ROANOKE RIVER BASIN

02072000 SMITH RIVER NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'50", long 80°01'30", Franklin County, Hydrologic Unit 03010103, on left bank 900 ft down-stream from Philpott Dam, l.3 mi southwest of Philpott (corrected), 11.6 mi upstream from Reed Creek, and at mile 44.1.

DRAINAGE AREA.--216 mi^2.

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1553: 1953(M), 1955-56(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 804.27 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Oct. 8, 1952, at site 1.9 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Since August 1950, flow regulated by Philpott Lake (station 02071900) 0.2 mi upstream. Maximum discharge, 17,000 ft^3/s, at site then in use, from rating curve extended above 9,700 ft^3/s on basis of slope-area measurements at gage heights 18.2 ft and 20.3 ft. Minimum discharge observed, 2.3 ft^3/s, result of repairs at dam, but may have been less during periods of estimated record. Minimum daily discharge, 20 ft^3/s, caused by turbines being shut down for repair at Philpott Dam. 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, 1,420 ft^3/s, Oct. 2, gage height, 5.10 ft; minimum daily, 45 ft^3/s, Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	55	165	165	52	52	312	555	454	357	58	267
2	218	55	164	165	666	756	351	54	455	358	58	280
3	225	227	165	53	616	756	352	55	455	206	317	283
4	53	226	165	53	617	759	53	568	456	57	317	213
5	53	226	165	213	611	759	53	806	456	57	318	57
6	217	226	53	160	756	762	453	807	53	367	318	57
7	219	225	53	172	756	53	453	812	53	360	318	266
8	218	55	165	173	756	53	453	905	203	363	59	268
9	53	55	165	179	757	304	453	1170	204	259	58	265
10	383	168	165	45	756	970	454	816	305	208	371	265
11	53	167	165	49	763	1290	53	60	294	57	369	265
12	53	168	165	220	761	1290	53	63	254	57	370	57
13	223	167	53	181	763	1200	402	63	53	262	266	57
14	222	168	53	189	52	52	403	64	53	259	214	260
15	328	55	166	182	53	52	404	167	254	362	58	253
16	57	55	165	179	360	394	403	55	254	362	61	254
17	274	168	165	52	360	150	405	55	254	314	368	254
18	53	166	165	52	945	150	693	558	254	58	367	255
19	53	168	166	234	1250	150	1250	558	255	58	368	50
20	222	167	53	190	1250	913	1250	556	53	261	264	50
21	222	167	53	196	669	62	1280	559	53	262	211	256
22	222	55	166	181	660	1260	1280	306	406	417	57	256
23	222	55	165	197	758	1040	1190	55	406	313	58	256
24	224	167	165	52	757	649	764	55	407	313	395	256
25	53	166	166	52	755	656	54	205	407	58	383	256
26	54	165	165	235	757	405	54	204	407	58	386	50
27	223	166	53	182	760	353	354	461	55	368	281	51
28	223	166	53	173	52	53	353	456	56	367	229	313
29	223	53	165	579	---	53	552	456	257	368	50	324
30	223	53	165	580	---	326	503	53	358	265	50	271
31	223	---	165	52	---	353	---	53	---	213	358	---
TOTAL	5507	4180	4222	5385	18068	16075	15087	11610	7884	7644	7355	6265
MEAN	178	139	136	174	645	519	503	375	263	247	237	209
MAX	383	227	166	580	1250	1290	1280	1170	456	417	395	324
MIN	53	53	53	45	52	52	53	53	53	57	50	50
MIN	53	53	53	45	52	52	53	53	53	57	50	50
(†)	-2687	-630	-343	+10386	+2037	-176	-116	+630	-1124	-3146	-862	-4089
MEAN‡	91	118	125	509	718	513	499	395	225	145	209	73
CFSM‡	.42	.55	.58	2.36	3.32	2.37	2.31	1.83	1.04	.67	.97	.34
IN.‡	.49	.61	.67	2.72	3.46	2.74	2.58	2.11	1.16	.77	1.12	.37

CAL YR 1997	TOTAL	104991	MEAN	288	MAX	676	MIN	46	MEAN‡	258	CFSM‡	1.19	IN.‡	16.23
WTR YR 1998	TOTAL	109282	MEAN	299	MAX	1290	MIN	45	MEAN‡	299	CFSM‡	1.38	IN.‡	18.80

† Total change in contents, equivalent in cubic feet per second, per month, in Philpott Lake; provided by U.S. Army Corps of Engineers.
‡ Adjusted for monthly change in contents.

