

RAINY RIVER BASIN--Continued

05127000 KAWISHIWI RIVER NEAR WINTON, MN

LOCATION.--Lat 47°56'05", long 91°45'50", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 20, T.63 N., R.11 W., Lake County, Hydrologic Unit 09030001, Superior National Forest, at power plant of Minnesota Power Co., just upstream from Fall Lake, and 1.8 mi east of Winton.

DRAINAGE AREA.--1,230 mi².

PERIOD OF RECORD.--June 1905 to June 1907, October 1912 to September 1919 (fragmentary), September 1923 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WDR MN-77-1: Drainage area.

REMARKS.--No estimated daily discharges. Records good. Daily discharge computed from power plant records. Flow regulated by power plant and by Camp Six, Bald Eagle, Gabbro, Little Gabbro, Birch, White Iron, South Farm, and Garden Lakes.

COOPERATION.--Records collected by Minnesota Power Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	318	900	796	559	305	401	355	7980	4110	503	1410	771		
2	102	999	667	559	305	307	356	8560	3850	504	1940	685		
3	120	1160	353	559	305	312	377	8910	3730	402	1910	483		
4	331	1160	494	545	305	343	355	8940	3510	399	1670	606		
5	311	1160	494	508	305	324	354	8930	3100	400	1560	606		
6	406	1160	494	509	305	304	354	8750	2550	400	1740	606		
7	406	1000	532	509	305	304	414	8490	2140	401	1810	606		
8	406	897	709	509	305	300	635	8230	1990	421	1810	606		
9	406	865	798	290	305	236	888	7910	1780	421	2010	606		
10	406	794	798	373	305	207	867	7200	1380	421	2830	636		
11	406	795	798	408	305	267	978	6270	1390	397	2710	655		
12	406	891	798	408	305	304	1410	5720	1400	366	2420	643		
13	402	900	798	408	305	304	1600	5090	1400	251	2050	607		
14	327	900	798	408	305	304	2110	4740	1650	116	1410	606		
15	444	1010	798	408	305	304	2720	4600	2040	202	1150	535		
16	445	1170	771	408	306	304	2780	4610	1920	317	1550	249		
17	451	1160	751	408	317	304	3000	4570	1660	650	1990	327		
18	451	1160	724	408	305	304	3040	4370	1260	874	2200	328		
19	451	1160	705	408	305	304	3370	4000	887	865	2310	328		
20	451	1020	705	408	305	304	3770	3610	888	891	2440	328		
21	451	900	705	408	305	304	4180	3510	956	892	2220	328		
22	420	900	705	408	305	304	4530	3510	1360	892	2010	328		
23	403	901	705	408	124	304	5010	3760	1570	892	1760	374		
24	403	901	705	408	139	304	5010	3960	1560	892	1620	401		
25	542	901	651	408	203	304	5740	3940	1560	827	1620	401		
26	790	901	507	408	306	304	5900	3960	1280	536	1560	401		
27	900	901	507	408	314	295	6170	3870	912	393	1400	401		
28	899	867	536	408	401	280	6760	4060	890	351	1240	401		
29	900	797	560	319	---	291	7300	4130	756	351	827	378		
30	899	797	560	305	---	335	7630	4150	503	353	628	376		
31	900	---	559	306	---	355	---	4150	---	591	771	---		
TOTAL	14953	29027	20481	13194	8210	9421	87963	174480	53982	16171	54576	14606		
MEAN	482	968	661	426	293	304	2932	5628	1799	522	1761	487		
MAX	900	1170	798	559	401	401	7630	8940	4110	892	2830	771		
MIN	102	794	353	290	124	207	354	3510	503	116	628	249		
AC-FT	29660	57580	40620	26170	16280	18690	174500	346100	107100	32080	108300	28970		
CFSM	.39	.79	.54	.35	.24	.25	2.38	4.58	1.46	.42	1.43	.40		
IN.	.45	.88	.62	.40	.25	.28	2.66	5.28	1.63	.49	1.65	.44		
+	-7.08	-26.2	-222	-130	-32.2	-118	733	-226	-8.82	20.0	-27.1	-46.4		
MEAN ‡	475	941	439	296	325	186	3665	5402	1791	542	1733	440		
CFSM ‡	.39	.77	.36	.24	.26	.15	2.98	4.40	1.46	.44	1.41	.36		
IN ‡	.45	.86	.42	.28	.27	.17	3.32	5.07	1.63	.51	1.63	.40		
CAL. YR. 00	TOTAL	298656	MEAN	816	MAX	3580	MIN	102	MEAN ‡	804	CFSM ‡	.65	IN ‡	8.88
WTR. YR 01	TOTAL	497064	MEAN	1362	MAX	8940	MIN	102	MEAN ‡	1358	CFSM ‡	1.10	IN ‡	15.01

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	893	764	597	454	349	379	1229	3131	1910	1171	695	737
MAX	4277	3572	1422	862	770	844	5020	9278	5661	3382	3775	3149
(WY)	1947	1971	1983	1978	1927	1945	1945	1950	1968	1999	1988	1928
MIN	66.5	8.97	76.1	80.3	74.5	103	19.3	111	519	217	51.7	38.1
(WY)	1924	1924	1977	1977	1977	1924	1924	1924	1980	1961	1919	1919

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	FOR 2000 WATER YEAR	FOR 2001 WATER YEAR	FOR 2002 WATER YEAR	WATER YEARS 1905 - 2001
ANNUAL TOTAL	298656	497064	497064	497064	497064	
ANNUAL MEAN	816	1362	1362	1362	1362	1036
HIGHEST ANNUAL MEAN						1967
LOWEST ANNUAL MEAN						240
HIGHEST DAILY MEAN	3580	May 13	8940	May 4	16000	May 18 1950
LOWEST DAILY MEAN	102	Oct 2	102	Oct 2	.00a	Aug 24 1905
ANNUAL SEVEN-DAY MINIMUM	232	Sep 27	241	Feb 19	.00	Oct 13 1923
ANNUAL RUNOFF (AC-FT)	592400		985900		750700	
ANNUAL RUNOFF (CFSM)	.66		1.11		.84	
ANNUAL RUNOFF (INCHES)	9.03		15.03		11.45	
10 PERCENT EXCEEDS	1560		3950		2440	
50 PERCENT EXCEEDS	705		635		597	
90 PERCENT EXCEEDS	306		305		195	

+ Change in contents, equivalent in cubic feet per second, in Camp Six, Bald Eagle, Gabbro, Little Gabbro, Birch, White Iron, Farm, South Farm, and Garden Lakes.
 † Adjusted for change in reservoir contents.
 a Many days, several years.

