

# Chapter 7 - Catawba River Subbasin 03-08-36

## Includes Long Creek and lower South Fork Catawba River

### 7.1 Water Quality Overview

#### *Subbasin 03-08-36 at a Glance*

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

Total area:	104
Land area:	101
Water area:	3

##### Population Statistics

1990 Est. Pop.:	61,697 people
Pop. Density:	611 persons/mi <sup>2</sup>

##### Land Cover (%)

Forest/Wetland:	54%
Surface Water:	3%
Urban:	14%
Cultivated Crop:	2%
Pasture/ Managed Herbaceous:	27%

##### Use Support Ratings

###### *Freshwater Streams:*

Fully Supporting:	19.7 mi.
Fully Supporting but Threatened:	22.7 mi.
Partially Supporting:	0.8 mi.
Not Supporting:	0.0 mi.
Not Rated:	26.2 mi.

This small subbasin includes Gastonia and parts of Bessemer City. Major dischargers include Crompton & Knowles, Pharr Yarns, Union County, Collins and Aikman, and Gastonia. Seven facilities in this subbasin currently monitor effluent toxicity under their NPDES permit. A map of this subbasin including water quality sampling locations is presented in Figure B-8. Biological ratings for these sample sites are presented in Table B-7.

Long Creek is primarily affected by agricultural runoff and attempts are being made to control erosion in the watershed. Most of the long-term benthos sites from this subbasin are associated with the Long Creek agricultural BMP effectiveness investigation. The BMPs were installed by the Gaston County Soil and Water Conservation District and primarily target the dairy farms in the watershed. Two of the sites have improved from Good-Fair to Good.

During the 1997 basinwide sampling, one fish community site was sampled on Long Creek. Although the classification for this site was Poor for both 1997 and 1993, the 1997 results indicated an increase in the NCIBI score and a large increase in the number of species collected.

The other long-term data site is South Fork Catawba River near McAdenville. This site has improved over the years from Fair in 1985 to Good-Fair in 1987 and has remained Good-Fair since that time.

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.

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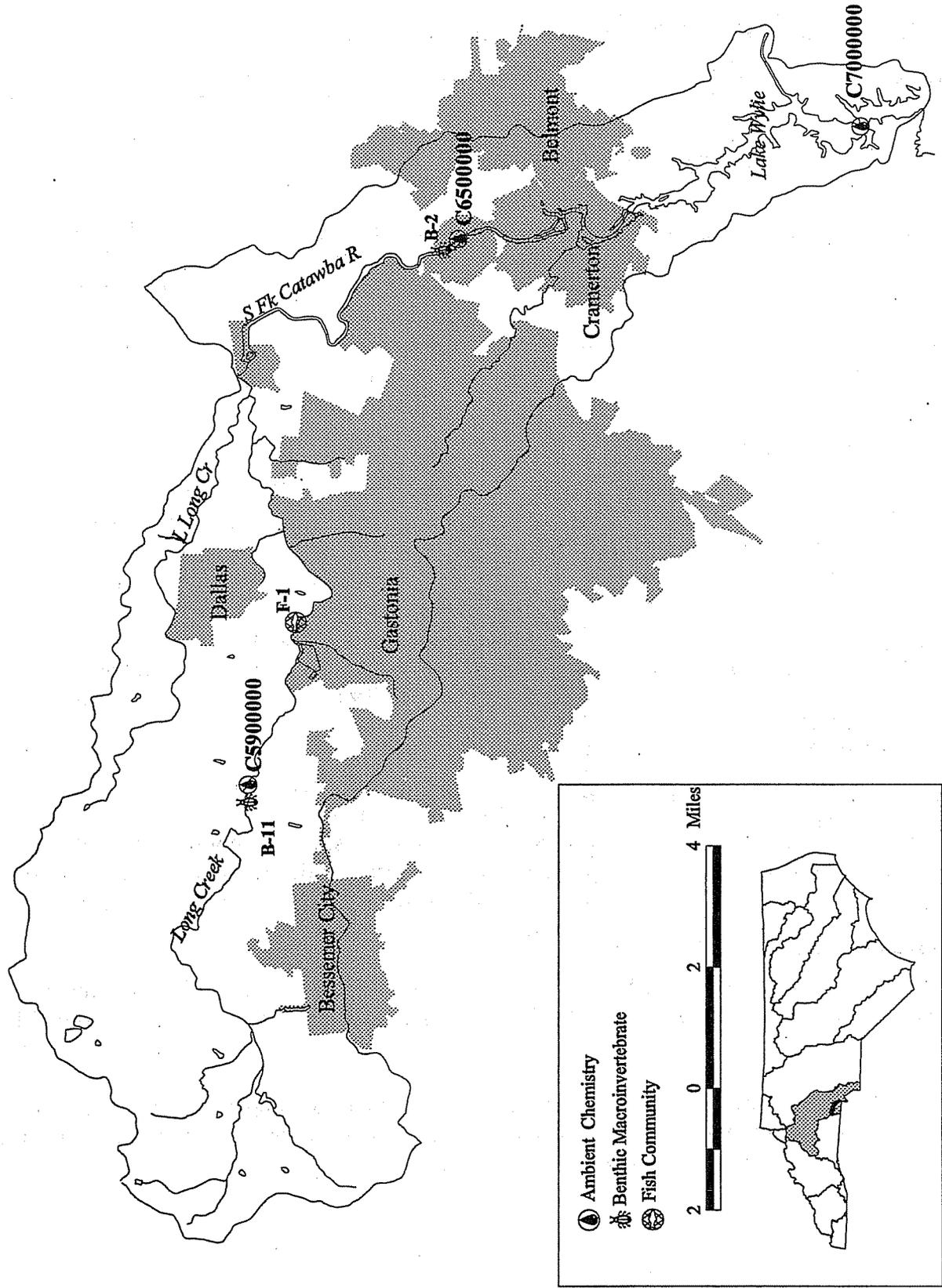


