

Section B

Water Quality Data and Information by Subbasin

Chapter 1 –

Pasquotank River Subbasin 03-01-50

Includes Pasquotank River and Tributaries

1.1 Water Quality Overview

Subbasin 03-01-50 at a Glance

Land and Water

Total area:	454 mi ²
Land area:	390 mi ²
Water area:	64 mi ²

Population Statistics

1990 Est. pop.:	31,369 people
Pop. density:	80 persons / mi ²

Land Cover (%)

Forest / Wetland:	46%
Surface Water:	18%
Urban:	<1%
Cultivated Crop:	34%
Pasture / Managed Herbaceous:	1%

This subbasin consists of the Pasquotank River and its tributaries in Camden, Pasquotank and Gates counties. The headwaters of the Pasquotank River include freshwater in the Great Dismal Swamp. Southward, a significant portion of the waters in this subbasin is brackish estuarine, including Albemarle Sound and the Pasquotank River below Elizabeth City. A map of this subbasin including water quality sampling locations is presented as Figure B-1.

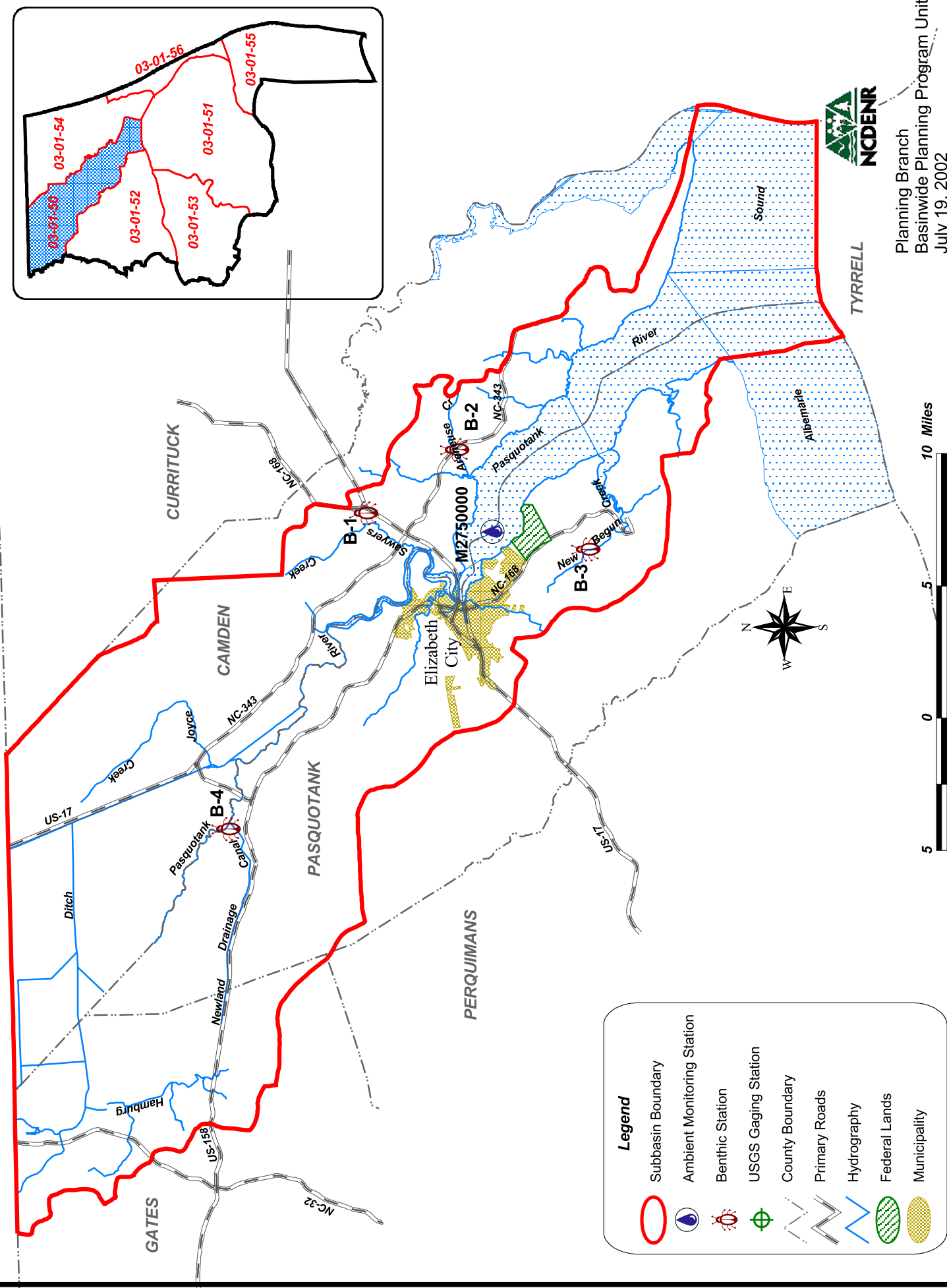
DWQ conducted ambient and benthic macroinvertebrate sampling in this subbasin. Bioclassifications for these sample locations are presented in Table B-1. Use support ratings are summarized in Table B-2. Refer to Appendix III for a complete listing of monitored waters and use support methods.

This subbasin includes the Great Dismal Swamp Wildlife Refuge and portions of the Great Marsh. In addition, the subbasin has Significant Natural Heritage Areas near the mouth of the Pasquotank River.

