

Chapter 1 -

Cape Fear River Subbasin 03-06-01

Includes the Haw River, Little Troublesome and Troublesome Creeks

1.1 Water Quality Overview

Subbasin 03-06-01 at a Glance

Land and Water Area (sq. mi.)

Total area:	189
Land Area:	187
Water Area:	2

Population Statistics

1990 Est. Pop.:	25,897 people
Pop. Density:	138 persons/mi ²

Land Cover (%)

Forest/Wetland:	58.6
Water:	2.0
Urban:	1.7
Cultivated Crop:	7.1
Pasture/ Managed Herbaceous:	30.6

Use Support Summary

Freshwater Streams:

Fully Supporting:	49.1 mi.
Partially Supporting:	46.7 mi.
Not Supporting:	5.0 mi.
Not Rated:	5.0 mi.

Lakes:

Hunt - Fully Supporting
Reidsville - Fully Supporting

This subbasin is located in the piedmont and is the headwaters of the Haw River, including Troublesome and Little Troublesome Creeks. The City of Reidsville is the only large municipality in the subbasin. The characteristics of streams in this subbasin are strongly affected by geology and soil type. Streams in the northern and western portion (upper Haw River, upper Troublesome Creek and Little Troublesome Creek) are within the Milton Belt and tend to be very sandy. The upper reaches of the Haw River and Little Troublesome Creek are generally slow flowing and swampy with little assimilative capacity for oxygen-consuming waste. A map of the subbasin, including water quality sampling locations, is presented in Figure B-1.

Biological ratings for these sample locations are presented in Table B-1. The current sampling resulted in impaired ratings for four streams in this subbasin. Refer to Appendix III for a complete listing of monitored waters and use support ratings. See Section A, Chapter 3, Table A-31 for a summary of lakes and reservoirs use support data.

The subbasin is primarily agricultural. There are 12 permitted discharges within the subbasin, mostly near Reidsville. Discharges from Reidsville WWTP and Glen Raven Mills are the largest.

Little Troublesome Creek, downstream of the Reidsville WWTP, rated Poor for both fish and macroinvertebrate data in 1998. Special studies of this discharge (1992 and 1994) demonstrated a reduction in organic loading in 1992; however, data indicated toxic conditions in Little Troublesome Creek during 1998. Urban nonpoint sources may also contribute to this problem, as a Fair benthos rating was assigned in 1992 and 1994 for Little Troublesome Creek above the discharge.

