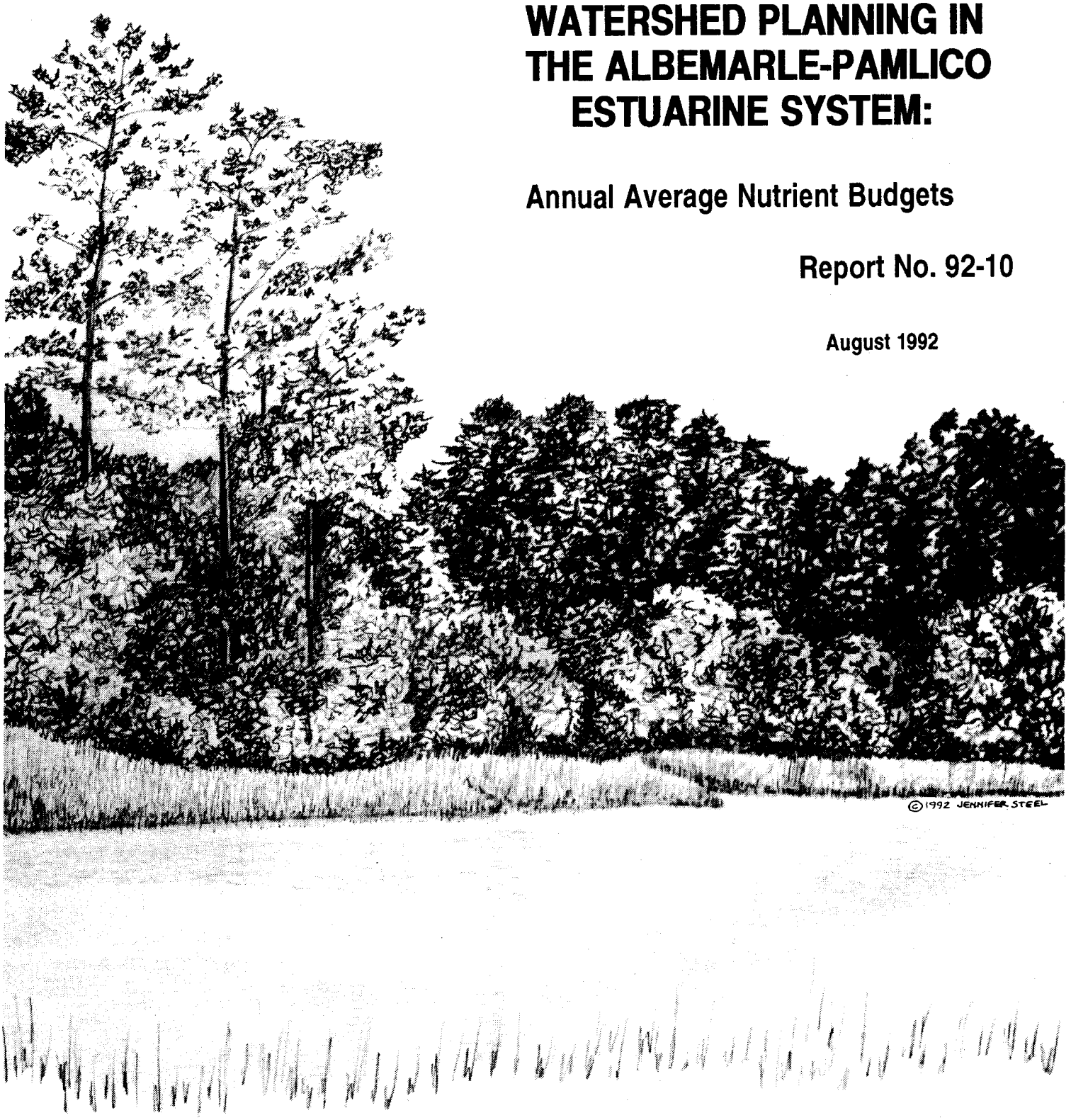
WATERSHED PLANNING IN THE ALBEMARLE-PAMLICO ESTUARINE SYSTEM:

Annual Average Nutrient Budgets

Report No. 92-10

August 1992



ALBEMARLE-PAMLICO ESTUARINE STUDY

NC Department of Environment, Health, and Natural Resources

ALBEMARLE-PAMLICO

Environmental Protection Agency National Estuary Program

WATERSHED PLANNING IN THE ALBEMARLE-PAMLICO ESTUARINE SYSTEM

Report 1 - Annual Average Nutrient Budgets

by

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Contents of the publication do not necessarily reflect the views and policies of the United States Environmental Protection Agency, the North Carolina Department of Environment, Health, and Natural Resources, nor does mention of trade names or commercial products constitute their endorsement by the United States or North Carolina Government."

Project No. 4873-03

August 1992

PREFACE

This report is the first in a series of nine reports by Research Triangle Institute (RTI) to support watershed planning and the Comprehensive Conservation and Management Plan for the Albemarle-Pamlico (A/P) Estuary Study Area. This work is being done under Cooperative Agreement No. C-14010 between RTI and the U.S. Environmental Protection Agency, with funding also provided by the State of North Carolina.

Current plans call for the report series to include the following, when completed later in 1992:

- Annual Average Nutrient Budgets
- Groundwater Discharge and Groundwater Quality
- Toxics Analysis
- Fishing Practices Mapping
- Subbasin Profiles and Critical Areas
- Future Nutrient Loading Scenarios and Target Nutrient Reductions
- Geographic Targeting for Nonpoint Source Programs
- A Subbasin PC Database
- Nutrient Mass Balances

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EXECUTIVE SUMMARY

The Albemarle-Pamlico (A/P) estuarine system is one of 17 estuaries identified nationwide under EPA's National Estuary Program. This report represents the results of a project to analyze nutrient loadings to the estuarine system and is one of several efforts by Research Triangle Institute (RTI) to support watershed planning in the A/P Study Area. The work was performed under contract to the North Carolina Department of Environment, Health, and Natural Resources and the U.S. Environmental Protection Agency (EPA), Region 4.

The purpose of this study was to estimate annual average nutrient loadings to surface waters in the A/P Study Area. Runoff from various land cover categories, direct input of atmospheric nutrients to surface waters, and point sources were considered. Nutrient sources to groundwater and transport from groundwater to surface waters were not considered.

Pollutant loading factors ("export coefficients") were multiplied by the area in various land cover categories to estimate runoff inputs and atmospheric inputs. Output from EPA's Regional Atmospheric Deposition Model (RADM) was also used to estimate atmospheric nitrogen inputs. Compliance monitoring data were available to estimate point sources in North Carolina; however, limited point source monitoring data were available in Virginia.

Transport of nutrients from the source to the estuary was not considered; estimates should generally be considered as potential loadings to the estuary and sound systems. Estimates are calculated for total nutrient loading, with the exception of atmospheric nitrogen estimates from the RADM model, which are available for specific fractions only.

Given these considerations, and results of past research, several general conclusions can be reached:

- Runoff is the largest source category of nutrient loadings to surface waters. Within this category, agricultural land is the largest contributor of both phosphorus and nitrogen inputs.

- In considering direct inputs to the hydrologic units representing the sound system, atmospherically derived nitrogen is a substantial contributor. We have not attempted to estimate the proportion of "inland" point sources and runoff which reach the sounds; however, the implication is for continuing closer study of the impact of atmospheric nitrogen.

- Other "elusive" sources of nutrients such as septic tanks, local atmospheric sources, unmonitored point sources, and concentrated animal operations cannot be accounted for explicitly due to the lack of source data.

- The accuracy of estimates of inputs from upland agricultural, forested, and urban land depends on both the accuracy of the land cover data and the ability of literature estimates of nutrient export to represent actual areal loading.

- The quantification of nutrient sources in 112 hydrologic units can be used to geographically prioritize areas within the large study area for monitoring, modeling, and control efforts.

For the entire A/P Study Area (below Falls Reservoir and Lake Gaston), a total of over 43 million kg/yr of nitrogen and over 4 million kg/yr of phosphorus is estimated to enter surface waters by discharge from point sources, runoff, direct atmospheric deposition, and discharge from upstream reservoirs (Figure ES-1). Annual average phosphorus sources in order of decreasing magnitude are land runoff, point sources, atmospheric inputs, and upstream reservoirs. Nitrogen sources in order of decreasing magnitude are runoff, atmospheric inputs, upstream reservoirs, and point sources. The Neuse and Tar-Pamlico basins contribute the most nutrients to the overall system, both on a total mass basis and a mass per unit area basis.

An important product of this effort was the development of a watershed-oriented database, which includes estimates of land cover and nutrient loadings for 68 hydrologic units in North Carolina and 44 hydrologic units in Virginia.

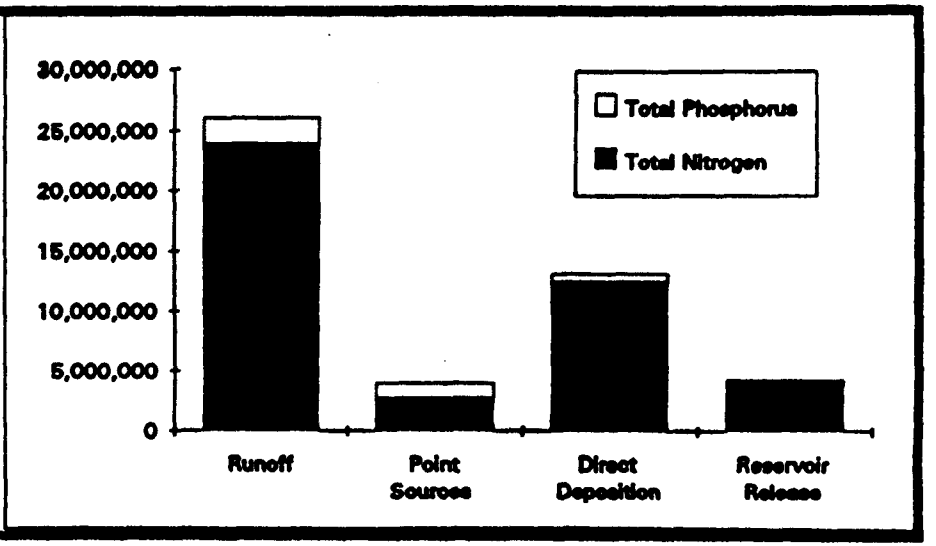
Figure ES-1

Nutrient Budget Summary By Source Category

AREAWIDE SUMMARY

(kg/yr)

	Total Nitrogen	Total Phosphorus
Runoff	23,927,169	2,183,668
Point Sources	2,731,370	1,263,233
Direct Deposition	12,479,840	654,185
Reservoir Release	4,056,000	196,700
Total	43,194,380	4,297,786

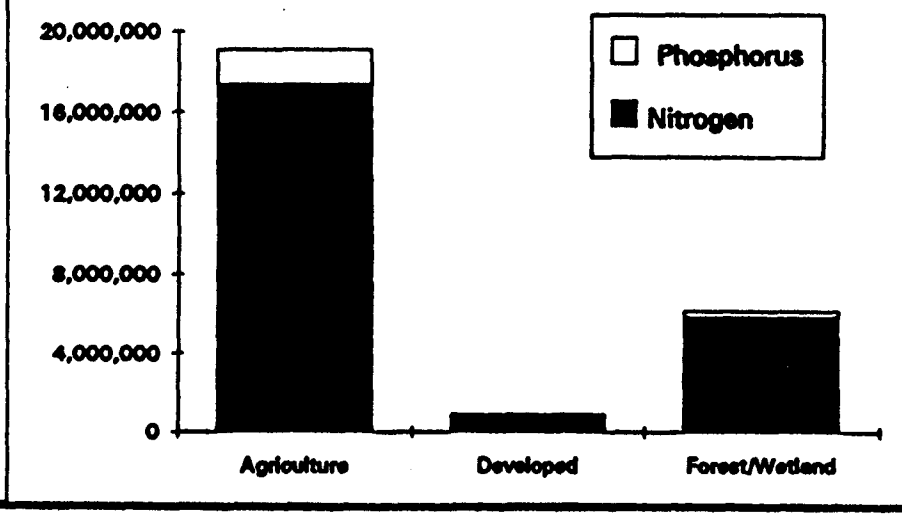


RUNOFF

(kg/yr)

	Nitrogen	Phosphorus
Agriculture	17,350,157	1,752,720
Developed	748,085	105,729
Forest/Wetland	5,828,927	325,219
Total	23,927,169	2,183,668

(most likely scenario)



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ACKNOWLEDGMENTS

The authors would like to thank the many people in the North Carolina Division of Environmental Management, Center for Geographic Information and Analysis, Virginia Division of Soil and Water Conservation, Virginia Water Control Board, and Environmental Protection Agency who provided the data upon which this report is founded, with special thanks to Elora Lee, Tom Tribble, Zsolt Nagy, Mike Rink, Robin Dennis, Cully Hession, Mike Flagg, Brian Hofstetter, and Michelle Fults. Special thanks is also given to those at RTI who helped with the countless data management, word processing, editing, and administrative activities necessary to produce this report, including John Tippett, Sharon Pressley, Kathleen Mohar, and Mike McCarthy. Finally, staff of the A/P Study are gratefully acknowledged for their cooperation and support.

