0	2,840
1945	Mar. 16, 1945	6.3	1,800
	May 22, 1945	7.7	2,620
	June 2, 1945	9.7	4,010
1946	Feb. 5, 1946	7.1	2,270
	Mar. 6, 1946	5.9	1,600
	Mar. 13, 1946	5.9	1,610
1947	June 1, 1947	8.63	3,740
	June 4, 1947	8.18	3,400
	June 13, 1947	11.95	6,550
	June 23, 1947	10.80	5,400
	June 30, 1947	6.4	2,200
1948	Feb. 28, 1948	5.8	1,630
	Mar. 19, 1948	7.35	2,620
	Mar. 27, 1948	7.3	2,600
1949	Mar. 4, 1949	^b 10.52	^a 3,000

5-4700. Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1950	Mar. 7, 1950	8.86	3,820	
	May 5, 1950	6.0	1,810	
	May 9, 1950	7.0	2,410	
	June 9, 1950	5.8	1,690	
	June 18, 1950	6.6	2,170	
1951	Feb. 26, 1951	5.75	1,690	
	Mar. 29, 1951	10.90	5,320	
	May 2, 1951	6.75	2,290	
	June 2, 1951	10.35	4,920	
	June 20, 1951	6.25	1,930	
	July 4, 1951	7.07	2,470	
1952	July 9, 1952	5.73	1,630	
1953	May 1, 1953	4.71	980	
1954	June 1, 1954	7.84	3,180	
	June 10, 1954	13.66	8,630	
	June 16, 1954	6.37	2,110	
	June 22, 1954	5.88	1,770	
	Aug. 27, 1954	8.27	3,520	
1955	Oct. 15, 1954	5.22	1,340	
1956	Sept. 4, 1956	3.49	376	
1957	June 16, 1957	8.28	3,540	
	July 4, 1957	6.52	2,200	
1958	July 2, 1958	6.55	2,270	
	July 4, 1958	7.85	3,150	
	July 11, 1958	5.78	1,720	
1959	Mar. 20, 1959	5.60	1,590	
	May 31, 1959	5.83	1,720	
1960	Mar. 30, 1960	10.33	6,210	
	May 7, 1960	5.59	1,590	
1961	Feb. 23, 1961	5.71	1,990	
	Mar. 15, 1961	5.51	1,770	
	Aug. 2, 1961	5.51	1,770	

5-4700. Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Mar. 26, 1962	6.91	3,010
	May 7, 1962	7.53	3,510
	May 30, 1962	5.72	1,970
	July 14, 1962	9.02	4,300
	July 22, 1962	5.72	1,970
1963	Apr. 30, 1963	5.65	1,820
1964	May 8, 1964	5.31	1,570
	June 22, 1964	5.91	2,170
1965	Mar. 1, 1965		^a 1,800
	Apr. 2, 1965		^a 3,300
	Apr. 6, 1965	9.43	5,260
	May 27, 1965	6.55	2,730
	June 6, 1965	5.75	2,020
	Sept. 20, 1965	6.92	3,030
	Sept. 28, 1965	5.34	1,610

a About

b Affected by ice

5-4740. Skunk River at Augusta, Iowa

Location.--Lat 40 deg.45 min.10 sec., long 91 deg.16 min.30 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ 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 upstream from mouth of Skunk River.

Drainage area.--4,303 sq mi.

Gage.--Recording. Datum of gage is 521.24 ft above mean sea level, adjustment of 1912. Sept. 30 to Nov. 15, 1913, nonrecording at site 400 ft upstream at datum about 0.7 ft higher. May 27, 1915 to Jan. 14, 1935, nonrecording at site 400 ft upstream at present datum.

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

Remarks.--Base for partial-duration series, 15,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1903	June 1, 1903	^b 21.	^a 45,000
1915	July 11, 1915	15.7	22,800
1916	Jan. 24, 1916	^b 16.5	18,400
	Jan. 27, 1916	^b 15.7	17,100
	Mar. 28, 1916	18.7	33,600
	June 7, 1916	14.5	19,600
1917	June 7, 1917	17.2	27,700
	June 13, 1917	14.0	18,400
	June 16, 1917	14.8	20,400
1918	May 30, 1918	12.8	15,600
	June 11, 1918	17.2	27,700
1919	Mar. 17, 1919	14.5	19,600
	May 4, 1919	15.3	21,700
1920	Mar. 26, 1920	16.5	22,200
	Apr. 20, 1920	17.6	24,500
	May 13, 1920	14.9	19,200
1921	June 19, 1921	11.8	13,700
1922	Feb. 23, 1922	10.3	11,200

5-4740. Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Mar. 26, 1923	8.5	8,600
1924	June 25, 1924	14.4	18,200
	June 28, 1924	19.4	27,800
	June 30, 1924	19.2	27,200
	July 25, 1924	15.4	20,100
1925	Feb. 24, 1925	^b 14.4	14,300
1926	June 13, 1926	16.2	20,300
	June 17, 1926	15.5	19,000
	Sept. 9, 1926	19.0	26,000
	Sept. 16, 1926	20.5	31,500
1927	Oct. 1, 1926	18.9	26,400
1927	Feb. 6, 1927	14.8	18,000
	Apr. 16, 1927	13.2	15,500
	Apr. 20, 1927	18.3	25,000
	May 19, 1927	14.8	18,000
	June 4, 1927	14.4	17,300
1928	June 29, 1928	13.0	16,100
	July 5, 1928	14.6	18,600
	Aug. 4, 1928	16.0	21,200
	Aug. 7, 1928	13.9	17,500
1929	Nov. 18, 1928	17.9	25,000
1929	Mar. 13, 1929	15.5	20,400
	Mar. 20, 1929	16.0	21,200
	Apr. 21, 1929	18.4	26,600
	Apr. 25, 1929	18.0	25,500
1930	June 17, 1930	22.6	44,500
1931	July 4, 1931	11.9	14,000
1932	Nov. 23, 1931	14.6	18,600
1932	Jan. 1, 1932	15.8	20,900
	Aug. 14, 1932	13.0	16,000
1933	Dec. 25, 1932	14.4	18,400
1933	May 13, 1933	15.2	19,800
1934	Apr. 5, 1934	4.0	2,220

5-4740. Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1935	June 2, 1935	15.2	16,400
	June 19, 1935	14.3	15,400
1936	Feb. 26, 1936	^b 17.4	16,000
1937	Feb. 22, 1937	17.3	21,800
	Mar. 6, 1937	15.3	17,000
	Mar. 12, 1937	15.5	17,400
1938	Feb. 8, 1938	^b 19.3	18,300
	June 16, 1938	17.9	23,300
1939	Mar. 13, 1939	19.5	28,000
1940	Aug. 17, 1940	11.9	11,800
1941	June 12, 1941	9.2	8,280
1942	Feb. 3, 1942	^d 14.3	13,600
1943	May 20, 1943	16.6	19,600
	Aug. 6, 1943	20.5	29,800
1944	Mar. 15, 1944	14.9	16,200
	Apr. 24, 1944	19.8	29,600
	May 26, 1944	23.0	44,800
	June 19, 1944	15.3	17,000
1945	Mar. 26, 1945	14.7	16,000
	May 18, 1945	16.7	20,200
1946	Jan. 6, 1946	19.2	27,500
	Jan. 9, 1946	19.2	27,600
	Mar. 17, 1946	14.6	16,000
	June 22, 1946	20.1	30,900
1947	Apr. 5, 1947	16.7	20,500
	Apr. 20, 1947	15.8	18,700
	June 9, 1947	19.6	29,000
	June 20, 1947	19.1	27,400
	July 1, 1947	19.1	27,000
1948	Feb. 28, 1948	16.6	20,200
	Mar. 20, 1948	18.7	25,800

5-4740. Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 4, 1949	^b 15.4	16,000
1950	Apr. 25, 1950	18.5	25,900
	June 19, 1950	19.9	30,100
1951	Feb. 19, 1951	^b 22.2	^a 18,000
	Mar. 29, 1951	13.95	15,400
	May 11, 1951	18.00	23,700
	Aug. 28, 1951	16.02	19,100
1952	Mar. 13, 1952	15.92	18,900
	June 21, 1952	14.60	16,500
1953	Apr. 1, 1953	14.39	16,100
1954	Aug. 27, 1954	10.2	9,780
1955	Apr. 25, 1955	15.62	18,300
1956	June 20, 1956	5.47	4,050
1957	July 31, 1957	7.05	5,850
1958	Aug. 1, 1958	13.12	12,800
1959	Feb. 26, 1959	^e	^a 15,000
1960	Oct. 7, 1959	15.80	16,200
1960	Jan. 16, 1960	17.29	20,900
	Apr. 3, 1960	25.00	^c 51,000
	Apr. 15, 1960	15.49	17,500
	May 10, 1960	15.11	16,800
	June 15, 1960	14.92	16,400
	July 13, 1960	14.17	15,200
1961	Mar. 8, 1961	14.49	15,800
	Mar. 14, 1961	14.55	15,900
	Sept. 14, 1961	15.38	17,300
1962	Nov. 3, 1961	14.45	15,600
	Nov. 20, 1961	18.89	25,200
1962	Mar. 13, 1962		15,000
	Mar. 23, 1962	18.20	23,100
	June 1, 1962	15.15	17,000

5-4740. Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 6, 1963	^b 18.54	^a 18,000
1964	Apr. 21, 1964	13.83	14,600
1965	Mar. 18, 1965	16.99	20,300
	Apr. 12, 1965	16.45	19,300
	Sept. 1, 1965	16.13	18,600
	Sept. 8, 1965	14.53	15,800
	Sept. 24, 1965	24.90	45,500

a About

b Affected by ice

c Flood of April 3, 1960 may have been largest since 1851

d Backwater from debris

e Maximum gage height, 17.87 ft. Feb. 25 (ice jam)

5-4730. Skunk River at Coppock, Iowa
(Discontinued Sept. 30, 1944)

Location.--Lat 41 deg.09 min.50 sec., long 91 deg.43 min.05 sec.,
in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.1, T.73 N., R.8 W., at bridge on State Highway 78,
0.5 mile west of Coppock, 3/4 mile upstream from Crooked Creek,
and 66 miles upstream from mouth of Skunk River.

Drainage area.--2,916 sq mi.

Gage.--Nonrecording. Altitude of gage is 583 ft determined from
river profile. At site 1/8 mile upstream prior to Sept.29,1937.

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)	Discharge (cfs)
1903	May 31, 1903	22	40,000
1914	Sept.21, 1914	11.7	6,980
1915	May 26, 1915	11.7	6,980
	June 8, 1915	11.2	6,350
	July 11, 1915	13.4	9,300
	Aug. 4, 1915	16.5	15,200
	Sept.16, 1915	11.3	6,450
1916	Oct. 2, 1915	14.7	11,200
1916	Jan. 27, 1916	12.8	8,400
	Feb. 22, 1916	12.4	7,870
	Mar. 27, 1916	17.1	16,800
	May 15, 1916	12.2	7,600
	Sept. 6, 1916	11.6	6,900
1917	Mar. 14, 1917	12.0	7,350
	May 1, 1917	12.1	7,450
	May 22, 1917	11.7	6,980
	June 7, 1917	16.7	15,600
	June 14, 1917	17.6	18,300
1918	May 29, 1918	12.2	7,800
	June 9, 1918	19.8	28,200
1919	Mar. 17, 1919	15.2	12,200
	May 5, 1919	14.1	10,200
	June 9, 1919	12.7	8,260

5-4730. Skunk River at Coppock, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Mar. 27, 1920	15.5	12,800
	Apr. 20, 1920	13.3	9,090
	May 13, 1920	12.4	7,870
1921	June 19, 1921	13.2	8,950
	Sept. 26, 1921	14.6	11,600
1922	Feb. 23, 1922	11.6	6,860
1923	Apr. 2, 1923	10.3	5,360
1924	Mar. 4, 1924	12.6	6,860
	June 29, 1924	19.1	23,900
	July 26, 1924	13.2	8,950
1925	June 4, 1925	10.2	5,040
1926	June 15, 1926	14.0	10,100
	Sept. 10, 1926	14.4	10,700
	Sept. 16, 1926	17.8	18,900
	Sept. 26, 1926	19.4	25,100
1927	Feb. 5, 1927	^b 16.5	15,200
	Apr. 19, 1927	15.5	12,800
	May 25, 1927	11.3	6,450
	June 4, 1927	11.7	6,980
1928	June 30, 1928	14.0	10,100
	July 4, 1928	14.5	10,800
	Aug. 6, 1928	14.3	10,600
1929	Nov. 19, 1928	14.2	10,400
1929	Mar. 19, 1929	17.7	18,600
	Apr. 1, 1929	11.5	6,700
	Apr. 20, 1929	13.6	9,500
	Apr. 26, 1929	14.6	11,000
1930	June 15, 1930	22.1	40,700
1931	Sept. 27, 1931	8.2	3,360
1932	Nov. 29, 1931	15.4	12,600
1932	Jan. 1, 1932	12.9	8,600
	June 26, 1932	12.3	7,740

5-4730. Skunk River at Coppock, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1932	July 11, 1932	11.3	6,450
	Aug. 13, 1932	11.2	6,380
1933	May 13, 1933	12.8	8,400
	May 26, 1933	14.2	10,400
1934	Jan. 26, 1934	6.5	1,840
1935	June 3, 1935	12.2	6,400
	June 20, 1935	13.8	7,870
	July 4, 1935	12.4	6,640
1936	Mar. 13, 1936	15.0	11,400
1937	Feb. 23, 1937	^b 17.4	8,510
	Mar. 10, 1937	<u>17.7</u>	19,600
1938	Feb. 6, 1938	^b 14.6	9,600
	May 19, 1938	12.3	7,500
1939	Mar. 13, 1939	17.4	15,700
1940	Aug. 29, 1940	7.9	3,260
1941	Feb. 15, 1941	11.9	5,500
1942	Nov. 7, 1941	12.4	7,390
1943	Feb. 9, 1943	^b 12.8	6,520
	May 21, 1943	15.0	10,900
	June 17, 1943	12.1	6,300
	June 22, 1943	13.0	7,390
	Aug. 4, 1943	21.6	37,400
1944	Apr. 24, 1944	17.6	18,700
	May 10, 1944	12.9	7,260
	May 24, 1944	22.3	41,500
	June 16, 1944	17.0	16,500
1945	Mar. 26, 1945	12.5	6,760
	Apr. 22, 1945	13.5	8,110
	May 19, 1945	15.5	12,100
	June 4, 1945	12.9	7,260
	June 16, 1945	14.0	8,910

5-4730. Skunk River near Coppock, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 9, 1946	17.7	19,100
	Mar. 19, 1946	14.3	9,440
	Mar. 26, 1946	12.2	6,410
	June 13, 1946	12.5	6,760
	June 20, 1946	18.9	24,200
1947	Apr. 8, 1947	15.7	12,600
	Apr. 16, 1947	13.8	8,580
	Apr. 22, 1947	15.4	11,800
	June 9, 1947	18.8	23,700
	June 18, 1947	19.3	26,000
1948	Feb. 19, 1948	^b 13.0	6,640
	Mar. 3, 1948	14.5	9,820
	Mar. 20, 1948	18.1	20,700
1949	Mar. 4, 1949	^b 15.7	10,200
	June 25, 1949	11.9	6,080
1950	Mar. 12, 1950	13.8	8,580
	June 21, 1950	15.0	10,900
	June 26, 1950	14.4	9,630

b Affected by ice

5-4715. Skunk River near Oskaloosa, Iowa

Location.--Lat 41 deg.21 min.15 sec., long 92 deg.39 min.30 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ 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, and 147.3 miles upstream from mouth.

Drainage area.--1,635 sq ft.

