Water-Data Report 2006

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 State 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^2.

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.

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 NGVD of 1929. Dec. 7, 1911, to Nov. 21, 1921, and Apr. 7 to Dec. 31, 1932, nonrecording gage and Nov. 21, 1921, to Apr. 7, 1932, water-stage recorder, both at site 9 mi upstream at different datum. Aug. 6, 1941, to Mar. 1, 1973, auxiliary water-stage recorder, 3.6 mi downstream of base gage. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated since August 1950 by Philpott Lake on Smith River, usable capacity, 6,325,000,000 ft^3; since September 1950 by John H. Kerr Reservoir, usable capacity, 101,247,000,000 ft^3; 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^3/s, Aug. 18, 1940; gage height: 39.0 ft, from floodmarks; minimum discharge: about 250 ft^3/s, Dec. 16, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877, discharge, 212,000 ft^3/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.

02080500 ROANOKE RIVER AT ROANOKE RAPIDS, NC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,620	3,750	5,800	8,560	8,040	4,780	2,320	4,230	4,290	3,060	4,630	2,860
2	2,630	3,900	6,940	8,290	7,060	5,170	2,250	4,320	4,260	3,100	4,060	2,840
3	2,620	4,420	7,610	4,010	5,070	5,170	2,260	4,330	3,060	7,250	4,250	2,340
4	2,610	3,890	8,070	3,850	2,780	2,700	2,240	4,330	2,930	2,920	3,410	2,500
5	2,600	2,810	8,450	5,140	2,750	2,450	2,240	4,390	2,920	11,200	2,820	2,640
6	2,800	2,310	8,880	5,830	6,060	2,450	2,260	4,330	2,910	14,700	3,180	2,550
7	2,640	3,310	12,000	7,380	4,740	2,430	2,270	4,260	3,060	9,070	3,660	2,540
8	3,060	1,760	15,300	6,290	5,460	2,420	2,250	4,270	2,960	3,260	3,200	5,270
9	2,460	1,860	14,100	11,100	5,580	2,430	2,300	4,270	2,930	3,250	3,180	2,660
10	2,920	2,590	16,400	7,520	3,800	2,430	2,310	4,280	2,940	6,050	2,890	2,560
11	2,890	2,600	13,500	7,400	3,550	2,320	2,310	4,310	2,930	12,800	3,010	3,680
12	2,440	3,510	14,700	4,630	7,500	2,320	2,300	4,310	2,950	18,100	3,010	2,780
13	2,490	3,880	15,300	4,050	12,300	2,290	2,300	4,290	2,990	18,000	2,860	2,810
14	2,450	3,760	15,600	2,740	9,650	2,280	2,400	4,310	3,330	18,000	3,270	2,750
15	2,940	2,940	13,600	4,100	3,500	2,270	3,250	4,300	3,090	14,100	3,030	4,360
16	3,730	3,260	12,200	5,300	2,800	2,280	3,290	4,300	3,080	14,100	2,920	2,700
17	2,400	3,340	14,600	2,730	2,900	2,290	3,290	4,290	3,110	11,100	4,820	2,750
18	2,300	2,270	14,400	7,040	4,270	2,300	3,280	4,300	3,050	9,890	3,080	8,200
19	2,190	2,520	9,350	6,750	4,140	2,290	3,270	4,330	3,960	8,110	2,600	3,280
20	2,080	2,310	8,160	8,510	11,500	2,280	3,260	4,300	2,990	14,300	2,570	3,310
21	2,130	2,370	7,980	7,710	9,370	2,300	3,320	4,290	2,990	10,300	3,860	2,330
22	3,580	2,360	14,300	7,270	4,130	2,310	3,820	4,270	4,340	7,200	3,200	3,010
23	2,310	4,730	13,800	8,290	3,500	2,310	3,850	4,270	3,020	7,400	2,900	2,360
24	2,250	2,340	15,300	8,130	4,100	2,300	3,820	4,270	3,020	5,360	2,880	3,870
25	2,010	2,320	14,500	8,140	2,820	2,290	3,790	4,290	3,030	5,330	2,490	3,690
26	2,830	2,330	14,700	8,140	2,830	2,290	3,790	4,310	3,050	5,460	2,450	2,200
27	3,120	2,330	8,060	11,700	9,920	2,350	3,790	4,280	3,690	4,060	2,840	2,780
28	2,300	3,000	7,510	14,300	4,280	2,400	3,810	4,280	5,790	3,930	5,350	6,950
29	2,260	3,870	7,600	13,900	---	2,380	4,130	4,250	8,190	3,060	7,270	4,170
30	3,120	4,190	7,900	14,400	---	2,380	4,170	4,260	3,770	2,970	8,770	2,370
31	4,240	---	8,290	8,350	---	2,370	---	4,290	---	4,190	4,390	---
Total	83,020	90,830	354,900	231,550	154,400	81,030	89,940	133,110	104,630	261,620	112,850	99,110
Mean	2,678	3,028	11,450	7,469	5,514	2,614	2,998	4,294	3,488	8,439	3,640	3,304
Max	4,240	4,730	16,400	14,400	12,300	5,170	4,170	4,390	8,190	18,100	8,770	8,200
Min	2,010	1,760	5,800	2,730	2,750	2,270	2,240	4,230	2,910	2,920	2,450	2,200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2006,[a] BY WATER YEAR (WY)

