

UPPER MISSISSIPPI RIVER MAIN STEM

05378500 MISSISSIPPI RIVER AT WINONA, MN

LOCATION.--Lat 4403'21", long 9138'16", in sec. 23, T.107 N., R.7 W., Winona County, Hydrologic Unit 07040003, on right bank at Winona pumping station in Winona, 9.5 mi upstream from Trempealeau River, and at mile 725.7 upstream from the Ohio River.

DRAINAGE AREA.--59,200 mi², approximately.

PERIOD OF RECORD.--June 1928 to current year. Gage-height records collected in this vicinity since 1878 are contained in reports of Mississippi River Commission.

GAGE.--Water-stage recorder. Datum of gage is 639.64 ft above mean sea level. June 10, 1928 to Apr. 15, 1931, nonrecording gage at site 800 ft upstream. Prior to Oct. 1, 1929, at datum 0.20 ft higher and Oct. 1, 1929 to Apr. 15, 1931, at datum 0.12 ft lower. Apr. 16, 1931 to Nov. 12, 1934, nonrecording gage at present site and datum. Since Mar. 31, 1937, auxiliary water-stage recorder 2.7 mi upstream at tailwater of navigation dam 5A.

REMARKS.-- Records good except those for estimated days, which are fair to poor. Some regulation by reservoirs, navigation dams, and power plants at low and medium stages. Daily discharges for some days provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Minimum gage height, -3.38 ft, Aug. 31, 1934 (prior to dam construction in 1936); minimum gage height since 1938, after completion of dam, 1.95 ft, Jan. 27, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 18, 1880, reached an elevation of 657.14 ft, discharge, 172,000 ft³/s, from information by U.S. Army Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	e26000	21900	21800	16800	19900	52000	75600	46500	29800	75800	21900
2	e20000	22800	21800	16400	19400	60900	90500	42600	28400	70100	19400
3	e18000	23800	22200	16700	18300	66800	103000	42000	29400	67300	19400
4	e19000	25200	22300	17500	18100	69500	113000	40100	28200	66200	20900
5	e19000	25900	22200	18900	18100	69600	117000	36200	29300	65000	25900
6	e20000	26000	22200	19800	16900	68200	117000	34700	29300	61800	22200

7	e22000	26000	22000	20100	16200	64200	115000	33400	29200	58700	18
8	21800	25700	22000	19500	16800	62400	112000	34900	29100	54900	16
9	21900	25700	22200	18400	17100	58700	109000	34900	29200	52200	18
10	20800	25500	22000	e16000	17000	51100	105000	32600	29200	49800	28
11	20000	25600	21800	e14000	17700	49400	101000	31400	26600	47000	23
12	19600	24600	21800	e12700	18100	47400	97700	29800	25900	44400	16
13	24300	23600	21900	e12400	18000	40700	95200	29100	26800	42300	17
14	28200	23300	21800	e12000	18500	35900	92700	29500	27000	40800	18
15	30600	23800	21000	e13000	18300	33900	88100	29000	25500	37600	19
16	32100	24400	20700	e15000	17700	32500	85200	29700	26500	36100	17
17	32300	23900	20400	e17000	17400	31900	80800	30600	29500	34500	17
18	31300	23100	20000	e19000	19400	32600	77000	30800	30700	33300	20
19	30800	21800	20300	22800	24300	33300	74500	32500	32900	33000	21
20	30400	19300	20700	23200	29900	33800	72400	36000	32800	32000	21
21	28100	17400	21000	23200	31600	31300	70000	34900	29900	31900	20
22	27900	18800	20800	23200	32600	29300	67300	33900	32600	32000	20
23	26800	23500	20100	23400	33100	29000	65300	33300	35400	30800	25
24	24600	23500	18900	23700	34400	26900	63600	33500	36700	29400	27
25	24800	22500	18800	23600	36100	25900	60200	34100	40400	27400	22
26	26100	22200	18600	23300	39500	26700	57300	32400	44800	26600	18
27	27700	21800	18100	22900	44600	29200	55900	27500	51000	25300	19
28	26200	21700	17500	21300	46900	33400	52800	27600	66100	22900	20
29	24100	22000	17100	20700	---	39000	49900	29700	76400	21300	20
30	23200	21700	16900	21000	---	51700	47200	30100	81400	21100	18
31	22700	---	17300	20400	---	64700	---	32300	---	21500	17
TOTAL	770300	697000	636200	587900	675900	1381900	2511200	1035600	1070000	1293000	63
MEAN	24850	23230	20520	18960	24140	44580	83710	33410	35670	41710	20
MAX	32300	26000	22300	23700	46900	69600	117000	46500	81400	75800	28
MIN	18000	17400	16900	12000	16200	25900	47200	27500	25500	21100	16
AC-FT	1528000	1382000	1262000	1166000	1341000	2741000	4981000	2054000	2122000	2565000	12

CFSM	.42	.39	.35	.32	.41	.75	1.41	.56	.60	.70	.35
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e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22640	22960	17750	15290	15540	30660	61750	48500	39120	31740	21430	22440
MAX	85950	50040	40440	30480	35900	86420	152600	111500	100200	118800	67560	69490
(WY)	1987	1972	1992	1983	1984	1983	1965	1986	1993	1993	1993	1986
MIN	6774	7367	6286	6742	7874	9023	12810	11930	8450	7063	5391	6790
(WY)	1934	1934	1934	1940	1977	1934	1931	1931	1934	1934	1934	1933

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1928 - 1998		
ANNUAL TOTAL	16004800		11755800				
ANNUAL MEAN	43850		32210		29180		
HIGHEST ANNUAL MEAN					56850		1986
LOWEST ANNUAL MEAN					9742		1934
HIGHEST DAILY MEAN	194000	Apr 12	117000	Apr 5	264000	Apr 20	1965
LOWEST DAILY MEAN	16900	Dec 30	12000a	Jan 14	2250	Dec 29	1933
ANNUAL SEVEN-DAY MINIMUM	17800	Dec 25	13600	Jan 10	3210	Dec 27	1933
INSTANTANEOUS PEAK FLOW			118000	Apr 5	268000	Apr 19	1965
INSTANTANEOUS PEAK STAGE			13.03	Apr 5	20.77b	Apr 19	1965
INSTANTANEOUS LOW FLOW					1940c	Dec 12	1980
ANNUAL RUNOFF (AC-FT)	31750000		23320000		21140000		
ANNUAL RUNOFF	.74		.54		.49		

(CFSM)							
10 PERCENT EXCEEDS	73400		64400		60400		
50 PERCENT EXCEEDS	30000		25300		21000		
90 PERCENT EXCEEDS	21800		16700		9940		

a Estimated, result of freezeup.

b From highwater mark.

c Result of ice jam upstream.