Figure B-8 Sampling Locations within Subbasin 03-08-36

Table B-7 Biological Assessment Sites in Catawba River Subbasin 03-08-36 (1997)

Site	Stream	County	Road	Rating
B-2	South Fork Catawba River	Gaston	NC 7	Good-Fair
B-11	Long Creek	Gaston	SR 1456	Good-Fair
F-1	Long Creek	Gaston	US 321	Poor

Key:

B = Benthic Macroinvertebrate Sites

F = Fish Sites

Fully supporting but threatened waters (ST) in this subbasin include the South Fork Catawba River and a short segment of Long Creek. The 1995 basin plan listed only the lower portion of the South Fork Catawba River as ST. There are currently more stream miles rated ST than the previous plan. Refer to Appendix II for a complete listing of monitored waters and use support ratings.

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

### 7.2.1 Impaired Waterbodies

The 1995 basinwide plan identified two streams as impaired. Each of these impaired waters are discussed below.

#### Long Creek

The 1995 basinwide plan identified lower Long Creek as impaired due to impacts from the Gastonia WWTP and nonpoint sources throughout the watershed. The Gastonia Long Creek WWTP was the largest point source discharge in the watershed. In 1990, the Gaston County Quality of Natural Resources Commission and the North Carolina Cooperative Extension Service, in conjunction with 13 sponsors including DWQ, initiated a water quality study of the Long Creek watershed. The objectives of the study were to identify and monitor point and nonpoint pollution sources and to collect water quality data that will allow for the development of policies and plans to protect the watershed. North Carolina Agricultural Cost Share Program funds were to be targeted for BMP implementation for animal waste management systems to address nonpoint sources of pollution.

#### Status of Progress

DWQ has been working with the City of Gastonia to reduce the discharge of oxygen-consuming wastes from the Long Creek WWTP. The Long Creek WWTP relocated its outfall from Long Creek to the South Fork Catawba River in 1998. This treatment upgrade means that even as permitted wasteflow is doubled, the facility will be able to reduce the total loading of oxygen-consuming wastes to the watershed. Following expansion to 16 MGD, the facility will be subject to advanced tertiary limits.

