

RAINY RIVER BASIN--Continued

05129115 VERMILION RIVER NEAR CRANE LAKE, MN

LOCATION.--Lat 48°15'53", long 92°33'57", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T.67 N., R.17 W., St. Louis County, Hydrologic Unit 09030002, in Superior National Forest, on left bank 350 ft downstream from bridge on Forest Route 491, 3.5 mi upstream from mouth, and 3.5 mi west of city of Crane Lake.

DRAINAGE AREA.-- 905 mi².

PERIOD OF RECORD.--August 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,180 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1979 reached a stage of 15.15 ft, from high-water mark, discharge about 4,600 ft³/s.

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	56	346	502	e325	e215	e180	1030	1410	1400	749	1230	698
2	51	340	527	e320	e215	e180	1170	1350	1350	795	1190	682
3	50	333	544	e315	e210	e180	1260	1300	1300	825	1140	709
4	47	317	547	e310	e210	e180	1340	1250	1250	854	1100	946
5	45	300	559	e300	e205	e175	1500	1210	1210	975	1050	1120
6	58	288	588	e290	e205	e175	1650	1210	1180	1230	1010	1160
7	63	281	602	e285	e200	e175	1770	1230	1150	1430	995	1140
8	64	275	602	e285	e200	173	1940	1220	1110	1530	967	1120
9	64	270	595	e280	e200	175	2210	1200	1080	1610	937	1080
10	61	274	575	e275	e196	176	2510	1210	1050	1660	919	1040
11	62	e280	553	e270	e195	176	2690	1310	1010	1650	890	996
12	69	e285	536	e265	e190	174	2660	1380	980	1610	904	971
13	67	e292	517	e260	e190	172	2590	1420	928	1620	1010	976
14	66	e302	501	e255	e190	172	2500	1410	869	1640	1100	981
15	69	e312	e471	e252	e185	170	2400	1360	824	1660	1160	983
16	108	329	e455	e250	e185	176	2320	1310	786	1680	1220	972
17	311	331	e440	e249	e185	190	2230	1320	751	1710	1180	952
18	565	336	e430	e248	e180	190	2160	1370	720	1710	1130	928
19	608	346	e420	e247	e180	191	2090	1380	692	1680	1110	897
20	601	354	e410	e246	e180	194	2030	1470	666	1640	1060	855
21	578	359	e400	e245	e180	192	1960	1660	641	1590	1010	835
22	541	363	e390	e243	e180	190	1890	1730	622	1550	962	809
23	498	373	e380	e240	e180	190	1830	1800	611	1530	925	782
24	453	383	e370	e235	e180	186	1770	1870	589	1480	894	756
25	419	395	e360	e230	e180	182	1710	1870	546	1440	868	740
26	408	402	e350	e230	e180	181	1640	1830	528	1410	844	761
27	397	409	e345	e225	e180	196	1590	1750	579	1370	820	796
28	383	414	e345	e225	e180	239	1540	1670	657	1350	788	835
29	372	423	e340	e225	---	414	1500	1580	706	1320	754	864
30	373	459	e330	e220	---	710	1450	1490	727	1300	732	884
31	360	---	e325	e220	---	849	---	1440	---	1270	723	---
TOTAL	7867	10171	14309	8065	5356	7103	56930	45010	26512	43868	30622	27268
MEAN	254	339	462	260	191	229	1898	1452	884	1415	988	909
MAX	608	459	602	325	215	849	2690	1870	1400	1710	1230	1160
MIN	45	270	325	220	180	170	1030	1200	528	749	723	682
AC-FT	15600	20170	28380	16000	10620	14090	112900	89280	52590	87010	60740	54090
CFSM	.28	.37	.51	.29	.21	.25	2.10	1.60	.98	1.56	1.09	1.00
IN.	.32	.42	.59	.33	.22	.29	2.34	1.85	1.09	1.80	1.26	1.12

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	567	539	419	293	241	297	1186	1402	934	807	498	483
MAX	1436	1138	872	476	374	574	2030	2496	1840	1609	1612	1880
(WY)	1996	1983	1983	1996	1997	1995	1997	1996	1985	1985	1988	1988
MIN	110	152	116	97.8	94.1	89.5	627	507	205	113	60.0	69.1
(WY)	1998	1988	1988	1988	1988	1988	1987	1980	1980	1980	1980	1998

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1979 - 1999
ANNUAL TOTAL	121962	283081	
ANNUAL MEAN	334	776	641
HIGHEST ANNUAL MEAN			922
LOWEST ANNUAL MEAN			280
HIGHEST DAILY MEAN	993	Apr 9	2690
LOWEST DAILY MEAN	45	Oct 5	45
ANNUAL SEVEN-DAY MINIMUM	52	Sep 30	53
INSTANTANEOUS PEAK FLOW			2710
INSTANTANEOUS PEAK STAGE			12.67
INSTANTANEOUS LOW FLOW			44
ANNUAL RUNOFF (AC-FT)	241900	561500	464700
ANNUAL RUNOFF (CFSM)	.37	.86	.71
ANNUAL RUNOFF (INCHES)	5.01	11.64	9.63
10 PERCENT EXCEEDS	620	1640	1440
50 PERCENT EXCEEDS	317	602	432
90 PERCENT EXCEEDS	71	180	156

