

## 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 mi<sup>2</sup> (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 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 estimated days were based on instantaneous discharges furnished by the U.S. Army Corps of Engineers from 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 2000 TO SEPTEMBER 2001  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10700	e16000	e26400	e22800	e22900	e20400	e35400	211000	83100	78500	27700	17700
2	10300	e15600	e26200	e23000	e23300	e20400	e35700	205000	81300	73900	28800	18200
3	10800	e22700	e24900	e23100	e21600	e20500	e37100	198000	79100	70100	32100	17700
4	10800	e24400	e22300	e22900	e21600	e21600	e41400	191000	77700	65100	34700	17700
5	10800	e24600	e22400	e22800	e21500	e21600	e49400	184000	76100	59000	36500	17400
6	10400	e24300	e12400	e22600	e19400	e21400	e58300	175000	74400	50900	38100	15700
7	10500	e24400	e11000	e22700	e19600	e21400	e59700	166000	71700	48000	36900	14500
8	10300	e27700	e12200	e22600	e19700	e21400	66700	156000	69800	45100	31800	16200
9	9910	e34100	e12600	e22500	e21700	e20500	77700	147000	67300	43100	28800	18800
10	9610	e39800	e12900	e22300	e23600	e20500	94500	138000	65100	42600	25700	20000
11	e9500	e38600	e15400	e22100	e22300	e20600	116000	131000	62100	39300	21100	20300
12	e10300	e36200	e16000	e22200	e20500	e20700	141000	124000	60800	36500	19800	18600
13	e15100	e38200	e15700	e22300	e20400	e21600	165000	118000	61800	33400	19700	18200
14	e18800	e39100	e13900	e22500	e20400	e22600	186000	112000	65100	29900	19400	17600
15	e15200	e38700	e13300	e22900	e20500	e22800	207000	109000	70900	27500	19000	15200
16	e10100	e37900	e13300	e23100	e20600	e24900	227000	105000	77400	25400	18600	15500
17	e9200	e37700	e13400	e23000	e20700	e26100	236000	101000	83200	25900	20300	15800
18	e8800	e37900	e13400	e22800	e20600	e26100	232000	96200	84700	29400	20500	15300
19	e14100	e36900	e15000	e22800	e20500	e25800	224000	90700	84500	30700	21100	15400
20	e14000	e34600	e16100	e22500	e20500	e24200	215000	85400	85600	30700	21500	15800
21	e14000	e35200	e16200	e22300	e20500	e24200	207000	82900	89900	30500	21900	16100
22	e14000	e31000	e17300	e21500	e20400	e25700	201000	79700	95600	29600	21800	16700
23	e14100	e29100	e17300	e18900	e20400	e30000	195000	76200	102000	29600	20100	17800
24	e16300	e26900	e17200	e18800	e20400	e30800	192000	74600	106000	30800	19900	18700
25	e16100	e23100	e17100	e19000	e20600	e30600	191000	74900	106000	31100	18900	19800
26	e16100	e21800	e17000	e19100	e20700	e29700	196000	75100	105000	30500	19900	20300
27	e16200	e24000	e17000	e20200	e20600	e28700	206000	76300	102000	29300	19200	18700
28	e15600	e23600	e16900	e21200	e20500	e27000	217000	78900	96900	28000	18600	16800
29	e15700	e26000	e17000	e21100	---	e27100	221000	82000	90700	27900	18900	15300
30	e15400	e28000	e17300	e21100	---	e30800	218000	84500	85100	28100	18600	15300
31	e16100	---	e17400	e21200	---	e34600	---	84500	---	28100	16800	---
TOTAL	398820	898100	516500	677900	586000	764300	4548900	3712900	2460900	1208500	736700	517100
MEAN	12870	29940	16660	21870	20930	24650	151600	119800	82030	38980	23760	17240
MAX	18800	39800	26400	23100	23600	34600	236000	211000	106000	78500	38100	20300
MIN	8800	15600	11000	18800	19400	20400	35400	74600	60800	25400	16800	14500
AC-FT	791100	1781000	1024000	1345000	1162000	1516000	9023000	7365000	4881000	2397000	1461000	1026000
CFSM	.22	.51	.28	.37	.35	.42	2.56	2.02	1.39	.66	.40	.29

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22430	23070	17730	15390	15690	30600	62520	49510	39930	32030	21650	22330
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1928 - 2001
ANNUAL TOTAL	8910020	17026620	
ANNUAL MEAN	24340	46650	29440
HIGHEST ANNUAL MEAN			56850
LOWEST ANNUAL MEAN			9742
HIGHEST DAILY MEAN	62500	Jul 14	236000
LOWEST DAILY MEAN	8800	Oct 18	8800
ANNUAL SEVEN-DAY MINIMUM	10100	Oct 6	10100
MAXIMUM PEAK FLOW			237000
MAXIMUM PEAK STAGE			20.07
INSTANTANEOUS LOW FLOW			20.77a
ANNUAL RUNOFF (AC-FT)	17670000	33770000	1940b
ANNUAL RUNOFF (CFSM)	.41	.79	21320000
10 PERCENT EXCEEDS	41800	106000	60500
50 PERCENT EXCEEDS	21900	23000	21200
90 PERCENT EXCEEDS	13000	15300	10000

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

