

# Chapter 4

## Pasquotank River Subbasin 03-01-53

Including: Scuppernon River, Kendrick Creek and Phelps Lake

### 4.1 Subbasin Overview

#### *Subbasin 03-01-53 at a Glance*

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

|             |                     |
|-------------|---------------------|
| Total area: | 475 mi <sup>2</sup> |
| Land area:  | 336 mi <sup>2</sup> |
| Water area: | 139 mi <sup>2</sup> |

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

|                                 |     |
|---------------------------------|-----|
| Forest/Wetland:                 | 41% |
| Cultivated Crop:                | 30% |
| Surface Water:                  | 28% |
| Urban:                          | <1% |
| Pasture/<br>Managed Herbaceous: | <1% |

##### **Counties**

Tyrrell and Washington

##### **Municipalities**

Columbia, Creswell and Roper

##### **Monitored Waterbody Statistics**

###### **Aquatic Life:**

|             |                     |
|-------------|---------------------|
| Total:      | 18.0 mi/78,492.6 ac |
| Supporting: | 62,474.2 ac         |
| Impaired:   | 4.4 mi/80.1 ac      |
| Not Rated:  | 13.6 mi/15,938.3 ac |

###### **Recreation:**

|             |                     |
|-------------|---------------------|
| Total:      | 13.6 mi/62,554.2 ac |
| Supporting: | 13.6 mi/62,554.2 ac |

This subbasin contains the Scuppernon River, Deep Creek, Kendrick Creek and several tributaries, many of which are channelized. Most streams are of low relief and often swampy. Ecologically, the subbasin contains characteristics of the Chesapeake-Pamlico lowlands and tidal marshes, as well as nonriverine swamps and peatlands. Land cover generally consists of evergreen forests, mixed forests, forested wetlands and marshes, and cultivated crop. This subbasin contains a diversity of public lands and Significant Natural Heritage Areas, including Lake Phelps State Park, Bull Neck Swamp, East Dismal and the Scuppernon River Swamp Forest.

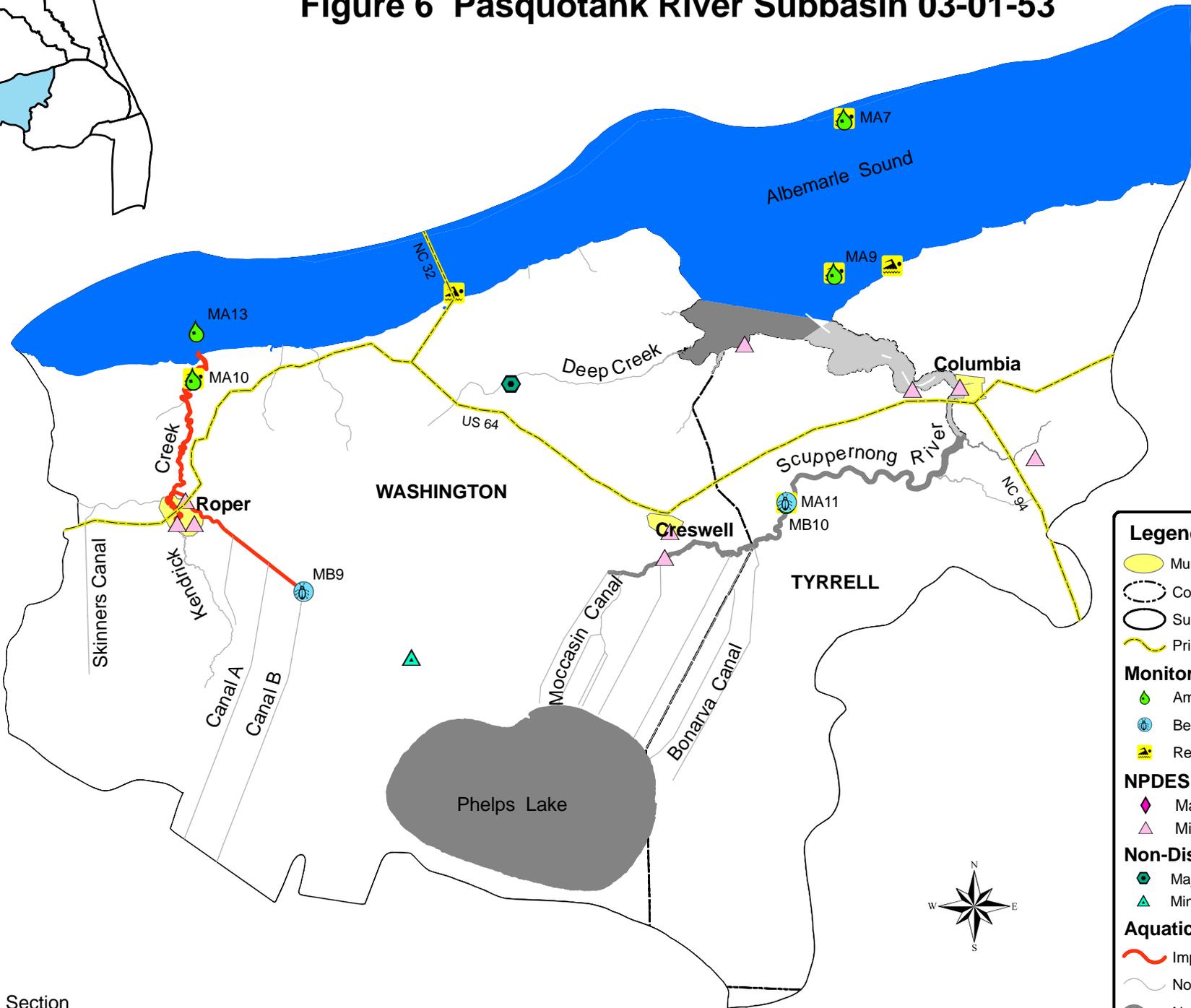
Western Tyrrell County and most of Washington County can be found in this subbasin with the highest concentration of urbanized areas around the small towns of Columbia, Creswell and Roper. All of these towns have experienced a net decrease in population since 1990 and Washington County's population is expected to decrease by 9.5 percent by 2020. Additional information regarding population and land use changes throughout the entire basin can be found in Chapter 11.

