

Water-Data Report 2013

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, 1914-15, 1917, 1920-22, 1927, maximum discharge.

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 streamgage.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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). 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 August 13, 2008. Minimum discharge for current water year also occurred on December 16.

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 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,010	886	738	1,800	7,910	3,790	2,310	4,790	2,130	2,510	3,440	2,470
2	4,290	870	738	1,950	7,110	3,270	2,130	3,810	2,450	4,260	3,490	2,660
3	5,180	856	738	1,980	5,100	2,970	2,150	3,480	3,820	7,310	3,030	2,300
4	3,230	847	813	1,790	3,630	2,720	2,200	3,430	2,720	15,200	2,770	2,170
5	2,120	847	813	1,590	3,260	2,610	2,680	10,500	2,350	e16,400	2,600	1,990
6	1,730	847	753	1,440	2,990	3,300	2,340	22,000	3,030	17,000	2,560	1,870
7	1,650	946	720	1,370	2,830	2,740	2,120	17,100	3,220	e16,600	2,950	1,800
8	1,540	1,000	727	1,420	3,060	2,450	2,040	13,000	5,330	14,000	5,320	1,760
9	1,390	898	723	1,420	2,600	2,450	2,120	9,350	3,690	10,400	5,300	1,710
10	1,310	832	736	1,340	2,480	2,370	2,070	6,440	8,670	9,010	4,230	1,660
11	1,230	815	790	e1,270	2,970	2,370	1,900	4,920	8,320	10,300	5,020	1,630
12	1,170	809	791	1,600	3,190	4,030	5,920	4,570	6,480	7,450	5,100	1,670
13	1,130	881	730	1,670	3,000	4,110	5,540	4,000	4,350	5,980	5,180	1,780
14	1,100	933	705	1,800	2,680	3,380	4,100	3,550	3,520	6,920	3,470	1,610
15	1,520	878	688	4,280	2,460	3,010	3,370	3,340	3,110	8,500	3,040	1,510
16	1,760	860	737	e7,450	2,320	2,730	3,230	3,160	2,820	6,510	2,770	1,480
17	1,440	843	967	10,900	2,190	2,570	2,940	3,000	2,700	5,370	2,590	1,440
18	1,210	813	1,030	13,500	2,090	2,500	3,440	3,930	3,060	4,960	2,640	1,400
19	1,120	802	927	10,100	2,160	2,700	3,250	4,130	2,850	4,330	4,020	1,400
20	1,080	802	890	7,700	2,140	2,460	4,370	3,540	2,540	4,040	5,100	1,410
21	1,040	795	1,910	5,040	2,040	2,270	3,870	3,340	2,400	4,260	3,740	1,700
22	1,020	781	1,650	3,530	2,560	2,170	3,200	3,760	2,250	4,910	3,250	2,840
23	994	769	1,140	3,110	2,760	2,220	3,090	4,200	2,150	4,670	3,030	2,070
24	983	759	1,150	2,950	2,600	2,720	2,920	3,580	2,470	4,030	2,860	1,580
25	954	751	1,210	2,690	2,360	3,140	2,790	3,000	3,090	3,710	2,800	2,320
26	951	741	4,310	2,400	4,330	2,670	2,490	2,760	2,620	3,750	2,510	2,920
27	939	743	5,090	2,250	6,260	2,320	2,470	2,670	2,510	5,200	2,390	2,080
28	939	748	4,180	2,150	5,390	2,190	4,620	2,550	2,340	5,700	2,290	1,730
29	935	746	2,660	2,160	---	2,140	8,180	2,440	2,170	3,970	2,200	1,580
30	920	738	2,290	4,380	---	2,190	7,030	2,300	2,090	3,370	2,230	1,510
31	895	---	1,930	11,000	---	2,250	---	2,210	---	3,420	2,250	---
Total	46,780	24,836	43,274	118,030	94,470	84,810	100,880	164,850	101,250	224,040	104,170	56,050
Mean	1,509	828	1,396	3,807	3,374	2,736	3,363	5,318	3,375	7,227	3,360	1,868
Max	5,180	1,000	5,090	13,500	7,910	4,110	8,180	22,000	8,670	17,000	5,320	2,920
Min	895	738	688	1,270	2,040	2,140	1,900	2,210	2,090	2,510	2,200	1,400
Cfsm	1.60	0.88	1.48	4.03	3.57	2.90	3.56	5.63	3.57	7.65	3.56	1.98
In.	1.84	0.98	1.70	4.65	3.72	3.34	3.97	6.49	3.99	8.82	4.10	2.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2013, BY WATER YEAR (WY)