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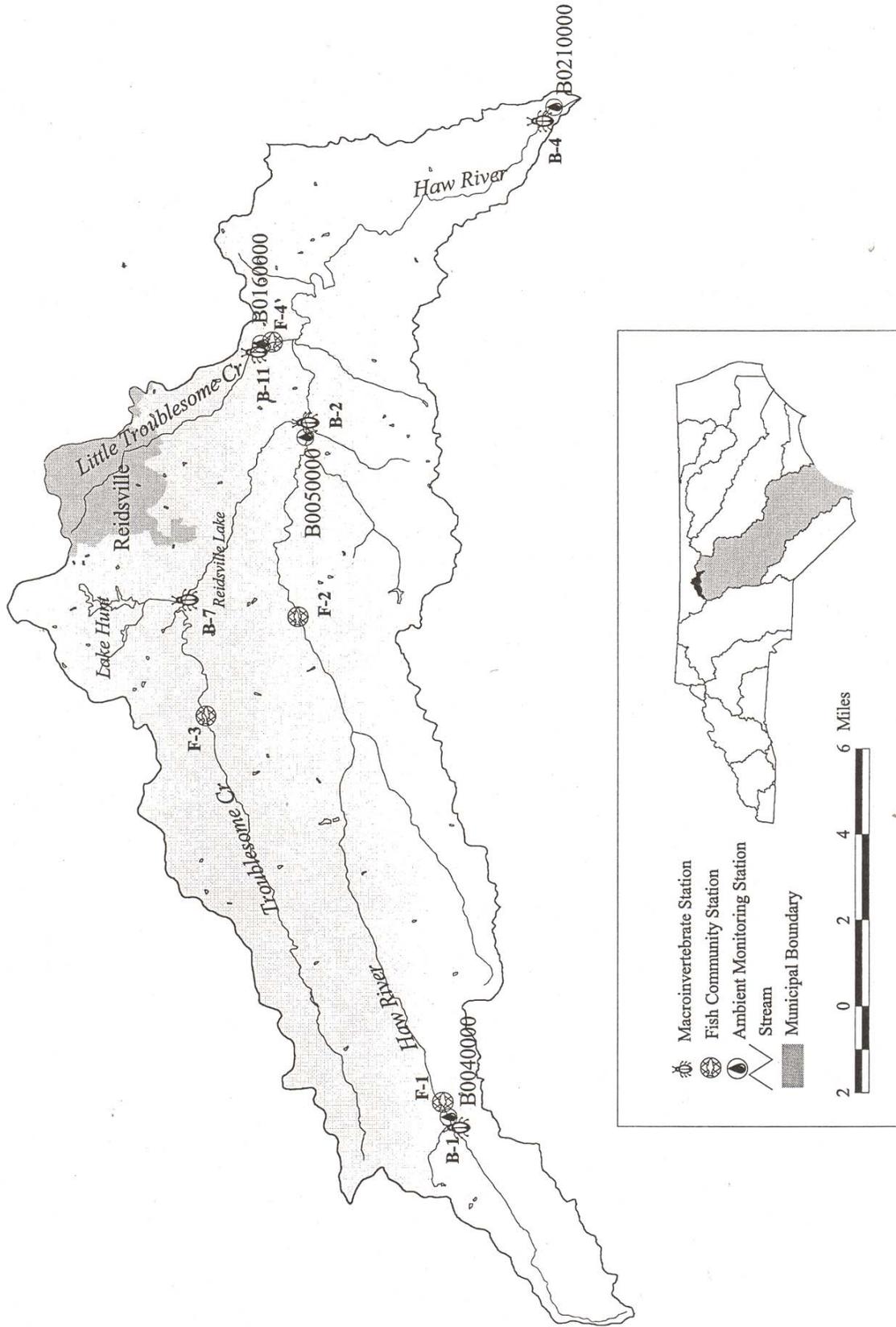


Figure B-1 Sampling Locations within Subbasin 03-06-01

Table B-1 Biological Assessment Sites in Cape Fear River Subbasin 03-06-01

<i>BENTHOS</i>				<i>Bioclassification</i>	
Site #	Stream	County	Location	1993	1998
B-1	Haw River	Guilford	SR 2109	Fair	Fair
B-2	Haw River	Rockingham	US 29 Bus	Good-Fair	Good-Fair
B-3	Haw River	Rockingham	NC 150	no sample	Good-Fair
B-4	Haw River	Alamance	NC 87	Good-Fair	Fair
B-7	Troublesome Creek	Rockingham	SR 2422	Good-Fair	Good-Fair
B-11	Little Troublesome Creek	Guilford	SR 2600	Poor	Poor

<i>FISH</i>				<i>Bioclassification</i>	
Site #	Stream	County	Location	1993	1998
F-1	Haw River	Guilford	SR 2109	no sample	Poor
F-2	Haw River	Rockingham	SR 2426	no sample	Poor/Fair
F-3	Troublesome Creek	Rockingham	SR 1001	Poor	Poor
F-4	Little Troublesome Creek	Rockingham	SR 2600	no sample	Poor

The Haw River at NC 87 has fluctuated between a Good-Fair benthos bioclassification (1985, 1987, 1993) and Fair (1990, 1998). While the drop from Good-Fair in 1993 to Fair in 1998 indicates a decline in water quality, part of this change may be due to the lower flow in 1998.

The Haw River Assembly has sampling sites on Little Troublesome Creek, Troublesome Creek and the Haw River (see Section C, Chapter 1, Part 1.4.6 for a description of this organization).

