

RED RIVER OF THE NORTH BASIN

05078000 CLEARWATER RIVER AT PLUMMER, MN

LOCATION.--Lat 4755'24", long 9602'46", in SE 1 / 4 SW 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 (revised).

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 (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 500 ft³/s and maximum (*):

Discharge			Discharge			
Date	Time	Gage height (ft)	Date	Time	Gage height (ft)	
		(ft ³ /s)			(ft ³ /s)	
Feb.28	--	a1000	--	June21 1500	720	5.98
May13	0900	614		June25 0130	660	5.75
May17	0600	*2980				*11.08

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	90	105	e115	e97	e87	e920	63	55	181	352	94	51
2	78	111	e115	e93	e87	e800	71	51	155	322	103	53
3	61	93	e112	e93	e87	e650	80	67	134	313	92	45
4	60	125	e107	e92	e88	e560	87	69	116	308	81	33
5	76	122	e105	e92	e88	e480	95	72	98	283	80	38
6	83	116	e105	e91	e88	e420	116	79	102	255	72	43

7	74	99	e105	e91	e88	e350	131	82	109	252	50	35
8	72	97	e105	e91	e86	e315	148	76	105	315	51	34
9	99	e97	e103	e91	e86	e260	157	74	88	330	42	33
10	115	e100	e103	e90	e86	e245	174	68	67	302	52	41
11	99	e105	e103	e90	e86	e230	191	59	64	265	47	39
12	84	e105	e105	e89	e86	e215	211	133	56	258	48	34
13	129	e110	e107	e90	e84	e200	237	576	66	229	53	40
14	211	e110	e109	e89	e84	e180	271	506	92	240	72	44
15	251	e105	e110	e88	e83	e173	277	519	88	316	53	44
16	215	e100	e110	e88	e84	e165	e260	1530	86	328	49	41
17	168	e100	e110	e88	e87	e150	e240	2860	81	321	49	42
18	150	e100	e110	e88	e93	e141	232	2430	94	309	44	42
19	160	e99	e110	e88	e100	137	237	1910	252	304	44	35
20	153	e99	e105	e88	e110	138	220	1560	606	258	47	39
21	141	e99	e104	e86	e120	145	185	1260	706	273	43	41
22	134	e100	e102	e86	e135	139	151	998	621	266	40	43
23	122	e105	e102	e86	e155	136	121	754	482	237	42	37
24	109	e107	e102	e86	e200	128	107	544	500	214	45	35
25	108	e110	e100	e86	e300	101	94	429	621	193	43	36
26	102	e110	e100	e87	e600	116	101	357	585	153	41	33
27	107	e110	e100	e87	e880	158	99	286	562	139	45	37
28	102	e110	e100	e87	e1000	95	79	231	512	128	60	40
29	102	e115	e100	e87	---	77	65	250	442	115	61	41
30	104	e115	e99	e87	---	73	62	230	385	98	48	38
31	100	---	e99	e85	---	74	---	199	---	92	53	---
TOTAL	3659	3179	3262	2757	5158	7971	4562	18314	8056	7768	1744	1187
MEAN	118	106	105	88.9	184	257	152	591	269	251	56.3	39.6
MAX	251	125	115	97	1000	920	277	2860	706	352	103	53
MIN	60	93	99	85	83	73	62	51	56	92	40	33
AC-FT	7260	6310	6470	5470	10230	15810	9050	36330	15980	15410	3460	2350

CFSM	.21	.19	.19	.16	.33	.46	.27	1.06	.48	.45	.10	.07
IN.	.25	.21	.22	.18	.35	.53	.31	1.23	.54	.52	.12	.08

a Estimated daily discharge.

e Estimated.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	116	92.2	64.8	52.5	50.7	117	536	359	252	224	122	104
MAX	483	503	140	90.1	184	445	1472	1974	1140	1072	507	666
(WY)	1972	1972	1978	1952	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 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998		
ANNUAL TOTAL	119773		67617				
ANNUAL MEAN	328		185		175a		
HIGHEST ANNUAL MEAN					354		1950
LOWEST ANNUAL MEAN					57.0		1990
HIGHEST DAILY MEAN	2700		Apr 16	2860	May 17	3840	Apr 25 1979
LOWEST DAILY MEAN	54		Sep 22	33	Sep 4, 9, 26	2.6	May 16 1977
ANNUAL SEVEN-DAY MINIMUM	60		Sep 21	37	Sep 7	2.9	May 10 1977
INSTANTANEOUS PEAK FLOW			2980		May 17	3940b	Apr 25 1979
INSTANTANEOUS PEAK STAGE			11.08		May 17	12.74c	Apr 16 1997
INSTANTANEOUS LOW FLOW			27		Sep 4	2.5	May 16 1977
ANNUAL RUNOFF (AC-FT)	237600		134100		126900		

ANNUAL RUNOFF (CFSM)	.59		.33		.32		
ANNUAL RUNOFF (INCHES)	8.03		4.53		4.29		
10 PERCENT EXCEEDS	1040		338		409		
50 PERCENT EXCEEDS	108		102		76		
90 PERCENT EXCEEDS	70		45		33		

- a Median of annual mean discharges is 170 ft³/s.
- b Gage-height, 12.31 ft.
- c Backwater from ice.