There are eleven minor National Pollutant Discharge Elimination System (NPDES) discharges in this subbasin with a total permitted flow of 0.75 MGD. Four of these facilities are water treatment plants (WTP) that are required by permit to monitor whole effluent toxicity (WET). No WET violations were reported for the Columbia WTP or the Creswell WTP. WET results submitted by the Tyrrell

County WTP and the Tyrrell County Bull Bay WTP, however, indicate that both facilities are consistently failing to meet their 90 percent acute toxicity target effluent concentration. More information about both of these facilities can be found in Section 4.4.2 and Section 4.4.1, respectively. A total of five NPDES facilities are permitted to discharge to the Scuppernon River; of which, Creswell Wastewater Treatment Plant has had significant noncompliance issues with biochemical oxygen demand. There are two surface irrigation non-discharge permits and three stormwater discharge permits for this subbasin. For the listing of NPDES permit holders, refer to Appendix III.

A map including the locations of the NPDES facilities and water quality monitoring stations is presented in Figure 6. Table 10 contains a summary of assessment unit numbers (AU#) and

Figure 6 Pasquotank River Subbasin 03-01-53



**Legend**

- Municipality
- County Boundary
- Subbasin Boundary
- Primary Roads

**Monitoring Stations**

- Ambient Monitoring Station
- Benthic Community
- Recreation Locations

**NPDES Dischargers**

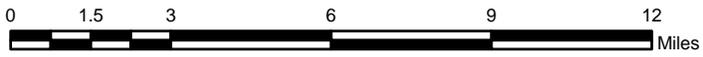
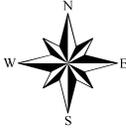
- Major
- Minor

