

ST. CROIX RIVER BASIN

05337400 KNIFE RIVER NEAR MORA, MN

LOCATION.--Lat 4555'12", long 9318'26", in SW 1 / 4 SW 1 / 4 sec. 26, T.40 N., R.24 W., Kanabec County, Hydrologic Unit 07030004, on left bank 400 ft upstream from bridge on County Highway 77, 1.1 mi upstream from mouth and 2.5 mi north of Mora.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1969-74; July 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 991.20 ft above mean sea level (Kanabec County bench mark).

REMARKS.--Records good except those for periods of estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 26, 1972, reached a stage of 14.0 ft, from information by local resident (discharge not determined). Result of dam failure and backwater from collapsed bridge.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge	Gage height (ft)	Date	Time	Discharge	Gage height (ft)
		(ft ³ /s)				(ft ³ /s)	
Apr. 03	1530	*203	*3.03	(No peak greater than base discharge.)			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	18	14	e9.9	8.3	141	122	19	10	30	1.4	2.1
2	8.6	21	15	e9.8	8.0	137	143	19	14	26	1.4	1.9
3	10	26	16	e9.6	e8.1	129	180	16	11	28	1.8	1.7
4	11	21	15	e9.4	e8.1	116	193	12	10	23	1.6	1.6
5	9.7	20	e14	e9.3	e8.1	103	182	13	10	18	1.3	1.6
6	16	20	14	e9.1	e8.1	95	166	12	7.9	26	1.1	1.6

7	21	18	e14	e9.0	e8.1	83	169	14	7.2	30	2.1	1.4
8	17	e17	13	e8.8	e8.1	75	171	15	6.1	34	2.4	1.5
9	15	e17	13	e8.8	e8.1	e62	162	12	6.1	31	3.0	1.5
10	16	e16	12	e8.7	e8.1	e50	151	9.6	5.2	28	4.6	1.6
11	13	e16	12	e8.6	e8.1	e46	149	8.3	8.4	23	3.9	1.6
12	15	e16	12	e8.6	e8.0	e40	129	10	17	19	2.9	1.7
13	24	e16	12	e8.6	e8.0	35	135	11	17	18	2.2	1.7
14	26	e16	12	e8.6	8.0	e29	138	9.3	17	18	1.9	2.0
15	28	e15	12	e8.5	9.0	26	132	11	16	28	1.9	1.8
16	28	e15	12	e8.5	9.5	23	117	17	38	25	1.6	1.6
17	25	e15	12	e8.5	14	21	96	17	39	21	1.6	1.7
18	24	e15	11	e8.5	18	19	90	16	57	18	1.8	1.7
19	18	e15	11	e8.4	20	18	83	16	73	17	1.8	1.8
20	23	e14	e11	e8.4	22	17	77	14	80	14	1.9	1.8
21	23	e14	e10	e8.4	27	16	68	12	77	13	1.7	1.8
22	18	e14	10	e8.3	34	15	61	9.7	70	11	5.4	1.6
23	17	e14	9.9	e8.3	44	15	53	7.3	60	8.5	11	1.9
24	19	e14	10	e8.3	59	15	51	5.3	51	6.3	10	2.0
25	16	e14	10	e8.3	74	16	47	3.2	52	5.1	9.2	2.0
26	14	14	e10	e8.2	88	17	41	4.4	46	3.7	7.3	3.9
27	12	15	e10	e8.2	111	23	28	3.6	47	2.5	6.2	2.1
28	11	14	10	e8.2	134	31	24	3.1	40	2.4	5.6	1.8
29	12	14	10	e8.2	---	43	22	3.9	36	2.2	4.9	1.7
30	12	14	10	8.3	---	63	20	9.3	35	1.8	3.7	1.8
31	14	---	e10	8.4	---	92	---	19	---	1.7	2.8	---
TOTAL	524.6	488	366.9	268.7	776.7	1611	3200	352.0	963.9	533.2	110.0	54.5
MEAN	16.9	16.3	11.8	8.67	27.7	52.0	107	11.4	32.1	17.2	3.55	1.82
MAX	28	26	16	9.9	134	141	193	19	80	34	11	3.9
MIN	8.3	14	9.9	8.2	8.0	15	20	3.1	5.2	1.7	1.1	1.4
AC-FT	1040	968	728	533	1540	3200	6350	698	1910	1060	218	108

CFSM	.17	.16	.12	.08	.27	.51	1.05	.11	.31	.17	.03	.02
IN.	.19	.18	.13	.10	.28	.59	1.17	.13	.35	.19	.04	.02

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	50.1	41.7	25.1	13.4	14.4	69.4	232	102	58.3	52.1	29.6	35.7
MAX	242	206	109	28.8	48.9	238	472	338	233	171	218	257
(WY)	1985	1978	1978	1984	1984	1983	1986	1986	1984	1975	1995	1986
MIN	1.84	1.38	1.17	1.14	1.16	14.3	30.5	11.4	3.06	.98	1.86	1.82
(WY)	1977	1990	1990	1977	1990	1975	1977	1998	1988	1988	1976	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1974 - 1998		
ANNUAL TOTAL	19459.6		9249.5				
ANNUAL MEAN	53.3		25.3		60.4		
HIGHEST ANNUAL MEAN					135		1986
LOWEST ANNUAL MEAN					16.8		1988
HIGHEST DAILY MEAN	1790		Apr 6	193	Apr 4	1790	Apr 6 1997
LOWEST DAILY MEAN	3.3		Sep 13	1.1a	Aug 6	.76	Jul 7 1988
ANNUAL SEVEN-DAY MINIMUM	4.2		Sep 9	1.5	Jul 31	.86	Jul 23 1988
INSTANTANEOUS PEAK FLOW				203	Apr 3	1870	Apr 6 1997
INSTANTANEOUS PEAK STAGE				3.30	Apr 3	6.69b	Nov 24 1977
INSTANTANEOUS LOW FLOW				.89a	Aug 5-7	.74	Jul 6, 28 1988
ANNUAL RUNOFF (AC-FT)	38600		18350		43790		
ANNUAL RUNOFF	.52		.25		.59		

(CFSM)							
ANNUAL RUNOFF (INCHES)	7.10		3.37		8.05		
10 PERCENT EXCEEDS	60		71		144		
50 PERCENT EXCEEDS	15		13		21		
90 PERCENT EXCEEDS	7.6		1.9		4.7		

a Minimum observed, partial gage-height record.

b From floodmarks, backwater from ice.

