

Water-Data Report 2007

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC

Cape Fear Basin
Lower Cape Fear Subbasin

LOCATION.--Lat 34°24'16", long 78°17'37" referenced to North American Datum of 1983, Bladen County, NC, Hydrologic Unit 03030005, on right bank near upstream end of Lock 1, 1.3 mi upstream from Natmore Creek, 2.0 mi upstream from bridge on North Carolina Highway 11, 4.6 mi southeast of Kelly, and at river mile 67.

DRAINAGE AREA.--5,255 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1969 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder with concrete lock and dam control. Datum of gage is 2.90 ft below NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Daily discharges above 2,500 ft³/s are fair, daily discharges below 2,500 ft³/s are poor. Slight regulation at high flow December 1972 to August 1981, caused by storage in B. Everett Jordan Lake. Flow regulated since September 1981 by B. Everett Jordan Lake (station 02098197). Slight diurnal fluctuation and some regulation for short periods at low flow caused by power plants upstream from station. The City of Wilmington diverted an average of 26.1 ft³/s for municipal water supply, most of which was returned downstream of station as treated effluent. Prior to regulation, maximum discharge: 57,000 ft³/s, March 3, 1979; gage height: 24.92 ft, from floodmarks. Minimum discharge prior to regulation, 406 ft³/s, July 1, 1981. Minimum discharge for current water year and period of record not determined due to fish lockage.