**Non-Dischargers**

- Major
- Minor

**Aquatic Life Rating**

- Impaired
- No Data
- Not Rated
- Supporting



**Table 10 Pasquotank Subbasin 03-01-53**

| AU Number  | Classification | Length/Area |          | Aquatic Life Assessment |         |        |                          | Recreation Assessment |          |        | Shellfish Harvesting |    | Stressors            | Sources         |
|--|----------------|-------------|----------|-------------------------|---------|--------|--------------------------|-----------------------|----------|--------|----------------------|----|----------------------|-----------------|
|  |                |             |          | AL Rating               | Station | Result | Year/<br>Parameter % Exc | REC Rating            | Station  | Result | SH Rating            | GA |                      |                 |
| Description  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| <b>ALBEMARLE SOUND</b>   |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| 30d  | SB             | 62,474.2    | S Acres  | <b>S</b>                | MA7     | NCE    | Low pH                   | 8.2                   | <b>S</b> | MA7    | NCE                  |    | Dioxin               | Industrial Site |
|  |                |             |          |                         | MA9     | NCE    |                          |                       |          | MA9    | NCE                  |    | Low pH               | Unknown         |
|  |                |             |          |                         |         |        |                          |                       |          | N61    | NCE                  |    |                      |                 |
|  |                |             |          |                         |         |        |                          |                       |          | N63    | NCE                  |    |                      |                 |
|  |                |             |          |                         |         |        |                          |                       |          | N65    | NCE                  |    |                      |                 |
| Portion of Albemarle Sound in subbasin 03-01-53. Waters of Albemarle Sound (All waters south and east of a line running in a southerly direction from Horniblow Point (North end of Norfolk-Southern Railroad Bridge) to a point of land on the east side of R |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| <b>Canal B</b>   |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| 30-9-4-1   | C;Sw           | 7.4         | FW Miles | ND                      |         |        |                          |                       |          |        |                      |    |                      |                 |
| From source to Main Canal  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| <b>Kendrick Creek (Mackeys Creek)</b>  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| 30-9-(2)   | SC             | 80.1        | S Acres  | <b>I</b>                | MA10    | CE     | Low DO                   | 43.9                  | <b>S</b> | MA10   | NCE                  |    | Nutrient Impacts     | Agriculture     |
|  |                |             |          |                         | MA10    | CE     | Low pH                   | 63.2                  |          |        |                      |    | Nickel               | Unknown         |
|  |                |             |          |                         | MA10    | NCE    | Turbidity                | 8.6                   |          |        |                      |    | Turbidity            | Unknown         |
|  |                |             |          |                         | MA10    | CE     | Nickel                   | 45                    |          |        |                      |    | Low pH               | Unknown         |
| From U.S. Hwy. 64 at Roper to Albemarle Sound  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
|  |                |             |          |                         |         |        |                          |                       |          |        |                      |    | Low Dissolved Oxygen | Unknown         |
| <b>Main Canal</b>  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| 30-9-4   | C;Sw           | 4.4         | FW Miles | <b>I</b>                |         |        |                          |                       |          |        |                      |    | Habitat Degradation  | Agriculture     |
| From source to Kendrick Creek  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
|  |                |             |          |                         | MB9     | SS     | 2005                     |                       |          |        |                      |    |                      |                 |
| <b>Phelps Lake</b>   |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| 30-14-4-6-1  | B;Sw,ORW       | 15,938.3    | FW Acres | <b>NR</b>               | ML2     | ID     |                          |                       |          |        |                      |    |                      |                 |
|  |                |             |          |                         | ML3     | ID     |                          |                       |          |        |                      |    |                      |                 |
|  |                |             |          |                         | ML1     | ID     |                          |                       |          |        |                      |    |                      |                 |
| Entire Lake  |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| <b>Scuppernong River</b>   |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
| 30-14-4-(1)  | C;Sw           | 13.6        | FW Miles | <b>NR+</b>              | MA11    | NCE    |                          |                       |          |        |                      |    | Low pH               | WWTP NPDES      |
| From source to mouth of Riders Creek (First Creek)   |                |             |          |                         |         |        |                          |                       |          |        |                      |    |                      |                 |
|  |                |             |          |                         | MB10    | P      | 2005                     |                       |          |        |                      |    | Low Dissolved Oxygen | WWTP NPDES      |



lengths, streams monitored, monitoring data types, locations and results, along with use support ratings for waters in the subbasin. Appendix V provides definitions of the terms used throughout this basin plan.