Gage.--Nonrecording prior to Nov. 21, 1947; recording thereafter. Datum of gage is 685.50 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 18,000 cfs and above 18,000 cfs on velocity-area study.

Remarks.--Base for partial-duration series, 6,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 1944	25.8	37,000
1946	Jan. 9, 1946	^b 18.57	9,600
	June 22, 1946	17.04	7,500
1947	June 6, 1947	19.47	14,300
	June 15, 1947	21.26	20,000
1948	Feb. 29, 1948	16.50	7,120
	Mar. 22, 1948	17.50	9,050
1949	Mar. 9, 1949	18.27	10,800
1950	Mar. 8, 1950	18.09	9,320
1951	Mar. 31, 1951	16.61	6,700
1952	Mar. 12, 1952	16.58	6,700
1953	Feb. 22, 1953	18.46	9,980
1954	June 24, 1954	15.89	5,420
1955	Feb. 20, 1955	^b 15.55	^a 3,700
1956	Aug. 13, 1956	7.90	782
1957	June 18, 1957	15.06	4,860

5-4715. Skunk River near Oskaloosa, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	July 7, 1958	15.76	5,680
1959	Mar. 21, 1959	16.87	8,500
1960	Jan. 14, 1960	16.84	7,340
	Apr. 3, 1960	20.56	14,800
	May 11, 1960	17.94	8,900
	June 28, 1960	16.64	6,800
1961	Sept. 13, 1961	16.17	6,280
1962	Mar. 20, 1962	17.32	6,730
	Mar. 29, 1962	18.80	8,460
1963	Aug. 6, 1963	16.38	5,720
1964	June 25, 1964	16.92	6,000
1965	Apr. 9, 1965	19.87	11,200

a About

b Affected by ice

5-4710. Skunk River below Squaw Creek near Ames, Iowa

Location.--Lat 42 deg.00 min.30 sec., long 93 deg.35 min.40 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ 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, 2 miles southeast of Ames, and at mile 222.6.

Drainage area.--556 sq mi.

Gage.--Recording. Datum of gage is 867.10 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 19, 1944	13	10,000
1953	May 1, 1953	5.47	1,620
1954	June 1, 1954	10.92	6,500
	June 11, 1954	11.92	7,980
	June 16, 1954	7.63	3,200
	June 22, 1954	8.36	3,820
	Aug. 22, 1954	8.53	3,950
	Aug. 26, 1954	9.26	4,700
	Aug. 28, 1954	12.36	8,700
1955	Oct. 14, 1954	6.81	2,680
1955	July 10, 1955	6.73	2,540
1956	May 13, 1956	3.05	638
1957	June 16, 1957	11.58	6,360
	July 4, 1957	8.54	3,950
1958	June 8, 1958	6.95	2,610
	June 13, 1958	6.93	2,610
	July 2, 1958	11.13	6,120
	July 4, 1958	12.82	8,550
1959	Mar. 20, 1959	8.69	3,860
	May 31, 1959	10.57	5,520

5-4710. Skunk River below Squaw Creek near Ames, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 30, 1960	13.20	9,260
	May 7, 1960	9.47	4,600
1961	Feb. 23, 1961	7.98	3,450
	Mar. 15, 1961	8.05	3,380
	June 7, 1961	7.11	2,680
	Aug. 1, 1961	7.97	3,310
	Sept. 30, 1961	8.27	3,520
1962	Mar. 26, 1962	10.70	5,900
	May 8, 1962	10.47	5,140
	May 29, 1962	9.32	4,280
	June 9, 1962	7.32	2,820
	July 15, 1962	11.87	6,330
	July 20, 1962	7.96	3,310
1963	Apr. 29, 1963	8.56	3,520
	May 12, 1963	10.20	4,780
1964	May 8, 1964	8.84	3,600
	June 23, 1964	9.80	4,440
1965	Mar. 1, 1965	11.87	6,410
	Apr. 1, 1965	11.82	6,350
	Apr. 6, 1965	12.59	7,340
	June 5, or 6, 1965		^a 3,800
	Sept. 20, 1965	8.36	3,720

a About

6-6085. Soldier River at Pisgah, Iowa

Location.--Lat 41 deg. 49 min. 50 sec., long 95 deg. 55 min. 50 sec., in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.14, T.81 N., R.44 W., on left bank on downstream side of highway bridge at west edge of Pisgah, 2.8 miles downstream from Stowe Creek, and 13.1 miles upstream from mouth.

Drainage area.--407 sq mi.

Gage.--Nonrecording prior to October 11, 1954; recording thereafter. Datum of gage is 1036.53 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1940	June 4, 1940	25.7	17,000
	July 9, 1940	25.1	16,000
	July 11, 1940	17.5	7,740
	Aug. 3, 1940	17.6	7,820
1941	June 2, 1941	12.6	4,220
1942	June 2, 1942	24.0	14,300
	June 28, 1942	26.1	17,800
	July 19, 1942	14.0	5,200
	July 24, 1942	15.5	6,250
1943	July 21, 1943	16.0	6,620
	Aug. 22, 1943	20.0	9,760
1944	May 12, 1944	16.0	6,620
	June 12, 1944	25.0	15,700
	Aug. 1, 1944	17.5	7,740
1945	Mar. 9, 1945	16.0	6,620
	May 21, 1945	20.0	9,760
	May 31, 1945	20.2	9,940
1946	Feb. 5, 1946	^b 17.0	5,830
	May 24, 1946	15.6	6,320
	June 28, 1946	20.1	9,850
	June 30, 1946	16.8	7,220
	Sept. 4, 1946	22.6	12,400
	Sept. 7, 1946	15.2	6,040
1947	June 22, 1947	14.1	5,270

6-6085. Soldier River at Pisgah, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1948	Feb.	27, 1948	22.1	11,800
	Mar.	16, 1948	16.3	6,790
	July	29, 1948	15.0	5,860
1949	Mar.	4, 1949	^b 22.0	9,500
	June	21, 1949	15.9	6,470
	Aug.	12, 1949	15.9	6,540
1950	Feb.	28, 1950	^b 20.4	9,000
	Mar.	4, 1950	14.7	5,690
	June	2, 1950	18.4	8,420
	June	12, 1950	28.2	22,500
	June	18, 1950	23.7	13,900
	Aug.	12, 1950	16.1	6,700
1951	Mar.	26, 1951	24.85	17,000
	May	1, 1951	18.55	10,000
	June	2, 1951	16.35	7,860
	June	17, 1951	27.46	20,400
	July	3, 1951	23.52	15,400
	Aug.	14, 1951	17.56	9,000
	Aug.	17, 1951	15.48	7,050
	Aug.	20, 1951	13.65	5,380
	Sept.	9, 1951	14.60	6,240
	Sept.	12, 1951	14.05	5,720
1952	Oct.	4, 1951	13.55	5,380
1952	Jan	19, 1952	17.35	8,800
	Mar.	12, 1952	13.45	5,210
	June	21, 1952	17.85	9,200
	June	27, 1952	25.18	17,500
	July	6, 1952	16.80	8,220
1953	June	25, 1953	16.40	7,860
	Aug.	3, 1953	16.24	7,680
	Aug.	6, 1953	13.80	5,550
1954	Apr.	21, 1954	17.6	9,000
	May	27, 1954	17.68	9,100
	June	19, 1954	23.35	15,200
	June	21, 1954	20.0	11,400
1955	Mar.	8, 1955	11.79	3,890

6-6085. Soldier River at Pisgah, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1956	July 11, 1956	10.68	2,880
1957	June 16, 1957	17.64	9,000
1958	July 2, 1958	13.7	5,260
1959	May 28, 1959	14.60	6,010
	May 31, 1959	16.87	8,060
1960	June 16, 1960	14.00	5,580
1961	Mar. 15, 1961	11.47	3,480
1962	Mar. 23, 1962	14.70	8,100
	May 28, 1962	12.96	5,800
	June 10, 1962	13.25	6,100
	Aug. 30, 1962	22.40	15,500
1963	June 5, 1963	19.14	12,000
	Aug. 6, 1963	16.89	9,800
1964	May 24, 1964	20.50	13,400
	May 26, 1964	22.21	15,300
1965	Mar. 17, 1965	13.90	6,800
	Mar. 31, 1965	19.13	12,000
	Apr. 3, 1965	13.98	6,880
	May 25, 1965	14.70	7,600

b Affected by ice

5-4550.1 South Branch Ralston Creek at Iowa City, Iowa

Location.--Lat 41 deg.38 min.50 sec., long 91 deg.30 min.30 sec.
in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 79N., R.6 W., on right bank 60 ft down-
stream from Muscatine Avenue bridge in Iowa City and 1.3
miles upstream from confluence with Ralston Creek.

Drainage area.--3.20 sq mi. approximately.

Gage.--Recording. Datum of gage is 678.03 above mean sea level,
datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements
below 220 cfs and by flow-through-culvert measurement at
780 cfs.

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

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	June 22, 1964	3.47	126
1965	Apr. 5, 1965	4.76	312
	Apr. 24, 1965	6.57	652
	May 26, 1965	4.28	209
	Sept. 21, 1965	8.15	780

5-4553. South Fork English River near Barnes City, Iowa

Location.--Near northwest corner sec.34, T.78 N., R.14 W., at bridge, 1 mile north of Barnes City, Poweshiek County.

Drainage area.--11.5 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June 28, 1953	11.40	478
1954	Aug. 26, 1954	10.88	352
1955	Apr. 24, 1955	9.20	157
1956	Aug. 12, 1956	8.43	121
1957	July 3, 1957	9.50	172
1958	July 31, 1958	10.87	318
1959	July 18, 1959	11.73	611
1960	July 12, 1960	12.14	865
1961	July 27, 1961	13.43	1,790
1962	Mar. 19, 1962	11.49	666
1963	Mar. 4, 1963	10.80	298
1964	June 22, 1964	11.42	484
1965	July 9, 1965	12.07	812

5-4552.8 South Fork English River tributary near Barnes City, Iowa

Location.--Near northeast corner sec.21, T.78 N., R.14 W., at
bridge, 3 miles north of Barnes City, Poweshiek County.

Drainage area.--2.51 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June 28, 1953	7.38	400
1954	Aug. 26, 1954	8.21	650
1955	Oct. 10, 1954	6.19	170
1956	Aug. 12, 1956	6.77	263
1957	July 3, 1957	7.38	400
1958	Aug. 15, 1958	6.72	255
1959	July 18, 1959	8.55	793
1960	June 19, 1960	8.57	690
1961	July 27, 1961	8.81	784
1962	Nov. 16, 1961	4.85	123
1963	Mar. 4, 1963	5.21	145
1964	June 22, 1964	5.34	152
1965	July 9, 1965	8.56	686

5-4553.5 South Fork English River tributary No. 2 near Montezuma,
Iowa

Location.--Near southwest corner sec.11, T.78 N., R.14 W., at
box culvert, 4 miles southeast of Montezuma, Poweshiek County.

Drainage area.--0.523 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	June 28, 1953	8.53	31
1954	Aug. 26, 1954	8.44	28
1955	Apr. 24, 1955	8.27	23
1956	Aug. 12, 1956	8.52	31
1957	July 3, 1957	8.29	24
1958	Sept. 10, 1958	8.39	27
1959	May 19, 1959	9.43	58
1960	June 19, 1960	11.18	134
1961	July 27, 1961	13.65	344
1962	Mar. 19, 1962	8.68	35
1963		c	
1964		c	
1965	July 9, 1965	9.99	80

c Peak stage did not reach bottom of gage

5-4840. South Raccoon River at Redfield, Iowa

Location.--Lat 41 deg.34 min.45 sec., long 94 deg.11 min.00 sec., in SW $\frac{1}{4}$ SW $\frac{1}{4}$ 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.

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1940	July 31, 1940	13.3	6,100
1941	June 28, 1941	10.5	3,550
1942	May 11, 1942	13.0	5,740
	Aug. 28, 1942	13.4	6,380
1943	Aug. 25, 1943	14.1	6,610
1944	May 3, 1944	13.2	5,930
	May 20, 1944	23.8	20,000
	May 23, 1944	16.9	9,750
	June 11, 1944	13.7	6,430
1945	May 14, 1945	15.0	7,730
	May 22, 1945	17.2	10,100
	May 30, 1945	15.0	7,730
	June 6, 1945	13.1	5,830
1946	Aug. 24, 1946	18.9	12,000
	Sept. 8, 1946	21.4	15,200
1947	June 2, 1947	18.9	15,000
	June 5, 1947	22.7	20,500
	June 12, 1947	24.3	23,800
	June 24, 1947	16.7	10,500
1948	Mar. 19, 1948	21.3	17,600

5-4840. South Raccoon River at Redfield, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Mar. 6, 1949	14.2	7,530
1950	May 5, 1950	14.7	7,990
	June 19, 1950	17.9	11,600
	June 23, 1950	13.8	7,080
1951	Mar. 29, 1951	20.10	15,400
	May 2, 1951	17.70	11,700
	June 2, 1951	18.14	12,200
	June 7, 1951	12.19	5,680
	July 3, 1951	16.26	10,100
1952	Mar. 13, 1952	11.53	5,160
	Mar. 31, 1952	14.39	7,840
	June 21, 1952	12.12	5,680
	June 27, 1952	16.06	9,740
1953	May 24, 1953	12.23	5,680
	June 10, 1953	23.08	21,300
1954	Aug. 22, 1954	13.84	7,200
1955	Apr. 24, 1955	12.86	6,310
1956	Sept. 4, 1956	9.80	3,840
1957	June 17, 1957	17.80	12,700
1958	July 2, 1958	29.04	35,000
	July 4, 1958	19.28	14,200
	July 19, 1958	15.80	9,580
	Sept. 6, 1958	25.12	25,500
1959	May 30, 1959	10.95	5,420
1960	Mar. 30, 1960	15.29	9,340
	May 7, 1960	15.31	9,340
1961	Feb. 23, 1961	11.23	5,590
	Mar. 27, 1961	10.67	5,160
	June 14, 1961	10.78	5,250
	Sept. 30, 1961	11.00	5,420
1962	Mar. 24, 1962	14.42	8,350

5-4840.--South Raccoon River at Redfield, Iowa-- (Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	May 29, 1962	15.46	9,340
	June 9, 1962	13.01	7,090
1963	Mar. 3, 1963	^b 13.43	^a 6,300
	Apr. 29, 1963	15.25	9,240
	Aug. 7, 1963	10.85	5,080
1964	Apr. 13, 1964	13.57	7,720
	June 23, 1964	19.69	14,900
1965	Feb. 21, 1965	^b 11.82	^a 5,600
	Mar. 2, 1965	17.70	12,800
	Mar. 17, 1965	19.60	15,800
	Apr. 1, 1965	15.14	9,350
	Apr. 5, 1965	16.99	11,800

a About

b Affected by ice

5-4874.7 South River near Ackworth, Iowa

Location.--Lat 41 deg.20 min.15 sec., long 93 deg.29 min.05 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.34, T.76 N., R.23 W., on right bank 15 ft downstream from county highway bridge, 2 miles southwest of Ackworth and 0.6 mile downstream from Otter Creek.

Drainage area.--460 sq mi. Prior to October 1, 1961, 474 sq mi.

Gage.--Recording. Datum of gage is 769.97 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 12, 1946, nonrecording; June 13, 1946 to Apr. 13, 1960, recording, and Apr. 14, 1960 to Sept. 30, 1961, nonrecording, all at site 3.8 miles downstream at datum 8.01 ft lower.

