

Water-Data Report 2008

**02087183 NEUSE RIVER NEAR FALLS, NC**

Neuse Basin  
Upper Neuse Subbasin

LOCATION.--Lat 35°56'24", long 78°34'51" referenced to North American Datum of 1983, Wake County, NC, Hydrologic Unit 03020201, on right bank 300 ft downstream from Falls Lake Dam, and 0.3 mi northwest of Falls.

DRAINAGE AREA.--771 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--July 1970 to current year.

REVISED RECORDS.--WDR NC-91-1: Drainage area. WRD NC 96-1: 1991-95 (maximum discharges and gage heights)

GAGE.--Water-stage recorder. Datum of gage is 194.69 ft above NGVD of 1929. Prior to Oct. 1, 1990, water-stage recorder at site 0.4 mi downstream at 182.62 ft. U.S. Army Corps of Engineers satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Falls Lake (station 02087182). June 5, 1980, to May 6, 1981, flows affected by incidental storage in Falls Lake, under construction; May 6, 1981, to January 13, 1983, gates closed and Falls Lake partially filled to provide storage for City of Raleigh water supply; January 13, 1983, gates closed and normal pool elevation, 250.1 ft, reached December 7, 1983. The City of Raleigh diverted an average of 69.1 ft<sup>3</sup>/s, 1.2 mi upstream from station for municipal water supply, of which an average of 62.7 ft<sup>3</sup>/s was returned downstream as treated effluent. Prior to regulation, maximum discharge: 13,600 ft<sup>3</sup>/s, July 17, 1975; gage height: 25.21 ft; minimum discharge: 4.6 ft<sup>3</sup>/s, September 24, 1980; gage height: 2.13 ft, at site then in use. Maximum gage-height and discharge for period of record may have been higher during period of estimated record, August 27-September 30, 1996. Minimum discharge for period of record not determined due to intermittent gate closure at dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1945 reached an elevation of 216.1 ft; discharge, 23,300 ft<sup>3</sup>/s at bridge 0.4 mi upstream, from information provided by the U.S. Army Corps of Engineers.

## 02087183 NEUSE RIVER NEAR FALLS, NC—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**  
**DAILY MEAN VALUES**

| Day          | Oct   | Nov   | Dec   | Jan   | Feb   | Mar  | Apr    | May    | Jun   | Jul   | Aug   | Sep    |
|--------------|-------|-------|-------|-------|-------|------|--------|--------|-------|-------|-------|--------|
| 1            | 151   | 82    | 55    | 57    | 56    | 50   | 29     | 441    | 94    | 94    | 148   | 127    |
| 2            | 123   | 83    | 55    | 57    | 56    | 51   | 29     | 643    | 94    | 94    | 147   | 125    |
| 3            | 103   | 83    | 55    | 57    | 56    | 42   | 29     | 779    | 94    | 94    | 147   | 124    |
| 4            | 119   | 83    | 55    | 56    | 56    | 26   | 29     | 776    | 94    | 94    | 146   | 123    |
| 5            | 140   | 83    | 55    | 56    | 85    | 27   | 30     | 775    | 94    | 94    | 155   | 121    |
| 6            | 140   | 84    | 54    | 56    | 56    | 28   | 30     | 776    | 112   | 94    | 172   | 122    |
| 7            | 140   | 84    | 54    | 56    | 57    | 28   | 290    | 776    | 140   | 94    | 172   | 125    |
| 8            | 140   | 83    | 54    | 57    | 56    | 29   | 483    | 777    | 127   | 94    | 172   | 125    |
| 9            | 119   | 83    | 54    | 57    | 56    | 29   | 496    | 647    | 117   | 95    | 171   | 449    |
| 10           | 101   | 83    | 54    | 57    | 56    | 29   | 494    | 379    | 117   | 95    | 171   | 893    |
| 11           | 106   | 83    | 55    | 57    | 55    | 29   | 494    | 312    | 117   | 94    | 171   | 890    |
| 12           | 123   | 85    | 55    | 57    | 55    | 29   | 609    | 313    | 135   | 94    | 171   | 1,530  |
| 13           | 136   | 84    | 55    | 57    | 55    | 29   | 787    | 311    | 148   | 95    | 144   | 1,920  |
| 14           | 137   | 84    | 54    | 56    | 55    | 30   | 850    | 309    | 147   | 95    | 156   | 1,910  |
| 15           | 137   | 70    | 55    | 56    | 55    | 30   | 823    | 310    | 138   | 95    | 216   | 1,890  |
| 16           | 126   | 55    | 55    | 56    | 55    | 30   | 736    | 312    | 105   | 94    | 188   | 1,890  |
| 17           | 114   | 55    | 55    | 57    | 55    | 30   | 652    | 312    | 88    | 94    | 188   | 1,880  |
| 18           | 116   | 55    | 55    | 57    | 55    | 30   | 551    | 313    | 88    | 94    | 188   | 1,880  |
| 19           | 116   | 55    | 55    | 57    | 54    | 30   | 466    | 313    | 119   | 95    | 166   | 1,870  |
| 20           | 116   | 73    | 55    | 57    | 51    | 30   | 419    | 315    | 149   | 95    | 134   | 1,850  |
| 21           | 116   | 81    | 55    | 57    | 50    | 29   | 420    | 314    | 149   | 95    | 134   | 1,850  |
| 22           | 116   | 55    | 54    | 57    | 51    | 29   | 381    | 311    | 125   | 95    | 135   | 1,850  |
| 23           | 116   | 55    | 55    | 56    | 50    | 29   | 348    | 295    | 87    | 96    | 134   | 1,850  |
| 24           | 102   | 55    | 55    | 57    | 50    | 29   | 347    | 284    | 150   | 96    | 134   | 1,540  |
| 25           | 81    | 55    | 55    | 57    | 50    | 29   | 346    | 284    | 150   | 96    | 135   | 708    |
| 26           | 81    | 55    | 56    | 57    | 50    | 28   | 347    | 284    | 94    | 95    | 135   | 877    |
| 27           | 82    | 55    | 56    | 56    | 51    | 29   | 291    | 253    | 94    | 95    | 132   | 1,620  |
| 28           | 83    | 55    | 55    | 56    | 51    | 29   | 260    | 211    | 94    | 111   | 128   | 1,790  |
| 29           | 82    | 55    | 56    | 56    | 51    | 29   | 263    | 154    | 94    | 141   | 127   | 2,070  |
| 30           | 82    | 55    | 57    | 56    | ---   | 29   | 294    | 94     | 94    | 149   | 126   | 2,250  |
| 31           | 81    | ---   | 57    | 56    | ---   | 29   | ---    | 94     | ---   | 148   | 127   | ---    |
| <b>Total</b> | 3,525 | 2,106 | 1,705 | 1,754 | 1,589 | 954  | 11,623 | 12,467 | 3,448 | 3,104 | 4,770 | 36,249 |
| <b>Mean</b>  | 114   | 70.2  | 55.0  | 56.6  | 54.8  | 30.8 | 387    | 402    | 115   | 100   | 154   | 1,208  |
| <b>Max</b>   | 151   | 85    | 57    | 57    | 85    | 51   | 850    | 779    | 150   | 149   | 216   | 2,250  |
| <b>Min</b>   | 81    | 55    | 54    | 56    | 50    | 26   | 29     | 94     | 87    | 94    | 126   | 121    |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2008<sup>a</sup>, BY WATER YEAR (WY)**

