

Chapter 21 -

Cape Fear River Subbasin 03-06-21

Includes the Northeast Cape Fear River and Barlow Branch

21.1 Water Quality Overview

Subbasin 03-06-21 at a Glance

Land and Water Area (sq. mi.)

| | |
|-------------|-----|
| Total area: | 119 |
| Land area: | 119 |
| Water area: | 0 |

Population Statistics

| | |
|-----------------|----------------------------|
| 1990 Est. Pop.: | 7,582 people |
| Pop. Density: | 64 persons/mi ² |

Land Cover (%)

| | |
|---------------------------------|------|
| Forest/Wetland: | 46.5 |
| Surface Water: | 0.2 |
| Urban: | 0.8 |
| Cultivated Crop: | 45.2 |
| Pasture/ Managed Herbaceous: | 7.3 |

Use Support Ratings

Freshwater Streams:

| | |
|-----------------------|----------|
| Fully Supporting: | 69.3 mi. |
| Partially Supporting: | 0.0 mi. |
| Not Supporting: | 4.3 mi. |
| Not Rated: | 6.8 mi. |

This subbasin is located in the inner coastal plain and contains the headwaters of the Northeast Cape Fear River and its tributaries. Most of this subbasin is in northern Duplin County, with approximately one-third of the subbasin in southern Wayne County. Land use is primarily agriculture. The only town in this area is Mount Olive. The only significant dischargers in this subbasin are Mount Olive Pickle Company and the Town of Mount Olive. Due to lack of flow, no sites were sampled for macroinvertebrates in 1998. Fish community sampling gave Matthews Creek a Good rating. A map of the subbasin, including water quality sampling locations, is presented in Figure B-21.

Biological ratings for these sample locations are presented in Table B-21. The current sampling resulted in no impaired ratings for streams in this subbasin. Refer to Appendix III for a complete listing of monitored waters and use support ratings.

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.

Table B-21 Biological Assessment Site in Cape Fear River Subbasin 03-06-21

| <i>FISH</i> | | | | <i>Bioclassification</i> | |
|-------------|----------------|--------|------------|--------------------------|------|
| Site # | Stream | County | Location | 1993/1994 | 1998 |
| F-1 | Matthews Creek | Duplin | NC 111/903 | --- | Good |