1. BACKGROUND

Government agencies, water users, and concerned citizens all need to know where nutrients found in the estuaries of the Albemarle/Pamlico (A/P) estuarine system originate. This information is valuable in setting priorities for management strategies and, when considered over time, is crucial to evaluating the effectiveness of management efforts.

Nutrient budgets for several river basins in the Albemarle-Pamlico drainage area have been developed in the past. The North Carolina Division of Environmental Management (NCDEM) developed budgets for the Chowan River 1982 in (1) and 1990 (2), for the lower Neuse River in 1988 (3), and for the Tar-Pamlico River in 1987 (4). For nonpoint sources associated with specific land uses, these budgets focused on the net output ("export") from a land use category within the basin to surface waters. Craig and Kuenzler (5) completed a more detailed analysis of nonpoint nutrient loading to the Chowan River, including estimates of inputs, storage, and outputs from various agricultural systems and swamp forests. Stanley (6) has also completed an analysis of historical nutrient sources in the A/P Study Area since the turn of the century.

Based on monitoring and research of eutrophication symptoms, reduction strategies have been developed for these three basins. In the Chowan River basin, overall targets of 35 percent reduction (30 to 40 percent range) in annual average phosphorus loading and 20 percent reduction (15 to 25 percent range) in annual average nitrogen (N) loading from 1982 calculated loadings were identified (1). These reductions were based on extensive documentation of freshwater nuisance algal blooms and a simple empirical model relating phosphorus (P) to chlorophyll *a*. It is estimated that the N loading target has been achieved, and that P loading has been reduced by 29 percent in the North Carolina portion of the basin

(2). Preliminary estimates from Virginia indicate that 10 percent of the agricultural nitrogen and phosphorus loadings have been reduced since 1982 as a result of State and Federal cost-sharing for implementing agricultural best management practices (BMPs) (7). Point source reductions in Virginia as a result of the phosphate detergent ban and designation as Nutrient Enriched Waters are currently being estimated (8).

In the Neuse River basin, target inorganic P and N reductions of at least 50 percent and 30 to 40 percent, respectively (with an emphasis on spring and early summer reductions), were identified by NCDEM (3) and Paerl (9). These reductions were needed to stem the proliferation of blooms of freshwater nuisance algal species and were based on the results of algal assay studies. Paerl et al. (10) identified the need to pursue parallel nitrogen and phosphorus reductions in the estuarine portion of the Neuse River. NCDEM (11) estimates that point source phosphorus loading has been reduced by 26 percent, principally as a result of the phosphate detergent ban. Changes in point source nitrogen loading or nonpoint loading subsequent to Nutrient Sensitive Waters (NSW) designation have not been estimated.

In the Tar-Pamlico basin, NCDEM (12) anticipates reductions in point source phosphorus loading as a result of a recently issued permit for Texas Gulf Industries and nutrient reduction goals for municipal dischargers. Modeling studies to assist in identifying target nutrient levels and the trading of nonpoint and point source loadings are ongoing. NCDEM (11) estimates that the detergent ban has reduced point source loading by 12 percent; ongoing studies have demonstrated considerable reduction capability through improved operation and maintenance efforts as well (13).

Other tributary systems of the Albemarle-Pamlico estuarine system and the open-water sounds have not been studied to the same extent as the Neuse, Chowan, and Tar-Pamlico,

thus there is less evidence to suggest that elevated nutrient concentrations have resulted in undesirable conditions. There is, however, considerable concern because of the largely unknown conditions in these systems and because of the unknown cumulative effects of anthropogenic loading from tributaries, groundwater, and atmospheric deposition.

There are several compelling reasons for recalculating nutrient budgets at this time:

- Budgets have not been completed for several tributary basins.
- Point source loading has been affected by the phosphate detergent ban, implementation of effluent limits for phosphorus, population growth, and other factors subsequent to previous estimates. A better monitoring record also exists in North Carolina as a result of changes in National Pollution Discharge Elimination System (NPDES) monitoring requirements.
- Nonpoint source loading has been affected by changes in land use/land cover. An areawide systematic land use/land cover study has been completed based on LANDSAT data from 1987-88. Previous nutrient budget efforts were based on land use data generated from 1970s aerial photography (1, 3, 4).
- Atmospheric inputs of nitrogen may play a more important role in triggering or sustaining blooms in the estuary and sound systems than previously thought and therefore should be studied more closely (14).
- NCDEM has recently initiated a river basin planning program that will require updates of management strategies for the 17 major basins in the State on a staggered 5-year basis.

1.1 GOALS

This report presents the initial results of an ongoing study. The principal goals of this first phase of the study are to

- Estimate nutrient budgets for both point and nonpoint sources for the entire A/P Study Area that are representative of a baseline condition (late 1980s), within the limitations of available data.
- Develop a systematic framework that will facilitate future efforts to evaluate the impact of control efforts on areawide nutrient loading.

Future efforts of the ongoing study will include:

- more detailed mass balance calculations of nutrient inputs, outputs, and storage for gaged watersheds
- use of nutrient budget and mass balance tools for predictive scenario testing
- documentation of literature sources used to select export coefficients
- compilation and analysis of available data representing environmental indicators of estuarine resources, stresses, and pollutant sources by hydrologic unit
- targeting of nonpoint source control efforts, including landscape considerations
- development of a PC watershed database

1.2 APPROACH

There are two main components to this study:

- For point sources, we have summarized data from 1989-1990 from compliance monitoring data tracked by NCDEM and the Virginia Water Control Board (VWCB).
- For nonpoint sources, we used an export coefficient approach is used. Because key data sources include land use data classified from LANDSAT images in 1987-88, the temporal resolution is similar to that of the point source estimates. In recognition of the considerable uncertainty in choosing coefficients appropriate for particular land cover categories, coefficients representing "high," "most likely," and "low" estimates are provided.

Ongoing efforts will expand on this initial "screening level" study. In particular, we plan to

- Project future nutrient inputs based on factors such as continuing implementation of point source controls, implementation of cost-sharing programs for conservation practices, predicted changes in atmospheric nitrogen inputs based on requirements of the Clean Air Act, projected population change and resulting changes in land use, and other factors, within the limitations of data availability
- Provide recommendations for targeting nonpoint source management efforts
- Expand upon this watershed-oriented database developed herein so that interested parties can quickly obtain information about watershed characteristics affecting nutrient management programs.

- Calculate nutrient mass balances to more carefully study nutrient inputs, outputs, and storage in selected gaged watersheds

2. METHODS

2.1 POINT SOURCE LOADING

Data used to calculate "current" (i.e., 1989-90) inputs were obtained from NCDEM and VWCB along with estimates of monthly median flow and concentration where available. Digital data for North Carolina point sources were screened for possible reporting and keypunching errors by flagging TP values < 1 or > 10 mg/L and TN values < 1 or > 100 mg/L; these data were subsequently compared to hard-copy files housed by DEM in Raleigh. Several facilities were identified for which data were erroneously entered in concentration rather than mass loading units. Additionally, the digital record included data values of "0.00 mg/L" where no data were collected. These data were removed from the record. A final issue was the absence of remark codes (e.g., for values reported as below detection) in the digital record.*

The median value of the monthly records over the 2-year period was chosen as a measure of the central tendency of the flow and concentration data.† North Carolina facilities for which loading data were available were reported separately from facilities that reported flow only. For Virginia, very little effluent monitoring data were available.

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*DEM notifies users of compliance monitoring system data that the agency accepts no responsibility for data entry errors.

†The median was chosen as a "robust" statistic.

2.2 NONPOINT SOURCE LOADING

2.2.1 Watershed Delineation

2.2.1.1 North Carolina

Watershed boundaries (as hard-copy maps and digital coverages) have been identified by several agencies in the A/P Study Area. U.S. Geological Survey (USGS) cataloging units (CUs) are the "least dense" coverage available.[‡] The CUs are identified by an eight-digit code as follows:

03-	03-	01-	02-
region	subregion	accounting unit	cataloging unit

There are 14 CUs in the North Carolina portion of the study area. The digital CU boundaries were developed from 1:2,000,000 source maps.

State (NCDEM) subbasins are of "intermediate density"; there are 25 subbasins in the North Carolina portion of the study area, or almost twice the density of the CU coverage. Boundaries were initially defined in the 1970s and are primarily used for tracking point source discharger information.

Soil Conservation Service (SCS) watersheds are the "most dense" coverage available. There are 151 watersheds in the North Carolina portion of the study area--or six times as many as are in the NCDEM watershed network.

Prior to this project, digital coverages derived from low resolution (1:2 million or 1:1 million) hydrographic (nontopographic) base maps were available for USGS cataloging units

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[‡]These watersheds are available as a Federal Information Processing Standard (FIPS) data coverage.

and NCDEM subbasins. SCS is beginning a statewide project to map and digitize watersheds (15).

In 1991, RTI, the N.C. Center for Geographic Information and Analysis (CGIA), and NCDEM completed a watershed delineation project in the A/P Study Area, with watersheds determined by the topography and hydrology shown on 1:24,000 maps (Figure 1). Watershed outlet points were developed using three criteria. First, all boundaries were consistent with USGS CUs, as shown on a 1:500,000 scale base map, with adjustments made to reflect the greater detail of the 1:24,000 maps. Second, subbasins were delineated based on a revised version of the NCDEM subbasins. This reflects an effort to ensure consistency between NCDEM and USGS CU boundaries, where these boundaries coincide, and to ensure consistency between boundaries identified as designated use classifications contained in water quality regulations. Finally, watersheds were identified with outlets at the locations of gaging stations with continuous flow recorders and good water quality records. This scheme resulted in identification of 68 polygons in the North Carolina portion of the A/P Study Area (see Figure 1a and Table 1).

2.2.1.2 Virginia

In 1990 the Soil Conservation Service, in conjunction with several Virginia State agencies, completed an extensive project to delineate and digitize a statewide watershed network (Figure 1b). These watersheds cover between 30,000 and 60,000 acres (16). USGS CUs are also available for the Virginia portion of the A/P Study Area. Watersheds corresponding to gaging stations have not been identified in Virginia.