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, 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 | 1,280 | 2,560 | 21,100 | 13,300 | 4,280 | 7,330 | 3,530 | 2,020 | 1,060 | 1,740 | 1,010 | 790 |
| 2 | 1,300 | 2,430 | 20,200 | 11,100 | 5,280 | 6,790 | 3,580 | 1,900 | 940 | 2,240 | 1,050 | 778 |
| 3 | 1,260 | 2,300 | 18,700 | 10,300 | 6,660 | 8,840 | 3,350 | 1,840 | 1,040 | 1,850 | 981 | 809 |
| 4 | 1,150 | 2,110 | 16,700 | 10,200 | 7,530 | 14,300 | 2,970 | 1,720 | 1,480 | 1,390 | 891 | 849 |
| 5 | 1,070 | 2,000 | 15,100 | 9,940 | 7,390 | 16,900 | 2,820 | 1,630 | 2,050 | 1,090 | 889 | 848 |
| 6 | 1,050 | 1,930 | 12,400 | 9,660 | 6,380 | 16,300 | 2,610 | 1,650 | 1,910 | 951 | 884 | 767 |
| 7 | 1,020 | 1,990 | 7,890 | 10,900 | 5,810 | 13,600 | 2,150 | 1,610 | 1,550 | 891 | 873 | 619 |
| 8 | 1,120 | 3,280 | 5,590 | 13,400 | 5,480 | 11,300 | 1,800 | 1,530 | 1,310 | 922 | 829 | 547 |
| 9 | 1,360 | 6,700 | 4,580 | 14,600 | 5,130 | 9,960 | 1,720 | 1,550 | 1,180 | 884 | 754 | 529 |
| 10 | 1,540 | 9,480 | 4,000 | 16,000 | 4,870 | 8,180 | 1,670 | 1,600 | 1,060 | 879 | 788 | 476 |
| 11 | 1,470 | 9,040 | 3,730 | 16,600 | 4,660 | 7,060 | 1,580 | 1,720 | 1,010 | 933 | 868 | 445 |
| 12 | 1,400 | 7,680 | 3,580 | 16,000 | 4,430 | 6,650 | 1,760 | 1,770 | 1,010 | 953 | 847 | 441 |
| 13 | 1,300 | 7,170 | 3,520 | 14,700 | 4,280 | 6,410 | 2,930 | 1,720 | 1,020 | 940 | 778 | 446 |
| 14 | 1,210 | 8,020 | 3,320 | 13,200 | 4,240 | 5,580 | 6,520 | 1,800 | 1,030 | 975 | 632 | 460 |
| 15 | 1,120 | 8,340 | 3,220 | 10,800 | 5,990 | 4,360 | 7,720 | 2,060 | 1,160 | 942 | 566 | 748 |
| 16 | 1,080 | 8,240 | 3,120 | 7,350 | 11,000 | 3,900 | 8,500 | 2,180 | 1,150 | 886 | 520 | 1,520 |
| 17 | 1,080 | 11,900 | 2,970 | 5,710 | 11,400 | 5,760 | 13,400 | 2,300 | 1,230 | 926 | 527 | 1,490 |
| 18 | 1,310 | 14,500 | 2,790 | 5,250 | 10,300 | 12,300 | 17,100 | 2,360 | 1,510 | 936 | 529 | 1,070 |
| 19 | 1,660 | 14,800 | 2,690 | 5,340 | 9,380 | 14,700 | 18,000 | 2,040 | 1,460 | 913 | 520 | 821 |
| 20 | 2,610 | 13,700 | 2,610 | 5,510 | 8,540 | 13,300 | 17,100 | 1,710 | 1,390 | 953 | 524 | 695 |
| 21 | 3,290 | 13,000 | 2,510 | 5,560 | 8,000 | 11,600 | 16,200 | 1,350 | 1,290 | 891 | 525 | 652 |
| 22 | 3,070 | 14,900 | 2,460 | 6,180 | 7,620 | 10,300 | 15,700 | 1,150 | 1,200 | 820 | 562 | 649 |
| 23 | 3,010 | 19,900 | 4,270 | 8,030 | 7,270 | 8,950 | 15,100 | 1,090 | 1,110 | 795 | 585 | 647 |
| 24 | 2,830 | 23,300 | 6,670 | 9,800 | 5,670 | 7,970 | 14,500 | 1,090 | 1,050 | 848 | 595 | 609 |
| 25 | 2,610 | 28,500 | 9,400 | 10,000 | 4,460 | 7,040 | 14,100 | 1,140 | 998 | 827 | 590 | 565 |
| 26 | 2,410 | 34,200 | 12,300 | 9,550 | 4,300 | 6,420 | 12,900 | 1,220 | 903 | 808 | 595 | 570 |
| 27 | 1,920 | 35,300 | 16,500 | 8,780 | 5,140 | 6,080 | 7,350 | 1,220 | 903 | 807 | 635 | 500 |
| 28 | 1,990 | 31,100 | 18,900 | 8,000 | 7,100 | 5,680 | 3,480 | 1,210 | 887 | 825 | 612 | 456 |
| 29 | 2,390 | 25,300 | 20,000 | 7,430 | --- | 4,140 | 2,490 | 1,170 | 858 | 853 | 609 | 408 |
| 30 | 2,640 | 22,400 | 19,300 | 6,870 | --- | 3,350 | 2,200 | 999 | 974 | 903 | 715 | 376 |
| 31 | 2,710 | --- | 16,400 | 5,280 | --- | 3,370 | --- | 958 | --- | 953 | 813 | --- |
| Total | 55,260 | 386,070 | 286,520 | 305,340 | 182,590 | 268,420 | 224,830 | 49,307 | 35,723 | 31,524 | 22,096 | 20,580 |
| Mean | 1,783 | 12,870 | 9,243 | 9,850 | 6,521 | 8,659 | 7,494 | 1,591 | 1,191 | 1,017 | 713 | 686 |
| Max | 3,290 | 35,300 | 21,100 | 16,600 | 11,400 | 16,900 | 18,000 | 2,360 | 2,050 | 2,240 | 1,050 | 1,520 |
| Min | 1,020 | 1,930 | 2,460 | 5,250 | 4,240 | 3,350 | 1,580 | 958 | 858 | 795 | 520 | 376 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2007^a, BY WATER YEAR (WY)

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mean | 3,415 | 3,703 | 5,030 | 7,773 | 8,904 | 10,490 | 7,874 | 3,899 | 3,788 | 3,063 | 3,178 | 3,854 |
| Max | 15,080 | 12,870 | 11,050 | 17,180 | 27,780 | 23,830 | 21,650 | 12,110 | 15,070 | 10,860 | 13,400 | 22,580 |
| (WY) | (2000) | (2007) | (1984) | (1998) | (1998) | (1998) | (2003) | (1989) | (1982) | (1995) | (2003) | (1996) |
| Min | 1,023 | 1,062 | 1,111 | 1,717 | 2,959 | 2,012 | 1,667 | 968 | 874 | 802 | 713 | 686 |
| (WY) | (1999) | (2002) | (2002) | (2001) | (2006) | (2006) | (1986) | (2002) | (2002) | (2002) | (2007) | (2007) |

