

UPPER MISSISSIPPI RIVER MAIN STEM-Continued

05211000 MISSISSIPPI RIVER AT GRAND RAPIDS, MN

LOCATION.--Lat 47°13'56", long 93°31'48", in SW¹/₄NW¹/₄ sec. 21, T.55 N., R.25 W., Itasca County, Hydrologic Unit 07010103, on left bank, in super-calendar room of Blandin Paper Mill in Grand Rapids, 400 ft downstream from Blandin Dam, 400 ft upstream from bridge on U.S. Highway 169, 2.5 mi upstream from Prairie River, and at mile 1,182 upstream from Ohio River.

DRAINAGE AREA.--3,370 mi² (approximately).

PERIOD OF RECORD.--October 1883 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "at Pokegama Dam near Grand Rapids" 1942-44.

GAGE.--Water-stage recorder. Datum of gage is 1,242.03 ft above sea level (NGVD of 1929). See WSP 1914 for history of changes prior to Jan. 17, 1951.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Winnibigoshish Lake, Leech Lake, Pokegama Lake, Blandin Paper Mill (up to 16 ft³/s diverted for paper production), and occasionally at low flow by power plant at Blandin Dam. Backwater from Prairie River occurs at times in most years.

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	1830	2440	e2600	2420	e2320	2310	2730	1850	2440	3110	2860	1660
2	1820	2660	e2570	2450	2320	2290	2730	2150	2450	3110	2870	1490
3	1790	2870	e2470	2450	2350	2230	2690	2200	2510	3010	2900	1600
4	1840	2910	e2350	2430	2330	2240	2640	2490	2480	2860	2940	1500
5	1780	2860	e2300	e2420	2300	2190	2570	2790	2440	2740	2850	1300
6	1810	2820	e2380	e2400	e2300	2190	2370	2850	2440	2640	2810	1310
7	1810	2970	2410	e2400	e2300	2130	2470	2900	2400	2740	2680	1390
8	1790	3040	2480	e2390	e2300	2110	1320	2850	2370	2630	2640	1300
9	1740	3070	2470	e2380	e2300	2100	569	2800	2390	2720	2850	1390
10	1810	2980	e2470	e2380	2310	2040	297	2770	2370	2560	2910	1390
11	1770	2920	e2470	e2380	2260	2080	200	2800	2380	2450	2830	1660
12	1780	2880	e2470	e2380	2290	2100	219	2740	2580	2480	2830	1540
13	1840	2840	e2470	e2380	2210	2150	811	2640	2810	2390	2630	1460
14	1990	2830	e2470	e2380	2230	2170	2210	2660	3010	2370	2540	1520
15	1990	2780	e2470	e2380	2250	2130	2450	2790	3260	2430	2540	1460
16	2020	2730	e2470	e2370	2200	2110	2520	2810	3340	2470	2680	1460
17	2220	2710	2470	e2370	2240	2100	2660	2750	3300	2460	2450	1460
18	2160	2660	2460	e2370	2250	2210	2740	e2780	3170	2490	2580	1220
19	2110	2630	2510	e2370	2240	2210	2700	e2770	3130	2510	2600	1180
20	2060	2570	2430	e2370	2240	2270	2650	e2750	3050	2580	2330	1340
21	2110	e2500	2490	e2370	2230	2270	2510	e3000	3010	2680	2330	1470
22	2090	e2430	2460	e2370	2230	2380	2400	e3150	2990	2580	2040	1470
23	2070	e2330	2380	e2370	2270	2450	2320	e3300	2910	2640	1820	1500
24	2070	e2320	2400	e2370	2290	2550	2220	e3300	2860	2650	1850	1480
25	2080	e2350	2360	e2370	2360	2570	1760	e3220	2820	2540	1810	1460
26	2140	e2370	2450	e2360	2380	2550	1630	e3200	2920	2570	1810	1510
27	2270	e2400	2430	e2350	2330	2480	1520	e3200	2990	2620	1860	1480
28	2530	e2420	2430	e2340	2280	2540	1470	e3170	3190	2650	1830	1420
29	2470	e2450	2480	e2340	---	2520	1470	e3140	3270	2630	1690	1490
30	2440	e2550	2450	e2330	---	2600	1550	e3100	3150	2580	1580	1470
31	2370	---	2430	e2320	---	2660	---	e2800	---	2870	1580	---
TOTAL	62600	80290	75950	73760	63910	70930	58396	87720	84430	81760	74520	43380
MEAN	2019	2676	2450	2379	2282	2288	1947	2830	2814	2637	2404	1446
MAX	2530	3070	2600	2450	2380	2660	2740	3300	3340	3110	2940	1660
MIN	1740	2320	2300	2320	2200	2040	200	1850	2370	2370	1580	1180
AC-FT	124200	159300	150600	146300	126800	140700	115800	174000	167500	162200	147800	86040
CFMSM	.60	.79	.73	.71	.68	.68	.58	.84	.84	.78	.71	.43
IN.	.69	.89	.84	.81	.71	.78	.64	.97	.93	.90	.82	.48

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1480	1652	1549	1533	1526	1422	1225	1341	1373	1472	1309	1268
MAX	2975	2978	2608	2410	2729	2762	3442	3026	3271	3363	3711	3542
(WY)	2000	2000	2000	1952	1945	1945	1945	1979	1962	1962	1950	1950
MIN	187	174	186	168	177	198	247	32.5	206	125	98.3	195
(WY)	1977	1977	1977	1977	1977	1977	1959	1949	1988	1961	1961	1976

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1942 - 2001
ANNUAL TOTAL	589613	857646	
ANNUAL MEAN	1611	2350	1429a
HIGHEST ANNUAL MEAN			2350
LOWEST ANNUAL MEAN			277
HIGHEST DAILY MEAN	3070	Nov 9	4610
LOWEST DAILY MEAN	274	May 4	.00b
ANNUAL SEVEN-DAY MINIMUM	314	Apr 14	24
MAXIMUM PEAK FLOW			12500d
MAXIMUM PEAK STAGE			10.12
INSTANTANEOUS LOW FLOW			166g
ANNUAL RUNOFF (AC-FT)	1169000	1701000	1035000
ANNUAL RUNOFF (CFSM)	.48	.70	.42
ANNUAL RUNOFF (INCHES)	6.51	9.47	5.76
10 PERCENT EXCEEDS	2470	2900	2420
50 PERCENT EXCEEDS	1760	2400	1450
90 PERCENT EXCEEDS	612	1550	379

- a Average based on 118 years of record is 1230 ft³/s; median of annual mean discharges is 1210 ft³/s.
- b Many days, several years.
- c May have been higher on May 23,24; gage height, 9.46 ft.
- d From rating curve extended above 4500 ft³/s.
- e Estimated.
- f From floodmark; result of dam failure.
- g Result of regulation.

