

Water-Data Report 2008

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. No flow also occurred October 12-17, 2007.

02085500 FLAT RIVER AT BAHAMA, 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	0.01	4.2	0.24	145	25	30	722	141	23	7.9	0.34	40
2	0.01	2.0	0.18	61	201	26	298	96	22	5.0	0.91	28
3	0.02	0.56	0.21	38	89	23	142	73	19	3.6	1.2	12
4	0.01	0.96	0.22	27	55	59	402	62	17	2.8	0.66	7.7
5	0.01	1.1	0.25	21	45	1,860	1,470	53	16	2.7	1.2	5.0
6	0.01	0.92	0.25	18	47	318	650	47	16	4.6	0.95	7,560
7	0.01	1.5	0.26	15	41	339	364	43	16	4.7	0.70	1,480
8	0.01	1.5	0.28	13	34	899	206	40	15	3.9	0.61	172
9	0.02	1.2	0.36	11	28	269	145	44	14	6.5	0.33	89
10	0.02	1.2	0.51	9.5	22	137	111	40	13	5.9	0.96	67
11	0.01	1.6	0.60	9.5	16	98	91	37	12	9.0	2.1	120
12	0.00	1.7	0.60	8.8	14	78	78	46	10	6.9	1.4	73
13	0.00	1.9	0.55	8.0	136	65	70	44	9.5	5.1	1.6	53
14	0.00	2.3	0.89	6.9	182	55	61	37	8.3	4.4	1.6	42
15	0.00	2.7	2.4	6.3	132	51	53	35	7.3	3.8	1.4	33
16	0.00	5.2	2.0	6.2	94	226	48	38	6.9	2.8	1.2	32
17	0.01	2.9	1.3	8.3	64	161	44	38	6.9	2.3	0.98	53
18	0.02	1.5	1.2	31	51	89	42	36	6.1	2.3	0.80	51
19	0.03	0.20	2.7	46	43	71	40	40	5.2	2.4	0.92	36
20	0.03	0.21	3.5	36	37	69	45	38	4.9	2.2	0.80	28
21	0.02	0.19	1.5	28	32	65	118	34	5.0	1.7	0.79	24
22	0.02	0.23	0.28	22	29	54	96	34	6.4	1.9	0.54	22
23	0.05	0.24	0.27	20	28	47	67	30	9.5	1.9	0.45	19
24	0.18	0.18	0.25	18	27	43	54	27	8.4	12	0.56	17
25	7.8	0.16	0.20	17	26	39	46	25	3.7	10	0.28	15
26	16	0.20	1.3	14	27	37	42	24	3.0	8.7	0.33	137
27	118	0.21	8.9	13	42	35	39	22	2.7	4.3	27	793
28	68	0.22	13	11	47	33	900	24	2.3	2.5	721	236
29	27	0.22	6.6	10	37	34	1,170	25	1.9	1.8	141	109
30	13	0.23	83	11	---	36	265	26	6.7	1.1	56	70
31	7.1	---	563	9.7	---	78	---	22	---	0.35	58	---
Total	257.40	37.43	696.80	699.2	1,651	5,424	7,879	1,321	297.7	135.05	1,026.61	11,423.7
Mean	8.30	1.25	22.5	22.6	56.9	175	263	42.6	9.92	4.36	33.1	381
Max	118	5.2	563	145	201	1,860	1,470	141	23	12	721	7,560
Min	0.00	0.16	0.18	6.2	14	23	39	22	1.9	0.35	0.28	5.0
Cfsm	0.06	0.01	0.15	0.15	0.38	1.17	1.76	0.29	0.07	0.03	0.22	2.56
In.	0.06	0.01	0.17	0.17	0.41	1.35	1.97	0.33	0.07	0.03	0.26	2.85

