

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 fair. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	355	889	1060	840	459	400	448	1780	442	1140	1000	452		
2	345	889	1060	801	459	400	449	1830	442	1150	1280	452		
3	118	889	1060	750	459	400	448	1570	670	1150	1280	452		
4	141	889	1040	731	459	400	448	1390	798	1150	985	452		
5	206	889	955	682	459	392	448	1390	839	984	850	453		
6	206	889	883	620	352	332	448	1250	879	819	663	453		
7	206	839	888	656	386	329	448	1140	878	700	581	453		
8	300	742	891	656	386	329	447	1150	808	755	512	453		
9	432	570	890	657	386	329	447	1260	636	769	539	452		
10	433	534	890	656	385	329	447	1400	298	797	605	452		
11	451	534	890	656	385	329	447	1540	400	772	512	452		
12	391	716	890	655	385	373	447	1630	846	608	213	452		
13	267	933	889	655	385	414	446	1620	1130	555	217	452		
14	253	949	889	655	385	443	447	1420	1140	498	283	452		
15	337	950	889	655	385	443	415	1270	1080	228	594	445		
16	352	951	889	655	384	341	217	1270	877	173	795	295		
17	345	951	889	639	384	223	119	1270	874	237	876	117		
18	285	951	889	555	385	148	119	1280	850	219	839	117		
19	253	941	889	555	386	332	119	1280	770	116	613	315		
20	262	955	889	555	394	372	312	1260	788	286	458	405		
21	280	785	881	555	406	413	399	1370	795	432	435	392		
22	296	620	837	556	406	421	419	1520	795	238	400	354		
23	338	620	838	555	406	421	718	1520	1270	117	400	243		
24	412	578	840	555	406	290	883	1310	1270	117	400	116		
25	441	811	840	555	406	257	1150	1160	1260	204	400	119		
26	443	1060	840	494	406	257	1250	1150	1260	345	400	158		
27	675	1060	840	483	406	257	1150	467	1260	371	400	120		
28	889	1060	840	483	404	262	1150	280	1150	444	404	120		
29	889	1060	840	472	---	388	1380	384	1140	444	328	120		
30	889	1060	840	459	---	431	1710	434	1140	637	352	223		
31	889	---	830	459	---	443	---	442	---	797	452	---		
TOTAL	12379	25564	27775	18910	11294	10898	17775	38037	26785	17252	18066	9991		
MEAN	399	852	896	610	403	352	592	1227	893	557	583	333		
MAX	889	1060	1060	840	459	443	1710	1830	1270	1150	1280	453		
MIN	118	534	830	459	352	148	119	280	298	116	213	116		
AC-FT	24550	50710	55090	37510	22400	21620	35260	75450	53130	34220	35830	19820		
CFSM	0.32	0.69	0.73	0.50	0.33	0.29	0.48	1.00	0.73	0.45	0.47	0.27		
IN.	0.37	0.77	0.84	0.57	0.34	0.33	0.54	1.15	0.81	0.52	0.55	0.30		
+	47.7	16.2	-68.9	-178	-164	-127	542	-2.81	8.82	-24.3	24.3	-25.1		
MEAN ‡	447	868	827	432	239	225	1134	1224	902	532	607	308		
CFSM ‡	0.36	0.71	0.67	0.35	0.19	0.18	0.92	1.00	0.73	0.43	0.49	0.25		
IN ‡	0.42	0.79	0.77	0.40	0.20	0.21	1.03	1.15	0.81	0.50	0.56	0.2		
CAL. YR. 01	TOTAL	498321	MEAN	1365	MAX	8940	MIN	116	MEAN ‡	1382	CFSM ‡	1.12	IN ‡	15.26
WTR. YR 02	TOTAL	234726	MEAN	634	MAX	1830	MIN	116	MEAN ‡	647	CFSM ‡	0.53	IN ‡	7.14

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	887	765	600	456	350	378	1221	3109	1898	1164	694	732
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 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1905 - 2002

ANNUAL TOTAL	498321	234726	
ANNUAL MEAN	1365	643	1031
HIGHEST ANNUAL MEAN			1967 1950
LOWEST ANNUAL MEAN			240 1924
HIGHEST DAILY MEAN	8940	May 4	1830 May 2 16000 May 18 1950
LOWEST DAILY MEAN	116	Jul 14	116 Jul 19 0.00a Aug 24 1905
ANNUAL SEVEN-DAY MINIMUM	217	Oct 2	139 Sep 24 0.00 Oct 13 1923
ANNUAL RUNOFF (AC-FT)	988400		465600 747300
ANNUAL RUNOFF (CFSM)	1.11		0.52 0.84
ANNUAL RUNOFF (INCHES)	15.07		7.10 11.39
10 PERCENT EXCEEDS	3950		1150 2440
50 PERCENT EXCEEDS	655		498 603
90 PERCENT EXCEEDS	304		257 201

+ 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.



