

Water-Data Report 2008

02097314 NEW HOPE CREEK NEAR BLANDS, NC

Cape Fear Basin
Haw Subbasin

LOCATION.--Lat 35°53'06", long 78°57'55" referenced to North American Datum of 1983, Durham County, NC, Hydrologic Unit 03030002, on right bank, 15 ft downstream of bridge on Secondary Road 1107, 0.5 mi southwest of Blands, and 2 mi downstream of Third Fork Creek.

DRAINAGE AREA.--75.9 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 214.37 ft above North American Vertical Datum of 1988. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable diurnal fluctuation at low flow. An average of 36.0 ft³/s was diverted from the Neuse River Basin for Durham municipal water supply; 15.2 ft³/s was returned to the Cape Fear River Basin, and about 12.7 ft³/s was returned to the Neuse River Basin. Maximum gage height for period of record occurred as a result of backwater from B. Everett Jordan Lake; maximum gage height unaffected by backwater from B. Everett Jordan Lake, 14.05 ft, September 6, 1996. Minimum discharge for period of record not determined due to regulation. Minimum discharge unregulated, 4.2 ft³/s, April 28, 29, May 1, 2, and July 10, 1985. Minimum discharge for current water year due to regulation, also occurred August 6. Maximum discharge for period of record 12,700 ft³/s, from rating curve extended above 3,500 ft³/s by logarithmic plotting.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	9.4	7.8	21	400	31	31	265	168	19	216	11	77
2	11	8.1	21	139	91	26	300	80	50	41	10	30
3	12	7.6	20	85	94	25	157	73	29	21	9.2	21
4	11	7.4	17	61	73	25	174	69	20	16	9.6	18
5	12	7.3	18	46	56	146	297	66	19	195	9.4	16
6	13	7.1	19	36	44	477	539	67	18	508	9.3	1,720
7	12	7.1	20	30	36	474	474	68	16	771	9.7	2,810
8	12	7.7	20	26	30	617	250	68	16	457	11	1,000
9	12	8.4	20	23	26	753	147	70	16	76	10	453
10	12	9.1	20	21	24	433	120	75	16	54	10	237
11	12	10	21	20	21	232	105	77	16	51	35	256
12	12	10	20	19	20	171	91	205	15	32	15	103
13	12	11	20	18	120	146	77	144	15	19	10	71
14	12	11	20	17	190	126	60	74	14	17	11	39
15	12	13	20	16	161	72	45	50	13	24	12	28
16	13	15	27	16	139	121	34	149	14	16	22	74
17	13	16	35	17	86	133	25	222	15	15	14	294
18	13	16	30	33	65	140	19	95	15	13	14	144
19	13	16	26	37	77	106	14	e178	14	12	13	46
20	13	15	23	39	40	75	24	e90	14	46	11	31
21	12	15	21	38	31	57	81	68	13	23	35	25
22	12	16	20	34	36	46	74	43	166	17	18	23
23	12	15	19	30	56	38	44	30	119	13	12	20
24	14	15	18	28	35	32	28	25	39	12	9.7	19
25	58	15	17	26	31	28	22	22	24	13	9.4	18
26	109	16	24	24	36	26	19	21	18	11	9.3	109
27	219	17	74	22	99	23	19	20	16	9.9	109	306
28	210	17	81	20	55	21	170	22	15	12	519	136
29	75	19	70	19	39	17	370	27	15	11	747	57
30	7.8	21	109	19	---	18	381	22	150	10	326	36
31	7.5	---	457	19	---	70	---	20	---	10	136	---
Total	977.7	376.6	1,348	1,378	1,842	4,705	4,425	2,408	939	2,741.9	2,186.6	8,217
Mean	31.5	12.6	43.5	44.5	63.5	152	148	77.7	31.3	88.4	70.5	274
Max	219	21	457	400	190	753	539	222	166	771	747	2,810
Min	7.5	7.1	17	16	20	17	14	20	13	9.9	9.2	16
Cfs/m	0.42	0.17	0.57	0.59	0.84	2.00	1.94	1.02	0.41	1.17	0.93	3.61
In.	0.48	0.18	0.66	0.68	0.90	2.31	2.17	1.18	0.46	1.34	1.07	4.03