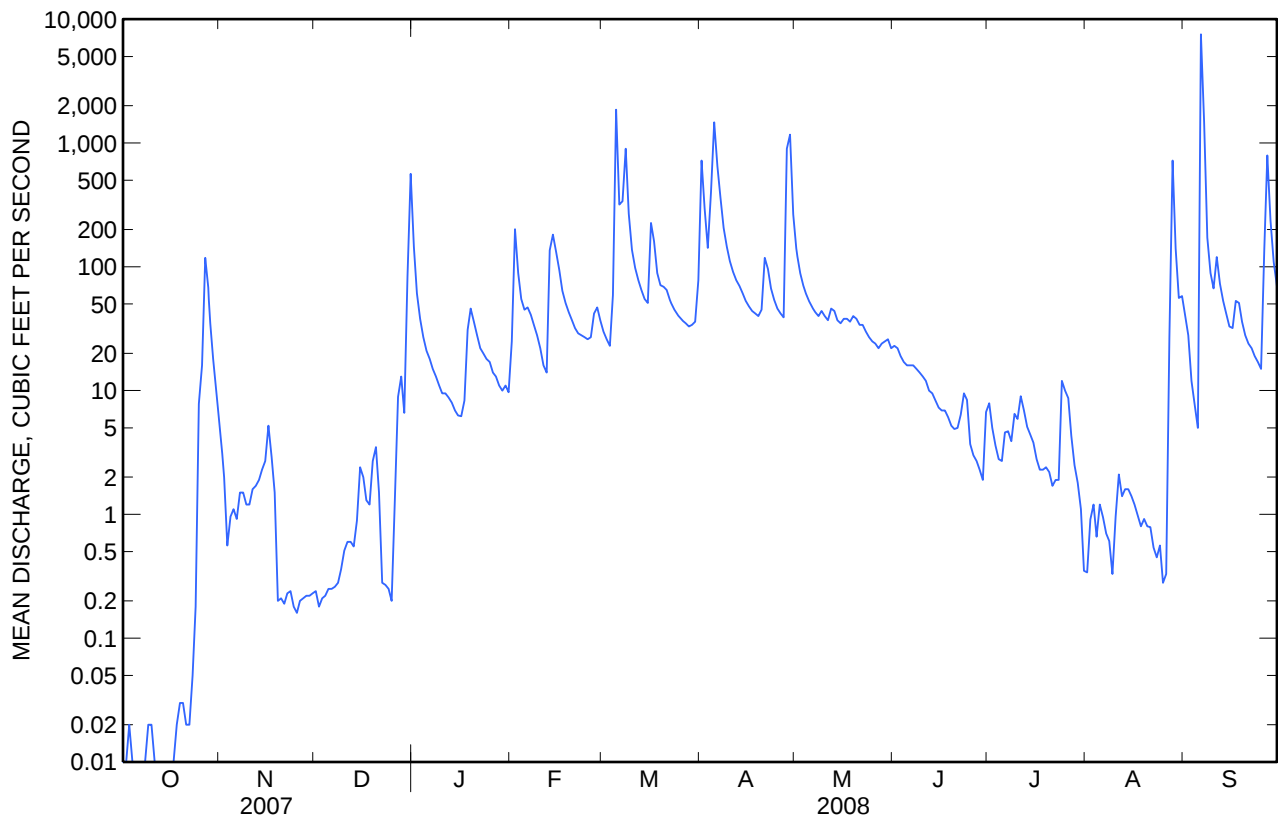
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	66.0	97.3	133	215	261	282	222	111	78.2	83.1	72.3	87.6
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 2007		Water Year 2008		Water Years 1925 - 2008	
Annual total	24,756.41		30,848.89			
Annual mean	67.8		84.3		142	
Highest annual mean					347	
Lowest annual mean					25.2	
Highest daily mean	1,650	Apr 15	7,560	Sep 6	21,800	Sep 6, 1996
Lowest daily mean	0.00	Oct 12	0.00	Oct 12	0.00	Oct 12, 2007
Annual seven-day minimum	0.00	Oct 11	0.00	Oct 11	0.00	Oct 11, 2007
Maximum peak flow			14,700	Sep 6	^a 33,800	Sep 6, 1996
Maximum peak stage			11.39	Sep 6	^a 17.26	Sep 6, 1996
Instantaneous low flow			^a 0.00	Oct 11	^a 0.00	Oct 11, 2007
Annual runoff (cfs)	0.455		0.566		0.952	
Annual runoff (inches)	6.18		7.70		12.94	
10 percent exceeds	138		119		276	
50 percent exceeds	11		14		48	
90 percent exceeds	0.13		0.22		6.4	

^aSee 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 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 2007 TO SEPTEMBER 2008

Part 1 of 3

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

Date	Time	Instan- taneous dis- charge, cfs (00061)	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)	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)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite water, fltrd, mg/L as N (00613)
Oct 02...	1315	.01	746	7.3	85	6.9	93	21.5	.35	E.015	E.02	E.02	.002
Dec 11...	1200	.60	757	8.6	80	7.0	103	11.8	.39	<.020	<.016	--	<.002
Feb 13...	0930	79	745	11.9	97	5.8	85	5.5	.55	.021	.148	E.15	E.002
Mar 28...	1430	32	748	10.0	105	6.0	79	16.7	.31	<.020	<.016	--	<.002
May 22...	1600	35	745	8.4	94	7.4	82	19.6	.34	E.019	.183	.18	.002
Jun 30...	1215	6.6	740	7.2	94	7.3	96	27.3	.36	<.020	E.012	--	<.002
Aug 27...	1230	5.5	750	--	--	7.3	75	23.2	.33	E.011	E.011	--	<.002
Sep 06...	1115	8,290	741	7.7	89	6.8	48	21.5	1.2	E.012	.187	.18	.005

02085500 FLAT RIVER AT BAHAMA, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 2 of 3

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L as P (00665)	Aluminum, water, unfltrd recover-able, µg/L (01105)	Arsenic, water, unfltrd µg/L (01002)	Cadmium, water, unfltrd µg/L (01027)	Chromium, 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)	Manganese, water, unfltrd recover-able, µg/L (01055)	Mercury, water, unfltrd recover-able, µg/L (71900)	Molybdenum, water, unfltrd recover-able, µg/L (01062)
Oct 02...	E.003	E.02	--	--	--	--	--	--	--	--	--	--	--
Dec 11...	E.005	.020	--	--	--	--	--	--	--	--	--	--	--
Feb 13...	.013	.060	--	--	--	--	--	--	--	--	--	--	--
Mar 28...	<.006	.019	--	--	--	--	--	--	--	--	--	--	--
May 22...	.007	.030	--	--	--	--	--	--	--	--	--	--	--
Jun 30...	<.006	.027	--	--	--	--	--	--	--	--	--	--	--
Aug 27...	E.004	.025	--	--	--	--	--	--	--	--	--	--	--
Sep 06...	.026	.308	1,510	1.1	.03	1.4	1.8	4.2	1,920	3.52	250	.013	M

02085500 FLAT RIVER AT BAHAMA, NC—Continued**WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 3 of 3

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

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)	Sus- pended sedi- ment dis- charge, tons/d (80155)
Oct						
02...	--	--	--	--	1	.00
Dec						
11...	--	--	--	--	2	.00
Feb						
13...	--	--	--	--	11	2.3
Mar						
28...	--	--	--	--	5	.43
May						
22...	--	--	--	--	2	.19
Jun						
30...	--	--	--	--	4	.07
Aug						
27...	--	--	--	--	7	.10
Sep						
06...	3.2	.13	E.01	27.2	160	3,580