## JUNIATA RIVER BASIN

### 01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA
**(Pennsylvania Water-Quality Network Station)**

**LOCATION**.--Lat 40°12'57", long 78°15'56", Bedford County, Hydrologic Unit 02050303, on left bank 500 ft downstream from bridge on State Highway 913, 0.5 mi west of Saxton, and 1.5 mi upstream from Shoup Run.

**DRAINAGE AREA**.--756 mi$^2$.

### WATER-DISCHARGE RECORDS

**PERIOD OF RECORD**.--September 1911 to current year. Monthly discharge only for September 1911 published in WSP 1302.

**REVISED RECORDS**.--WSP 1302: 1912-13(M), 1914-15. WSP 1502: 1934, 1936.

**GAGE**.--Water-stage recorder. Datum of gage is 795.77 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at site 0.8 mi downstream at datum 4.82 ft lower.

**REMARKS**.--Records fair except those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Satellite and landline telemetry at station.

**EXTREMES OUTSIDE PERIOD OF RECORD**.--Flood of June 1, 1889, reached a stage of 23.0 ft at present site and datum, from floodmarks, discharge, about 71,300 ft$^3$/s.

**PEAK DISCHARGES FOR CURRENT YEAR**.--Peak discharges greater than a base discharge of 7,700 ft$^3$/s and maximum (*):

| Date | Time | Discharge ft$^3$/s | Gage Height (ft) |
|---|---|---|---|
| Jan. 2 | 1330 | 15,600 | 12.05 |
| Mar. 21 | 1000 | 10,900 | 9.87 |
| May 11 | 0645 | 8,520 | 8.53 |
| May 16 | 2345 | 8,640 | 8.61 |
| June 4 | 1630 | *18,400 | *13.21 |
| June 8 | 0500 | 9,400 | 9.08 |
| Sept. 28 | 1245 | 10,600 | 9.71 |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 240 | 1500 | 586 | 1880 | e460 | e1480 | 1250 | 564 | 2570 | 583 | 222 | 303 |
| 2 | 180 | 985 | 542 | 13300 | e460 | e1260 | 1440 | 627 | 2360 | 530 | 269 | 339 |
| 3 | 147 | 778 | 489 | 8920 | e470 | e1000 | 1520 | 633 | 2540 | 497 | 1160 | 671 |
| 4 | 127 | 643 | e400 | 4920 | e490 | e900 | 1470 | 651 | 15300 | 466 | 1400 | 1650 |
| 5 | 114 | 564 | e365 | 3300 | e510 | 857 | 1930 | 733 | 10700 | 448 | 774 | 1430 |
| 6 | 103 | 684 | e365 | 2500 | e480 | e2700 | 3530 | 1110 | 5100 | 418 | 738 | 905 |
| 7 | 96 | 1410 | e360 | 1920 | e400 | e4700 | 2970 | 1350 | 4580 | 423 | 601 | 672 |
| 8 | 90 | 984 | e360 | 1770 | e370 | 3020 | 3120 | 1330 | 7420 | 399 | 517 | 540 |
| 9 | 87 | 815 | e375 | 1730 | e350 | 3820 | 3210 | 2150 | 5000 | 393 | 538 | 460 |
| 10 | 84 | 723 | e370 | 1950 | e330 | 4770 | 3990 | 4110 | 3620 | 380 | 734 | 406 |
| 11 | 122 | 721 | e380 | 1740 | e320 | 3000 | 3640 | 7250 | 2600 | 438 | 1020 | 360 |
| 12 | 244 | 827 | e590 | e1290 | e310 | 2320 | 4260 | 4560 | 2010 | 538 | 870 | 322 |
| 13 | 490 | 1520 | e885 | e1180 | e290 | 3390 | 3610 | 3220 | 2090 | 436 | 691 | 298 |