For more detailed information on water quality in this subbasin, refer to *Basinwide Assessment Report – Cape Fear River Basin – June 1999*, available from DWQ Environmental Sciences Branch at (919) 733-9960.

1.2 Impaired Waters

Portions of the Haw River, Candy Creek, Troublesome Creek and Little Troublesome Creek were identified as impaired in the 1996 Cape Fear River Basinwide Water Quality Plan. Portions of the Haw River, Troublesome Creek and Little Troublesome Creek are currently rated impaired according to recent DWQ monitoring. Current status of each stream is discussed below. Prior recommendations, future recommendations and projects aimed at improving water quality for these waters are also discussed when applicable. 303(d) listed waters are summarized in Part 1.3 and waters with other issues, recommendations or projects are discussed in Part 1.4.

Haw River

1996 Recommendations

The 1996 Cape Fear River Basinwide Plan identified the Haw River (7.2 miles from source to SR 2109) as partially supporting (PS). This segment of the Haw River was listed as impaired from nonpoint and point sources of pollution. The 1996 plan recommended that any new or expanding discharges to this portion of the Haw River meet limits at least as stringent as 15 mg/l BOD₅ and 4 mg/l NH₃-N.

Current Status

No new or expanding discharges have been permitted in this section of the Haw River. The Haw River (27.8 miles from source to SR 2426) is partially supporting (PS) based on recent DWQ monitoring because of an impaired biological community. This stream is on the state's year 2000 303(d) list (not yet EPA approved). Instream habitat degradation associated with agricultural nonpoint sources may be the cause of impairment. These two stream segments are very low flowing and biological ratings may reflect the low flow condition.

2000 Recommendations

No new or expanding discharges should be permitted in this portion of the Haw River (because of the low flows in this stream). Continued monitoring is recommended to determine the extent of impacts from agricultural sources. The 303(d) list approach will be to resample for biological and chemical data to attempt to determine potential problem parameters.

The Haw River Assembly is establishing a management trust on 3.7 acres around the source spring of the Haw River. For more information on this project, refer to Section C, Chapter 1, Part 1.5.1.

Candy Creek

Current Status

Candy Creek (3.6 miles for source to Haw River) was partially supporting (PS) in the 1996 plan. Candy Creek is currently not rated (NR). Using new biological information, DWQ has determined that the previous rating was inappropriate because of the small size of this stream.

Troublesome Creek

Current Status

Troublesome Creek was rated partially supporting (PS) in the 1996 plan. Currently 15.6 miles of Troublesome Creek (from source to SR 2423) are partially supporting (PS) based on recent DWQ monitoring because of an impaired biological community. Instream habitat degradation associated with agricultural nonpoint sources may be the cause of impairment. This stream is on

the state's year 2000 303(d) list (not yet EPA approved). This portion of Troublesome Creek is very low flowing and biological ratings may reflect the low flow condition.

2000 Recommendations

No new or expanding discharges should be permitted in this stream (because of the low flows in these streams). Continued monitoring is recommended to determine the extent of impacts from agricultural sources. The 303(d) list approach will be to resample for biological and chemical data to attempt to determine potential problem parameters.

Little Troublesome Creek

Current Status

Little Troublesome Creek was identified as impaired in the 1996 plan. The 3.3-mile segment upstream of the Reidsville WWTP was partially supporting (PS) due to urban and agricultural nonpoint source pollution. The 5.0-mile stream segment upstream from the Haw River was not supporting (NS) because of point source pollution from the Reidsville WWTP.

The Reidsville WWTP outfall was relocated to the Haw River at NC 150 in November 1998, although during power outages the Little Troublesome Creek outfall is still used. Little Troublesome Creek (8.3 miles from source to the Haw River) is currently partially supporting (PS) above the Reidsville WWTP and not supporting (NS) below the WWTP because of an impaired biological community. Instream habitat degradation associated with urban nonpoint sources may be the cause of impairment. There are also indications of nutrient enrichment associated with runoff from the City of Reidsville. Fecal coliform bacteria are a noted problem parameter as well. This stream is on the state's year 2000 303(d) list (not yet EPA approved). There is currently a 100% moratorium on this facility, preventing new connections to the collection system (see Part 1.4 below).

