

UPPER MISSISSIPPI RIVER MAIN STEM

05243725 STRAIGHT RIVER NEAR PARK RAPIDS, MN

LOCATION.--Lat 4652'30", long 9503'56", in NW 1 / 4 NE 1 / 4 sec. 11, T. 139 N., R. 35 W., Hubbard County, Hydrologic Unit 07010106, upstream from culvert on U.S. Highway 71 3.2 mi south of Park Rapids.

DRAINAGE AREA.--53.2 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1970-71, 1973, 1975-76. October 1986 to current year (no winter records in 1987, 1990-91). May 1988 through August 1989, records of hourly water temperature (available in files of the Geological Survey).

GAGE.--Water-stage recorder. Datum of gage is 1,399.55 ft above mean sea level (levels by Minnesota Department of Natural Resources).

REMARKS.--Records good except those for estimated daily discharges, which are fair.

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	SEP
1	77	81	72	e68	e68	e94	72	58	69	79	62	68
2	77	81	72	e68	e67	e88	73	58	67	75	61	70
3	77	81	e72	e68	e66	e83	72	57	66	72	61	68
4	77	80	e73	e68	e66	e78	69	57	63	68	60	65
5	77	78	e74	e68	e66	e74	68	56	62	69	61	65
6	77	78	e73	e68	e67	e74	68	57	61	70	60	66
7	77	77	e72	e68	e65	e74	69	57	60	77	60	65
8	78	78	e71	e68	e65	e72	68	59	59	82	60	64
9	80	78	e70	e68	e65	e70	67	59	58	79	58	62
10	81	79	e70	e68	e65	e68	65	59	59	76	58	61
11	86	78	e69	e68	e65	e67	65	59	61	74	57	61
12	89	74	e69	e68	e64	e66	64	63	66	72	58	62

13	99	80	e69	e68	e65	e66	67	69	67	69	57	66
14	100	79	e69	e68	e65	e65	66	71	68	69	57	73
15	98	79	e69	e68	e66	e64	65	71	69	70	58	73
16	94	e78	e69	e68	e67	e64	64	91	68	68	59	73
17	90	e78	e69	e68	e69	e64	63	84	69	66	62	70
18	87	e77	e69	e68	e69	e64	62	75	72	65	63	69
19	85	e77	e69	e68	e69	e71	62	70	81	65	65	69
20	83	e77	e69	e68	e70	e66	61	66	83	65	65	68
21	81	e79	e69	e67	e70	e68	61	63	81	70	64	66
22	79	e80	e69	e67	e70	69	61	61	77	73	64	65
23	78	e81	e69	e70	e70	69	60	59	72	71	64	64
24	78	e79	e69	e69	e73	68	59	57	71	67	63	63
25	82	e77	e69	e69	e77	69	58	56	69	65	62	64
26	81	75	e69	e70	e82	69	57	55	67	66	62	72
27	80	71	e69	e69	e89	69	57	56	76	66	62	75
28	79	72	e69	e69	e95	68	57	59	91	64	63	74
29	79	73	e69	e68	---	68	57	57	87	65	63	72
30	79	72	e68	e68	---	73	57	67	81	63	63	75
31	80	---	e68	e68	---	72	---	73	---	61	63	---
TOTAL	2565	2327	2166	2114	1955	2194	1914	1959	2100	2161	1895	2028
MEAN	82.7	77.6	69.9	68.2	69.8	70.8	63.8	63.2	70.0	69.7	61.1	67.6
MAX	100	81	74	70	95	94	73	91	91	82	65	75
MIN	77	71	68	67	64	64	57	55	58	61	57	61
AC-FT	5090	4620	4300	4190	3880	4350	3800	3890	4170	4290	3760	4020
CFSM	1.56	1.46	1.31	1.28	1.31	1.33	1.20	1.19	1.32	1.31	1.15	1.27
IN.	1.79	1.63	1.51	1.48	1.37	1.53	1.34	1.37	1.47	1.51	1.33	1.42

