

Water-Data Report 2010

**02085070 ENO RIVER NEAR DURHAM, NC**

Neuse Basin  
Upper Neuse Subbasin

LOCATION.--Lat 36°04'20", long 78°54'28" referenced to North American Datum of 1983, Durham County, NC, Hydrologic Unit 03020201, on right bank 275 ft downstream of bridge on U.S. Highway 501, 0.2 mi downstream of Crooked Creek, and 5 mi north of Durham.

DRAINAGE AREA.--141 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--August 1963 to current year. Occasional low-flow measurements, 1955.

PRECIPITATION: August 2008 to current year. Published as station number 360419078543145.

REVISED RECORDS.--WDR NC-72-1: 1968-71 (annual maximum discharges).

GAGE.--Water-stage recorder. Datum of gage is 269.92 ft above North American Vertical Datum of 1988. Prior to November 19, 1966, at site 275 ft upstream, at datum 272.35 ft. Water-stage recorder at present site, at datum 270.94 ft. November 20, 1966, to September 30, 1967. U.S. Army Corps of Engineers satellite telemetry at streamgage.

REMARKS.--No estimated daily discharges. Records good. Some regulation during periods of low flow caused by mill 600 ft upstream. Maximum gage height for period of record, 23.58 ft, from floodmark. Minimum discharge for period of record also occurred on August 15, 1977.

## 02085070 ENO RIVER NEAR DURHAM, NC—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	12	44	65	149	147	111	155	37	102	11	19	6.5
2	8.1	87	419	131	174	107	127	36	165	10	16	5.7
3	6.5	41	1,800	111	631	116	112	35	116	9.1	15	5.1
4	5.1	24	478	101	681	115	102	34	90	8.6	12	5.6
5	4.6	14	276	93	1,390	106	93	33	65	7.7	24	5.2
6	5.3	8.6	272	88	3,430	100	87	32	54	7.2	82	5.0
7	5.3	5.8	163	85	821	93	79	32	52	6.7	50	4.8
8	5.3	5.6	124	85	447	90	74	29	46	7.4	27	5.0
9	5.3	5.5	1,320	83	311	88	82	24	41	9.3	16	5.4
10	5.7	13	771	76	308	85	76	20	38	6.7	12	5.0
11	4.9	1,220	275	71	236	88	65	19	36	7.7	11	4.7
12	4.0	1,630	155	71	187	106	62	19	33	8.1	9.6	5.2
13	4.6	1,580	185	73	176	328	60	25	56	15	9.0	6.1
14	4.8	481	315	69	165	327	56	23	84	89	8.8	5.8
15	6.0	177	199	69	153	278	56	24	49	59	7.8	5.4
16	6.4	108	141	66	159	172	54	53	166	27	7.1	4.9
17	5.5	79	115	588	147	136	52	507	76	82	6.9	4.2
18	5.8	65	107	613	134	119	50	1,000	43	137	6.9	3.9
19	5.4	92	563	263	124	109	47	264	34	102	11	3.8
20	5.4	87	477	162	116	100	46	140	30	45	12	3.7
21	5.3	74	335	157	111	94	60	87	25	31	8.8	3.9
22	6.5	61	234	399	126	91	71	142	21	21	17	4.4
23	7.8	746	183	260	164	94	56	580	23	16	23	4.4
24	12	732	154	174	152	91	51	269	25	13	26	4.4
25	8.1	259	890	2,160	176	82	59	134	20	16	39	4.6
26	7.3	142	1,570	705	153	83	61	93	16	26	16	4.1
27	9.6	112	534	316	131	86	53	68	16	16	11	35
28	39	95	275	200	120	79	46	126	15	84	9.3	76
29	35	77	183	161	---	924	40	1,860	15	46	7.2	66
30	23	67	142	169	---	548	38	255	12	28	6.9	1,040
31	13	---	143	171	---	234	---	127	---	23	6.7	---
<b>Total</b>	282.6	8,132.5	12,863	7,919	11,070	5,180	2,070	6,127	1,564	975.5	534.0	1,343.8
<b>Mean</b>	9.12	271	415	255	395	167	69.0	198	52.1	31.5	17.2	44.8
<b>Max</b>	39	1,630	1,800	2,160	3,430	924	155	1,860	166	137	82	1,040
<b>Min</b>	4.0	5.5	65	66	111	79	38	19	12	6.7	6.7	3.7
<b>Cfsm</b>	0.06	1.92	2.94	1.81	2.80	1.19	0.49	1.40	0.37	0.22	0.12	0.32
<b>In.</b>	0.07	2.15	3.39	2.09	2.92	1.37	0.55	1.62	0.41	0.26	0.14	0.35

