

05127000 KAWISHIWI RIVER NEAR WINTON, MN

LOCATION.--Lat 47°56'05", long 91°45'50", in NE¼NW¼ 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 mi<sup>2</sup>.

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 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221	139	308	308	105	121	122	308	761	1,230	893	253
2	225	131	308	308	149	121	163	349	772	1,120	893	64
3	185	210	308	308	168	165	261	402	895	1,120	894	0.00
4	226	375	308	308	246	183	261	402	897	1,120	875	0.00
5	384	405	308	308	259	200	261	407	843	1,120	893	0.00
6	209	405	308	287	259	153	261	448	775	1,120	846	0.00
7	208	405	308	270	259	123	261	448	775	1,380	894	0.00
8	246	393	308	247	259	153	261	448	626	1,220	894	264
9	257	381	308	261	259	220	261	451	556	1,230	894	404
10	298	380	308	261	259	223	261	461	580	1,390	881	403
11	305	380	308	260	259	187	252	665	606	1,490	563	129
12	362	378	309	260	259	122	161	872	623	1,490	405	254
13	399	355	309	260	259	122	122	870	655	1,490	405	451
14	399	355	309	260	259	122	122	871	837	1,270	406	450
15	393	355	309	260	259	122	224	871	877	1,120	406	416
16	399	350	308	260	259	123	261	843	892	1,120	406	353
17	399	291	308	260	259	123	260	836	892	1,140	381	269
18	432	334	308	260	140	224	260	808	891	1,230	94	257
19	447	335	309	260	106	230	326	748	892	1,280	0.00	484
20	452	335	309	260	121	157	385	748	892	1,340	0.00	670
21	452	335	309	260	121	122	447	825	892	1,410	279	669
22	452	332	308	260	121	122	447	898	854	1,230	446	748
23	667	308	308	261	237	122	432	898	841	1,120	446	890
24	799	308	308	257	258	198	406	898	862	1,120	446	890
25	787	308	308	257	277	258	345	898	903	957	445	890
26	666	311	308	257	185	258	260	877	1,030	794	445	886
27	604	308	308	254	122	176	260	849	1,120	787	424	807
28	552	308	309	259	121	120	258	882	1,240	765	401	755
29	571	308	309	259	---	119	258	897	1,320	796	394	660
30	576	308	309	166	---	120	266	829	1,320	821	377	554
31	441	---	308	97	---	122	---	791	---	893	377	---
TOTAL	13,013	9,826	9,558	8,053	5,844	4,931	8,125	21,798	25,919	35,713	16,403.00	12,870.00
MEAN	420	328	308	260	209	159	271	703	864	1,152	529	429
MAX	799	405	309	308	277	258	447	898	1,320	1,490	894	890
MIN	185	131	308	97	105	119	122	308	556	765	0.00	0.00
AC-FT	25,810	19,490	18,960	15,970	11,590	9,780	16,120	43,240	51,410	70,840	32,540	25,530
CFSM	0.34	0.27	0.25	0.21	0.17	0.13	0.22	0.57	0.70	0.94	0.43	0.35
IN.	0.39	0.30	0.29	0.24	0.18	0.15	0.25	0.66	0.78	1.08	0.50	0.39
+	4.27	-30.6	-78.0	-118	-127	-6.04	286	89.7	-33.8	4.16	-14.0	7.31
MEAN ‡	4.24	297	230	142	81.7	153	557	793	830	1156	515	436
CFSM ‡	0.34	0.24	0.19	0.12	0.07	0.12	0.45	0.64	0.67	0.94	0.42	0.35
IN ‡	0.39	0.27	0.22	0.14	0.07	0.14	0.50	0.74	0.75	1.08	0.48	0.39

CAL. YR. 02 TOTAL 201,405 MEAN 552 MAX 1,830 MIN 116 MEAN ‡ 548 CFSM ‡ 0.45 IN ‡ 6.05  
WTR. YR. 03 TOTAL 172,053 MEAN 471 MAX 1,490 MIN 0.00 MEAN ‡ 470 CFSM ‡ 0.38 IN ‡ 5.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)
MEAN	882	760	597	454	348	376	1,211	3,081	1,886	1,164	692	729
MAX	4,277	3,572	1,422	862	770	844	5,020	9,278	5,661	3,382	3,775	3,149
(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)

05127000 KAWISHIWI RIVER NEAR WINTON, MN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1905 - 2003	
ANNUAL TOTAL	201,405		172,053.00			
ANNUAL MEAN	552		471		1,025	
HIGHEST ANNUAL MEAN					1,967	1950
LOWEST ANNUAL MEAN					240	1924
HIGHEST DAILY MEAN	1,830	May 2	1,490	Jul 11-13	16,000	May 18, 1950
LOWEST DAILY MEAN	116	Jul 19	a0.00	Aug 19	b0.00	Aug 24, 1905
ANNUAL SEVEN-DAY MINIMUM	139	Sep 24	45	Sep 1	0.00	Oct 13, 1923
ANNUAL RUNOFF (AC-FT)	399,500		341,300		742,400	
ANNUAL RUNOFF (CFSM)	0.45		0.38		0.83	
ANNUAL RUNOFF (INCHES)	6.09		5.20		11.32	
10 PERCENT EXCEEDS	1,150		897		2,420	
50 PERCENT EXCEEDS	434		311		600	
90 PERCENT EXCEEDS	245		127		200	

+ 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 Also occurred Aug. 20, and Sept. 3-7.

b Many days, several years.

