

05094000 SOUTH BRANCH TWO RIVERS AT LAKE BRONSON, MN

LOCATION.--Lat 48°43'50", long 96°39'50", in SW¹/₄SW¹/₄ sec. 30, T.161 N., R.46 W., Kittson County, Hydrologic Unit 09020312, on left bank 70 ft upstream from culvert on U.S. Highway 59 at Lake Bronson and 3.4 mi downstream from dam at outlet of Bronson Lake.

DRAINAGE AREA.--422 mi².

PERIOD OF RECORD.--September 1928 to November 1936, April to September 1937, April 1941 to October 1943, April to December 1944, April 1945 to September 1947, October 1953 to September 1981, April 1985 to current year. Monthly discharge only for some periods, published in WSP 1308. October 1981 to March 1985, annual maximums only. Published as South Fork Two Rivers at Bronson prior to 1941.

REVISED RECORDS.--WSP 1308: 1929(M), 1931(M), 1936(M), 1944(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 928.53 ft above sea level (NGVD of 1929, Minnesota Department of Transportation benchmark). Prior to Nov. 23, 1953, nonrecording gage at bridge 100 ft downstream at datum 2.00 ft higher. Nov 23, 1953 to Oct. 5, 1963, water-stage recorder at same site at datum 2.00 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow partly regulated since 1937 at Bronson Lake; usable capacity, 3,700 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	9.2	e5.6	e6.3	e6.8	e6.5	e265	17	20	23	1.9	3.9
2	8.1	8.7	e5.4	e6.3	e7.2	e4.0	e250	21	20	23	1.9	4.0
3	8.2	8.6	e5.4	e6.3	e7.1	e2.3	e150	22	21	23	1.8	4.0
4	9.7	8.3	e5.4	e6.3	e7.0	e1.6	e100	24	19	23	1.8	3.9
5	9.4	8.2	e5.6	e6.3	e7.0	e1.4	e60	34	19	23	1.9	3.6
6	9.2	7.9	e6.5	e6.2	e7.0	e1.3	e45	43	18	23	2.1	2.8
7	9.6	7.8	e7.5	e6.2	e6.9	e1.2	35	34	21	18	2.0	1.9
8	12	7.9	e8.0	e6.2	e6.8	e1.1	64	27	38	4.9	1.9	1.6
9	13	8.2	e8.5	e5.9	e6.8	e1.0	81	27	169	2.9	1.8	1.4
10	13	8.0	e10	e5.7	e6.8	e0.99	88	27	222	2.7	2.1	1.3
11	13	7.8	e9.6	e5.7	e6.8	e0.98	89	20	357	2.6	2.0	1.5
12	12	8.1	e7.9	e5.7	e6.8	e0.97	82	11	514	2.6	1.9	1.4
13	12	7.8	e7.0	e5.7	e6.9	e0.96	73	15	442	2.2	1.8	1.4
14	14	7.7	e6.4	e5.7	e6.9	e0.95	64	22	337	2.3	1.7	1.4
15	13	7.4	e6.0	e5.7	e7.1	e0.95	60	23	341	2.3	1.6	1.3
16	12	7.1	e5.8	e5.7	e7.5	e0.95	52	25	179	2.1	20	1.2
17	11	6.5	e5.6	e5.8	e7.8	e0.95	37	26	63	2.0	6.7	1.3
18	11	5.9	e5.4	e6.1	e8.0	e10	33	34	103	2.0	5.7	2.4
19	10	5.7	e5.4	e5.8	e8.0	e200	25	48	101	1.9	4.0	2.0
20	10	5.6	e5.4	e5.8	e8.0	e10	25	147	77	2.0	2.6	1.6
21	10	5.8	e5.4	e5.8	e8.0	e50	27	273	52	1.9	2.4	1.5
22	9.7	5.8	e5.2	e5.8	e7.9	e175	47	225	33	1.9	2.3	1.5
23	9.2	e6.0	e5.2	e5.8	e7.8	e200	112	162	20	1.9	3.3	20
24	9.2	e6.2	e5.2	e5.8	e7.7	e220	126	134	12	1.9	4.1	43
25	9.4	e6.5	e5.5	e5.8	e7.6	e240	85	134	6.6	1.9	4.3	40
26	9.0	e7.0	e6.2	e5.8	e7.5	e260	32	111	5.8	2.0	4.3	40
27	8.8	e7.5	e6.6	e5.8	e7.4	e280	33	65	5.2	1.9	4.2	39
28	12	e7.0	e7.0	e6.0	e7.3	e290	32	22	11	1.8	7.1	48
29	12	e6.4	e7.0	e6.2	---	e300	28	18	29	1.8	5.1	54
30	11	e6.0	e6.6	e6.4	---	e290	13	19	33	1.8	4.3	42
31	9.7	---	e6.3	e6.6	---	e280	---	19	---	1.8	3.9	---
TOTAL	328.7	216.6	198.6	185.2	204.4	2,833.10	2,213	1,829	3,288.6	209.1	112.5	372.9
MEAN	10.6	7.22	6.41	5.97	7.30	91.4	73.8	59.0	110	6.75	3.63	12.4
MAX	14	9.2	10	6.6	8.0	300	265	273	514	23	20	54
MIN	8.1	5.6	5.2	5.7	6.8	0.95	13	11	5.2	1.8	1.6	1.2
AC-FT	652	430	394	367	405	5,620	4,390	3,630	6,520	415	223	740
CFSM	0.03	0.02	0.02	0.01	0.02	0.22	0.17	0.14	0.26	0.02	0.01	0.03
IN.	0.03	0.02	0.02	0.02	0.02	0.25	0.20	0.16	0.29	0.02	0.01	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	22.0	32.8	6.04	3.50	6.04	78.1	445	218	188	119	53.3	44.2
MAX	153	1,132	37.9	15.3	93.1	689	1,977	1,500	1,336	1,136	1,349	525
(WY)	(1958)	(2001)	(2001)	(2001)	(1998)	(1995)	(1966)	(1996)	(1970)	(1956)	(1993)	(1957)
MIN	0.40	0.38	0.13	0.12	0.12	0.66	0.54	0.98	1.43	0.44	0.089	0.000
(WY)	(1991)	(1990)	(1987)	(1987)	(1987)	(1934)	(1991)	(1991)	(1980)	(1988)	(1988)	(1937)

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	65,913.5		11,991.70		a102	
ANNUAL MEAN	181		32.9		314	
HIGHEST ANNUAL MEAN					2001	
LOWEST ANNUAL MEAN					1934	
HIGHEST DAILY MEAN	2,680	Jun 14	514	Jun 12	5,290	Apr 5, 1966
LOWEST DAILY MEAN	1.6	Sep 18	0.95	Mar 14-17	b0.00	Jul 25, 1937
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 14	0.96	Mar 11	0.00	Aug 2, 1937
MAXIMUM PEAK FLOW			547	cJun 12	5,410	Apr 5, 1966
MAXIMUM PEAK STAGE			d11.11	Mar 18	18.23	Apr 5, 1966
ANNUAL RUNOFF (AC-FT)	130,700		23,790		74,080	
ANNUAL RUNOFF (CFSM)	0.43		0.078		0.24	
ANNUAL RUNOFF (INCHES)	5.81		1.06		3.29	
10 PERCENT EXCEEDS	534		86		241	
50 PERCENT EXCEEDS	12		7.4		5.3	
90 PERCENT EXCEEDS	4.4		1.8		0.90	

- a Median of annual mean discharges is 65 ft³/s.
- b Many days, several years.
- c Gage height, 5.83 ft.
- d Backwater from ice, from highwater mark.
- e Estimated.

