

POTOMAC RIVER BASIN

01632000 NORTH FORK SHENANDOAH RIVER AT COOTES STORE, VA

LOCATION.--Lat 38°38'13", long 78°51'11", Rockingham County, Hydrologic Unit 02070006, on right bank at Cootes Store, 300 ft upstream from bridge on State Highway 259, and 3.7 mi upstream from Linville Creek.

DRAINAGE AREA.--210 mi².

PERIOD OF RECORD.--February 1925 to current year.

REVISED RECORDS.--WSP 726: 1928-31. WSP 951: 1936, 1939(M). WSP 1171: 1935, 1937, 1938(M). WSP 1502: 1926, 1927-28(M), 1929, 1930-34(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,051.8 ft above mean sea level (U.S. Army Corps of Engineers bench mark). Prior to Nov. 15, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good except for period of no gage-height record, Jan. 8-11, which is fair. National Weather Service gage-height telemeter and Virginia Department of Emergency Services gage-height radio transmitter at station. Maximum discharge, 63,400 ft³/s, from rating curve extended above 9,000 ft³/s on basis of indirect measurement of peak flow. Minimum gage height, 1.74 ft, Sep. 7-10, 1966. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|-------|------|--------------------------------|------------------|--------------------------------------|------|--------------------------------|------------------|
| Sep 6 | 1815 | *2,430 | *6.87 | No peak greater than base discharge. | | | |

Minimum discharge, 0.35 ft³/s, Aug 7, 11-13, gage height, 1.73 ft.

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 | 1.6 | 2.4 | 3.8 | 5.4 | 54 | 39 | 89 | 38 | 22 | 2.7 | .64 | 18 |
| 2 | 1.3 | 2.7 | 3.8 | 5.3 | 52 | 36 | 86 | 35 | 21 | 3.0 | .54 | 16 |
| 3 | 1.3 | 3.7 | 3.9 | 10 | 45 | 34 | 77 | 34 | 18 | 2.7 | .75 | 14 |
| 4 | 1.6 | 3.3 | 3.9 | 11 | 41 | 36 | 71 | 33 | 17 | 2.4 | .45 | 14 |
| 5 | 1.8 | 3.0 | 4.0 | 8.6 | 37 | 36 | 66 | 31 | 15 | 2.1 | .44 | 388 |
| 6 | 1.9 | 2.9 | 4.0 | 6.5 | 35 | 39 | 61 | 30 | 14 | 1.7 | .42 | 1710 |
| 7 | 2.2 | 2.9 | 4.1 | 7.9 | 33 | 48 | 56 | 29 | 13 | 1.4 | .39 | 1240 |
| 8 | 3.3 | 3.0 | 5.6 | e9.0 | 33 | 66 | 52 | 191 | 12 | 1.2 | .42 | 535 |
| 9 | 3.0 | 3.2 | 8.0 | e14 | 31 | 79 | 52 | 178 | 11 | 1.0 | .43 | 281 |
| 10 | 2.6 | 3.2 | 6.3 | e18 | 29 | 81 | 53 | 118 | 9.8 | .95 | .42 | 194 |
| 11 | 2.4 | 3.4 | 5.3 | e9.0 | 28 | 74 | 53 | 86 | 9.6 | 1.0 | .40 | 124 |
| 12 | 2.3 | 3.3 | 4.9 | 9.5 | 28 | 73 | 52 | 69 | 9.4 | .99 | .37 | 85 |
| 13 | 2.2 | 3.2 | 7.0 | 16 | 28 | 87 | 49 | 58 | 8.5 | 1.2 | .38 | 64 |
| 14 | 2.2 | 3.3 | 7.1 | 34 | 26 | 116 | 46 | 83 | 8.1 | 1.1 | 1.0 | 51 |
| 15 | 2.1 | 3.2 | 6.4 | 52 | 25 | 141 | 46 | 123 | 7.5 | .92 | .60 | 45 |
| 16 | 2.3 | 3.2 | 6.2 | 55 | 24 | 203 | 46 | 99 | 6.5 | .81 | .52 | 74 |
| 17 | 2.3 | 3.3 | 6.0 | 47 | 23 | 581 | 43 | 86 | 7.0 | .72 | .48 | 81 |
| 18 | 2.3 | 3.2 | 5.9 | 65 | 44 | 1220 | 41 | 73 | 7.3 | .67 | .45 | 80 |
| 19 | 2.1 | 3.4 | 5.9 | 100 | 72 | 817 | 39 | 64 | 7.4 | .67 | 16 | 69 |
| 20 | 2.1 | 3.4 | 6.0 | 72 | 75 | 477 | 37 | 56 | 7.5 | .60 | 44 | 69 |
| 21 | 1.9 | 3.4 | 6.0 | 99 | 71 | 380 | 36 | 49 | 7.4 | .67 | 53 | 154 |
| 22 | 1.9 | 3.4 | 5.8 | 368 | 65 | 436 | 36 | 46 | 6.9 | .75 | 18 | 215 |
| 23 | 2.1 | 3.5 | 5.8 | 255 | 62 | 395 | 36 | 88 | 6.3 | .68 | 12 | 161 |
| 24 | 2.1 | 3.5 | 6.1 | 548 | 59 | 327 | 46 | 75 | 5.6 | .67 | 10 | 112 |
| 25 | 2.4 | 3.6 | 5.9 | 422 | 53 | 265 | 44 | 59 | 5.1 | .70 | 61 | 83 |
| 26 | 2.3 | 3.8 | 5.6 | 259 | 49 | 215 | 43 | 48 | 4.7 | .59 | 65 | 64 |
| 27 | 2.5 | 3.7 | 5.5 | 177 | 44 | 188 | 43 | 41 | 4.0 | .55 | 61 | 52 |
| 28 | 2.3 | 3.9 | 5.5 | 125 | 42 | 155 | 42 | 35 | 2.7 | .60 | 39 | 50 |
| 29 | 2.3 | 4.0 | 5.7 | 94 | --- | 130 | 41 | 31 | 2.5 | .69 | 29 | 53 |
| 30 | 2.5 | 3.8 | 5.6 | 75 | --- | 110 | 39 | 27 | 2.3 | .65 | 24 | 490 |
| 31 | 2.5 | --- | 5.5 | 62 | --- | 93 | --- | 24 | --- | .61 | 20 | --- |
| TOTAL | 67.7 | 99.8 | 171.1 | 3039.2 | 1208 | 6977 | 1521 | 2037 | 279.1 | 34.99 | 461.10 | 6586 |
| MEAN | 2.18 | 3.33 | 5.52 | 98.0 | 43.1 | 225 | 50.7 | 65.7 | 9.30 | 1.13 | 14.9 | 220 |
| MAX | 3.3 | 4.0 | 8.0 | 548 | 75 | 1220 | 89 | 191 | 22 | 3.0 | 65 | 1710 |
| MIN | 1.3 | 2.4 | 3.8 | 5.3 | 23 | 34 | 36 | 24 | 2.3 | .55 | .37 | 14 |
| CFSM | .01 | .02 | .03 | .47 | .21 | 1.07 | .24 | .31 | .04 | .01 | .07 | 1.05 |
| IN. | .01 | .02 | .03 | .54 | .21 | 1.24 | .27 | .36 | .05 | .01 | .08 | 1.17 |

