

Chapter 6 - Pasquotank River Subbasin 03-01-55 Includes Northeastern Pamlico Sound

6.1 Water Quality Overview

Subbasin 03-01-55 at a Glance

Land and Water

Total area:	574 mi ²
Land area:	96 mi ²
Water area:	478 mi ²

Population Statistics

1990 Est. pop.:	3,436 people
Pop. density:	36 persons/mi ²

Land Cover (%)

Forest/Wetland:	11
Surface Water:	89
Urban:	<1
Cultivated Crop:	<1
Pasture/ Managed Herbaceous:	<1

This subbasin consists of Pamlico Sound from Oregon Inlet to Hatteras Inlet and the Outer Banks in Dare County. It also includes Black Lake and Stumpy Point Bay. The majority of the subbasin consists of the SA waters of the Pamlico Sound. In the northwestern portion of the basin, several freshwater swampy systems can be found. The largest municipalities in the basin include Rodanthe and Avon. A map including water quality sampling locations is presented as Figure B-7.

DWQ did not collect benthic macroinvertebrate, fish community, fish tissue or ambient water quality sampling in this basin. Therefore, there is currently little DWQ scientific information on water quality status in this subbasin. 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-10.

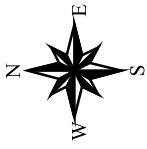
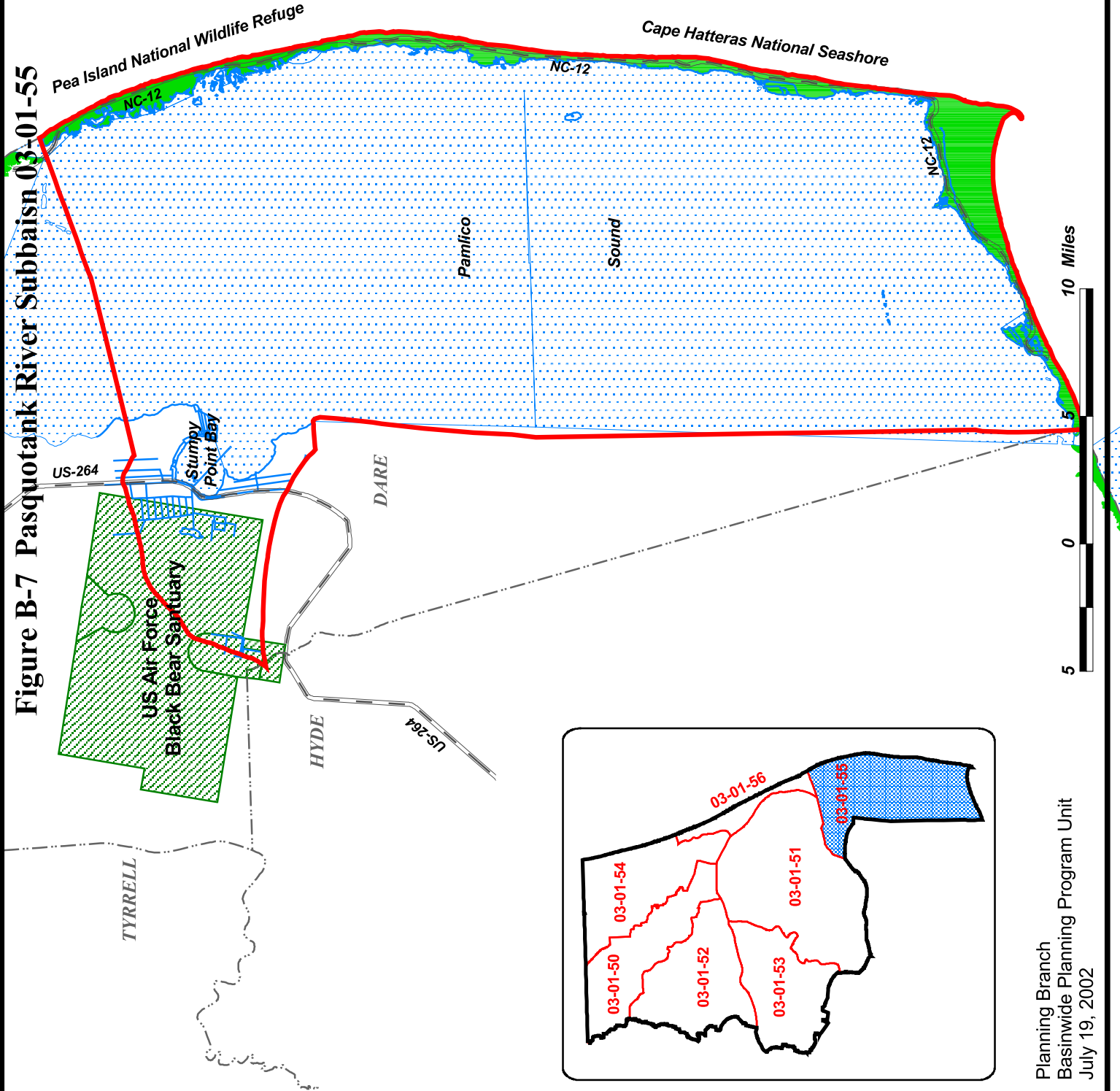
The Pea Island National Wildlife Refuge and Cape Hatteras National Seashore predominate the public lands and Significant Natural Heritage Areas in the subbasin.

