

Water-Data Report 2007

**02086624 KNAP OF REEDS CREEK NEAR BUTNER, NC**

Neuse Basin  
Upper Neuse Subbasin

LOCATION.--Lat 36°07'40", long 78°47'55" referenced to North American Datum of 1927, Granville County, NC, Hydrologic Unit 03020201, on left bank, 1.5 mi downstream of bridge on Secondary Road 1120, 2.3 mi west of Butner, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--43 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1982 to September 1995. February 2006 to current year.

GAGE.--Water-stage recorder. Datum of gage is 255 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some diurnal fluctuation at low flow. The town of Butner diverted an average of 4.1 ft<sup>3</sup>/s for municipal water supply upstream from station and returned an average of 3.2 ft<sup>3</sup>/s upstream from station as treated effluent.

## 02086624 KNAP OF REEDS CREEK NEAR BUTNER, NC—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	e2.8	e7.9	24	45	19	27	19	10	3.2	4.5	2.8	e2.6
2	e2.3	e6.4	22	69	40	336	21	7.4	3.2	2.7	2.6	e2.6
3	e2.0	e5.9	17	43	43	152	18	8.0	9.6	2.4	2.5	e2.7
4	e1.9	e5.2	18	36	36	59	16	7.6	5.4	2.3	2.5	e2.7
5	e25	e4.9	14	33	33	40	13	6.5	3.7	2.3	2.6	e2.6
6	e6.3	e4.8	11	117	e26	33	9.7	9.7	6.9	2.0	2.8	e2.5
7	e4.9	e8.1	10	83	e19	29	10	8.4	4.4	1.9	2.9	e2.5
8	e3.8	274	9.3	303	e17	27	8.5	7.8	3.5	2.0	2.8	e2.6
9	e2.9	68	6.8	119	16	24	8.1	11	2.7	2.2	2.8	e2.5
10	e2.7	34	7.0	58	13	22	9.5	26	2.6	2.3	3.2	e2.7
11	e2.5	24	7.7	41	12	21	9.7	16	2.7	2.7	3.2	e2.6
12	e2.4	351	8.0	34	12	19	68	137	2.5	4.0	2.8	e2.5
13	e2.3	203	7.9	31	13	18	51	142	4.4	2.8	3.0	e2.5
14	e2.3	49	8.3	30	73	17	29	32	4.1	2.3	2.8	e8.2
15	e2.3	31	8.4	29	58	17	330	21	2.9	2.2	2.7	e6.3
16	e2.2	426	7.7	29	36	145	365	15	2.7	2.3	2.7	e3.6
17	e3.3	277	7.6	24	28	233	101	22	2.4	2.3	e7.3	e2.9
18	e34	60	8.2	22	25	65	52	14	2.5	5.3	e4.4	e2.7
19	e7.6	37	9.0	26	21	42	38	9.1	2.2	3.3	e3.1	e2.6
20	e5.5	28	10	24	20	33	35	6.5	2.2	2.7	e2.7	e2.5
21	e4.7	41	11	e25	18	34	31	6.1	2.2	2.1	e3.4	e2.4
22	e4.0	557	17	159	27	27	25	5.4	2.6	2.0	e8.2	e2.3
23	e7.1	304	38	88	26	25	22	4.9	3.7	e2.0	e6.0	e2.4
24	e4.9	94	31	50	21	23	21	4.6	2.1	e1.9	e3.3	e2.3
25	e4.4	57	214	37	31	22	20	4.4	5.8	e1.9	e2.7	e2.4
26	e3.9	48	332	30	79	19	18	4.3	2.9	e2.1	e2.5	e2.5
27	e4.0	45	90	27	46	18	16	3.7	2.5	e12	e2.4	e2.2
28	e81	41	53	27	32	18	15	3.4	2.4	e8.0	e2.4	e2.3
29	e22	e38	40	24	---	22	12	3.6	2.4	e4.4	e2.5	e2.4
30	e14	26	34	e19	---	24	11	3.7	3.6	e3.6	e2.5	e2.5
31	e10	---	32	18	---	20	---	3.4	---	2.9	e2.5	---
<b>Total</b>	279.0	3,156.2	1,113.9	1,700	840	1,611	1,402.5	564.5	104.0	97.4	100.6	86.1
<b>Mean</b>	9.00	105	35.9	54.8	30.0	52.0	46.8	18.2	3.47	3.14	3.25	2.87
<b>Max</b>	81	557	332	303	79	336	365	142	9.6	12	8.2	8.2
<b>Min</b>	1.9	4.8	6.8	18	12	17	8.1	3.4	2.1	1.9	2.4	2.2
<b>Cfsm</b>	0.21	2.45	0.84	1.28	0.70	1.21	1.09	0.42	0.08	0.07	0.08	0.07
<b>In.</b>	0.24	2.73	0.96	1.47	0.73	1.39	1.21	0.49	0.09	0.08	0.09	0.07

