

Water-Data Report 2008

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC

French Broad-Holston Basin
Upper French Broad Subbasin

LOCATION.--Lat 35°36'32", long 82°34'41" referenced to North American Datum of 1983, Buncombe County, NC, Hydrologic Unit 06010105, on right bank 27 ft upstream from Pearson Bridge (Secondary Road 1348) at Asheville, 1.4 mi downstream of bridge on U.S. Highways 19 and 23, 3.2 mi downstream of Swannanoa River, and at river mile 145.8.

DRAINAGE AREA.--945 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1895 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1901(M), 1914-15(M), 1917(M), 1920-22(M), 1927(M).

GAGE.--Water-stage recorder. Datum of gage is 1,950.28 ft above National Geodetic Vertical Datum of 1929. September 17, 1895, to December 31, 1901, nonrecording gage at present site at different datum. March 19, 1903, to July 15, 1916, and January 1, 1917, to September 30, 1922, nonrecording gage at Smith Bridge 1.5 mi upstream at datum 1,961.80 ft. October 1, 1922, to August 9, 1930, nonrecording gage at present site and datum. Satellite and telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Many small diversions from tributaries upstream from station for water supply. Diversions by City of Asheville and others from upstream tributaries in the Swannanoa River basin (station 03451000) totaled about 30.1 ft³/s and 24.3 ft³/s was discharged 4 mi downstream from station as treated effluent. Slight diurnal fluctuation and occasional slight regulation at low flow caused by power plant 46 mi upstream and small reservoirs upstream from station. Maximum discharge for period of record, from rating curve extended above 43,000 ft³/s, by logarithmic plotting; maximum gage height, 23.10, from floodmarks. Minimum discharge for period of record and current water year also occurred August 13, 2008.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed since at least 1791, that of July 16, 1916, and flood of June 17, 1876, reached a stage of 18 ft, from studies by Tennessee Valley Authority.

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	363	518	614	2,210	3,050	1,180	1,450	1,160	722	459	325	732
2	356	505	571	1,590	4,330	1,130	1,420	1,090	709	402	286	670
3	353	479	550	1,250	2,900	1,070	1,420	1,060	700	363	266	587
4	391	459	522	1,110	2,120	2,240	1,510	1,030	665	341	256	526
5	592	449	510	1,040	1,820	6,610	2,160	986	635	375	230	476
6	610	441	499	985	1,640	5,680	2,850	957	609	414	216	440
7	539	430	484	925	2,130	5,070	2,620	940	598	671	206	420
8	458	425	485	879	1,980	5,010	2,170	914	617	783	210	404
9	430	424	500	849	1,590	4,410	1,910	947	593	954	199	421
10	450	421	509	856	1,400	3,340	1,740	992	701	766	186	508
11	474	422	498	1,660	1,250	2,780	1,730	996	787	593	177	812
12	409	417	489	2,140	1,160	2,450	1,600	1,080	649	494	174	626
13	387	422	482	1,510	1,180	2,200	1,520	1,000	570	461	180	676
14	373	421	471	1,240	1,280	2,000	1,410	895	634	639	231	603
15	372	664	478	1,080	1,150	2,020	1,440	877	643	444	343	485
16	372	653	759	1,000	1,060	2,700	1,370	933	579	388	310	453
17	372	575	857	1,080	1,170	2,280	1,330	997	509	355	266	464
18	371	488	710	1,340	2,730	1,930	1,200	895	465	347	268	466
19	400	470	626	1,310	2,570	2,050	1,180	871	430	315	258	444
20	410	460	598	1,150	1,800	4,090	1,230	848	423	301	236	414
21	474	449	631	969	1,530	3,610	1,150	821	418	306	219	399
22	422	486	715	943	1,420	2,700	1,100	798	468	288	206	398
23	543	706	1,250	972	1,430	2,330	1,080	755	486	292	198	387
24	1,670	709	2,730	968	1,320	2,090	1,050	735	468	353	195	370
25	1,740	593	1,750	921	1,210	1,890	1,020	737	416	364	206	355
26	1,070	626	1,270	889	1,480	1,740	1,030	725	386	332	1,410	367
27	785	838	1,220	847	1,700	1,650	1,270	712	390	338	6,230	667
28	683	894	1,210	830	1,400	1,580	1,570	1,120	433	364	3,770	521
29	615	722	2,490	807	1,240	1,650	1,720	1,220	483	339	1,810	439
30	570	659	2,590	858	---	1,630	1,330	988	465	367	1,270	423
31	539	---	2,980	997	---	1,530	---	786	---	418	846	---
Total	17,593	16,225	30,048	35,205	51,040	82,640	45,580	28,865	16,651	13,626	21,183	14,953
Mean	568	541	969	1,136	1,760	2,666	1,519	931	555	440	683	498
Max	1,740	894	2,980	2,210	4,330	6,610	2,850	1,220	787	954	6,230	812
Min	353	417	471	807	1,060	1,070	1,020	712	386	288	174	355
Cfsm	0.60	0.57	1.03	1.20	1.86	2.82	1.61	0.99	0.59	0.47	0.72	0.53
In.	0.69	0.64	1.18	1.39	2.01	3.25	1.79	1.14	0.66	0.54	0.83	0.59