Six facilities in the subbasin hold NPDES minor permits. Five of the six facilities are nonmunicipal. Several facilities are required to conduct whole effluent toxicity testing as a condition of their permit. Of these facilities, Dare County's Reverse Osmosis facility (No. 001) had 18 passes and four fails before 2000. During 2000, the facility had three passes and no failures. The Dare County Reverse Osmosis facility (No. 002) had 36 passes and 14 fails before 2000. During 2000, the facility had three passes and four failures. No individual stormwater permits exist in the subbasin; however, there are six general stormwater permits.

For more detailed information on sampling and assessment of streams in this subbasin, refer to the *Basinwide Assessment Report-Pasquotank River Basin* (NCDENR-DWQ, January 2002), available from DWQ Environmental Sciences Branch at <http://www.esb.enr.state.ncu.us/bar.html> or by calling (919) 733-9960.



Figure B-7 Pasquotank River Subbasin 03-01-55



Atlantic Ocean

Legend

- Subbasin Boundary
- Ambient Monitoring Station
- Benthic Station
- USGS Gaging Station
- County Boundary
- Primary Roads
- Hydrography
- Game Lands
- Federal Lands
- Municipality

Table B-10 Use Support Ratings Summary (2000) for Monitored and Evaluated² Streams (Miles) in Pasquotank River Subbasin 03-01-55

Use Support Category	FS	PS	NS	NR	Total ¹
Aquatic Life/ Secondary Recreation²	316,110.70 estuarine ac	0	0	53.8 coastal mi 117.6 fresh ac 4,022.0 estuarine ac	53.8 coastal mi 117.6 fresh ac 320,132.7 estuarine ac
Fish Consumption³	0	53.8 coastal mi	0	0	53.8 coastal mi
Primary Recreation	53.8 coastal mi 315,407.0 estuarine ac	0	0	4,725.8 estuarine ac	53.8 coastal mi 320,132.8 estuarine ac
Shellfish Harvest	318,771.7 estuarine ac	0	1,361.1 estuarine ac	0	320,132.8 estuarine ac

¹ 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.

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

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

6.2 Status and Recommendations for Previously Impaired Waters

Previously impaired Class SA waters are discussed in Section 6.4 below. There were no other waters identified as impaired in the 1997 plan.

