

Water-Data Report 2011

## 02080500 ROANOKE RIVER AT ROANOKE RAPIDS, NC

Roanoke Basin  
Lower Roanoke Subbasin

LOCATION.--Lat 36°27'36", long 77°38'01" referenced to North American Datum of 1983, Halifax County, NC, Hydrologic Unit 03010107, on right bank 1.2 mi downstream of bridge on North Carolina Highway 48 at Roanoke Rapids, 2.5 mi upstream from Chockoyotte Creek, 2.8 mi downstream of Roanoke Rapids dam, and 133.6 mi upstream from mouth in Albemarle Sound.

DRAINAGE AREA.--8,384 mi<sup>2</sup>.

### SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 1911 to current year. Prior to January 1933, published as "Roanoke River at Old Gaston". Records published for both sites February 1930 to December 1932. Gage-height records collected at site of auxiliary gage since November 1890 are contained in reports of National Weather Service, NOAA, U.S. Department of Commerce.

REVISED RECORDS.--WSP 712: 1930. WSP 822: 1936. WSP 1032: 1912, 1928(M), 1930(M), 1932-33(M). WSP 1433: 1912-23, 1925-28, 1930, 1932-33, 1935, 1937-39. WSP 1904: 1958, 1960. WDR NC-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 43.84 ft above National Geodetic Vertical Datum of 1929. December 7, 1911, to November 21, 1921, and April 7 to December 31, 1932, nonrecording gage and November 21, 1921, to April 7, 1932, water-stage recorder, both at site 9 mi upstream at different datum. August 6, 1941, to March 1, 1973, auxiliary water-stage recorder, 3.6 mi downstream of base gage. Satellite telemetry at station.

REMARKS.--Records good except for those estimated daily discharges, which are fair. Flow regulated since August 1950 by Philpott Lake on Smith River, usable capacity, 6,325,000,000 ft<sup>3</sup>; since September 1950 by John H. Kerr Reservoir, usable capacity, 101,247,000,000 ft<sup>3</sup>; since June 1955 by Roanoke Rapids Lake; since September 1962 by Leesville Lake; since October 1962 by Lake Gaston; and since September 1963 by Smith Mountain Lake. Prior to regulation, maximum discharge: 261,000 ft<sup>3</sup>/s, August 18, 1940; gage height: 39.0 ft, from floodmarks; minimum discharge: about 250 ft<sup>3</sup>/s, December 16, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877, discharge, 212,000 ft<sup>3</sup>/s, reached a stage about 2 ft lower at Old Gaston than flood in August 1940 which was 21.5 ft. Flood in August 1940 is the maximum known since at least 1771.