Cape Fear River 030621

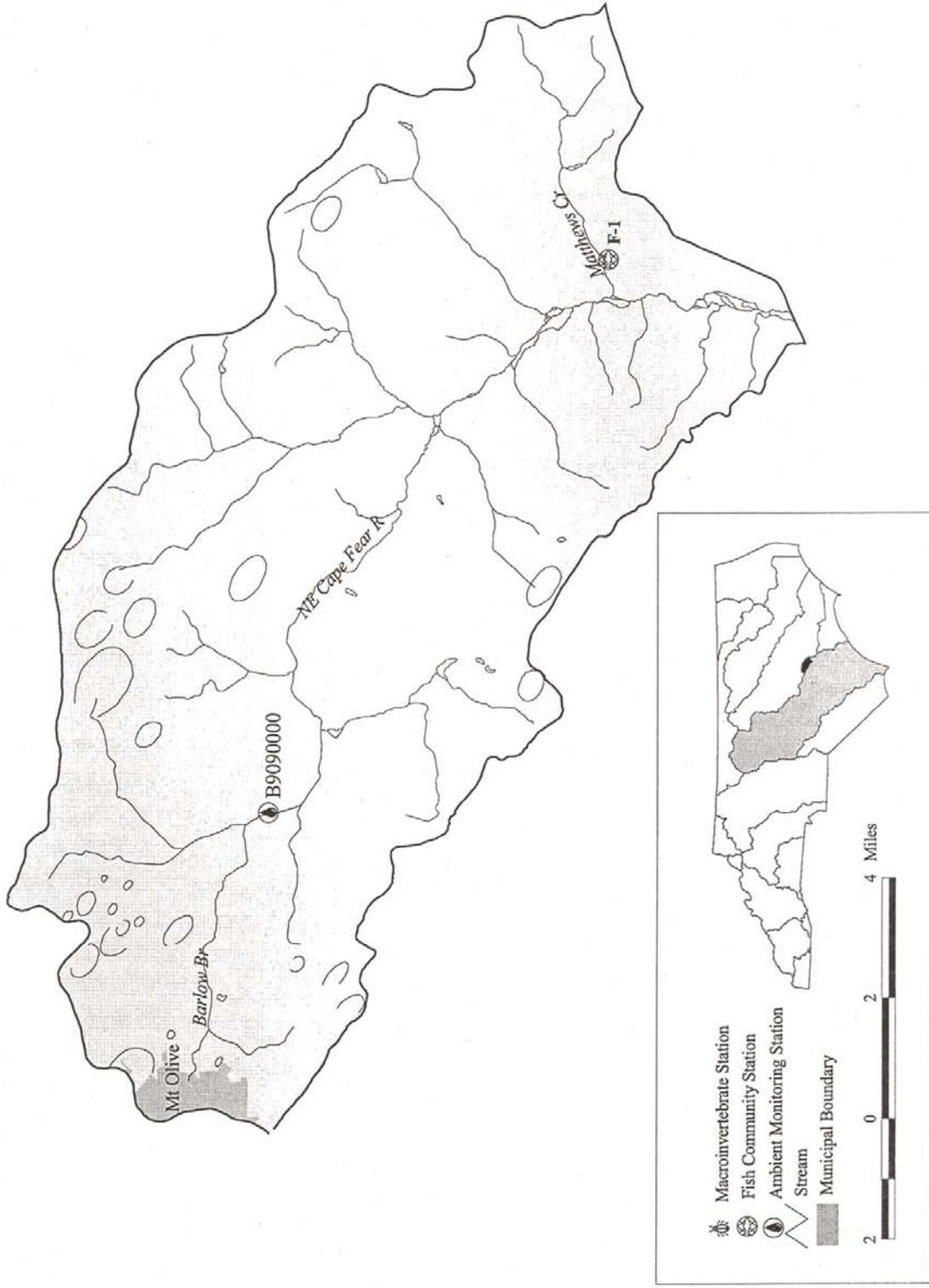


Figure B-21 Sampling Locations within Subbasin 03-06-21

21.2 Impaired Waters

Portions of the Northeast Cape Fear River and Barlow Branch were identified as impaired in the 1996 Cape Fear River Basinwide Water Quality Plan. Portions of the Northeast Cape Fear River and Barlow Branch are 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 21.3 and waters with other issues, recommendations or projects are discussed in Part 21.4.

Northeast Cape Fear River and Barlow Branch

Current Status

Barlow Branch (1.1 miles from source to Northeast Cape Fear River) was not supporting (NS), and Northeast Cape Fear River (4.9 miles from source to NC 403) was not supporting (NS) and partially supporting (PS) in the 1996 plan. The discharge from the Mount Olive Pickle Company was the cause of impairment. Biological monitoring data were not collected in these two streams during recent DWQ sampling because of low flow conditions. Ambient water quality data (Northeast Cape Fear River at SR 1937 approximately 2.7 miles downstream of the Mount Olive Pickle Company discharge) indicated chloride levels exceeding the water quality limit in 48% of samples taken between 1993 and July 1996. The ambient water quality station was relocated approximately 5.1 miles downstream at NC 403 in 1996. The ambient station data at NC 403 has not indicated high chloride levels. Currently the Northeast Cape Fear River (3.3 miles from source to SR 1937) and Barlow Branch (1 mile) are not supporting (NS).

The Mount Olive Pickle Company discharges chlorides above permitted levels into Barlow Branch (a zero 7Q10 stream) before it joins the Northeast Cape Fear River. The Mount Olive Pickle Company was given a variance from the state surface water quality standard for chloride (230 mg/l) in 1996. The Mount Olive Pickle Company has met the requirements of the variance to date. Over the past 11 years, the company has reduced water usage per case by 50% and salt usage by 74%.

2000 Recommendations

It is recommended that the Northeast Cape Fear River ambient monitoring station be relocated to SR 1937 to better evaluate the impacts of the Mount Olive Pickle Company discharge. DWQ will continue to monitor this discharge as the company continues to reduce the chloride levels reaching surface waters. For more information on the variance, refer to the *EMC Report of Proceedings on the Proposed Changes to the Surface Water Quality Standards and Classifications Rules for the Triennial Review- December 9, 1999*.

21.3 303(d) Listed Waters

Because the Mount Olive Pickle Company has a variance from the chloride standard and is working toward reducing the impacts of the discharge, the Northeast Cape Fear River and

Barlow Branch will not be on the state's year 2000 303(d) list (not yet EPA approved). These streams will be discussed in the narrative section of the 303(d) list.

21.4 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.

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.

Portions of the Northeast Cape Fear River 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 needed to determine the impacts of de-snagging operations that remove the most important habitat in these systems.