Two sites were sampled for benthic macroinvertebrates in 2005. Swamp and draft Coastal B criteria were used to evaluate the benthic communities resulting in Impaired and Not Rated stream segments. Data were also collected from four ambient monitoring stations (MA7, MA9, MA10 and MA11). Ambient monitoring on Kendrick Creek (MA10) showed frequent pH and dissolved oxygen levels below water quality standards. Frequent elevated levels of nickel were also recorded. Kendrick Creek drains several swamps in the area. Swamps are naturally low in pH, and therefore, low pH levels are not unexpected. More benthic data is needed to determine any significant water quality changes.

In this subbasin, one lake (Phelps Lake) was also sampled. Phelps Lake is the second largest natural lake in North Carolina. The lake was sampled a total of 12 times between October 2001 and September 2005 at three sampling locations. More information on Phelps Lake can be found in Section 4.3.4. Refer to the *2006 Pasquotank River Basinwide Assessment Report* <http://h2o.enr.state.nc.us/esb/Basinwide/PASQUOTANK2006Final.pdf> and Appendix I for more information on monitoring throughout the subbasin.

Waters in the following sections and in Table 10 are identified by an assessment unit number (AU#). This number is used to track defined segments in the water quality assessment database, list 303(d) Impaired waters, and to identify waters throughout the basin plan. The AU# 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 AU# and the DWQ index segment are the same.

## **4.2 Use Support Assessment Summary**

All surface waters in the state are assigned a classification appropriate to the best-intended use of that water. Waters are regularly assessed by DWQ to determine how well they are meeting their best-intended use. Table 11 provides a summary of use support for waters in subbasin 03-01-53.

In subbasin 03-01-53, use support was assigned for aquatic life, recreation, and fish consumption. Waters are Supporting, Impaired, Not Rated, and No Data in the aquatic life and recreation categories on a monitored or evaluated basis. All waters are Impaired in the fish consumption category on an evaluated basis based on fish consumption advice issued by the Department of Health and Human Services (DHHS).

For more information about use support determinations, refer to Appendix II or the *Supplemental Guide to North Carolina's Basinwide Planning: Support Document for Basinwide Water Quality Plans* found at DWQ's website <http://h2o.enr.state.nc.us/basinwide/SupplementalGuide.htm>.

Table 11 Summary of Use Support Ratings by Category in Subbasin 03-01-53

| Use Support Rating | Aquatic Life                    |                    | Recreation                      |                    |
|--------------------|---------------------------------|--------------------|---------------------------------|--------------------|
|                    | Freshwater                      | Saltwater          | Freshwater                      | Saltwater          |
| <b>Monitored</b>   |                                 |                    |                                 |                    |
| Supporting         | 0                               | 62,474.2 ac        | 13.6 mi                         | 62,554.2 ac        |
| Impaired*          | 4.4 mi (24.4%)                  | 80.1 ac (0.1%)     | 0                               | 0                  |
| Not Rated          | 13.6 mi<br>15,938.3 ac          | 0                  | 0                               | 0                  |
| <b>Total</b>       | <b>18.0 mi<br/>15,938.3 ac</b>  | <b>62,554.2 ac</b> | <b>13.6 mi</b>                  | <b>62,554.2 ac</b> |
| <b>Unmonitored</b> |                                 |                    |                                 |                    |
| Not Rated          | 3.6 mi                          | 1,839.4 ac         | 0                               | 0                  |
| No Data            | 91.5 mi                         | 1,733.8 ac         | 99.6 mi<br>15,938.3 ac          | 3,573.2 ac         |
| <b>Total</b>       | <b>95.1 mi</b>                  | <b>3,573.2 ac</b>  | <b>99.6 mi<br/>15,938.3 ac</b>  | <b>3,573.2 ac</b>  |
| <b>Totals</b>      |                                 |                    |                                 |                    |
| <b>All Waters</b>  | <b>113.1 mi<br/>15,938.3 ac</b> | <b>66,127.4 ac</b> | <b>113.1 mi<br/>15,938.3 ac</b> | <b>66,127.4 ac</b> |

\* The noted percent Impaired is the percent of monitored miles/acres only.

### 4.3 Status and Recommendations of Previously and Newly Impaired Waters

The following waters were either identified as Impaired in the previous basin plan (2002) 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 2008 303(d) list. The current status and recommendations for addressing these waters are presented below, and each is identified by an AU#. Information regarding 303(d) listing and reporting methodology is presented in Chapter 15.

