

ROANOKE RIVER BASIN

02062500 ROANOKE (STAUNTON) RIVER AT BROOKNEAL, VA

LOCATION.--Lat 37°02'28", long 78°57'02", Campbell County, Hydrologic Unit 03010102, on left bank 1,600 ft upstream from bridge on U.S. Highway 501 at Brookneal, 2.9 mi upstream from Falling River, and at mile 255.9.

DRAINAGE AREA.--2,415 mi².

PERIOD OF RECORD.--April 1923 to current year.

REVISED RECORDS.--WSP 892: 1928(M). WSP 972: 1928-34. WSP 1303: 1924-27(M), 1929(M), 1941(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 351.96 ft above sea level. Apr. 30, 1923, to Aug. 29, 1929, nonrecording gage, Aug. 30, 1929, to Aug. 15, 1940, water-stage recorder, and Aug. 16 to Oct. 1, 1940, nonrecording gage at site 1,800 ft downstream at same datum. Oct. 2, 1940, to Sept. 30, 1941, nonrecording gage at site 1,600 ft downstream at same datum.

REMARKS.--Records good except for periods of no gage-height record, Dec. 24, 25, Jan. 7, 8, Apr. 9-12, 23-27, Jul. 1-12, Jul. 28 to Aug. 2, and Sep. 7-9, which are fair. Flow regulated since 1962 by Leesville Lake (station 02059400) 40.1 mi upstream and since 1963 by Smith Mountain Lake (station 02057400) 58.1 mi upstream. Statistics of monthly mean data and summary statistics for water years 1924 - 1962 (unregulated flow) are available in previous data books, water years 1991 - 1998. U.S. Army Corps of Engineers satellite gage-height telemeter at station. Maximum discharge, 130,000 ft³/s, at present site, from gage-height relation curve, from rating curve extended above 55,000 ft³/s on basis of slope-area measurement by Geological Survey, unit hydrograph and flood-routing studies by U.S. Army Corps of Engineers, and records for other stations in Roanoke River Basin. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s, Sep 30, gage height, 21.63 ft; minimum daily, 475 ft³/s, Aug. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	853	927	965	739	910	982	1350	1650	880	e670	e695	620
2	831	927	978	726	1300	1150	1880	1620	890	e730	e530	559
3	857	920	970	1050	1980	1250	2080	1660	890	e860	506	522
4	885	948	945	1640	1510	1340	2000	1680	886	e895	511	694
5	887	982	965	1190	1200	1380	1940	1790	906	e820	503	970
6	879	953	991	879	1080	1310	1550	1650	877	e710	494	1350
7	906	953	996	e920	1020	1290	1290	1680	846	e660	653	e1650
8	951	949	1010	e900	1000	1250	1210	1750	854	e695	687	e1350
9	1060	921	1140	868	984	1200	e1250	1770	852	e720	528	e1050
10	1040	940	1220	863	941	1190	e1300	1740	835	e780	487	835
11	958	987	1080	837	904	1220	e2200	1700	819	e680	487	967
12	923	1020	1010	839	886	1200	e3700	1630	823	e685	490	894
13	913	1010	1430	843	887	1180	3500	1600	840	765	500	756
14	914	941	1540	839	868	1250	3310	1860	849	863	653	726
15	902	940	1250	1010	831	2490	2530	2270	837	791	684	771
16	899	982	1090	1180	864	4570	1930	1900	840	751	527	1320
17	906	956	1030	1050	841	3800	1820	1730	874	809	486	1210
18	908	908	942	1290	1190	2890	1560	1670	770	799	475	927
19	904	954	836	1560	1900	2380	1310	1630	705	691	478	916
20	910	937	834	1230	1440	2240	1210	1580	744	615	494	792
21	901	940	825	1020	1160	2200	1180	1550	679	592	661	777
22	895	930	824	946	1020	2710	1180	1560	610	686	764	1010
23	907	937	825	933	961	2740	e1220	1600	617	780	606	892
24	888	935	e912	3190	944	2430	e1220	1560	605	845	540	811
25	893	946	e928	3890	932	2010	e1200	1560	587	793	665	862
26	905	962	812	2000	919	1750	e1700	1140	841	622	996	847
27	902	958	780	1440	898	1470	e1920	973	833	531	839	785
28	897	958	784	1200	926	1370	1890	952	725	e530	942	1430
29	914	965	787	1080	---	1300	1870	889	685	e660	855	3070
30	902	958	779	992	---	1260	1730	852	638	e670	690	16400
31	911	---	757	936	---	1230	---	844	---	e700	632	---
TOTAL	28201	28544	30235	38080	30296	56032	54030	48040	23637	22398	19058	45763
MEAN	910	951	975	1228	1082	1807	1801	1550	788	723	615	1525
MAX	1060	1020	1540	3890	1980	4570	3700	2270	906	895	996	16400
MIN	831	908	757	726	831	982	1180	844	587	530	475	522
(†)	-12548	-9549	+2712	+24266	+17626	+1215	-2148	-13962	-11209	+2088	-4986	+29943
MEAN†	505	633	1063	2011	1711	1847	1729	1099	414	790	454	2524
CFSM†	.21	.26	.44	.83	.71	.76	.72	.46	.17	.33	.19	1.05
IN. ‡	.24	.29	.51	.96	.74	.88	.80	.52	.19	.38	.22	1.17

CAL YR 1998 TOTAL 1168608 MEAN 3202 MAX 29200 MIN 757 MEAN† 3143 CFSM† 1.30 IN.† 17.67
WTR YR 1999 TOTAL 424314 MEAN 1163 MAX 16400 MIN 475 MEAN† 1227 CFSM† .51 IN.† 6.90

† Total change in contents, equivalent in cubic feet per second, per month, in Smith Mountain and Leesville Lakes; provided by American Electric Power.

‡ Adjusted for monthly change in contents.

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1606	1823	2061	3059	3324	4061	3583	2698	2137	1497	1395	1716
MAX	6446	8961	5625	7695	9536	11760	14410	7039	7522	4775	4675	8822
(WY)	1991	1986	1997	1978	1998	1993	1987	1978	1995	1972	1985	1996
MIN	325	553	637	867	953	561	921	836	405	683	411	512
(WY)	1964	1982	1964	1981	1981	1981	1981	1964	1964	1963	1964	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR
ANNUAL TOTAL	1168608	424314										
ANNUAL MEAN	3202	1163										
HIGHEST ANNUAL MEAN									2408			
LOWEST ANNUAL MEAN									4440			1973
HIGHEST DAILY MEAN									853			1981
LOWEST DAILY MEAN									65600			Sep 9 1987
HIGHEST DAILY MEAN	29200	Mar 21							140			Jul 25 1966
LOWEST DAILY MEAN	757	Dec 31							203			Sep 4 1965
ANNUAL SEVEN-DAY MINIMUM	804	Dec 25							20400			Sep 9 1987
INSTANTANEOUS PEAK FLOW									21.63			Sep 30 1987
INSTANTANEOUS PEAK STAGE									472			Sep 9 1987
INSTANTANEOUS LOW FLOW									aAug 18			cJul 25 1966
ANNUAL RUNOFF (CFSM)	1.33								.48			1.00
ANNUAL RUNOFF (INCHES)	18.00								6.54			13.55
10 PERCENT EXCEEDS	7200								1780			4700
50 PERCENT EXCEEDS	1390								936			1410
90 PERCENT EXCEEDS	886								663			548

- a Also Aug 19, 1999.
- b Lowest recorded discharge; may have been lower during period of no gage-height record, Jul 25, 26, 1966.
- c Also Jul 26, 1966.
- e Estimated.