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2007 <sup>a</sup>, BY WATER YEAR (WY)**

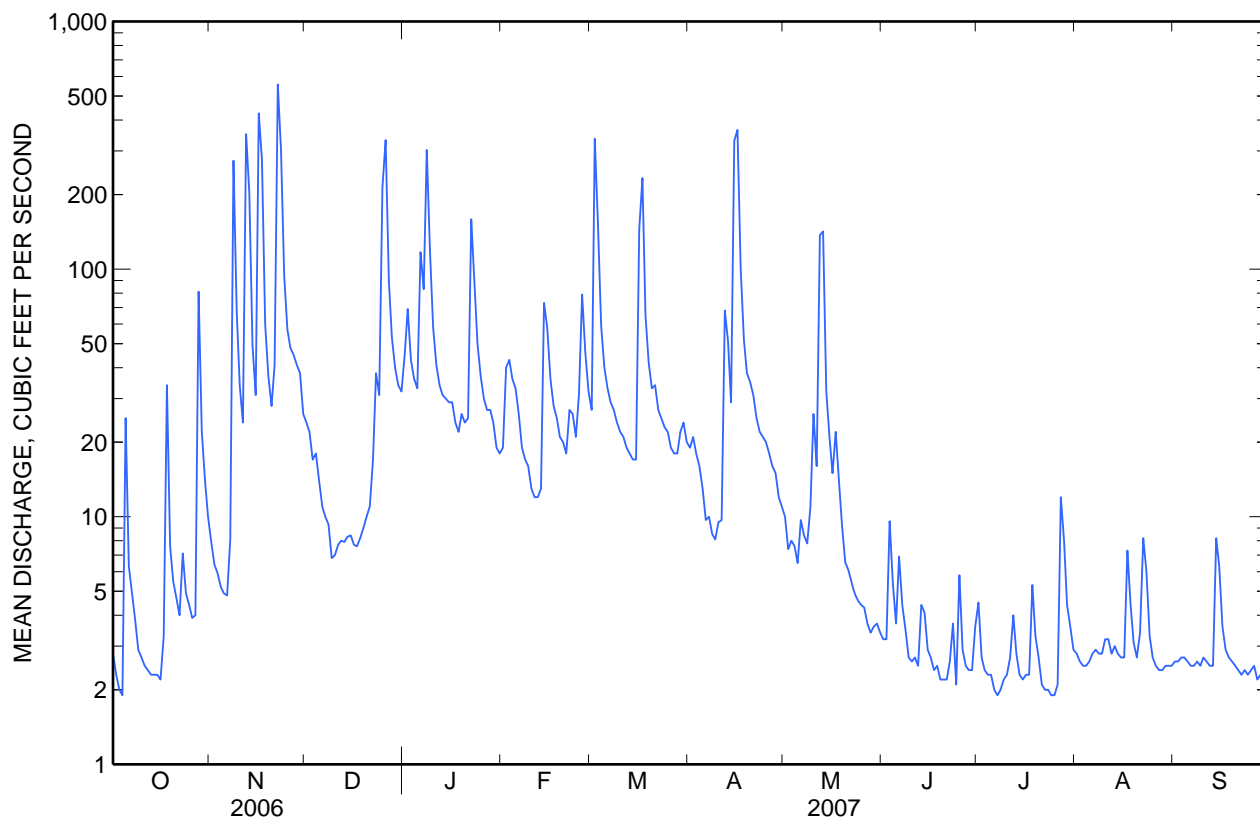
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	18.0	30.6	42.0	64.8	77.9	109	65.3	34.3	20.3	25.7	17.4	5.57
<b>Max</b>	105	147	124	164	170	253	190	109	151	166	113	12.5
<b>(WY)</b>	(1990)	(1986)	(1984)	(1991)	(1983)	(1993)	(1993)	(1989)	(1995)	(1989)	(1989)	(1989)
<b>Min</b>	3.67	4.60	6.54	6.00	14.8	6.57	5.83	5.33	2.41	2.12	3.04	2.44
<b>(WY)</b>	(1985)	(1985)	(1995)	(1989)	(1988)	(2006)	(1995)	(1986)	(1986)	(1985)	(1993)	(1984)