| 14 | 428 | 1580 | e1420 | e1150 | e270 | 5350 | 2760 | 2450 | 2020 | 359 | 507 | 298 |
| 15 | 308 | 1100 | e2750 | e1040 | e280 | 5170 | 2200 | 1770 | 1520 | 324 | 414 | 308 |
| 16 | 415 | 924 | 2610 | e785 | e270 | 5120 | 1770 | 3720 | 1280 | 298 | 392 | 345 |
| 17 | 1490 | 1330 | 2100 | e630 | e260 | 5900 | 1460 | 6820 | 1100 | 279 | 467 | 347 |
| 18 | 1250 | 3050 | 1450 | e590 | e250 | 6250 | 1340 | 5150 | 1150 | 270 | 860 | 301 |
| 19 | 673 | 2220 | 1200 | e570 | e300 | 5390 | 1130 | 4310 | 1350 | 275 | 554 | 1750 |
| 20 | 492 | 1610 | 1270 | e550 | e380 | 4740 | 1000 | 3330 | 1250 | 248 | 416 | 5130 |
| 21 | 390 | 1390 | 2210 | e530 | e400 | e5060 | 920 | 2700 | 2960 | 246 | 349 | 2540 |
| 22 | 326 | 1230 | 2060 | e520 | e480 | e4420 | 963 | 2190 | 4540 | 237 | 308 | 1620 |
| 23 | 279 | 1080 | 1680 | e510 | e1500 | e3640 | 1070 | 1780 | 3020 | 228 | 278 | 3940 |
| 24 | 246 | 919 | 1590 | e500 | e4500 | e3120 | 796 | 2300 | 2030 | 225 | 253 | 3440 |
| 25 | 225 | 801 | 1340 | e510 | 4010 | 2520 | 710 | 2190 | 1460 | 251 | 237 | 2040 |
| 26 | 373 | 771 | 1200 | e490 | 2800 | 1980 | 687 | 1960 | 1170 | 251 | 268 | 1550 |
| 27 | 925 | 732 | 1070 | e470 | 1990 | 1890 | 704 | 2410 | 979 | 221 | 286 | 1300 |
| 28 | 792 | 635 | 1020 | e450 | 1750 | 1420 | 671 | 2590 | 841 | 200 | 424 | 7050 |
| 29 | 558 | 596 | 777 | e440 | --- | 1250 | 606 | 2610 | 737 | 194 | 440 | 4380 |
| 30 | 1110 | 576 | 728 | e450 | --- | 1330 | 588 | 2090 | 648 | 183 | 363 | 2650 |
| 31 | 2170 | --- | 703 | e450 | --- | 1390 | --- | 1660 | --- | 177 | 321 | --- |
| TOTAL | 14574 | 32698 | 33245 | 57035 | 24680 | 99157 | 55315 | 80318 | 93945 | 10415 | 16671 | 47345 |
| MEAN | 470 | 1090 | 1072 | 1840 | 881 | 3199 | 1844 | 2591 | 3132 | 336 | 538 | 1578 |
| MAX | 2170 | 3050 | 2750 | 13300 | 4500 | 6250 | 4260 | 7250 | 15300 | 583 | 1400 | 7050 |
| MIN | 84 | 564 | 360 | 440 | 250 | 857 | 588 | 564 | 648 | 177 | 222 | 298 |
| CFSM | 0.62 | 1.44 | 1.42 | 2.43 | 1.17 | 4.23 | 2.44 | 3.43 | 4.14 | 0.44 | 0.71 | 2.09 |
| IN. | 0.72 | 1.61 | 1.64 | 2.81 | 1.21 | 4.88 | 2.72 | 3.95 | 4.62 | 0.51 | 0.82 | 2.33 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2003, BY WATER YEAR (WY)**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAN | 419 | 607 | 851 | 1013 | 1416 | 2111 | 1739 | 1244 | 754 | 396 | 266 | 284 |
| MAX | 3561 | 2897 | 3254 | 3477 | 4817 | 7669 | 5811 | 3425 | 4624 | 2847 | 851 | 2356 |
| (WY) | 1977 | 1998 | 1973 | 1937 | 1979 | 1936 | 1993 | 1924 | 1972 | 1989 | 1915 | 1996 |
| MIN | 59.5 | 65.3 | 93.6 | 132 | 138 | 459 | 338 | 211 | 134 | 66.6 | 55.1 | 57.6 |
| (WY) | 1964 | 1931 | 1931 | 1981 | 1934 | 1990 | 1915 | 1926 | 1965 | 1966 | 1966 | 1963 |