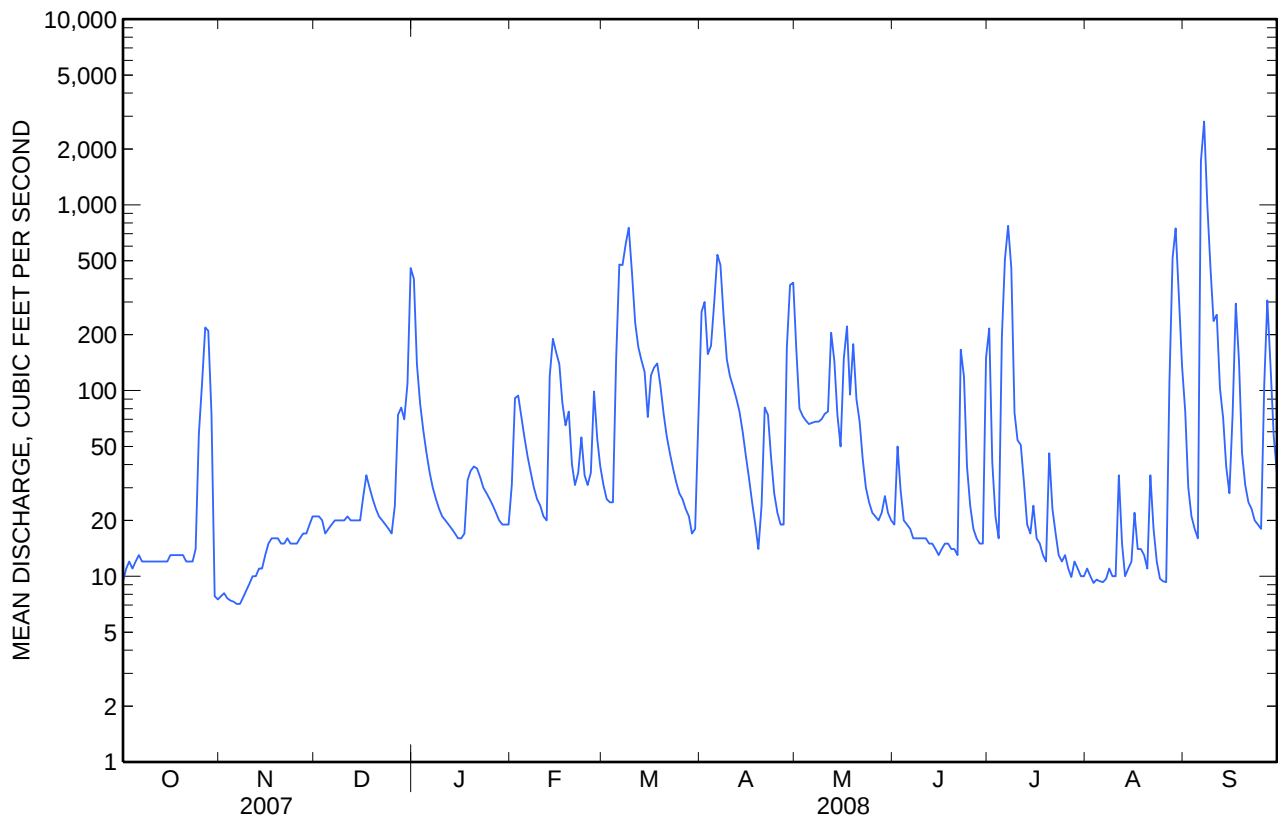
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	49.7	83.4	82.4	140	176	189	148	81.8	45.5	47.2	44.6	71.3
Max	231	477	264	509	463	493	618	411	154	156	121	507
(WY)	(2003)	(2007)	(1984)	(1991)	(1998)	(1998)	(1987)	(1997)	(1995)	(1995)	(2004)	(1999)
Min	12.8	12.6	17.0	31.6	58.2	42.0	13.5	18.1	13.1	12.9	12.4	10.8
(WY)	(1987)	(2008)	(1989)	(2001)	(2002)	(1985)	(1985)	(2002)	(2002)	(1993)	(2006)	(1984)