#### 4.3.1 Kendrick Creek [AU# 30-9-(1) and 30-9-(2)]

##### 2002 Status

Kendrick Creek, from source to U.S. Hwy 64 in Roper, was first listed on the 1998 303(d) list of Impaired waters based on a 1998 historic listing for water quality standards violations for dissolved oxygen (DO) and pH. Potential sources were identified as nonirrigated crop production, off-farm animal holding and/or management areas and municipal point sources. Benthic sampling in 2000 resulted in a Not Rated bioclassification. Biologists also determined that the low pH and low DO levels in Kendrick Creek are likely due to natural conditions.

##### Current Status

Kendrick Creek, from U.S. Hwy 64 in Roper to the Albemarle Sound (80.1 saltwater acres), is Impaired in the aquatic life category due to standards violations at ambient monitoring station MA10. Site MA10 was sampled 57 times for dissolved oxygen and pH over the course of the five-year assessment period. Nearly 44 percent of the samples were below the water quality standard of 5.0 mg/l for DO and 63 percent were below the water quality standard of 6.8 s.u. for pH. Metals were sampled a total of 20 times over the course of the five year period. Nickel

exceeded the water quality standard of 8.3 µg/l in 45 percent of the samples collected. Turbidity was also elevated in 8.6 percent of the samples and is likely associated with road construction activities along US 64.

Fish tissue samples were also collected from Kendrick Creek in order to evaluate mercury levels in the Pasquotank River basin. Results are included in Section 4.5.1.

#### 2007 Recommendations

Kendrick Creek continues to be impacted from agricultural activity, primarily corn, bean and cotton crop production. Duckweed growth has become a noticeable problem in waterways. The expansion of US Hwy 64 during the 5-year data assessment period and/or the presence of an auto salvage yard could be contributing metals to the creek. Kendrick Creek will remain on the 2008 303(d) list. DWQ will further assess if low DO and pH are natural conditions. DWQ will work with local resource agencies to address agricultural impacts and further assess sources of metals.

### **4.3.2 Main Canal [AU# 30-9-4]**

#### 2002 Status

Main Canal was first listed on the 1998 303(d) list of Impaired waters for biological integrity. Potential sources were identified as off-farm animal holding and/or management areas, intensive animal feeding operations and nonirrigated crop production.

#### Current Status

Main Canal, from source to Kendrick Creek (4.4 miles), is Impaired in the aquatic life category due to a Severe swamp benthic bioclassification at site MB9. Substrate was composed entirely of silt and muck, consequently, making sampling very difficult. Sticks and aquatic macrophytes were present, but rare and provided the only habitat for macroinvertebrate colonization at the site. Water flow was slow, pools and riffles were absent. Erosion was observed on both streambanks with the left streambank riparian zone consisting of trees and the right streambank consisting of mostly grass. These minimal riparian vegetated areas make the streambanks susceptible to failure during high flow events. No permitted NPDES facilities are located above site MB9.

#### 2007 Recommendations

Main Canal [AU# 30-9-4] will remain on the 2008 303(d) list. DWQ will work with local resource agencies to address agricultural impacts.

### **4.3.3 Scuppernong River [AU# 30-14-4-(1)]**

Growing Area I-3 consists of all waters within the Scuppernong River watershed. According to the *Sanitary Survey of Albemarle and Currituck Sounds, Areas I-1, I-3 through I-16 (DEH Shellfish Sanitation & Recreational Water Quality Section, December 2005)*, there has been little change in water quality since the last survey. The only shellfish found in this area is *Rangia* clams and no commercial shellfish harvesting occurs. Freshwater runoff is the most significant factor affecting water quality in this region, and can be associated with agricultural runoff or natural runoff from swampwaters following heavy rains. The area is mainly rural with the exception of Columbia, which has 825 residents, although several new subdivisions were recently established. Columbia treats its waste with an oxidation ditch treatment system. A motel and restaurant rely on a package plant for sewage disposal with treated effluent discharged

into the Scuppernong River. Hog farming was an important industry in this area; ten hog farms and associated lagoons are located in this area, but most are currently not operational. Much of the area is covered with row crop farms including corn, potatoes and cotton.