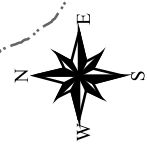
There are seven permitted dischargers in the subbasin. The Elizabeth City WWTP is the only major discharge, which discharges into the Pasquotank River. Also, there are 15 general permits. Two facilities: the Elizabeth City Wastewater Treatment Plant and the US Coast Guard are required under permit to perform whole effluent toxicity testing in the subbasin. The Elizabeth City WWTP experienced problems during 1997, and the causes of their toxicity testing failures are not clear. Since September of 1997, the facility has not failed a test. There is one individual stormwater permit issued in the subbasin for Universal Forest Products Eastern Division, Inc.

Benthic macroinvertebrate data have been collected at five sites since the fall of 1995. However, these data are not rated, and therefore, offer little indication of the water quality status of the Pasquotank River basin.

Figure B-1 Pasquotank River Subbasin 03-01-50



Planning Branch
Basinwide Planning Program Unit
July 19, 2002



Legend

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

Table B-1 DWQ Monitoring Locations and Benthic Macroinvertebrate Bioclassifications (2000) for Pasquotank River Subbasin 03-01-50

Site(s)	Stream	County	Location	Bioclassification
<i>Benthic Macroinvertebrates</i>				
Freshwater				
B-4	Pasquotank River	Pasquotank	End of SR 1361	Not Rated
B-5	Pasquotank River	Pasquotank	Goat Island	Not Rated
B-1	Sawyers Creek	Camden	SR 1200	Not Rated
B-2	Areneuse Creek	Camden	NC 343	Not Rated
B-3	Newbegun	Camden	SR 1132	Not Rated
<i>Ambient Monitoring</i>				<i>Problem Parameters</i>
M2750000	Pasquotank River	Pasquotank	at Elizabeth City	pH

* Refer to Section A, Part 3.3 for more information on fish community and benthic macroinvertebrate bioclassifications.

Table B-2 Use Support Ratings Summary (2000) for Monitored and Evaluated² Freshwater Streams (Miles) in Pasquotank River Subbasin 03-01-50

Use Support Category	FS	PS	NS	NR	Total ¹
Aquatic Life/ Secondary Recreation²	28,665.8 estuarine ac	0	0	132.4 mi 23,208.9 estuarine ac	132.4 mi 51,874.7 estuarine ac
Primary Recreation	37,851.5 estuarine ac			93.3 estuarine ac	37,944.8 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 These waters are impaired because of a regional fish consumption advisory. Refer to Section A, Part 4.3 for further information.

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.

1.2 Status and Recommendations for Previously Impaired Waters

The 1997 Pasquotank River Basinwide Plan identified no impaired stream segments in this subbasin.

1.3 Status and Recommendations for Newly Impaired Waters

The four benthic monitoring sites in this subbasin are currently not rated because criteria for assigning bioclassifications to swamp streams are still in draft form (page 67). There are no other newly impaired waters in this subbasin.

1.4 Other Issues and Recommendations

The surface waters discussed in this section are fully supporting designated uses or 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.

1.4.1 Pasquotank River

Current Status

The Pasquotank River is currently not rated. There are indications that urban stormwater runoff may be adversely affecting water quality in the Pasquotank River near Elizabeth City. Elizabeth City operates a wastewater treatment plant, and its influent chamber has experienced chronic overflows to Knobbs Creek. DWQ believes that the overflows do not warrant a Special Order by Consent (SOC) at the present time. Instead, DWQ believes that the facility has maintenance issues with insufficient operational oversight.

2002 Recommendations

As of March 2002, DWQ believes the situation has been rectified regarding the wastewater treatment plant's influent chamber. DWQ has appreciated Elizabeth City's efforts in keeping the state abreast of the city's efforts to correct this problem. Elizabeth City will be required to apply for a NPDES Phase II stormwater permit by March 2003. DWQ is currently developing rules to implement Phase II.

Water Supply Watersheds

Elizabeth City informed DWQ's Water Supply Protection Program that they might permanently stop using their water supply intake. As of April 2002, a decision was not finalized regarding this issue.

2002 Recommendations

DWQ recommends that Elizabeth City decide whether they wish to use the Pasquotank River as a raw water supply source. If Elizabeth City decides not to use the Pasquotank River as a raw drinking water supply source, then the river could be reclassified for non-water supply use. In order for DWQ to consider the reclassification, a request for the reclassification must be submitted to DWQ. As of April 2002, DWQ has not received any requests from Elizabeth City. Until then, Elizabeth City, Pasquotank County and Camden County are required to implement water supply watershed protection ordinances that meet or exceed the state's rules.

1.4.2 Albermarle Sound

Current Status

Albermarle Sound is currently not rated. Small areas of the sound may be adversely affected by increased development in this subbasin. A new golf community, *Fortune Bay*, is proposed for 606 acres at Currituck Point. The facility will affect 400 acres of wetlands, and it proposes to discharge into SB waters of the Albermarle Sound.

2002 Recommendations

DWQ recommends that Fortune Bay reuse high quality water at its facility to limit the amount of discharge into SB waters.

1.4.3 Areneuse Creek

Current Status

Areneuse Creek is currently not rated. The DWQ Regional Office indicated that there have been numerous algal blooms near the canals of Areneuse Creek. Potential contributing sources to the algal bloom may include increased local development.

2002 Recommendations

DWQ will continue to monitor Areneuse Creek to evaluate potential impacts of algal blooms.