

Chapter 11

Cape Fear River Subbasin 03-06-11

Including: Deep River, Big Buffalo Creek, Cedar Creek, Georges Creek and Pocket Creek

11.1 Subbasin Overview

Subbasin 03-06-11 at a Glance

Land and Water Area

Total area:	133 mi ²
Land area:	132 mi ²
Water area:	1 mi ²

Population Statistics

2000 Est. Pop.:	19,646 people
Pop. Density:	98 persons/mi ²

Land Cover (percent)

Forest/Wetland:	83.8%
Surface Water:	1.2%
Urban:	3.2%
Cultivated Crop:	2.2%
Pasture/ Managed Herbaceous:	9.5%

Counties

Chatham and Lee

Municipalities

Goldston and Sanford

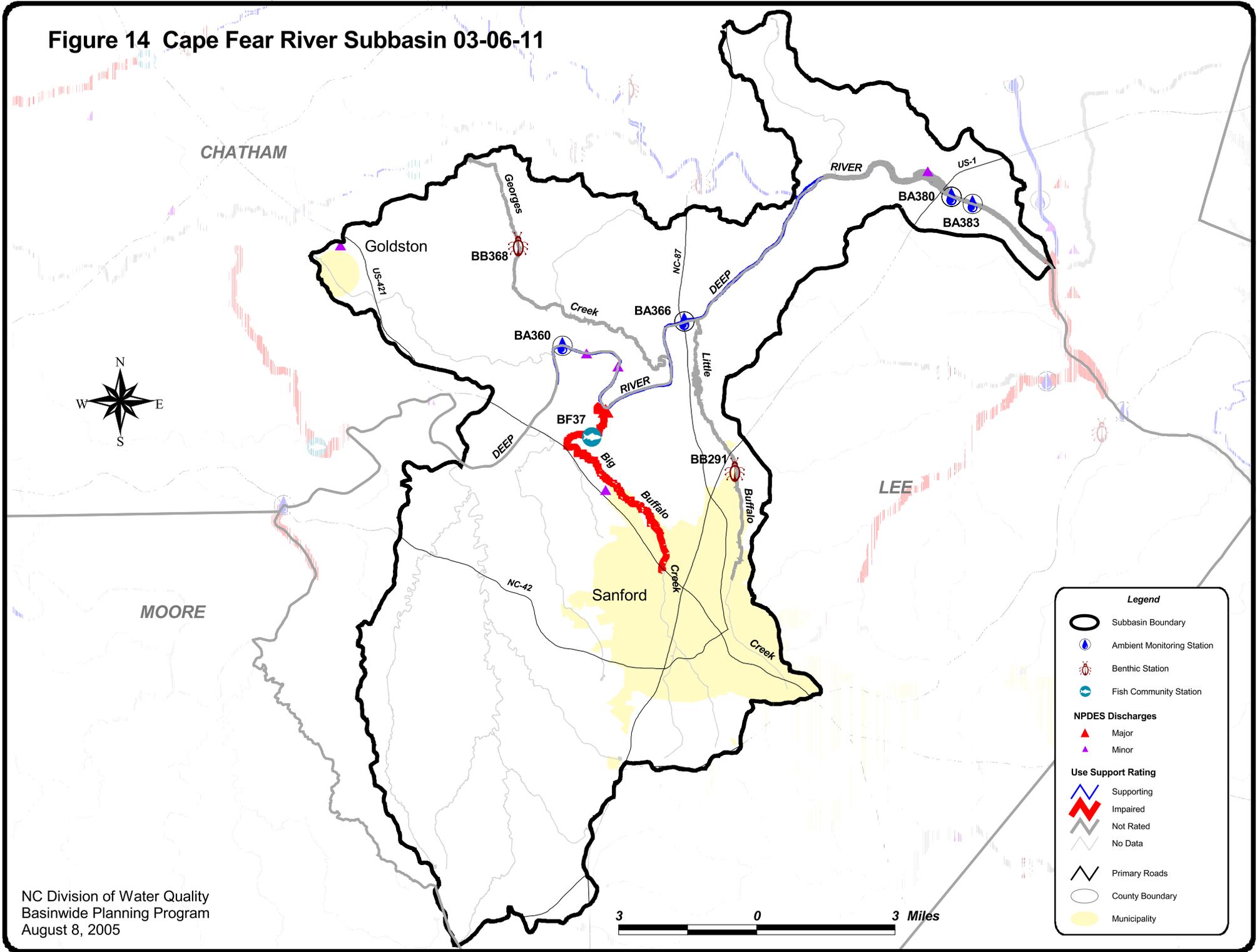
Subbasin 03-06-11 drains Triassic basin soils, and many of the streams have very low or zero flow at certain times of year. Most of the watershed is forested. Development is occurring near Sanford. Population is expected to grow by 35,000 people in counties with portions or all of their areas in this subbasin by 2020.

There are seven individual NPDES wastewater discharge permits in this subbasin with a permitted flow of 7.8 MGD (Figure 14). The largest are Sanford WWTP (6.8 MGD) and Gold Kist Inc. (1 MGD). Refer to Appendix VI and Chapter 30 for more information on NPDES permit holders. Issues related to compliance with NPDES permit conditions are discussed below in Section 11.3 for Impaired waters and in Section 11.4 for other waters.

