

RAINY RIVER BASIN

05124480 KAWISHIWI RIVER NEAR ELY, MN

LOCATION.--Lat 4755'22", long 9132'06", in SE 1 / 4 SE 1 / 4 sec. 24, T.63 N., R.10 W., Lake County, Hydrologic Unit 09030001, in Superior National Forest, on left bank upstream from rapids, 2 mi upstream from South Kawishiwi River, 2.2 mi southwest of Fernberg Lookout Tower and 14 mi east of Ely.

DRAINAGE AREA.--254 mi² (revised).

PERIOD OF RECORD.--June 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,450 ft above sea level, from topographic map.

REMARKS.--Records good.

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 | 21 | 21 | 21 | e19 | 18 | 29 | 60 | 427 | 204 | 98 | 47 | 26 |
| 2 | 20 | 22 | 21 | e19 | 18 | 30 | 65 | 414 | 204 | 93 | 45 | 25 |
| 3 | 20 | 24 | 21 | e19 | 18 | 30 | 67 | 398 | 194 | 92 | 44 | 24 |
| 4 | 20 | 24 | 21 | e19 | 18 | 30 | 71 | 386 | 186 | 89 | 43 | 23 |
| 5 | 20 | 23 | 21 | e19 | 18 | 30 | 75 | 380 | 180 | 87 | 41 | 23 |
| | | | | | | | | | | | | |
| 6 | 19 | 23 | 22 | e19 | 18 | 30 | 81 | 363 | 175 | 88 | 40 | 22 |
| 7 | 19 | 23 | 21 | e19 | 18 | 31 | 104 | 349 | 170 | 85 | 39 | 21 |
| 8 | 19 | 23 | 21 | e19 | 18 | 31 | 129 | 331 | 166 | 81 | 39 | 20 |
| 9 | 19 | 23 | 21 | e19 | 19 | 31 | 143 | 318 | 161 | 77 | 43 | 20 |
| 10 | 18 | 24 | 21 | e19 | 18 | 31 | 156 | 306 | 155 | 74 | 42 | 19 |
| | | | | | | | | | | | | |
| 11 | 20 | 23 | 21 | e19 | 19 | 31 | 175 | 292 | 151 | 70 | 40 | 19 |
| 12 | 22 | 23 | 21 | e19 | 18 | 31 | 195 | 281 | 152 | 68 | 38 | 18 |
| 13 | 24 | 23 | 20 | e19 | 19 | 31 | 224 | 267 | 151 | 65 | 36 | 18 |

| | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|-------|-------|------|------|------|------|
| 14 | 23 | 23 | 20 | 20 | 19 | 32 | 249 | 277 | 146 | 63 | 35 | 20 |
| 15 | 23 | 22 | 20 | 19 | 19 | 32 | 274 | 287 | 141 | 63 | 33 | 20 |
| | | | | | | | | | | | | |
| 16 | 22 | 22 | 20 | 18 | 19 | 32 | 297 | 309 | 135 | 59 | 32 | 19 |
| 17 | 21 | 22 | 20 | 18 | 19 | 32 | 318 | 309 | 129 | 56 | 34 | 18 |
| 18 | 21 | 22 | 20 | 18 | 19 | 32 | 340 | 310 | 127 | 54 | 32 | 18 |
| 19 | 21 | 21 | 20 | 18 | 19 | 32 | 362 | 308 | 129 | 52 | 31 | 24 |
| 20 | 20 | 21 | 20 | 19 | 19 | 32 | 383 | 302 | 127 | 52 | 34 | 26 |
| | | | | | | | | | | | | |
| 21 | 20 | 21 | 19 | 19 | 19 | 31 | 401 | 296 | 122 | 56 | 33 | 25 |
| 22 | 20 | 22 | 19 | 19 | 19 | 31 | 419 | 289 | 117 | 53 | 33 | 23 |
| 23 | 19 | 22 | 19 | 19 | 20 | 31 | 434 | 279 | 112 | 50 | 34 | 23 |
| 24 | 19 | 22 | 19 | 19 | 21 | 31 | 445 | 267 | 109 | 47 | 34 | 22 |
| 25 | 18 | 22 | 19 | 20 | 21 | 32 | 454 | 256 | 106 | 45 | 33 | 22 |
| | | | | | | | | | | | | |
| 26 | 18 | 22 | 19 | 20 | 22 | 32 | 455 | 244 | 104 | 47 | 31 | 22 |
| 27 | 18 | 22 | 19 | 19 | 26 | 33 | 454 | 232 | 100 | 51 | 31 | 23 |
| 28 | 17 | 22 | 19 | 19 | 28 | 35 | 449 | 245 | 107 | 51 | 32 | 22 |
| 29 | 17 | 22 | 19 | 19 | --- | 39 | 447 | 233 | 107 | 51 | 31 | 24 |
| 30 | 17 | 22 | 19 | 19 | --- | 49 | 438 | 221 | 105 | 52 | 29 | 24 |
| 31 | 18 | --- | e19 | 19 | --- | 54 | --- | 211 | --- | 49 | 27 | --- |
| | | | | | | | | | | | | |
| TOTAL | 613 | 671 | 622 | 588 | 546 | 1018 | 8164 | 9387 | 4272 | 2018 | 1116 | 653 |
| MEAN | 19.8 | 22.4 | 20.1 | 19.0 | 19.5 | 32.8 | 272 | 303 | 142 | 65.1 | 36.0 | 21.8 |
| MAX | 24 | 24 | 22 | 20 | 28 | 54 | 455 | 427 | 204 | 98 | 47 | 26 |
| MIN | 17 | 21 | 19 | 18 | 18 | 29 | 60 | 211 | 100 | 45 | 27 | 18 |
| AC-FT | 1220 | 1330 | 1230 | 1170 | 1080 | 2020 | 16190 | 18620 | 8470 | 4000 | 2210 | 1300 |
| CFSM | .08 | .09 | .08 | .07 | .08 | .13 | 1.08 | 1.20 | .56 | .26 | .14 | .09 |
| IN. | .09 | .10 | .09 | .09 | .08 | .15 | 1.20 | 1.38 | .63 | .30 | .16 | .10 |

