

## RED RIVER OF THE NORTH BASIN--Continued

05067500 MARSH RIVER NEAR SHELLY, MN

LOCATION.--Lat 47°24'45", long 96°45'50", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 3, T.145 N., R.48W., Norman County, Hydrologic Unit 09020107, on left bank, 10 ft downstream of County Road 129 bridge, 3.8 mi southeast of Shelly and 10 mi upstream from mouth.

DRAINAGE AREA.--220 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1944 to September 1983 and April 1985 to current year (no winter records since 1989). Monthly discharge only for March 1944, published in WSP 1308. Operated as a high-flow partial-record station October 1983 to March 1985.

GAGE.--Water-stage recorder. Datum of gage is 841.14 ft above sea level (NGVD of 1929, levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1965, nonrecording gage at datum 3.0 ft higher. Oct. 1, 1965 to May 17, 1989, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Large part of high flow of Wild Rice River diverted into Marsh River basin at overflow section 4.6 mi east of Ada. Another diversion from Wild Rice River basin formed in 1947, 1.5 mi southeast of Ada and diverted water at all stages 1947- 51, after which it was closed except for a small regulated flow diverted for abatement of pollution from Ada sewage plant effluent.

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     | .20    | 17  | --- | --- | --- | --- | 163   | 52    | 18    | 1.5   | 2.2    | .00   |
| 2     | .32    | 29  | --- | --- | --- | --- | 186   | 47    | 20    | 1.2   | 5.1    | .00   |
| 3     | .27    | 37  | --- | --- | --- | --- | 267   | 42    | 19    | 1.1   | 3.7    | .00   |
| 4     | .41    | 58  | --- | --- | --- | --- | 377   | 37    | 16    | 1.2   | 2.1    | .00   |
| 5     | .36    | 68  | --- | --- | --- | --- | 512   | 34    | 12    | 1.1   | 1.6    | .00   |
| 6     | .32    | 70  | --- | --- | --- | --- | 686   | 35    | 11    | 1.3   | .94    | e.00  |
| 7     | .33    | 141 | --- | --- | --- | --- | 1060  | 38    | 11    | 1.3   | .52    | e.62  |
| 8     | .35    | 365 | --- | --- | --- | --- | 1680  | 44    | 10    | 1.1   | 1.1    | e3.0  |
| 9     | .42    | 433 | --- | --- | --- | --- | 2120  | 57    | 8.9   | 1.1   | 1.3    | e18   |
| 10    | .39    | 329 | --- | --- | --- | --- | 2350  | 58    | 7.8   | .74   | 19     | e20   |
| 11    | .28    | 235 | --- | --- | --- | --- | 2300  | 49    | 6.7   | .43   | 104    | e10   |
| 12    | .32    | 171 | --- | --- | --- | --- | 2130  | 42    | 4.6   | .22   | 88     | e6.6  |
| 13    | .35    | 131 | --- | --- | --- | --- | e1700 | 36    | 4.0   | .09   | 53     | e3.8  |
| 14    | 3.4    | 105 | --- | --- | --- | --- | e1200 | 31    | 4.3   | .12   | 31     | e2.0  |
| 15    | 11     | --- | --- | --- | --- | --- | e800  | 27    | e15   | .15   | 19     | e1.2  |
| 16    | 17     | --- | --- | --- | --- | --- | e500  | 25    | 19    | .60   | 10     | e.92  |
| 17    | 15     | --- | --- | --- | --- | --- | e340  | 21    | 16    | .51   | 4.6    | e.86  |
| 18    | 12     | --- | --- | --- | --- | --- | e320  | 17    | 15    | .29   | 2.3    | e.80  |
| 19    | 13     | --- | --- | --- | --- | --- | e280  | 15    | 13    | .16   | 1.3    | e.74  |
| 20    | 13     | --- | --- | --- | --- | --- | e260  | 13    | 13    | .64   | .53    | e.76  |
| 21    | 12     | --- | --- | --- | --- | --- | e230  | 13    | 11    | 1.1   | .13    | e.72  |
| 22    | 10     | --- | --- | --- | --- | --- | e200  | 11    | 10    | 1.6   | .00    | e.68  |
| 23    | 7.1    | --- | --- | --- | --- | --- | e190  | 12    | 8.4   | 1.8   | .00    | e.60  |
| 24    | 6.0    | --- | --- | --- | --- | --- | e170  | 13    | 6.7   | 1.3   | .00    | e.52  |
| 25    | 7.4    | --- | --- | --- | --- | --- | e150  | 10    | 5.0   | 1.5   | .00    | e.48  |
| 26    | 8.9    | --- | --- | --- | --- | --- | e140  | 7.8   | 4.3   | 1.4   | .00    | e.44  |
| 27    | 10     | --- | --- | --- | --- | --- | 116   | 8.2   | 3.0   | 1.2   | .00    | e.42  |
| 28    | 12     | --- | --- | --- | --- | --- | 89    | 13    | 2.6   | 1.2   | .00    | e.38  |
| 29    | 10     | --- | --- | --- | --- | --- | 71    | 18    | 2.5   | .87   | .00    | e.36  |
| 30    | 9.3    | --- | --- | --- | --- | --- | 59    | 18    | 2.0   | .48   | .00    | e.34  |
| 31    | 11     | --- | --- | --- | --- | --- | ---   | 17    | ---   | 1.6   | .00    | ---   |
| TOTAL | 192.42 | --- | --- | --- | --- | --- | 20646 | 861.0 | 299.8 | 28.90 | 351.42 | 74.24 |
| MEAN  | 6.21   | --- | --- | --- | --- | --- | 688   | 27.8  | 9.99  | .93   | 11.3   | 2.47  |
| MAX   | 17     | --- | --- | --- | --- | --- | 2350  | 58    | 20    | 1.8   | 104    | 20    |
| MIN   | .20    | --- | --- | --- | --- | --- | 59    | 7.8   | 2.0   | .09   | .00    | .00   |
| AC-FT | 382    | --- | --- | --- | --- | --- | 40950 | 1710  | 595   | 57    | 697    | 147   |
| CFSM  | .03    | --- | --- | --- | --- | --- | 3.13  | .13   | .05   | .00   | .05    | .01   |
| IN.   | .03    | --- | --- | --- | --- | --- | 3.49  | .15   | .05   | .00   | .06    | .01   |

