

## UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05284000 MILLE LACS LAKE AT COVE BAY NEAR ONAMIA, MN

LOCATION.--Lat 46°06'36", long 93°37'08", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 21, T.42 N., R.26 W., Mille Lacs County, Hydrologic Unit 07010207, in Minnesota Department of Natural Resources boathouse at Cove Bay boatlanding, 3.6 mi northeast of Onamia.

PERIOD OF RECORD.--June 1931 to current year. Monthend records for the period October 1939 to September 1953 published in WSP 1278 (fragmentary 1940-41). Published as "at Wealthwood" prior to October 1939, and as "at Garrison" October 1939 to September 1987 (gage heights collected at Wealthwood October 1939 to September 1941, but converted to gage datum at Garrison for publication).

GAGE.--Water-stage recorder. Datum of gage is 1,240.40 ft above sea level (levels by Minnesota Department of Natural Resources). Gage readings have been reduced to elevations above sea level. Prior to Oct. 1, 1941, non-recording gage at Wealthwood, 17 mi north of present site, at various datums; gage readings have been reduced to elevations, adjustment of 1912. Oct. 1, 1941 to Sept. 30, 1958, water-stage recorder at Garrison, 16 mi northwest of present site at datum 1,240.50 ft, adjustment of 1912. To convert these readings to National Geodetic Vertical Datum of 1929, subtract 0.10 ft. Oct. 1, 1958 to Sept. 30, 1987, water-stage recorder at Garrison at present datum.

REMARKS.--Water level affected by fixed-crest spillway constructed in 1953 at outlet of Ogechie Lake, 2.7 mi downstream from outlet of Mille Lacs Lake, with crest at elevation 1,250.50 ft. Water level subject to fluctuation caused by seiches.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height, 13.47 ft, Aug. 14, 1972 (affected by seiche action); maximum daily, 13.03 ft, Aug. 22, 1972; minimum gage-height observed, 5.34 ft (present datum) Oct. 16-19, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height, 12.12 ft, July 9, affected by wind and seiche action; maximum daily, 11.51 ft, Aug. 13; minimum gage height, 9.70 ft, Nov. 18; minimum daily, 9.92 ft, Nov. 9.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

