

## ST. CROIX RIVER BASIN

05333579 UPPER TAMARACK RIVER AT COUNTY ROAD 25 NEAR MARKVILLE, MN

LOCATION.--Lat 46°05'30", long 92°18'32", in NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 25, T. 42 N., R. 16 W., Pine County, Hydrologic Unit 07030001, at County Highway 25 bridge, 1 mile east of Markville.

DRAINAGE AREA.--63.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to November 1999.

GAGE.--Water-stage recorder.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e27	e33	e37	e13	11	15	280	45	19	101	665	58
2	e30	e33	e35	e13	12	15	257	39	19	91	573	50
3	e31	e32	33	e13	12	15	230	34	17	94	536	44
4	e28	e31	32	e14	12	14	326	31	15	112	627	41
5	e28	e30	45	e13	11	13	406	35	32	144	540	55
6	e39	e29	72	e12	10	13	548	79	115	172	393	77
7	e34	e28	87	e11	10	12	618	186	207	168	300	75
8	e32	e27	e80	e11	12	11	586	238	198	160	246	147
9	e30	e27	e70	e10	13	12	502	223	152	148	182	215
10	e29	e52	e60	e9.6	14	12	408	183	112	140	126	219
11	e28	e80	e52	e9.0	15	12	367	151	123	134	139	151
12	e35	e72	e49	e9.4	16	11	335	171	182	112	175	132
13	e35	e66	e45	e10	15	11	311	174	175	89	381	135
14	e27	e58	e40	e11	15	12	266	160	137	75	324	134
15	e25	e54	e35	e11	15	14	176	135	99	63	270	116
16	e40	e50	e28	e12	15	19	224	115	75	59	198	96
17	e64	e46	e26	e14	15	22	237	110	58	69	97	83
18	e74	e44	e24	e15	14	25	223	108	46	90	107	73
19	e56	e54	e22	e14	14	31	201	98	37	100	123	70
20	e47	e66	e21	e13	13	37	178	93	32	82	115	75
21	e39	e52	e20	e12	12	49	159	89	25	69	102	71
22	e36	e54	e18	e12	11	56	142	80	53	58	93	64
23	e37	e60	e17	e12	11	67	125	74	123	75	151	55
24	e30	e74	e17	e12	10	76	111	70	178	138	254	48
25	e32	e68	e16	e11	11	80	97	65	184	153	209	43
26	e35	e62	e17	e10	11	83	85	56	175	444	159	54
27	e37	e60	e16	e10	12	90	76	47	148	760	131	79
28	e34	e54	e15	e11	13	161	67	39	121	869	112	85
29	e35	e48	e16	13	---	291	60	33	112	594	95	76
30	e40	e42	e15	12	---	290	52	26	104	415	79	65
31	e39	---	e14	11	---	302	---	22	---	576	68	---
TOTAL	1133	1486	1074	364.0	355	1871	7653	3009	3073	6354	7570	2686
MEAN	36.5	49.5	34.6	11.7	12.7	60.4	255	97.1	102	205	244	89.5
MAX	74	80	87	15	16	302	618	238	207	869	665	219
MIN	25	27	14	9.0	10	11	52	22	15	58	68	41
AC-FT	2250	2950	2130	722	704	3710	15180	5970	6100	12600	15020	5330

e Estimated

05333579 UPPER TAMARACK RIVER AT COUNTY ROAD 25 NEAR MARKVILLE, MN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

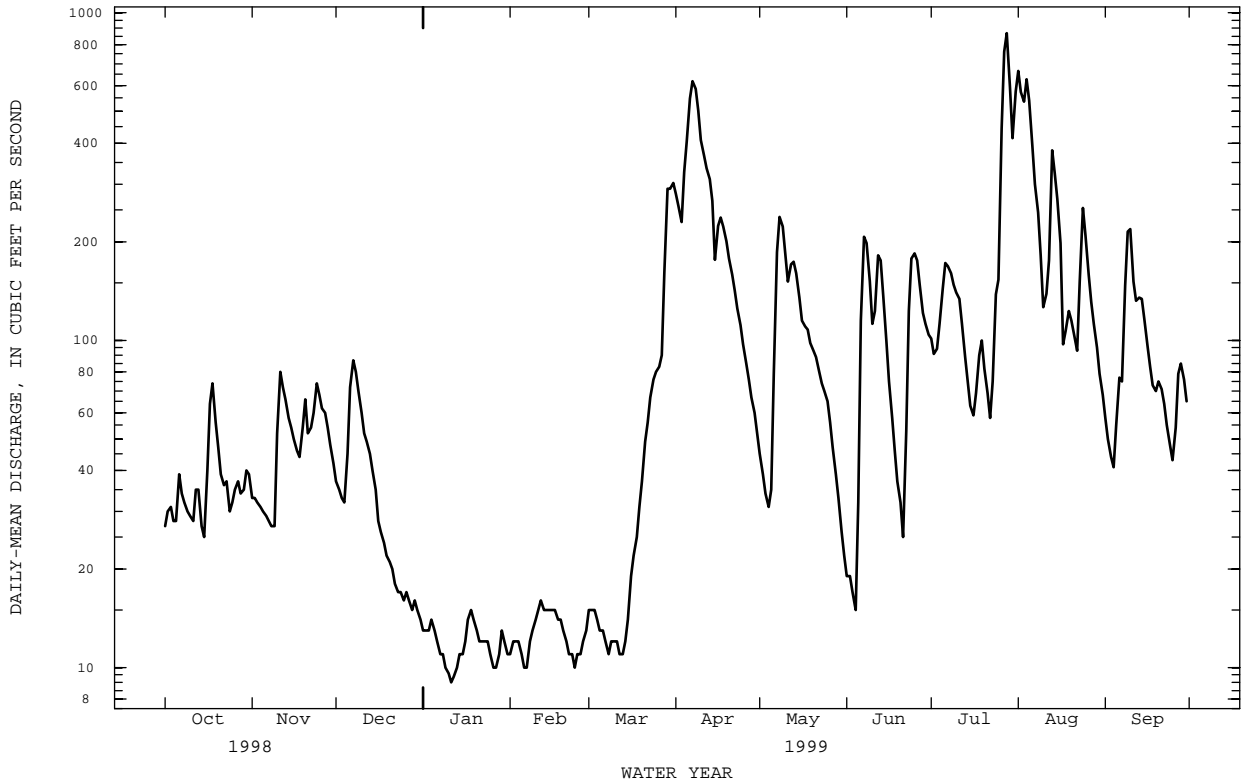
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.5	49.5	34.6	11.7	12.7	60.4	255	97.1	102	205	244	89.5
MAX	36.5	49.5	34.6	11.7	12.7	60.4	255	97.1	102	205	244	89.5
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	36.5	49.5	34.6	11.7	12.7	60.4	255	97.1	102	205	244	89.5
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