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SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1983 - 2008	
Annual total	20,732.3		31,544.8			
Annual mean	56.8		86.2		96.1	
Highest annual mean					180	2003
Lowest annual mean					38.3	2002
Highest daily mean	940	Apr 17	2,810	Sep 7	6,300	Sep 6, 1996
Lowest daily mean	7.1	Nov 6	7.1	Nov 6	0.39	Dec 30, 1988
Annual seven-day minimum	7.5	Nov 2	7.5	Nov 2	4.1	Dec 20, 2001
Maximum peak flow			6,970	Sep 6	^a 12,700	Sep 6, 1996
Maximum peak stage			12.19	Sep 6	^a 18.96	Apr 15, 2003
Instantaneous low flow			^a 5.7	Aug 3	^a NOT DETERMINED	
Annual runoff (cfs)	0.748		1.14		1.27	
Annual runoff (inches)	10.16		15.46		17.21	
10 percent exceeds	133		192		210	
50 percent exceeds	21		24		33	
90 percent exceeds	12		11		13	

^aSee Remarks.

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-86, 1989-1995, 1997-1999, 2001, 2004, 2006-2008.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1982 to September 1985.

WATER TEMPERATURE: December 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.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 535 microsiemens, September 30, 1984; minimum, 38 microsiemens. March 6, 7, 1984.

WATER TEMPERATURE: Maximum, 27.5°C, August 23, 1983; minimum, 0.0°C, January 21, 22, 1985.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 1 of 4

[Remark codes: E, estimated.]

Date	Time	Instantaneous discharge, cfs (00061)	Color, water, fltrd, Pt-Co units (00080)	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 25 degC (00095)	Temperature, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
Mar 08...	0945	583	150	743	6.8	66	6.8	108	12.3	30	7.71	2.51	2.84
Apr 29...	1000	347	250	756	5.6	59	6.9	100	17.2	28	7.40	2.28	3.06

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 2 of 4

[Remark codes: E, estimated.]

Date	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf infl pt titr., field, mg/L as CaCO3 (00419)	Bicarbonate, wat unf infl pt titr., field, mg/L (00450)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L as SiO2 (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia, water, fltrd, mg/L as N (00608)	Nitrate + nitrite, water, fltrd, mg/L as N (00631)	Nitrite, water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)
Mar 08...	9.45	16	19	10.3	E.10	9.17	13.6	92	.96	.077	.779	.011	.153
Apr 29...	6.41	24	29	6.30	E.12	6.97	7.96	84	1.2	.072	.374	.010	.100

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 3 of 4

[Remark codes: E, estimated.]

Date	Phos- phorus, water, unfltrd mg/L (00665)	Organic carbon, water, fltrd, mg/L (00681)	Organic carbon, water, unfltrd mg/L (00680)	Alum- inum, water, unfltrd recover- able, µg/L (01105)	Arsenic water, unfltrd µg/L (01002)	Cadmium water, unfltrd µg/L (01027)	Chrom- ium, water, unfltrd 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, fltrd, µg/L (71890)
Mar 08...	.267	13.1	14.6	705	.87	.03	1.3	.49	4.4	972	1.42	84.7	E.009
Apr 29...	.28	11.4	19.2	1,460	1.7	.05	2.8	1.4	7.2	2,320	5.16	197	E.007

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 4 of 4

[Remark codes: E, estimated.]

Date	Mercury water, unfltrd recover- able, µg/L (71900)	Molyb- denum, water, unfltrd recover- able, µg/L (01062)	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)
Mar 08...	.015	.7	3.1	.18	.05	17.3	29
Apr 29...	.026	.5	3.6	.17	.06	20.6	88