

Chapter 19 - Cape Fear River Subbasin 03-06-19

Includes the Black River, Six Runs Creek and Great Coharie Creek

19.1 Water Quality Overview

Subbasin 03-06-19 at a Glance

Land and Water Area (sq. mi.)

Total area:	739
Land area:	737
Water area:	2

Population Statistics

1990 Est. Pop.:	40,575 people
Pop. Density:	55 persons/mi ²

Land Cover (%)

Forest/Wetland:	53.5
Surface Water:	0.5
Urban:	1.3
Cultivated Crop:	34.0
Pasture/ Managed Herbaceous:	10.7

Use Support Ratings

Freshwater Streams:

Fully Supporting:	452.1 mi.
Partially Supporting:	15.0 mi.
Not Supporting:	0.0 mi.
Not Rated:	40.2 mi.

This subbasin is located in the coastal plain. The Black River and Six Runs Creek, below Quewhiffle Swamp, were designated ORW in 1994. Land adjacent to the Black River is primarily undisturbed forest. A map of the subbasin, including water quality sampling locations, is presented in Figure B-19.

Biological ratings for these sample locations are presented in Table B-19. The current sampling resulted in impaired ratings for a portion of one stream. Refer to Appendix III for a complete listing of monitored waters and use support ratings.

This subbasin has a very high concentration of hog farms. The Town of Clinton is the largest developed area within this subbasin. There are 7 permitted dischargers in this subbasin, the largest of which is the Town of Clinton WWTP.

Analysis of monitoring data has been complicated by the de-snagging of these streams as part of the Emergency Watershed Protection Program. This program, administered by the USDA's Natural Resources Conservation Service (NRCS), provides technical and financial assistance to preserve life and property

threatened by excessive erosion and flooding. Streams appeared to be totally de-snagged at sampling sites. This makes it difficult to determine whether any changes that may have occurred in the macroinvertebrate community were due to changes in water quality or lack of suitable habitat (see Section A, Chapter 4, Part 4.11).

Both Great Coharie Creek and Six Runs Creek showed decreased water quality between 1993 and 1998. All the streams in this subbasin have many hog farms in their watersheds. The Black River has maintained a rating of Excellent since 1985; however, some pollution intolerant macroinvertebrate species were not collected in 1998 that were found in earlier samplings.

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.

Cape Fear River 030619



Figure B-19 Sampling Locations within Subbasin 03-06-19

- Macroinvertebrate Station
- Fish Community Station
- Ambient Monitoring Station
- Stream
- Municipal Boundary

3 0 3 6 9 Miles

Table B-19 Biological Assessment Sites in Cape Fear River Subbasin 03-06-19

<i>BENTHOS</i>				<i>Bioclassification</i>		
Site #	Stream	County	Location	1993	1998	
B-1	Great Coharie Creek	Sampson	SR 1214	Good	Good-Fair	
B-3	Little Coharie Creek	Sampson	SR 1214	Good-Fair	Good-Fair	
B-6	Six Runs Creek	Sampson	SR 1960	Excellent	Good	
B-12	Black River	Sampson	NC 411	Excellent	Excellent	
<i>FISH TISSUE</i>				<i>No. Samples Exceeding Criteria</i>		
Station	Description	Year Sampled	Total Samples	Metals	Organics	Comments
FT-1	Black River near Ivanhoe	1995	7	3	0	EPA mercury limit exceeded in 3 bowfin samples

19.2 Impaired Waters

There were no impaired streams identified in the 1996 Cape Fear River Basinwide Water Quality Plan. Stewarts Creek is currently rated as impaired according to recent DWQ monitoring. Current status of each of these streams 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 19.3 and waters with other issues, recommendations or projects are discussed in Part 19.4.

Stewarts Creek

Current Status

Stewarts Creek (15.0 miles from source to Six Runs Creek) is currently partially supporting (PS) according to DWQ monitoring in 1996 because of an impaired biological community. Nonpoint source pollution resulting from Hurricane Fran is a possible cause of the impairment. This sample was taken after the hurricane, but before de-snagging operations had started. Stewarts Creek is on the state's year 2000 303(d) list (not yet EPA approved).

The Town of Magnolia discharges into an unnamed tributary to Millers Creek, which flows into Millers Creek before entering Stewarts Creek downstream of Warsaw. The Magnolia WWTP has had problems with effluent toxicity, and UT Millers Creek has received a large amount of sludge since 1998. The problems with the WWTP are related to inflow and infiltration (I&I). The WWTP has been fined monthly since November 1999. DWQ staff are working with this facility to quickly address the collection system problems. Magnolia WWTP is replacing several thousand feet of sewer line that have caused the problems. Millers Creek and UT Millers Creek are currently not rated (NR).

2000 Recommendations

Because of the timing of the sampling and hurricane impacts, Stewarts Creek will continue to be monitored to assess impacts and recovery from the hurricane. The 303(d) list approach will be to resample the stream to obtain updated use support information. Monitoring of the Magnolia WWTP discharge will continue as repairs are made to the sewer system.

19.3 303(d) Listed Waters

Stewarts Creek is the only stream (15 stream miles) in the subbasin that is impaired and on the state's year 2000 303(d) list (not yet EPA approved). Stewarts Creek is discussed above. For information on 303(d) listing requirements and approaches, refer to Appendix IV.

19.4 Other Issues, Recommendations and Projects

The following surface waters are 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 and lakes. 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, workshops and nonpoint source agency contacts, see Appendix V.

Portions of Great Coharie Creek, Little Coharie Creek, Six Runs Creek and Crane Creek were impacted during Hurricane Fran in 1996. These streams were also subject to massive de-snagging operations after the storm (see Section A, Chapter 4, Part 4.11). Because this region is regularly impacted by hurricanes and tropical storms, it is recommended that further monitoring be conducted to evaluate the post-hurricane recovery of macroinvertebrates. Monitoring is recommended to determine the impacts of de-snagging operations that remove important habitat in these waters.

Approximately 3% 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.

The Lower Cape Fear River Program

The Lower Cape Fear River Program maintains three sampling stations in this subbasin that are used along with DWQ ambient data to make use support determinations in this subbasin. Refer to Section C, Part 1.4.5 for more information on the program and the UNCW Center for Marine Sciences.

Mercury Advisories

DWQ sampling in 1994 and 1998 noted mercury in fish tissue at levels greater than EPA limits and FDA/NC limits. Mercury in fish tissue is not exclusive to the Cape Fear River basin. In recent years, elevated levels of mercury in some fish species have been noted in other coastal areas. This issue is discussed further in Chapter 4, Part 4.8.4.

1999 Hurricanes

In September and October 1999, three hurricanes made landfall near the mouth of the Cape Fear River. Although streams throughout the basin were impacted, the streams in the lower Cape Fear River subbasins were severely impacted. The extent of water quality problems and recovery of ecosystems in this subbasin will not be known for some time. Refer to Section A, Chapter 4, Part 4.11.