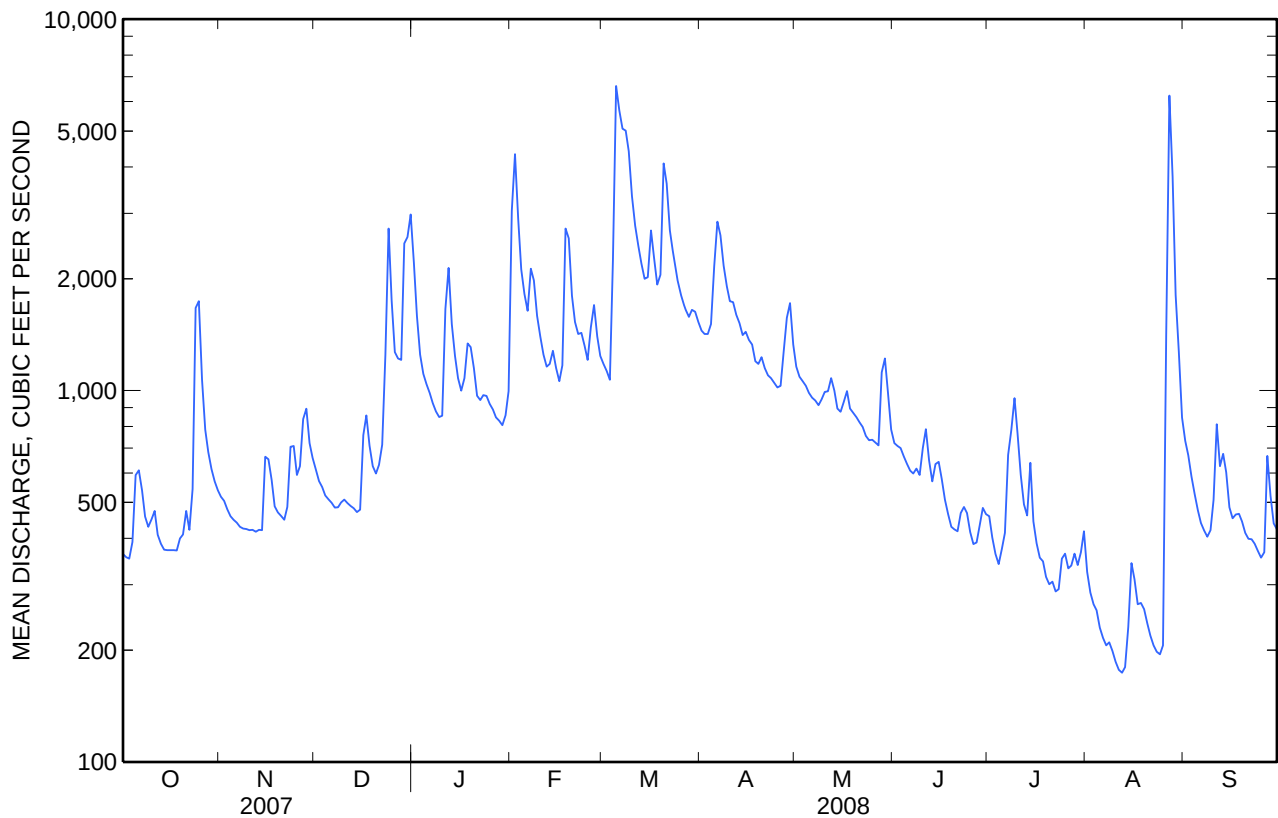
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,566	1,630	2,098	2,415	2,635	2,970	2,708	2,157	1,867	1,697	1,664	1,522
Max	7,025	5,121	5,700	6,068	6,364	7,928	5,705	4,961	5,774	11,500	8,362	10,210
(WY)	(1965)	(1980)	(1915)	(1937)	(1998)	(1899)	(1899)	(1973)	(1909)	(1916)	(1901)	(2004)
Min	353	507	636	548	1,083	1,037	973	852	547	440	328	346
(WY)	(1955)	(1932)	(1956)	(1956)	(1931)	(1988)	(1986)	(2001)	(1988)	(2008)	(1925)	(1954)

