Chapter 11 -
Cape Fear River Subbasin 03-06-11
Includes the Deep River, Big Buffalo Creek and Cedar Creek

11.1 Water Quality Overview

Subbasin 03-06-11 at a Glance

Land and Water Area (sq. mi.)

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

Population Statistics

1990 Est. Pop.:	22,221 people
Pop. Density:	111 persons / mi^2

Land Cover (%)

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

Use Support Ratings

Freshwater Streams:

Fully Supporting:	74.0 mi.
Partially Supporting:	0.0 mi.
Not Supporting:	0.0 mi.
Not Rated:	55.4 mi.

This subbasin contains the lowermost reach of the Deep River prior to its confluence with the Haw River. The sedimentary geology and poor groundwater recharge capacity of these streams result in 7Q10 values of zero for all but the largest watersheds. A map of the subbasin, including water quality sampling locations, is presented in Figure B-11.

Biological ratings for these sample locations are presented in Table B-11. The current sampling resulted in impaired ratings for two streams in this subbasin. Refer to Appendix III for a complete listing of monitored waters and use support ratings.

Much of the land use within this subbasin is forest, although pasture, cultivated crops, and urban and built-up land uses also account for significant portions of the subbasin. Chatham County has high numbers of certified animal operations, primarily cattle and poultry.

There are 7 permitted discharge facilities in this subbasin, and only two facilities have permitted flow greater than 1 MGD: Sanford WWTP and Golden Poultry.

Two Deep River locations have been sampled for benthic macroinvertebrates in this subbasin. Declines in water quality were found at both locations (Good in 1993 to Good-Fair in 1998) suggesting impacts other than the Sanford WWTP. This 5-year decline in water quality was not evident at the next most upstream Deep River location in Moore County.

Tributary streams within this subbasin have physical characteristics that are typical for the geology of the Triassic Basin. These characteristics, which include zero 7Q10 values and poor instream habitat, produce streams that are difficult to rate using current DWQ classification criteria for benthic macroinvertebrates.

