

# Chapter 4 - French Broad River Subbasin 04-03-04 Includes Spring Creek, Ivy River, Little Ivy and Big Laurel Creek

## 4.1 Water Quality Overview

### *Subbasin 04-03-04 at a Glance*

#### Land and Water Area (sq. mi.)

Total area:	496
Land area:	494
Water area:	2

#### Population Statistics

1990 Est. Pop.:	20,660 people
Pop. Density:	41 persons/mi <sup>2</sup>

#### Land Cover (%)

Forest/Wetland:	85%
Surface Water:	<1%
Urban:	<1%
Cultivated Cropland:	<1%
Pasture/ Managed Herbaceous:	14%

#### Use Support Ratings

##### *Freshwater Streams:*

Fully Supporting:	728.7 miles
Partially Supporting:	2.6 miles
Not Supporting:	0.0 miles
Not Rated:	30.7 miles

This subbasin includes the lower section of the French Broad River in Madison County. The largest tributaries in the northern portion of the subbasin are Spring Creek, which is entirely within the Pisgah National Forest, and Big Laurel Creek, which creates the southern border of the Pisgah National Forest. In the southern section of the subbasin, there is development around the towns of Marshall and Mars Hill and agricultural activities. The largest tributary in this part of the subbasin is Ivy Creek (River). A map of this subbasin, including water quality sampling locations, is presented in Figure B-4. Overall biological ratings are presented in Table B-4.

Ambient water quality data is collected on the French Broad River at Marshall. Data do not indicate any significant changes since 1992.

Benthic macroinvertebrate samples have been collected at 28 sites in this subbasin since 1983. The French Broad River near Marshall has been sampled 9 times and received a rating of Good-Fair each time, with the exception of a Fair rating in 1987. In general, streams in the northern and western section of the subbasin (which are in the Pisgah National Forest) have been consistently

rated Good or Excellent. Streams closer to Marshall in the Ivy Creek (River) watershed have declined from Good or Excellent ratings to Fair or Good-Fair ratings since 1992.

Three fish community samples were conducted in this subbasin. The entire length of Big Ivy Creek and Shelton Laurel Creek is designated as Hatchery Supported Trout Waters (NCWRC, 1997). Big Laurel Creek and Shelton Laurel Creek are also supplementally classified by DWQ as Trout Waters. Fisheries biologists observed large amounts of thick, filamentous green algae in Big Laurel Creek that was assumed to affect the fish community status.

There are 11 minor dischargers in this subbasin. Only the Marshall WWTP currently monitors effluent toxicity under its NPDES permit.

