

Water-Data Report 2007

**02074000 SMITH RIVER AT EDEN, NC**

Roanoke Basin  
Upper Dan Subbasin

LOCATION.--Lat 36°31'32", long 79°45'56" referenced to North American Datum of 1983, Rockingham County, NC, Hydrologic Unit 03010103, on right bank at Eden, 0.3 mi downstream of bridge on North Carolina Highway 14, 0.8 mi upstream from bridge on Secondary Road 1714, 1.2 mi south of Virginia-North Carolina State line, 1.3 mi downstream of Stuart Creek, and 3.9 mi upstream from mouth.

DRAINAGE AREA.--538 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1970, published as "Smith River at Spray".

REVISED RECORDS.--WSP 1433: 1946.

GAGE.--Water-stage recorder. Datum of gage is 539.56 ft above NGVD of 1929. Satellite telemetry at station.

REMARKS.--Records good, except those for estimated daily discharges, which are poor. Flow regulated since August 1950 by Philpott Lake, 40 mi upstream (usable capacity, 6,325,000,000 ft<sup>3</sup>). Additional regulation by hydroelectric plant at Martinsville, Virginia, 18 mi upstream. Maximum discharge prior to regulation: 45,600 ft<sup>3</sup>/s, August 15, 1940, from rating curve extended above 12,000 ft<sup>3</sup>/s on the basis of computation of peak flow over dam 1.5 mi downstream; gage height: 19.28 ft.

## 02074000 SMITH RIVER AT EDEN, 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	256	504	1,030	6,510	569	795	466	358	1,250	253	406	2,230
2	245	527	916	2,700	575	4,460	e562	475	433	187	393	684
3	388	571	337	1,580	522	1,380	862	488	486	321	382	386
4	415	447	425	1,420	228	799	855	509	824	423	379	409
5	576	335	891	1,440	490	897	834	511	e688	448	135	528
6	592	395	887	1,190	515	1,310	826	380	e620	624	104	574
7	471	452	864	1,430	564	1,270	784	324	582	462	229	555
8	409	1,020	904	3,560	575	1,250	381	341	410	205	354	493
9	444	905	694	1,970	523	1,230	425	460	425	149	348	298
10	447	719	327	1,540	433	1,140	913	467	200	317	341	200
11	426	603	457	1,400	247	847	869	465	223	440	337	308
12	548	553	662	1,340	495	739	1,350	459	585	497	104	468
13	584	426	674	1,150	576	965	1,040	372	509	437	78	468
14	370	638	548	581	2,590	1,060	820	320	662	371	177	828
15	259	677	479	644	1,110	1,060	633	404	443	191	307	2,570
16	324	5,210	535	1,470	813	2,950	1,700	565	518	140	346	503
17	432	2,710	388	1,500	896	2,500	e1,210	579	289	451	311	323
18	620	1,310	244	1,500	823	1,280	873	720	238	508	337	415
19	492	2,150	532	1,510	1,160	1,200	1,310	676	403	480	95	504
20	557	2,080	493	1,210	1,030	1,280	1,290	636	615	351	58	491
21	520	1,400	525	432	966	1,360	1,020	663	568	338	119	558
22	336	1,570	588	654	870	1,320	601	257	498	145	287	469
23	306	1,920	922	697	860	1,250	581	220	424	112	289	304
24	413	1,070	587	608	678	1,050	874	435	226	264	411	238
25	407	900	651	632	444	676	853	294	188	724	458	370
26	532	643	1,340	608	757	777	829	455	227	570	222	478
27	454	542	902	561	807	1,120	877	356	388	337	89	480
28	1,850	915	719	434	746	1,130	841	260	443	436	315	508
29	944	908	656	370	---	1,260	348	256	417	170	401	476
30	452	960	612	562	---	1,190	303	467	406	205	540	287
31	672	---	455	576	---	970	---	437	---	361	489	---
<b>Total</b>	15,741	33,060	20,244	41,779	20,862	40,515	25,130	13,609	14,188	10,917	8,841	17,403
<b>Mean</b>	508	1,102	653	1,348	745	1,307	838	439	473	352	285	580
<b>Max</b>	1,850	5,210	1,340	6,510	2,590	4,460	1,700	720	1,250	724	540	2,570
<b>Min</b>	245	335	244	370	228	676	303	220	188	112	58	200
<b>Cfsm</b>	0.94	2.05	1.21	2.51	1.38	2.43	1.56	0.82	0.88	0.65	0.53	1.08
<b>In.</b>	1.09	2.29	1.40	2.89	1.44	2.80	1.74	0.94	0.98	0.75	0.61	1.20

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2007 <sup>a</sup>, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	511	517	599	702	728	890	879	695	655	518	498	542
<b>Max</b>	1,572	1,530	1,376	1,453	1,633	2,519	3,016	1,567	2,026	1,374	1,454	2,030
<b>(WY)</b>	(1990)	(1986)	(1997)	(1979)	(1998)	(1993)	(1987)	(1978)	(1972)	(1989)	(1985)	(1996)
<b>Min</b>	201	211	267	291	249	331	248	266	146	151	126	165
<b>(WY)</b>	(1952)	(1982)	(2001)	(1989)	(2002)	(1967)	(2002)	(1964)	(2002)	(2002)	(2002)	(2002)

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1951 - 2007 <sup>a</sup>	
<b>Annual total</b>	235,091		262,289			
<b>Annual mean</b>	644		719		644	
<b>Highest annual mean</b>					1,010	1987
<b>Lowest annual mean</b>					254	2002
<b>Highest daily mean</b>	5,980	Jun 27	6,510	Jan 1	16,700	Jun 21, 1972
<b>Lowest daily mean</b>	142	May 14	58	Aug 20	46	Aug 14, 1967
<b>Annual seven-day minimum</b>	260	May 13	214	Aug 17	100	Aug 10, 2002
<b>Maximum peak flow</b>			12,600	Jan 1	24,800	Jun 21, 1972
<b>Maximum peak stage</b>			10.39	Jan 1	16.24	Jun 21, 1972
<b>Instantaneous low flow</b>			40	Aug 21	38	Aug 7, 1967
<b>Annual runoff (cfsm)</b>	1.20		1.34		1.20	
<b>Annual runoff (inches)</b>	16.26		18.14		16.26	
<b>10 percent exceeds</b>	1,050		1,310		1,180	
<b>50 percent exceeds</b>	515		532		457	
<b>90 percent exceeds</b>	275		257		223	

<sup>a</sup> Regulated period only (1951-2007). See Remarks.