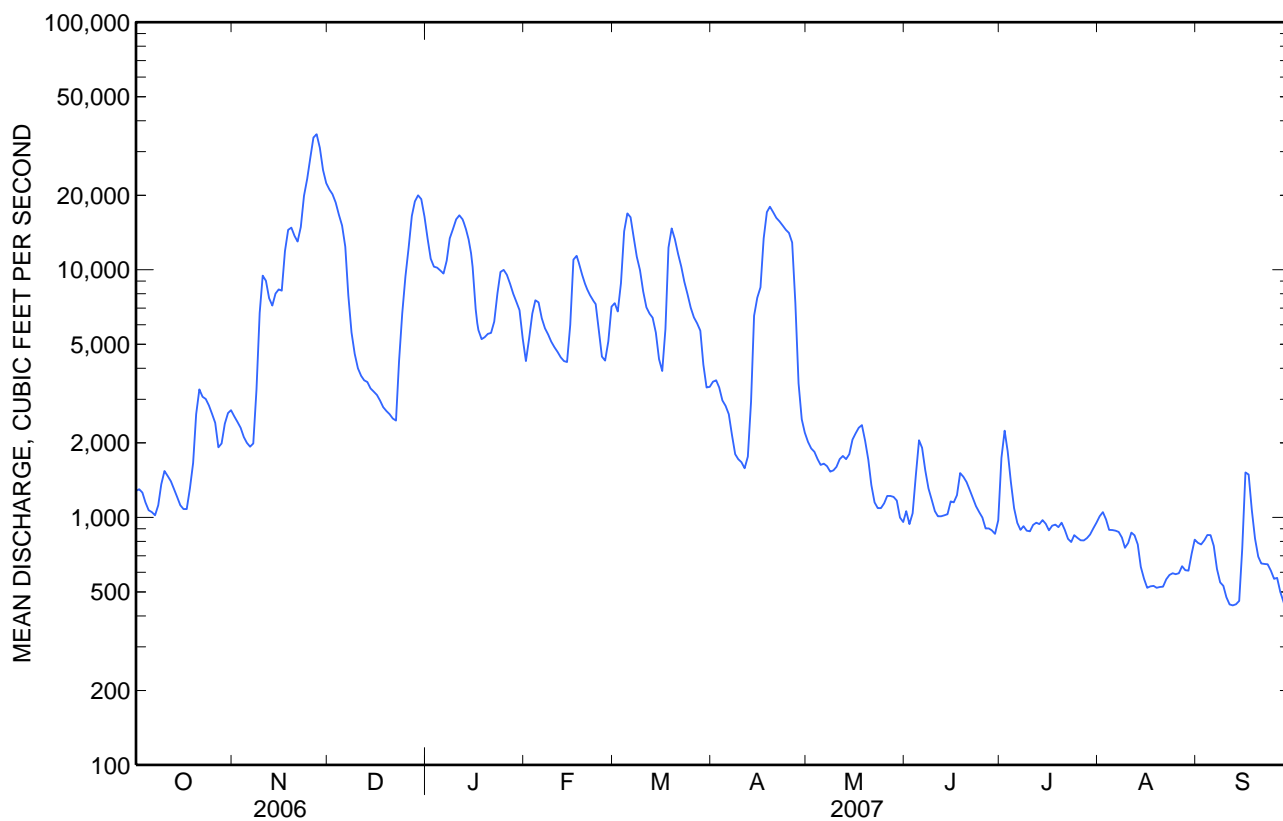
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SUMMARY STATISTICS