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1983 - 2007 <sup>a</sup>	
Annual total	9,876.9		11,055.2			
Annual mean	28.0		30.3		42.6	
Highest annual mean					78.9	1989
Lowest annual mean					5.80	1996
Highest daily mean	670	Jul 6	557	Nov 22	2,920	Mar 4, 1993
Lowest daily mean	1.9	Aug 26	1.9	Oct 4	1.0	Oct 21, 1992
Annual seven-day minimum	2.2	Aug 22	2.1	Jul 20	1.2	Oct 20, 1992
Maximum peak flow			793	Nov 16	5,800	Mar 4, 1993
Maximum peak stage			7.07	Nov 16	8.31	Mar 4, 1993
Instantaneous low flow			NOT DETERMINED		0.91	Jul 27, 1993
Annual runoff (cfsm)	0.651		0.704		0.991	
Annual runoff (inches)	8.54		9.56		13.47	
10 percent exceeds	54		58		77	
50 percent exceeds	7.7		9.0		8.2	
90 percent exceeds	2.8		2.4		2.9	

<sup>a</sup> See Period of Record.



## 02086624 KNAP OF REEDS CREEK NEAR BUTNER, NC—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-87, 1989-1995, 2006-07.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1982 to September 1985.

WATER TEMPERATURE: October 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

REMARKS.--Station operated to define water quality as part of a regional surface-water quality assessment. Samples for October 1994 and April 1995 were collected by the North Carolina Department of Environment, Health and Natural Resources. A GC/FID scan for trace organic compounds was performed on these samples the the U.S. Geological Survey Water Quality Lab. Results are available at the North Carolina Water Science Center, Raleigh, NC.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, >1,100 microsiemens, August 25, 30, 31, 1984; minimum recorded, 39 microsiemens, March 7, 1984.

WATER TEMPERATURE: Maximum recorded, 31.5°C, August 15, 1985; minimum recorded, 1.0°C, January 21, 29, February 9, 1985.

## WATER-QUALITY DATA

## WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 4

[Remark codes: E, estimated.]

Date	Time	Instan- taneous dis- charge, cfs (00061)	Color, water, fltrd, Pt-Co units (00080)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)
Jan 08...	1300	383	100	752	10.3	94	5.8	67	10.6	20	4.53	2.13	1.79
Mar 02...	1045	459	100	747	11.2	98	5.8	66	8.8	22	5.29	2.23	2.26

## WATER-QUALITY DATA

## WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 2 of 4

[Remark codes: E, estimated.]

Date	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bicar- bonate, wat unf incrm. titr., field, mg/L (00450)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue Ammonia + Ammonia nitrate water, fltrd, mg/L (00631)	Ammonia + Ammonia nitrite water, fltrd, mg/L (00625)	Nitrite + Nitrite water, fltrd, mg/L (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)		
												on evap. at 180degC wat flt mg/L (70300)	org-N, water, unfltrd mg/L as N (00625)
Jan 08...	4.20	15	18	4.24	E.06	8.66	6.34	60	.71	.095	.220	.005	.040
Mar 02...	7.12	15	18	6.46	.11	8.80	8.55	59	.85	.081	.596	.004	.029

02086624 KNAP OF REEDS CREEK NEAR BUTNER, NC—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 3 of 4

[Remark codes: E, estimated.]

Date	Phos- phorus, water, unfltrd mg/L (00665)	Organic carbon, water, unfltrd mg/L (00680)	Alum- inum, water, recover -able, µg/L (01105)	Arsenic water, unfltrd µg/L (01002)	Cadmium water, unfltrd µg/L (01027)	Chrom- ium, water, recover -able, µg/L (01034)	Cobalt water, unfltrd recover -able, µg/L (01037)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Mercury water, unfltrd recover -able, µg/L (71900)	Molyb- denum, water, unfltrd recover -able, µg/L (01062)
Jan 08...	.121	13.7	690	.45	.02	2.3	1.13	3.1	1,550	1.18	142	E.008	.2
Mar 02...	.136	12.4	955	.43	.03	2.3	1.93	3.4	2,020	1.92	224	.012	.4

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 4 of 4

[Remark codes: E, estimated.]

Date	Nickel, water, unfltrd recover -able, µg/L (01067)	Selen- ium, water, unfltrd µg/L (01147)	Silver, water, unfltrd recover -able, µg/L (01077)	Zinc, water, unfltrd recover -able, µg/L (01092)	Sus- pended sedi- ment concen- tration mg/L (80154)
Jan 08...	2.08	.13	E.01	6	49
Mar 02...	2.59	.13	E.01	9	67