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2001, BY WATER YEAR (WY)

|      | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 13.4 | 11.0 | 5.60 | 3.79 | 3.29 | 77.5 | 306  | 125  | 85.7 | 74.5 | 18.6 | 12.6 |
| MAX  | 130  | 102  | 77.1 | 64.5 | 62.1 | 437  | 1537 | 2617 | 1030 | 820  | 363  | 144  |
| (WY) | 1952 | 1952 | 1951 | 1951 | 1951 | 1945 | 1950 | 1950 | 1950 | 1950 | 1949 | 1944 |
| MIN  | .000 | .000 | .000 | .000 | .000 | .000 | .078 | .87  | .000 | .000 | .000 | .000 |
| (WY) | 1955 | 1956 | 1956 | 1946 | 1946 | 1964 | 1981 | 1980 | 1980 | 1961 | 1959 | 1954 |

SUMMARY STATISTICS FOR 2000 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1944 - 2001

|                          |  |  |  |      |        |  |       |        |  |        |        |      |
|--------------------------|--|--|--|------|--------|--|-------|--------|--|--------|--------|------|
| ANNUAL MEAN              |  |  |  |      |        |  |       |        |  | 63.3   |        |      |
| HIGHEST ANNUAL MEAN      |  |  |  |      |        |  |       |        |  | 543a   |        | 1950 |
| LOWEST ANNUAL MEAN       |  |  |  |      |        |  |       |        |  | 1.24   |        | 1977 |
| HIGHEST DAILY MEAN       |  |  |  | 1140 | Jun 25 |  | 2350  | Apr 10 |  | 4740   | Apr 19 | 1979 |
| LOWEST DAILY MEAN        |  |  |  | .00  | Sep 10 |  | .00b  | Aug 22 |  | .00c   | Sep 4  | 1945 |
| ANNUAL SEVEN-DAY MINIMUM |  |  |  | .00  | Sep 10 |  | .00   | Aug 22 |  | .00    | Sep 12 | 1945 |
| MAXIMUM PEAK FLOW        |  |  |  |      |        |  | 2380  | Apr 10 |  | 4880d  | Apr 19 | 1979 |
| MAXIMUM PEAK STAGE       |  |  |  |      |        |  | 19.24 | Apr 10 |  | 25.45f | Apr 18 | 1997 |
| ANNUAL RUNOFF (AC-FT)    |  |  |  |      |        |  |       |        |  | 45850  |        |      |
| ANNUAL RUNOFF (CFSM)     |  |  |  |      |        |  |       |        |  | .29    |        |      |
| ANNUAL RUNOFF (INCHES)   |  |  |  |      |        |  |       |        |  | 3.91   |        |      |
| 10 PERCENT EXCEEDS       |  |  |  | 108  |        |  | 230   |        |  | 117    |        |      |
| 50 PERCENT EXCEEDS       |  |  |  | 9.5  |        |  | 8.6   |        |  | 1.5    |        |      |
| 90 PERCENT EXCEEDS       |  |  |  | .33  |        |  | .22   |        |  | .00    |        |      |

- a Based on complete years only, 1945-83, 86-89.
- b Many days.
- c Many days, most years.
- d Gage-height, 22.36 ft., from floodmark.
- e Estimated.
- f From floodmark.