2.2.2 Land Use/Land Cover

Land use/land cover data from a 1987-88 LANDSAT classification study were obtained from the NC Center for Geographic Information and Analysis (Appendix A). This

Figure 1a: A/P Hydrologic Units in North Carolina (see Table 1)

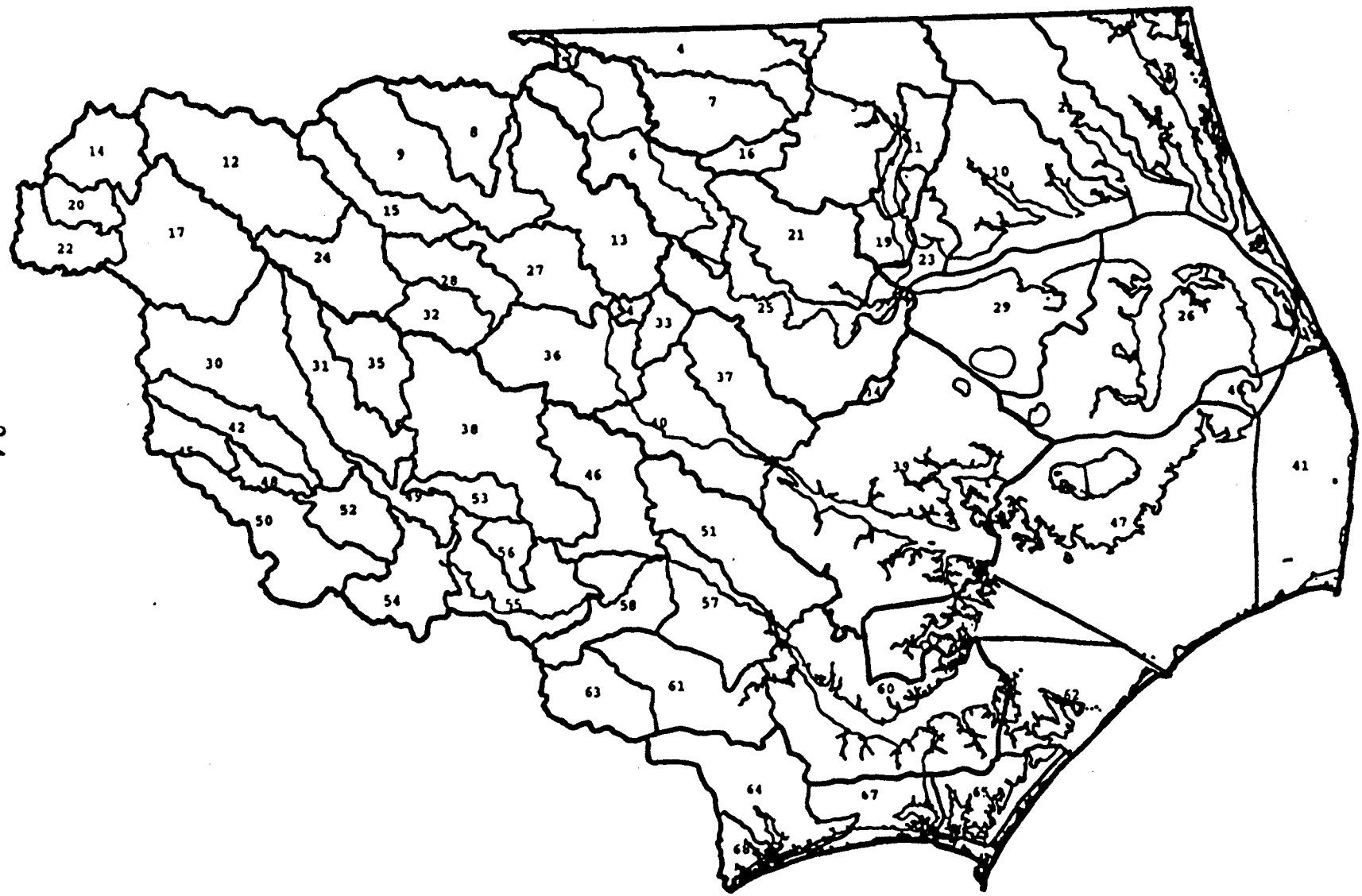


Figure 1b: A/P Hydrologic Units in Virginia (see Table 1)

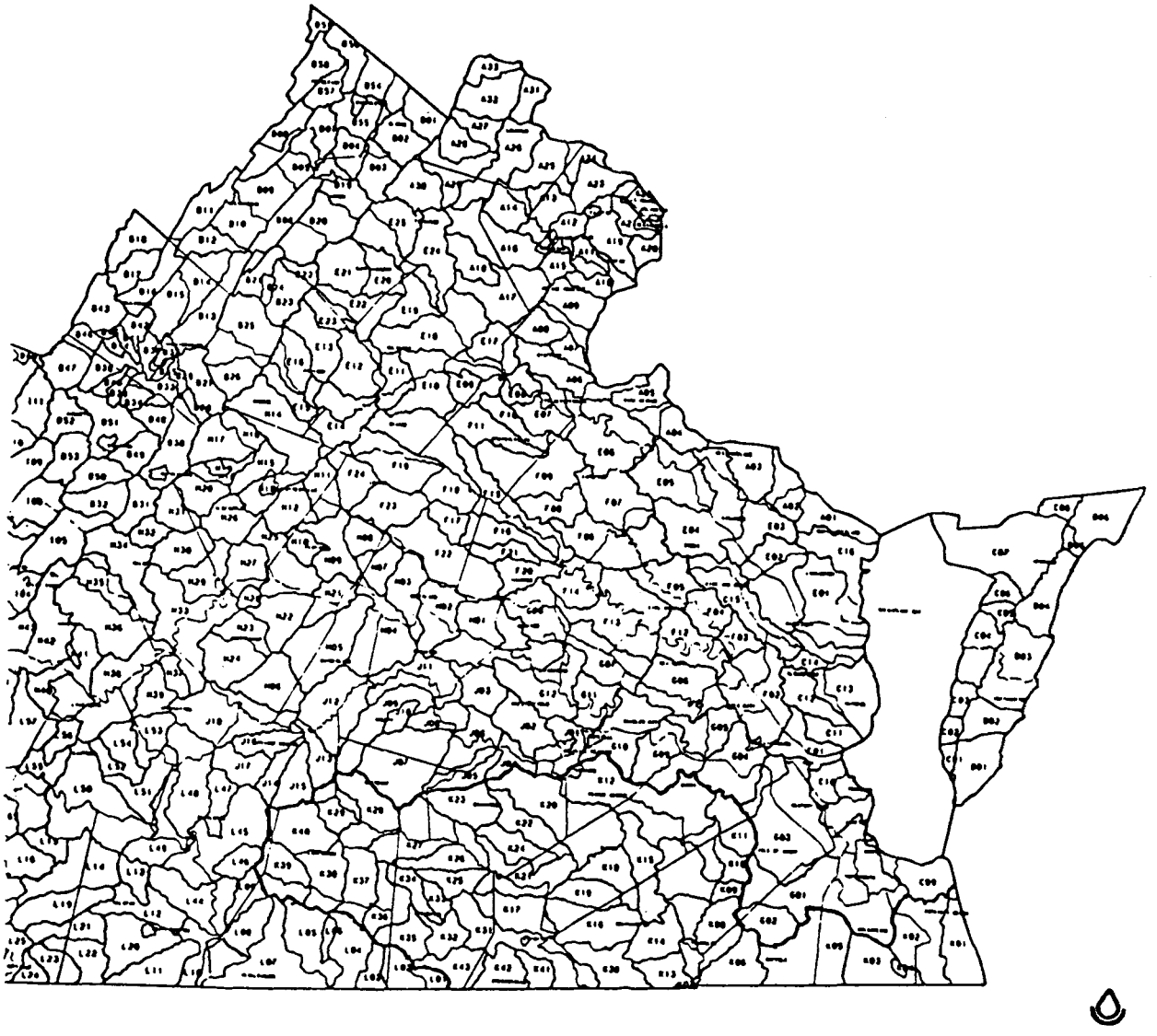


TABLE 1: A/P Hydrologic Units

A/P HYDRO UNIT	USGS CU	VA Hydro Unit	MAJOR DRAINAGE	MINOR DRAINAGE	AREA (Hectares)	# IN FIG 1
3-01-01-06-01	3010106	3.2.08	ROANOKE RIVER	UNNAMED	2,468	5
3-01-01-07-01	3010107	3.2.08	ROANOKE RIVER	UNNAMED	112,752	6
3-01-01-07-02	3010107	3.2.09	ROANOKE RIVER	UNNAMED	140,634	25
3-01-01-07-03	3010107	3.2.10	ROANOKE RIVER	CASHIE RIVER	79,597	21
3-01-02-03-01	3010203	3.1.01	CHOWAN RIVER	AHOSKIE CREEK	15,746	16
3-01-02-03-02	3010203	3.1.01	CHOWAN RIVER	UNNAMED	114,381	3
3-01-02-03-03	3010203	3.1.03	CHOWAN RIVER	UNNAMED	31,962	11
3-01-02-03-04	3010203	3.1.05	CHOWAN RIVER	UNNAMED	24,654	19
3-01-02-04-01	3010204	3.1.02	MEHERRIN RIVER	MEHERRIN RIVER	41,329	4
3-01-02-04-02	3010204	3.1.04	MEHERRIN RIVER	POTECASI CREEK	58,105	7
3-01-02-05-01	3010205	3.1.04	ALBEMARLE SOUND	UNNAMED	22,930	23
3-01-02-05-02	3010205	3.1.50	ALBEMARLE SOUND	PASQUOTANK RIVER	97,842	2
3-01-02-05-03	3010205	3.1.51	ALBEMARLE SOUND	ALLIGATOR RIVER	258,232	26
3-01-02-05-04	3010205	3.1.52	ALBEMARLE SOUND	UNNAMED	139,822	10
3-01-02-05-05	3010205	3.1.53	ALBEMARLE SOUND	SCUPPERNONG RIVER	119,443	29
3-01-02-05-06	3010205	3.1.54	CURRITUCK SOUND	UNNAMED	112,760	1
3-01-02-05-07	3010205	3.1.56	ALBEMARLE SOUND	ROANOKE SOUND	28,677	18
3-02-01-01-01	3020101	3.3.01	TAR-PAMLICO RIVER	UNNAMED	112,269	12
3-02-01-01-02	3020101	3.3.01	TAR-PAMLICO RIVER	UNNAMED	59,907	24
3-02-01-01-03	3020101	3.3.02	TAR-PAMLICO RIVER	SWIFT CREEK	42,759	15
3-02-01-01-04	3020101	3.3.02	TAR-PAMLICO RIVER	UNNAMED	31,284	32
3-02-01-01-05	3020101	3.3.02	TAR-PAMLICO RIVER	UNNAMED	38,047	28
3-02-01-01-06	3020101	3.3.02	TAR-PAMLICO RIVER	UNNAMED	53,152	27
3-02-01-02-01	3020102	3.3.04	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	46,057	8
3-02-01-02-02	3020102	3.3.04	TAR-PAMLICO RIVER	FISHING CREEK	91,008	9
3-02-01-02-03	3020102	3.3.04	TAR-PAMLICO RIVER	FISHING CREEK	94,736	13
3-02-01-03-01	3020103	3.3.03	TAR-PAMLICO RIVER	UNNAMED	6,134	34
3-02-01-03-02	3020103	3.3.03	TAR-PAMLICO RIVER	CONETOE CREEK	18,410	33
3-02-01-03-03	3020103	3.3.03	TAR-PAMLICO RIVER	UNNAMED	85,351	36
3-02-01-03-04	3020103	3.3.05	TAR-PAMLICO RIVER	UNNAMED	76,712	40
3-02-01-03-05	3020103	3.3.06	TAR-PAMLICO RIVER	UNNAMED	63,100	37
3-02-01-04-01	3020104	3.3.07	PAMLICO RIVER ESTUARY	VAN SWAMP	3,254	44
3-02-01-04-02	3020104	3.3.07	PAMLICO RIVER ESTUARY	UNNAMED	305,369	39
3-02-01-05-01	3020105	3.1.57	PAMLICO SOUND	UNNAMED	16,151	43
3-02-01-05-02	3020105	3.1.55	PAMLICO SOUND	UNNAMED	130,710	41