2000 Recommendations

Continued monitoring is recommended to assess water quality in Little Troublesome Creek downstream of the previous discharge location. The 303(d) list approach in the lower section will be to develop a TMDL to address fecal coliform bacteria. Flow data are being collected in the lower segment as part of the TMDL development process.

Reidsville will be required to address stormwater issues as part of Phase II of the NPDES stormwater program. NPDES stormwater permit applications must be received by DWQ by March 1, 2003. The 303(d) list approach in the upper section will be to resample for biological and chemical data to attempt to determine potential problem parameters.

DWQ, with CWMTF (see Section C, Chapter 1, Part 1.3.2), will start working on a detailed study of the Little Troublesome Creek watershed to identify the sources and extent of nonpoint source impacts to this stream.

1.3 303(d) Listed Waters

There are three streams (64.0 stream miles) in the subbasin that are impaired and on the state's year 2000 303(d) list (not yet EPA approved). The Haw River, Troublesome Creek and Little Troublesome Creek are discussed above. For information on 303(d) listing requirements and approaches, refer to Appendix IV.

1.4 Other Issues, Recommendations and Projects

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.

Reidsville Lake, a water supply reservoir located on Troublesome Creek, is owned by the City of Reidsville. The topography of the watershed is characterized by rolling hills, and land use is mainly agricultural (row crop and pastures) along with light residential and commercial development. A public park with boat launch area is located off of SR 2435 and is operated by the City of Reidsville Department of Parks and Recreation. In Reidsville Lake, one largemouth bass sample (of 15 fish tissue samples collected) contained mercury exceeding the EPA screening value of 0.6 ppm.

Portions of the Haw River and Troublesome Creek are downstream of partially supporting stream segments affected by agricultural nonpoint sources. DWQ encourages implementation of agricultural best management practices that reduce potential impacts to these surface waters. For information on water quality education programs, workshops and nonpoint source agency contacts, see Appendix V. 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.

Approximately 50% of the waters in this subbasin are impaired by nonpoint source pollution. All the waters of the subbasin are affected by nonpoint sources. DENR, other state agencies and environmental groups have programs and initiatives underway to address water quality problems associated with nonpoint sources. DWQ will notify local agencies of water quality concerns in this subbasin and work with these various agencies to conduct further monitoring, as well as assist agency personnel with locating sources of funding for water quality protection.

Upper Cape Fear River Basin Association

The Upper Cape Fear River Basin Association (UCFRBA) is starting to sample 45 sites in the upper Deep and Haw River watersheds. The data will be analyzed to support various studies and will be used with DWQ data to develop use support ratings for waters in the Cape Fear River basin during the upcoming basinwide cycle.

Haw River at WWTP Discharge

Current Status

This segment of the Haw River is currently fully supporting (FS), but is downstream of impacted waters, and may also be adversely affected by the Reidsville WWTP outfall to the Haw River at NC 150. Toxicity violations have been a continuing problem for the Reidsville WWTP. The facility has been out of compliance and on a special order of consent (SOC) for several years. The facility has been upgraded, and the discharge moved from Little Troublesome Creek to the current location. The SOC expired in 1999, and the WWTP was fined and continued to have toxicity violations. DWQ did not reissue the SOC. The facility was placed on a 100% moratorium, preventing new connections to the collection system, in August 1999. The facility has not had toxicity violations for nine months and has been from the moratorium.

2000 Recommendations

It is recommended that this segment of the Haw River be monitored to determine if the new discharge is degrading water quality in the Haw River. The Reidsville WWTP discharge will continue to be monitored to assure that toxicity problems do reoccur.