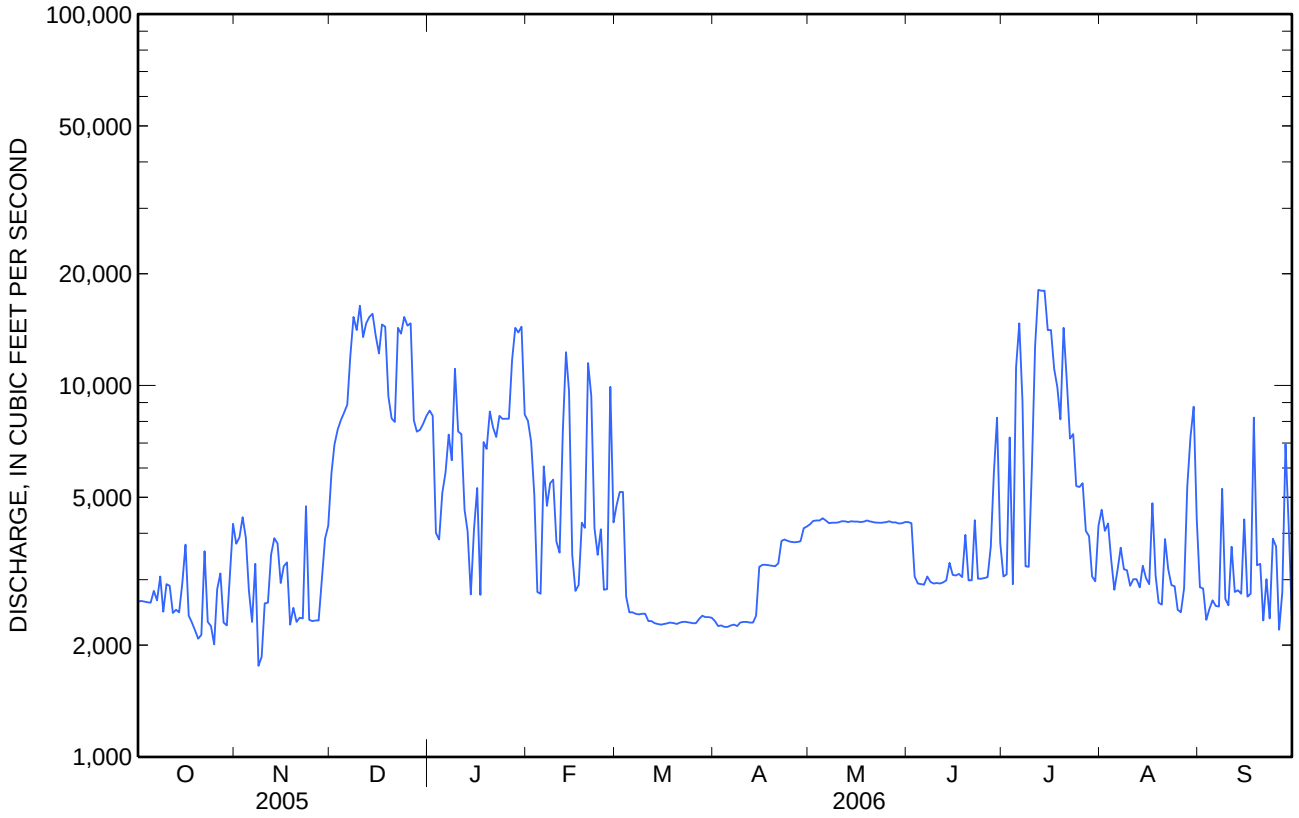
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	5,725	6,220	7,714	9,575	10,250	10,570	11,270	10,140	7,610	6,238	5,341	5,458
Max	20,360	17,690	18,380	17,850	26,800	27,350	32,660	31,750	23,040	22,870	15,180	25,970
(WY)	(1980)	(1986)	(1973)	(1991)	(1998)	(1998)	(1993)	(1978)	(2003)	(2003)	(2003)	(1996)
Min	2,031	1,987	2,046	2,037	2,014	1,910	1,951	2,446	2,365	2,581	2,519	2,186
(WY)	(1971)	(1987)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1977)	(1970)	(1993)	(1968)