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	10,700	8,780	2,840	2,370	2,380	2,260	8,390	7,260	5,260	2,450	4,730	8,470
2	2,300	8,750	3,050	2,350	2,320	2,260	8,360	7,190	5,270	2,290	5,500	2,230
3	2,270	9,500	3,790	5,440	2,280	2,250	8,290	7,110	5,260	2,240	2,330	2,210
4	5,370	8,660	2,290	4,640	2,330	2,240	8,380	7,100	6,620	2,290	2,230	2,230
5	5,180	8,820	2,820	5,130	2,390	2,250	8,370	7,120	e6,600	2,980	2,190	2,240
6	4,870	7,470	7,920	2,410	2,370	2,300	8,370	7,170	e6,570	3,880	2,280	2,260
7	5,310	7,600	5,920	2,310	2,360	2,250	8,400	8,350	6,580	3,820	2,290	2,510
8	5,080	8,970	6,660	2,300	2,360	2,260	8,390	9,620	6,590	2,910	5,520	2,330
9	2,050	8,790	5,930	2,300	2,360	2,290	6,730	9,640	6,600	2,340	3,800	4,530
10	1,980	8,200	6,980	5,260	2,380	8,410	6,390	9,730	5,760	2,340	3,790	2,190
11	3,290	7,710	2,470	5,280	2,400	8,560	6,370	9,770	5,150	5,490	2,220	2,180
12	4,360	8,130	2,380	5,140	2,370	7,910	6,360	9,770	5,100	10,000	2,210	6,330
13	4,160	1,850	5,390	5,090	2,360	8,110	7,140	9,700	5,080	3,040	2,220	5,440
14	3,730	2,440	8,530	5,200	2,360	8,070	8,000	8,230	5,070	2,290	2,210	7,120
15	1,900	5,650	9,980	2,340	2,370	8,570	8,220	7,190	5,140	2,250	2,990	3,690
16	2,170	4,950	7,760	2,760	2,390	8,490	8,180	6,300	7,340	2,230	2,200	1,900
17	2,200	4,920	6,930	5,220	2,380	7,970	8,230	5,290	3,050	2,200	3,840	2,110
18	4,250	5,280	2,370	5,280	2,380	8,240	8,390	5,190	3,000	2,910	3,900	2,130
19	3,670	7,120	3,330	4,630	2,360	11,300	10,300	5,210	2,940	2,920	2,230	1,910
20	3,350	4,300	5,780	4,190	2,340	11,500	13,900	5,230	2,940	3,670	2,190	1,850
21	3,330	5,040	5,490	4,110	2,360	11,500	13,900	5,200	2,920	3,720	2,200	4,810
22	3,420	7,340	5,470	2,780	2,340	11,300	13,900	5,160	2,700	2,970	2,210	5,170
23	2,230	4,400	5,420	2,760	2,350	11,300	12,400	5,140	2,690	2,280	2,220	6,700
24	2,170	4,300	4,620	4,960	2,360	11,300	12,200	5,170	2,780	2,310	6,350	2,060
25	3,620	3,570	2,310	2,760	2,320	11,500	11,300	5,170	2,940	2,320	6,230	2,090
26	2,610	4,340	2,280	2,790	2,280	8,320	11,300	5,180	2,790	2,260	8,640	6,920
27	2,620	2,770	3,790	2,770	2,270	8,280	10,300	5,170	2,850	3,180	2,540	5,920
28	5,560	2,810	4,540	2,740	2,290	8,400	9,270	5,210	4,190	3,090	3,630	4,990
29	7,250	2,850	4,570	2,470	---	8,350	8,190	5,190	2,960	4,700	2,340	2,560
30	7,750	2,820	4,520	2,430	---	8,360	7,220	5,190	2,770	2,300	8,870	2,700
31	4,160	---	3,860	2,430	---	8,360	---	5,220	---	2,400	8,650	---
<b>Total</b>	122,910	178,130	149,990	112,640	65,810	224,460	275,140	209,170	135,510	96,070	114,750	109,780
<b>Mean</b>	3,965	5,938	4,838	3,634	2,350	7,241	9,171	6,747	4,517	3,099	3,702	3,659
<b>Max</b>	10,700	9,500	9,980	5,440	2,400	11,500	13,900	9,770	7,340	10,000	8,870	8,470
<b>Min</b>	1,900	1,850	2,280	2,300	2,270	2,240	6,360	5,140	2,690	2,200	2,190	1,850

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2011<sup>a</sup>, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	5,495	6,286	7,825	9,655	9,900	10,310	11,210	9,858	7,493	5,951	5,125	5,235
<b>Max</b>	20,360	17,690	20,390	19,850	26,800	27,350	32,660	31,750	23,040	22,870	15,180	25,970
<b>(WY)</b>	(1980)	(1986)	(2010)	(2010)	(1998)	(1998)	(1993)	(1978)	(2003)	(2003)	(2003)	(1996)
<b>Min</b>	2,031	1,987	2,046	2,037	2,014	1,910	1,951	2,446	2,365	2,581	2,519	2,186
<b>(WY)</b>	(1971)	(1987)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1977)	(1970)	(1993)	(1968)

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SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1964 - 2011 <sup>a</sup>	
<b>Annual total</b>	3,209,640		1,794,360			
<b>Annual mean</b>	8,794		4,916		7,739	
<b>Highest annual mean</b>					15,330	2003
<b>Lowest annual mean</b>					2,361	2002
<b>Highest daily mean</b>	20,900	Jan 25	13,900	Apr 20	36,000	Sep 11, 1996
<b>Lowest daily mean</b>	1,850	Nov 13	1,850	Nov 13	818	Nov 15, 1970
<b>Annual seven-day minimum</b>	2,510	Jun 29	2,260	Mar 1	989	Nov 5, 1986
<b>Maximum peak flow</b>			22,400	Aug 24	37,700	Apr 16, 1993
<b>Maximum peak stage</b>			8.70	Aug 24	11.87	Apr 16, 1993
<b>Instantaneous low flow</b>			1,680	Oct 21	760	Nov 23, 1970
<b>10 percent exceeds</b>	20,700		8,600		18,800	
<b>50 percent exceeds</b>	6,340		4,300		5,790	
<b>90 percent exceeds</b>	2,320		2,240		2,040	

<sup>a</sup> Regulated period only (1964-2011). See Remarks.