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC—Continued

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1896 - 2008	
Annual total	439,733		373,609			
Annual mean	1,205		1,021		2,075	
Highest annual mean					3,671	
Lowest annual mean					1,004	
Highest daily mean	8,980	Jan 1	6,610	Mar 5	66,000	Jul 16, 1916
Lowest daily mean	310	Sep 13	174	Aug 12	174	Aug 12, 2008
Annual seven-day minimum	329	Sep 7	190	Aug 7	190	Aug 7, 2008
Maximum peak flow			8,140	Aug 27	^a 110,000	Jul 16, 1916
Maximum peak stage			5.23	Aug 27	^a 23.10	Jul 16, 1916
Instantaneous low flow			^a 170	Aug 12	^a 170	Aug 12, 2008
Annual runoff (cfs)	1.27		1.08		2.20	
Annual runoff (inches)	17.31		14.71		29.83	
10 percent exceeds	2,220		2,060		3,610	
50 percent exceeds	726		714		1,620	
90 percent exceeds	414		353		760	

^aSee Remarks.

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC—Continued**CLIMATOLOGICAL RECORDS**

PERIOD OF RECORD.--October 1998 to current year.

INSTRUMENTATION.--Tipping-bucket raingage and electronic datalogger. Satellite telemetry at station.

REMARKS.--Gage is operated in cooperation with Tennessee Valley Authority. Precipitation data collected during freezing periods may not be accurately reflected in daily record; consequently, winter record is poor.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY SUM VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.86	0.01	0.02	0.00	0.03	0.00	0.00	0.12
2	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.01	0.00	0.19	0.00	0.11	0.01	0.00	0.00	0.00	0.00
4	0.24	0.00	0.00	0.00	0.14	1.53	0.24	0.00	0.00	0.00	0.00	0.00
5	0.12	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00
6	0.00	0.08	0.00	0.01	0.08	0.00	0.08	0.00	0.00	0.36	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.11	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.09	0.00	1.06	0.00	0.00
9	0.36	0.00	0.11	0.00	0.00	0.00	0.00	0.11	0.00	0.17	0.00	0.21
10	0.01	0.00	0.01	0.52	0.00	0.00	0.00	0.18	2.40	0.15	0.00	0.58
11	0.00	0.00	0.00	0.10	0.00	0.00	0.04	0.17	0.01	0.00	0.00	0.02
12	0.00	0.00	0.00	0.00	0.02	0.00	0.11	0.00	0.00	0.00	0.00	0.00
13	0.00	0.01	0.01	0.06	0.02	0.00	0.00	0.00	0.00	0.22	0.07	0.00
14	0.00	0.43	0.00	0.00	0.00	0.03	0.01	0.03	0.12	0.00	0.00	0.00
15	0.00	0.31	0.40	0.00	0.00	0.63	0.00	0.09	0.00	0.00	0.00	0.01
16	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.05
17	0.00	0.00	0.00	0.47	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00
19	0.32	0.00	0.00	0.00	0.00	0.48	0.62	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.10	0.00	0.00	0.00	0.00
21	0.00	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
22	0.19	0.18	0.22	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
23	0.79	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.32	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.03	0.02	0.04	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.51	0.00
26	0.00	0.09	0.27	0.00	0.60	0.00	0.00	0.00	0.07	0.04	3.66	0.10
27	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.13	0.00	0.93	0.01
28	0.00	0.00	0.35	0.00	0.00	0.00	0.37	0.41	0.11	0.08	0.17	0.00
29	0.00	0.00	0.00	0.09	0.01	0.35	0.02	0.00	0.01	0.00	0.00	0.00
30	0.00	0.00	0.58	0.04	---	0.02	0.00	0.00	0.06	0.00	0.00	0.03
31	0.00	---	0.00	0.41	---	0.00	---	0.00	---	0.00	0.00	---
Total	2.39	1.13	2.80	1.70	3.02	3.73	2.23	1.33	3.18	2.08	5.34	1.13

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC—Continued

