

# Chapter 5 - Pasquotank River Subbasin 03-01-54 Includes Currituck Sound and the North River

## 5.1 Water Quality Overview

### ***Subbasin 03-01-54 at a Glance***

#### **Land and Water**

Total area:	503 mi <sup>2</sup>
Land area:	304 mi <sup>2</sup>
Water area:	199 mi <sup>2</sup>

#### **Population Statistics**

1990 Est. pop.:	14,653 people
Pop. density:	48 persons/mi <sup>2</sup>

#### **Land Cover (%)**

Forest/Wetland:	39
Surface Water:	39
Urban:	<1
Cultivated Crop:	20
Pasture/ Managed Herbaceous:	<1

This subbasin consists of Currituck Sound and the North River and its tributaries in Currituck and Camden counties. A map including water quality sampling locations is presented as Figure B-6.

DWQ did not conduct benthic macroinvertebrate, fish community, fish tissue or ambient sampling in this subbasin. Therefore, there is currently little information on water quality status in subbasin 03-01-54. DWQ relies on information from the Division of Environmental Health, local water treatment plant operators, and county health departments for this subbasin. Use support ratings are presented in Table B-9.

This subbasin contains multiple public lands and Significant Natural Heritage Areas including several National Wildlife Refuges, the Currituck Banks National Estuarine Research Reserve, Northwest River Marsh

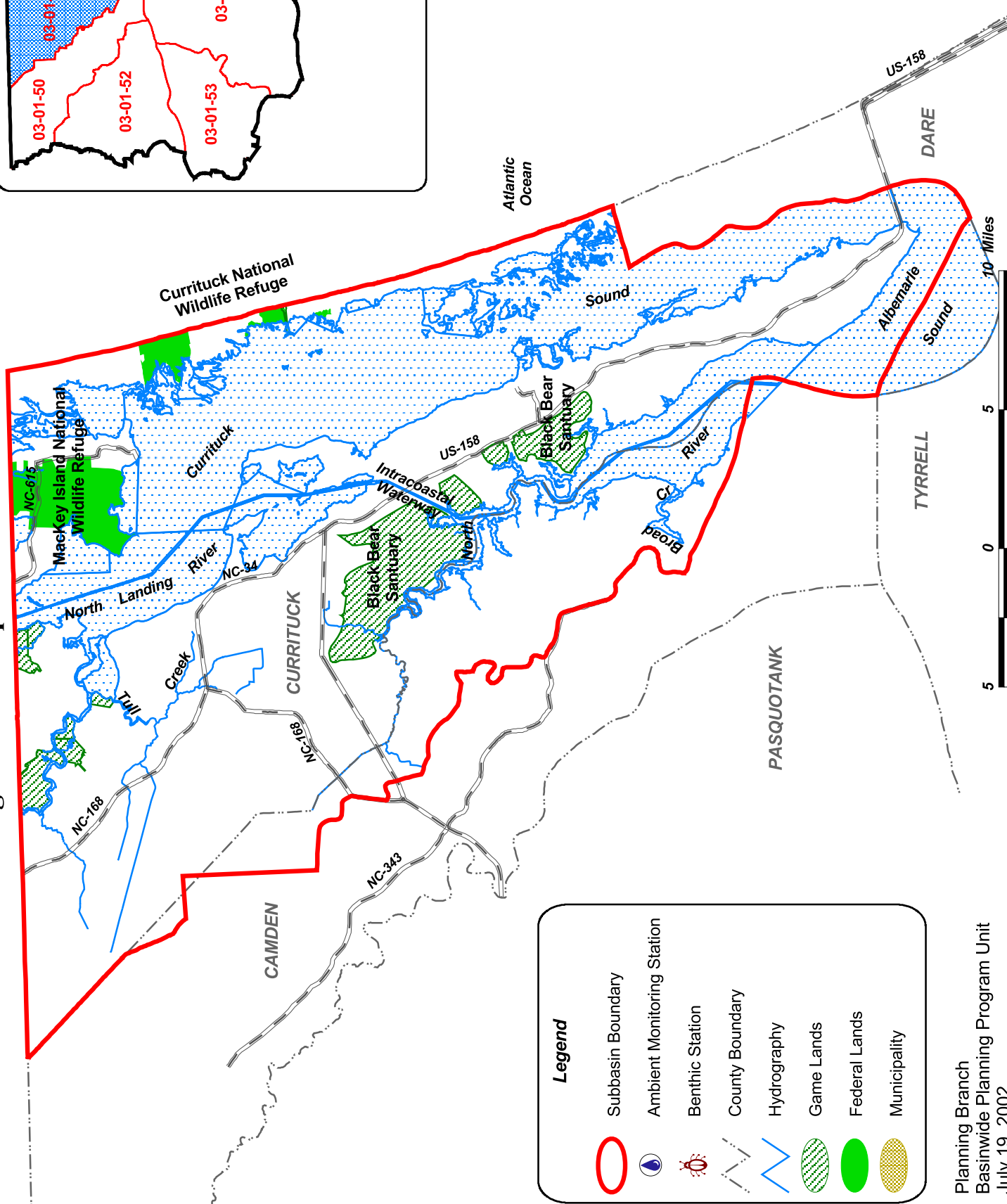
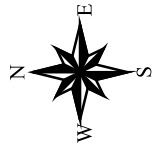
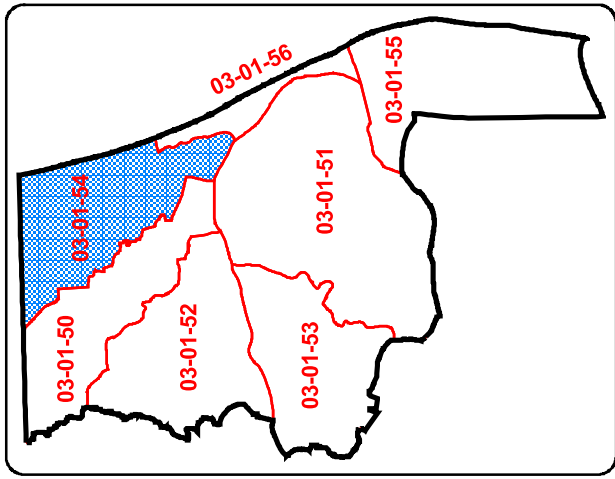
Game Land, North River Game Land and portions of the Great Marsh.

