

# Chapter 18

## Cape Fear River Subbasin 03-06-18

Including: South River, Little Black River and Big Creek

### 18.1 Subbasin Overview

#### *Subbasin 03-06-18 at a Glance*

##### **Land and Water Area**

Total area:	495 mi <sup>2</sup>
Land area:	493 mi <sup>2</sup>
Water area:	2 mi <sup>2</sup>

##### **Population Statistics**

2000 Est. Pop.:	85,550 people
Pop. Density:	173 persons/mi <sup>2</sup>

##### **Land Cover (percent)**

Forest/Wetland:	56.1%
Surface Water:	1.3%
Urban:	1.7%
Cultivated Crop:	34.4%
Pasture/Managed Herbaceous:	6.6%

##### **Counties**

Bladen, Cumberland, Harnett,  
Johnston, Sampson and Wake

##### **Municipalities**

Angier, Autryville, Benson, Coats,  
Dunn, Erwin, Falcon, Garland,  
Roseboro and Stedman

Subbasin 03-06-18 is in the coastal plain with many slow-moving tannin stained streams draining wetland areas. Most of the watershed is forested with extensive agriculture present. Development is occurring north of Fayetteville in the western portion of the subbasin. Population is expected to grow by 230,000 people in counties with portions or all of their areas in this subbasin by 2020; however, most of the growth is occurring in the county areas outside of the subbasin. Sampson County is expected to grow by 26,000, which is more representative for this subbasin.

There are two individual NPDES wastewater discharge permits in this subbasin with a permitted flow of 0.08 MGD (Figure 21). Refer to Appendix VI and Chapter 30 for more information on NPDES permit holders.

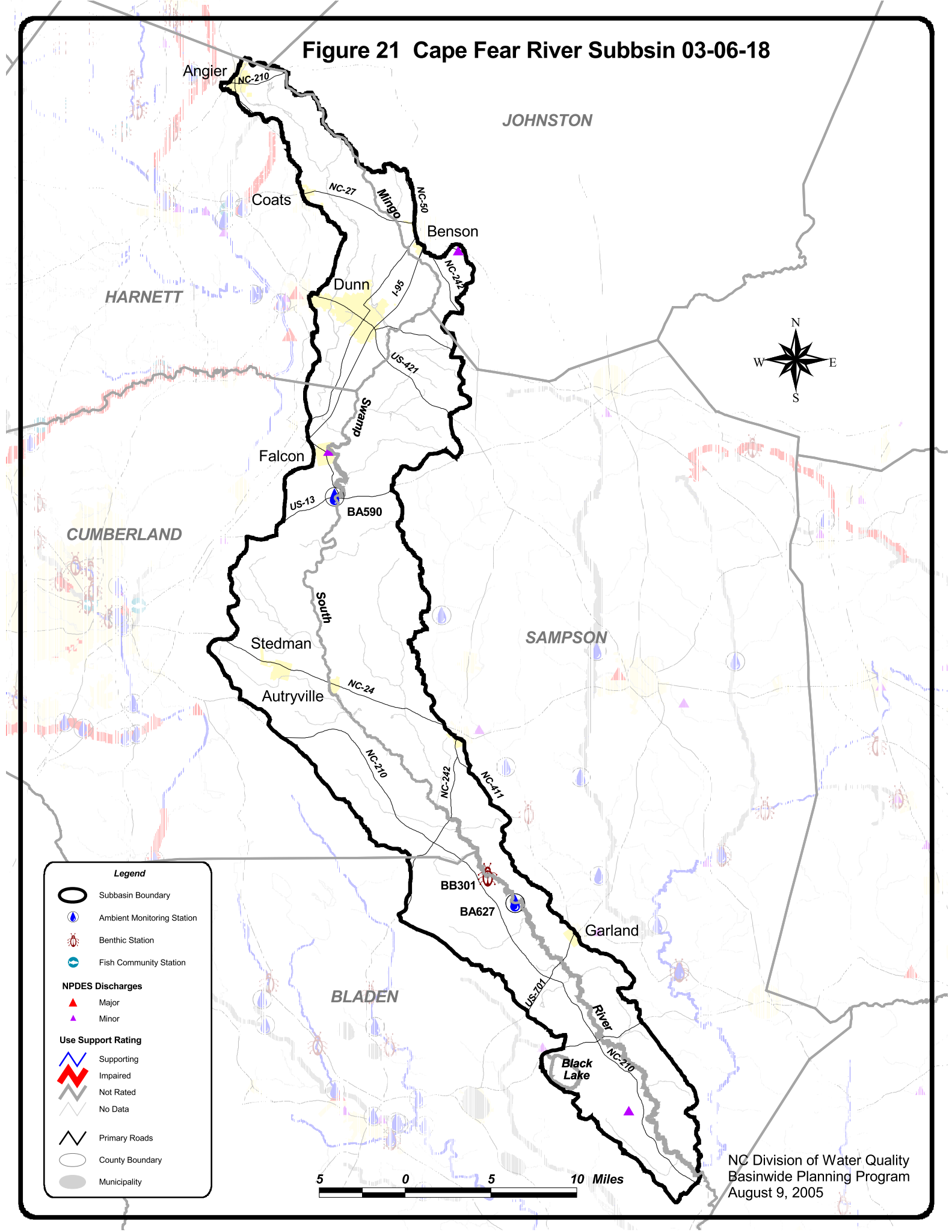
There are 105 registered swine operations in this subbasin. Issues related to agricultural activities are discussed below in Section 18.4.