| | Calendar Year 2006 | | Water Year 2007 | | Water Years 1982 - 2007 ^a | |
|---------------------------------|--------------------|--------|-----------------------------|--------|--------------------------------------|--------------|
| Annual total | 1,649,080 | | 1,868,260 | | | |
| Annual mean | 4,518 | | 5,119 | | 5,394 | |
| Highest annual mean | | | | | 10,740 | 2003 |
| Lowest annual mean | | | | | 1,833 | 2002 |
| Highest daily mean | 35,300 | Nov 27 | 35,300 | Nov 27 | 47,600 | Sep 11, 1996 |
| Lowest daily mean | 743 | Jun 3 | 376 | Sep 30 | 179 | Aug 10, 2002 |
| Annual seven-day minimum | 917 | May 29 | 478 | Sep 8 | 350 | Aug 7, 2002 |
| Maximum peak flow | | | 35,900 | Nov 27 | 48,300 | Sep 11, 1996 |
| Maximum peak stage | | | 22.71 | Nov 27 | 24.29 | Sep 11, 1996 |
| Instantaneous low flow | | | NOT DETERMINED ^b | | NOT DETERMINED ^b | |
| 10 percent exceeds | 9,770 | | 14,400 | | 14,200 | |
| 50 percent exceeds | 2,690 | | 2,240 | | 2,780 | |
| 90 percent exceeds | 1,150 | | 735 | | 1,030 | |

^a Regulated period only (1982-2007). See Remarks.

^b See Remarks.



02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC—Continued**CLIMATOLOGICAL RECORDS**

PERIOD OF RECORD.--November 1998 to current year. Records from November 1998 to September 1999 are unpublished and available from the USGS Water Science Center, Raleigh, NC.

INSTRUMENTATION.--Tipping-bucket raingage. Satellite telemetry at station.

REMARKS.--Precipitation data collected during freezing periods may not be accurately reflected in daily record; consequently, winter record is poor.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY SUM VALUES

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 0.00 | 0.00 | 0.01 | 0.44 | 1.28 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 1.34 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.52 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 | 0.00 | 0.37 | 0.02 | 0.00 | 0.00 | 0.00 |
| 6 | 0.01 | 0.00 | 0.00 | 0.55 | 0.00 | 0.00 | 0.00 | 0.06 | 0.01 | 0.00 | 0.48 | 0.00 |
| 7 | 0.06 | 1.45 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.60 | 0.01 | 0.00 |
| 8 | 1.00 | 0.01 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.02 | 0.00 | 0.00 |
| 9 | 0.09 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.06 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 1.57 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.23 | 0.25 | 0.74 | 0.00 |
| 12 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 1.30 | 0.02 | 0.00 | 0.01 | 0.00 | 0.11 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.93 | 0.00 | 0.00 | 0.01 | 0.56 | 0.00 | 0.00 | 0.17 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.13 | 0.00 | 0.04 |
| 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.82 | 0.00 | 0.00 | 0.01 | 0.00 | 0.30 |
| 16 | 0.00 | 2.66 | 0.00 | 0.04 | 0.00 | 0.56 | 0.04 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 |
| 17 | 0.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.98 | 0.02 | 0.00 | 0.00 | 0.00 |
| 18 | 0.17 | 0.00 | 0.00 | 0.54 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.29 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.39 | 0.66 | 0.00 | 0.47 |
| 21 | 0.00 | 2.57 | 0.00 | 0.26 | 0.11 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.12 | 2.33 | 3.29 | 0.88 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.14 | 1.19 |
| 23 | 0.01 | 0.00 | 0.63 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.53 | 0.00 | 0.24 | 0.00 |
| 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 2.33 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.26 | 0.00 | 0.01 | 0.00 |
| 26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| 27 | 1.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.11 | 0.84 | 0.00 |
| 28 | 0.25 | 0.00 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.86 | 0.00 | 0.00 |
| 29 | 0.00 | 0.00 | 0.00 | 0.00 | --- | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 0.00 | 0.05 | 0.00 | 0.00 | --- | 0.00 | 0.00 | 0.00 | 0.05 | 0.05 | 0.05 | 0.00 |
| 31 | 0.00 | --- | 0.02 | 0.00 | --- | 0.00 | --- | 0.00 | --- | 0.01 | 0.00 | --- |
| Total | 3.95 | 9.77 | 6.53 | 3.88 | 2.86 | 2.26 | 5.28 | 1.68 | 3.76 | 4.00 | 4.08 | 2.35 |

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC—Continued

