

Water-Data Report 2007

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(M).

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

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 September 14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed since at least 1791: 22.0 ft, July 16, 1916; discharge: 115,000 ft³/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.

03453500 FRENCH BROAD RIVER AT MARSHALL, NC—Continued

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	1,350	1,730	2,910	11,100	2,040	1,960	1,810	1,360	856	903	1,200	848
2	1,260	1,920	4,400	9,350	2,080	7,400	1,850	1,330	1,020	865	930	804
3	1,220	1,680	3,390	8,320	2,110	7,270	1,940	1,480	931	914	793	633
4	1,200	1,570	2,580	7,040	1,970	6,230	1,850	2,130	938	875	692	532
5	1,160	1,500	2,320	5,140	1,860	3,860	1,810	1,850	876	753	633	471
6	1,280	1,460	2,180	5,960	1,840	2,950	1,700	2,000	820	687	662	438
7	1,180	1,560	2,060	5,730	1,880	2,650	1,650	1,830	778	664	685	405
8	1,110	3,720	1,940	9,360	1,830	2,460	1,620	1,560	779	867	710	390
9	1,150	3,150	1,820	8,420	1,780	2,320	1,580	1,460	783	796	629	366
10	1,150	2,430	1,800	7,350	1,720	2,210	1,570	1,410	759	932	573	338
11	1,230	2,140	1,750	5,950	1,680	2,130	1,540	1,470	707	877	540	347
12	1,270	2,440	1,630	4,650	1,670	2,040	1,700	1,520	795	789	491	345
13	1,430	2,110	1,580	4,190	1,690	1,960	1,680	1,550	862	715	871	333
14	1,170	1,950	1,570	3,880	1,920	1,930	1,650	1,430	1,090	667	594	1,470
15	1,050	1,950	1,520	3,630	1,840	1,890	2,070	1,330	1,100	645	495	3,190
16	1,030	5,970	1,490	3,440	1,660	4,510	2,990	1,260	1,190	616	444	1,690
17	1,470	6,010	1,440	3,060	1,610	4,860	2,220	1,250	1,040	720	459	979
18	3,580	4,620	1,420	2,910	1,620	3,340	1,910	1,190	880	691	453	727
19	3,030	3,140	1,390	2,880	1,560	2,750	1,860	1,160	834	690	405	625
20	2,280	2,630	1,360	2,710	1,550	2,540	1,960	1,130	935	769	404	569
21	2,180	2,350	1,340	2,570	1,640	2,590	1,790	1,100	836	654	392	537
22	1,860	2,210	2,050	3,040	1,760	2,350	1,690	1,060	749	583	412	530
23	1,660	2,070	5,250	3,110	1,640	2,230	1,610	1,020	686	577	385	533
24	1,540	1,870	4,740	2,750	1,520	2,140	1,560	1,020	728	634	412	516
25	1,450	1,750	3,360	2,590	1,730	2,050	1,560	1,010	1,100	613	813	479
26	1,400	1,680	5,160	2,460	2,410	1,970	1,510	991	1,080	1,790	537	469
27	1,450	1,610	4,310	2,350	2,140	1,920	1,510	953	1,150	865	724	449
28	2,140	1,590	3,160	2,280	1,840	1,890	1,520	925	1,050	1,340	887	432
29	2,790	1,550	2,720	2,180	---	1,900	1,450	898	977	1,110	695	401
30	2,150	1,650	2,480	2,130	---	1,890	1,400	862	888	1,070	600	394
31	1,850	---	2,690	2,060	---	1,830	---	845	---	1,630	798	---
Total	50,070	72,010	77,810	142,590	50,590	90,020	52,560	40,384	27,217	26,301	19,318	20,240
Mean	1,615	2,400	2,510	4,600	1,807	2,904	1,752	1,303	907	848	623	675
Max	3,580	6,010	5,250	11,100	2,410	7,400	2,990	2,130	1,190	1,790	1,200	3,190
Min	1,030	1,460	1,340	2,060	1,520	1,830	1,400	845	686	577	385	333
Cfsm	1.21	1.80	1.88	3.45	1.36	2.18	1.32	0.98	0.68	0.64	0.47	0.51
In.	1.40	2.01	2.17	3.98	1.41	2.51	1.47	1.13	0.76	0.73	0.54	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,756	2,033	2,444	2,904	3,268	3,653	3,338	2,628	2,174	1,797	1,756	1,677
Max	8,172	5,640	5,465	6,279	7,373	7,170	6,149	5,585	4,191	5,214	4,905	10,430
(WY)	(1965)	(1980)	(1962)	(1998)	(1998)	(1975)	(1983)	(2003)	(1989)	(2005)	(1994)	(2004)
Min	450	651	778	715	1,547	1,235	1,191	1,066	700	708	577	384
(WY)	(1955)	(1955)	(1956)	(1956)	(2002)	(1988)	(1986)	(1988)	(1988)	(1986)	(2002)	(1954)

03453500 FRENCH BROAD RIVER AT MARSHALL, NC—Continued

SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1943 - 2007	
Annual total	755,420		669,110			
Annual mean	2,070		1,833		2,448	
Highest annual mean					3,573	1949
Lowest annual mean					1,229	1988
Highest daily mean	8,660	Jan 18	11,100	Jan 1	32,400	Sep 8, 2004
Lowest daily mean	790	Jun 22	333	Sep 13	292	Sep 27, 1954
Annual seven-day minimum	883	Jun 17	361	Sep 7	313	Sep 24, 1954
Maximum peak flow			14,500	Jan 1	54,000	Nov 6, 1977
Maximum peak stage			6.39	Jan 1	13.64	Nov 6, 1977
Instantaneous low flow			233	Sep 10	^a 193	Sep 13, 1954
Annual runoff (cfsm)	1.55		1.38		1.84	
Annual runoff (inches)	21.10		18.69		24.97	
10 percent exceeds	3,290		3,170		4,370	
50 percent exceeds	1,740		1,550		1,950	
90 percent exceeds	1,110		581		893	

^a See Remarks.