6.3 Status and Recommendations for Newly Impaired Waters

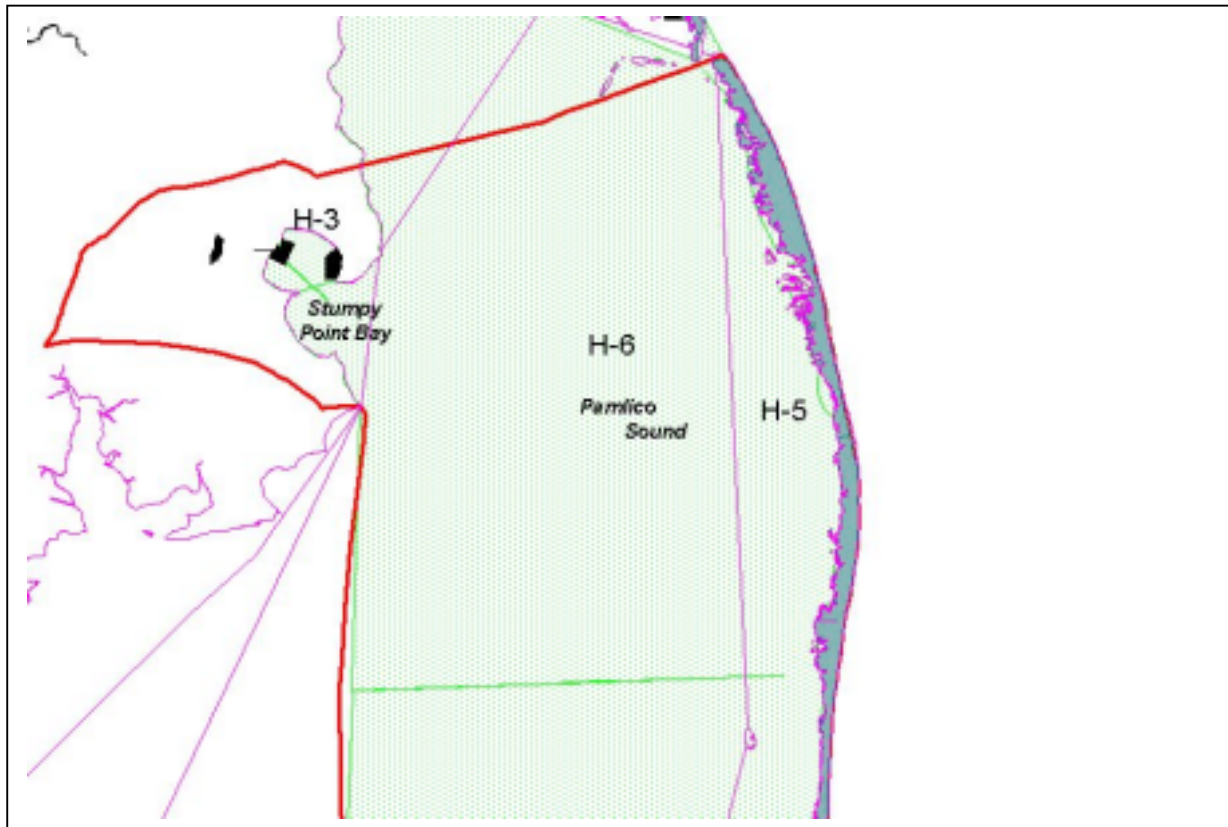
There are 53.8 Atlantic coastal miles which are partially supporting that were monitored for fish consumption. All waters in this subbasin are currently partially supporting (PS) on an evaluated basis for the fish consumption use support category because of a regional fish consumption advisory for shark, swordfish, king mackerel, tilefish, largemouth bass, bowfin (or blackfish), and chain pickerel (or jack). Refer to page 68 for more information on this issue. There are other newly impaired shellfish waters in this subbasin. Class SA waters are discussed below in Section 6.4.

6.4 Impaired Class SA Waters

There are 320,132.8 acres of Class SA waters in this subbasin that were assessed in the shellfish harvesting use support category. In this subbasin, 1,361.1(4.21%) are considered impaired for the shellfish harvesting use support category. Refer to Figures B-8 and B-9 to identify locations of DEH SS growing areas and growing area classifications. The larger water areas in this subbasin are described below with reference to DEH SS growing areas. The problem parameter for all waters listed below is fecal coliform bacteria contamination. Refer to page 61 for recommendations to address impairment in Class SA waters.

The differences in acreage estimates between basinwide cycles are not necessarily related to changes in water quality, but to different methods of estimating acreage and changes in use support methodology. For more information on changes in use support methodology, refer to Appendix III and page 59. For a complete listing of monitored Class SA waters refer to Appendix III.