### 2002 Status

The upper portion of the Scuppernong River was first listed on the 1998 303(d) list of Impaired waters for water quality standards violations for dissolved oxygen (DO) and pH. Potential sources were identified as nonirrigated crop production, off-farm animal holding and/or management areas, municipal point sources, and specialty crop production. Benthic sampling in 2000 resulted in a Not Rated bioclassification. Biologists also determined that the low pH and low DO levels in the Scuppernong River are likely due to natural conditions.

### Current Status

The upper portion of the Scuppernong River, from source to Riders Creek (First Creek) (13.6 miles), is Not Rated<sup>+</sup> in the aquatic life category. The Scuppernong River was sampled using draft criteria for Coastal B rivers and is labeled as NR<sup>+</sup>. Coastal B rivers are defined as waters in the coastal plain that are deep (nonwadeable), freshwater systems with little or no visible current under normal or low flow conditions. Other characteristics may include an open canopy, low pH and low DO. Boat sampling is required for these waters. Site MB10 received a Poor bioclassification using draft criteria for Coastal B rivers. Any bioclassifications derived from sampling data should be considered draft and not used for use support decisions; therefore this section of the Scuppernong River is Not Rated (BAU, March 2006). Samples taken in 2005, however, indicated a more pollution intolerant benthic community.

Data was also collected from one ambient monitoring station at site MA11. Site MA11 coincides with site MB10. No water quality standards were exceeded during this assessment period, and monthly measurements showed salinity concentrations to be less than 0.10 parts per thousand (ppt) for 2004 and early 2005. During drought conditions, however, the water often becomes brackish. The highest salinity concentration since 2000 was recorded in August 2002 with a measurement of 5.1 ppt. This concentration is higher than most freshwater invertebrates can survive. Three of the abundant taxa collected at the site were indicative of low DO. Ambient monitoring data for the past five years show DO levels typically fall below 1.0 mg/l each summer, limiting the benthic macroinvertebrate community at this site.

Hydrologically, the sampling site is located in a deep-water run with very little sinuosity. Duckweed and alligator weed were abundant. The riparian zones on both sides of the river were wide and intact, but undercut banks were abundant. Sticks, snags, logs, root mats and aquatic macrophytes (i.e., alligator weed) were also abundant.

A total of five NPDES facilities are permitted to discharge to the Scuppernong River. Two of these facilities are located approximately two miles upstream of the sampling site. The Creswell Water Treatment Plant (WTP) (Permit NC0027600) is required by permit to perform whole effluent toxicity (WET) testing. No WET violations were reported during the last two years of the assessment period. The Creswell Wastewater Treatment Plant (WWTP) (Permit NC0048861), however, reported significant noncompliance issues with biochemical oxygen demand (BOD), which can lead to lower than normal DO levels in the receiving stream. Significant noncompliance issues with pH were also identified. During the most recent inspection (January 2007), the facility received Civil Penalty assessments for BOD violations in February and March 2006 and a Notice of Violation (NOV) for BOD violations in April 2006.

In 2002, a Clean Water Management Trust Fund grant was awarded to Tyrrell Water and Sewer District for construction of a regional low-pressure sewer system to eliminate 191 septic systems and straight pipes.

Fish tissue samples were collected from the Scuppernong River in order to evaluate mercury levels in the Pasquotank River basin. Results are included in Section 4.5.1.

#### 2007 Recommendations

The Scuppernong River [AU# 30-14-4-(1)] will remain on the 2008 303(d) list to further assess natural conditions for low DO and pH. The Scuppernong River will be rated when Coastal B benthic criteria are finalized. DWQ will continue to work with local resource agencies to monitor water quality and work with the Town of Creswell to ensure that the WWTP is in compliance during the next review period.

#### **4.3.4 Phelps Lake [AU# 30-14-4-6-1]**

Phelps Lake is the second largest natural lake in North Carolina and is located within a vast peninsula between the Albemarle Sound to the north and the Pamlico River to the south. The peninsula contains numerous low-lying swampy areas underlain by thick organic muck and relatively well-drained areas with fertile mineral and organic soils. Much of the area has been cleared of vegetation, drained and put into large-scale agricultural use. Phelps Lake was reclassified from C Sw to B Sw ORW in August 2000.