TABLE 1: A/P Hydrologic Units

A/P HYDRO UNIT	USGS CU	VA Hydro Unit	MAJOR DRAINAGE	MINOR DRAINAGE	AREA (Hectares)	# IN FIG 1
3-02-01-05-03	3020105	3.3.08	PAMLICO SOUND	UNNAMED	317,491	47
3-02-01-05-04	3020105	3.4.13	PAMLICO SOUND	UNNAMED	71,645	59
3-02-01-06-01	3020106	3.4.14	CORE SOUND	UNNAMED	87,062	62
3-02-01-06-02	3020106	3.5.01	WHITE OAK RIVER	UNNAMED	81,803	64
3-02-01-06-03	3020106	3.5.04	CORE SOUND	UNNAMED	44,245	65
3-02-01-06-04	3020106	3.5.05	CORE SOUND	UNNAMED	13,395	66
3-02-01-06-05	3020106	3.5.03	BOGUE SOUND	UNNAMED	50,437	67
3-02-01-06-06	3020106	3.5.01	WHITE OAK RIVER	UNNAMED	17,630	68
3-02-02-01-01*	3020201	3.4.01	NEUSE RIVER	FLAT RIVER	38,629	14
3-02-02-01-02*	3020201	3.4.01	NEUSE RIVER	LITTLE RIVER	20,682	20
3-02-02-01-03*	3020201	3.4.01	NEUSE RIVER	ENO RIVER	36,714	22
3-02-02-01-04*	3020201	3.4.01	NEUSE RIVER	FALLS LAKE	103,841	17
3-02-02-01-05	3020201	3.4.02	NEUSE RIVER	UNNAMED	113,314	30
3-02-02-01-06	3020201	3.4.02	NEUSE RIVER	SWIFT CREEK	40,200	42
3-02-02-01-07	3020201	3.4.03	NEUSE RIVER	MIDDLE CREEK	21,598	45
3-02-02-01-08	3020201	3.4.03	NEUSE RIVER	MIDDLE CREEK	12,433	48
3-02-02-01-09	3020201	3.4.04	NEUSE RIVER	UNNAMED	71,861	50
3-02-02-01-10	3020201	3.4.02	NEUSE RIVER	UNNAMED	34,458	52
3-02-02-01-11	3020201	3.4.06	NEUSE RIVER	LITTLE RIVER	60,079	31
3-02-02-01-12	3020201	3.4.06	NEUSE RIVER	UNNAMED	21,980	49
3-02-02-01-13	3020201	3.4.12	NEUSE RIVER	UNNAMED	47,458	54
3-02-02-02-01	3020202	3.4.06	NEUSE RIVER	UNNAMED	63,601	55
3-02-02-02-02	3020202	3.4.05	NEUSE RIVER	UNNAMED	15,213	56
3-02-02-02-03	3020202	3.4.05	NEUSE RIVER	UNNAMED	50,302	58
3-02-02-02-04	3020202	3.4.09	NEUSE RIVER	SWIFT CREEK	86,179	51
3-02-02-02-05	3020202	3.4.08	NEUSE RIVER	UNNAMED	59,923	57
3-02-02-03-01	3020203	3.4.07	NEUSE RIVER	CONTENTNEA CREEK	40,796	35
3-02-02-03-02	3020203	3.4.07	NEUSE RIVER	CONTENTNEA CREEK	129,368	38
3-02-02-03-03	3020203	3.4.07	NEUSE RIVER	NAHUNTA SWAMP	20,655	53
3-02-02-03-04	3020203	3.4.07	NEUSE RIVER	LITTLE CONTENTNEA CREEK	70,110	46
3-02-02-04-01	3020204	3.4.11	NEUSE RIVER	TRENT RIVER	43,067	63
3-02-02-04-02	3020204	3.4.11	NEUSE RIVER	TRENT RIVER	71,770	61
3-02-02-04-03	3020204	3.4.10	NEUSE RIVER ESTUARY	UNNAMED	181,831	60
				TOTAL:	4,815,512	

*Falls Lake.

TABLE 1: A/P Hydrologic Units

A/P HYDRO UNIT	USGS CU	VA Hydro Unit	MAJOR DRAINAGE	MINOR DRAINAGE	AREA (Hectares)	# IN FIG 1
3-01-02-01-01	3010201	K13	NOTTOWAY RIVER	DARDEN MILL RUN	15,279	K13
3-01-02-01-02	3010201	K14	NOTTOWAY RIVER	MILL SWAMP	21,365	K14
3-01-02-01-03	3010201	K15	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	28,203	K15
3-01-02-01-04	3010201	K16	NOTTOWAY RIVER	ANGELICO CREEK	37,350	K16
3-01-02-01-05	3010201	K17	NOTTOWAY RIVER	OTTERDAM SWAMP	25,622	K17
3-01-02-01-06	3010201	K18	NOTTOWAY RIVER	NOTTOWAY RIVER	22,144	K18
3-01-02-01-07	3010201	K19	NOTTOWAY RIVER	SPRING CREEK	17,251	K19
3-01-02-01-08	3010201	K20	NOTTOWAY RIVER	JONES HOLE SWAMP	61,178	K20
3-01-02-01-09	3010201	K21	NOTTOWAY RIVER	BUCKSIN CREEK	32,800	K21
3-01-02-01-10	3010201	K22	NOTTOWAY RIVER	STONY CREEK	20,089	K22
3-01-02-01-11	3010201	K23	NOTTOWAY RIVER	BUTTERWOOD CREEK	24,499	K23
3-01-02-01-12	3010201	K24	NOTTOWAY RIVER	SAPPONY CREEK	17,452	K24
3-01-02-01-13	3010201	K25	NOTTOWAY RIVER	STURGEON CREEK	13,581	K25
3-01-02-01-14	3010201	K26	NOTTOWAY RIVER	TURKEY EGG CREEK	22,844	K26
3-01-02-01-15	3010201	K27	NOTTOWAY RIVER	NOTTOWAY RIVER	36,085	K27
3-01-02-01-16	3010201	K28	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	31,455	K28
3-01-02-01-17	3010201	K29	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	17,349	K29
3-01-02-02-01	3010202	K08	BLACKWATER RIVER	LOWER BLACKWATER RIVER	41,742	K08
3-01-02-02-02	3010202	K09	BLACKWATER RIVER	SEACOCK SWAMP	33,340	K09
3-01-02-02-03	3010202	K10	BLACKWATER RIVER	UPPER BLACKWATER RIVER	21,785	K10
3-01-02-02-04	3010202	K11	BLACKWATER RIVER	MILL SWAMP	20,064	K11
3-01-02-02-05	3010202	K12	BLACKWATER RIVER	UPPER BLACKWATER	74,811	K12
3-01-02-03-05	3010203	K06	CHOWAN RIVER	SOMERTON CREEK	25,326	K06
3-01-02-03-06	3010203	K07	CHOWAN RIVER	BUCKHORN CREEK	484	K07
3-01-02-04-03	3010204	K30	MEHERRIN RIVER	TARRARA CREEK	25,282	K30
3-01-02-04-04	3010204	K31	MEHERRIN RIVER	MEHERRIN RIVER	44,421	K31
3-01-02-04-05	3010204	K32	MEHERRIN RIVER	MEHERRIN RIVER	14,455	K32
3-01-02-04-06	3010204	K33	MEHERRIN RIVER	ROSES CREEK	7,122	K33
3-01-02-04-07	3010204	K34	MEHERRIN RIVER	GREAT CREEK	12,216	K34
3-01-02-04-08	3010204	K35	MEHERRIN RIVER	MEHERRIN RIVER	17,888	K35
3-01-02-04-09	3010204	K36	MEHERRIN RIVER	MEHERRIN RIVER	20,423	K36
3-01-02-04-10	3010204	K37	MEHERRIN RIVER	FLAT ROCK CREEK	24,060	K37
3-01-02-04-11	3010204	K38	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	24,682	K38
3-01-02-04-12	3010204	K39	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	24,140	K39
3-01-02-04-13	3010204	K40	MEHERRIN RIVER	NORTH MEHERRIN RIVER	27,320	K40
3-01-02-04-14	3010204	K41	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREEK	9,848	K41
3-01-02-04-15	3010204	K42	MEHERRIN RIVER	FONTAINE CREEK	17,995	K42
3-01-02-04-16	3010204	K43	MEHERRIN RIVER	UPPER FONTAINE CREEK	19,229	K43
3-01-02-05-08	3010205	K01	CURRITUCK SOUND	BACK BAY	26,173	K01
3-01-02-05-09	3010205	K02	CURRITUCK SOUND	NORTH LANDING RIVER	42,439	K02
3-01-02-05-10	3010205	K03	CURRITUCK SOUND	NORTHWEST RIVER	27,476	K03
3-01-02-05-11	3010205	K04	CURRITUCK SOUND	INDIAN CREEK	1,994	K04
3-01-02-05-12	3010205	K05	ALBEMARLE SOUND	DISMAL SWAMP	54,986	K05
				TOTAL:	1,104,244	

study resulted in six general (Level 1) and twenty detailed (Level 2) classifications. We dissolved the 20 classifications into 13 classifications; these categories were further divided into four categories: agricultural, forest/wetland, developed, and marsh/water for calculations of runoff and atmospheric inputs (Appendix A).

Information on the extent and location of urban lands from the satellite classification was used, with the knowledge that this classification was the least accurate (Appendix A). Because the study area is largely rural, this issue is probably not important for areawide or basinwide projections, although land use data for small watersheds that are relatively highly developed may not be representative of actual conditions.

Another important category in the LANDSAT land cover map is the "border" category, which refers to areas within the study area that are outside the extent of the LANDSAT imagery used in the A/P study. This category is especially important in the Neuse basin, where 9 percent of the basin is classified as "border," meaning that the actual underlying land use is unknown. This occurred as a function of the coverage of the LANDSAT images processed in the classification study. To deal with this issue, land cover was estimated for areas with no data based on the proportion of various land cover categories within that subbasin to areas with data.

2.2.3 An Export Coefficient Approach

2.2.3.1 Agricultural Land, Forest/Wetlands, and Developed Land

Nutrient export coefficients, reflecting the average nutrient loading (kg/ha*yr), were used to evaluate nutrient contributions. Export coefficients were chosen for four categories of land cover. For any type of land use, the nutrient export coefficient was multiplied by the total area of that use in the watershed to obtain a loading estimate. These products were summed to obtain an estimate of total runoff nutrient loading into surface waters in the study area.

Export coefficients were chosen based on a literature review (summarized in Table 2). (This review will be documented in a future report). No attempt was made to choose different export coefficients for a given category for different hydrologic units based on hydrologic or other distinctions. The interquartile range of export coefficients reported was used as a measure of the variability in areal loading rates. This approach was chosen because its inherent simplicity is appropriate for predictions in the large A/P Study Area and the data requirements of alternative nonpoint source modeling approaches are prohibitive.

2.2.3.2 Direct Atmospheric Loading

Atmospheric phosphorus inputs were estimated using literature values of export coefficients as well. Additionally, data generated by EPA's Regional Atmospheric Deposition Model (RADM) were used to estimate nitrogen loading (17). RADM was calibrated using monitoring data from 1985. Latitude and longitude coordinates for point estimates (Figure 2) were obtained, converted from a geographic to a stateplane projection, and a map was created using the ARC/INFO GENERATE command. This point map was contoured using the TIN module of ARC/INFO to produce contour maps for wet and dry deposition. These maps were overlain on the subbasin map, and areally-weighted averages of each deposition type were calculated. Wet nitrogen deposition estimates were available from RADM for NO_3 only. Dry nitrogen deposition estimates were available for NO_3 + HNO_3 + NO_2. Therefore, the RADM estimates do not include dry deposition of ammonium, wet or dry organic deposition, or total wet NO_x. Calculated deposition rates for the A/P Study Area are provided in Table 3.