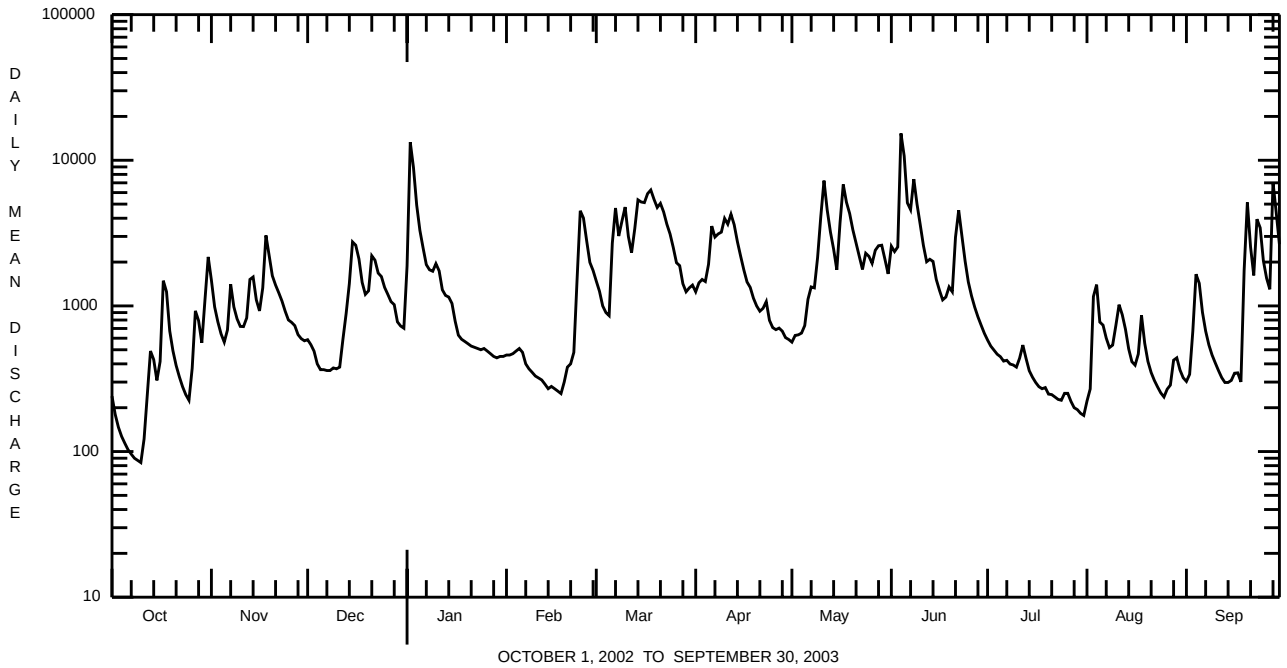
**e** Estimated.

## JUNIATA RIVER BASIN

### 01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA--Continued

| SUMMARY STATISTICS | FOR 2002 CALENDAR YEAR | | FOR 2003 WATER YEAR | | WATER YEARS 1912 - 2003 | |
|---|---|---|---|---|---|---|
| ANNUAL TOTAL | 228453 | | 565398 | | | |
| ANNUAL MEAN | 626 | | 1549 | | 922 | |
| HIGHEST ANNUAL MEAN | | | | | 1575 | 1996 |
| LOWEST ANNUAL MEAN | | | | | 402 | 1969 |
| HIGHEST DAILY MEAN | 4830 | May 10,19 | 15300 | Jun 4 | 58300 | Mar 18 1936 |
| LOWEST DAILY MEAN | 44 | Sep 14 | 84 | Oct 10 | 39 | Sep 12 1966 |
| ANNUAL SEVEN-DAY MINIMUM | 48 | Sep 10 | 99 | Oct 5 | 41 | Sep 7 1966 |
| MAXIMUM PEAK FLOW | | | 18400 | Jun 4 | **a**80500 | Mar 18 1936 |
| MAXIMUM PEAK STAGE | | | 13.21 | Jun 4 | **b**24.54 | Mar 18 1936 |
| INSTANTANEOUS LOW FLOW | | | 80 | Oct 10 | 39 | Sep 6 1966**c** |
| ANNUAL RUNOFF (CFSM) | 0.83 | | 2.05 | | 1.22 | |
| ANNUAL RUNOFF (INCHES) | 11.24 | | 27.82 | | 16.58 | |
| 10 PERCENT EXCEEDS | 1540 | | 3760 | | 2200 | |
| 50 PERCENT EXCEEDS | 305 | | 870 | | 420 | |
| 90 PERCENT EXCEEDS | 81 | | 273 | | 117 | |

