

RED RIVER OF THE NORTH BASIN--Continued

05078000 CLEARWATER RIVER AT PLUMMER, MN

LOCATION.--Lat 47°55'24", long 96°02'46", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T.151 N., R.42 W., Red Lake County, Hydrologic Unit 09020305, on right bank 200 ft downstream from Soo Line Railroad bridge, 300 ft downstream from bridge on U.S. Highway 59, 0.9 mi northwest of railroad depot in Plummer, and 8 mi upstream from Hill River.

DRAINAGE AREA.--555 mi².

PERIOD OF RECORD.--April 1939 to September 1979, March 1982 to current year. Annual maximums only, October 1979 to February 1982.

GAGE.--Water-stage recorder. Datum of gage is 1,098.57 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). Prior to Nov. 10, 1939, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1968, undetermined amounts of water diverted for the flooding of wild rice paddies upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 630 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jun 10	0500	1,030	7.16	Aug 29	0900	683	5.87
Jun 23	1230	*1,410	*8.32	Sep 1	1400	814	6.38
Jul 12	1600	1,210	7.77				

Minimum discharge, 40 ft³/s, Oct. 9, 10, Sept. 20, 23, 24, gage height, 2.59 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	97	e102	e80	e65	e60	e75	187	207	899	234	792
2	51	96	e97	e80	e64	e59	e71	184	209	925	277	646
3	44	119	e92	e80	e63	e59	e67	181	196	910	260	433
4	48	160	e89	e81	e63	e59	e66	183	179	827	241	313
5	49	153	e85	e83	e64	e58	e65	196	177	687	192	248
6	46	124	e83	e85	e64	e58	e65	191	186	542	158	228
7	45	104	e82	e87	e65	e58	e65	177	189	468	158	219
8	54	101	e82	e89	e66	e58	e66	173	160	628	151	193
9	42	87	e81	e92	e67	e58	e69	253	468	655	140	174
10	40	91	e80	e93	e68	e58	e73	348	916	696	127	162
11	54	97	e82	e91	e68	e60	e90	360	615	937	114	158
12	132	94	e88	e89	e69	e61	e120	325	470	1170	114	147
13	153	80	e86	e87	e69	e63	e170	305	391	1090	133	137
14	138	68	e84	e85	e70	e66	e200	283	464	829	135	127
15	142	67	e87	e83	e71	e69	188	268	469	598	111	118
16	134	71	e91	e80	e71	e72	152	240	394	544	108	109
17	142	70	e91	e78	e71	e72	135	220	327	498	124	94
18	130	70	e90	e77	e71	e70	142	242	316	404	185	82
19	120	70	e87	e76	e71	e67	211	277	391	349	198	54
20	112	80	e85	e75	e70	e65	297	224	698	318	185	44
21	110	75	e83	e75	e69	e63	294	175	851	316	160	46
22	107	71	e83	e74	e68	e62	273	164	1070	288	141	48
23	93	75	e82	e73	e66	e61	225	153	1370	244	130	42
24	86	80	e81	e72	e65	e60	200	185	1280	248	124	42
25	88	96	e80	e71	e64	e60	246	184	1280	226	125	47
26	97	74	e80	e70	e63	e60	282	171	1330	229	117	46
27	91	e64	e80	e69	e62	e62	270	170	1280	221	110	46
28	99	e60	e80	e68	e61	e67	261	136	1160	213	270	45
29	99	e59	e80	e68	---	e79	245	155	1010	216	601	42
30	94	e107	e80	e67	---	e88	200	193	905	275	414	47
31	88	---	e80	e66	---	e80	---	213	---	254	570	---
TOTAL	2781	2660	2633	2444	1868	1992	4883	6716	18958	16704	6107	4929
MEAN	89.7	88.7	84.9	78.8	66.7	64.3	163	217	632	539	197	164
MAX	153	160	102	93	71	88	297	360	1370	1170	601	792
MIN	40	59	80	66	61	58	65	136	160	213	108	42
AC-FT	5520	5280	5220	4850	3710	3950	9690	13320	37600	33130	12110	9780
CFSM	0.16	0.16	0.15	0.14	0.12	0.12	0.29	0.39	1.14	0.97	0.35	0.30
IN.	0.19	0.18	0.18	0.16	0.13	0.13	0.33	0.45	1.27	1.12	0.41	0.33

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	117	100	67.9	54.6	52.5	119	541	363	265	232	128	115
MAX	483	617	211	125	184	445	1472	1974	1140	1072	507	666
(WY)	1972	2001	2001	2001	1998	1995	1997	1950	1962	1997	1985	1973
MIN	21.5	23.8	24.4	18.4	19.0	22.8	26.8	7.52	30.1	16.0	13.3	14.1
(WY)	1941	1991	1990	1940	1940	1940	1977	1977	1991	1940	1940	1940

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1939 - 2002
ANNUAL TOTAL	105635	72675	
ANNUAL MEAN	289	199	181a
HIGHEST ANNUAL MEAN			354 1950
LOWEST ANNUAL MEAN			57.0 1990
HIGHEST DAILY MEAN	2100 Apr 13	1370 Jun 23	3840 Apr 25 1979
LOWEST DAILY MEAN	40 Oct 10	40 Oct 10	2.6 May 16 1977
ANNUAL SEVEN-DAY MINIMUM	46 Oct 4	44 Sep 23	2.9 May 10 1977
MAXIMUM PEAK FLOW		1410 Jun 23	3940b Apr 25 1979
MAXIMUM PEAK STAGE		8.32 Jun 23	12.74c Apr 16 1997
INSTANTANEOUS LOW FLOW		40 Oct 9, Sep 20, 23	2.5 May 16 1977
ANNUAL RUNOFF (AC-FT)	209500	144200	130800
ANNUAL RUNOFF (CFSM)	0.52	0.36	0.33
ANNUAL RUNOFF (INCHES)	7.08	4.87	4.42
10 PERCENT EXCEEDS	789	468	419
50 PERCENT EXCEEDS	120	97	80
90 PERCENT EXCEEDS	73	60	34

- a Median of annual mean discharges is 178 ft³/s.
- b Gage-height, 12.31 ft.
- c Backwater from ice.
- e Estimated.

