

Water-Data Report 2007

02085500 FLAT RIVER AT BAHAMA, NC

Neuse Basin
Upper Neuse Subbasin

LOCATION.--Lat 36°10'58", long 78°52'44" referenced to North American Datum of 1983, Durham County, NC, Hydrologic Unit 03020201, on right bank 0.5 mi upstream from Lake Michie, 1.2 mi upstream from bridge on Secondary Road 1616, 1.2 mi north of Bahama, and 1.5 mi upstream from Dial Creek.

DRAINAGE AREA.--149 mi².

SURFACE-WATER RECORDS

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

REVISED RECORDS.--WSP 1333: 1926, 1928(M), 1938, 1946. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 346.85 ft above NGVD of 1929. Prior to October 22, 1925, nonrecording gage at present site at 346.27 ft. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Prior to December 1962, some diurnal fluctuation and infrequent regulation at low flow caused by small mill 5 mi upstream. Maximum discharge for period of record from rating curve extended above 18,000 ft³/s, on basis of slope-conveyance measurement of peak flow; maximum gage height, 17.26 ft, from high-water mark inside gage shelter.

02085500 FLAT RIVER AT BAHAMA, NC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|--------------|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 11 | 35 | 93 | 143 | 65 | 102 | 106 | 52 | 12 | 6.4 | 0.79 | 1.2 |
| 2 | 11 | 29 | 122 | 333 | 82 | 761 | 98 | 49 | 11 | 5.1 | 0.53 | 0.60 |
| 3 | 9.2 | 24 | 93 | 161 | 95 | 399 | 91 | 47 | 17 | 4.9 | 0.89 | 0.35 |
| 4 | 7.7 | 20 | 80 | 117 | 78 | 202 | 80 | 46 | 38 | 5.2 | 0.72 | 0.45 |
| 5 | 6.5 | 20 | 72 | 103 | 67 | 140 | 71 | 46 | 43 | 5.0 | 1.1 | 0.47 |
| 6 | 16 | 20 | 66 | 884 | 61 | 112 | 64 | 48 | 91 | 5.1 | 1.5 | 0.44 |
| 7 | 115 | 35 | 65 | 334 | 60 | 95 | 63 | 45 | 70 | 5.4 | 1.5 | 0.29 |
| 8 | 279 | 832 | 59 | 1,210 | 60 | 88 | 64 | 41 | 33 | 5.5 | 1.8 | 0.32 |
| 9 | 112 | 269 | 54 | 495 | 57 | 81 | 60 | 44 | 25 | 5.7 | 1.4 | 0.23 |
| 10 | 57 | 124 | 52 | 252 | 55 | 78 | 58 | 81 | 20 | 6.3 | 1.2 | 0.16 |
| 11 | 38 | 82 | 52 | 168 | 53 | 74 | 60 | 71 | 17 | 7.8 | 1.4 | 0.13 |
| 12 | 28 | 969 | 51 | 132 | 52 | 71 | 440 | 57 | 17 | 18 | 0.41 | 0.11 |
| 13 | 20 | 486 | 50 | 116 | 53 | 67 | 283 | 49 | 16 | 16 | 0.72 | 0.09 |
| 14 | 15 | 191 | 49 | 107 | 676 | 66 | 137 | 41 | 18 | 11 | 0.84 | 0.12 |
| 15 | 13 | 118 | 48 | 98 | 322 | 65 | 1,650 | 37 | 15 | 8.8 | 0.20 | 0.30 |
| 16 | 12 | 1,000 | 48 | 95 | 167 | 381 | 1,140 | 34 | 13 | 7.5 | 0.20 | 0.18 |
| 17 | 13 | 634 | 46 | 82 | 119 | 1,030 | 359 | 33 | 12 | 6.5 | 0.16 | 0.14 |
| 18 | 56 | 232 | 44 | 75 | 101 | 276 | 213 | 37 | 11 | 6.7 | 0.24 | 0.13 |
| 19 | 66 | 138 | 44 | 82 | 86 | 168 | 157 | 35 | 10 | 6.1 | 0.22 | 0.10 |
| 20 | 39 | 103 | 43 | 83 | 77 | 127 | 124 | 31 | 9.1 | 5.3 | 0.24 | 0.13 |
| 21 | 29 | 94 | 41 | 75 | 75 | 108 | 106 | 29 | 8.7 | 4.7 | 0.23 | 0.14 |
| 22 | 24 | 4,380 | 45 | 255 | 108 | 94 | 94 | 27 | 9.0 | 4.2 | 0.26 | 0.14 |
| 23 | 24 | 1,670 | 187 | 267 | 104 | 89 | 84 | 24 | 10 | 3.9 | 0.27 | 0.10 |
| 24 | 22 | 488 | 129 | 156 | 78 | 84 | 77 | 23 | 13 | 3.4 | 0.31 | 0.09 |
| 25 | 20 | 267 | 579 | 115 | 89 | 80 | 72 | 22 | 14 | 2.9 | 0.32 | 0.07 |
| 26 | 17 | 183 | 892 | 95 | 402 | 73 | 67 | 20 | 15 | 2.4 | 0.25 | 0.06 |
| 27 | 16 | 139 | 274 | 86 | 196 | 70 | 66 | 18 | 9.5 | 2.2 | 0.25 | 0.06 |
| 28 | 222 | 119 | 159 | 82 | 128 | 141 | 65 | 17 | 7.0 | 2.1 | 0.23 | 0.05 |
| 29 | 157 | 101 | 113 | 74 | --- | 269 | 62 | 16 | 6.4 | 1.8 | 1.7 | 0.03 |
| 30 | 67 | 91 | 95 | 68 | --- | 244 | 55 | 14 | 6.7 | 1.8 | 1.2 | 0.02 |
| 31 | 46 | --- | 85 | 66 | --- | 136 | --- | 13 | --- | 1.8 | 1.1 | --- |
| Total | 1,568.4 | 12,893 | 3,830 | 6,409 | 3,566 | 5,771 | 6,066 | 1,147 | 597.4 | 179.5 | 22.18 | 6.70 |
| Mean | 50.6 | 430 | 124 | 207 | 127 | 186 | 202 | 37.0 | 19.9 | 5.79 | 0.72 | 0.22 |
| Max | 279 | 4,380 | 892 | 1,210 | 676 | 1,030 | 1,650 | 81 | 91 | 18 | 1.8 | 1.2 |
| Min | 6.5 | 20 | 41 | 66 | 52 | 65 | 55 | 13 | 6.4 | 1.8 | 0.16 | 0.02 |
| Cfsm | 0.34 | 2.88 | 0.83 | 1.39 | 0.85 | 1.25 | 1.36 | 0.25 | 0.13 | 0.04 | 0.00 | 0.00 |
| In. | 0.39 | 3.22 | 0.96 | 1.60 | 0.89 | 1.44 | 1.51 | 0.29 | 0.15 | 0.04 | 0.01 | 0.00 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2007, BY WATER YEAR (WY)