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

Remarks.--Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Aug. 11, 1940	8.3	1,770
1941	June 9, 1941	20.6	13,400
	Sept. 16, 1941	17.9	8,570
1942	Oct. 22, 1941	16.9	7,420
1942	Nov. 1, 1941	18.7	9,480
	Dec. 23, 1941	14.3	5,210
1942	July 19, 1942	18.4	9,090
1943	May 15, 1943	15.1	6,130
	June 12, 1943	13.8	5,130
1944	Apr. 22, 1944	13.4	5,030
	May 2, 1944	16.3	7,460
	May 22, 1944	19.7	10,900
	June 9, 1944	17.5	8,600
1945	Mar. 15, 1945	14.8	6,140
	Apr. 16, 1945	19.6	11,800
	May 14, 1945	18.5	10,100
	May 25, 1945	15.4	6,660
1946	Jan. 6, 1946	^b 22.3	5,100
	Mar. 26, 1946	16.3	7,470
	June 19, 1946	20.0	12,600
	Aug. 25, 1946	15.5	7,470

5-4874. South River near Ackworth, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 4, 1947	18.6	10,300
	Apr. 11, 1947	13.9	7,290
	May 29, 1947	19.8	12,400
	June 5, 1947	24.6	34,000
	June 13, 1947	23.1	22,500
	June 22, 1947	21.9	17,300
1948	Mar. 15, 1948	16.0	8,900
1949	Feb. 24, 1949	14.5	7,250
	June 25, 1949	17.8	11,000
1950	Feb. 28, 1950	16.6	10,300
	May 9, 1950	20.1	15,200
	June 14, 1950	13.9	7,350
	June 18, 1950	13.5	6,950
1951	Mar. 28, 1951	12.02	5,450
	Apr. 13, 1951	11.90	5,360
	May 1, 1951	16.80	10,500
	May 26, 1951	18.84	13,100
	June 2, 1951	15.12	8,660
	June 7, 1951	14.43	7,960
	July 3, 1951	12.17	5,980
1952	Mar. 13, 1952	12.23	5,980
	May 23, 1952	13.01	5,800
	June 22, 1952	21.83	16,600
	Aug. 15, 1952	14.32	7,780
1953	Feb. 20, 1953	12.81	6,220
	Mar. 30, 1953	12.53	5,950
	June 10, 1953	20.65	16,200
1954	Apr. 25, 1954	13.70	7,100
	June 1, 1954	12.37	5,860
	June 16, 1954	13.03	6,400
1955	July 10, 1955	12.02	5,500
1956	Aug. 18, 1956	7.69	2,350
1957	Apr. 3, 1957	9.01	3,130

5-4874.7 South River near Ackworth, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	July 2, 1958	14.43	6,040
	July 19, 1958	13.88	5,590
1959	Mar. 26, 1959	12.5	5,150
	Apr. 20, 1959	13.03	5,500
	May 22, 1959	22.81	13,700
	May 29, 1959	19.35	11,700
	June 20, 1959	19.52	11,800
	Aug. 7, 1959	14.83	6,940
	Sept. 26, 1959	15.04	7,100
1960	Jan. 13, 1960	21.26	13,000
	Mar. 30, 1960	22.60	18,100
	May 6, 1960	16.6	8,190
	May 25, 1960	19.7	11,300
	Sept. 24, 1960	18.0	9,450
1961	Feb. 18, 1961	19.80	11,400
	Mar. 13, 1961	19.60	11,100
1962	Nov. 16, 1961	23.62	9,480
1962	Feb. 5, 1962	18.73	5,790
	Mar. 19, 1962	25.53	12,300
	June 11, 1962	24.32	10,100
1963	Apr. 29, 1963	20.82	7,260
	Aug. 6, 1963	18.38	5,580
1964	June 23, 1964	16.90	4,480
1965	Mar. 17, 1965	25.47	12,100
	Apr. 6, 1965	16.62	5,080
	Apr. 8, 1965	18.57	6,450
	June 4, 1965	21.30	8,540
	Sept. 21, 1965	23.31	9,350

b Affected by ice

5-4876. South Whitebreast Creek near Osceola, Iowa

Location.--Near southwest corner sec.12, T.71 N., R.25 W., at bridge, 6 miles southeast of Osceola, Clarke County.

Drainage area.--28.0 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by current-meter measurements below and by logarithmic extension above 900 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 8, 1953	11.21	1,280
1954	May 29, 1954	5.27	302
1955	July 9, 1955	12.02	1,440
1956	c		
1957	Apr. 2, 1957	9.90	1,020
1958	July 3, 1958	11.57	1,350
1959	Aug. 6, 1959	13.09	1,680
1960	Mar. 27, 1960	11.44	1,330
1961	Sept.14, 1961	11.04	1,240
1962	Nov. 16, 1961	12.08	1,460
1963	Apr..22, 1963	11.65	1,370
1964	Sept. 6, 1964	13.51	1,790
1965	May 8, 1965	11.99	1,440

c Peak stage did not reach bottom of gage

5-4956. South Wyaconda River near West Grove, Iowa

Location.--Near northwest corner sec.5, T.68 N., R.14 W., at bridge on U.S. Highway 63, 2.5 miles east of West Grove, Davis County.

Drainage area.--4.69 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1953	Mar. 30, 1953	8.18	530
1954	Apr. 6, 1954	8.09	485
1955	Oct. 10, 1954	9.15	1,250
1956		c	
1957	June 11, 1957	6.98	142
1958	July 31, 1958	9.21	1,310
1959	Aug. 5, 1959	9.64	1,970
1960	Oct. 6, 1959	9.39	1,490
1961	Mar. 27, 1961	7.34	215
1962	Nov. 16, 1961	7.96	424
1963	Mar. 4, 1963	8.95	1,080
1964	June 15, 1964	7.95	242
1965	Apr. 8, 1965	9.22	1,320

c Peak stage did not reach bottom of gage

6-8082. Spring Valley Creek near Tabor, Iowa
(Discontinued Sept. 30, 1964)

Location.--Lat 40 deg. 54 min. 35 sec., long 95 deg. 36 min. 00 sec., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.31, T.71 N., R.41 W., on left bank 20 ft downstream from highway bridge, 1.5 miles upstream from mouth and 4.0 miles northeast of Tabor.

Drainage area.--7.65 sq mi.

Gage.--Recording. Altitude of gage is 975 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 210 cfs and extended above on basis of a slope-area measurement of peak flow.

Remarks.--Base for partial-duration series, 250 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1956	June	11, 1956	8.59	317
	July	15, 1956	13.50	2,310
	Aug.	18, 1956	8.78	359
1957	May	29, 1957	12.07	1,480
	June	7, 1957	10.58	865
	June	17, 1957	8.90	380
	July	1, 1957	10.33	778
1958	July	19, 1958	10.85	935
	July	30, 1958	15.48	4,150
1959	May	18, 1959	12.57	1,730
	May	29, 1959	^a 10.0	670
	Aug.	5, 1959	8.40	279
	Sept.	18, 1959	8.51	298
1960	Aug.	17, 1960	9.30	473
	Aug.	28, 1960	12.28	1,370
	Sept.	24, 1960	8.63	328
1961	June	27, 1961	12.13	1,480
1962	May	28, 1962	11.77	1,300
	May	31, 1962	^a 9.36	^a 486
	June	6, 1962	8.85	370
1963	Sept.	10, 1963	12.13	1,480

6-8082. Spring Valley Creek near Tabor, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 26, 1964	12.12	1,480
	June 14, 1964	9.55	525
	June 20, 1964	9.66	566
	July 11, 1964	8.55	298

a About

5-4705. Squaw Creek at Ames, Iowa

Location.--Lat 42 deg.01 min.20 sec., long 93 deg.37 min.55 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.10, T.83 N., R.24 W., on left bank 65 ft downstream from Lincolnway bridge, 1.8 miles upstream from mouth, in City of Ames.

Drainage area.--204 sq mi.

Gage.--Nonrecording prior to May 24, 1965; recording thereafter. Datum of gage is 881.00 ft above mean sea level, datum of 1929. Prior to Mar. 11, 1925, at site 0.6 mile upstream at different datum.

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)
1918	June 4, 1918	14.5	6,900
1919	Sept.30, 1919	7.96	^c 1,900
1920	Oct. 4, 1919	8.6	2,260
1921	Sept.17, 1921	7.4	1,900
1922	July 17, 1922	10.7	4,130
1923	Sept.28, 1923	6.1	1,340
1924	July 28, 1924	8.8	3,170
1925	Aug. 7, 1925	4.9	791
1926	Sept.19, 1926	10.2	3,610
1927	Oct. 4, 1926	5.8	1,060
1965	June 4, 1965	8.85	^d 2,780

c Maximum for period May to September 1919

d Maximum for period May to September 1965

5-4910. Sugar Creek near Keokuk, Iowa

Location.--Lat 40 deg.26 min.45 sec., long 91 deg.28 min.55 sec., in SE $\frac{1}{4}$ NW $\frac{1}{4}$ 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 and from Nov. 28, 1928 to Sept. 30, 1931; recording remainder of time. Datum of gage is 510.20 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1905	June 9, 1905	^c 20.6	^a 33,000
1922	July 12, 1922	10.0	^d 2,780
1923	Mar. 15, 1923	5.8	980
1924	Aug. 7, 1924	9.81	2,400
1925	July 7, 1925	9.30	2,180
1926	Sept. 8, 16, 1926	10.58	3,040
1927	June 11, 1927	13.5	6,170
1928	Oct. 1, 1927	13.85	6,620
1929	Nov. 17, 1928		^e
1930	June 15, 1930	9.0	1,970
1931	June 6, 1931	10.0	2,560
1958	Sept.24, 1958	4.67	^f 341
1959	Apr. 19, 1959	10.56	2,320
	Aug. 6, 1959	10.88	2,270
	Sept.27, 1959	10.92	2,460
	Sept.28, 1959	12.22	4,300
1960	Oct. 6, 1959	11.72	3,500

5-4910. Sugar Creek near Keokuk, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 30, 1960	11.40	2,900
	Apr. 17, 1960	11.17	2,500
	June 23, 1960	11.54	3,200
	July 1, 1960	10.73	2,100
	July 12, 1960	12.87	6,120
1961	Sept. 14, 1961	12.32	4,750
1962	Nov. 3, 1961	11.08	2,440
	Nov. 16, 1961	10.62	2,150
1963	Mar. 4, 1963	11.29	2,950
1964	Apr. 5, 1964	10.20	2,000
	Apr. 20, 1964	11.77	3,400
1965	Jan. 1, 1965	11.32	2,980
	Jan. 23, 1965	10.47	2,220
	Mar. 17, 1965	11.35	2,440
	Apr. 6, 1965	12.65	4,580
	July 14, 1965	10.01	2,050

a About

c Maximum stage known

d Maximum for period April to September, 1922

e Not determined

f Maximum for period August to September, 1958

6.8120. Tarkio River at Blanchard, Iowa
(Discontinued June 30, 1940)

Location.--Lat. 40 deg. 35 min. 40 sec., long. 95 deg. 13 min. 25 sec., on line between SE $\frac{1}{4}$ sec. 20 and NE $\frac{1}{4}$ sec. 29, T.67 N., R. 38 W., at bridge on State Highway 333, 1 mile north of Blanchard and 8.2 miles downstream from Snake Creek.

Drainage area.--200 sq. mi.

Gage.--Nonrecording prior to August 7, 1934; recording thereafter. Datum of gage is 940.32 feet above mean sea level, datum of 1929. Prior to March 5, 1940, at 5.00 feet higher datum.

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)
1934	Sept. 26, 1934		^c 182
1935	May 31, 1935		1,920
1936	Apr. 28, 1936		4,330
1937	May 21, 1937		5,620
1938	Aug. 20, 1938		4,240
1939	Mar. 12, 1939		9,980
1940	Apr. 29, 1940		^d 168

c Maximum for period March 13 to September 30, 1934

d Maximum for period October 1, 1939, to June 30, 1940

6-8117.6 Tarkio River near Elliot, Iowa

Location.--Near northeast corner sec.28, T.73 N., R.37 W., at bridge, 4.5 miles southeast of Elliot, Montgomery County.

Drainage area.--10.7 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	June 22, 1952	11.88	1,200
1953		c	
1954		c	
1955	Mar. 2, 1955	8.88	428
1956	July 7, 1956	6.19	138
1957	May 29, 1957	5.16	88
1958	Aug. 28, 1958	11.48	1,050
1960	June 30, 1960	10.33	1,060
1961	Feb. 27, 1961	5.95	230
1962	May 28, 1962	11.68	1,490
1963	Mar. 11, 1963	6.59	307
1964	May 26, 1964	9.79	922
1965	Apr. 5, 1965	8.26	584

c Peak stage did not reach bottom of gage

6-8118.4 Tarkio River at Stanton, Iowa

Location.--Lat 40 deg. 58 min. 55 sec., long 95 deg. 06 min. 35 sec., in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T.71 N., R.37 W., on right bank 10 ft downstream from highway bridge and half a mile west of Stanton.

Drainage area.--49.3 sq mi.

Gage.--Crest-stage gage prior to October 17, 1957; recording thereafter. Datum of gage is 1,104.67 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,550 cfs and extended above on basis of slope-area measurement at gage height 15.37 ft.

Remarks.--Only annual peaks are shown prior to 1958. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1952	June	22, 1952	15.68	c
1953			e	
1954	Aug.	23, 1954	10.23	c
1955	Mar.	2, 1955	13.44	c
1956	July	15, 1956	15.37	3,380
1957			e	
1958	July	3, 1958	14.26	2,400
	July	30, 1958	14.74	2,750
	Aug.	6, 1958	13.84	2,010
1959	May	19, 1959	13.12	1,580
	May	29, 1959	14.13	2,300
1960	Mar.	28, 1960	14.53	2,640
	June	30, 1960	16.23	4,240
	Aug.	28, 1960	13.79	2,070
	Sept.	18, 1960	16.61	4,650
	Sept.	24, 1960	13.81	2,070
1961	Mar.	27, 1961	13.70	2,000
1962	May	29, 1962	14.65	2,730
1963	Mar.	11, 1963	12.37	1,140

6-8118.4 Tarkio River at Stanton, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 26, 1964	13.41	1,790
	May 26, 1964	16.83	4,870
	June 14, 1964	13.27	1,720
	June 19, 1964	16.78	4,870
	June 22, 1964	18.66	7,230
	July 11, 1964	14.88	3,000
1965	Mar. 1, 1965		d
	Mar. 17, 1965	15.42	3,150
	Apr. 5, 1965	14.18	2,290
	May 22, 1965	13.89	2,090
	June 8, 1965	18.70	5,610
	June 29, 1965	14.45	2,480

c Not determined

d Unknown

e Peak stage did not reach bottom of gage

6-8118.2 Tarkio River tributary near Stanton, Iowa

Location.--Near northeast corner sec.16, T.72 N., R.37 W., at box culvert on County Road "P", 4 miles north of Stanton, Montgomery County.

Drainage area.--0.67 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation--Defined by step-backwater computations and by indirect measurements at 238 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	June 2, 1952	4.51	248
1953		c	
1954	June 21, 1954	3.35	128
1955	Mar. 2, 1955	3.82	166
1956	July 15, 1956	4.88	318
1957	May 15, 1957	3.54	142
1958	Aug. 28, 1958	4.86	313
1959	May 28, 1959	3.97	179
1960	June 30, 1960	4.62	266
1961	Mar. 12, 1961	3.40	132
1962	May 28, 1962	3.73	158
1963	Mar. 4, 1963	2.90	99
1964	May 24, 1964	3.99	181
1965	June 8, 1965	3.28	124

c Peak stage did not reach bottom of gage

6-8980. Thompson River at Davis City, Iowa
(Published as "Grand River" prior to 1918)

Location.--Lat. 40 deg. 38 min. 20 sec., long. 93 deg. 48 min. 30 sec., in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35 T.68 N., R.26 W., on right bank 15 feet downstream from bridge on U.S. Highway 69 at Davis City, 5 $\frac{1}{4}$ miles upstream from Iowa-Missouri State Line, and 9 miles downstream from Elk Creek.

