

Water-Data Report 2010

03453500 FRENCH BROAD RIVER AT MARSHALL, NC

French Broad-Holston Basin
Upper French Broad Subbasin

LOCATION.--Lat 35°47'11", long 82°39'39" referenced to North American Datum of 1983, Madison County, NC, Hydrologic Unit 06010105, on right bank 0.7 mi upstream from Hayes Creek, 1.0 mi downstream of Ivy River, 1.5 mi southeast of Marshall, and at river mile 126.7.

DRAINAGE AREA.--1,332 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1436: 1954, maximum discharge.

GAGE.--Water-stage recorder. Datum of gage is 1,646.79 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority).
Satellite and telephone telemetry at streamgage.

REMARKS.--No estimated daily discharges. Records good. Small diversions from tributaries for water supply. Slight diurnal fluctuation and occasional slight regulation at low flow caused by small reservoirs upstream from station. Prior to July 1963, some regulation by Progress Energy Company, Weaver Plant, 15 mi upstream, after November 1986 the same power plant was operated by the Metropolitan Sewage Treatment Plant. Minimum discharge for period of record also occurred August 12, 13, 2008.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed since at least 1791: 22.0 ft, July 16, 1916; discharge: 115,000ft³/s. Flood of August 30, 1940, reached a stage of 16.6 ft; discharge, 70,000 ft³/s, from high water marks, flood profiles, and studies by Tennessee Valley Authority.

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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	2,430	4,980	2,560	4,570	4,480	3,230	3,570	2,250	2,980	1,340	1,110	837
2	2,200	4,880	3,530	4,300	5,110	3,210	3,260	2,190	2,570	1,190	1,010	797
3	1,970	3,890	7,540	3,940	6,250	3,290	3,050	3,190	2,640	1,120	945	761
4	1,780	3,280	7,000	3,720	5,950	3,140	2,920	3,930	2,310	1,070	885	726
5	2,290	2,890	5,740	3,580	8,510	3,010	2,800	3,220	2,180	1,030	934	694
6	2,460	2,620	4,120	3,430	11,100	2,900	2,900	2,730	2,060	977	1,110	679
7	2,090	2,410	3,600	3,300	9,440	2,830	2,680	2,560	1,880	930	1,370	660
8	1,960	2,270	3,480	3,130	8,050	2,800	2,920	2,470	1,670	898	1,130	665
9	1,660	2,140	10,000	2,900	6,750	2,770	3,780	2,140	1,550	909	915	712
10	1,600	2,790	8,720	2,820	5,890	2,950	3,280	2,000	1,560	982	842	689
11	1,650	13,600	7,260	2,790	5,320	3,000	2,780	1,990	1,590	902	900	707
12	1,570	11,700	5,580	2,720	4,900	3,690	2,660	2,000	1,610	1,330	945	1,170
13	1,770	9,500	4,630	2,600	4,610	6,520	2,550	1,950	1,550	1,300	894	1,120
14	2,020	7,440	5,040	2,530	4,320	5,910	2,420	1,860	1,480	1,100	1,020	853
15	2,380	4,930	4,700	2,490	4,160	4,770	2,370	2,200	1,370	979	1,640	716
16	2,370	3,970	4,220	2,440	4,150	4,260	2,320	2,040	1,940	903	2,050	667
17	2,290	3,600	3,870	5,600	3,940	3,910	2,260	2,620	2,070	1,140	1,550	752
18	2,060	4,220	3,650	6,960	3,750	3,680	2,190	2,740	1,810	1,810	1,460	669
19	1,840	5,470	4,140	5,740	3,550	3,500	2,110	2,350	1,440	1,720	1,600	632
20	1,700	5,220	3,990	4,370	3,440	3,230	2,090	2,050	1,330	1,250	1,510	623
21	1,610	4,350	3,630	4,300	3,400	3,070	2,150	1,970	1,270	1,430	1,370	600
22	1,520	3,780	3,560	5,120	3,640	5,300	2,080	2,330	1,300	1,010	2,910	579
23	1,480	3,990	3,550	4,730	4,220	5,530	2,020	2,110	1,170	935	2,550	588
24	2,440	3,940	3,560	5,010	4,170	4,460	2,040	1,850	1,230	946	1,550	631
25	3,870	3,590	13,900	16,100	4,000	3,980	3,470	1,850	1,290	960	1,290	602
26	3,020	3,210	14,200	13,700	3,620	3,810	4,490	1,840	1,390	1,120	1,200	968
27	2,790	3,000	11,000	11,400	3,460	3,460	3,660	1,730	1,720	1,060	1,160	1,420
28	5,260	2,810	9,080	8,970	3,360	3,420	3,090	1,680	1,530	1,260	1,190	2,480
29	4,990	2,680	6,880	6,660	---	4,430	2,640	1,770	1,550	1,400	1,050	1,670
30	3,860	2,610	5,100	5,430	---	4,290	2,440	1,570	1,470	1,110	954	1,380
31	3,160	---	4,660	4,970	---	3,830	---	1,650	---	934	893	---
Total	74,090	135,760	182,490	160,320	143,540	118,180	82,990	68,830	51,510	35,045	39,937	26,047
Mean	2,390	4,525	5,887	5,172	5,126	3,812	2,766	2,220	1,717	1,130	1,288	868
Max	5,260	13,600	14,200	16,100	11,100	6,520	4,490	3,930	2,980	1,810	2,910	2,480
Min	1,480	2,140	2,560	2,440	3,360	2,770	2,020	1,570	1,170	898	842	579
Cfsm	1.79	3.40	4.42	3.88	3.85	2.86	2.08	1.67	1.29	0.85	0.97	0.65
In.	2.07	3.79	5.10	4.48	4.01	3.30	2.32	1.92	1.44	0.98	1.12	0.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,730	2,027	2,463	2,897	3,244	3,623	3,297	2,607	2,146	1,755	1,723	1,673
Max	8,172	5,640	5,887	6,279	7,373	7,170	6,149	5,585	4,191	5,214	4,905	10,430
(WY)	(1965)	(1980)	(2010)	(1998)	(1998)	(1975)	(1983)	(2003)	(1989)	(2005)	(1994)	(2004)
Min	450	583	778	715	931	1,235	1,191	1,066	636	518	577	384
(WY)	(1955)	(2009)	(1956)	(1956)	(2009)	(1988)	(1986)	(1988)	(2008)	(2008)	(2002)	(1954)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1943 - 2010	
Annual total	933,790		1,118,739			
Annual mean	2,558		3,065		2,428	
Highest annual mean					3,573	1949
Lowest annual mean					1,198	2008
Highest daily mean	14,800	Sep 22	16,100	Jan 25	32,400	Sep 8, 2004
Lowest daily mean	558	Sep 7	579	Sep 22	195	Aug 12, 2008
Annual seven-day minimum	636	Sep 2	608	Sep 19	215	Aug 8, 2008
Maximum peak flow			21,400	Dec 25	54,000	Nov 6, 1977
Maximum peak stage			8.15	Dec 25	13.64	Nov 6, 1977
Instantaneous low flow			546	Sep 22	^a 190	Aug 11, 2008
Annual runoff (cfsm)	1.92		2.30		1.82	
Annual runoff (inches)	26.08		31.24		24.76	
10 percent exceeds	4,940		5,450		4,350	
50 percent exceeds	1,780		2,530		1,940	
90 percent exceeds	809		935		869	

^a See Remarks.