The Long Creek Watershed project in Gaston County was initiated in 1992 as an EPA 319 nonpoint source monitoring program project. The project will continue through 2001. Several agencies have cooperated on this project with the Gaston County Cooperative Extension Service playing a lead role. More details on this project can be found in Section C of this plan. Current data indicate that the installation of best management practices (BMPs) in the watershed have resulted in a decrease in bacteria and total phosphorus levels.

Many university research projects are also taking place in this watershed, in cooperation with several dairy operations. Best management practices are being installed throughout the watershed to reduce sediment transport and reduce nutrients and fecal coliform bacteria levels. For more information, refer to Section C, Chapter 1 or contact the Gaston County Cooperative Extension Service at (704) 922-0303.

Based on the most recent DWQ data, Long Creek is no longer listed as an impaired stream. While Long Creek is rated as fully supporting its uses, there are elevated fecal coliform bacteria levels in the creek. DWQ will continue to conduct monitoring in Long Creek to assess water quality improvements as a result of ongoing NPS reduction projects and improvements to the Gastonia-Long Creek WWTP.

### **Dallas Branch**

Dallas Branch is a tributary to Long Creek and was listed as impaired in the 1995 basinwide plan due to nonpoint sources of pollution. The planned management strategy for the creek was to include the creek in the Long Creek Watershed study.

#### Status of Progress

Dallas Branch has not specifically been a focus of the Long Creek Watershed project, and DWQ did not include this branch in the most recent sampling. Therefore, the creek has not been given a use support rating. However, the creek is on the 303(d) list due to prior DWQ sampling (see Part 7.3.2 for more information).

### **7.2.2 Other Recommendations**

#### **South Fork Catawba River**

A water quality study of 10 miles of the South Fork Catawba River was performed in order to calibrate a water quality model. This model was used to predict dissolved oxygen, ammonia and biochemical oxygen demand under low flow conditions.

Results of the study suggested that the assimilative capacity for oxygen-consuming wastes in the lower South Fork Catawba River is extremely limited. It was recommended that new or expanding major discharges (permitted wasteflow greater than 1.0 MGD) to the South Fork below Long Creek should receive advanced tertiary limits.

## Status of Progress

The South Fork Catawba River flows through both subbasins 03-08-35 and 03-08-36 and is, therefore, discussed in Section A, Chapter 4, Part 4.1.2 and 4.1.3.

### **7.3 Current Priority Issues and Recommendations**

#### **7.3.1 Monitored Impaired Waters**

There are no impaired waters in this subbasin based on the most recent DWQ sampling data. During the next five years, addressing monitored impaired waters will be a priority. This subbasin has no monitored impaired waters; however, the South Fork Catawba River and Long Creek show impacts from nonpoint source pollution. Local land use planning efforts and the use of best management practices (BMPs) and naturally vegetated buffer zones could help improve water quality in these streams.

#### **7.3.2 303(d) Listed Waters**

During the next five years, it will be a priority of DWQ to begin to address waters listed on the state's 303(d) list. In this subbasin, only Dallas Branch is on the 303(d) list based on prior DWQ sampling data. This stream is discussed below. Further information on the 303(d) list and listing requirements can be found in Appendix IV.

#### **Dallas Branch**

Dallas Branch was sampled by DWQ biologists in 1992 (listed as UT to Long Creek) above and below the Dallas WWTP. The intent of the sampling was to assess potential impacts on Dallas Branch due to effluent from the facility. At that time, DWQ noted water quality impacts (benthos samples rated Good-Fair above the facility and Fair below). This sampling resulted in Dallas Branch being given an impaired use support status (partially supporting). The Dallas WWTP, at that time, had chronic problems meeting effluent toxicity test limits in their NPDES permit. As of 1996, the facility opted to meet NH<sub>3</sub> permit requirements instead of conducting toxicity testing. Therefore, there is currently not enough information about the current toxicity of the effluent.

#### 1999 Recommendation(s)

Given that Dallas Branch is on the 303(d) list with a planned approach to conduct monitoring and identify problem parameters in the stream, it is recommended that the Dallas WWTP be required to conduct toxicity testing during the next permit cycle to determine the impact of this effluent on the stream.