

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05378500 MISSISSIPPI RIVER AT WINONA, MN

LOCATION.--Lat 44°03'21", long 91°38'16", 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 sea level (NGVD of 1929). 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 for discharges above 50,000 cfs are good while records for discharge below 50,000 cfs are fair to poor. Some regulation by reservoirs, navigation dams, and power plants at low and medium stages. Daily discharges for some days were based in part on instantaneous discharges obtained from the U.S. Army Corps of Engineers for Lock and Dam 5A.

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.

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	15500	22100	33000	17000	18100	17400	35300	67400	41200	65800	42100	47000
2	15600	22500	31000	18000	18500	17600	38000	66200	39500	64600	41800	46700
3	15000	22100	28000	19000	17800	17900	41500	65300	40100	64700	41200	45500
4	15400	20600	30000	20000	17500	20300	40900	62700	46000	63400	43000	46300
5	15300	19100	32000	20000	16600	20800	39200	61400	47300	59900	45800	47700
6	15200	18700	33000	21000	16600	19300	38800	56600	50000	56800	46800	49300
7	14200	19200	33000	21000	16500	18300	37100	54300	51400	56300	49500	50900
8	12400	18500	34000	23000	18300	18100	38200	53000	52000	54900	50800	53200
9	12000	19200	39000	24000	19000	18400	39600	54100	52000	52500	50600	57100
10	16300	18800	40000	27000	18300	19400	40900	55200	51000	50700	49100	60800
11	18100	19300	38000	25000	18500	20600	43700	58300	50500	50800	48100	61200
12	18100	19000	37000	24000	17500	21900	50200	63600	50600	53300	47900	57600
13	18100	18700	36000	22900	18100	26100	57000	69300	49200	55100	47800	55000
14	18700	18700	33000	22200	17500	27700	66100	73400	47700	56000	45700	52900
15	19800	18600	31000	22300	17100	27700	82100	74000	47500	57400	43000	52300
16	20600	18900	31000	21900	17000	27900	101000	74100	43500	58100	41600	49100
17	21300	18700	31000	21900	17600	26700	115000	73900	42800	57400	40500	46700
18	21400	19100	30000	21000	17600	25800	121000	73000	42600	57300	40800	44600
19	20800	19600	29000	19600	19000	25200	124000	71400	41800	57100	40800	44200
20	20100	19400	27000	18900	22500	25300	122000	68600	41000	55900	40900	42100
21	19400	19400	24000	17800	23500	25600	117000	65900	42500	55700	41300	40200
22	19800	19700	22000	17800	23800	26100	111000	61700	46000	55500	47700	37500
23	20000	19500	23000	18800	24000	26500	105000	57800	52000	53200	53900	36000
24	20100	19800	24000	20100	24900	25600	99100	56800	56000	51100	56300	36000
25	19700	23300	22000	20200	24900	22700	92900	53800	57700	48900	57600	36400
26	19300	24600	16000	20100	24400	21600	84800	51700	60600	48600	58200	37100
27	18500	24300	13000	19700	22600	22100	78900	50700	64000	47500	57800	37400
28	16100	30000	13000	19600	19200	21600	76700	48400	66600	45000	55700	36900
29	15200	37000	14000	19300	---	24000	74100	46500	66800	43400	53000	37500
30	17000	37000	17000	19100	---	28200	69800	42600	66600	44100	51600	37000
31	20300	---	17000	18400	---	31400	---	42000	---	43900	48500	---
TOTAL	549300	645400	861000	640600	546900	717800	2180900	1873700	1506500	1684900	1479400	1382200
MEAN	17720	21510	27770	20660	19530	23150	72700	60440	50220	54350	47720	46070
MAX	21400	37000	40000	27000	24900	31400	124000	74100	66800	65800	58200	61200
MIN	12000	18500	13000	17000	16500	17400	35300	42000	39500	43400	40500	36000
AC-FT	1090000	1280000	1708000	1271000	1085000	1424000	4326000	3716000	2988000	3342000	2934000	2742000
CFSM	0.30	0.36	0.47	0.35	0.33	0.39	1.23	1.02	0.85	0.92	0.81	0.78

05378500 MISSISSIPPI RIVER AT WINONA, MN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22370	23050	17870	15460	15740	30500	62660	49650	40070	32330	21990	22630
MAX	85950	50040	40440	30480	35900	86420	152600	119800	100200	118800	67560	69490
(WY)	1987	1972	1992	1983	1984	1983	1965	2001	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 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1928 - 2002
ANNUAL TOTAL	17268900	14068600	
ANNUAL MEAN	47310	38540	29560
HIGHEST ANNUAL MEAN			56850
LOWEST ANNUAL MEAN			9742
HIGHEST DAILY MEAN	236000	Apr 17	124000
LOWEST DAILY MEAN	12000	Oct 9	12000
ANNUAL SEVEN-DAY MINIMUM	14200	Oct 3	14200
MAXIMUM PEAK FLOW			124000
MAXIMUM PEAK STAGE			13.51
INSTANTANEOUS LOW FLOW			1940b
ANNUAL RUNOFF (AC-FT)	34250000	27910000	21410000
ANNUAL RUNOFF (CFSM)	0.80	0.65	0.50
10 PERCENT EXCEEDS	106000	63800	60700
50 PERCENT EXCEEDS	23000	37000	21300
90 PERCENT EXCEEDS	17700	18000	10000

a From highwater mark.
 b Result of ice jam upstream.