Table 2

Export Coefficients Literature Review

(Kg/ha * y)

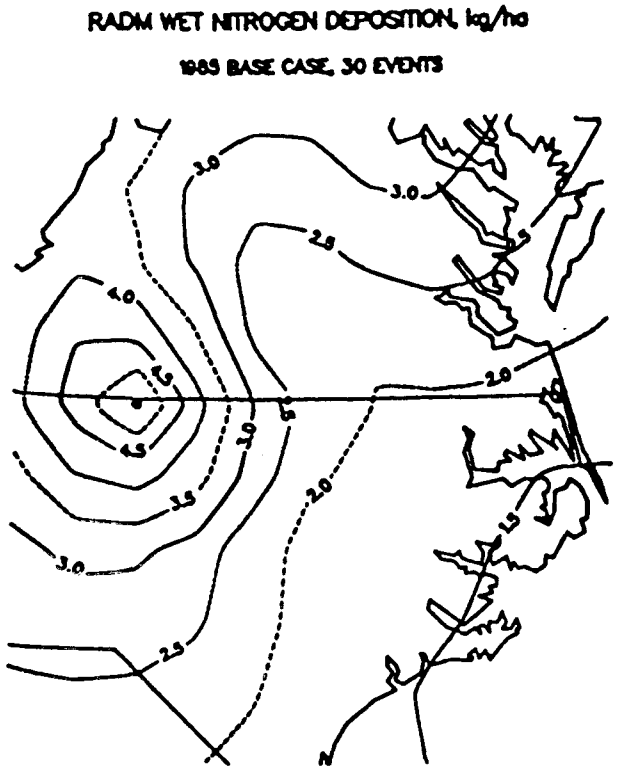
	Agriculture	Forest/Wetland	Developed	Atmospheric
Total Phosphorus				
Low (25%)	0.55	0.09	0.45	0.25
Median	0.99	0.13	1.06	0.65
High (75%)	2.03	0.21	1.5	0.69
Total Nitrogen				
Low (25%)	5	0.69	5	8.7
Median	9.8	2.33	7.5	12.4
High (75%)	14.3	3.8	9.72	24
Number of Studies	77	36	78	6

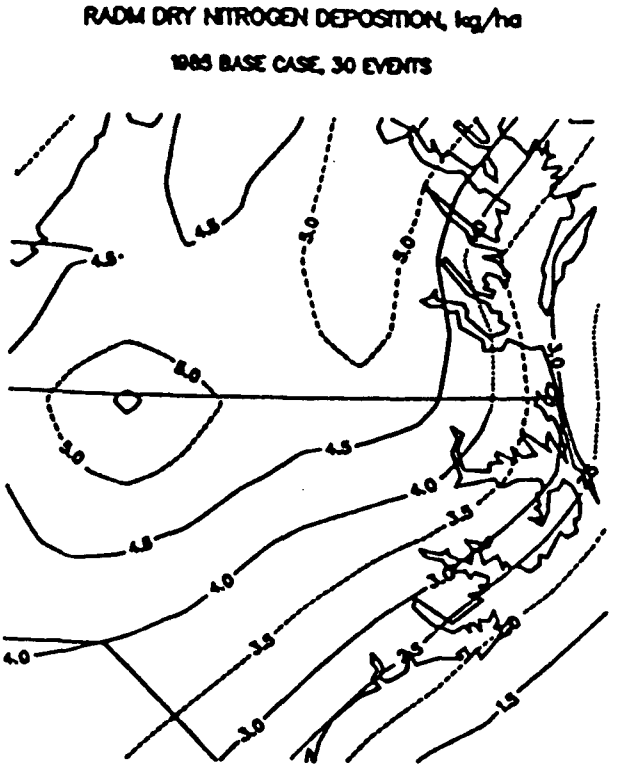
Table 3: Nitrogen Loading Rates from RADM (wet and dry deposition)

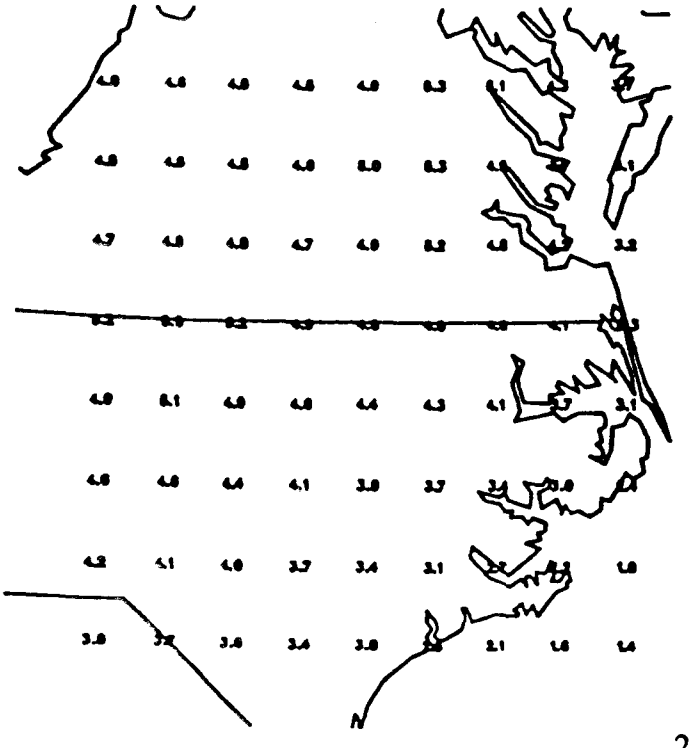
	RADM N (kg/ha
ALBEMARLE SOUN	5.26
BLACKWATER RIV	6.54
BOGUE SOUND	4.70
CHOWAN RIVER	6.64
CORE SOUND	3.73
CURRITUCK SOUN	5.42
MEHERRIN RIVER	6.50
NEUSE RIVER	6.90
NEUSE RIVER EST	4.84
NOTTOWAY RIVER	6.63
PAMLICO RIVER ES	5.53
PAMLICO SOUND	3.98
ROANOKE RIVER	6.74
TAR-PAMLICO RIV	7.11
WHITE OAK RIVER	5.20

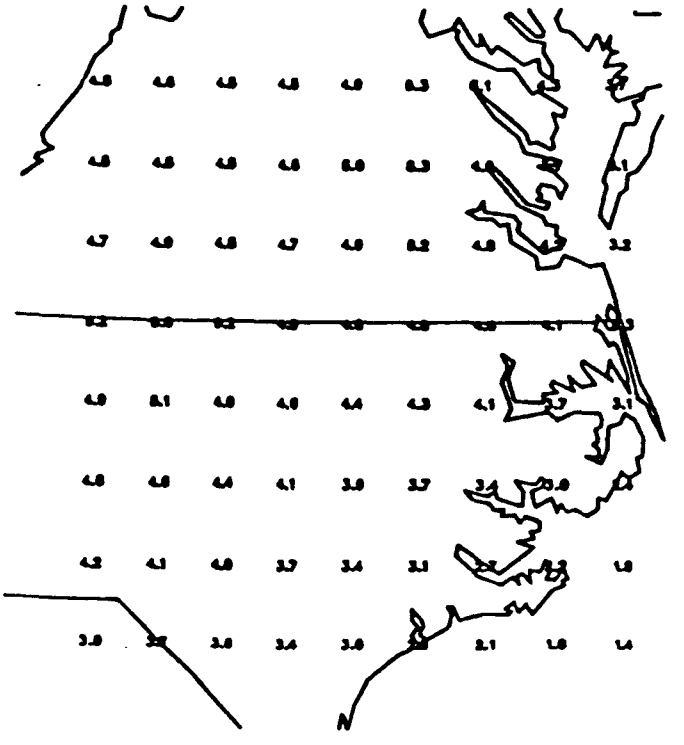
Figure 2:

RADM Atmospheric Nitrogen Deposition Estimates









2.2.3.3 Upstream Reservoir Discharge

For the Falls Reservoir, previous estimates of nutrient loading at the gage below the lake were used (3). For Lake Gaston, USGS records of the long-term average nitrogen and phosphorus concentration and flow at Roanoke Rapids were used to estimate flux (18).

Previous estimates (3) were used for Falls Reservoir rather than estimates from point and nonpoint sources because of the effect of the reservoir in trapping nutrients (LANDSAT data are available for the Falls watershed). Therefore, estimates presented for the Neuse River basin do not include point sources, runoff, or atmospheric inputs for watershed units 0302020101 through 0302020104.

SAS, EXCEL, and ARC/INFO were used to manage, analyze, and present data. Results are available as EXCEL spreadsheets.

3. RESULTS

3.1 POINT SOURCE LOADING

Point source estimates are summarized in Figure 3 and detailed in Appendix B. Estimates of loading were not made for dischargers with neither flow nor concentration data. Therefore, the total basin point source loading estimates are lower than actual values. This underestimate is not substantial because the total wasteflow reported with no corresponding concentration (aside from several industrial operations that probably have low nutrient concentrations) is less than 6 mgd in North Carolina and about 11 mgd in Virginia, or about 4 percent of the total reported flow.

Data are very limited for Virginia dischargers. Although there are relatively few "large" permitted point source dischargers in the Chowan basin in Virginia, the lack of effluent data makes it difficult to estimate nutrient contributions. As dischargers cycle through NPDES permits, better data should become available (8).

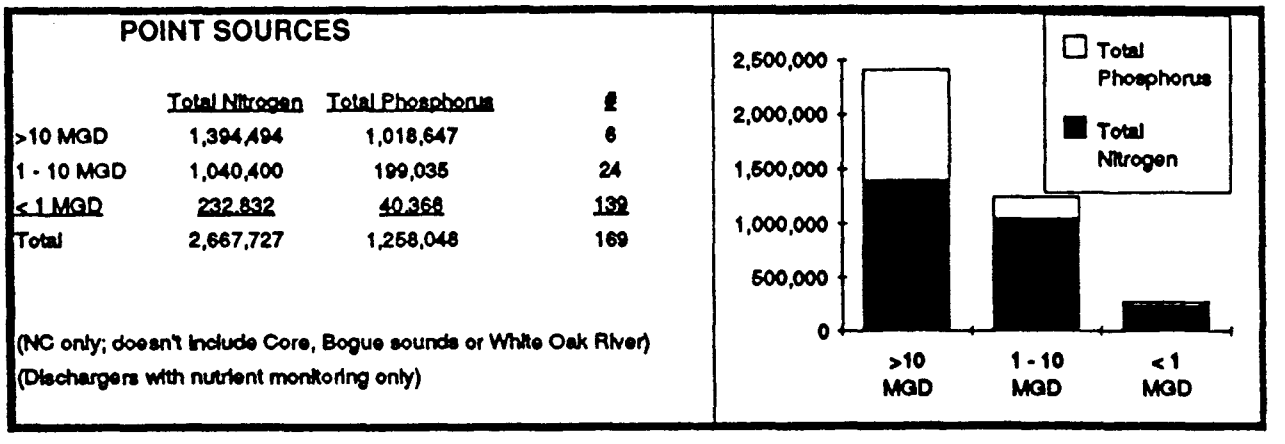


Figure 3. Summary of NC Point Source Loading (kg/yr)

Of the 169 point sources (pipes) that monitored phosphorus in North Carolina, 77 were discharging less than an average of 2 mg/L; 33, less than 1 mg/L; and 10, less than

0.5 mg/L. Texas Gulf Chemicals discharged more than 10 times as much phosphorus as the next largest source. The six plants discharging more than 10 mgd were responsible for 52 and 81 percent of the nitrogen and phosphorus loadings, respectively. The 26 plants discharging 1 to 10 mgd were responsible for almost all of the additional loading.

Although no areawide point source data collection efforts were conducted prior to this study, it is clear in comparing these estimates to previous studies by NCDEM (2, 3, 4, 11) that point source phosphorus loading declined substantially in the 1980s, while point source nitrogen loading changed very little.