Drainage area.--701 sq. mi.

Gage.--Nonrecording prior to February 25, 1942; recording thereafter. Datum of gage is 876.04 feet 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 velocity-area study.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1885	Aug.	8, 1885	22.8	30,000
1897	Apr.	24, 1897	21.7	c
1903	Aug.	27, 1903	21.0	c
1909	July	6, 1909	20.3	c
1914	Aug.	16, 1914	20.2	c
1915	Mar.	28, 1915	19.6	c
1918	June	6, 1918	14.7	5,660
1919	Mar.	16, 1919	17.8	10,100
	Apr.	22, 1919	14.6	5,580
	May	4, 1919	17.8	10,100
	June	4, 1919	18.8	12,500
	Sept.	30, 1919	14.2	5,260
1920	Nov.	11, 1919	15.2	6,100
1920	Mar.	24, 1920	16.9	8,350
	Mar.	26, 1920	16.0	7,000
	Apr.	2, 1920	15.2	6,100
	Apr.	21, 1920	16.4	7,600
	Apr.	27, 1920	13.7	4,890
	May	13, 1920	16.9	8,350

6-8980. Thompson River at Davis City, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1921	May	11, 1921	14.5	5,500
	June	2, 1921	15.1	5,280
1922	May	23, 1922	15.0	5,200
	July	18, 1922	19.9	13,200
	July	30, 1922	15.5	5,600
	Sept.	1, 1922	17.6	8,040
1923	Nov.	13, 1922	17.4	7,760
1924	Mar.	1, 1924	14.4	4,720
	June	26, 1924	19.0	10,200
1925	June	3, 1925 ^d	13.1	3,860
1926	Sept.	9, 1926	19.1	10,800
1941	Sept.	17, 1941	9.4	^e 4,440
1942	Oct.	9, 1941	12.0	6,700
	Nov.	2, 1941	12.2	6,900
		1941	12.2	
1942	June	20, 1942	13.5	8,380
	June	26, 1942	12.0	6,700
1943	May	15, 1943	11.5	6,420
	June	13, 1943	12.1	6,910
1944	Apr.	23, 1944	14.2	8,810
	May	3, 1944	11.7	6,590
	May	21, 1944	9.7	4,960
1945	Mar.	17, 1945	11.5	6,620
	Apr.	17, 1945	13.9	8,700
	May	15, 1945	12.9	7,750
1946	Jan.	6, 1946	15.2	11,500
	May	3, 1946	10.0	6,400
	June	19, 1946	11.1	7,610
1947	Apr.	5, 1947	11.7	8,200
	Apr.	12, 1947	11.6	8,100
	May	30, 1947	8.9	5,300
	June	6, 1947	19.3	19,500
	June	14, 1947	20.1	21,300
	June	23, 1947	12.6	9,320
1948	Mar.	20, 1948	8.6	4,860

6-8980. Thompson River at Davis City, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1949	June 26, 1949	7.8	4,140
1950	May 10, 1950	11.8	12,000
	June 19, 1950	11.4	11,300
1951	Mar. 29, 1951	6.98	5,100
	May 2, 1951	13.75	15,200
	May 12, 1951	6.98	5,100
	May 27, 1951	9.82	8,900
	July 5, 1951	7.26	5,490
1952	Nov. 13, 1951	6.61	4,620
1952	Mar. 13, 1952	7.79	6,140
1953	Mar. 30, 1953	5.86	3,890
1954	June 15, 1954	4.56	2,520
1955	Mar. 3, 1955	4.81	2,760
1956	Aug. 9, 1956	4.70	2,670
1957	Apr. 3, 1957	7.54	5,250
1958	July 15, 1958	9.22	7,400
	July 27, 1958	8.19	5,850
1959	Mar. 26, 1959	7.67	5,430
	Apr. 20, 1959	9.18	6,900
	May 11, 1959	10.25	7,900
	May 31, 1959	10.60	8,300
	July 1, 1959	8.04	5,700
	Aug. 6, 1959	18.42	17,500
	Sept. 27, 1959	10.35	8,100
1960	Jan. 14, 1960	11.92	9,690
	Mar. 30, 1960	16.63	15,200
	Apr. 17, 1960	6.97	4,800
	July 1, 1960	9.89	7,600
1961	Feb. 18, 1961	^b 6.63	^a 9,600
	Mar. 14, 1961	6.78	5,230
	Sept. 13, 1961	8.22	6,820
1962	Nov. 3, 1961	6.61	5,050
	Nov. 16, 1961	8.86	7,200

6-8980. Thompson River at Davis City, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1962	Mar.	20, 1962	7.56	5,970
	May	31, 1962	6.18	4,690
	June	10, 1962	6.27	4,780
1963	Mar.	4, 1963	6.00	4,510
1964	June	21, 1964	7.05	5,410
	Sept.	8, 1964	9.14	7,400
	Sept.	23, 1964	7.74	6,060
1965	Mar.	17, 1965	9.08	9,120
	Apr.	8, 1965	9.35	9,520
	May	8, 1965	9.10	9,150
	July	1, 1965	5.69	4,760
	Sept.	21, 1965	8.87	8,820

a About

b Affected by ice

c Discharge could not be estimated

d Maximum for period October 1, 1924, to July 2, 1925

e Maximum for period July 19 to September 30, 1941

5-4517. Timber Creek near Marshalltown, Iowa

Location.--Lat 42 deg.00 min.25 sec., long 92 deg.51 min.30 sec., in SE $\frac{1}{4}$ SW $\frac{1}{4}$ 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.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 1947	16.8	
1950	Feb. 9, 1950	11.92	1,520
	Feb. 10, 1950	12.30	1,690
	Mar. 5, 1950	15.10	4,030
	June 18, 1950	15.77	4,940
1951	Mar. 28, 1951	10.70	1,160
	June 1, 1951	11.52	1,390
1952	Mar. 10, 1952	13.87	2,770
1953	Feb. 20, 1953	15.09	4,030
1954	June 10, 1954	13.47	2,450
1955	Feb. 19, 1955	13.45	1,500
1956	May 13, 1956	4.35	150
1957	June 18, 1957	14.23	3,030
	July 3, 1957	15.38	4,420
1958	Feb. 24, 1958	^b 10.56	^a 800
1959	Feb. 28, 1959	10.83	1,190
	Mar. 14, 1959	10.22	1,040
	Mar. 20, 1959	14.59	3,420
	Mar. 26, 1959	10.71	1,200
	May 19, 1959	14.32	3,120

Timber Creek near Marshalltown, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Jan. 13, 1960	14.0	2,850
	Mar. 30, 1960	14.57	3,420
	Apr. 17, 1960	10.47	1,120
	May 6, 1960	14.40	3,220
	May 26, 1960	12.36	1,740
1961	Feb. 18, 1961	15.67	4,810
	Feb. 23, 1961	13.37	2,370
	Mar. 6, 1961	12.86	2,020
	Mar. 13, 1961	12.3	1,690
1962	Mar. 20, 1962	10.99	1,240
	Mar. 22, 1962	11.43	1,360
	Mar. 24, 1962	10.94	1,220
	May 29, 1962	12.67	1,900
	July 14, 1962	13.53	2,450
	July 20, 1962	12.71	1,900
1963	Mar. 13, 1963	^b 13.24	^a 1,100
1964	June 23, 1964	12.86	2,020
1965	Feb. 7, 1965	^b 12.50	^a 1,400
	Feb. 10, 1965	^b 12.55	^a 1,500
	Mar. 1, 1965	^b 12.32	^a 1,250
	Mar. 17, 1965	^b 12.99	^a 1,550
	Apr. 1, 1965	^b 15.07	^a 2,100
	Apr. 5, 1965	14.57	2,530
	Apr. 24, 1965	14.31	3,130
	July 9, 1965	11.89	1,520
	Sept. 21, 1965	10.82	1,200

a About

b Affected by ice

5-4120. Turkey River at Elkader, Iowa
(Discontinued September, 1942)

Location.--Lat 42 deg.51 min.05 sec., long 91 deg.24 min.15 sec.,
in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 93 N., R. 5W., in tailrace of Central
States Power & Light Corporation's hydroelectric plant in
Elkader, 2.6 miles upstream from Roberts Creek and at mile 37.0.

Drainage area.--891 sq mi.

Gage.--Nonrecording. Datum of gage is 701.61 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)
1916	June	1, 1916	34.3	^a 30,000
1929	March	16, 1929		^c 25,200
1933	April	1, 1933		^c 23,800
	July	2, 1933	14.2	11,800
1934	Jan.	22, 1934	12.8	6,860
1935	March	6, 1935	14.0	11,400
1936	Mar.	11, 26, 1936	26.4	9,000
1937	March	7, 1937	27.5	12,300
1938	Feb.	5, 1938	14.50	13,000
1939	Mar.	14, 1939	11.50	4,970
1940	July	27, 1940	29.1	19,000
1941	May	31, 1941	29.1	19,300
1942	June	30, 1942	13.0	9,200

a About

c Mean daily discharge

5-4125. Turkey River at Garber, Iowa

Location.--Lat 42 deg.44 min.20 sec., long 91 deg.15 min.45 sec., in NE $\frac{1}{4}$ SW $\frac{1}{4}$ 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, and at mile 19.6.

Drainage area.--1,545 sq mi.

Gage.--Nonrecording prior to Feb. 7, 1935; recording thereafter. Datum is 634.46 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 10,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1902	May 18, 1902	^c 23.7	^a 25,000
1914	June 15, 1914	13.2	8,960
1915	Aug. 4, 1915	14.7	10,900
1916	Mar. 25, 1916	20.6	18,000
	June 2, 1916	22.0	20,300
1919	June 4, 1919	16.8	^d 13,100
1920	Mar. 12, 1920	15.1	11,000
1921	May 31, 1921	14.5	10,400
1922	Feb. 23, 1922	28.1	32,300
	July 22, 1922	23.0	23,000
1923	Mar. 4, 1923	17.2	13,800
	Apr. 3, 1923	24.2	25,200
1924	Mar. 4, 1924	15.0	11,000
	July 21, 1924	17.4	14,600
	Aug. 19, 1924	15.5	11,700
1925	June 15, 1925	24.7	26,200
	June 17, 1925	15.5	11,700
	June 24, 1925	15.5	11,700

Turkey River at Garber, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Aug. 20, 1926	12.0	7,130
1927	Oct. 3, 1926	16.8	13,700
1927	May 24, 1927	15.0	10,800
	May 28, 1927	14.6	10,300
1929	July 13, 1929		^e 7,630
1930	June 13, 1930		14,500
1933	Dec. 24, 1933	14.9	10,700
	Mar. 30, 1933	22.5	20,600
	Apr. 1, 1933	20.9	18,500
	Apr. 10, 1933	14.4	10,200
	May 20, 1933	14.7	10,600
	July 12, 1933	22.4	20,400
1934	Jan. 22, 1934	11.5	6,230
1935	Mar. 4, 1935	19.9	17,100
1936	Mar. 11, 1936	^b 20.7	15,000
1937	Mar. 6, 1937	20.8	18,900
	June 13, 1937	17.1	13,500
1938	Sept. 13, 1938	21.1	19,600
1939	Mar. 14, 1939	^b 19.13	9,200
1940	July 27, 1940	25.3	26,100
	Aug. 27, 1940	16.4	10,400
1941	Mar. 21, 1941	17.6	12,300
	May 28, 1941	20.0	16,200
	May 31, 1941	20.0	16,200
	June 12, 1941	23.3	22,100
1942	June 30, 1942	17.5	12,000
	Aug. 1, 1942	16.0	10,100
1943	Mar. 16, 1943	21.0	17,600
	Aug. 13, 1943	20.0	15,900

Turkey River at Garber, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 23, 1944	16.6	10,800
	June 16, 1944	20.6	16,900
1945	Mar. 18, 1945	17.2	11,600
	June 2, 1945	18.2	13,000
	June 28, 1945	17.3	11,700
	Aug. 14, 1945	17.0	11,300
1946	Jan. 5, 1946	24.3	24,100
	Mar. 6, 1946	22.1	19,600
	Mar. 13, 1946	17.9	12,600
1947	Mar. 13, 1947	17.2	11,600
	Apr. 10, 1947	17.3	11,700
	June 13, 1947	26.6	29,000
	June 29, 1947	22.9	21,200
1948	Feb. 28, 1948	^b 23.62	18,000
	Mar. 15, 1948	17.1	11,400
	Mar. 17, 1948	19.8	15,600
	Mar. 19, 1948	21.7	19,000
	May 10, 1948	17.3	11,700
1949	Mar. 4, 1949	20.5	16,800
1950	Mar. 7, 1950	23.7	23,700
	Mar. 27, 1950	23.3	22,900
	June 13, 1950	16.9	11,900
	June 25, 1950	17.0	12,000
	July 16, 1950	17.2	12,300
	Aug. 1, 1950	17.3	12,400
	Sept. 22, 1950	17.9	13,200
1951	Feb. 26, 1951	18.72	14,600
	Mar. 28, 1951	22.79	21,900
	Apr. 7, 1951	20.90	18,300
	Apr. 26, 1951	15.94	10,500
	Apr. 30, 1951	20.44	17,400
	June 27, 1951	16.71	11,600
	July 8, 1951	21.44	19,200
1952	Apr. 1, 1952	15.88	9,840
1953	July 27, 1953	20.62	16,900

Turkey River at Garber, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Aug. 4, 1953	19.71	15,300
	Aug. 6, 1953	19.85	15,700
1954	June 21, 1954	19.94	16,400
1955	June 3, 1955	15.32	9,840
1956	Mar. 28, 1956	17.00	12,300
1957	June 18, 1957	14.20	7,320
1958	May 31, 1958	17.61	12,100
1959	Mar. 26, 1959	21.06	17,000
	Apr. 1, 1959	19.93	15,000
	June 26, 1959	17.35	11,400
1960	Jan. 12, 1960	20.02	15,200
	Mar. 30, 1960	22.96	20,000
	May 6, 1960	21.07	17,000
1961	Feb. 23, 1961	17.31	11,200
	Mar. 6, 1961	16.48	10,100
	Mar. 26, 1961	22.84	19,700
	Aug. 1, 1961	17.55	11,600
	Sept. 30, 1961	17.79	11,900
1962	Nov. 2, 1962	16.80	10,500
	Mar. 29, 1962	24.70	24,500
	May 6, 1962	17.47	11,500
1963	Mar. 17, 1963	20.69	16,300
	Mar. 19, 1963	16.79	10,500
1964	Apr. 3, 1964	17.00	10,800
1965	Mar. 1, 1965	^b 22.10	^a 13,000
	Apr. 1, 1965	19.15	13,800

a About

b Affected by ice

c Maximum known since 1890

d Maximum observed May-Sept., 1919

e Maximum observed Apr.-Sept., 1929

5-4116. Turkey River at Spillville, Iowa

Location.--Lat 43 deg.12 min.30 sec., long 91 deg.57 min.00 sec., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ 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 mill dam, 3,000 ft upstream from Wonder Creek, and at mile 98.1.

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.

