



Water-Data Report 2011

02097464 MORGAN CREEK NEAR WHITE CROSS, NC

Cape Fear Basin
Haw Subbasin

LOCATION.--Lat 35°55'25", long 79°06'54" referenced to North American Datum of 1983, Orange County, NC, Hydrologic Unit 03030002, at downstream side of culvert on North Carolina Highway 54, 2 mi upstream from University Lake, and 3.5 mi east of White Cross.

DRAINAGE AREA.--8.35 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 410.13 ft above North American Vertical Datum of 1988. Satellite telemetry at streamgage.

REMARKS.--No estimated daily discharges, records fair. Maximum discharge for period of record from rating curve extended above 2,700 ft³/s, by logarithmic plotting. No flow occurs at times most years.

02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.5	0.39	0.77	0.64	0.61	4.4	3.8	0.90	0.29	0.14	0.00	0.00
2	0.40	0.38	0.81	0.91	0.78	2.1	2.5	0.88	0.25	0.08	0.00	0.00
3	0.24	0.39	0.75	1.1	0.78	1.5	1.6	0.85	0.20	0.05	0.00	0.00
4	0.17	0.55	0.70	0.96	0.86	1.2	1.5	10	0.18	0.04	0.00	0.00
5	0.19	0.78	0.76	0.86	14	1.2	1.6	3.1	0.17	0.07	0.00	0.00
6	0.18	0.80	0.72	0.85	5.1	2.9	1.5	1.3	0.17	0.05	0.01	0.02
7	0.17	0.74	0.68	0.82	2.1	6.0	1.2	0.83	0.16	0.08	0.01	0.03
8	0.15	0.64	0.68	0.74	1.4	2.8	1.2	0.73	0.15	2.3	0.00	0.01
9	0.14	0.63	0.66	0.66	0.98	2.2	5.6	0.65	0.14	13	0.00	0.01
10	0.14	0.59	0.62	0.63	0.85	6.0	28	0.52	0.12	0.85	0.00	0.01
11	0.14	0.57	0.59	0.63	0.77	6.5	6.7	0.48	0.12	0.54	0.00	0.00
12	0.13	0.53	0.74	0.63	0.70	2.9	3.8	0.44	0.25	0.37	0.00	0.00
13	0.12	0.51	0.89	0.63	0.63	2.1	2.7	0.58	0.21	0.26	0.01	0.00
14	0.36	0.51	0.89	0.62	0.60	1.7	2.7	1.1	0.15	0.19	0.01	0.00
15	0.75	0.49	0.89	0.60	0.59	1.3	2.6	1.0	0.12	0.14	0.04	0.00
16	0.35	0.50	0.92	0.59	0.55	1.5	16	0.71	0.11	0.11	0.02	0.00
17	0.30	0.72	1.7	0.60	0.56	1.3	16	1.5	0.10	0.08	0.01	0.00
18	0.27	0.76	1.5	0.67	0.58	1.1	5.6	0.77	0.09	0.07	0.00	0.00
19	0.24	0.72	1.1	0.68	0.56	1.1	3.4	0.56	0.09	0.05	0.00	0.00
20	0.30	0.65	0.92	0.63	0.51	0.95	2.5	0.46	0.08	0.04	0.00	0.00
21	0.30	0.62	0.79	0.59	0.53	0.91	1.9	0.40	0.06	0.03	0.00	0.01
22	0.26	0.60	0.72	0.55	0.58	0.96	1.8	0.35	0.05	0.02	0.00	0.03
23	0.22	0.59	0.66	0.53	0.61	0.94	2.4	0.34	0.04	0.01	0.00	0.03
24	0.20	0.57	0.59	0.51	0.64	2.3	2.1	0.32	0.03	0.01	0.00	0.04
25	0.19	0.55	0.58	0.49	0.77	1.7	1.5	0.28	0.02	0.00	0.00	0.04
26	0.38	0.58	0.67	0.72	0.94	1.2	1.4	0.26	0.02	0.00	0.00	0.03
27	0.38	0.60	0.70	0.97	1.1	2.4	1.3	1.5	0.01	0.00	0.00	0.03
28	0.54	0.58	0.64	0.86	1.4	2.3	1.3	1.9	0.03	0.00	0.00	0.04
29	0.47	0.54	0.59	0.77	---	1.9	1.2	0.64	0.17	0.00	0.00	0.03
30	0.43	0.52	0.59	0.70	---	13	1.00	0.44	0.18	0.00	0.00	0.03
31	0.43	---	0.60	0.65	---	9.6	---	0.35	---	0.00	0.00	---
Total	10.04	17.60	24.42	21.79	40.08	87.96	126.40	34.14	3.76	18.58	0.11	0.39
Mean	0.32	0.59	0.79	0.70	1.43	2.84	4.21	1.10	0.13	0.60	0.00	0.01
Max	1.5	0.80	1.7	1.1	14	13	28	10	0.29	13	0.04	0.04
Min	0.12	0.38	0.58	0.49	0.51	0.91	1.0	0.26	0.01	0.00	0.00	0.00
Cfsm	0.04	0.07	0.09	0.08	0.17	0.34	0.50	0.13	0.02	0.07	0.00	0.00
In.	0.04	0.08	0.11	0.10	0.18	0.39	0.56	0.15	0.02	0.08	0.00	0.00

