

RED RIVER OF THE NORTH BASIN--Continued

05112000 ROSEAU RIVER BELOW STATE DITCH 51, NEAR CARIBOU, MN

LOCATION.--Lat 48°58'54", long 96°27'46", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T.164 N., R.45 W., Kittson County, Hydrologic Unit 09020314, on left bank 400 ft downstream from State ditch 51 (known locally as Caribou cutoff ditch) and 0.6 mi west of Caribou.

DRAINAGE AREA.--1,420 mi².

PERIOD OF RECORD.--April to October 1917, April 1920 to current year (no winter records in water years 1931, 1932, 1934-36, 1938-40, 1944-72). Published as "at Caribou," prior to April 1929; as "below Cutoff ditch, near Caribou April 1929 to September 1936. Records published for both sites April 1929 to September 1930. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1938(M). WSP 1508: 1917(M), 1920, 1932(M), 1934-35(M). WSP 1913: 1954(M).

GAGE.--Water-stage recorder. Datum of gage is 1,002.31 ft above sea level (NGVD of 1929, levels by Geodetic Survey of Canada). Prior to Apr. 1, 1929, nonrecording gage at site at Caribou 0.6 mi upstream at datum 0.95 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation from wildlife management impoundments several miles upstream of gage. Occasionally, at high stages, there is some natural diversion of flow above station to headwaters of Two Rivers.

COOPERATION.--Red Lake Watershed Management Board.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1916 is reported to have reached a stage of about 15.5 ft at former site.

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	60	211	e125	e41	e21	e15	e60	545	583	3990	2000	356
2	51	231	e120	e40	e20	e14	e150	504	650	3940	1890	383
3	47	278	e116	e39	e19	e13	e135	490	688	3860	1790	406
4	46	281	e112	e38	e18	e13	e120	469	686	3790	1670	395
5	48	265	e110	e37	e18	e12	e110	447	655	3770	1520	367
6	52	249	e108	e37	e18	e12	e100	438	607	3750	1320	329
7	58	234	e107	e36	e17	e11	e93	491	547	3710	1050	292
8	61	216	e104	e36	e17	e11	e87	576	486	3670	823	258
9	56	204	e102	e35	e17	e11	e84	648	453	3590	874	229
10	56	198	e100	e35	e17	e11	e87	783	1210	3520	885	200
11	58	192	e98	e36	e17	e11	e91	942	2420	3440	799	164
12	59	186	e97	e38	e17	e10	e120	1010	2120	3360	714	147
13	62	182	e96	e37	e17	e10	e200	1040	2000	3270	608	136
14	71	168	e95	e35	e18	e11	e340	1050	1950	3190	427	127
15	79	162	e93	e32	e18	e11	e460	1050	2010	3100	322	120
16	83	163	e92	e31	e19	e11	e480	1040	2150	3020	281	109
17	94	159	e91	e30	e19	e11	461	1010	2370	2950	360	100
18	103	155	e90	e29	e20	e11	437	991	2740	2880	529	93
19	96	150	e88	e29	e20	e12	394	959	3090	2820	595	116
20	92	144	e85	e29	e20	e12	345	919	3400	2800	551	237
21	88	147	e81	e28	e20	e13	302	859	3650	2820	458	260
22	201	142	e77	e28	e20	e16	265	794	3910	2760	362	233
23	223	137	e73	e28	e20	e18	231	732	4160	2690	288	199
24	223	133	e67	e27	e19	e20	221	678	4280	2610	271	174
25	220	131	e62	e26	e18	e21	332	598	4320	2540	290	175
26	215	e90	e58	e26	e18	e23	596	527	4270	2470	258	163
27	208	e51	e53	e25	e17	e24	665	492	4200	2390	216	152
28	198	e70	e50	e25	e16	e26	653	467	4160	2310	214	141
29	200	e125	e47	e24	---	e29	619	451	4110	2220	308	124
30	195	e130	e45	e23	---	e33	579	462	4050	2160	356	104
31	200	---	e43	e22	---	e40	---	507	---	2080	343	---
TOTAL	3503	5184	2685	982	515	496	8817	21969	71925	95470	22372	6289
MEAN	113	173	86.6	31.7	18.4	16.0	294	709	2398	3080	722	210
MAX	223	281	125	41	21	40	665	1050	4320	3990	2000	406
MIN	46	51	43	22	16	10	60	438	453	2080	214	93
AC-FT	6950	10280	5330	1950	1020	984	17490	43580	142700	189400	44370	12470
CFSM	0.08	0.12	0.06	0.02	0.01	0.01	0.21	0.50	1.69	2.17	0.51	0.15
IN.	0.09	0.14	0.07	0.03	0.01	0.01	0.23	0.58	1.88	2.50	0.59	0.16

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	173	172	71.2	27.7	23.3	131	834	973	649	460	179	181
MAX	1302	2022	813	134	75.4	793	2168	3029	2588	3080	1582	1451
(WY)	1942	2001	2001	1927	1997	1995	1966	1950	1970	2002	1993	1968
MIN	0.12	0.26	0.53	0.090	0.060	1.57	38.2	26.9	6.70	0.65	2.09	0.30
(WY)	1991	1991	1991	1991	1991	1989	1981	1988	1980	1980	1936	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1917 - 2002
ANNUAL TOTAL	255925	240207	
ANNUAL MEAN	701	658	341
HIGHEST ANNUAL MEAN			933 2001
LOWEST ANNUAL MEAN			35.9 1977
HIGHEST DAILY MEAN	2870 Apr 15	4320 Jun 25	4320 Jun 25 2002
LOWEST DAILY MEAN	25 Mar 1	10 Mar 12	0.00 Sep 15-17 1990
ANNUAL SEVEN-DAY MINIMUM	25 Mar 1	11 Mar 7	0.04 Sep 12 1990
MAXIMUM PEAK FLOW		4320 Jun 24	4320 Jun 24 2002
MAXIMUM PEAK STAGE		11.91 Jun 24	11.91 Jun 24 2002
INSTANTANEOUS LOW FLOW			0.00a Aug 13 1936
ANNUAL RUNOFF (AC-FT)	507600	476500	247200
ANNUAL RUNOFF (CFM)	0.49	0.46	0.24
ANNUAL RUNOFF (INCHES)	6.70	6.29	3.26
10 PERCENT EXCEEDS	2020	2640	1180
50 PERCENT EXCEEDS	190	163	66
90 PERCENT EXCEEDS	31	18	8.5

a Also occurred in 1990 and 1991.
e Estimated.