A portion of this subbasin is located on the Outer Banks, an area of high growth potential. Growth management within the next five years will be imperative in order to maintain good water quality in this subbasin.

There are two permitted NPDES dischargers in the subbasin: Currituck County Water Treatment Plant and Corolla North Utilities. Both facilities hold minor permits. No facilities are required under permit to perform whole effluent toxicity testing in the subbasin. There are no NPDES individual stormwater permits issued in the subbasin; however, there are 11 general stormwater permits issued.

For more detailed information on sampling and assessment of streams in this subbasin, refer to the *Basinwide Assessment Report-Pasquotank River Basin* (NCDENR-DWQ, December 2001), available from DWQ Environmental Sciences Branch at <http://www.esb.enr.state.ncu.us/bar.html> or by calling (919) 733-9960.

**Figure B-6 Pasquotank River Subbasin 03-01-54**



**Legend**

- Subbasin Boundary
- Ambient Monitoring Station
- Benthic Station
- County Boundary
- Hydrography
- Game Lands
- Federal Lands
- Municipality

Planning Branch  
 Basinwide Planning Program Unit  
 July 19, 2002

Table B-9 Use Support Ratings Summary (2000) for Monitored and Evaluated<sup>2</sup> Streams (Miles) in Pasquotank River Subbasin 03-01-54

Use Support Category	FS	PS	NS	NR	Total <sup>1</sup>
<b>Aquatic Life/ Secondary Recreation<sup>2</sup></b>	11,049.3 estuarine ac	0	0	69.9 mi 942.9 fresh ac 113,560.0 estuarine ac 22.6 coastal mi	69.9 mi 942.9 fresh ac 124,609.3 estuarine ac 22.6 coastal mi
<b>Fish Consumption<sup>3</sup></b>	0	22.6 coastal mi	0	0	22.6 coastal mi
<b>Primary Recreation</b>	22.6 coastal mi	0	0	25.1 mi 11,049.3 estuarine ac	25.1 mi 11,049.3 estuarine ac 22.6 coastal mi

<sup>1</sup> Total stream miles/acres assigned to each use support category in this subbasin. Column is not additive because some stream miles are assigned to more than one category.