Nitrogen concentrations and loadings from point sources are more variable, in absolute terms, than phosphorus concentrations and loadings. Although the reasons for this variability are unknown, inherent relevant effluent variability as well as the comparative emphasis in management programs are probably contributing factors. As with phosphorus, a few sources contribute a majority of the point source nitrogen inputs.

3.2 NONPOINT SOURCE LOADING

Estimated nonpoint nitrogen and phosphorus contributions are summarized in Figures 4 through 6, with detailed results in Appendix A. Agricultural inputs dominate runoff contributions; developed lands contribute a very small proportion of the total runoff inputs (Figure 4). Using the interquartile range of export coefficients observed in the literature review as a measure of uncertainty results in a substantial range of predictions (Figure 5). The Currituck, Neuse, and Pamlico basins have the highest areal yields (kg/ha*yr) (Figure 6).

Most of the runoff input, areawide, is attributable to agricultural land. Exceptions to this generalization certainly occur locally as a result of local land use patterns and deviations

Figure 4

AREAWIDE LOADING FROM RUNOFF

	Total Nitrogen	Total Phosphorus
Agriculture	17,350,157	1,752,720
Developed	748,085	105,729
Forest/Wetland	5,828,927	325,219
Total	23,927,169	2,183,668

(most likely scenario)

(kg/yr)

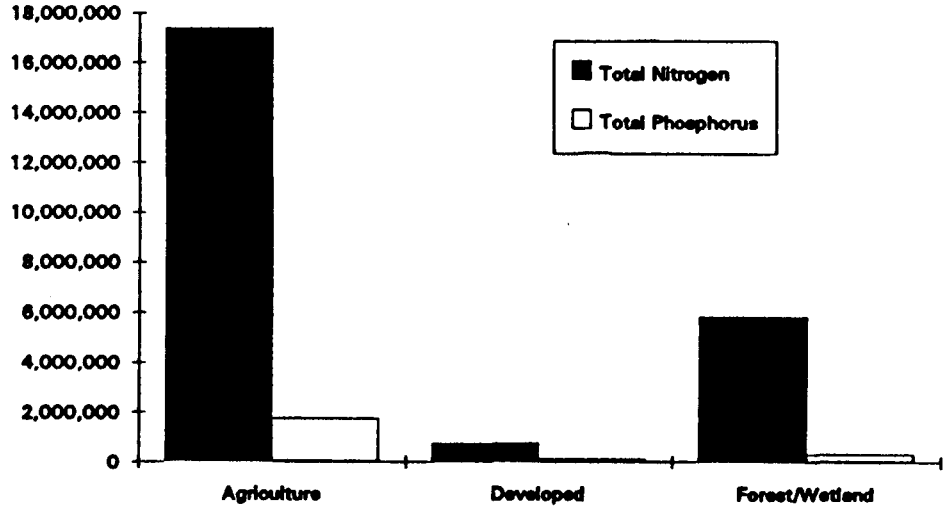
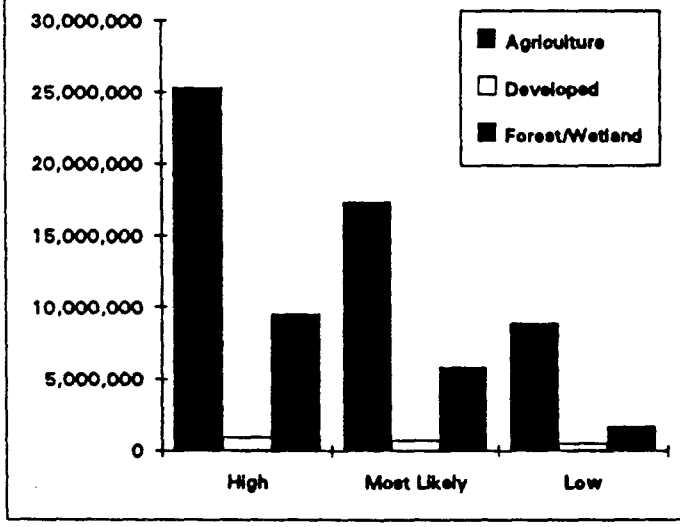


Figure 5

Range of Estimates in Runoff (kg/yr)

(reflecting interquartile range in export coefficients)

	Total Nitrogen			Total Phosphorus		
	High	Most Likely	Low	High	Most Likely	Low
Agriculture	25,317,066	17,350,157	8,852,121	2,863,221	1,752,720	775,749
Developed	969,519	748,085	498,724	136,997	105,729	41,099
Forest/Wetland	9,506,404	5,828,927	1,726,163	390,575	325,219	167,389
Total Runoff	35,792,989	23,927,169	11,077,007	3,390,793	2,183,668	984,238



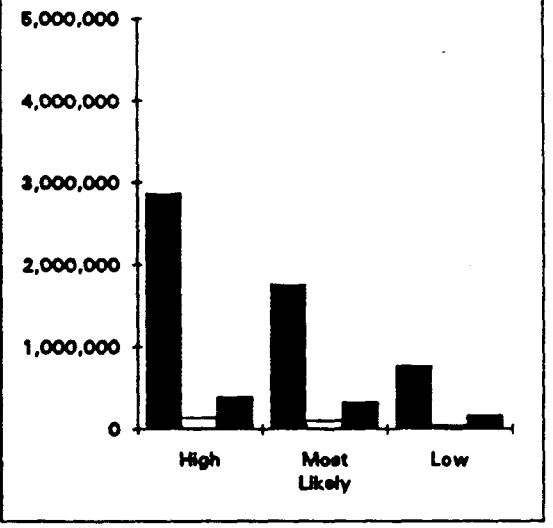
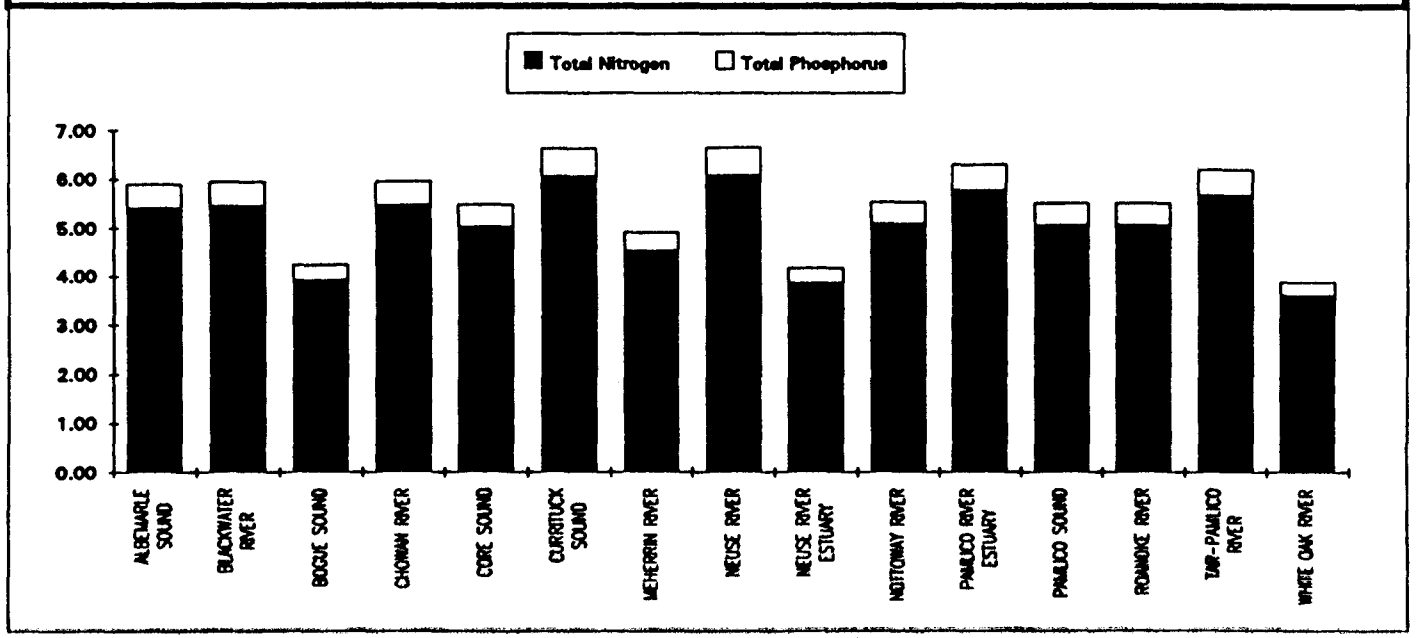


Figure 6

Areal Loading From Runoff (kg/ha yr)

	Total Nitrogen	Total Phosphorus
ALBEMARLE SOUND	5.41	0.49
BLACKWATER RIVER	5.46	0.49
BOGUE SOUND	3.92	0.33
CHOWAN RIVER	5.48	0.49
CORE SOUND	5.04	0.45
CURRITUCK SOUND	6.07	0.57
MEHERRIN RIVER	4.54	0.39
NEUSE RIVER	6.09	0.58
NEUSE RIVER ESTUARY	3.87	0.32
NOTTOWAY RIVER	5.10	0.45
PAMLICO RIVER ESTUARY	5.78	0.53
PAMLICO SOUND	5.08	0.45
ROANOKE RIVER	5.07	0.45
TAR-PAMLICO RIVER	5.68	0.53
WHITE OAK RIVER	3.61	0.28
median:	5.10	0.45



from the export, or yield, represented by the coefficients selected (e.g., due to both natural features and management factors). The Neuse and Tar basins are the largest contributors of runoff-based inputs to the system.

No spatial variation in export coefficients were assumed for the different land use categories; the overall areal nutrient loading rate for any particular hydrologic unit is therefore strictly a function of land use. A ranking of hydrologic units based on the percent land use in agricultural and developed lands indicates hydrologic units which may be expected to contribute proportionally higher nutrient loadings (per unit area) (Table 4a and 4b). These tables use data presented in Appendix A, and runoff nutrient loading calculations all indicate that land uses are more important in considering nutrient inputs to the entire system and large river basins than urban land uses.

Table 4a: % Agricultural Land Use by Hydrologic Unit (≥50%)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Area (%)
3-02-02-02-02	NEUSE RIVER	UNNAMED	69
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	65
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	63
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	63
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	63
3-02-02-01-12	NEUSE RIVER	UNNAMED	62
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	60
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	60
3-01-02-03-03	CHOWAN RIVER	UNNAMED	59
3-02-02-02-01	NEUSE RIVER	UNNAMED	59
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	58
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	57
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	57
3-02-02-01-09	NEUSE RIVER	UNNAMED	56
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	55
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	54
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	54
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	53
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	53
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	52
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	52
3-02-02-01-13	NEUSE RIVER	UNNAMED	52
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	52
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	52
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	51
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	50

Table 4b: % Developed Land Use by Hydrologic Unit (≥10%)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Area (%)
3-01-01-06-01	ROANOKE RIVER	UNNAMED	34
3-02-02-01-05	NEUSE RIVER	UNNAMED	23
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	18
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	16
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	12
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	10

4. DISCUSSION

4.1 MODEL UNCERTAINTY

The "screening" nature of this study and the goal to develop areawide budgets required use of data coverages available for the entire area (in, or readily transferrable to, electronic format). Relying on State point source, LANDSAT, and RADM data and literature estimates of export coefficients allowed for assessments of the relative magnitude of sources and source areas on large temporal (annual) and spatial (regional) scales.

As with any such study, the effects of errors in estimates or results must be considered. Unfortunately, an analysis to determine quantitative estimates of the error was beyond the scope of the study. However, the following comments are offered for the reader who is interested in a qualitative assessment of error.