01632000 NORTH FORK SHENANDOAH RIVER AT COOTES STORE, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

| | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 126 | 145 | 184 | 222 | 290 | 414 | 344 | 272 | 128 | 64.0 | 87.2 | 88.3 |
| MAX | 1401 | 1883 | 850 | 1114 | 1155 | 1536 | 1156 | 964 | 906 | 552 | 697 | 1582 |
| (WY) | 1943 | 1986 | 1974 | 1996 | 1998 | 1936 | 1987 | 1942 | 1972 | 1949 | 1955 | 1996 |
| MIN | .76 | 3.26 | 3.04 | 5.13 | 11.3 | 38.4 | 27.7 | 24.3 | 6.10 | 1.13 | .52 | .66 |
| (WY) | 1931 | 1931 | 1966 | 1966 | 1934 | 1981 | 1981 | 1977 | 1977 | 1999 | 1930 | 1930 |

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1925 - 1999

| | | | |
|--------------------------|----------|----------|------|
| ANNUAL TOTAL | 101693.8 | 22481.99 | |
| ANNUAL MEAN | 279 | 61.6 | 197 |
| HIGHEST ANNUAL MEAN | | | 463 |
| LOWEST ANNUAL MEAN | | | 58.1 |
| HIGHEST DAILY MEAN | 4030 | Jan 8 | 1710 |
| LOWEST DAILY MEAN | 1.3 | aSep 16 | .37 |
| ANNUAL SEVEN-DAY MINIMUM | 1.5 | Sep 27 | .40 |
| INSTANTANEOUS PEAK FLOW | | | 2430 |
| INSTANTANEOUS PEAK STAGE | | | 6.87 |
| INSTANTANEOUS LOW FLOW | | | .35 |
| ANNUAL RUNOFF (CFSM) | 1.33 | | .29 |
| ANNUAL RUNOFF (INCHES) | 18.01 | | 3.98 |
| 10 PERCENT EXCEEDS | 849 | | 120 |
| 50 PERCENT EXCEEDS | 24 | | 16 |
| 90 PERCENT EXCEEDS | 2.1 | | 1.0 |

- a Also Sep 17, and Oct 2-3, 1998.
- b Also Aug 29, Sep 4, 1957, and Sep 7-10, 1966.
- c From floodmarks.
- d Also Aug 11-13, 1999.
- e Estimated.