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

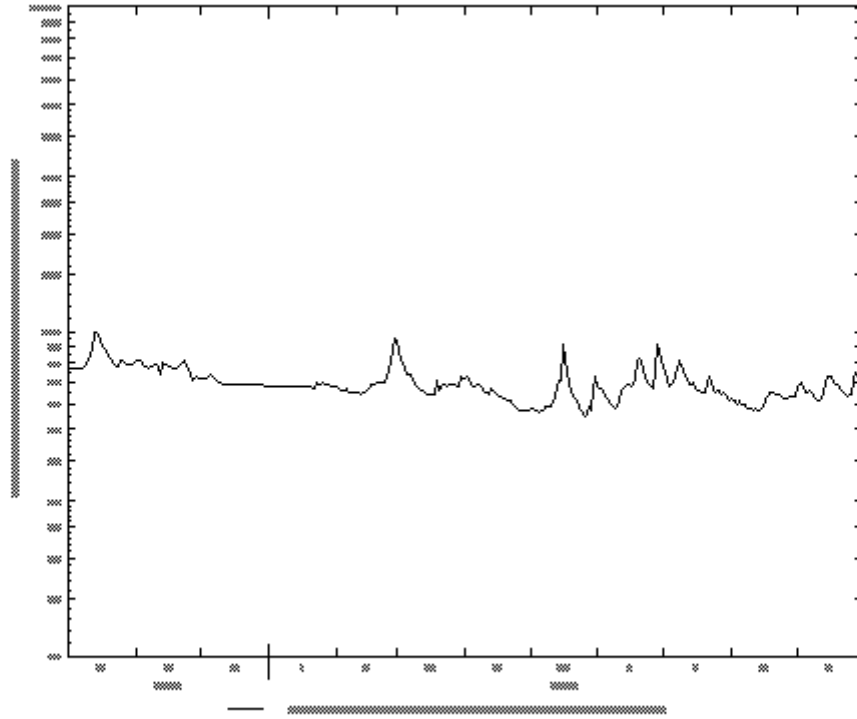
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	61.9	63.1	59.5	53.5	55.1	62.4	70.7	65.0	58.4	57.6	54.3	58.4
MAX	83.1	77.6	74.5	68.2	69.8	76.8	101	82.1	70.4	81.5	74.7	76.4
(WY)	1996	1998	1995	1998	1998	1995	1997	1996	1997	1997	1993	1997
MIN	42.2	47.4	46.0	41.9	44.8	50.9	56.1	46.2	41.9	39.5	35.9	38.7
(WY)	1993	1989	1989	1992	1992	1989	1991	1992	1992	1988	1990	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998		
ANNUAL TOTAL	26960		25378				
ANNUAL MEAN	73.9		69.5		61.2		
HIGHEST ANNUAL MEAN					70.7		1997
LOWEST ANNUAL MEAN					48.0		1992
HIGHEST DAILY MEAN	144	Apr 6	100	Oct 14	144	Apr 6	1997
LOWEST DAILY MEAN	55	Jun 14	55	May 26	28	Jan 9	1992
ANNUAL SEVEN-DAY MINIMUM	58	Mar 18	57	May 23	34	Aug 5	1990
INSTANTANEOUS PEAK FLOW			101	Oct 14	149	Apr 6	1997
INSTANTANEOUS PEAK STAGE			2.04	Oct 14	2.84a	Mar 6	1994
INSTANTANEOUS LOW FLOW			53	May 29, Aug 13	25b	Jan 9	1992
ANNUAL RUNOFF (AC-FT)	53480		50340		44360		
ANNUAL RUNOFF (CFSM)	1.39		1.31		1.15		
ANNUAL RUNOFF (INCHES)	18.85		17.75		15.64		
10 PERCENT EXCEEDS	93		80		77		

50 PERCENT EXCEEDS	72		68		59		
90 PERCENT EXCEEDS	60		60		44		

a From floodmark, backwater from ice.

b Result of freezeup.



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