

# Chapter 9 -

## Catawba River Subbasin 03-08-38

### Includes Sixmile Creek, Waxhaw Creek and Twelvemile Creek

#### 9.1 Water Quality Overview

##### *Subbasin 03-08-38 at a Glance*

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

Total area:	179
Land area:	178
Water area:	1

###### Population Statistics

1990 Est. Pop.:	25,902 people
Pop. Density:	146 persons/mi <sup>2</sup>

###### Land Cover (%)

Forest/Wetland:	61%
Surface Water:	1%
Urban:	4%
Cultivated Crop:	7%
Pasture/ Managed Herbaceous:	28%

###### Use Support Ratings

###### *Freshwater Streams:*

Fully Supporting:	0.0 mi.
Fully Supporting but Threatened:	102.6 mi.
Partially Supporting:	0.0 mi.
Not Supporting:	0.0 mi.
Not Rated:	48.6 mi.

The streams in this small subbasin have very low flows during summer drought periods. Agricultural nonpoint source runoff is a major source of water quality degradation in this subbasin, although low flow conditions during the summer also limit the diversity of aquatic life. No benthic macroinvertebrate samples were collected in 1997 due to low flows. According to earlier benthic data, water quality in both Twelvemile and Waxhaw Creek improved from Fair in 1983 to Good-Fair in 1990. Fish community sampling was assessed at three sites in 1997 (see Table B-9). A map of this subbasin including water quality sampling locations is presented in Figure B-10.

No problems have been reported from the three facilities that currently monitor effluent toxicity under conditions of their NPDES permit.

Biological and chemical monitoring data are used to develop use support ratings. These ratings are used to prioritize DWQ activities towards protecting and restoring waters in the basin. There are no impaired waters in this subbasin.

For more detailed information on water quality in subbasin 03-08-38, refer to the *Basinwide Assessment Report - Catawba River Basin - August 1998*, available

from the DWQ Environmental Sciences Branch at (919) 733-9960.

Table B-9 Biological Assessment Sites in Catawba River Subbasin 03-08-38 (1997)

Site	Stream	County	Road	NCIBI Class
F-1	Twelvemile Creek	Union	NC 16	Fair
F-2	Sixmile Creek	Union	SR 1312	Fair
F-3	Waxhaw Creek	Union	SR 1103	Good-Fair

Key:

F = Fish Sites

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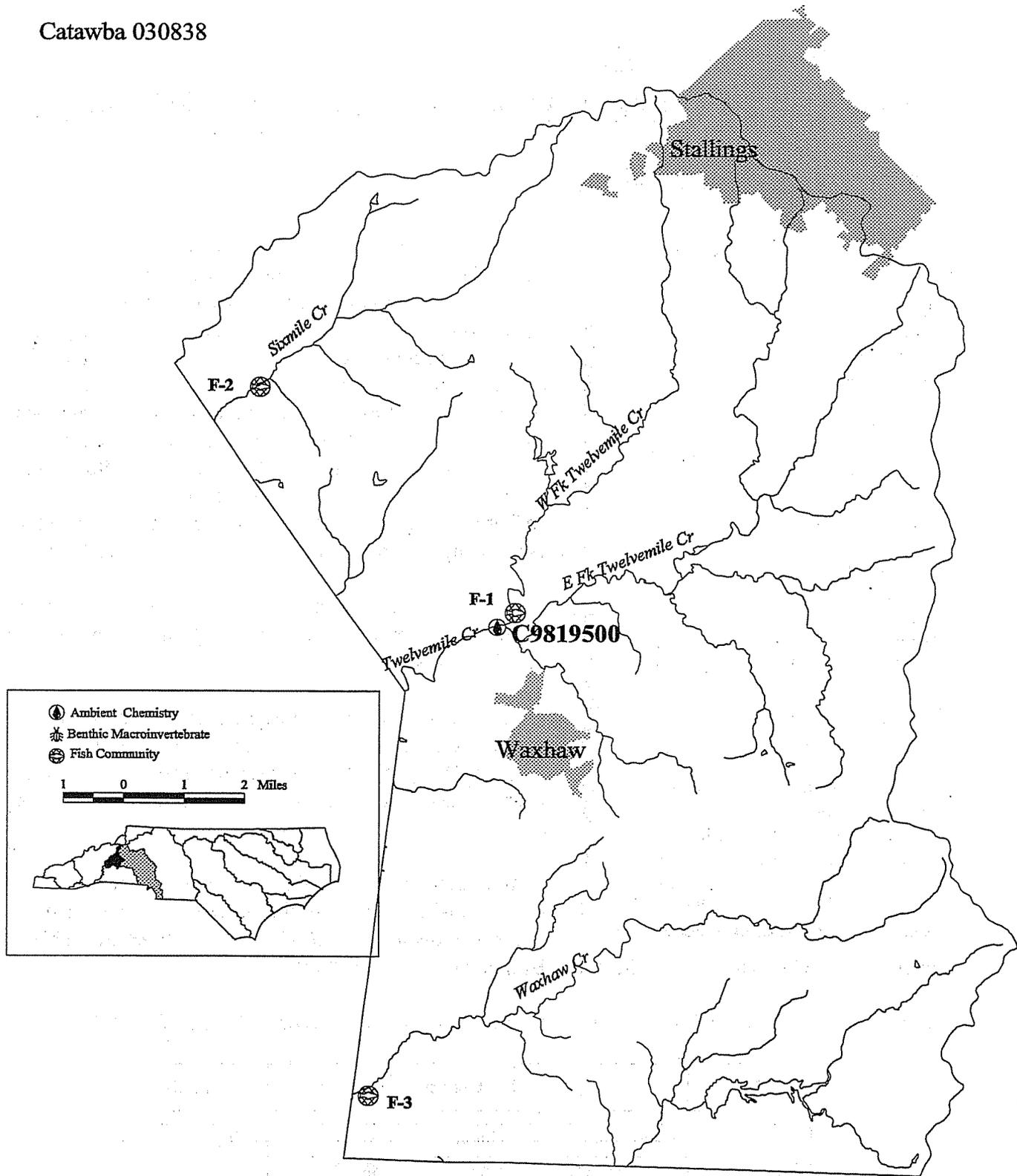