|             | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Mean</b> | 367    | 369    | 563    | 743    | 1,056  | 1,393  | 1,125  | 484    | 324    | 311    | 288    | 432    |
| <b>Max</b>  | 3,217  | 1,535  | 1,883  | 2,014  | 3,462  | 3,992  | 3,687  | 1,821  | 1,427  | 1,501  | 1,099  | 3,953  |
| <b>(WY)</b> | (2000) | (1996) | (2003) | (1984) | (1998) | (1989) | (2003) | (1989) | (2003) | (1995) | (1989) | (1996) |
| <b>Min</b>  | 72.6   | 65.2   | 55.0   | 56.6   | 54.8   | 30.8   | 72.3   | 110    | 115    | 61.7   | 61.0   | 67.8   |
| <b>(WY)</b> | (1984) | (1984) | (2008) | (2008) | (2008) | (2008) | (2006) | (1995) | (2008) | (1983) | (1983) | (1985) |

## 02087183 NEUSE RIVER NEAR FALLS, NC—Continued

## SUMMARY STATISTICS

|                                 | Calendar Year 2007 |        | Water Year 2008 |        | Water Years 1983 - 2008 <sup>a</sup> |              |
|---------------------------------|--------------------|--------|-----------------|--------|--------------------------------------|--------------|
| <b>Annual total</b>             | 142,698            |        | 83,294          |        |                                      |              |
| <b>Annual mean</b>              | 391                |        | 228             |        | 619                                  |              |
| <b>Highest annual mean</b>      |                    |        |                 |        | 1,312                                | 2003         |
| <b>Lowest annual mean</b>       |                    |        |                 |        | 123                                  | 2002         |
| <b>Highest daily mean</b>       | 2,950              | Jan 11 | 2,250           | Sep 30 | 7,420                                | Sep 16, 1996 |
| <b>Lowest daily mean</b>        | 54                 | Dec 6  | 26              | Mar 4  | 26                                   | Mar 4, 2008  |
| <b>Annual seven-day minimum</b> | 54                 | Dec 4  | 28              | Mar 4  | 28                                   | Mar 4, 2008  |
| <b>Maximum peak flow</b>        |                    |        | 2,530           | Sep 29 | <sup>a</sup> 7,650                   | Sep 16, 1996 |
| <b>Maximum peak stage</b>       |                    |        | 3.46            | Sep 29 | <sup>a</sup> 8.05                    | Sep 16, 1996 |
| <b>Instantaneous low flow</b>   |                    |        | 19              | Apr 7  |                                      |              |
| <b>10 percent exceeds</b>       | 1,040              |        | 512             |        | 2,030                                |              |
| <b>50 percent exceeds</b>       | 166                |        | 94              |        | 176                                  |              |
| <b>90 percent exceeds</b>       | 55                 |        | 50              |        | 77                                   |              |

<sup>a</sup>Regulated period only (1983-2008). See Remarks.