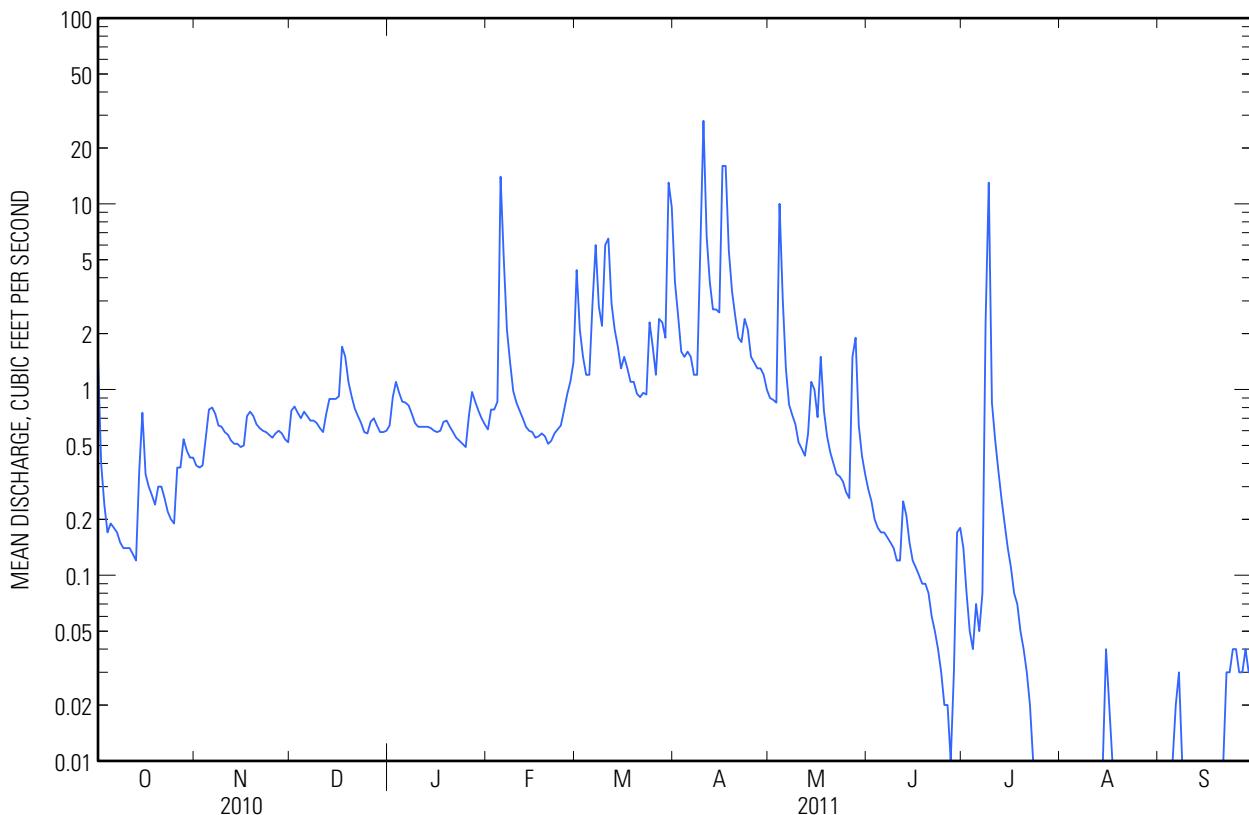
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2.77	4.27	5.57	9.81	11.4	15.8	9.59	5.27	3.53	2.39	2.18	4.98
Max	13.1	16.0	18.7	33.4	39.7	53.0	38.6	30.1	19.9	12.3	18.7	40.4
(WY) (1990)	(2007)	(2010)	(1998)	(1998)	(1998)	(1998)	(2003)	(1989)	(1995)	(2000)	(1995)	(1999)
Min	0.01	0.00	0.18	0.37	1.26	1.67	1.95	0.72	0.03	0.04	0.00	0.00
(WY)	(2008)	(2008)	(2008)	(2008)	(2008)	(2006)	(2002)	(2002)	(2002)	(2002)	(2007)	(2007)