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2010, BY WATER YEAR (WY)**

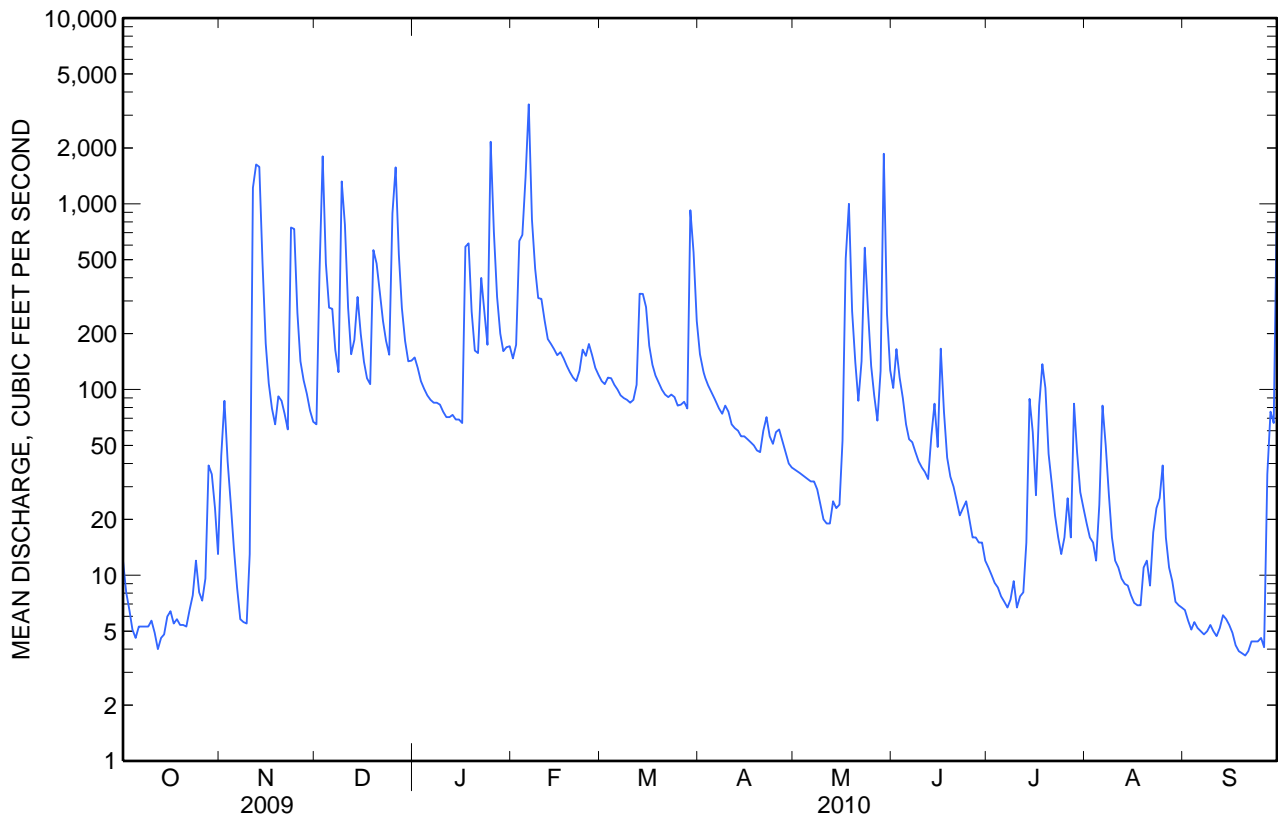
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	55.5	81.1	119	189	230	269	182	115	86.5	67.9	51.3	72.2
<b>Max</b>	456	462	415	517	638	767	603	429	411	452	282	606
<b>(WY)</b>	(1972)	(1986)	(2010)	(1998)	(1998)	(1998)	(2003)	(1978)	(1982)	(1975)	(1985)	(1999)
<b>Min</b>	4.77	3.51	11.3	14.3	37.4	32.4	34.9	10.2	5.28	6.01	3.12	0.84
<b>(WY)</b>	(1964)	(2008)	(2002)	(2008)	(2008)	(2006)	(1995)	(2002)	(2002)	(2002)	(2007)	(1968)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1963 - 2010	
<b>Annual total</b>	47,744.8		58,061.4			
<b>Annual mean</b>	131		159		126	
<b>Highest annual mean</b>					293	2003
<b>Lowest annual mean</b>					26.7	2002
<b>Highest daily mean</b>	1,800	Dec 3	3,430	Feb 6	9,900	Sep 6, 1996
<b>Lowest daily mean</b>	2.8	Sep 13	3.7	Sep 20	0.08	Aug 14, 1977
<b>Annual seven-day minimum</b>	3.8	Sep 10	4.0	Sep 17	0.20	Aug 8, 1977
<b>Maximum peak flow</b>			5,750	May 29	14,700	Sep 6, 1996
<b>Maximum peak stage</b>			14.14	May 29	<sup>a</sup> 23.58	Sep 6, 1996
<b>Instantaneous low flow</b>			2.1	Sep 26	<sup>a</sup> 0.06	Aug 14, 1977
<b>Annual runoff (cfsm)</b>	0.928		1.13		0.894	
<b>Annual runoff (inches)</b>	12.60		15.32		12.15	
<b>10 percent exceeds</b>	309		327		257	
<b>50 percent exceeds</b>	43		65		51	
<b>90 percent exceeds</b>	5.7		5.6		6.3	

