

Water-Data Report 2010

03451000 SWANNANOA RIVER AT BILTMORE, NC

French Broad-Holston Basin
Upper French Broad Subbasin

LOCATION.--Lat 35°34'06", long 82°32'41" referenced to North American Datum of 1983, Buncombe County, NC, Hydrologic Unit 06010105, on left bank at Biltmore, 100 ft downstream of Biltmore Avenue Bridge, 200 ft upstream from Southern Railway bridge, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--130 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1920 to September 1926, May 1934 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 803: 1921, 1923-26, maximum discharge. WSP 823: Drainage area. WSP 1306: 1921, 1924, 1926, maximum discharge.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,976.58 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). December 1, 1920, to September 30, 1926, nonrecording gage at site 100 ft upstream at same datum. Satellite telemetry at streamgage.

REMARKS.--No estimated daily discharges. Records good except those above 6,500 ft³/s, which are poor. Considerable regulation from 1925-50 (reservoir silted) by Lake Craig, 3.6 mi upstream from station. City of Asheville diverted water from Burnett Lake on North Fork Swannanoa River, 20 mi upstream from station and water from Bee Tree Lake on Bee Tree Creek, 16 mi upstream from station. An average of 32.5 ft³/s was discharged downstream of station into the French Broad River as treated sewage effluent. Maximum discharge for period of record, from rating curve extended above 9,100 ft³/s on basis of computation of peak flow over dam 3.6 mi upstream from station. Minimum discharge for period of record occurred several days in October 1941. Minimum discharge for current water year also occurred September 26.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed: 26 ft; discharge: 40,000 ft³/s in April 1791, from studies by Tennessee Valley Authority. Flood of July 1916 reached a stage of 20.7 ft; discharge, 23,000 ft³/s, from flood profile by Tennessee Valley Authority. Flood of August 16, 1928 reached a stage of 18.74 ft, from floodmarks; discharge, 17,800 ft³/s. High stages are subject to backwater from French Broad River.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	237	264	105	364	264	182	391	139	156	58	64	26
2	223	171	306	339	494	188	208	137	265	55	47	24
3	108	147	262	315	513	184	192	246	195	53	40	23
4	80	131	175	299	582	175	185	168	172	53	37	22
5	177	119	164	285	825	168	223	240	169	51	117	21
6	93	109	147	275	540	166	353	240	161	48	90	21
7	122	104	148	259	399	166	182	232	156	46	50	21
8	223	99	307	149	367	162	213	142	147	45	42	25
9	71	117	801	140	431	162	276	122	115	45	43	26
10	69	463	482	136	412	314	186	121	130	47	37	24
11	67	1,360	393	133	380	189	168	128	120	48	37	44
12	69	640	204	127	362	299	164	126	122	78	48	52
13	67	464	217	123	258	442	159	119	119	77	37	29
14	100	389	215	121	234	325	155	122	115	54	35	23
15	108	341	370	119	229	305	152	169	99	46	40	23
16	89	306	347	119	310	365	150	138	107	69	41	21
17	85	284	286	446	306	343	147	188	97	83	36	23
18	80	307	174	260	293	333	143	220	83	69	42	25
19	72	260	194	221	195	330	141	200	79	62	43	23
20	68	139	169	204	189	209	142	188	77	146	39	22
21	64	130	175	383	189	211	146	245	108	114	78	21
22	62	142	278	376	239	439	137	148	89	49	76	20
23	82	171	269	307	369	477	178	123	72	42	42	20
24	201	301	176	754	364	445	156	114	68	40	36	22
25	114	249	1,360	1,310	314	428	232	138	65	69	33	18
26	131	119	673	596	200	417	216	119	66	70	32	127
27	420	111	416	539	196	220	373	115	62	48	33	98
28	462	106	319	584	190	284	363	149	63	49	31	127
29	365	106	302	572	---	317	234	151	72	50	30	58
30	285	109	378	315	---	427	158	111	60	39	28	68
31	158	---	377	270	---	410	---	170	---	40	25	---
Total	4,552	7,758	10,189	10,440	9,644	9,082	6,123	4,968	3,409	1,843	1,409	1,097
Mean	147	259	329	337	344	293	204	160	114	59.5	45.5	36.6
Max	462	1,360	1,360	1,310	825	477	391	246	265	146	117	127
Min	62	99	105	119	189	162	137	111	60	39	25	18
Cfsm	1.13	1.99	2.53	2.59	2.65	2.25	1.57	1.23	0.87	0.46	0.35	0.28
In.	1.30	2.22	2.92	2.99	2.76	2.60	1.75	1.42	0.98	0.53	0.40	0.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2010^a, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	96.3	118	140	191	220	265	243	183	134	101	99.0	98.0
Max	569	604	385	610	598	740	560	480	387	503	828	1,162
(WY)	(1965)	(1980)	(1962)	(1995)	(1990)	(1975)	(1936)	(1973)	(1949)	(1949)	(1940)	(2004)
Min	13.7	27.0	35.3	32.3	45.8	45.7	55.6	45.5	17.7	18.2	13.3	13.8
(WY)	(1955)	(1982)	(1989)	(1956)	(2009)	(1988)	(1986)	(1988)	(1988)	(1986)	(2002)	(1954)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1921 - 2010 ^a	
Annual total	60,342		70,514			
Annual mean	165		193		157	
Highest annual mean					277	1949
Lowest annual mean					55.9	1988
Highest daily mean	1,360	Nov 11	1,360	Nov 11	10,200	Sep 8, 2004
Lowest daily mean	26	Aug 9	18	Sep 25	1.2	Oct 14, 1941
Annual seven-day minimum	35	Sep 2	21	Sep 19	6.4	Sep 7, 2002
Maximum peak flow			2,730	Jan 24	^b 18,400	Aug 13, 1940
Maximum peak stage			7.60	Jan 24	19.22	Sep 8, 2004
Instantaneous low flow			^b 18	Sep 25	^b 1.1	Oct 9, 1941
Annual runoff (cfsm)	1.27		1.49		1.21	
Annual runoff (inches)	17.27		20.18		16.40	
10 percent exceeds	374		390		308	
50 percent exceeds	106		147		104	
90 percent exceeds	39		37		36	

^a See Period of Record

^b See Remarks