SUMMARY STATISTICS

	Calendar Year 2010	Water Year 2011	Water Years 1989 - 2011
Annual total	1,518.91	385.27	
Annual mean	4.16	1.06	6.27
Highest annual mean			12.5
Lowest annual mean			1.06
Highest daily mean	169 Feb 5	28 Apr 10	737 Sep 6, 1996
Lowest daily mean	0.00 Aug 13	0.00 Jul 25	0.00 Jun 16, 2002
Annual seven-day minimum	0.00 Aug 13	0.00 Jul 25	0.00 Aug 8, 2002
Maximum peak flow		78 Jul 9	a3,100 Aug 27, 1995
Maximum peak stage		4.14 Jul 9	11.20 Aug 27, 1995
Instantaneous low flow		a0.00 Jul 24	a0.00 Jun 16, 2002
Annual runoff (cfsm)	0.498	0.126	0.751
Annual runoff (inches)	6.77	1.72	10.20
10 percent exceeds	8.6	2.1	12
50 percent exceeds	0.72	0.57	2.1
90 percent exceeds	0.00	0.00	0.11

^a See Remarks.



02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1989 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 2002 to November 2003.

REMARKS.--Station operated as part of a regional surface-water quality assessment. August 2002 to November 2003, station was also part of the NAWQA Urban Land Use Gradient study.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.6°C, August 30, 2003; minimum recorded, 0.0°C, January 19, 23-26, 28, 2003.

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 1 of 6

[%; percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Color, water, filtered, platinum cobalt units (00080)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
10-07-2010	1145	Surface water	Regular	753	40	.16	5.6	55	6.6
12-03-2010	0930	Surface water	Regular	753	20	.73	10.1	81	7.0
02-15-2011	1315	Surface water	Regular	760	18	.59	13.1	107	7.4
04-26-2011	1015	Surface water	Regular	752	35	1.3	7.2	77	7.0
06-30-2011	1015	Surface water	Regular	757	62	.18	2.4	28	7.0

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 2 of 6

[%; percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)		Temperature, water, °C (00010)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Hardness, water, mg/L as CaCO ₃ (00900)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (00419)
		Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)	Temperature, water, °C (00010)								
10-07-2010	1145	109	13.8	87	36.2	9.16	3.25	2.88	5.95	25.5	
12-03-2010	0930	119	5.6	77	43.7	11.2	3.85	2.42	6.97	37.0	
02-15-2011	1315	117	6.5	71	40.8	10.8	3.38	1.53	7.01	--	
04-26-2011	1015	118	18.7	81	41.4	10.8	3.51	2.06	7.46	33.8	
06-30-2011	1015	146	21.9	92	51.9	13.7	4.28	2.29	7.51	52.8	