SUMMARY STATISTICS

FOR 1999 WATER YEAR

ANNUAL TOTAL	36628.0
ANNUAL MEAN	100
HIGHEST DAILY MEAN	869 Jul 28
LOWEST DAILY MEAN	9.0 Jan 11a
ANNUAL SEVEN-DAY MINIMUM	10 Jan 7
INSTANTANEOUS PEAK FLOW	937 Jul 28
INSTANTANEOUS PEAK STAGE	8.21 Jul 28
ANNUAL RUNOFF (AC-FT)	72650
10 PERCENT EXCEEDS	233
50 PERCENT EXCEEDS	
90 PERCENT EXCEEDS	55
	12

a Estimated daily-mean.



## ST. CROIX RIVER BASIN--Continued

05333579 UPPER TAMARACK RIVER AT CO. RD. 25 NR MARKVILLE, MN--Continued  
(National Water Quality Assessment Program)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1998 to September 1999.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED WATER (MG/L) (00300)	NITRO- GEN, DIS- SOLVED AMMONIA (MG/L AS N) (00608)	NITRO- GEN, DIS- SOLVED NITRITE (MG/L AS N) (00613)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)
NOV									
23...	1500	60	107	7.9	2.6	7.6	.029	<.010	.71
DEC									
10...	1220	60	97	7.5	.1	5.0	.025	<.010	.68
JAN									
14...	1545	11	358	7.7	.6	12.6	.069	.014	.91
FEB									
24...	1250	10	206	7.3	-.1	--	.129	<.010	.81
MAR									
12...	1440	12	192	6.8	-.1	12.7	.096	<.010	.64
29...	1610	300	77	7.0	1.6	13.5	.108	<.010	.83
APR									
07...	0950	564	40	6.4	2.6	12.9	.030	<.010	.87
29...	1300	59	62	7.9	14.7	10.9	.031	<.010	.82
MAY									
12...	1300	174	52	7.4	11.9	10.9	<.020	<.010	1.1
JUN									
10...	1630	104	62	7.8	22.4	7.7	<.020	<.010	1.2
24...	1040	178	56	7.1	20.0	8.7	<.020	<.010	1.2
JUL									
09...	1010	1010	62	7.4	19.1	8.8	.021	<.010	1.6
26...	1200	397	52	7.0	23.1	8.1	<.020	<.010	1.4
26...	1630	572	--	--	--	--	--	--	--
AUG									
11...	1145	120	69	7.4	19.3	9.0	.038	<.010	1.3
SEP									
08...	1315	101	78	7.5	19.8	9.2	<.020	<.010	1.1

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV								
23...	.72	.189	E.030	<0.05	<.010	3.5	15	62
DEC								
10...	.80	.148	<.050	<0.05	.012	2.9	1	67
JAN								
14...	.95	2.70	.025	.019	.017	12	5	84
FEB								
24...	.79	.209	.029	.021	.015	8.4	2	70
MAR								
12...	.63	.241	.027	.020	.018	8.1	3	59
29...	1.6	.383	.124	.023	.010	2.2	52	79
APR								
07...	.38	.224	.043	.021	<.010	1.3	11	61
29...	2.0	<.050	.020	.014	.017	2.4	7	44
MAY								
12...	2.5	<.050	.025	.014	<.010	1.4	6	75
JUN								
10...	3.1	.071	.047	.026	.018	1.4	7	91
24...	1.3	.067	.060	.036	.020	1.2	64	22
JUL								
09...	1.6	.104	.074	.044	<.010	1.4	--	--
26...	1.6	.107	.100	.042	<.010	.56	23	63
26...	--	--	.108	--	--	--	--	--
AUG								
11...	1.3	.113	.075	.037	.011	1.4	8	83
SEP								
08...	1.2	.128	.064	.038	.012	1.9	5	96