<sup>a</sup> See Remarks.



## 02085070 ENO RIVER NEAR DURHAM, NC—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989-95, 2009-10.

REMARKS.--Station operated to define water quality as part of a regional surface-water quality assessment.

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 1 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/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; E, estimated]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Color, water, filtered, platinum cobalt units (00080)	Discharge, instantaneous, ft <sup>3</sup> /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)
11-12-2009	1330	Surface water	Regular	749	150	1,740	10.5	98	7.2	64
01-25-2010	0915	Surface water	Regular	741	200	3,740	10.9	102	6.7	51

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 2 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/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; E, estimated]

Date	Temperature, water, °C (00010)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Hardness, water, mg/L as CaCO <sub>3</sub> (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 <sub>3</sub> (00419)	Bi carbonate, water, unfiltered, inflection-point, incremental titration method, field, mg/L (00450)
11-12-2009	11.6	61	20.2	4.94	1.90	2.82	3.72	11.6	14.2
01-25-2010	11.1	56	14.9	3.63	1.42	1.73	2.92	8.6	10.5

## 02085070 ENO RIVER NEAR DURHAM, NC—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/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; E, estimated]

Date	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO <sub>2</sub> (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia	Ammonia, water, filtered, mg/L as N (00608)	Nitrate	Nitrite, water, filtered, mg/L as N (00613)	Orthophos phate, water, filtered, mg/L as P (00671)
					plus organic nitrogen, water, unfiltered, mg/L as N (00625)		plus nitrite, water, filtered, mg/L as N (00631)		
11-12-2009	4.86	< .08	7.99	6.58	1.0	< .020	.352	.004	.033
01-25-2010	4.47	< .08	7.66	4.63	1.6	E .017	.243	.003	.017

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/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; E, estimated]

Date	Phosphorus, water, unfiltered, mg/L as P (00665)	Aluminum, water, unfiltered, recover able, μg/L (01105)	Cadmium, water, unfiltered, μg/L (01027)	Chromium, water, unfiltered, recover able, μg/L (01034)	Cobalt,	Copper, water, unfiltered, recover able, μg/L (01042)	Iron, water, unfiltered, recover able, μg/L (01045)	Lead, water, unfiltered, recover able, μg/L (01051)	Manganes e, water, unfiltered, recover able, μg/L (01055)	Mercury, water, unfiltered, recover able, μg/L (71900)
					water, unfiltered, recoverabl e, microgram s per liter (01037)					
11-12-2009	.239	1,120	.04	1.2	2.0	4.7	2,290	2.88	373	.011
01-25-2010	.458	2,970	.06	2.6	4.8	7.1	5,200	7.56	549	.031

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 5 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/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; E, estimated]

Date	Molybdenu m, water, unfiltered, recoverabl e, microgram s per liter (01062)	Nickel, water, unfiltered, recover able, μg/L (01067)	Silver, water, unfiltered, recover able, μg/L (01077)	Zinc, water, unfiltered, recover able, μg/L (01092)	Arsenic, water, unfiltered, μg/L (01002)	Selenium, water, unfiltered, μg/L (01147)	Organic carbon, water, unfiltered, mg/L (00680)	Suspended sediment concen tration, mg/L (80154)
01-25-2010	< .1	1.8	.03	20.0	1.2	.17	19.5	517