Phelps Lake (15,938.3 freshwater acres) is Not Rated in the aquatic life category because sample size criteria (10 sample minimum) were not met. The lake was sampled four times from May 2005 to August 2005 at sites ML1, ML2 and ML3. Physical water quality values for chlorophyll a, pH, DO and temperature were similar to those collected in previous assessments. Nutrient concentrations, which were generally low to moderate, were also similar to previous assessments.

Phelps Lake was also sampled as part of the North Carolina Mercury Study Extension between 2004-2006. Samples were collected on a quarterly basis. No samples exceeded the state mercury standard. Fish tissue samples were also collected from Phelps Lake in order to evaluate mercury levels in the Pasquotank River basin. Results are included in Section 4.5.1.

### **4.4 Status and Recommendations for Waters with Noted Impacts**

The surface waters discussed in this section are not Impaired. Attention and resources should be focused on these issues to prevent water quality degradation. The current status and recommendations for addressing these waters are presented below, and each is identified by an AU#. Nonpoint source program agency contacts are listed in Appendix IV.

#### **4.4.1 Bull Bay [AU# 30-14]**

Bull Bay (1,839.4 saltwater acres) is Not Rated on an evaluated basis in the aquatic life category due to WET failures associated with the Tyrrell County (Bull Bay) Reverse Osmosis (RO) Water Treatment Plant (Permit NC0086924). Between October 2003 and December 2005, the facility failed to meet its 90 percent acute toxicity target effluent concentrations on three occasions. No other violations have been reported at this facility. DWQ will continue to work with Tyrrell County to assure permit limits are met.

#### 4.4.2 Riders Creek (First Creek) [AU# 30-14-4-10]

Riders Creek (First Creek), from source to the Scuppernong River (3.6 freshwater miles) is Not Rated on an evaluated basis in the aquatic life category due to WET failures associated with the Tyrrell County Ionic Exchange Water Treatment Plant (Permit NC0087092). Between July 2004 and December 2005, the facility failed to meet its 90 percent acute toxicity target effluent concentrations on five occasions. No other violations have been reported at this facility.

This WTP should be replaced with a new Reverse Osmosis WTP with discharge to the Albemarle Sound. Removing the WTP discharge to Riders Creek should reduce toxicity exceedances in the river.

### 4.5 Additional Water Quality Issues within Subbasin 03-01-53

#### 4.5.1 Mercury Contamination – Fish Tissue Assessment

Between 2003 and 2004, 89 fish tissue samples were collected from three stations in the Pasquotank River basin to determine the level of mercury contamination. The samples included largemouth bass, yellow perch, sunfish and catfish. Results from the period show 48 of the 89 samples collected contained mercury concentrations exceeding the state criteria of 0.4 ppm. Table 12 provides a list of the sampling locations, number of samples collected and mercury results for the Pasquotank River basin.

Currently, there are no site-specific consumption advisories for mercury-contaminated fish in the Pasquotank River basin. However, the Department of Health and Human Services (DHHS) issued statewide advice for the consumption of bowfin, catfish, warmouth and chain pickerel south and east of I-85 and statewide for largemouth bass.

Table 12 Fish Tissue Results for Mercury Contamination in Subbasin 03-01-53

| Stream Name (Location) | Years Sampled | Species  | Number of Samples | Samples Exceeding Mercury Standard |
|------------------------|---------------|--|-------------------|------------------------------------|
| Kendrick Creek         | 2003          | Bass, Sunfish, Catfish, Pickerel, Yellow Perch | 23                | 7                                  |
| Lake Phelps            | 2003 & 2004   | Bass, Sunfish, Catfish, Yellow Perch           | 59                | 39                                 |
| Scuppernong River      | 2004          | Bass, Sunfish                                  | 7                 | 2                                  |

#### 4.5.2 Dioxin Contamination- Fish Consumption Advisory

In 2001, the Department of Health and Human Services (DHHS) issued dioxin advisory for the consumption of catfish and carp in the Albemarle Sound from Bull Bay to Harvey Point; West to the mouth of the Roanoke River and to the mouth of the Chowan River to the U.S. Highway 17 Bridge (Perquimans, Chowan, Bertie, Washington, and Tyrrell Counties). For more information on this advisory, please visit DHHS website <http://www.epi.state.nc.us/epi/fish/>.