There were two benthic community samples and one fish community sample (Figure 14 and Table 14) collected during this assessment period. Data were also collected from four ambient monitoring stations including one UCFRBA (Appendix V) station and four shared ambient stations. 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 14 Cape Fear River Subbasin 03-06-11



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 14 CAPE FEAR Subbasin 03-06-11

AU Number	Classification	Length/Area	Aquatic Life Assessment				Recreation Assessment			
			AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	Stressors
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					Results
	Miles/Acres				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

S	m	12.0	FW Miles
NR	m	24.5	FW Miles
I	m	8.0	FW Miles
ND		68.0	FW Miles

Recreation Rating Summary

S	m	6.0	FW Miles
ND		106.5	FW Miles

Fish Consumption Rating Summary

I	m	6.0	FW Miles
I	e	106.5	FW Miles

11.2 Use Support Assessment Summary

Use support ratings were assigned for waters in subbasin 03-06-11 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 WS classified waters (18.7 miles) 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 44.5 stream miles (39.5 percent) monitored during this assessment period in the aquatic life category. There are 8 stream miles (7.1 percent) identified as Impaired in this same category.

11.3 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.

11.3.1 Big Buffalo Creek [AU#17-40]

2000 Recommendations

The 2000 basinwide plan recommended that Sanford address stormwater issues as part of the Phase II NPDES permit process. Big Buffalo Creek was Not Rated in the 2000 basin plan.

Current Status

Big Buffalo Creek from source to Deep River (8 miles) is Impaired for aquatic life because of a Fair fish community rating at site BF37. The watershed drains the urban areas associated with Sanford.

2005 Recommendations

DWQ will continue to monitor Big Buffalo Creek. Refer to Chapter 31 for more information and recommendations for urban streams.

Big Buffalo Creek will be added to the 303(d) list of Impaired waters. TMDLs (Chapter 35) will be developed for identified stressors within 8-13 years of listing.

11.4 Status and Recommendations for Waters with Noted Impacts

The surface waters discussed in this section are not Impaired. However, notable water quality problems and concerns have been documented for some waters based on this assessment. While these waters are not Impaired, attention and resources should be focused on these waters to prevent additional degradation or facilitate water quality improvement. Waters in the following section are identified by assessment unit number (AU#). See overview for more information on AU#s.

11.4.1 Little Buffalo Creek [AU#17-42]

Current Status and 2005 Recommendations

Little Buffalo Creek from source to the Deep River (9.9 miles) is Not Rated for aquatic life because a benthic community rating could not be assigned at site BB291. The creek drains urban areas in Sanford and had steep undercut banks and sandbars. A problematic pump station in this watershed is scheduled to be eliminated.

Water Quality Initiatives

In 1998, Sanford received a \$765,000 CWMTF (Chapter 34) grant to purchase or acquire permanent easements on 250 acres along Little Buffalo Creek.

11.4.2 Purgatory Branch [AU#17-40-3]

Current Status and 2005 Recommendations

Purgatory Branch from source to Big Buffalo Creek (2.2 miles) is Not Rated for aquatic life on an evaluated basis because the Bost Distributing Corporation (NC0081493) had significant violations of biological oxygen demand permit limits during the assessment period that could have negatively impacted water quality. Turbidity also exceeded the standard in 8.3 percent of samples collected at site BA380. The NPDES compliance process will be used to address the significant permit violations noted above.

11.4.3 Deep River [AU#17-(38.7) and (43.5)]

Current Status and 2005 Recommendations

Deep River [17-(38.7)] from Lee County water supply intake to upstream of Rocky Branch (12 miles) is Supporting aquatic life because no criteria were exceeded at site BA366, although dissolved oxygen was below 5 mg/l in 14 percent of samples collected during the assessment period.

Deep River [17-(43.5)] from upstream of Rocky Branch to the Cape Fear River (6 miles) is Not Rated for aquatic life because Moncure Community Health (NC0030384) had significant violations of total suspended solids permit limits during the last two years of the assessment period. Although no criteria were exceeded at site BA383, turbidity was above the standard in 8.3 percent of samples collected at site BA380. This segment is Impaired on a monitored basis in the fish consumption category and will be added to the 303(d) list of Impaired waters.

Because of the historically low dissolved oxygen levels in these segments and because of the downstream Impairment in the Cape Fear River, a permitting strategy will apply to new and expanding discharges (Chapter 30). The NPDES compliance process will be used to address the significant permit violations noted above.

Water Quality Initiatives

In 1998, Triangle Land Conservancy received a \$1,189,000 CWMTF grant to acquire 563 acres along the Deep River. In 2001, the Triangle Land Conservancy received a minigrant of \$25,000 for pre-acquisition of 874 acres along the Deep River. In 2002, Triangle Land Conservancy received a \$1,825,000 CWMTF grant to acquire 62 percent of 762 acres along the Deep River (See Chapter 34 for more information on all projects).