**a** From rating curve extended above 21,000 $ft^3/s$ on basis of slope-area measurement of peak flow.
**b** From floodmark in gage.
**c** Also Sept. 7, 12, 1966.



**01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA**--Continued
**(Pennsylvania Water-Quality Network Station)**

## WATER-QUALITY RECORDS

**PERIOD OF RECORD**.--April 2002 to current year.

**REMARKS**.--Other data for the Water-Quality Network can be found on pages 368-434.

**COOPERATION**.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| Date | Time | Agency collecting sample, code (00027) | Agency analyzing sample, code (00028) | Instantaneous discharge, cfs (00061) | Sampling method, code (82398) | Dissolved oxygen, mg/L (00300) | pH, water, unfltrd field, std units (00400) | Specif. conductance, wat unf µS/cm 25 degC (00095) | Temperature, water, deg C (00010) | Hardness, water, unfltrd mg/L as CaCO3 (00900) | Calcium water unfltrd recoverable, mg/L (00916) | Magnesium, water, unfltrd recoverable, mg/L (00927) | ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 2002 | | | | | | | | | | | | | |
| 05... | 0900 | 1028 | 9813 | 569 | 40 | 11.4 | 7.8 | 225 | 5.9 | 91 | 23.2 | 8.1 | 58 |
| JAN 2003 | | | | | | | | | | | | | |
| 07... | 1000 | 1028 | 9813 | 1950 | 40 | 13.2 | 7.4 | 198 | 1.7 | 74 | 19.8 | 5.9 | 41 |
| MAR | | | | | | | | | | | | | |
| 11... | 0915 | 1028 | 9813 | 3100 | 40 | 14.3 | 6.7 | 184 | 1.3 | 60 | 15.8 | 5.0 | 35 |
| MAY | | | | | | | | | | | | | |
| 27... | 0930 | 1028 | 9813 | 2660 | 40 | 9.6 | 7.1 | 176 | 14.3 | 72 | 19.1 | 5.9 | 49 |
| JUL | | | | | | | | | | | | | |
| 22... | 0900 | 1028 | 9813 | 239 | 40 | 6.4 | 8.0 | 353 | 23.4 | 170 | 41.7 | 15.8 | 131 |
| SEP | | | | | | | | | | | | | |
| 16... | 1030 | 1028 | 9813 | 325 | 40 | 8.5 | 8.1 | 317 | 19.1 | 140 | 34.7 | 12.3 | 105 |

| Date | Sulfate water, fltrd, mg/L (00945) | Residue on evap. at 105degC wat flt mg/L (00515) | Residue total at 105 deg. C, suspended, mg/L (00530) | Ammonia water, unfltrd mg/L as N (00610) | Nitrate water unfltrd mg/L as N (00620) | Nitrite water, unfltrd mg/L as N (00615) | Orthophosphate, water, unfltrd mg/L as P (70507) | Phosphorus, water, unfltrd mg/L (00665) | Total nitrogen, water, unfltrd mg/L (00600) | Organic carbon, water, unfltrd mg/L (00680) | Aluminum, water, unfltrd recoverable, µg/L (01105) | Copper, water, unfltrd recoverable, µg/L (01042) | Iron, water, unfltrd recoverable, µg/L (01045 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOV 2002 | | | | | | | | | | | | | |
| 05... | 25.7 | 152 | <2 | <.020 | 2.24 | <.040 | <.01 | .013 | 3.0 | 2.7 | <200 | <10 | 160 |
| JAN 2003 | | | | | | | | | | | | | |
| 07... | 19.8 | 124 | 8 | <.020 | 2.25 | <.040 | .02 | .018 | 2.7 | 2.2 | 300 | <10 | 350 |
| MAR | | | | | | | | | | | | | |
| 11... | 16.3 | 144 | 12 | .040 | 1.62 | <.040 | .04 | .042 | 1.9 | 2.8 | 900 | 190 | 870 |
| MAY | | | | | | | | | | | | | |
| 27... | 16.7 | 128 | 24 | <.020 | 1.33 | <.040 | .03 | .043 | 1.8 | 2.6 | 600 | <10 | 980 |
| JUL | | | | | | | | | | | | | |
| 22... | 30.0 | 234 | 2 | <.020 | 2.58 | <.040 | .01 | .025 | 2.9 | 2.5 | 200 | <10 | 230 |
| SEP | | | | | | | | | | | | | |
| 16... | 26.0 | 214 | 10 | <.020 | 2.10 | <.040 | .02 | .022 | 2.5 | 2.1 | 200 | <10 | 250 |