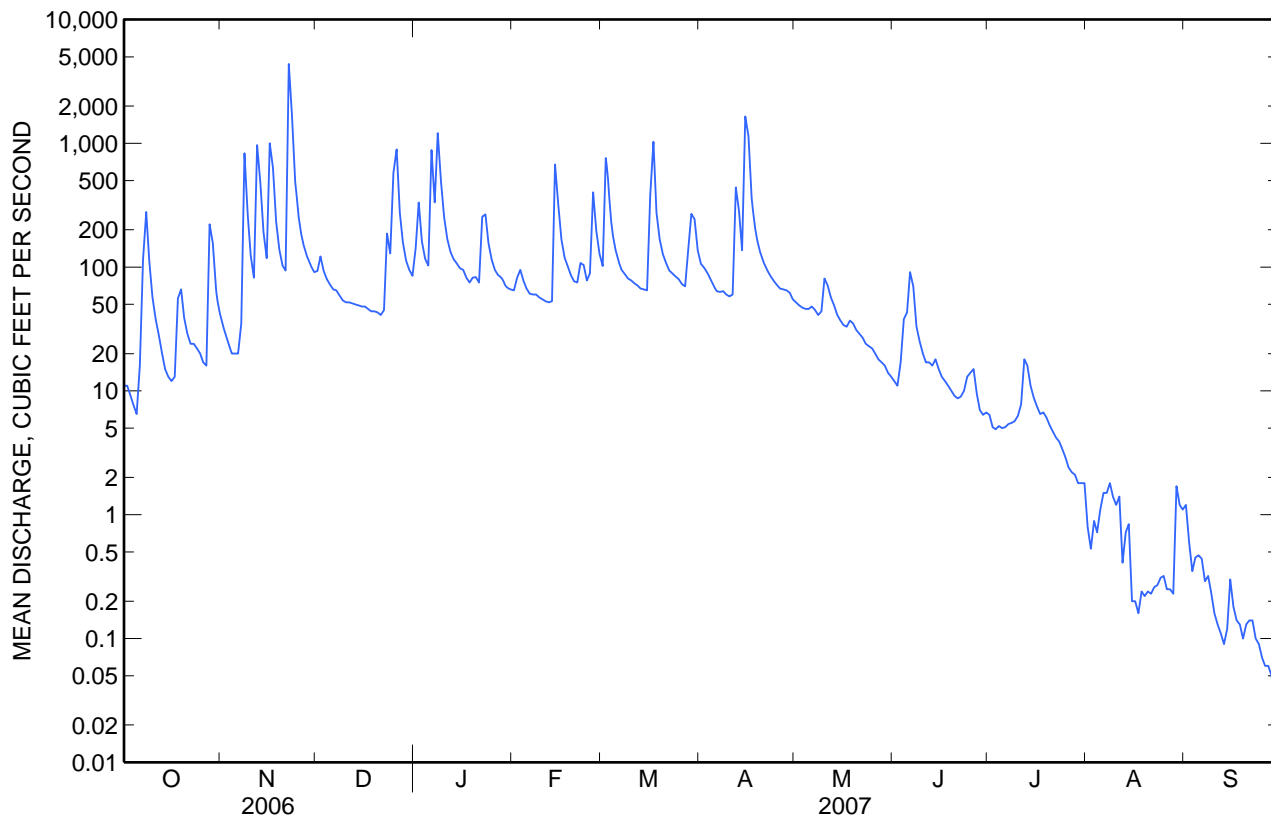
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mean | 66.7 | 98.4 | 135 | 217 | 264 | 284 | 221 | 111 | 79.1 | 84.1 | 72.8 | 84.1 |
| Max | 561 | 489 | 421 | 761 | 758 | 948 | 656 | 573 | 551 | 798 | 431 | 984 |
| (WY) | (1972) | (1986) | (1973) | (1936) | (1998) | (1998) | (2003) | (1978) | (1938) | (1975) | (1939) | (1996) |
| Min | 1.11 | 0.71 | 1.81 | 4.29 | 39.4 | 28.5 | 31.1 | 19.3 | 3.85 | 1.68 | 0.72 | 0.22 |
| (WY) | (2006) | (1934) | (1934) | (1934) | (2002) | (2006) | (1942) | (2002) | (2002) | (2002) | (2007) | (2007) |

