

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 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2510	2960	3060	2340	e2150	2310	842	349	656	1940	1260	1030
2	2520	2990	3040	2300	e2140	2300	880	306	757	1950	1220	1010
3	2540	3000	3050	2310	e2140	2340	877	357	663	1810	1230	1030
4	2560	3000	3040	2310	e2130	2360	857	274	738	1890	1010	1030
5	2520	3030	3040	e2300	e2130	2320	753	333	640	1840	940	984
6	2650	3040	3030	e2300	2110	2270	652	362	612	1820	761	1150
7	2810	3070	3050	e2300	2110	2250	631	295	622	1820	909	1200
8	3010	3040	3010	e2300	2090	2320	632	629	582	1750	773	1240
9	3050	2990	2970	e2300	2030	2350	618	645	535	1770	623	1320
10	3020	2990	2950	e2300	1990	2290	644	808	495	1770	675	1360
11	3240	3000	2920	2290	1980	2270	523	1000	527	1810	693	1350
12	3180	2980	2880	2320	2050	2160	421	1030	516	1760	620	1250
13	3170	2870	2860	e2300	2050	2110	356	1160	509	1760	681	1380
14	3160	2870	2830	e2300	2050	1950	307	1160	504	1720	776	1380
15	3180	2820	2810	2260	2060	2050	319	1160	583	1760	866	1320
16	3200	2900	2550	2200	2070	1820	305	1180	893	1720	971	1310
17	3170	3000	2180	e2210	2090	1740	299	1200	913	1590	1130	1330
18	3190	3040	2080	2210	2040	1720	324	1030	1060	1520	1200	1290
19	3170	2990	2110	2170	2060	1670	327	834	921	1430	1180	1360
20	3140	3010	2190	e2200	2010	1490	320	845	1130	1500	1190	1340
21	3120	3000	e2250	e2160	1990	1350	307	871	1190	1420	1200	1290
22	3080	2990	e2270	e2160	1900	1340	345	836	1470	1440	1060	1360
23	3080	2970	e2280	e2160	1830	1140	283	821	1670	1480	960	1350
24	3080	2940	e2290	e2160	1790	1100	330	815	1690	1440	972	1340
25	3080	3000	e2290	e2150	1780	1100	294	679	1710	1410	953	1430
26	3030	3010	e2290	e2140	1910	1040	323	673	1830	1440	1030	1520
27	3020	2950	e2290	e2130	1960	1110	343	611	2010	1470	939	1520
28	2930	2960	e2290	e2130	2050	1050	317	658	1970	1390	999	1520
29	2930	2930	e2300	e2140	2220	1120	313	656	1930	1420	986	1680
30	2980	3010	e2300	e2140	---	1070	318	656	1960	1430	1010	1860
31	2900	---	2340	e2150	---	987	---	716	---	1280	1030	---
TOTAL	92220	89350	80840	69140	58910	54497	14060	22949	31286	50550	29847	39534
MEAN	2975	2978	2608	2230	2031	1758	469	740	1043	1631	963	1318
MAX	3240	3070	3060	2340	2220	2360	880	1200	2010	1950	1260	1860
MIN	2510	2820	2080	2130	1780	987	283	274	495	1280	620	984
AC-FT	182900	177200	160300	137100	116800	108100	27890	45520	62060	100300	59200	78420
CFSM	.88	.88	.77	.66	.60	.52	.14	.22	.31	.48	.29	.39
IN.	1.02	.99	.89	.76	.65	.60	.16	.25	.35	.56	.33	.44

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2000, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1471	1635	1534	1519	1514	1407	1213	1316	1349	1452	1290	1265
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 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1942 - 2000
ANNUAL TOTAL	887773	633183	
ANNUAL MEAN	2432	1730	1413 ^a
HIGHEST ANNUAL MEAN			2269
LOWEST ANNUAL MEAN			277
HIGHEST DAILY MEAN	3730	May 22	4610
LOWEST DAILY MEAN	456	Mar 31	.00 ^b
ANNUAL SEVEN-DAY MINIMUM	520	Mar 26	24
INSTANTANEOUS PEAK FLOW			12500 ^c
INSTANTANEOUS PEAK STAGE			15.20 ^d
INSTANTANEOUS LOW FLOW			119 ^e
ANNUAL RUNOFF (AC-FT)	1761000	1256000	1024000
ANNUAL RUNOFF (CFSM)	.72	.51	.42
ANNUAL RUNOFF (INCHES)	9.80	6.99	5.70
10 PERCENT EXCEEDS	3150	3000	2400
50 PERCENT EXCEEDS	2520	1770	1420
90 PERCENT EXCEEDS	1570	612	374

- ^a Average based on 117 years of record is 1,220 ft³/s; median of annual mean discharges is 1,200 ft³/s.
- ^b Many days, several years.
- ^c Gage height, 9.34 ft.
- ^d From rating curve extended above 4,500 ft³/s.
- ^e Estimated.
- ^f Backwater from ice.
- ^g From floodmark; result of dam failure.
- ^h Result of regulation.