02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 3 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Bi-carbonate, water, unfiltered, inflection-point, incremental titration method, field, mg/L (00450)				Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)
		Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	mg/L as (00955)	mg/L (00945)	mg/L as N (00625)	mg/L as N (00608)	mg/L as N (00631)	mg/L as N (00613)		
10-07-2010	1145	31.1	6.96	<.04	14.9	13.6	.43	.017	.012	<.001	
12-03-2010	0930	45.1	9.34	<.04	15.5	7.30	.18	<.010	<.008	<.001	
02-15-2011	1315	72.5	11.8	<.04	8.79	8.81	.17	<.010	.333	.002	
04-26-2011	1015	41.2	10.5	.04	13.6	5.04	.44	.049	.213	.004	
06-30-2011	1015	64.3	9.33	.07	18.6	1.96	.48	.084	.095	.005	

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 4 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Orthophosphate, water, filtered, mg/L as P (00671)		Aluminum, water, unfiltered, recoverable, µg/L (01105)		Chromium, water, unfiltered, recoverable, µg/L (01027)		Cobalt, water, unfiltered, recoverable, microgram s per liter (01034)	Copper, water, unfiltered, recoverable, µg/L (01037)	Iron, water, unfiltered, recoverable, µg/L (01042)	Iron, water, unfiltered, recoverable, µg/L (01045)
		Phosphorus, water, unfiltered, mg/L as P (00665)	µg/L (01105)	water, unfiltered, recoverable, µg/L (01027)	water, unfiltered, recoverable, µg/L (01034)	water, unfiltered, recoverable, µg/L (01037)	water, unfiltered, recoverable, µg/L (01042)	water, unfiltered, recoverable, µg/L (01045)			
10-07-2010	1145	.020	.051	70	<.05	.36	.42	1.5	633		
12-03-2010	0930	.020	.026	--	--	--	--	--	--	--	
02-15-2011	1315	.007	.013	--	--	--	--	--	--	--	
04-26-2011	1015	.026	.068	95	<.05	.32	.42	.87	1,150		
06-30-2011	1015	.034	.096	--	--	--	--	--	--	--	

02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 5 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Manganese		Molybdenum		Nickel		Silver		Zinc		Arsenic, water, unfiltered, µg/L (01002)	Selenium, water, unfiltered, µg/L (01147)
		Lead, water, unfiltered, recoverable, µg/L (01051)	Nickel, water, unfiltered, recoverable, µg/L (01055)	Mercury, water, unfiltered, recoverable, µg/L (71900)	Manganese, water, unfiltered, recoverable, µg/L (01062)	Nickel, water, unfiltered, recoverable, µg/L (01067)	Silver, water, unfiltered, recoverable, µg/L (01077)	Zinc, water, unfiltered, recoverable, µg/L (01092)					
10-07-2010	1145	.12	117	<.005	.1	<.12	<.01	<2.4	.75	.15			
12-03-2010	0930	--	--	--	--	--	--	--	--	--			
02-15-2011	1315	--	--	--	--	--	--	--	--	--			
04-26-2011	1015	.29	117	<.005	.2	.38	<.01	<2.4	.93	.12			
06-30-2011	1015	--	--	--	--	--	--	--	--	--			

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER
2011

Part 6 of 6

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Date	Sample start time	Organic carbon, water, unfiltered, mg/L (00680)		Suspended sediment concentration, mg/L (80154)	
10-07-2010	1145	8.4	6		
12-03-2010	0930	4.7	2		
02-15-2011	1315	3.2	1		
04-26-2011	1015	5.9	13		
06-30-2011	1015	6.6	9		