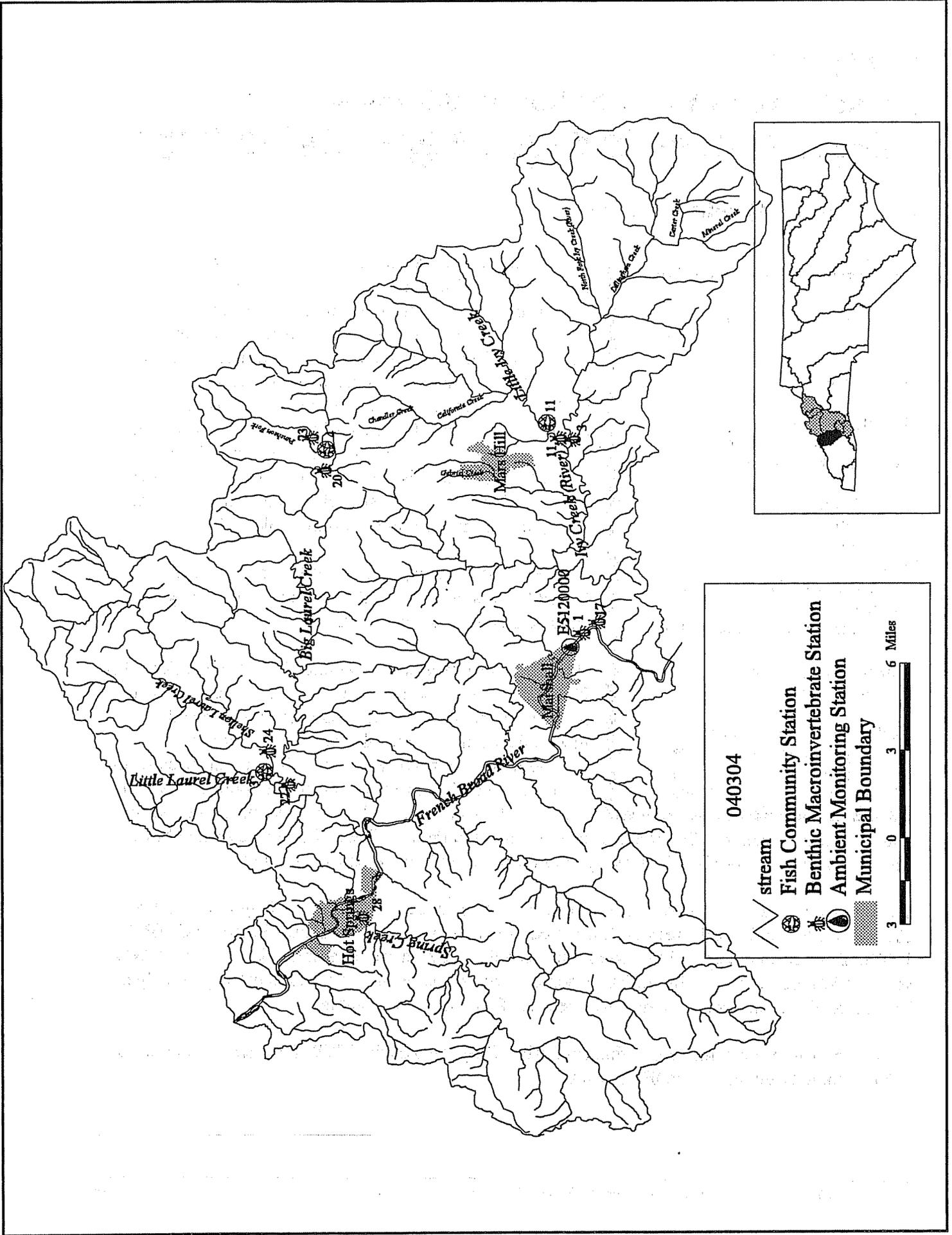


Figure B-4 Sampling Locations within Subbasin 04-03-04

Table B-4 Basinwide Biological Sites in French Broad River Subbasin 04-03-04 (1997)<sup>o</sup>

Site #	Stream	County	Road	Rating
<i>Benthic Macroinvertebrates</i>				
B-1	French Broad River	Madison	NC 213	Good-Fair
B-3	Ivy Creek (River)	Buncombe	SR 2150	Good-Fair
B-11	Little Ivy Creek	Madison	SR 1610	Fair
B-17	Ivy Creek (River)	Madison	US 25/70	Good-Fair
B-19	Big Laurel Creek	Madison	SR 1503	Good
B-22	Big Laurel Creek	Madison	NC 208	Excellent
B-23	Puncheon Fork	Madison	SR 1503	Good
B-24	Shelton Laurel Creek	Madison	NC 208/212	Good
B-28	Spring Creek	Madison	NC 209	Good
<i>Fish Community</i>				
F-1	Ivy Creek (River)	Buncombe	SR 2150	Not Rated*
F-3	Big Laurel Creek	Madison	NC 208	Not Rated*
F-4	Shelton Laurel Creek	Madison	NC 208	Not Rated*

\* Refer to Section A, Chapter 3 for more information on fish community ratings

<sup>o</sup> Locations of ambient monitoring stations can be found in Section A, Table A-25

For more detailed information on water quality in this subbasin, refer to the *Basinwide Assessment Report – French Broad River Basin – November 1998*, available from the DWQ Environmental Sciences Branch at (919) 733-9960.

## 4.2 Prior Basinwide Plan Recommendations (1995) and Achievements

### 4.2.1 Impaired Waters

There were no streams identified as impaired in this subbasin in the 1995 French Broad River Basinwide Plan.