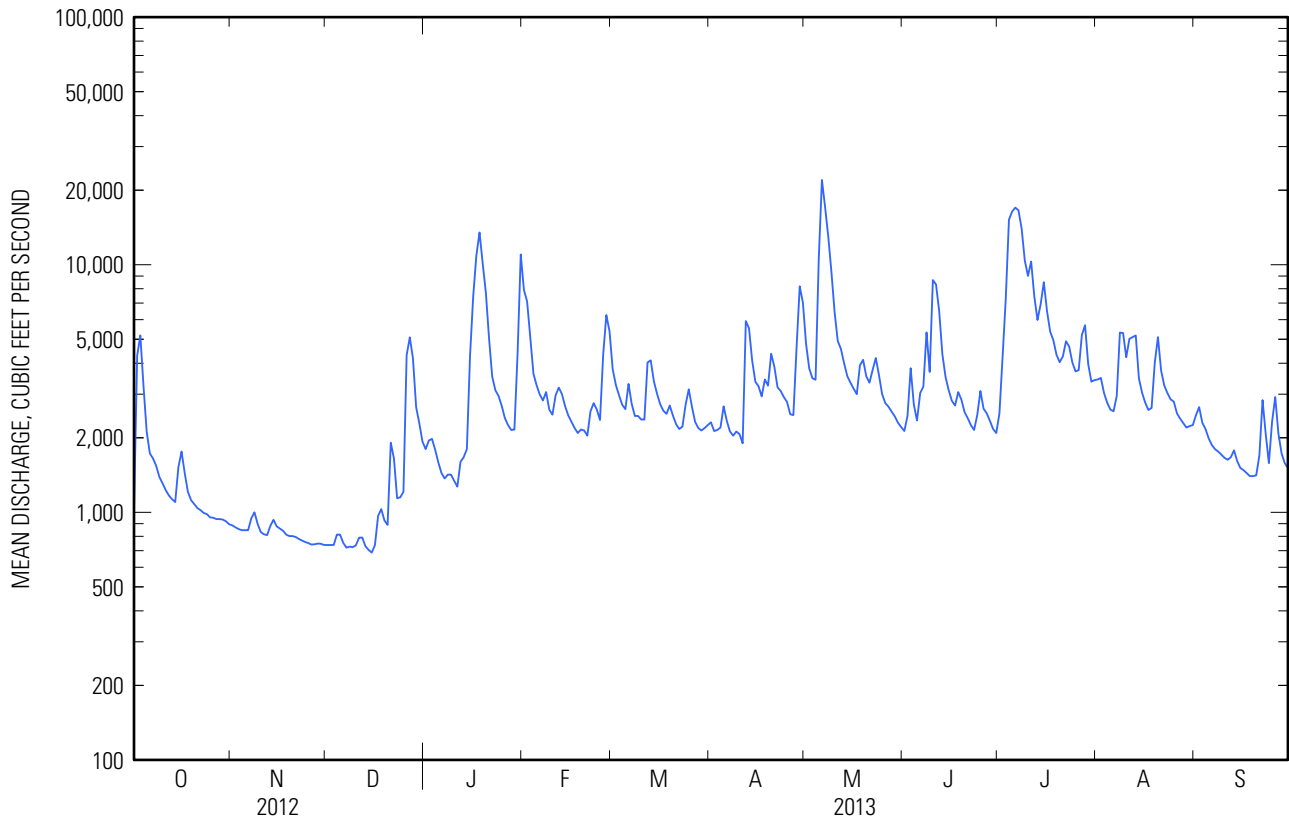
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,549	1,627	2,121	2,427	2,623	2,954	2,707	2,179	1,865	1,723	1,656	1,529
Max	7,025	5,121	5,700	6,068	6,364	7,928	5,705	5,318	5,774	11,500	8,362	10,210
(WY)	(1965)	(1980)	(1915)	(1937)	(1998)	(1899)	(1899)	(2013)	(1909)	(1916)	(1901)	(2004)
Min	353	507	636	548	788	1,037	973	852	547	440	328	346
(WY)	(1955)	(1932)	(1956)	(1956)	(2009)	(1988)	(1986)	(2001)	(1988)	(2008)	(1925)	(1954)