Remarks.--Base for partial-duration series, 1,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 1947	^e 18.4	^a 10,000
1956	July 31, 1956	4.13	^c 398
1957	July 16, 1957	6.73	1,230
1958	Feb. 24, 1958	^b 5.17	^a 500
1959	Mar. 30, 1959	^d 9.12	2,100
1960	Mar. 30, 1960	10.70	3,220
	May 7, 1960	9.18	2,360
	June 24, 1960	10.12	2,860
1961	Mar. 27, 1961	14.37	6,420
1962	Mar. 29, 1962	15.32	7,380
	Aug. 31, 1962	14.34	5,950
1963	Mar. 17, 1963	8.41	2,000
1964	April 2, 1964	7.25	1,430

5-4116. Turkey River at Spillville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Mar. 1, 1965	^b 16.11	^a 3,900
	Apr. 1, 1965	^b 12.58	^a 2,800
	Apr. 5, 1965	11.56	2,740
	Apr. 8, 1965	11.68	2,810
	Sept. 29, 1965	11.68	3,490

a About

b Affected by ice

c Period July to Sept. 1956

d Maximum gage height, 11.48 ft., Mar. 29, 1959
(backwater from ice)

e From floodmark

5-3875. Upper Iowa River at Decorah, Iowa

Location.--Lat 43 deg.18 min.20 sec., long 91 deg.48 min.05 sec., in NE 1/4 SW 1/4 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 Creek.

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.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges.			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 31, 1952	9.17	8,850
1953	July 26, 1953	9.32	9,600
	Aug. 3, 1953	9.58	11,100
1954	June 21, 1954	10.12	11,600
1955	Aug. 1, 1955	6.64	1,700
1956	Mar. 28, 1956	8.28	5,500
	Apr. 2, 1956	8.07	4,910
1957	July 16, 1957	8.98	8,000
1958	Feb. 26, 1958	^b 7.40	^a 1,200
1959	Apr. 1, 1959	8.32	5,400
1960	Mar. 30, 1960	8.43	5,880
	July 22, 1960	8.46	5,880
1961	Mar. 27, 1961	13.08	20,200
1962	Mar. 30, 1962	11.32	14,800
	July 2, 1962	8.68	5,320
	Aug. 31, 1962	10.18	10,300
1963	Mar. 17, 1963	^b 8.68	^a 3,600

Upper Iowa River at Decorah, Iowa--Continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 3, 1964	7.97	3,870
1965	Mar. 2, 1965	9.89	9,800
	Apr. 8, 1965	9.68	9,100
	Sept. 21, 1965	8.41	5,500
	Sept. 30, 1965	9.98	10,100

a About

b Affected by ice

5-3880. Upper Iowa River near Decorah, Iowa
(Discontinued September, 1951)

Location.--Lat 43 deg.18 min.20 sec., long 91 deg.44 min.50 sec.,
in E $\frac{1}{2}$ sec. 14, T. 98 N., R.8 W., on left bank 500 ft. upstream
from county highway bridge in Freeport, 1.4 miles downstream
from Trout Creek, and 3 miles downstream from Decorah.

Drainage area.--568 sq mi.

Gage.--Nonrecording prior to August. 28, 1920 and from July 1, 1933
to September 30, 1936; recording remainder of time. Datum of
gage is 829.8 ft above mean sea level, datum of 1929 (Winneshiek
County bench mark). At datum 3.96 ft. lower prior to August 28,
1920. July 1, 1933 to September 30, 1936 at site 4 miles
downstream at different datum.

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

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1914	May 24, 1914	11.6	7,100
1919	Sept. 10, 1919	11.05	6,220
1920	May 22, 1920	10.0	4,970
1921	May 27, 1921	10.21	9,860
	May 30, 1921	9.2	8,000
	June 20, 1921	9.0	7,600
	Sept. 17, 1921	7.8	5,680
1922	Feb. 22, 1922	10.42	10,500
	Mar. 6, 1922	7.9	5,840
1923	Apr. 3, 1923	9.0	7,140
1924	Mar. 27, 1924	8.0	6,000
	Aug. 8, 1924	8.1	6,160
	Aug. 19, 1924	8.98	7,140
1925	Feb. 9, 1925	8.3	6,480
	June 12, 1925	9.7	8,600
1926	Mar. 18, 1926	6.63	3,870
1927	May 29, 1927	5.30	2,580

Upper Iowa River near Decorah, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1933	July 1,2, 1933	97.2	12,200
1934	Jan. 22, & Apr. 3,4,5, 1934	92.0	3,600
1935	Mar. 16, 1935	94.4	7,600
1936	Mar. 10, 11, 1936	98.0	9,420
1937	Mar. 6, 1937	^b 8.80	7,100
1938	June 25, 1938	8.80	6,680
	Aug. 5, 1938	7.3	4,920
	Aug. 16, 1938	7.1	4,640
1939	Mar. 13, 1939	^b 8.10	5,100
1940	Aug. 25, 1940	6.38	3,760
1941	May 29, 1941	15.2	28,500
1942	Oct. 7, 1941	7.9	5,840
	June 30, 1942	11.1	12,500
	Aug. 1, 1942	9.8	8,720
	Aug. 8, 1942	8.2	5,820
	Sept. 18, 1942	8.7	6,560
1943	Oct. 3, 1942	8.5	6,240
	Mar. 15, 1943	9.8	8,900
	Mar. 26, 1943	8.8	6,800
	Aug. 13, 1943	8.3	5,920
1944	June 15, 1944	8.6	6,410
	June 17, 1944	9.3	7,700
1945	Mar. 14, 1945	8.8	6,760
	Mar. 17, 1945	12.2	16,400
	May 21, 1945	8.0	5,550
	May 26, 1945	7.4	4,730
	June 1, 1945	8.9	7,000
	Aug. 5, 1945	11.2	12,600
	Aug. 14, 1945	9.0	7,220

Upper Iowa River near Decorah, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 5, 1946	12.1	16,200
	Mar. 6, 1946	10.9	11,900
	Mar. 12, 1946	9.8	8,950
	Sept. 6, 1946	12.0	15,800
1947	Apr. 5, 1947	8.6	7,240
	Apr. 10, 1947	8.0	6,310
	June 13, 1947	9.9	9,650
1948	Feb. 28, 1948	^b 11.85	12,100
	Mar. 16, 1948	8.6	7,380
	Mar. 19, 1948	8.4	6,940
1949	Mar. 5, 1949	8.6	6,410
1950	Mar. 7, 1950	^b 10.63	^a 9,500
	Mar. 26, 1950	11.37	13,400
	June 13, 1950	8.5	6,400
	July 16, 1950	10.1	9,580
1951	Apr. 7, 1951	9.96	9,900
	June 26, 1951	8.12	6,030
	June 27, 1951	6.67	4,500
1952	Mar. 31, 1952	9.76	9,400

a. About 1/2 mile

b. Affected by ice

6-4834.5 Wagner Creek near Ashton, Iowa

Location.--On south line sec. 35, T.99 N., R.42 W., at bridge,
3 miles northeast of Ashton, Osceola County.

Drainage area.--7.09 sq. mi.

Gage.--Crest-stage gage. Datum is arbitrary.

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)
1952	Mar. 29, 1952	4.31	390
1953	June 7, 1953	5.37	2,840
1954	June 20, 1954	5.29	2,600
1955	Apr. 23, 1955	3.60	40
1956	Aug. 13, 1956	3.56	32
1957	July 3, 1957	3.96	180
1958	Apr. 5, 1958	3.52	24
1959	May 30, 1959	5.29	2,600
1960	Mar. 30, 1960	4.53	475
1961	Mar. 27, 1961	3.64	52
1962	Mar. 31, 1962	4.58	516
1963		c	
1964	May 12, 1964	3.10	d
1965	Aug. 21, 1965	4.37	395

c Peak stage did not reach bottom of gage

d Discharge not determined

5-4522. Walnut Creek near Hartwick, Iowa

Location.--Lat 41 deg.50 min.10 sec., long 92 deg.23 min.20 sec., in SE $\frac{1}{4}$ SW $\frac{1}{4}$ 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 measurements below 2,600 cfs and extended above on basis of contracted opening and flow over-embankment measurement at peak flow.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June	1947	17.7
1950	Mar. 5, 1950	^b 14.68	^a 1,700
	Mar. 6, 1950	^b 14.28	^a 2,000
	June 18, 1950	15.07	3,500
	June 24, 1950	15.12	3,600
1951	June 3, 1951	13.27	1,450
	July 9, 1951	13.27	1,450
1952	Mar. 10, 1952	13.90	1,820
	Mar. 13, 1952	12.08	1,060
1953	Feb. 20, 1953	^b 14.50	^a 2,000
1954	Aug. 26, 1954	13.31	1,450
	Aug. 27, 1954	13.31	1,450
	Sept. 29, 1954	11.94	1,020
1955	Apr. 23, 1955	11.57	952
1956	July 31, 1956	12.27	895
1957	May 31, 1957	10.97	684
1958	July 14, 1958	13.45	1,290
	Sept. 3, 1958	15.67	4,930

Walnut Creek near Hartwick, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Sept. 6, 1958	13.41	1,270
1959	Mar. 20, 1959	14.88	3,230
	Mar. 26, 1959	12.27	1,120
	Apr. 1, 1959	11.91	1,020
	Apr. 27, 1959	14.07	1,950
	May 21, 1959	13.74	1,680
	June 30, 1959	14.24	2,180
1960	Nov. 4, 1959	13.21	1,410
1960	Jan. 12, 1960	15.04	3,500
	Jan. 14, 1960	13.01	1,450
	Mar. 29, 1960	^b 15.44	^a 3,000
	Mar. 31, 1960	12.73	1,360
	May 6, 1960	14.56	2,640
1961	Feb. 18, 1961	14.75	2,980
	Mar. 6, 1961	15.17	3,700
	Mar. 8, 1961	14.80	3,060
	Mar. 13, 1961	12.10	1,350
1962	Mar. 19, 1962	13.85	1,780
	Mar. 23, 1962	11.57	1,050
	July 14, 1962	14.30	2,250
	July 19, 1962	13.24	1,530
1963	Mar. 12, 1963	^b 11.57	^a 850
1964	June 23, 1964	14.19	2,120
1965	Jan. 22, 1965	^b 13.00	1,100
	Feb. 9, 1965	^b 13.68	1,100
	Mar. 17, 1965	12.62	1,340
	Mar. 30, 1965	14.59	2,700
	Apr. 5, 1965	13.75	1,760
	Apr. 24, 1965	14.17	2,080
	June 5, 1965	13.86	1,750
	July 2, 1965	12.63	1,340
	Sept. 21, 1965	12.39	1,270

a About

b Affected by ice

5-4214. Wapsipinicon River at Central City, Iowa
(Discontinued Aug. 31, 1950)

Location.--Lat 42 deg.12 min.20 sec., long 91 deg.,31 min.55 sec.
in sec.3, T.85 N., R.6 W., on State Highway 13 in Central City,
Linn County, Iowa, 4.3 miles downstream from Walton Creek and
at mile 108.9.

Drainage area.--1,263 sq mi.

Gage.--Nonrecording. Datum of gage 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.

Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 17, 1929	17	13,000
1941	Apr. 7, 1941	13.6	4,300
	Apr. 21, 1941	13.1	3,200
	June 5, 1941	13.9	4,800
	Sept. 9, 1941	15.8	9,280
	Sept. 18, 1941	13.2	3,500
1942	Oct. 8, 1941	13.6	4,200
	Nov. 3, 1941	14.6	6,320
1942	Mar. 24, 1942	13.5	4,000
	June 14, 1942	15.8	9,280
	July 31, 1942	13.4	3,700
	Aug. 3, 1942	14.8	6,760
1943	Oct. 8, 1942	13.0	3,000
1943	Mar. 17, 1943	13.8	4,600
	Mar. 22, 1943	13.3	3,600
	Apr. 2, 1943	13.3	3,600
1944	Mar. 17, 1944	13.4	3,900
	May 24, 1944	14.0	5,110
	June 19, 1944	16.8	12,400
	June 23, 1944	14.4	5,880
1945	Mar. 20, 1945	16.3	10,800
	Apr. 19, 1945	13.2	3,400
	June 5, 1945	14.3	5,660

Wapsipinicon River at Central City, Iowa

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 8, 1946	15.6	8,760
	Mar. 9, 1946	14.1	5,220
	Mar. 18, 1946	14.9	6,980
	Sept. 23, 1946	13.1	3,200
1947	Apr. 13, 1947	15.0	7,200
	June 2, 1947	16.0	9,800
	June 6, 1947	16.7	12,000
	June 15, 1947	19.3	22,500
	July 4, 1947	14.0	5,000
1948	Mar. 1, 1948	13.7	4,000
	Mar. 4, 1948	13.2	3,300
	Mar. 22, 1948	16.3	10,800
	May 13, 1948	13.1	3,200
1949	Mar. 8, 1949	14.9	6,980
	Apr. 1, 1949	13.2	3,500
1950	Mar. 9, 1950	15.4	8,240
	Mar. 28, 1950	13.6	4,100
	June 25, 1950	14.1	5,220
	Sept. 22, 1950		6,600

5-4220. Wapsipinicon River near DeWitt, Iowa

Location.--Lat. 41 deg.45 min.55 sec., long.90 deg.32 min.00 sec., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ 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, 6.4 miles upstream from Brophy Creek and 18.2 miles upstream from mouth.

Drainage area.--2,330 sq mi (includes that of Silver Creek).

Gage.--Recording. Datum of gage is 598.81 ft above mean sea level, adjustment of 1912.

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

Remarks.--Base for partial-duration series, 4,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 12, 1935	9.7	8,070
	Mar. 27, 1935	8.0	5,440
1936	Mar. 18, 1936	9.1	6,880
	Apr. 1, 1936	8.4	5,440
1937	Feb. 21, 1937	^b 11.65	7,200
	Mar. 6, 1937	10.8	14,900
	Apr. 6, 1937	8.2	5,320
1938	Feb. 8, 1938	9.48	7,810
	May 20, 1938	8.2	5,260
	June 12, 1938	8.1	5,170
	June 15, 1938	8.9	6,550
1939	Mar. 13, 1939	9.7	8,500
1940	June 27, 1940	6.8	3,520
1941	Apr. 10, 1941	8.3	5,280
	Apr. 21, 1941	8.3	5,160
	June 1, 1941	8.6	5,590
	Sept. 14, 1941	10.2	8,130
1942	Oct. 23, 1941	8.6	5,000
	Nov. 8, 1941	9.6	6,800
1942	June 19, 1942	10.3	8,390
	Aug. 8, 1942	9.6	7,280
1943	Dec. 28, 1942	^b 10.26	5,500

Wapsipinicon River near DeWitt, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Feb. 23, 1943	8.7	5,220
	Mar. 19, 1943	9.4	6,610
1944	Mar. 16, 1944	9.3	6,520
	Apr. 24, 1944	9.4	6,550
	May 21, 1944	10.5	10,400
	June 24, 1944	10.3	9,440
	June 27, 1944	12.1	26,000
1945	Mar. 25, 1945	10.2	9,000
	May 18, 1945	8.4	4,970
	June 11, 1945	8.8	5,490
	June 30, 1945	8.4	4,900
1946	Jan. 6, 1946	11.1	14,600
	Jan. 10, 1946	10.7	11,600
	Mar. 21, 1946	10.0	8,240
	Sept. 6, 1946	8.7	5,320
1947	Apr. 6, 1947	9.3	6,420
	Apr. 21, 1947	10.3	9,440
	June 9, 1947	11.3	16,600
	June 19, 1947	11.8	21,600
	July 7, 1947	9.8	7,610
	July 13, 1947	8.5	5,000
1948	Feb. 28, 1948	^b 10.6	6,500
	Mar. 9, 1948	^b 10.9	8,500
	Mar. 20, 1948	11.1	17,200
1949	Mar. 10, 1949	10.0	8,240
	July 21, 1949	9.9	7,910
1950	Mar. 13, 1950	10.1	9,700
	Apr. 26, 1950	9.8	8,480
	June 19, 1950	9.0	5,500
1951	Feb. 20, 1951	^b 10.81	^a 9,800
	Feb. 26, 1951	11.20	14,700
	Apr. 3, 1951	11.07	13,600
	Apr. 14, 1951	10.87	12,300
	May 6, 1951	11.30	15,600
	June 8, 1951	8.70	5,450
	July 15, 1951	10.67	11,100