## 4.3 Current Priority Issues and Recommendations

A portion of the Little Ivy Creek (River) is the only river in this subbasin that is considered to be impaired and is discussed in Part 4.3.1. This length of the river is also on the state's year 2000 (not yet EPA approved) 303(d) list (see Part 4.3.2).

### 4.3.1 Monitored Impaired Waters

#### Little Ivy Creek (River) (2.6 miles from SR 1547 to Ivy Creek (River))

This 2.6-mile section of the Little Ivy River is impaired (PS) due to nonpoint source contributions from agriculture and nonurban development. The 2.1 miles of the Little Ivy River

headwaters above this impaired section of the river are also impacted by these same nonpoint sources of pollution, but are not rated as impaired.

#### 2000 Recommendation(s)

A project is currently underway to implement best management practices in the Little Ivy River watershed to reduce fecal coliform bacteria (see Section C, Chapter 1). Some of the best management practices implemented will reduce erosion and runoff from pastureland, exclude livestock from riparian areas, and include installation of vegetated riparian buffers. In addition, straight piping is known to occur in the watershed, and the NC Division of Environmental Health Waste Discharge Elimination Program (WADE) is currently working to eliminate direct discharges in the watershed (see Section C, Chapter 1). DWQ will continue to monitor the creek to better identify sources of pollution.

#### **4.3.2 303(d) Listed Waters**

Segments of the Little Ivy Creek (River) are on the state's year 2000 (not yet EPA approved) 303(d) list for this subbasin. Little Ivy Creek (River) is currently impaired and discussed above (Part 4.3.1). Refer to Appendix IV for more information on the state's 303(d) list and listing requirements.

#### **4.3.3 Other Issues and Recommendations**

The following surface water segments are rated as fully supporting using recent DWQ monitoring data. However, these data revealed some impacts to water quality. Although no action is required for these surface waters, continued monitoring is recommended. Enforcement of sediment and erosion control laws will help to reduce impacts on these streams. DWQ encourages the use of voluntary measures to prevent water quality degradation. Education on local water quality issues is always a useful tool to prevent water quality problems and to promote restoration efforts. For information on water quality education programs and nonpoint source agency contacts, see Appendix VI. DWQ will notify local agencies of water quality concerns for these creeks and work with these various agencies to conduct further monitoring and assist agency personnel with locating sources of water quality protection funding.

The I-26 corridor construction through northern Buncombe County to the Tennessee state line has resulted in impacts to water quality in some of the tributaries in the vicinity of the construction project. Impacts to the aquatic life and habitat are related to the construction itself. The new corridor is about 75 percent complete. Once complete, there will likely be additional impacts due to stormwater runoff being rerouted to streams. Mitigation of the construction has just begun, so there is yet no measure of success for the BMPs installed. Evaluation of the effectiveness of BMPs will need to be completed to assure water quality protection. DWQ will continue to monitor streams in this area to assess water quality.

The VWIN program is also monitoring several stream sites in this area (Maas et al., 1999). VWIN monitoring has shown higher median conductivity levels than other major watersheds. California Creek, Middle Fork and Paint Fork, all main tributaries of Little Ivy Creek, show elevated levels of turbidity and total suspended solids. California Creek and Middle Fork also

have shown elevated metals concentrations. Nutrient concentrations are often elevated on California and Gabriel Creeks, and Middle and Paint Forks.

California Creek (3.8 miles from SR 1349 to Little Ivy Creek) was recently sampled by DWQ to assess impacts of I-26 construction in Madison County. This sample was taken prior to construction and will be used as a baseline of water quality in the creek. DWQ will continue to monitor water quality at this site. VWIN monitoring will also continue at this site.

Gabriel Creek (7.2 miles from NC 213 to Ivy Creek) is experiencing impacts from both agricultural activities and nonurban development. A watershed assessment to identify sources of impacts and actions needed to address them would be beneficial.

DWQ is currently conducting monitoring to assess the potential to reclassify the lower French Broad River in Madison County from a Class C to a Class B water (see Section A, Chapter 3, Part 3.2). The Class B rating would provide water quality protection for primary recreation in addition to Class C protection.

