

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 NGVD 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 28.2 ft³/s and 26.9 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 also occurred September 14, 2002. Minimum discharge for current water year also occurred September 14.

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.

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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	902	1,220	2,840	8,980	1,620	1,710	1,370	1,030	704	663	802	720
2	861	1,200	3,780	8,600	1,700	6,940	1,430	1,010	733	694	653	660
3	827	1,110	2,700	7,690	1,680	6,440	1,480	1,010	728	697	571	534
4	818	1,050	2,080	6,180	1,580	5,280	1,410	1,600	710	640	527	444
5	785	1,020	1,890	4,350	1,520	2,940	1,380	1,320	669	577	511	400
6	884	997	1,750	5,200	1,460	2,350	1,290	1,510	636	535	553	379
7	785	1,210	1,630	5,010	1,470	2,110	1,260	1,320	610	577	581	359
8	774	2,720	1,540	8,630	1,440	1,940	1,230	1,140	586	628	542	339
9	802	2,150	1,450	7,510	1,390	1,830	1,210	1,080	607	604	503	333
10	794	1,590	1,420	6,420	1,350	1,740	1,200	1,050	590	613	455	323
11	879	1,470	1,360	4,900	1,330	1,670	1,190	1,150	565	607	437	315
12	962	1,550	1,270	3,810	1,320	1,600	1,340	1,190	631	566	497	322
13	951	1,360	1,240	3,460	1,340	1,560	1,270	1,180	701	519	726	310
14	781	1,280	1,230	3,210	1,510	1,520	1,300	1,090	803	496	456	1,450
15	726	1,530	1,190	3,000	1,430	1,480	1,820	1,000	805	486	395	2,530
16	721	5,490	1,160	2,820	1,310	3,380	2,360	962	811	490	368	1,210
17	1,180	5,100	1,130	2,470	1,280	3,330	1,630	945	768	557	398	723
18	3,190	3,600	1,120	2,410	1,260	2,340	1,430	917	660	503	371	615
19	2,170	2,440	1,110	2,390	1,230	1,990	1,400	894	682	525	350	506
20	1,650	2,050	1,090	2,210	1,220	1,850	1,460	872	686	562	342	479
21	1,560	1,830	1,070	2,090	1,300	1,820	1,320	847	634	481	319	455
22	1,290	1,730	2,160	2,520	1,380	1,700	1,260	805	578	446	324	463
23	1,150	1,560	4,800	2,520	1,260	1,630	1,200	786	540	438	324	458
24	1,070	1,420	3,950	2,230	1,190	1,580	1,180	791	672	442	456	437
25	1,010	1,340	3,130	2,090	1,450	1,510	1,160	783	802	690	608	422
26	978	1,280	4,660	1,980	2,020	1,460	1,140	763	827	1,070	450	409
27	1,060	1,230	3,570	1,870	1,640	1,440	1,150	739	782	624	729	393
28	1,760	1,210	2,650	1,810	1,430	1,410	1,150	718	722	802	713	376
29	2,100	1,190	2,290	1,740	---	1,430	1,100	698	708	711	531	364
30	1,480	1,360	2,070	1,680	---	1,430	1,060	688	681	938	572	357
31	1,300	---	2,690	1,640	---	1,390	---	679	---	1,140	689	---
Total	36,200	54,287	66,020	121,420	40,110	70,800	40,180	30,567	20,631	19,321	15,753	17,085
Mean	1,168	1,810	2,130	3,917	1,432	2,284	1,339	986	688	623	508	570
Max	3,190	5,490	4,800	8,980	2,020	6,940	2,360	1,600	827	1,140	802	2,530
Min	721	997	1,070	1,640	1,190	1,390	1,060	679	540	438	319	310
Cfsm	1.24	1.91	2.25	4.14	1.52	2.42	1.42	1.04	0.73	0.66	0.54	0.60
In.	1.43	2.14	2.60	4.78	1.58	2.79	1.58	1.20	0.81	0.76	0.62	0.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2007, BY WATER YEAR (WY)