Wapsipinicon River near DeWitt, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Nov. 14, 1951	10.27	8,000
1952	Mar. 13, 1952	10.88	10,800
	Apr. 10, 1952	9.39	5,620
	May 23, 1952	9.03	5,280
	June 14, 1952	9.34	5,800
1953	Feb. 8, 1953	9.16	5,620
	Feb. 21, 1953	10.73	9,350
1954	Aug. 19, 1954	8.15	3,940
1955	Oct. 11, 1954	9.33	5,620
1955	Feb. 21, 1955	^b 10.22	^a 5,100
1956	May 30, 1956	8.09	3,720
1957	June 21, 1957	7.31	2,770
1958	June 14, 1958	9.27	5,620
1959	Feb. 27, 1959	^b 8.9	^a 5,400
	Mar. 21, 1959	10.23	6,950
	Apr. 4, 1959	11.17	10,600
	Apr. 28, 1959	9.27	5,250
	July 7, 1959	10.56	8,200
1960	Jan. 16, 1960	10.88	10,800
	Apr. 4, 1960	11.71	18,300
	Apr. 24, 1960	10.24	7,600
	May 10, 1960	11.16	12,600
	June 6, 1960	10.02	6,800
1961	Mar. 12, 1961	9.86	6,420
	Apr. 4, 1961	11.36	14,200
	June 9, 1961	10.00	6,800
	Sept. 14, 1961	10.07	6,950
1962	Nov. 8, 1961	10.86	10,500
	Nov. 17, 1961	10.95	11,200
1962	Mar. 20, 1962	11.24	13,400
	Apr. 6, 1962	11.67	17,600
	May 13, 1962	10.82	10,200
	June 1, 1962	9.43	5,350
	July 30, 1962	9.87	6,420

Wapsipinicon River near DeWitt, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	Mar. 20, 1963	9.93	6,680
1964	June 22, 1964	7.73	3,030
1965	Mar. 14, 1965	^b 10.38	^a 7,000
	Apr. 14, 1965	11.05	10,200
	Sept. 24, 1965	11.44	11,100

a About

b Affected by ice

5-4205.6 Wapsipinicon River near Elma, Iowa

Location.--Lat 43 deg.14 min.35 sec., long 92 deg.31 min.50 sec., in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.8, T.97 N., R.14 W., on right bank 10 ft downstream from highway bridge, 0.2 mile downstream from unnamed creek, 4.9 miles west of Elma, and at mile 217.9.

Drainage area.--95.2 sq mi.

Gage.--Recording. Datum of gage is 1,131.46 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.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Mar. 30, 1959	11.54	902
1960	June 24, 1960	13.44	2,980
1961	Mar. 27, 1961	14.19	4,970
	Aug. 1, 1961	12.92	1,560
1962	Mar. 29, 1962	^b 14.84	^a 5,700
	Aug. 31, 1962	14.72	5,500
1963	Oct. 9, 1962	11.61	960
1964	May 24, 1964	9.90	540
1965	Apr. 6, 1965	^b 13.66	^a 2,300
	Apr. 8, 1965	13.19	2,430
	Apr. 11, 1965	12.54	1,460
	Sept. 20, 1965	13.16	2,100
	Sept. 29, 1965	14.26	4,730

a About

b Affected by ice

5-4210. Wapsipinicon River at Independence, Iowa

Location.--Lat 42 deg.27 min.50 sec., long 91 deg.53 min.40 sec., in SE $\frac{1}{4}$ sec.4, T.88 N., R.9W., on right bank at Sixth Street in Independence, 1,800 ft downstream from Interstate Power Co.'s hydroelectric plant, 4 $\frac{3}{4}$ miles downstream from Otter Creek, 9.9 miles upstream from Pine Creek, and at mile 142.6.

Drainage area.--1,048 sq mi.

Gage.--Recording. Datum of gage is 882.85 ft above mean sea level, datum of 1929. Prior to May 24, 1941, nonrecording gage in tailrace of powerplant 1,800 ft upstream at datum 80.00 ft. lower.

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)
1933	July 3, 1933		^c 1,080
1934	Apr. 11, 1934	5.9	1,010
1935	Mar. 5, 6, 1935	11.4	7,220
	Mar. 24, 1935	8.4	4,040
	May 5, 1935	7.5	3,000
1936	Mar. 12, 1936	11.1	6,900
	Mar. 26, 1936	9.7	5,170
1937	Feb. 20, 1937	7.9	3,480
	Mar. 8, 1937	12.0	7,900
	June 15, 1937	7.6	3,180
	June 21, 1937	8.0	3,600
1938	Feb. 7, 1938	7.7	3,240
	Sept. 19, 1938	8.4	3,990
1939	Nov. 9, 10, 1938	7.4	2,790
1940	Sept. 1, 1940	7.3	2,540
1941	Mar. 24, 1941	8.6	4,120
	Apr. 4, 1941	8.3	3,870
	Apr. 19, 1941	7.7	3,280
	June 2, 1941	9.9	5,100
	Sept. 8, 1941	10.13	5,250

Wapsipinicon River at Independence, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Sept. 16, 1941	8.6	4,060
1942	Oct. 7, 1941	8.6	4,060
1942	Nov. 1, 1941	10.9	6,580
1942	Mar. 22, 1942	8.2	3,750
	June 3, 1942	8.5	4,000
	June 12, 1942	13.46	9,060
1943	Oct. 6, 1942	8.0	3,560
1943	Feb. 24, 1943	7.6	3,110
	Mar. 16, 1943	8.59	4,090
	Mar. 20, 1943	7.3	3,000
	Mar. 31, 1943	7.7	3,160
1944	Mar. 15, 1944	8.4	3,900
	May 22, 1944	9.4	4,740
	June 17, 1944	15.64	13,800
	June 22, 1944	7.9	3,440
1945	Mar. 14, 1945	8.8	4,220
	Mar. 18, 1945	13.95	10,900
	Apr. 17, 1945	8.0	3,550
	June 3, 1945	10.0	5,150
1946	Jan. 6, 1946	13.36	9,910
	Jan. 9, 1946	9.0	4,460
	Mar. 7, 1946	8.9	4,380
	Mar. 14, 1946	10.0	5,190
1947	Apr. 11, 1947	11.5	7,220
	June 2, 1947	10.7	6,270
	June 5, 1947	10.6	6,160
	June 14, 1947	^d 18.74	21,500
	June 18, 1947	12.7	10,000
	July 1, 1947	9.0	4,770
1948	Feb. 28, 1948	9.4	5,480
	Mar. 3, 1948	8.2	3,940
	Mar. 20, 1948	13.33	11,100
	May 12, 1948	7.6	3,140
1949	Mar. 6, 1949	10.78	7,420
	Apr. 1, 1949	7.6	3,140

Wapsipinicon River at Independence, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 7, 1950	12.82	10,300
	Mar. 27, 1950	8.5	4,300
	June 19, 1950	7.5	3,020
	June 24, 1950	9.8	6,020
	Sept. 21, 1950	10.3	6,720
1951	Apr. 30, 1951	18.20	20,800
1952	Apr. 3, 1952	9.76	6,460
1953	Aug. 8, 1953	9.72	6,350
1954	May 3, 1954	7.30	2,780
1955	Feb. 21, 1955	6.35	1,560
1956	Apr. 2, 1956	6.77	2,100
1957	June 19, 1957	7.79	3,270
1958	June 1, 1958	6.07	1,210
1959	Mar. 27, 1959	13.67	11,800
	July 1, 1959	11.57	8,460
1960	Mar. 30, 1960	15.63	15,200
	Apr. 19, 1960	10.14	6,300
	May 1, 1960	7.84	3,270
	May 7, 1960	12.07	9,210
1961	Mar. 7, 1961	8.24	3,690
	Mar. 29, 1961	16.11	15,700
	Apr. 25, 1961	7.94	3,330
	Aug. 6, 1961	8.16	3,690
1962	Oct. 1, 1961	7.63	3,030
	Nov. 3, 1961	9.85	5,640
1962	Mar. 31, 1962	15.43	14,400
	May 6, 1962	12.32	9,050
	May 13, 1962	9.18	4,890
	July 21, 1962	11.65	8,040
1963	Mar. 19, 1963	7.82	3,210
	Mar. 22, 1963	7.68	3,090

Wapsipinicon River at Independence, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1963	May 15, 1963	7.84	3,210
	June 10, 1963	8.05	3,450
	July 20, 1963	7.82	3,210
1964	Apr. 3, 1964	6.67	1,830
1965	Mar. 22, 1965	8.20	3,980
	Mar. 5, 1965	9.67	5,680
	Apr. 2, 1965	10.57	6,690
	Apr. 7, 1965	12.19	8,880
	Sept. 24, 1965	9.30	5,010

c Maximum for period July to Sept. 1933

d Maximum stage since at least 1901

5-4215. Wapsipinicon River at Stone City, Iowa
(Discontinued Sept. 30, 1914)

Location.--Lat 42 deg.07 min.00 sec., long 91 deg.21 min.10 sec., in SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 6, T.84 N., R.4 W., at highway bridge at Stone City about 180 ft upstream from Chicago, Milwaukee, St. Paul & Pacific Railroad bridge 3.1 miles upstream from Buffalo Creek and at mile 92.5.

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)
1892	July , 1892	28.0	32,000
1903	July 13, 1903	15.2	^c 10,500
1904	Mar. 21, 1904	11.3	5,820
	Mar. 27, 1904	12.8	7,510
	May 30, 1904	6.8	2,370
1905	Mar. 15, 1905	8.4	3,400
	Mar. 22, 1905	13.1	7,900
	May 18, 1905	8.2	3,270
	June 2, 1905	6.5	2,140
	July 7, 1905	6.9	2,370
	July 23, 1905	6.2	1,930
1906	Mar. 4, 1906	12.2	6,780
	Mar. 31, 1906	14.2	9,440
	Apr. 11, 1906	8.4	3,400
1907	Feb. 22, 1907	9.2	4,000
	Mar. 4, 1907	9.6	4,320
	June 13, 1907	6.6	2,160
	July 20, 1907	10.1	4,720
	Aug. 17, 1907	10.3	4,890
	Aug. 31, 1907	8.7	3,620
1908	Oct. 5, 1907	6.6	2,190
1908	Feb. 26, 1908	8.4	3,400
	Mar. 7, 1908	8.8	3,700

Wapsipinicon River at Stone City, Iowa--(Continued)

Peak stages and discharge				
Water year	Date	Gage height (feet)	Discharge (cfs)	
1908	May 30, 1908	9.7	4,400	
	July 3, 1908	7.4	2,680	
	July 21, 1908	8.3	3,330	
1909	Feb. 24, 1909	7.2	2,600	
	Mar. 7, 1909	8.5	3,490	
	Mar. 27, 1909	9.2	4,000	
	Apr. 22, 1909	14.0	9,160	
	May 1, 1909	9.7	4,400	
	May 17, 1909	10.1	4,720	
	June 8, 1909	7.3	2,650	
1910	Dec. 7, 1909	7.2	2,560	
1910	Mar. 12, 1910	9.5	4,240	
	Mar. 16, 1910	11.7	6,230	
1911	Feb. 17, 1911	14.3	9,580	
	Aug. 16, 1911	6.4	2,070	
	Oct. 1, 1911	7.3	2,650	
1912	Dec. 20, 1911	6.8	2,330	
1912	Mar. 24, 1912	8.7	3,620	
	Mar. 30, 1912	14.8	10,300	
	Apr. 1, 1912	15.6	11,500	
	Apr. 14, 1912	8.6	3,560	
	Aug. 19, 1912	7.6	2,860	
1913	Mar. 19, 1913	10.6	5,200	
	Mar. 24, 1913	10.8	5,340	
	Apr. 13, 1913	6.8	2,310	
	May 24, 1913	9.8	4,450	
	May 29, 1913	9.9	4,570	

c Result of discharge measurement

6-8060. Waubonsie Creek near Bartlett, Iowa

Location.--Lat 40 deg. 53 min. 05 sec., long 95 deg. 44 min. 45 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T.70 N., R.43 W., on left pier on downstream side of highway bridge, 2.5 miles east of Bartlett and 3.5 miles west of Tabor.

Drainage area.--30.4 sq mi.

Gage.--Recording. Datum of gage is 936.96 ft above mean sea level, datum of 1929. Prior to June 16, 1951, nonrecording gage and Jan. 10, 1946, to May 8, 1950, supplementary high-stage recording gage at same site and datum.

Stage-discharge relation.--Defined by current-meter measurements below 3,900 cfs and extended above on basis of slope-area measurements.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1946	Aug.	7, 1946	20.0	1,500
	Sept.	4, 1946	37.7	12,500
1947	June	4, 1947	34.0	9,400
	June	12, 1947	27.4	5,000
	June	18, 1947	19.5	1,580
	June	22, 1947	18.45	1,250
	Aug.	24, 1947	18.68	1,330
1948	Feb.	27, 1948	^b 23.5	^a 2,700
	Aug.	10, 1948	18.95	1,420
	Sept.	1, 1948	18.47	1,280
1949	June	1, 1949	20.15	1,820
	June	13, 1949	20.6	1,960
	June	22, 1949	27.66	5,150
	June	27, 1949	32.88	10,300
	July	6, 1949	17.15	1,630
1950	May	4, 1950	19.45	2,510
	May	8, 1950	37.8	14,500
	June	8, 1950	36.7	13,500
	July	12, 1950	26.1	5,860
	Aug.	12, 1950	17.7	1,830
1951	July	3, 1951	20.03	2,840
1952	Oct.	4, 1951	15.68	1,240
1952	Aug.	8, 1952	18.37	2,200
1953	June	27, 1953	15.82	1,270

6-8060. Waubonsie Creek near Bartlett, Iowa--continued

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 31, 1954	16.10	1,360
	Aug. 21, 1954	17.9	2,000
	Aug. 23, 1954	21.6	3,560
1955	Sept. 29, 1955	17.54	1,860
1956	July 11, 1956	18.07	1,430
	July 15, 1956	26.9	5,200
	Aug. 1, 1956	20.97	2,450
	Aug. 18, 1956	23.85	2,820
1957	June 7, 1957	22.85	2,430
	July 1, 1957	19.98	1,500
1958	July 19, 1958	22.64	2,360
	July 30, 1958	22.57	2,360
1959	May 18, 1959	25.90	3,760
	July 31, 1959	22.42	2,290
	July 28, 1959	20.50	1,640
	Sept. 18, 1959	20.43	1,610
1960	Aug. 18, 1960	21.72	2,040
1961	June 27, 1961	21.42	1,940
1962	May 28, 1962	22.67	2,400
1963	Sept. 10, 1963	20.07	1,490
1964	May 26, 1964	22.93	2,460
	June 14, 1964	21.09	1,840
	June 16, 1964	20.10	1,540
1965	Mar. 1, 1965		c
	May 22, 1965	18.05	1,200
	June 29, 1965	21.72	2,770
	July 1, 1965	17.84	1,320
	July 19, 1965	22.96	3,320

a About

b Affected by ice

c Unknown

6-8984. Weldon River near Leon, Iowa

Location--Lat. 40 deg. 41 min. 50 sec., long. 93 deg. 38 min. 15 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T.68 N., R.24 W., on left bank 10 feet downstream from highway bridge, 5.7 miles upstream from Steele Creek, and 6.5 miles southeast of Leon.

Drainage area.--104 sq. mi.

Gage.--Recording. Datum of gage is 906.26 feet above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,600 cfs and extended above on basis of contracted-opening and flow-over-embankment measurement of peak flow.