There is an acknowledged source of bias in that point source inputs are underestimated. This bias is a function of our decision not to estimate loading for unmonitored point sources. This is not thought to be a large source of bias for North Carolina because of the good monitoring record for permitted dischargers, although the bias could be larger in Virginia. We also did not obtain point source data for the White Oak River and Bogue Sound drainage; areawide projections comparing nonpoint and point sources therefore underestimate the relative point source contributors.

Another, perhaps more important, factor that may result in the overestimation of runoff inputs in both relative and absolute terms is the inability of export coefficients to account for loss of nutrients (to biomass areas, sediments, and the atmosphere) in the process of being delivered to the estuaries. Because export coefficients reported in the literature typically represent field-scale or small-watershed-scale delivery, it is conceivable that

additional nutrient loss in the large stream and river corridors occurs that is not represented by the coefficients.

One ramification of these biases is the possibility not only of not attributing a sufficient portion of the budgets to these source categories, but of overestimating the relative contributions of other categories. The reader is therefore cautioned that the relative inputs from runoff may be overestimated.

There are other important uncertainty and variability issues related to model selection. Dillaha (19) suggests that, regardless of whether a lumped (as in this study) or distributed model is used, nonpoint source models are accurate only within a factor of 2 or 3. A wide range of export coefficients have been reported in the literature, often without detailed information about important covariates such as soil type or runoff, making it difficult to choose an appropriate export coefficient for any given land cover or land parcel.

The usefulness of the models for management purposes is conditioned by this uncertainty and variability. Lack of knowledge of model uncertainty makes it difficult for policymakers to anticipate the effect of a policy intervention, such as revising a county land use plan or reallocating cost-share funds.

The approach chosen herein to deal with uncertainty for the largest source category (runoff), professional judgment regarding "high," "most likely," and "low" coefficients, is a first cut at addressing this issue. Although the method is not statistically rigorous, it does attempt to present useful information concerning plausible model error.

The reader is cautioned to consider at least two other important issues that are not reflected in these budgets: temporal variability and bioavailability. Numerous studies have demonstrated that there is considerable year-to-year, seasonal, and storm-event-related variability in nutrient loading, which has important implications for the ecological health of

the estuarine system. The ultimate effect of annualizing inputs is to develop a long-term context in which to consider them.

There is also evidence that nutrients from the different source categories considered (point sources, atmospheric deposition, and runoff) may be used by primary producers to varying degrees depending on the chemical form in which the nutrient is delivered. We are unfortunately not able to provide an estimate of the relative "weight" of a unit mass nutrient loading to the primary producers from each source category.

4.2 MANAGEMENT IMPLICATIONS

It is apparent from this analysis that long-term management of nutrient inputs to the estuaries and sounds of the A/P system faces new challenges. As a function of the landscape, most of the loading is generated from agricultural lands, with atmospheric sources of nitrogen and point source phosphorus inputs being the next largest source categories. Principal challenges in managing agricultural loading include: targeting key source areas and sources; tracking management efforts; and quantifying the effectiveness of management efforts, both on field, watershed, and basin scales.

This study provides some insight into atmospheric nitrogen sources, although many questions remain. What effect will efforts to implement Clean Air Act provisions have? How important are nitrogen fractions not included in RADM output in stimulating blooms, and are spatial deposition patterns similar?

As previously noted, there are certainly management issues associated with sources for which widely available data do not exist (e.g., confined animal operations, local atmospheric sources, septic tanks) that may be quite important on local as well as regional scales.

An important product of this study is the development of a watershed-oriented database, which includes estimates of land cover and nutrient loadings for 68 hydrologic units in North Carolina and 44 hydrologic units in Virginia. Enhancement of the database will require continuing interagency coordination to incorporate attributes such as additional watershed boundaries, more detailed land use/land cover data, and best management practices data. This effort will be critical to monitoring the effectiveness of nutrient control programs.

The identification of land use and nutrient budgets within these hydrologic units may provide useful input into regional targeting efforts for nonpoint source management programs. Although these are certainly not the only factors to consider in setting geographic priorities for management efforts, they are nevertheless a key indicator of nonpoint source pollution.

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APPENDIX A

Hydrologic Unit Estimates of Land Use/Land Cover and Loading

I. Summary of Previous LANDSAT Classification Study

The following discussion is based on an analysis presented by Khorram et al. (1992).

At the beginning of the A/P study process, the lack of a current land use/land cover inventory for the entire study area was identified as a critical gap in the database available to researchers. Because the study area covers 23,500 square miles, a decision was made at an A/P workshop in late 1987 that LANDSAT Thematic Mapper (TM) digital data would be the most cost-effective and practical source of current land cover information. Five Landsat TM scenes were used to complete the project (Table A-1 and Figure A-1).

The final classification scheme was based on categories from the USGS Anderson land cover scheme and from spectral classes that were otherwise well defined in the image data. There are six primary land use/land cover categories, referred to as Level I classes: water, agriculture, urban/developed, shrub/scrub, forest, wetland, and barren land. An effort was made to distinguish more specific categories within most of these Level I land use classes. A total of 20 Level II land use/land cover classes are summarized in Table A-2.

Estimates of the accuracy of the land use classification have been developed. A total of approximately 2,000 one-acre plots throughout the study area were visited and actual land use was recorded and compared with the category attributed by the classification algorithm. Table A-3 summarizes the accuracy of Level I and Level II categories.

Two measures of accuracy are reported. Producer's accuracy indicates the percent probability that an area that is actually in class N (e.g., agriculture) has been classified as class N on the image. User's accuracy indicates the percent probability that an area that has been classified as class N on the image is actually class N. There can be a trade-off between these two types of accuracy. For example, a high level of producer's accuracy for agricultural land could be obtained by classifying a broad range of land as agriculture.

While the sheer number of cells classified as agriculture would, to some extent, ensure that land areas actually in agricultural uses would be so labeled, this would come at the expense of user's accuracy. The user is interested in whether a land cover category attributed to an area shown on the map is accurate and indicates what is actually there.

All categories other than urban/developed were classified in a manner that achieved a relatively high level of user's accuracy; that is, land areas shown on the land classification map have a high likelihood of indicating what actually exists on the ground. The urban/developed category does indicate a relatively high level of producer's accuracy, indicating that much of the land in the study area that is actually urban or developed is so classified. The problem suggested by the high producer's accuracy and the low user's accuracy is that additional land, not actually urban, has been classified as urban, so that the total amount of land classified as urban is overestimated.

Level II categories other than urban/developed also generally indicate a relatively high user's accuracy. There are two non-urban Level II classes with very low user's accuracy -- disturbed land and white cedar. An important category in the LANDSAT land cover map is the "border" category, which refers to areas within the study area that are outside the extent of the LANDSAT imagery used in the A/P study. As indicated in Figure A-1, this category is especially important in the Neuse basin, where 9 percent of the basin is classified as "border," meaning that the actual underlying land use is unknown. This occurred because the LANDSAT scene for this portion of the basin was not included.

II. Use of LANDSAT Classification Study for Nutrient Budget Development

For the purpose of estimating nutrient inputs from runoff, the LANDSAT classifications were further aggregated to reflect the ability to identify unique export

coefficients from the literature review (Table A-2). Riparian swamps and bottomland hardwood swamps were considered to be source areas for nutrients with export coefficients equal to coefficients for upland forests. (This assumption will be studied more closely in the next phase of the ongoing study.) Pocosins were not assumed to be source areas for nutrients. Sand and marshes were assumed to be source areas for atmospheric inputs. Land use/land cover for each of the hydrologic units is summarized in Table A-4. Loading inputs from runoff and direct atmospheric inputs are summarized in tables A-5 and A-6.

III. Reference

Khorram, S., H. Cheshire, K. Siderelis, and Z. Nagy. March, 1992. Mapping and GIS Development of Land Use and Land Cover Categories for the Albemarle-Pamlico Drainage Basin.

TABLE A-1. Scene Information

Date	Approximate Area of Coverage
12/05/88	SE section of A/P basin; Neuse River estuary
11/03/88	NE section of A/P basin; Pamlico River to southern Virginia Beach
11/24/87	Middle & Upper N.C. Coastal Plain; Suffolk Scarp west to Fall Zone
01/08/87	Virginia; Suffolk west of Lunenburg Co.
12/03/88	Western portion of A/P basin; Raleigh

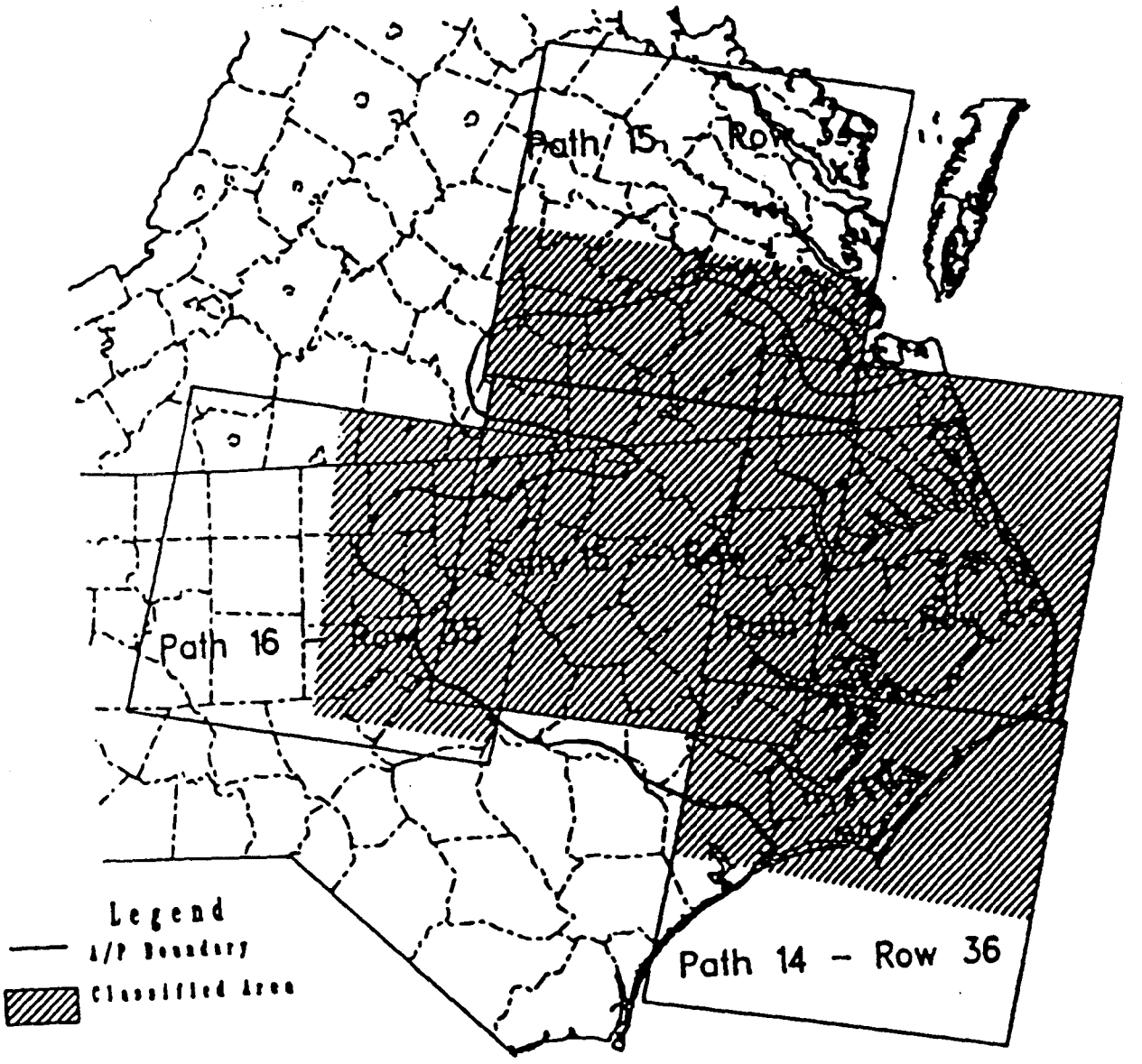

Figure A-1. **Landsat TM coverage of the A/P drainage basin. Shading indicates areas actually classified by land use cover.**

Source: Khorram et al., 1992.