Figure B-10 Sampling Locations within Subbasin 03-08-38

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

### 9.2.1 Impaired Waterbodies

The 1995 basinwide plan identified Sixmile Creek as impaired. This creek is discussed below.

#### Sixmile Creek

Per existing DWQ regulations for zero 7Q10 flow streams, it was recommended that all new and expanding facilities would receive summer limits of 5 mg/l BOD<sub>5</sub>, 2 mg/l NH<sub>3</sub> and 6 mg/l DO. Winter limits for new and expanding facilities would be 10 mg/l BOD<sub>5</sub>, 4 mg/l NH<sub>3</sub> and 6 mg/l DO. It was recommended that all facilities tie on to sewer lines serving a regional facility.

#### Status of Progress

Of the eight facilities that were discharging to Sixmile Creek, there are currently only three remaining. DWQ will not allow any new discharges to Sixmile Creek, given that Charlotte-Mecklenburg Utilities (CMUD) has extended sewer lines to this area. Although existing dischargers will not be required to tie on to CMUD, DWQ may require these dischargers to perform an engineering alternatives analysis (EAA) in the future. DWQ biologists believe this stream is too small to appropriately use sampling methodology and is no longer be rated. However, water quality concerns remain.

### 9.2.2 Other Issues

#### Union County Watersheds

The entire Sixmile Creek watershed in North Carolina and much of Union County has zero 7Q10 flow streams. However, much of Sixmile Creek does have a positive 30Q2 flow. Existing water quality models cannot accurately predict the effects of discharges to a zero 7Q10 flow stream, yet because of the positive 30Q2 flow, DWQ procedures have allowed for new and expanding facilities to be permitted at advanced tertiary limits. However, without a model in place there is no way to estimate at what point such a stream will be impaired by additional wastewater flow. This is a concern in watersheds such as Sixmile Creek where a significant amount of wastewater is discharged to zero 7Q10 streams. It is also a potential concern for nearby Waxhaw Creek, which provides habitat for the state and federally endangered Carolina Heelsplitter mussel.

#### Status of Progress and 1999 Recommendation(s)

DWQ will continue to encourage facilities in such low flow streams to tie on to regional facilities when this option is available. When tying into another larger facility is not feasible, DWQ will continue to implement the zero flow policy for new and expanding facilities to zero flow streams. In some instances, dischargers may be required to perform an engineering alternatives analysis (EAA).

## **9.3 Current Priority Issues and Recommendations**

### **9.3.1 Monitored Impaired Waters**

There are no impaired waters in this subbasin based on the most recent DWQ sampling data. However, it is worth noting that there is significant development occurring in this subbasin which could result in decreasing water quality in the headwaters. DWQ has limited monitoring stations in this subbasin, and these monitoring efforts should be expanded in the future to better assess the effects of this development. Local land use planning should be implemented to assure water quality is protected.

### **9.3.2 303(d) Listed Waters**

There are no streams in this subbasin on the state's year 2000 (not yet EPA approved) 303(d) list. See Appendix IV for further information on 303(d) listing requirements.