02085500 FLAT RIVER AT BAHAMA, NC—Continued

SUMMARY STATISTICS

| | Calendar Year 2006 | | Water Year 2007 | | Water Years 1925 - 2007 | |
|---------------------------------|--------------------|--------|-----------------|--------|-------------------------|--------------|
| Annual total | 32,012.5 | | 42,056.18 | | | |
| Annual mean | 87.7 | | 115 | | 143 | |
| Highest annual mean | | | | | 347 | 2003 |
| Lowest annual mean | | | | | 25.2 | 2002 |
| Highest daily mean | 4,380 | Nov 22 | 4,380 | Nov 22 | 21,800 | Sep 6, 1996 |
| Lowest daily mean | 1.4 | Aug 28 | 0.02 | Sep 30 | 0.02 | Sep 30, 2007 |
| Annual seven-day minimum | 1.6 | Aug 23 | 0.05 | Sep 24 | 0.05 | Sep 24, 2007 |
| Maximum peak flow | | | 5,860 | Nov 22 | ^a 33,800 | Sep 6, 1996 |
| Maximum peak stage | | | 7.66 | Nov 22 | ^a 17.26 | Sep 6, 1996 |
| Instantaneous low flow | | | 0.01 | Sep 30 | 0.01 | Sep 30, 2007 |
| Annual runoff (cfsm) | 0.589 | | 0.773 | | 0.957 | |
| Annual runoff (inches) | 7.99 | | 10.50 | | 13.01 | |
| 10 percent exceeds | 137 | | 247 | | 278 | |
| 50 percent exceeds | 34 | | 49 | | 49 | |
| 90 percent exceeds | 9.6 | | 0.32 | | 6.6 | |

^a See Remarks.



