

## 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 mi<sup>2</sup>.

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 (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 fair. Satellite telemeter at station. 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 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	233	e144	e42	e29	e27	e800	2430	2070	1970	346	47
2	24	228	e140	e41	e29	e27	e820	2390	2050	1950	246	45
3	26	293	e140	e40	e29	e27	e840	2350	2030	1940	187	44
4	26	316	e138	e39	e29	e27	e900	2320	2060	1930	148	51
5	31	302	e135	e38	e29	e27	e950	2340	2050	1920	124	65
6	37	286	e132	e37	e28	e27	e1050	2330	2030	1890	106	129
7	33	276	e130	e36	e28	e27	e1170	2300	2050	1860	104	294
8	31	263	e128	e35	e28	e27	e1700	2260	2030	1840	100	401
9	41	246	e125	e34	e28	e27	2110	2210	2030	1870	106	480
10	40	233	e122	e34	e28	e27	2170	2190	2070	1860	123	522
11	44	e235	e119	e33	e28	e27	2240	2220	2050	1830	120	535
12	53	e230	e117	e32	e28	e27	2300	2200	2040	1800	108	535
13	44	e250	e115	e32	e28	e27	2370	2180	2020	1770	97	518
14	50	e290	e112	e31	e28	e28	2420	2150	2010	1780	85	515
15	55	e280	e108	e30	e28	e28	2450	2140	2020	1770	76	542
16	55	e240	e105	e30	e28	e28	2470	2120	2030	1750	77	582
17	64	e200	e100	e29	e28	e29	2490	2100	2040	1710	75	597
18	87	e180	e95	e29	e28	e29	2520	2080	2050	1680	73	592
19	251	e150	e90	e29	e28	e30	2540	2060	2060	1650	78	572
20	423	e160	e85	e29	e27	e31	2560	2060	2070	1610	84	537
21	472	e200	e80	e29	e27	e35	2580	2050	2080	1580	82	491
22	480	e195	e75	e29	e27	e37	2580	2090	2080	1540	75	420
23	453	e190	e70	e29	e27	e37	2580	2150	2130	1490	91	353
24	409	e180	e65	e29	e27	e37	2580	2150	2130	1420	93	297
25	364	e170	e60	e29	e27	e39	2570	2150	2090	1350	88	256
26	322	e165	e56	e29	e27	e45	2560	2140	2120	1260	87	222
27	288	e160	e53	e29	e27	e100	2540	2120	2100	1150	83	196
28	267	e155	e50	e29	e27	e200	2520	2100	2040	1020	74	184
29	257	e150	e48	e29	---	e350	2490	2080	2010	871	64	185
30	248	e147	e46	e29	---	e590	2470	2070	2000	683	57	182
31	240	---	e44	e29	---	e760	---	2090	---	495	50	---
TOTAL	5239	6603	3027	999	780	2785	62340	67620	61640	49239	3307	10389
MEAN	169	220	97.6	32.2	27.9	89.8	2078	2181	2055	1588	107	346
MAX	480	316	144	42	29	760	2580	2430	2130	1970	346	597
MIN	24	147	44	29	27	27	800	2050	2000	495	50	44
AC-FT	10390	13100	6000	1980	1550	5520	123700	134100	122300	97670	6560	20610
CFSM	.12	.16	.07	.02	.02	.06	1.46	1.54	1.45	1.12	.08	.24
IN.	.14	.17	.08	.03	.02	.07	1.63	1.77	1.61	1.29	.09	.27

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	172	138	54.2	27.0	22.4	130	833	971	615	421	157	178
MAX	1302	712	303	134	75.4	793	2168	3029	2588	1653	1582	1451
(WY)	1942	1995	1995	1927	1997	1995	1966	1950	1970	1968	1993	1968
MIN	.12	.26	.53	.090	.060	1.57	38.2	26.9	6.70	.65	2.09	.30
(WY)	1991	1991	1991	1991	1991	1989	1981	1988	1980	1980	1936	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1917 - 1999
ANNUAL TOTAL	157226	273968	
ANNUAL MEAN	431	751	321
HIGHEST ANNUAL MEAN			751 1999
LOWEST ANNUAL MEAN			35.9 1977
HIGHEST DAILY MEAN	1590	May 29	2580 Apr 21-24 4020 May 19 1950
LOWEST DAILY MEAN	17	Sep 17	24 Oct 1,2 .00a Sep 15 1990
ANNUAL SEVEN-DAY MINIMUM	18	Sep 12	27 Feb 20 .04 Sep 12 1990
INSTANTANEOUS PEAK FLOW			2590 Apr 22 4080 May 19 1950
INSTANTANEOUS PEAK STAGE			9.60 Apr 22 11.81 May 19 1950
INSTANTANEOUS LOW FLOW			24b Oct 1 .00a Aug 13 1936
ANNUAL RUNOFF (AC-FT)	311900	543400	232400
ANNUAL RUNOFF (CFSM)	.30	.53	.23
ANNUAL RUNOFF (INCHES)	4.12	7.18	3.07
10 PERCENT EXCEEDS	1210	2150	1230
50 PERCENT EXCEEDS	195	187	80
90 PERCENT EXCEEDS	24	28	9.1

a Many days, several years.  
 b Rising stage.