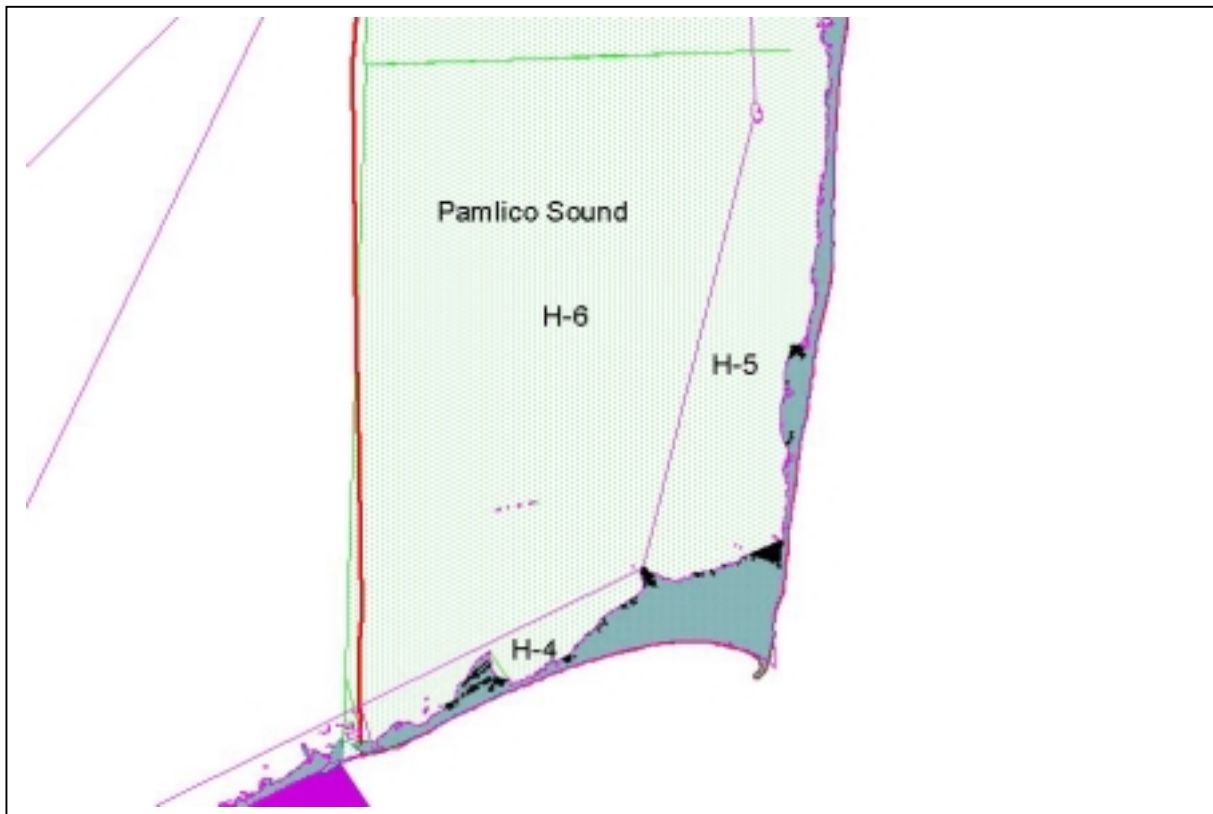
Subbasin 03-01-55 contains portions of four DEH growing areas: H3, H4, H5 and H6 (Figures B-8 and B-9).



■ Approved

■ Prohibited/Restricted

Figure B-8 Northern DEH Shellfish Growing Area Classifications in SA Waters of Subbasin 03-01-55



□ Approved

■ Prohibited/Restricted

Figure B-9 Southern DEH Shellfish Growing Area Classifications in SA Waters of Subbasin 03-01-55

Stumpy Point (DEH Area H-3)

The majority of the area is approved for commercial shellfish harvesting, and most waters are fully supporting. There are several areas closed, including an area surrounding Lake Worth and an area at the southeastern most section of Stumpy Point Bay. Potential sources of pollution include straight pipes, wildlife and nonpoint source runoff (NCDENR-DEH, H3).

Hatteras Area (DEH Area H-4)

The majority of the area is approved for commercial shellfish harvesting, and most waters are fully supporting. There are several areas closed, including several sections of Pamlico Sound which house boating facilities. All canals along the shoreline are closed to shellfish harvesting. Potential sources of pollution include nonpoint source runoff, illicit solid waste disposal in "The Slash" and nearby development (NCDENR-DEH, H4).

Outer Banks (DEH Area H-5)

All of DEH Area H-5 is located within this subbasin. Some of the areas that are prohibited to commercial shellfishing include Cape Creek, portions of Pamlico Sound, Askins Creek, Peters

Ditch and Mill Creek. Bacteriological data for Area H-5 indicated further deterioration in water quality in the Mill Creek section; however, DEH noted that the approved classification of the area is adequate at the current time (NCDENR-DEH, H5). Potential sources of pollution include nonpoint source pollution from failing/overused septic systems, stormwater runoff, local wildlife and nearby residential developments (NCDENR-DEH, H3).

6.5 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.

6.5.1 Buzzard Bay

Current Status

Buzzard Bay is currently not rated. The Town of Kill Devil Hill's Wastewater Treatment Plant which discharges into Buzzard Bay exceeded its fecal coliform limits by greater than 40 percent over the third and fourth quarters of 1999. The facility was designed under capacity; however, the facility has made efforts to increase treatment levels and change to a non-discharge method.

2002 Recommendations

DWQ will provide technical consultation to the town to determine the severity and cause of the fecal coliform permit exceedences.

6.5.2 Colington Creek

Current Status

Colington Creek is currently not rated. The Outer Banks Beach Club, a non-discharge facility, currently lacks sufficient maintenance. The operation is undergoing a change of management.

2002 Recommendations

DWQ will make site consultations to provide technical information to the owners about the history and current condition of the facility with respect to its impact to local surface water.

6.5.3 Pamlico Sound

Current Status

Pamlico Sound is currently fully supporting. The Buxton Water Treatment Plant, a non-discharge facility, has had an ongoing challenge with solids in their holding pond. DWQ will conduct site consultations to determine long-term solutions to remedy the situation.

2002 Recommendations

DWQ will provide both technical and financial information to the facility operators to assist them in their strategic planning.