| DAY  | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1    | 10.35 | 10.04 | 10.12 | 10.16 | 10.21 | 10.12 | 10.33 | 10.53 | 11.11 | 11.38 | 11.38 | 11.07 |
| 2    | 10.28 | 10.02 | 10.13 | 10.18 | 10.20 | 10.12 | 10.34 | 10.51 | 11.11 | 11.36 | 11.31 | 11.08 |
| 3    | 10.25 | 10.02 | 10.14 | 10.18 | 10.21 | 10.12 | 10.35 | 10.47 | 11.07 | 11.36 | 11.33 | 11.07 |
| 4    | 10.16 | 10.00 | 10.15 | 10.17 | 10.20 | 10.13 | 10.39 | 10.47 | 11.05 | 11.39 | 11.36 | 11.06 |
| 5    | 10.16 | 9.99  | 10.20 | 10.19 | 10.19 | 10.15 | 10.40 | 10.53 | 11.18 | 11.43 | 11.30 | 11.11 |
| 6    | 10.21 | 9.97  | 10.21 | 10.22 | 10.19 | 10.15 | 10.46 | 10.60 | 11.17 | 11.45 | 11.27 | 11.05 |
| 7    | 10.30 | 9.95  | 10.15 | 10.21 | 10.18 | 10.15 | 10.47 | 10.75 | 11.23 | 11.41 | 11.33 | 11.03 |
| 8    | ---   | 9.94  | 10.16 | 10.21 | 10.17 | 10.17 | 10.48 | 10.72 | 11.23 | 11.37 | 11.34 | 11.07 |
| 9    | ---   | 9.92  | 10.19 | 10.21 | 10.18 | 10.20 | 10.49 | 10.66 | 11.23 | 11.46 | 11.31 | 11.05 |
| 10   | ---   | 10.21 | 10.15 | 10.22 | 10.17 | 10.20 | 10.47 | 10.64 | 11.30 | 11.42 | 11.36 | 11.04 |
| 11   | ---   | 10.08 | 10.13 | 10.23 | 10.17 | 10.21 | 10.51 | 10.73 | 11.33 | 11.41 | 11.34 | 10.97 |
| 12   | ---   | 10.01 | 10.16 | 10.23 | 10.16 | 10.21 | 10.50 | 10.90 | 11.29 | 11.37 | 11.38 | 10.98 |
| 13   | ---   | 9.94  | 10.16 | 10.23 | 10.16 | 10.22 | 10.50 | 10.99 | 11.35 | 11.37 | 11.51 | 10.97 |
| 14   | ---   | 10.06 | 10.13 | 10.23 | 10.16 | 10.22 | 10.53 | 10.99 | 11.33 | 11.41 | 11.28 | 10.96 |
| 15   | ---   | 9.97  | 10.18 | 10.22 | 10.16 | 10.22 | 10.59 | 11.01 | 11.24 | 11.34 | 11.16 | 10.92 |
| 16   | 10.06 | 10.00 | 10.18 | 10.21 | 10.16 | 10.23 | 10.66 | 11.06 | 11.24 | 11.44 | 11.22 | 10.88 |
| 17   | 10.09 | 9.97  | 10.12 | 10.22 | 10.16 | 10.22 | 10.57 | 11.12 | 11.21 | 11.42 | 11.21 | 10.84 |
| 18   | 10.14 | 10.01 | 10.20 | 10.23 | 10.15 | 10.23 | 10.53 | 11.12 | 11.16 | 11.39 | 11.21 | 10.85 |
| 19   | 10.13 | 10.22 | 10.27 | 10.22 | 10.16 | 10.23 | 10.56 | 11.05 | 11.15 | 11.39 | 11.21 | 10.95 |
| 20   | 10.07 | 10.16 | 10.15 | 10.22 | 10.15 | 10.23 | 10.56 | 11.08 | 11.15 | 11.36 | 11.19 | 10.88 |
| 21   | 10.06 | 10.05 | 10.15 | 10.22 | 10.14 | 10.24 | 10.57 | 11.14 | 11.12 | 11.37 | 11.17 | 10.80 |
| 22   | 10.02 | 10.10 | 10.14 | 10.22 | 10.15 | 10.24 | 10.60 | 11.12 | 11.04 | 11.36 | 11.17 | 10.80 |
| 23   | 10.01 | 10.15 | 10.14 | 10.21 | 10.13 | 10.24 | 10.57 | 11.28 | 11.10 | 11.39 | 11.25 | 10.82 |
| 24   | 10.02 | 10.08 | 10.14 | 10.21 | 10.13 | 10.25 | 10.55 | 11.20 | 11.11 | 11.40 | 11.24 | 10.75 |
| 25   | 10.03 | 10.14 | 10.15 | 10.20 | 10.13 | 10.25 | 10.55 | 11.20 | 11.07 | 11.36 | 11.20 | 10.75 |
| 26   | 10.04 | 10.13 | 10.15 | 10.20 | 10.13 | 10.25 | 10.55 | 11.13 | 11.06 | 11.47 | 11.16 | 10.87 |
| 27   | 10.05 | 10.13 | 10.15 | 10.23 | 10.12 | 10.26 | 10.56 | 11.12 | ---   | 11.41 | 11.19 | 10.88 |
| 28   | 10.05 | 10.14 | 10.16 | 10.21 | 10.12 | 10.28 | 10.56 | 11.12 | ---   | 11.41 | 11.21 | 10.90 |
| 29   | 9.98  | 10.14 | 10.16 | 10.22 | ---   | 10.30 | 10.56 | 11.10 | ---   | 11.42 | 11.14 | 10.84 |
| 30   | 10.09 | 10.16 | 10.16 | 10.21 | ---   | 10.31 | 10.55 | 11.10 | ---   | 11.40 | 11.04 | 10.88 |
| 31   | 10.05 | ---   | 10.16 | 10.21 | ---   | 10.32 | ---   | 11.18 | ---   | 11.48 | 11.02 | ---   |
| MEAN | ---   | 10.06 | 10.16 | 10.21 | 10.16 | 10.22 | 10.51 | 10.92 | ---   | 11.40 | 11.25 | 10.94 |
| MAX  | ---   | 10.22 | 10.27 | 10.23 | 10.21 | 10.32 | 10.66 | 11.28 | ---   | 11.48 | 11.51 | 11.11 |
| MIN  | ---   | 9.92  | 10.12 | 10.16 | 10.12 | 10.12 | 10.33 | 10.47 | ---   | 11.34 | 11.02 | 10.75 |

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