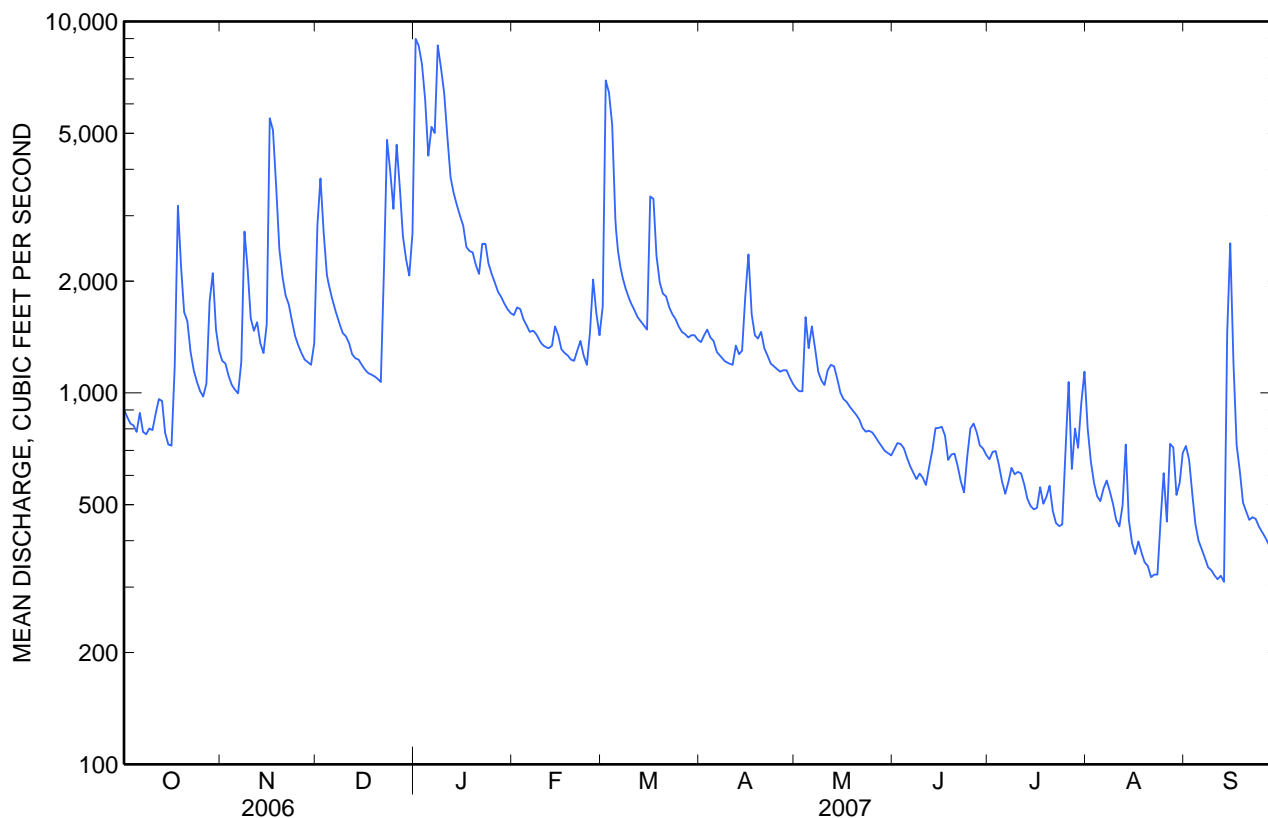
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,575	1,640	2,108	2,426	2,643	2,972	2,719	2,168	1,879	1,708	1,672	1,531
Max	7,025	5,121	5,700	6,068	6,364	7,928	5,705	4,961	5,774	11,500	8,362	10,210
(WY)	(1965)	(1980)	(1915)	(1937)	(1998)	(1899)	(1899)	(1973)	(1909)	(1916)	(1901)	(2004)
Min	353	507	636	548	1,083	1,037	973	852	547	559	328	346
(WY)	(1955)	(1932)	(1956)	(1956)	(1931)	(1988)	(1986)	(2001)	(1988)	(1986)	(1925)	(1954)

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1896 - 2007	
Annual total	606,405		532,374			
Annual mean	1,661		1,459		2,084	
Highest annual mean					3,671	1901
Lowest annual mean					1,004	1988
Highest daily mean	6,560	Jun 27	8,980	Jan 1	66,000	Jul 16, 1916
Lowest daily mean	641	Jun 22	310	Sep 13	215	Sep 13, 2002
Annual seven-day minimum	744	Jun 17	329	Sep 7	246	Sep 7, 2002
Maximum peak flow			9,660	Jan 1	^a 110,000	Jul 16, 1916
Maximum peak stage			5.81	Jan 1	^a 23.10	Jul 16, 1916
Instantaneous low flow			^a 308	Sep 13	^a 215	Sep 13, 2002
Annual runoff (cfsm)	1.76		1.54		2.21	
Annual runoff (inches)	23.87		20.96		29.97	
10 percent exceeds	2,650		2,670		3,630	
50 percent exceeds	1,420		1,180		1,630	
90 percent exceeds	889		461		768	

^a See Remarks.



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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 2006 TO SEPTEMBER 2007
DAILY SUM VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.15	0.09	0.02	0.03	0.73	0.07	0.00	0.04	0.00	0.01	0.00
2	0.00	0.04	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.03	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.06	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.00
5	0.09	0.00	0.00	0.66	0.00	0.00	0.00	0.18	0.03	0.00	0.00	0.00
6	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
7	0.00	1.10	0.00	0.61	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
8	0.03	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
9	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
10	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.06	0.59	0.00	0.00	0.00	0.00	0.14	0.19	0.00	0.09	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.02	0.00
13	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.25	0.01	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.28	0.00	0.00	2.60
15	0.00	1.27	0.00	0.00	0.00	0.21	0.40	0.00	0.18	0.00	0.00	0.00
16	0.16	0.08	0.00	0.00	0.00	1.65	0.00	0.05	0.00	0.00	0.00	0.00
17	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
19	0.24	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.39	0.09	0.00
20	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.02	0.05	0.00	0.00
21	0.00	0.00	0.00	0.19	0.09	0.00	0.00	0.00	0.00	0.00	0.03	0.00
22	0.00	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.03	0.05	0.25	0.00
25	0.00	0.00	0.31	0.00	0.35	0.00	0.00	0.00	0.05	1.44	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00
27	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00
28	0.17	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.86	0.53	0.00	0.00
29	0.00	0.03	0.00	0.00	---	0.16	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.34	0.01	0.00	---	0.00	0.00	0.00	0.00	0.28	0.25	0.00
31	0.00	---	1.64	0.00	---	0.00	---	0.00	---	0.00	0.00	---
Total	2.06	3.60	3.15	1.70	0.71	3.03	1.24	0.56	1.92	3.57	0.65	2.60

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