02080500 ROANOKE RIVER AT ROANOKE RAPIDS, NC—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1964 - 2006 [a]	
Annual total	2,511,440		1,796,990			
Annual mean	6,881		4,923		7,879	
Highest annual mean					15,330	2003
Lowest annual mean					2,361	2002
Highest daily mean	19,600	Mar 30	18,100	Jul 12	36,000	Sep 11, 1996
Lowest daily mean	1,760	Nov 8	1,760	Nov 8	818	Nov 15, 1970
Annual seven-day minimum	2,360	Oct 19	2,250	Apr 2	989	Nov 5, 1986
Maximum peak flow			19,600	Dec 5	37,700	Apr 16, 1993
Maximum peak stage			8.70	Dec 5	11.87	Apr 16, 1993
Instantaneous low flow			1,640	Oct 26	760	Nov 23, 1970
10 percent exceeds	14,300		9,900		18,800	
50 percent exceeds	6,610		3,660		5,960	
90 percent exceeds	2,640		2,310		2,030	

[a] Regulated period only (1964-2006). See Remarks.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1957, 1959, 1960, 1968-73, 1975-96, 2006.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1976 to September 1984.
WATER TEMPERATURE: October 1948 to September 1949, October 1976 to September 1984.

REMARKS.--Station operated as part of the NASQAN network from October 1976 to September 1995. Station operated as part of the NAWQA Program in November 1995. Samples collected at bridge on State Highway 48 at Roanoke Rapids, 1.2 mi upstream from gaging station. Miscellaneous water-quality data collected at bridge on State Highway 48 and/or gaging station 1.2 mi downstream are published for water years 1946-47, 1955-67. Water-quality measurements and samples for water year 2006 were collected by the U.S. Geological Survey and the North Carolina Division of Water Quality.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 153 micosiemens, Sept. 15, 1981; minimum daily, 65 microsiemens, Apr. 7, 1979.
WATER TEMPERATURE: Maximum daily, 32.5°C, July 30, 1949; minimum daily, 1.0°C, Jan. 18-22, 30, 31, Feb. 1, 1977.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
[Remark codes: <, less than.]

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Suspended sediment concentration mg/L (80154)
Jul								
19...	1245	17,700	5.5	7.0	108	26.0	--	7
Aug								
02...	0930	2,690	--	--	--	--	1.0	9
15...	1145	--	6.6	6.2	118	27.9	.8	--
Sep								
06...	1200	--	9.2	7.7	115	25.7	.9	--
18...	1035	--	8.1	6.5	116	24.2	<2.0	--