02085500 FLAT RIVER AT BAHAMA, NC—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment and to define the impacts of various land-use development on surface-water quality in the Upper Neuse River basin. For the period February 1988 through June 1989 the inorganic-chemical data and trace-metal data were analyzed by the city of Durham's Brown Water Treatment Laboratory.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 2

[Remark codes: <, less than; E, estimated.]

| Date | Time | Instantaneous discharge, cfs (00061) | Barometric pressure, mm Hg (00025) | Dissolved oxygen, mg/L (00300) | Dissolved oxygen, percent of saturation (00301) | pH, water, unfltrd field, std units (00400) | Specific conductance, wat unf μ S/cm 25 degC (00095) | Temperature, water, deg C (00010) | Ammonia + org-N, water, fltrd, mg/L as N (00623) | Ammonia + org-N, water, unfltrd, mg/L as N (00625) | Ammonia water, fltrd, mg/L as N (00608) | Nitrite + nitrate water, fltrd, mg/L as N (00631) | Nitrite water, fltrd, mg/L as N (00613) |
|--------------|------|--------------------------------------|------------------------------------|--------------------------------|---|---|--|-----------------------------------|--|--|---|---|---|
| Oct | | | | | | | | | | | | | |
| 18... | 1030 | 43 | 750 | 8.6 | 86 | 6.7 | 80 | 14.5 | .37 | .41 | <.020 | .08 | E.001 |
| Nov | | | | | | | | | | | | | |
| 16... | 1200 | 549 | 744 | 9.0 | 90 | 6.1 | 71 | 14.3 | .45 | .58 | <.020 | .24 | E.001 |
| Jan | | | | | | | | | | | | | |
| 30... | 1345 | 67 | 751 | 13.2 | 101 | 6.5 | 73 | 3.5 | .30 | .24 | E.012 | .42 | E.001 |
| Mar | | | | | | | | | | | | | |
| 07... | 1645 | 93 | 758 | 11.4 | 102 | 6.3 | 66 | 10.4 | .26 | .31 | E.011 | .31 | E.002 |
| Apr | | | | | | | | | | | | | |
| 16... | 1400 | 915 | 744 | 10.1 | 97 | 5.7 | 52 | 12.6 | .88 | .88 | .028 | .21 | .004 |
| May | | | | | | | | | | | | | |
| 30... | 1215 | 15 | 753 | 7.0 | 86 | 6.9 | 87 | 24.8 | .39 | .37 | .036 | .20 | .003 |

02085500 FLAT RIVER AT BAHAMA, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 2 of 2

[Remark codes: <, less than; E, estimated.]

| Date | Total nitro- gen, water, fltrd, mg/L (00602) | Total nitro- gen, water, unfltrd mg/L (00600) | Ortho- phos- phate, water, fltrd, mg/L as P (00671) | Phos- phorus, water, fltrd, mg/L (00666) | Phos- phorus, water, unfltrd mg/L (00665) | Sus- pended sedi- ment concen- tration mg/L (80154) | Sus- pended sedi- ment dis- charge, tons/d (80155) |
|------------|--|---|--|---|--|--|---|
| Oct | | | | | | | |
| 18... | .45 | .50 | .007 | E.02 | .04 | 8 | .93 |
| Nov | | | | | | | |
| 16... | .69 | .82 | .016 | E.02 | .09 | 72 | 107 |
| Jan | | | | | | | |
| 30... | .72 | .65 | E.005 | <.04 | <.04 | 3 | .54 |
| Mar | | | | | | | |
| 07... | .58 | .62 | E.005 | <.04 | .04 | 6 | 1.5 |
| Apr | | | | | | | |
| 16... | 1.1 | 1.1 | .017 | .04 | .13 | 88 | 217 |
| May | | | | | | | |
| 30... | .59 | .56 | .007 | <.04 | .04 | 6 | .24 |