| Date | Lead, water, unfltrd recoverable, µg/L (01051) | Manganese, water, unfltrd recoverable, µg/L (01055) | Nickel, water, unfltrd recoverable, µg/L (01067) | Zinc, water, unfltrd recoverable, µg/L (01092) |
|---|---|---|---|---|
| NOV 2002 | | | | |
| 05... | <1.0 | 20 | <50 | <10 |
| JAN 2003 | | | | |
| 07... | <1.0 | 40 | <50 | <10 |
| MAR | | | | |
| 11... | <1.0 | 50 | <50 | 160 |
| MAY | | | | |
| 27... | 1.1 | 80 | <50 | 20 |
| JUL | | | | |
| 22... | <1.0 | 40 | <50 | 10 |
| SEP | | | | |
| 16... | <1.0 | 30 | <50 | <10 |

**01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA**--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

**REMARKS**.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

| Date | 8/13/02 |
|---|---|
| Benthic Macroinvertebrate | Count |
| Platyhelminthes | |
| Turbellaria (FLATWORMS) | |
| Tricladida | |
| Planariidae | 1 |
| Mollusca | |
| Gastropoda (SNAILS) | |
| Basommatophora | |
| Ancylidae | |
| Ferrissia sp | 2 |
| Bivalvia (CLAMS) | |
| Veneroida | |
| Sphaeriidae | 1 |
| Sphaerium sp | 1 |
| Annelida | |
| Oligochaeta (AQUATIC EARTHWORMS) | |
| Tubificida | |
| Tubificidae | 1 |
| Arthropoda | |
| Insecta | |
| Ephemeroptera (MAYFLIES) | |
| Baetidae | |
| Baetis sp | 11 |
| Caenidae | |
| Caenis sp | 5 |
| Ephemerellidae | |
| Serratella sp | 1 |
| Heptageniidae | |
| Leucrocuta sp | 15 |
| Nixe sp | 4 |
| Stenonema sp | 2 |
| Isonychiidae | |
| Isonychia sp | 1 |
| Leptophlebiidae | 1 |
| Tricorythidae | |
| Tricorythodes sp | 2 |
| Odonata (DRAGONFLIES AND DAMSELFLIES) | |
| Coenagrionidae | |
| Argia sp | 2 |
| Trichoptera (CADDISFLIES) | |
| Glossosomatidae | |
| Culoptila sp | 1 |
| Protoptila sp | 1 |
| Hydropsychidae | 1 |
| Cheumatopsyche sp | 9 |
| Hydropsyche sp | 2 |
| Philopotamidae | |
| Chimarra sp | 3 |

**01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA**--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

| Date | 8/13/02 |
|---|---|
| Benthic Macroinvertebrate | Count |
| Coleoptera (BEETLES) | |
| Elmidae (RIFFLE BEETLES) | |
| Optioservus sp | 9 |
| Stenelmis sp | 33 |
| Psephenidae (WATER PENNIES) | |
| Psephenus sp | 6 |
| Diptera (TRUE FLIES) | |
| Chironomidae (MIDGES) | 3 |
| Simuliidae (BLACK FLIES) | |
| Simulium sp | 1 |
| Tipulidae (CRANE FLIES) | |
| Antocha sp | 1 |
| Total Organisms | 120 |