Remarks.--Base for partial-duration series, 4,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1959	Nov.	17, 1958	17.87	7,410
	Apr.	20, 1959	17.32	6,870
	May	21, 1959	19.16	8,740
	May	29, 1959	16.74	6,330
	May	30, 1959	15.37	5,220
	Aug.	6, 1959	25.27	^c 48,600
1960	Oct.	5, 1959	16.00	5,700
1960	Mar.	29, 1960	18.12	7,220
	Apr.	16, 1960	19.72	9,210
	May	16, 1960	15.88	4,910
1961	Feb.	18, 1961	16.00	5,000
	Mar.	5, 1961	19.85	8,020
	July	15, 1961	21.62	10,000
	Sept.	13, 1961	22.14	11,600
	Sept.	30, 1961	15.91	4,930
1962	Nov.	2, 1961	15.62	4,720
	Nov.	16, 1961	17.25	5,860
1962	May	29, 1962	15.96	5,000
	June	10, 1962	21.63	10,000
1963	Mar.	18, 1963	13.22	3,150
1964	Sept.	6, 1964	19.48	7,750
1965	Apr.	8, 1965	15.45	4,760
	Sept.	21, 1965	19.10	7,570

c Greatest flood in at least 40 years

6-6003. West Branch Floyd River near Struble, Iowa

Location.--Lat 42 deg. 55 min. 15 sec., long 96 deg. 10 min. 30 sec., in NE $\frac{1}{4}$ sec. 32, T.94 N., R.45 W., on right bank at downstream side of county road bridge, 0.2 mile west of U.S. Highway 75, 2.2 miles northeast of Struble, 17 miles upstream from confluence with Floyd River, and at mile 39.3 upstream from mouth of Floyd River.

Drainage area--181 sq mi.

Gage.--Recording. Datum of gage is 1,239.40 ft above mean sea level (State Highway Commission benchmark).

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)
1956	July 12, 1956	9.22	463
1957	July 4, 1957	11.32	840
1958	Apr. 6, 1958	7.34	218
1959	May 31, 1959	10.27	646
1960	Mar. 29, 1960	14.72	3,880
	Apr. 1, 2, 1960	14.62	3,630
	May 21, 1960	10.83	740
1961	Aug. 22, 1961	8.55	501
1962	Mar. 28, 1962	15.63	8,060
	Apr. 3, 1962	10.64	1,110
	May 22, 1962	9.94	892
	June 17, 1962	11.28	1,320
1963	July 30, 1963	9.03	700
1964	May 24, 1964	6.72	236
1965	Mar. 13, 1965		c
	Apr. 1, 1965	^b 14.49	^a 2,800
	Apr. 6, 1965	11.93	1,520
	June 5, 1965	8.12	506
	June 7, 1965	9.08	719
	June 29, 1965	10.47	1,070
	July 7, 1965	9.04	710

a About

b Affected by ice

c Unknown

5-4485. West Branch Iowa River near Klemme, Iowa
(Discontinued September 30, 1958)

Location.--Lat 42 deg.57 min.50 sec., long 93 deg.42 min.20 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.17, T.94 N., R.24 W., on downstream side of highway bridge 6 miles southwest of Klemme and 11.8 miles upstream from confluence with East Branch Iowa River, and at mile 338.9 above mouth of Iowa River.

Drainage area.--112 sq mi.

Gage.--Nonrecording. Datum of gage is 1,180.83 ft above mean sea level, datum of 1929. Prior to July 13, 1948 at datum 1.0 ft higher.

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)
1948	May 15, 1948	6.16	^c 110
1949	Mar. 27, 1949	7.08	538
1950	Mar. 27, 1950	7.09	522
1951	Feb. 26, 1951	^b 9.63	^a 550
	Mar. 28, 1951	^b 10.68	^a 740
	Apr. 7, 1951	11.84	1,420
	May 2, 1951	8.33	565
	June 26, 1951	12.38	1,340
	July 9, 1951	8.38	580
1952	Mar. 30, 1952	9.12	860
	June 14, 1952	7.36	568
	July 7, 1952	7.93	653
1953	June 8, 1953	6.16	391
1954	June 21, 1954	14.97	1,920
1955	July 6, 1955	5.9	349
1956	Mar. 27, 1956	^b 4.40	^a 130

West Branch Iowa River near Klemme, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 30, 1957	5.15	272
1958	June 4, 1958	5.35	256

a About

b Affected by ice

c Maximum for period April to September

5-4589. West Fork Cedar River at Finchford, Iowa
(Published as West Fork Shell Rock River at Finchford, 1945-55)

Location.--Lat 42 deg.37 min.50 sec., long 92 deg.32 min.25 sec.,
in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.90 N., R.14 W., on left bank 100 ft down-
stream from county highway bridge in Finchford, 3.2 miles up-
stream from Shell Rock River, and at mile 209.1 above mouth
of Iowa 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.

Remarks.--Base for partial duration series, 2,500 cfs.

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1929	March	1929	^a 14.0	^a 12,800
1946	Mar.	8, 1946	11.51	5,220
1947	June	13, 1947	13.7	11,600
	July	2, 1947	11.2	4,630
	July	7, 1947	11.0	4,300
1948	Mar.	1, 1948	^b 12.3	^a 7,000
	Mar.	19, 1948	12.87	9,580
1949	Mar.	7, 1949	12.25	6,330
1950	Mar.	8, 1950	^b 14.80	11,000
1951	Feb.	28, 1951	13.5	10,500
	Mar.	30, 1951	14.5	14,500
	Apr.	8, 1951	13.0	8,800
	Apr.	30, 1951	13.42	10,100
	June	27, 1951	17.28	31,900
	July	11, 1951	10.89	4,100
1952	Apr.	1, 1952	11.91	5,800
1953	Aug.	7, 1953	8.97	2,250
1954	June	20, 1954	14.18	11,400
	June	23, 1954	14.9	14,200

5-4589. West Fork Cedar River at Finchford, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 16, 1954	6.32	850
1956	Mar. 29, 1956	5.61	642
1957	June 19, 1957	6.82	1,040
1958	July 17, 1958	5.95	712
1959	Mar. 28, 1959	12.07	4,740
1960	Mar. 30, 1960	14.00	10,600
1961	Mar. 27, 1961	15.40	17,400
1962	Mar. 30, 1962	14.98	14,000
1963	Mar. 19, 1963	11.79	4,280
1964	Sept. 12, 1964	7.90	1,330
1965	Apr. 7, 1965	15.91	16,700
	Sept. 21, 1965	14.44	10,300

a About

b Affected by ice

5-4765. West Fork Des Moines River at Estherville, Iowa

Location.--Lat 43 deg.24 min.00 sec., long 94 deg.50 min.40 sec., in SW $\frac{1}{4}$ SE $\frac{1}{4}$ 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, 404.2 miles upstream from mouth of Des Moines River.

Drainage area.--1,372 sq mi.

Gage.--Recording. Datum of gage is 1,247.55 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 31, 1952	10.63	3,900
	Apr. 6, 1952	11.82	4,880
1953	May 28, 1953	9.12	2,860
	June 8, 1953	15.53	10,800
1954	Mar. 19, 1954	5.67	1,380
1955	Mar. 12, 1955	4.37	752
1956	Apr. 4, 1956	3.42	370
1957	June 24, 1957	5.33	1,200
1958	Apr. 7, 1958	3.51	404
1959	June 1, 1959	10.04	3,040
1960	Apr. 5, 1960	10.79	4,040
	May 22, 1960	7.80	2,250
1961	Mar. 25, 1961	12.03	5,350
1962	Apr. 6, 1962	12.22	5,610
	July 5, 1962	11.21	4,420
1963	July 19, 1963	7.35	2,090

5-4765. West Fork Des Moines River at Estherville, Iowa

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 7, 1964	6.24	1,660
1965	Apr. 10, 1965	15.61	10,200
	May 7, 1965	7.69	2,210
	May 11, 1965	7.56	2,130
	May 26, 1965	7.70	2,210

5-4767.5 West Fork Des Moines River at Humboldt, Iowa

Location.--Lat 42 deg.43 min.10 sec., long 94 deg.13 min.10 sec., in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.91 N., R.29 W., on First Avenue bridge in city of Humboldt, about 700 feet below dam, 3.9 miles upstream from confluence with East Fork Des Moines River, and at mile 334.3 upstream from mouth of Des Moines River (U.S. Geological Survey river profile).

Drainage area.--2,256 sq.mi.

Gage.--Nonrecording. Datum of gage is 1053.54 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)
1940	Apr. 1, 1940	4.4	815
1941	June 15, 1941	6.73	2,730
1942	June 4, 1942	7.32	3,550
1943	June 30, 1943	7.95	4,520
1944	May 20, 1944	10.33	7,300
1945	Mar. 15, 1945	8.35	4,670
1946	May 25, 1946	7.70	3,890
1947	June 23, 1947	12.2	11,000
1948	Feb. 29, 1948	^b 9.59	5,540
1949	Mar. 27, 1949	7.72	3,890
1950	June 19, 1950	6.88	2,990
1951	Apr. 5, 1951	11.30	8,980
1952	Apr. 11, 1952	9.28	5,870
1953	June 13, 1953	9.64	6,280

5-4767.5 West Fork Des Moines River at Humboldt, Iowa

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1954	June 22, 1954	11.33	9,490
1955	Apr. 26, 1955	6.40	2,450
1956	May 17, 1956	3.91	505
1957	May 31, 1957	4.62	945
1958	July 15, 1958	4.36	770
1959	May 23, 1959	6.67	2,770
1960	Mar. 31, 1960	9.52	6,400
1961	Mar. 29, 1961	11.56	9,280
1962	Apr. 1, 1962	11.12	8,500
1963	July 23, 1963	6.18	2,320
1964	July 31, 1964	9.42	6,110
1965	Apr. 8, 1965	13.90	14,400

b Affected by ice

6-6020. West Fork ditch at Holly Springs, Iowa

Location.--Lat 42 deg. 15 min. 34 sec., long 96 deg. 04 min. 41 sec., in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.16, T.86 N., R.45 W., on right bank 10 ft downstream from bridge on county road, three-quarters of a mile south of Holly Springs, 11.4 miles upstream from Wolf Creek, 15.7 miles north of Onawa, and 22 miles southeast of Sioux City.

Drainage area.--399 sq mi.

Gage.--Recording. Datum of gage is 1,052.82 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to June 16, 1959, nonrecording gage at bridge three-quarters of a mile upstream at same datum.

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)
1939	Aug.	3, 1939	15.0	1,320
1940	June	4, 1940	19.8	3,360
1941	Sept.	15, 1941	19.0	2,580
1942	June	30, 1942	13.7	878
1943	July	19, 1943	18.0	2,480
1944	July	8, 1944	19.7	3,590
	Aug.	1, 1944	19.0	3,050
1945	Mar.	12, 1945	21.4	5,250
	Aug.	6, 1945	22.4	6,600
1946	Feb.	7, 1946	^b 17.7	1,100
1947	June	25, 1947	15.9	1,520
1948	Feb.	29, 1948	17.2	2,000
	Mar.	17, 1948	17.0	1,920
1949	June	1, 1949	17.2	2,040
1950	June	19, 1950	22.2	6,300
1951	Mar.	28, 1951	22.28	6,450
	May	2, 1951	17.8	2,580
	June	19, 1951	16.2	2,140
	Aug.	16, 1951	16.0	2,100

6-6020. West Fork Ditch at Holly Springs, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Feb. 12, 1952	^b 16.10	^a 2,000
	Mar. 14, 1952	13.40	2,060
	Mar. 31, 1952	16.35	3,440
	July 8, 1952	18.75	5,000
1953	June 9, 1953	18.89	5,050
1954	June 20, 1954	22.91	7,860
1955	July 10, 1955	11.30	1,640
1956	May 29, 1956	6.9	390
1957	June 14, 1957	14.24	2,300
	June 17, 1957	13.97	2,220
	June 22, 1957	14.2	2,300
	June 29, 1957	14.08	2,260
1958	Feb. 25, 1958	^b 11.31	^a 700
1959	May 28, 29, 1959	18.00	^a 4,320
	May 30, 31, 1959	16.6	^a 3,500
1960	Mar. 30, 1960	22.43	^a 10,000
	Apr. 2, 1960	17.27	3,280
	May 26, 1960	16.09	2,890
	Aug. 29, 1960	14.67	2,480
1961	Mar. 16, 1961	11.25	1,840
	June 14, 1961	12.07	2,140
1962	Mar. 28, 1962	22.46	12,400
	July 20, 1962	12.4	^a 2,200
1963	June 2, 1963	18.33	6,040
	June 5, 1963	12.36	2,370
1964	May 6, 1964	11.60	2,130
	May 25, 1964	14.76	3,620
1965	Apr. 2, 1965	18.29	6,290
	Apr. 4, 1965	13.57	2,890
	Apr. 7, 1965	16.23	4,560

a About

b Affected by ice

6-8074.1 West Nishnabotna River at Hancock, Iowa

Location.--Lat 41 deg. 23 min 28 sec., long 95 deg. 22 min. 10 sec., in NE $\frac{1}{4}$ sec.18, T.76 N., R.39 W., on downstream side of bridge on County Highway C, 0.3 mile west of Hancock School and 7.0 miles downstream from Jim Creek.

Drainage area.--609 sq mi.

Gage.--Recording. Datum of gage is 1,085.94 ft. above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,000 cfs and extended above by logarithmic plotting

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Mar. 29, 1960	13.64	9,320
	May 6, 1960	12.57	8,120
	Aug. 7, 1960	9.70	4,800
1961	Mar. 14, 1961	10.31	5,430
	June 27, 1961	10.01	4,460
	July 28, 1961	9.69	4,160
1962	Mar. 22, 1962	10.90	6,680
	May 21, 1962	12.10	7,420
	May 26, 1962	11.58	6,800
	May 29, 1962	13.50	9,240
	June 10, 1962	11.18	6,200
1963	Mar. 11, 1963	9.75	4,860
	Mar. 14, 1963	8.98	4,100
1964	Apr. 2, 1964	9.20	4,010
	May 8, 1964	9.55	5,320
	May 26, 1964	14.50	10,500
	June 22, 1964	10.92	6,090
	July 3, 1964	10.10	5,210
	July 7, 1964	9.65	4,700
	July 11, 1964	12.34	7,760
1965	Mar. 1, 1965	20.44	18,000
	Mar. 17, 1965	15.39	12,000
	Mar. 31, 1965	13.94	13,100
	Apr. 5, 1965	10.91	8,070
	May 26, 1965	11.49	8,940
	Sept. 28, 1965	8.85	5,160

a About

b Affected by ice

6-8085. West Nishnabotna River at Randolph, Iowa

Location.--Lat 40 deg. 52 min. 25 sec., long 95 deg. 34 min. 40 sec., in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.17, T.70 N., R.41 W., on downstream side of bridge on State Highway 184, 0.3 mile downstream from Deer Creek, 0.5 mile west of Randolph, and 16.2 miles upstream from confluence with East Nishnabotna River.

Drainage area.--1,326 sq mi.

Gage.--Nonrecording prior to Aug. 26, 1955; recording thereafter.
Datum of gage is 932.99 ft above mean sea level, unadjusted.