ROANOKE RIVER BASIN

02072000 SMITH RIVER NEAR PHILPOTT, VA--Continued

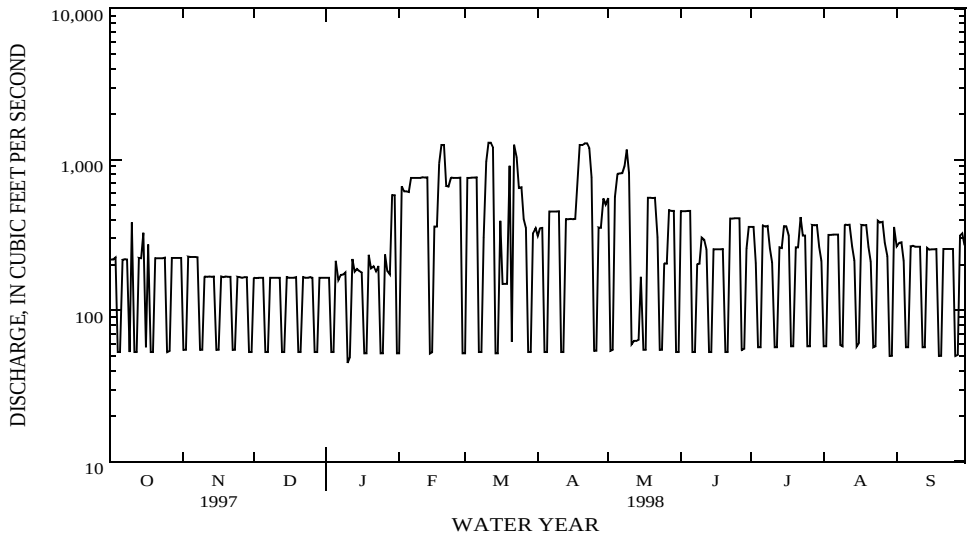
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1950, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	326	318	292	324	339	397	381	442	381	385	338	331
MAX	522	371	507	403	406	474	490	631	562	915	759	531
(WY)	1948	1948	1949	1949	1948	1949	1948	1949	1949	1949	1949	1949
MIN	183	202	166	238	209	303	244	195	284	158	141	166
(WY)	1949	1947	1947	1948	1947	1950	1950	1947	1948	1947	1947	1947

SUMMARY STATISTICS	WATER YEARS 1947 - 1950	
ANNUAL MEAN	354	
HIGHEST ANNUAL MEAN	517	1949
LOWEST ANNUAL MEAN	237	1947
HIGHEST DAILY MEAN	a4500	May 31 1950
LOWEST DAILY MEAN	93	Sep 5 1947
ANNUAL SEVEN-DAY MINIMUM	104	Sep 3 1947
INSTANTANEOUS PEAK FLOW	17000	Jun 29 1949
INSTANTANEOUS PEAK STAGE	20.30	Jun 29 1949
INSTANTANEOUS LOW FLOW	21	Aug 15 1950
ANNUAL RUNOFF (CFSM)	1.64	
ANNUAL RUNOFF (INCHES)	22.30	
10 PERCENT EXCEEDS	560	
50 PERCENT EXCEEDS	274	
90 PERCENT EXCEEDS	148	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1998, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	238	228	250	277	273	342	389	313	283	243	256	261
MAX	755	835	586	526	718	946	1194	796	827	646	479	724
(WY)	1990	1986	1997	1991	1973	1993	1983	1978	1972	1972	1970	1979
MIN	96.1	70.5	88.0	71.1	58.2	60.5	69.2	61.3	67.2	82.2	77.4	126
(WY)	1952	1953	1996	1953	1953	1953	1969	1964	1964	1964	1964	1956

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1951 - 1998	
ANNUAL TOTAL	104991		109282			
ANNUAL MEAN	288		299		279	
HIGHEST ANNUAL MEAN					441	1973
LOWEST ANNUAL MEAN					123	1953
HIGHEST DAILY MEAN	676	May 7	1290	bMar 11	5710	Apr 24 1992
LOWEST DAILY MEAN	46	cMar 16	45	Jan 10	d20	Mar 24 1984
ANNUAL SEVEN-DAY MINIMUM	133	Nov 29	75	May 11	42	Mar 2 1953
INSTANTANEOUS PEAK FLOW			1420	Oct 2	9500	Dec 7 1950
INSTANTANEOUS PEAK STAGE			5.10	Oct 2	15.00	Dec 7 1950
INSTANTANEOUS LOW FLOW			17	fSep 15	g2.3	Dec 16 1985
ANNUAL RUNOFF (CFSM)	1.33		1.39		1.29	
ANNUAL RUNOFF (INCHES)	18.08		18.82		17.57	
10 PERCENT EXCEEDS	651		756		657	
50 PERCENT EXCEEDS	226		223		208	
90 PERCENT EXCEEDS	52		53		46	

a No gage-height record; discharge computed on basis of records for stations at Bassett and at Martinsville.
b Also Mar. 12, 1998.
c Also May. 10, 11, 17, 25, and Sept. 20, 21, 1997.
d Caused by turbines being shut down for repair at Philpott Dam.
f Also Sept. 16, 17, 18, 21, 22, 23, 24, 25 and 28, 1998.
g Result of repair at dam, but may have been less during periods of estimated record.