<sup>2</sup> For the fish consumption use support category, only monitored stream miles are presented.

<sup>3</sup> These waters are impaired because of a regional fish consumption advisory. Refer to Section A, Part 4.3 for further information.

## 5.2 Status and Recommendations for Previously Impaired Waters

The 1997 Pasquotank River Basinwide Plan did not identify any segments in this subbasin as impaired.

## 5.3 Status and Recommendations for Newly Impaired Waters

There are 22.6 Atlantic coastal miles which are partially supporting that were monitored for fish consumption. All waters in this subbasin are currently partially supporting (PS) on an evaluated basis in the fish consumption use support category because of a regional fish consumption advisory for shark, swordfish, king mackerel, tilefish, largemouth bass, bowfin (or blackfish), and chain pickerel (or jack). Refer to page 68 for more information on this issue.

## 5.4 Other Issues and Recommendations

The surface waters discussed in this section are fully supporting designated uses or are not rated based on recent DWQ monitoring; however, these data revealed some impacts to water quality. Although no action is required for these streams, voluntary implementation of BMPs is encouraged and continued monitoring is recommended. DWQ will notify local agencies of water quality concerns regarding these waters and work with them to conduct further monitoring and to locate sources of water quality protection funding.

This subbasin has the potential to undergo a great population increase due to its proximity to Virginia and growing municipalities in the North Carolina portion of the basin. Growth management within the next five years will be imperative in order to maintain good water quality in this subbasin. Growth management can be defined as the application of strategies and practices that help achieve sustainable development in harmony with the conservation of

environmental qualities and features of an area. On a local level, growth management often involves planning and development review requirements that are designed to maintain or improve water quality. Refer to Section 4.11 for more information about minimizing impacts to water quality from development.

#### **5.4.2 Guinea Mill Run**

##### Current Status

Guinea Mill Run is currently not rated. Orchard Park in Moyock has had challenges with insufficient infiltration of their wastewater treatment plant's spray irrigation. The facility is in continual violation; however, little effort by the facility is underway to correct the problem.

##### 2002 Recommendations

DWQ's Regional Office has made several consultations to the facility; however, the owners have made insufficient progress on the violations. DWQ will issue a substantial fine to the facility coupled with a meeting to discuss potential state-based funding to remedy the situation.

#### **5.4.3 Currituck Sound**

##### 1997 Recommendations

Part of Currituck Sound was experiencing mild algal blooms. DWQ stated that it would continue to monitor the character, frequency and duration of the blooms to determine whether or not they were becoming more severe.

In addition, DWQ recommended that the NPS team should consider any actions that could be taken to reduce the amount of nutrients entering the sound.

##### Status of Progress

Currituck Sound is currently not rated. In the 1999 Environmental Sciences Branch Algal Assessment, there were no reports of algal blooms in Currituck Sound.

##### 2002 Recommendations

DWQ will continue to monitor the frequency and duration of algal blooms in Currituck Sound. Where necessary, DWQ will use the assistance of the other scientific staff such as Rapid Response Teams to assist in determining the cause of the algal blooms. Upon notification of an algal bloom in the vicinity, DWQ will continue to immediately provide the information to the public.

DWQ should collaborate with the National Oceanic and Atmospheric Administration's Submerged Aquatic Vegetation Research efforts to monitor the status of the submerged aquatic vegetation in the area. Where feasible, DWQ should allocate funding and technical assistance toward the initiative.

DWQ will continue to provide information to the US Army Corps in their efforts to undertake a Scoping Study of Currituck Sound. Pending budget flexibility, DWQ will allocate funding towards future collaboration efforts with the US Army Corps.