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)
1947	June 1947	^a 24	
1949	Mar. 5, 1949	^b 24.6	^a 16,000
	June 13, 1949	14.2	6,800
1950	Feb. 28, 1950	18.50	20,000
	May 9, 1950	21.93	29,600
	June 9, 1950	16.29	11,300
	June 18, 1950	15.40	9,300
	July 12, 1950	16.17	11,100
	Aug. 12, 1950	16.25	11,100
1951	Apr. 27, 1951	12.95	7,050
	May 1, 1951	21.35	28,200
	May 10, 1951	13.02	7,050
	June 2, 1951	21.66	29,100
	June 7, 1951	16.90	15,600
	June 20, 1951	14.96	11,200
	July 3, 1951	21.77	29,400
	Aug. 15, 1951	13.19	7,450
	Aug. 17, 1951	12.72	6,510
	Aug. 20, 1951	15.86	13,400
1952	June 22, 1952	20.50	25,500
	June 27, 1952	18.37	19,500
	Aug. 29, 1952	18.80	20,600
1953	June 28, 1953	11.77	4,980
1954	Aug. 23, 1954	17.15	13,400

6-8085. West Nishnabotna River at Randolph, Iowa--continued

Peak stages and discharges				
Water year	Date		Gage height (feet)	Discharge (cfs)
1955	Mar.	2, 1955	14.69	10,500
	July	9, 1955	16.18	13,900
1956	July	8, 1956	17.8	17,900
	July	15, 1956	14.06	9,260
1957	June	16, 1957	17.58	15,600
1958	Feb.	24, 1958	^b 18.62	^a 11,000
	July	3, 1958	17.70	16,500
	July	19, 1958	15.35	8,400
	July	30, 1958	17.30	14,600
	Aug.	6, 1958	16.50	11,800
	Sept.	6, 1958	18.20	17,900
1959	May	3, 1959	13.15	6,580
	May	18, 1959	14.43	8,200
	May	29, 1959	18.13	16,200
1960	Mar.	30, 1960	19.18	20,000
	May	6, 1960	14.42	7,570
	June	30, 1960	14.73	8,200
	Aug.	7, 1960	14.26	7,360
	Aug.	29, 1960	17.16	14,500
	Sept.	18, 1960	14.76	8,410
1961	Mar.	13, 1961	15.56	11,700
	June	27, 1961	14.36	7,570
1962	Mar.	22, 1962	14.94	8,830
	May	21, 1962	14.39	7,570
	May	29, 1962	21.60	26,600
	June	11, 1962	15.18	8,620
1963	Mar.	11, 1963	15.33	12,000
1964	May	26, 1964	18.76	17,400
	June	14, 1964	16.72	11,400
	June	23, 1964	16.30	10,400
	July	11, 1964	16.23	10,200

6-8085. West Nishnabotna River at Randolph, Iowa--continued

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Mar. 1, 1965	^b 22.76	^a 28,000
	Mar. 17, 1965	19.25	18,400
	Apr. 1, 1965	15.47	9,900
	Apr. 5, 1965	15.80	11,000
	May 22, 1965	15.87	9,670
	May 25, 1965	15.01	7,860
	June 29, 1965	18.35	17,900
	Sept. 7, 1965	15.33	9,580

a About

b Affected by ice

5-3884. Wexford Creek near Harpers Ferry, Iowa

Location.--Near SE $\frac{1}{4}$ sec.25, T.98 N., R.3 W., at bridge, 5 miles north of Harpers Ferry, Allamakee County.

Drainage area.--11.9 sq. mi.

Gage.--Crest-stage gage. Datum is arbitrary.

State-discharge relation.--Defined by current-meter measurements and step-back-water computations.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 26, 1953	4.91	659
1954	June 20, 1954	4.90	655
1955	July 8, 1955	6.29	1,490
1956	May 6, 1956	5.00	695
1957	June 17, 1957	5.11	740
1958		c	
1959	May 31, 1959	4.50	525
1960	Mar. 27, 1960	6.40	1,590
1961	Sept.30, 1961	6.82	2,030
1962	July 2, 1962	7.03	2,290
1963		c	
1964		c	
1965	Sept. 7, 1965	5.88	1,170

c Peak stage did not reach bottom of gage

5-4879.8 Whitebreast Creek near Dallas, Iowa

Location.--Lat. 41 deg.14 min.45 sec., long 93 deg.15 min.50 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.3, T.74 N., R.21 W., on left bank 15 ft downstream from county road bridge 0.5 mile downstream from Kirk Branch, and 2.25 miles northwest of Dallas.

Drainage area.--342 sq mi.

Gage.--Recording. Datum of gage is 759.12 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

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)
1963	Mar. 4, 1963	18.95	3,500
	Mar. 19, 1963	21.40	5,550
1964	May 8, 1964	17.24	3,490
	June 15, 1964	18.40	3,580
	June 22, 1964	19.74	4,200
1965	Mar. 17, 1965	22.49	6,640
	Apr. 5, 1965	19.44	4,870
	Apr. 8, 1965	16.43	3,360
	Apr. 11, 1965	16.18	3,240
	Apr. 25, 1965	16.51	3,400
	Sept. 21, 1965	20.57	5,490

5-4880. Whitebreast Creek near Knoxville, Iowa
(Discontinued Sept. 30, 1962)

Location.--Lat. 42 deg.19 min.25 sec., long 93 deg.08 min.55 sec., in NE $\frac{1}{4}$ SW $\frac{1}{4}$ 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.--Recording. Datum of gage is 734.73 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Feb. 16, 1949, nonrecording at same site and datum.

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)
1945	Aug. 2, 1945		C 300
1946	Jan. 7, 1946		5,000
	Mar. 17, 1946	11.7	
	June 20, 1946	18.4	8,740
	Aug. 25, 1946	10.7	
1947	Apr. 5, 1947	15.5	
	Apr. 10, 1947	15.4	
	May 29, 1947	17.0	
	June 6, 1947	19.6	14,000
	June 13, 1947	16.7	
	June 22, 1947	17.1	
1948	Mar. 16, 1948	11.2	2,730
1949	Feb. 23, 1949	15.30	5,400
	June 25, 1949	16.38	6,530
1950	Feb. 28, 1950	15.83	5,900
	May 10, 1950	17.95	9,100
	June 18, 1950	12.16	3,540
1951	Mar. 28, 1951	11.17	3,290
	May 26, 1951	14.70	5,020
	July 3, 1951	14.98	5,200

5-4880. Whitebreast Creek near Knoxville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 13, 1952	12.49	3,880
	June 21, 1952	18.16	9,500
	Aug. 15, 1952	11.44	3,380
1953	Nov. 17, 1952	15.89	6,000
1953	Feb. 20, 1953	^b 11.25	3,100
	Mar. 30, 1953	13.72	4,700
	June 10, 1953	15.90	6,540
1954	Apr. 25, 1954	12.01	3,850
1955	July 10, 1955	9.74	2,590
1956	Aug. 8, 1956	10.79	3,000
1957	May 13, 1957	10.42	2,760
1958	July 2, 1958	18.37	7,300
	July 4, 1958	18.24	7,020
	July 19, 1958	12.35	3,660
1959	Mar. 20, 1959	^b 11.31	^a 3,600
	Mar. 26, 1959	14.0	4,850
	Apr. 20, 1959	14.2	^a 5,000
	May 11, 1959	11.5	3,680
	May 22, 1959	17.75	7,800
	May 31, 1959	16.64	6,660
	Sept. 26, 1959	10.77	3,390
1960	Jan. 12, 1960	17.10	7,100
	Mar. 30, 1960	19.02	11,000
	Apr. 17, 1960	^d 12.4	^a 3,900
	May 7, 1960	17.0	7,000
	May 25, 1960	^d 16.7	^a 8,000
1961	Feb. 18, 1961	15.74	5,940
	Mar. 6, 1961	12.80	4,260
	Mar. 13, 1961	15.48	5,800
	Mar. 23, 1961	10.27	3,190
	Sept. 14, 1961	14.75	5,330

5-4880. Whitebreast Creek near Knoxville, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Nov. 3, 1961	12.46	4,120
	Nov. 16, 1961	16.80	6,830
1962	Mar. 20, 1962	16.48	7,000
	June 11, 1962	19.30	11,700

a About

b Affected by ice

c Maximum for period July to September, 1945

d Estimated

5-4878. Whitebreast Creek at Lucas, Iowa

Location.--Near northeast corner sec.23, T.72 N., R.23 W.,
at bridge on U.S. Highway 65 near south city limits of Lucas,
Lucas County.

Drainage area.--128 sq mi.

Gage.--Crest-stage gage. Datum is arbitrary.

Stage-discharge relation.--Defined by current-meter measurements
below and by logarithmic extension above 5,000 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1953	June 8, 1953	15.15	3,420
1954	May 29, 1954	8.52	583
1955	July 8, 1955	14.95	2,960
1956		c	
1957	Apr. 4, 1957	12.85	1,460
1958	July 30, 1958	13.59	1,760
1959	May 22, 1959	16.98	11,900
1960	Mar. 29, 1960	15.80	5,600
1961	Sept. 14, 1961	14.41	2,570
1962	Nov. 16, 1961	15.25	3,700
1963	Apr. 22, 1963	14.10	2,310
1964	June 20, 1964	12.95	1,620
1965	May 8, 1965	14.67	2,820

c Peak stage did not reach bottom of gage

5-4595. Winnebago River at Mason City, Iowa

Location.--Lat 43 deg.10 min.00 sec., long 93 deg.11 min. 40 sec., in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.3, T.96 N., R.20 W., on right bank 650 ft upstream from Thirteenth Street Bridge in Mason City, 1.0 mile upstream from Willow Creek, and at mile 275.8 above mouth of Iowa River.

Drainage area.--526 sq mi.

Gage.--Recording. Datum of gage is 1,069.59 ft above mean sea level datum of 1929. Prior to Oct. 15, 1934, gage at datum 6.47 ft lower. Oct. 15 to Nov. 6, 1934 gage at different datum and Nov.7, 1934, to Mar. 22, 1935, nonrecording gage at present datum.

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

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Mar. 30, 1933	15.7	10,800
1934	Apr. 3, 1934	4.1	1,470
1935	Mar. 5, 1935	5.80	2,340
1936	Mar. 16, 1936	b6.10	2,520
	Mar. 17, 1936	b5.97	2,440
1937	Mar. 5, 1937	9.68	5,260
1938	June 23, 1938	8.7	4,340
	June 25, 1938	10.29	5,850
	Sept.15, 1938	8.2	3,970
1939	Mar. 13, 1939	7.9	3,730
	Mar. 22, 1939	5.8	2,360
1940	Mar. 29, 1940	3.4	980
1941	June 2, 1941	4.4	1,500
1942	Nov. 1, 1941	5.8	2,290
1943	Mar. 16, 1943	7.93	3,760
1944	May 21, 1944	6.7	2,840
	June 12, 1944	12.2	7,020
	June 17, 1944	8.1	3,820

5-4595. Winnebago River at Mason City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 11, 1945	^b 10.22	^a 4,600
	Mar. 13, 1945	^b 9.17	^a 4,000
	Mar. 15, 1945	8.0	3,750
	Apr. 23, 1945	6.4	2,630
	May 25, 1945	6.4	2,630
	June 1, 1945	6.6	2,770
	June 10, 1945	8.6	4,160
	Aug. 14, 1945	6.0	2,350
1946	Mar. 14, 1946	6.9	2,970
	May 24, 1946	5.8	2,260
1947	Apr. 10, 1947	6.4	2,680
	June 17, 1947	8.1	3,850
	June 29, 1947	7.9	3,690
	June 30, 1947	8.8	4,360
	July 6, 1947	6.4	2,700
1948	Feb. 28, 1948	^b 11.22	^a 5,000
1949	Mar. 4, 1949	7.4	3,310
	Mar. 24, 1949	6.4	2,630
	Mar. 27, 1949	6.8	2,820
	June 25, 1949	5.9	2,310
1950	Mar. 7, 1950	7.3	3,310
	Mar. 27, 1950	6.4	2,690
1951	Feb. 26, 1951	^b 8.75	^a 3,000
	Apr. 7, 1951	12.44	7,560
	Apr. 29, 1951	8.11	3,880
	May 2, 1951	9.12	4,680
	June 28, 1951	9.05	4,600
1952	Mar. 18, 1952	5.97	2,450
	Mar. 21, 1952	5.42	2,090
	Mar. 30, 1952	8.70	4,360
1953	Aug. 3, 1953	4.73	1,730
1954	June 18, 1954	10.67	4,900
	June 21, 1954	11.85	7,060
	Aug. 23, 1954	5.65	2,210

5-4595. Winnebago River at Mason City, Iowa--(Continued)

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1955	June 3, 1955	5.75	2,330
1956	Apr. 1, 1956	4.15	1,360
1957	May 30, 1957	3.58	1,090
1958	June 4, 1958	3.83	955
1959	May 21, 1959	7.33	3,040
	May 31, 1959	6.40	2,560
1960	Mar. 28, 1960	5.98	2,320
1961	Mar. 27, 1961	14.80	10,500
1962	Mar. 29, 1962	11.80	7,200
	Aug. 31, 1962	13.06	8,510
1963	Mar. 17, 1963	^b 7.23	^a 2,100
	Mar. 23, 1963	^b 7.03	^a 2,300
	May 10, 1963	8.39	3,800
	July 19, 1963	8.86	4,120
1964	Sept. 9, 1964	4.85	1,620
1965	Mar. 1, 1965	11.27	5,920
	Apr. 6, 1965	13.70	9,000
	Apr. 11, 1965	14.27	9,700
	May 5, 1965	6.71	2,360
	Sept. 19, 1965	9.41	4,290
	Sept. 29, 1965	9.61	4,450

a About

b Affected by ice

5-3890. Yellow River at Ion, Iowa
(Discontinued Sept. 30, 1951)

Location.--Lat 43 deg.06 min.35 sec., long 91 deg.15 min.45 sec.,
in SE $\frac{1}{4}$ SW $\frac{1}{4}$ 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 664.65 ft. above mean sea
level, adjustment of 1912.

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

Remarks.--Base for partial-duration series, 3,000 cfs.

Peak stages and discharges			
Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 4, 1935	11.0	5,440
1936	Mar. 10, 1936	10.2	4,560
1937	Mar. 4, 1937	10.5	4,950
	June 13, 1937	9.1	3,500
1938	Feb. 6, 1938	10.4	4,840
	June 30, 1938	9.8	4,200
	July 10, 1938	8.9	3,310
1939	Feb. 19, 1939	8.2	2,730
1940	Mar. 29, 1940	9.6	4,000
	July 26, 1940	9.7	4,100
	Aug. 3, 1940	9.7	4,100
1941	May 29, 1941	15.2	21,200
1942	June 13, 1942	8.7	3,250
	June 29, 1942	10.3	4,910
	Aug. 1, 1942	12.0	7,320
1943	Mar. 15, 1943	9.8	4,360
	Aug. 13, 1943	12.2	8,320
1944	June 16, 1944	13.5	12,200
	June 17, 1944	10.8	5,530
	June 26, 1944	10.4	5,000

Yellow River at Ion, Iowa--(Continued)

Peak stages and discharge			
Water year	Date	Gage height (feet)	Discharge (cfs)
1945	June 1, 1945	13.1	11,600
	June 28, 1945	8.4	3,210
1946	Jan. 5, 1946	13.0	13,000
	Feb. 5, 1946	8.9	5,120
	Mar. 6, 1946	11.0	7,760
	Mar. 12, 1946	11.0	7,760
	Aug. 17, 1946	9.6	5,830
	Sept. 6, 1946	11.7	9,750
1947	Apr. 10, 1947	8.8	4,980
	June 13, 1947	10.4	6,900
1948	Feb. 28, 1948	^b 12.0	^a 8,000
	Mar. 16, 1948	8.6	4,760
	Mar. 19, 1948	12.5	13,000
1949	Mar. 4, 1949	10.0	6,520
1950	Mar. 6, 1950	9.6	5,920
	Mar. 26, 1950	12.8	15,700
	June 13, 1950	8.8	4,980
	July 16, 1950	10.1	6,550
1951	Feb. 25, 1951	^b 8.05	^a 4,500
	Mar. 29, 1951	9.90	9,580
	Apr. 7, 1951	10.34	10,500
	July 8, 1951	7.57	4,840
	July 16, 1951	7.62	4,840
	Aug. 6, 1951	8.26	6,100

a About

b Affecting ice