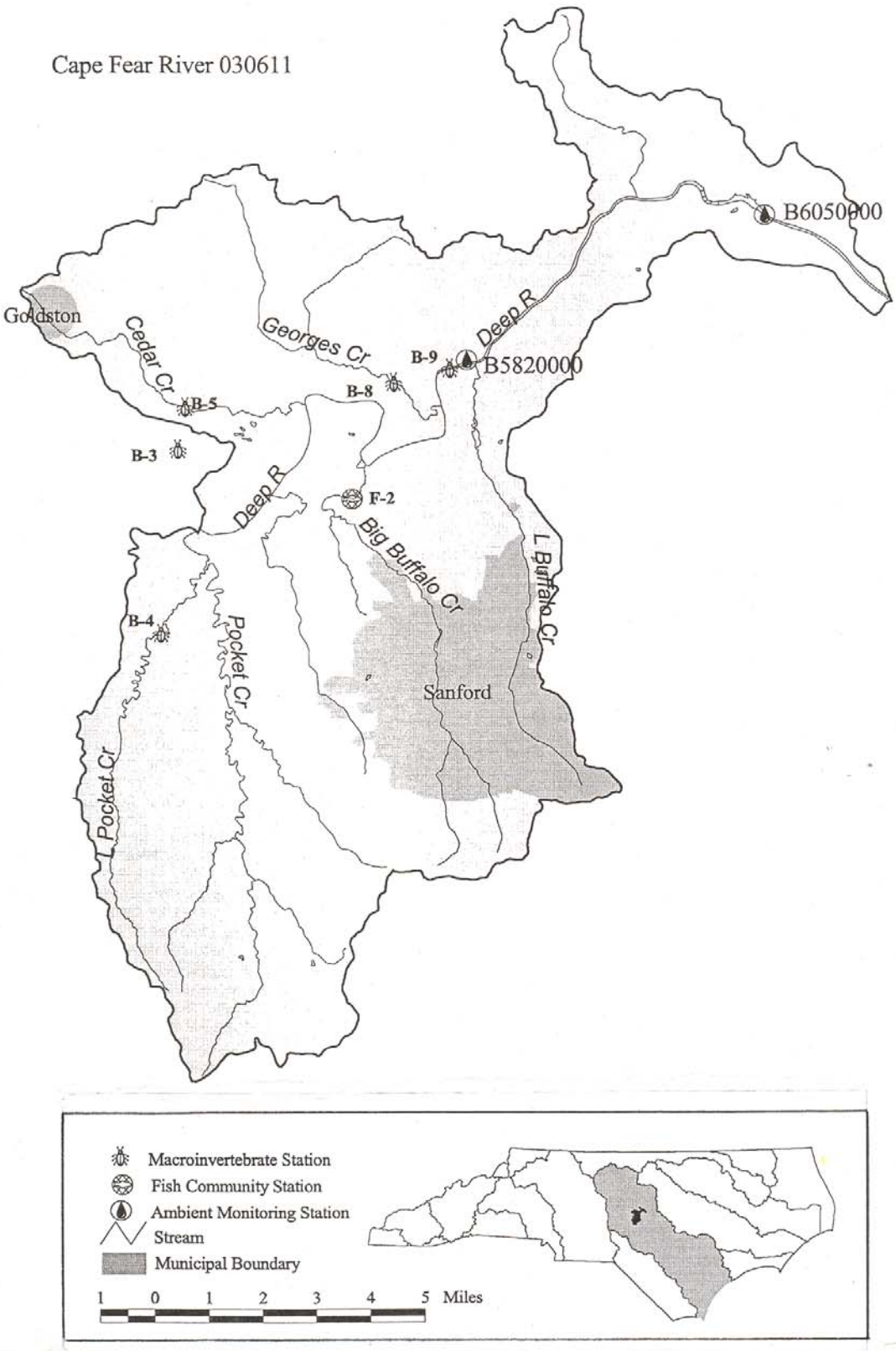

Figure B-11 Sampling Locations within Subbasin 03-06-11

Table B-11 Biological Assessment Sites in Cape Fear River Subbasin 03-06-11

BENTHOS				***Bioclassification***	
Site #	**Stream**	**County**	**Location**	**1993**	**1998**
B-3	Deep River	Lee	SR 1007	Good (s)	Good-Fair (s)
B-4	Little Pocket Creek	Lee	NC 42	Not Rated (w)	Not Rated (w)
B-5	Cedar Creek	Chatham	SR 2142	Not Rated (w)	Not Rated (w)
B-8	Georges Creek	Chatham	SR 2150	Not sampled	Not Rated (w)
B-9	Deep River	Lee	US 15/501	Good (s)	Good-Fair (s)
FISH				***Bioclassification***	
Site #	**Stream**	**County**	**Location**	**1994**	**1998**
F-1	Cedar Creek	Chatham	SR 2145	Fair	no sample
F-2	Big Buffalo Creek	Lee	SR 1403	Fair	Poor

(w) Winter collection, (s) Summer collection

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.

11.2 Impaired Waters

Portions of Little Pocket, Cedar, Georges and Little Buffalo Creeks were identified as impaired in the 1996 Cape Fear River Basinwide Water Quality Plan. 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. There are no streams currently rated as impaired according to recent DWQ monitoring. Waters with other issues, recommendations or projects are discussed in Part 11.4.

Little Pocket Creek

Current Status

Little Pocket Creek (12.4 miles) was partially supporting (PS) in the 1996 plan. This stream is currently not rated (NR). New biological information has determined that the previous rating was inappropriate because of the small size of the stream and the low summer flow conditions characteristic of Triassic Basin streams. This stream is currently not rated (NR) and no longer on the 303(d) list.

Cedar Creek

Current Status

Cedar Creek (7.9 miles) was partially supporting (PS) in the 1996 plan. Instream habitat degradation associated with runoff from a clay pit mine is a potential source of impairment. The clay pit mine has BMPs in place as required in the general permit; however, there are indications that the BMPs are not protecting water quality. New biological information has determined that the previous rating was inappropriate because of the small size of the stream and the low summer flow conditions characteristic of Triassic Basin streams. This stream is currently not rated (NR) and no longer on the 303(d) list.

Georges Creek

Current Status

Georges Creek (8.7 miles) was partially supporting (PS) in the 1996 plan. New biological information has determined that the previous rating was inappropriate because of the small size of the stream and the low summer flow conditions characteristic of Triassic Basin streams. This stream is currently not rated (NR) and no longer on the 303(d) list.

Little Buffalo Creek

Current Status

Little Buffalo Creek (9.8 miles) was not supporting (NS) in the 1996 plan. New biological information has determined that the previous rating was inappropriate because of the small size of the stream and the low summer flow conditions characteristic of Triassic Basin streams. This stream is currently not rated (NR) and no longer on the 303(d) list. Pollutants associated with urban runoff from the City of Sanford are a potential cause of impairment. Sanford 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. Refer to Section C, Chapter 1, Part 1.5.2 for a description of riparian buffers being established on Buffalo Creek.

11.3 303(d) Listed Waters

There are no stream segments in the subbasin that are impaired and on the state's year 2000 303(d) list (not yet EPA approved). For information on 303(d) listing requirements and approaches, refer to Appendix IV.

11.4 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. 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.

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.

Big Buffalo Creek (Sanford)

New biological information from Big Buffalo Creek has determined that the previous rating was inappropriate because of the small size of the stream and the low summer flow conditions characteristic of Triassic Basin streams. This stream is currently not rated (NR). Pollutants associated with urban runoff from the City of Sanford are a potential cause of impairment. Sanford 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. Refer to Section C, Chapter 1, Part 1.5.2 for a description of riparian buffers being established on Buffalo Creek.

Recommendations for Deep River Point Source Discharges

1996 Recommendations

Because assimilative capacity had been exhausted between Carbonton dam and the Haw River, it was recommended that no new discharges should be permitted, and the expansion request by the Town of Sanford WWTP would be carefully considered in light of the possibility for increased regionalization.

Current Status

The Town of Sanford WWTP discharge remains at 5 MGD. There have been no new or expanding discharges in this segment of the Deep River.

2000 Recommendations

No new or expanding discharges should be permitted in this segment of the Deep River.