There was one benthic community sample (Figure 21 and Table 21) collected during this assessment period. Data were also collected from two ambient monitoring stations including one LCFRBA (Appendix V) station and one DWQ ambient station. One lake was also monitored. Refer to the *2003 Cape Fear River Basinwide Assessment*

*Report* at <http://www.esb.enr.state.nc.us/bar.html> and Appendix IV for more information on monitoring.

Waters in the following sections are identified by assessment unit number (AU#). This number is used to track defined segments in the water quality assessment database, 303(d) Impaired waters list and the various tables in this basin plan. The assessment unit number is a subset of the DWQ index number (classification identification number). A letter attached to the end of the AU# indicates that the assessment is smaller than the DWQ index segment. No letter indicates that the assessment unit and the DWQ index segment are the same.

Figure 21 Cape Fear River Subbsin 03-06-18



**Legend**

- Subbasin Boundary
- Ambient Monitoring Station
- Benthic Station
- Fish Community Station
- NPDES Discharges**
  - Major
  - Minor
- Use Support Rating**
  - Supporting
  - Impaired
  - Not Rated
  - No Data
- Primary Roads
- County Boundary
- Municipality

**Table 21 CAPE FEAR Subbasin 03-06-18**

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment					
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	Stressors	Sources	
<b>Black Lake (Bay Tree Lake)</b>													
18-68-17-1-1	C Sw	1,454.2	FW Acres	<b>NR</b>	BL33	NCE	Low pH	100	<b>ND</b>			Low pH	Unknown
From source to Lake Drain													
<b>South River</b>													
18-68-12-(0.5)a	C Sw	6.7	FW Miles	<b>NR</b>	BA590	NCE	Low DO	48.2	<b>S</b>	BA590	NCE	Low Dissolved Oxygen	Unknown
From source to US 13													
18-68-12-(8.5)	C Sw ORW	45.4	FW Miles	<b>NR</b>	BA627	NCE	Low DO	12.3	<b>S</b>	BA627	NCE	Low Dissolved Oxygen	Unknown
From Big Swamp to Black River													

AL - Aquatic Life	BF - Fish Community Survey	E - Excellent	S - Supporting	I - Impaired
REC - Recreation	BB - Benthic Community Survey	G - Good	NR - Not Rated	
	BA - Ambient Monitoring Site	GF - Good-Fair	NR*- Not Rated for Recreation (screening criteria exceeded)	
	BL- Lake Monitoring	F - Fair	ND-No Data Collected to make assessment	
	S- DEH RECMON	P - Poor	<b>Results</b>	
	<b>Miles/Acres</b>	NI - Not Impaired	CE-Criteria Exceeded > 10% and more than 10 samples	
	FW- Fresh Water	S- Severe Stress	NCE-No Criteria Exceeded	
	S- Salt Water	M-Moderate Stress		
		N- Natural		