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SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1896 - 2013	
Annual total	580,977		1,163,440			
Annual mean	1,587		3,188		2,077	
Highest annual mean					3,671 1901	
Lowest annual mean					1,004 1988	
Highest daily mean	5,650	Sep 19	22,000	May 6	66,000	Jul 16, 1916
Lowest daily mean	655	Jul 9	688	Dec 15	174	Aug 12, 2008
Annual seven-day minimum	738	Dec 9	738	Dec 9	190	Aug 7, 2008
Maximum peak flow			23,200	May 6	^a 110,000	Jul 16, 1916
Maximum peak stage			9.98	May 6	^a 23.10	Jul 16, 1916
Instantaneous low flow			^a 686	Dec 15	^a 170	Aug 12, 2008
Annual runoff (cfsm)	1.68		3.37		2.20	
Annual runoff (inches)	22.87		45.80		29.87	
10 percent exceeds	2,530		5,600		3,640	
50 percent exceeds	1,430		2,500		1,620	
90 percent exceeds	791		852		755	

^a See Remarks.



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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.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY SUM VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.42	0.00	0.00	0.26	0.00	---	---	---	---	0.90	0.02	0.21
2	0.79	0.00	0.00	0.01	0.00	---	---	---	---	0.04	0.00	0.01
3	0.00	0.00	0.00	0.00	0.00	---	---	---	---	2.78	0.00	0.18
4	0.00	0.00	0.00	0.00	0.00	---	---	---	---	1.13	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	---	---	---	---	0.05	0.02	0.00
6	0.00	0.09	0.02	0.00	0.00	---	---	---	---	1.35	0.00	0.00
7	0.37	0.07	0.00	0.00	0.35	---	---	---	---	0.75	0.33	0.00
8	0.00	0.00	0.00	0.00	0.01	---	---	---	---	0.05	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	---	---	---	---	0.07	0.13	0.00
10	0.00	0.00	0.13	0.00	0.25	---	---	---	---	1.21	0.08	0.00
11	0.00	0.00	0.00	0.09	0.01	---	---	---	0.03	0.02	0.28	0.00
12	0.00	0.14	0.00	0.00	0.13	---	---	---	0.00	0.01	0.06	0.15
13	0.00	0.01	0.00	0.02	0.13	---	---	---	0.33	0.00	0.01	0.02
14	0.00	0.00	0.00	1.43	0.00	---	---	---	0.00	0.82	0.00	0.00
15	0.70	0.00	0.00	1.06	0.00	---	---	---	0.00	0.01	0.00	0.00
16	0.00	0.00	0.63	0.23	0.00	---	---	---	0.00	0.00	0.00	0.00
17	0.00	0.00	0.01	1.68	0.00	---	---	---	0.44	0.83	0.10	0.00
18	0.00	0.00	0.03	0.00	0.00	---	---	---	0.03	0.00	0.22	0.00
19	0.00	0.00	0.00	0.00	0.01	---	---	---	0.01	0.00	0.94	0.00
20	0.00	0.00	0.31	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.23	---	---	---	0.00	0.07	0.01	0.99
22	0.00	0.00	0.00	0.00	0.28	---	---	---	0.00	0.11	0.00	0.10
23	0.00	0.00	0.00	0.00	0.14	---	---	---	0.01	0.01	0.00	0.00
24	0.00	0.00	0.34	0.00	0.00	---	---	---	0.00	0.00	0.00	0.00
25	0.00	0.00	0.09	0.01	0.00	---	---	---	0.00	0.00	0.00	0.84
26	0.00	0.00	1.28	0.00	0.75	---	---	---	0.06	0.00	0.00	0.00
27	0.00	0.02	0.01	0.03	0.01	---	---	---	0.11	0.61	0.00	0.00
28	0.15	0.00	0.08	0.00	0.00	---	---	---	0.01	0.00	0.00	0.00
29	0.03	0.00	0.07	0.02	---	---	---	---	0.00	0.00	0.15	0.00
30	0.09	0.00	0.00	1.83	---	---	---	---	0.14	0.00	0.00	0.00
31	0.00	---	0.00	0.03	---	---	---	---	---	0.16	0.00	---
Total	2.55	0.33	3.00	6.70	2.30	---	---	---	---	10.98	2.35	2.50

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