

**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 mi<sup>2</sup>.

**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: 1923(M), 1925(M). WSP 823: Drainage area. WSP 1306: 1921(M), 1924(M), 1926(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,976.58 ft above NGVD 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 and telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good except those above 6,500 ft<sup>3</sup>/s, which are poor. Considerable regulation from 1925-50 (reservoir silted) by Lake Craig, 3.6 mi upstream from station. City of Asheville diverted an average of 28.2 ft<sup>3</sup>/s from Burnett Lake on North Fork Swannanoa River, 20 mi upstream from station. An average of 26.9 ft<sup>3</sup>/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 ft<sup>3</sup>/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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed: 26 ft; discharge: 40,000 ft<sup>3</sup>/s in April 1791, from studies by Tennessee Valley Authority. Flood of July 1916 reached a stage of 20.7 ft; discharge, 23,000 ft<sup>3</sup>/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 ft<sup>3</sup>/s. High stages are subject to backwater from French Broad River.

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	63	126	166	753	89	157	97	71	40	39	92	53
2	60	157	117	300	92	334	95	70	41	40	72	35
3	59	133	105	306	90	161	91	73	43	39	62	32
4	58	126	99	270	86	132	93	100	42	35	55	31
5	56	125	175	354	80	119	85	98	38	32	52	27
6	73	123	175	352	81	109	85	91	37	32	48	24
7	56	215	171	368	84	103	87	78	35	73	43	24
8	61	335	165	695	80	98	84	73	33	78	41	24
9	62	192	162	457	78	94	83	70	34	40	38	22
10	78	167	161	394	77	93	81	68	33	44	36	22
11	162	180	144	447	76	90	82	79	33	49	34	22
12	62	184	82	417	77	87	89	80	33	40	38	21
13	52	161	79	394	87	84	89	74	41	33	35	20
14	50	188	78	371	92	84	192	66	85	33	31	312
15	48	303	75	351	77	85	247	62	96	37	28	125
16	53	363	74	316	74	575	118	63	64	45	27	52
17	188	186	72	134	73	283	91	66	46	36	27	40
18	159	208	71	205	76	196	86	60	40	30	25	36
19	95	190	70	208	72	162	90	59	39	34	25	33
20	108	178	69	122	74	152	114	58	41	33	25	31
21	83	196	70	114	83	150	97	54	34	28	24	30
22	79	194	259	129	77	132	93	52	31	25	33	34
23	76	109	184	161	69	124	88	51	29	24	27	31
24	76	95	133	157	68	118	86	57	32	38	114	28
25	77	88	178	154	107	112	84	51	38	266	43	26
26	75	85	149	148	89	108	82	50	115	293	50	25
27	147	82	129	104	76	104	82	48	97	103	57	24
28	184	80	117	96	72	101	77	46	95	126	36	25
29	142	80	110	92	---	105	77	44	54	107	35	22
30	133	124	107	91	---	101	73	42	42	208	42	22
31	129	---	292	87	---	97	---	41	---	173	56	---
<b>Total</b>	2,804	4,973	4,038	8,547	2,256	4,450	2,918	1,995	1,461	2,213	1,351	1,253
<b>Mean</b>	90.5	166	130	276	80.6	144	97.3	64.4	48.7	71.4	43.6	41.8
<b>Max</b>	188	363	292	753	107	575	247	100	115	293	114	312
<b>Min</b>	48	80	69	87	68	84	73	41	29	24	24	20
<b>Cfsm</b>	0.70	1.28	1.00	2.12	0.62	1.10	0.75	0.50	0.37	0.55	0.34	0.32
<b>In.</b>	0.80	1.42	1.16	2.45	0.65	1.27	0.83	0.57	0.42	0.63	0.39	0.36

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2007 <sup>a</sup>, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	97.4	119	139	191	222	268	245	183	136	103	101	98.4
<b>Max</b>	569	604	385	610	598	740	560	480	387	503	828	1,162
<b>(WY)</b>	(1965)	(1980)	(1962)	(1995)	(1990)	(1975)	(1936)	(1973)	(1949)	(1949)	(1940)	(2004)
<b>Min</b>	13.7	27.0	35.3	32.3	65.7	45.7	55.6	45.5	17.7	18.2	13.3	13.8
<b>(WY)</b>	(1955)	(1982)	(1989)	(1956)	(1988)	(1988)	(1986)	(1988)	(1988)	(1986)	(2002)	(1954)

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1921 - 2007 <sup>a</sup>	
<b>Annual total</b>	47,265		38,259			
<b>Annual mean</b>	129		105		158	
<b>Highest annual mean</b>					277	1949
<b>Lowest annual mean</b>					55.9	1988
<b>Highest daily mean</b>	819	Jan 18	753	Jan 1	10,200	Sep 8, 2004
<b>Lowest daily mean</b>	29	Aug 9	20	Sep 13	1.2	Oct 14, 1941
<b>Annual seven-day minimum</b>	31	Aug 4	22	Sep 7	6.4	Sep 7, 2002
<b>Maximum peak flow</b>			1,470	Jan 1	<sup>b</sup> 18,400	Aug 13, 1940
<b>Maximum peak stage</b>			5.32	Jan 1	19.22	Sep 8, 2004
<b>Instantaneous low flow</b>			19	Sep 13	<sup>b</sup> 1.1	Oct 9, 1941
<b>Annual runoff (cfsm)</b>	0.996		0.806		1.22	
<b>Annual runoff (inches)</b>	13.53		10.95		16.53	
<b>10 percent exceeds</b>	217		193		308	
<b>50 percent exceeds</b>	109		80		105	
<b>90 percent exceeds</b>	49		32		37	

<sup>a</sup> See Period of Record.

<sup>b</sup> See Remarks.