**Aquatic Life Rating Summary**

NR	m	52.1	FW Miles
NR	m	1,454.2	FW Acres
ND		242.5	FW Miles

**Recreation Rating Summary**

S	m	52.1	FW Miles
ND		242.5	FW Miles
ND		1,454.2	FW Acres

**Fish Consumption Rating Summary**

I	m	45.4	FW Miles
I	e	249.2	FW Miles
I	e	1,454.2	FW Acres

## **18.2 Use Support Assessment Summary**

Use support ratings were assigned for waters in subbasin 03-06-18 in the aquatic life, recreation, fish consumption and water supply categories. All waters are Impaired on an evaluated basis in the fish consumption category because of fish consumption advice that applies to the entire basin. In the water supply category, all waters are Supporting on an evaluated basis based on reports from DEH regional water treatment plant consultants. Refer to Appendix X for a complete list of monitored waters and more information on Supporting monitored waters.

There were 52.1 stream miles (17.7 percent) and 1,454.2 freshwater acres (100 percent) monitored during this assessment period in the aquatic life category. There were no Impaired stream miles identified as Impaired in this category.

## **18.3 Status and Recommendations of Previously and Newly Impaired Waters**

The following waters were either identified as Impaired in the previous basin plan (2000) or are newly Impaired based on recent data. If previously identified as Impaired, the water will either remain on the state's 303(d) list or will be delisted based on recent data showing water quality improvements. If the water is newly Impaired, it will likely be placed on the 2006 303(d) list. The current status and recommendations for addressing these waters are presented below, and each is identified by an assessment unit number (AU#). Refer to the overview for more information on AUs. Information regarding 303(d) listing and reporting methodology is presented in Appendix VII.

### **18.3.1 Black River (Little Black) [AU#18-68-12-(0.5)a]**

#### 2000 Recommendations

The 2000 basinwide plan recommended that the Black River be resampled. Black River was Not Rated in the 2000 plan because it could not be sampled due to low flow conditions.

#### Current Status and 2005 Recommendations

The Black River from source to the South River (28.3 miles) was not monitored during this assessment period, and no data were available to make an assessment in any use support category. DWQ will reestablish a monitoring site on the Black River during this assessment period. The Black River will remain on the 303(d) list until monitoring data are obtained and a use support assessment can be determined.

### **18.3.2 South River [AU#18-68-12-(0.5)a and 8.5]**

#### 2000 Recommendations

The 2000 basinwide plan recommended that the South River be resampled using the 303(d) approach. South River was Not Rated in the 2000 plan because it could not be sampled. The lower segment was Fully Supporting in the 2000 plan and no recommendations were made.

### Current Status

The South River [18-68-12-(0.5)a] from source to US 13 (6.7 miles) is Not Rated for aquatic life because dissolved oxygen was below the 4 mg/l in 48 percent of samples at site BA590.

The South River [18-68-12-(8.5)] from Big Swamp to the Black River (45.4 miles) is Not Rated for aquatic life because a benthic community rating could not be assigned at site BB301. Dissolved oxygen was below the 4 mg/l in 12 percent of samples at site BA627. This segment is Impaired on a monitored basis in the fish consumption category.

These segments of the South River have a supplemental classification of Sw, which acknowledges natural characteristics of swamps such as low dissolved oxygen and low pH.

### 2005 Recommendations

DWQ will continue to monitor the South River watershed. The South River will remain on the 303(d) list until further evaluations can be made on the swamp characteristics.

### Water Quality Initiatives

In 1999, the Cape Fear RC&D received an \$18,550 CWMTF (Chapter 34) grant to purchase a no-till drill to make available to farmers in this watershed (Chapter 34).