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

| | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 149 | 162 | 133 | 91.1 | 67.1 | 56.2 | 237 | 659 | 381 | 204 | 141 | 135 |
| MAX | 881 | 684 | 345 | 163 | 107 | 85.2 | 785 | 1133 | 1070 | 467 | 758 | 698 |
| (WY) | 1978 | 1971 | 1983 | 1984 | 1971 | 1969 | 1976 | 1979 | 1970 | 1968 | 1988 | 1988 |
| MIN | 12.1 | 9.43 | 7.25 | 5.32 | 4.77 | 5.87 | 8.95 | 13.3 | 115 | 65.1 | 36.0 | 18.5 |
| (WY) | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1977 | 1998 | 1998 | 1976 |

| SUMMARY STATISTICS | FOR 1997 CALENDAR YEAR | | FOR 1998 WATER YEAR | | WATER YEARS 1966 - 1998 | | |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|--------|------|
| ANNUAL TOTAL | 55981 | | 29668 | | | | |
| ANNUAL MEAN | 153 | | 81.3 | | 202 | | |
| HIGHEST ANNUAL MEAN | | | | | 313 | | 1971 |
| LOWEST ANNUAL MEAN | | | | | 81.3 | | 1998 |
| HIGHEST DAILY MEAN | 734 | May 2 | 455 | Apr 26 | 1710 | Apr 24 | 1976 |
| LOWEST DAILY MEAN | 17 | Oct 28 | 17 | Oct 28 | 4.5a | Jan 31 | 1977 |
| ANNUAL SEVEN-DAY MINIMUM | 18 | Oct 25 | 18 | Oct 25 | 4.6 | Jan 29 | 1977 |
| INSTANTANEOUS PEAK FLOW | | | 461 | Apr 25 | 1720 | Apr 24 | 1976 |
| INSTANTANEOUS PEAK STAGE | | | 4.45 | Apr 25 | 5.92 | Apr 24 | 1976 |
| INSTANTANEOUS LOW FLOW | | | 17 | Oct 27 | 4.5 | Jan 30 | 1977 |
| ANNUAL RUNOFF (AC-FT) | 111000 | | 58850 | | 146500 | | |
| ANNUAL RUNOFF (CFSM) | .61 | | .32 | | .80 | | |
| ANNUAL RUNOFF (INCHES) | 8.23 | | 4.36 | | 10.86 | | |
| 10 PERCENT EXCEEDS | 540 | | 278 | | 510 | | |
| 50 PERCENT EXCEEDS | 74 | | 29 | | 105 | | |
| 90 PERCENT EXCEEDS | 20 | | 19 | | 36 | | |

a Occurred Jan. 31 to Feb. 2, 1977.