TABLE A-2. Land Use/Land Cover Classes for the Albemarle/Pamlico Estuary Study (Khorram et al. 1991)

Original Classification	Name	Description	This Study Classification and NPS Category
1	BORDER	Areas corresponding to a spectral value of zero; includes pixels outside of the classification area and areas obscured by cloud cover.	Apportioned among other land use categories
2	WATER	Lakes, reservoirs, ponds, estuaries and sounds. Also includes streams or rivers wide enough to be resolved by the Thematic Mapper.	Water Direct Atmospheric
3 - 5	LOW, MEDIUM, & HIGH DENSITY DEVELOPED	Residential commercial and industrial complexes. The three categories correspond roughly to areas where structures and/or pavement cover 25% to 50%, 50% to 85%, and >85%, respectively, of the ground area classified.	Developed Runoff
6	AGRICULTURE, BARE SOIL AND GRASS	Cropland and pasture, bare and grass covered soils. Includes all land cleared for agricultural or silvicultural activities. Wide transportation corridors (such as interstate highways with grassy medians), beach grasses, golf courses, large athletic fields and other grassy features are also in this class.	Agriculture Runoff
7	LOW DENSITY VEGETATION	Areas which have some vegetative cover but are not forested. Fallow fields, cleared areas in early successional stages, and some landscaped residential areas are included in this class. Wide utility corridors (power and communication), some narrow road systems and weed covered spoil piles along drainage ditches also occur in this category.	Forest/Wetland Runoff
8	PINE FOREST	Medium and high density conifer stands, predominantly loblolly pine; also includes high pocosins which have a high density (>50% crown closure) of pond pine.	Forest/Wetland Runoff
9	BOTTOMLAND HARDWOODS	Hardwood stands found predominantly in the floodplains of streams and rivers. These stands are dominated by deciduous species such as lowland species of maple, black gum, oak, sweetgum, sycamore, birch, elm and ash.	Forest/Wetland Runoff

TABLE A-2. (continued)

Original Classification	Name	Description	This Study Classification and NPS Category
10	HARDWOOD	Hardwood stands found predominantly in upland areas, on gently sloping interstream divides or in drier low lying areas. Stands dominated by oak, hickory, elm and maple.	Forest/Wetland Runoff
11	PINE/HARDWOOD	Stands of mixed conifer and deciduous hardwood. Neither pine nor hardwood comprise greater than 75% of the crown density.	Forest/Wetland Runoff
12	DISTURBED LAND	Bare fields which have undergone recent disturbance; predominantly agricultural fields and clear cuts but also includes some developed areas such as sites being prepared for construction or around quarries.	Agriculture Runoff
13	SHADOW AND MIXED PIXELS	In the Piedmont, includes shadows (usually in high density developed areas) and pixels which are a mixture of water and trees (usually bordering lakes and ponds). In the Coastal Plain, many wet areas with organic soils (RIVERINE SWAMP and LOW MARSH) were confused with shadows.	Forest/Wetland Runoff
14	RIVERINE SWAMP	Forests occurring along the major Coastal Plains rivers and their tributaries and on sites associated with nearly permanent fresh or brackish water. These riverine swamp forests usually occur in the floodplains of rivers or on wet flats. Dominated by gum-cypress or gum-maple swamps, but also including maple, birch, sycamore, sweetgum and oaks. This class tends to be mixed with SHADOW (Class 13).	Forest/Wetland Runoff
15	EVERGREEN HARDWOOD/CONIFER	Dominated by evergreen hardwood shrubs and small trees (magnolias and bay forest); usually found in association with RIVERINE SWAMP or in high pocosins which have a low density of pond or loblolly pines.	High/low pocosin None

TABLE A-2. (continued)

Original Classification	Name	Description	This Study Classification and NPS Category
16	ATLANTIC WHITE CEDAR	Generally even-aged stands of Atlantic White Cedar which occur on peaty, acidic soils. In areas where drainage channels are bordered by pine forest, the mixed pixel response (black-tannic waters/pines) appear to emulate the response of Atlantic White Cedar.	Forest/Wetland Runoff
17	LOW POCOSIN	Predominantly areas with organic soils supporting evergreen and deciduous shrubs, vines, briars and cane. These areas tend to be more poorly drained than areas associated with the EVERGREEN HARDWOOD/CONIFER class (Class 15) and they support fewer tree species.	High/low pocosin None
18	LOW MARSH	Regularly flooded marshes dominated by Spartina (sp. alterniflora), Scirpus and Juncus (cordgrass, bulrushes, and black needlerush). Soils are generally rich in organic matter and remain wet most of the year. This class tends to be mixed with SHADOW (Class 13).	Marsh Direct Atmospheric
19	HIGH MARSH	Generally irregularly flooded marshes dominated by Spartina (sp. cynosuroides), Typha or Phragmites (giant cordgrass, cattail and reeds). In general, these areas are slightly less rich in organic matter but in the fall and winter a thick mat of dead marsh grass may form.	Marsh Water Direct Atmospheric
20	SAND	Bare, dry sandy soils. Confined to the Coastal Plain, this class includes sand dunes or bare sandy ridges, and also occurs in agricultural fields which have patches of sandy, well-drained soils.	Sand Direct Atmospheric

TABLE A-3

Classification Accuracy Estimates

(Standard errors were calculated for Level I categories using a 95% confidence level)

		Tidewater		Mid & Upper Coastal Plain		Piedmont		Level II Total		Level I Total	
Level I Class	Level II Class	A	B	A	B	A	B	A	B	A	B
Water		99	97	95	95	100	100	99	97	99	97
Urban or Built Up Land	LOW DEV	67	29	42	33	68	42	59	38		
	MED DEV	63	42	50	18	70	49	67	43	76	
	HIGH DEV	100	50	0	0	100	47	79	37	(+/-7.35)	(+/-7.90)
Agriculture	AGRICULTURE	89	98	80	94	76	88	82	94	86	93
	DISTURBED	100	70	67	28	60	75	74	41	(+/-3.01)	(+/-2.30)
Shrub/Scrub		78	86	79	88	100	96	84	90	84	90
Forest Land	PINE	88	87	80	94	88	96	84	92		
	HARDWOOD	71	100	89	82	87	93	88	87	89	93
	MIXED	63	75	73	67	69	94	71	75	(+/-2.51)	(+/-2.1)
Wetland	BOTTOM HDWD	89	94	71	73	100	93	83	83		
	RIVERINE	67	83	61	81	--	--	65	82		
	EVERGREEN	84	82	84	63	--	--	84	70	89	88
	WHITE CEDAR	100	40	--	--	--	--	100	40	(+/-3.15)	(+/-3.25)
	LOW POCOSIN	86	80	--	--	--	--	86	80		
	LOW MARSH	87	81	--	--	--	--	87	84		
	HIGH MARSH	100	91	--	--	--	--	100	91		
Barren Land	SAND	100	73	--	--	--	--	100	73	100 (-)	73 (+/-29.5)

A Percent probability that an area which is actually in Class N has been classified as Class N on the image; "Producer's accuracy"

B Percent probability that an area which has been classified as Class N on the image actually is Class N; "User's accuracy"

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-01-06-01	ROANOKE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	1,098
3-01-01-06-01	ROANOKE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	755
3-01-01-06-01	ROANOKE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	257
3-01-01-06-01	ROANOKE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	153
3-01-01-06-01	ROANOKE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	96
3-01-01-06-01	ROANOKE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	67
3-01-01-06-01	ROANOKE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	23
3-01-01-06-01	ROANOKE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	18
3-01-01-06-01	ROANOKE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1
3-01-01-07-01	ROANOKE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	45,469
3-01-01-07-01	ROANOKE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	34,130
3-01-01-07-01	ROANOKE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	16,307
3-01-01-07-01	ROANOKE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	9,291
3-01-01-07-01	ROANOKE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	3,050
3-01-01-07-01	ROANOKE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	1,949
3-01-01-07-01	ROANOKE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	1,516
3-01-01-07-01	ROANOKE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	494
3-01-01-07-01	ROANOKE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	464
3-01-01-07-02	ROANOKE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	40,588
3-01-01-07-02	ROANOKE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	26,265
3-01-01-07-02	ROANOKE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	24,538
3-01-01-07-02	ROANOKE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	22,107
3-01-01-07-02	ROANOKE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	12,281
3-01-01-07-02	ROANOKE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	11,273
3-01-01-07-02	ROANOKE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	2,512
3-01-01-07-02	ROANOKE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	717
3-01-01-07-02	ROANOKE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	207
3-01-01-07-02	ROANOKE RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	87
3-01-01-07-02	ROANOKE RIVER	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	48
3-01-01-07-02	ROANOKE RIVER	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	3
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	21,852
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	6,12	Agriculture	Agriculture	Runoff	20,682
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	8	Pine Forest	Forest/Wetland	Runoff	14,346
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	9,298
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	15,17	Pocosin	Pocosin	None	7,198
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	5,743
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	2	Water	Water	Direct Atmospheric	266
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	3,4,5	Developed	Developed	Runoff	130
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	13	Shadow	Forest/Wetland	Runoff	75
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	6	Agriculture	Agriculture	Runoff	5,051
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	15	Pocosin	Pocosin	None	2,511
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	11	Upland Forest	Forest/Wetland	Runoff	2,023
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	9	Bottomland Swamp	Forest/Wetland	Runoff	1,910

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	14	Bottomland Swamp	Forest/Wetland	Runoff	1,131
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	8	Pine Forest	Forest/Wetland	Runoff	1,031
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	7	Low Density Vegetation	Forest/Wetland	Runoff	757
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	12	Agriculture	Agriculture	Runoff	439
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	2	Water	Water	Direct Atmospheric	257
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	10	Upland Forest	Forest/Wetland	Runoff	107
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	13	Shadow	Forest/Wetland	Runoff	32
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	4	Developed	Developed	Runoff	21
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	3	Developed	Developed	Runoff	13
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	5	Developed	Developed	Runoff	0
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	6	Agriculture	Agriculture	Runoff	8,086
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	15	Pocosin	Pocosin	None	2,533
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	11	Upland Forest	Forest/Wetland	Runoff	2,526
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	1,996
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	8	Pine Forest	Forest/Wetland	Runoff	1,844
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	1,405
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	10	Upland Forest	Forest/Wetland	Runoff	1,224
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	908
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	12	Agriculture	Agriculture	Runoff	535
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	2	Water	Water	Direct Atmospheric	158
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	13	Shadow	Forest/Wetland	Runoff	90
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	4	Developed	Developed	Runoff	32
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	3	Developed	Developed	Runoff	13
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	18	Marsh	Marsh	Direct Atmospheric	13
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	5	Developed	Developed	Runoff	5
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	8	Pine Forest	Forest/Wetland	Runoff	12,933
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	6	Agriculture	Agriculture	Runoff	7,178
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	11	Upland Forest	Forest/Wetland	Runoff	3,217
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	1,576
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	15	Pocosin	Pocosin	None	939
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	849
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	10	Upland Forest	Forest/Wetland	Runoff	555
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	13	Shadow	Forest/Wetland	Runoff	382
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	225
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	12	Agriculture	Agriculture	Runoff	188
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	3	Developed	Developed	Runoff	57
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	4	Developed	Developed	Runoff	54
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	2	Water	Water	Direct Atmospheric	42
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	5	Developed	Developed	Runoff	2
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	18	Marsh	Marsh	Direct Atmospheric	2
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	20	Sand	Sand	Direct Atmospheric	0
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	6	Agriculture	Agriculture	Runoff	12,177
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	8	Pine Forest	Forest/Wetland	Runoff	7,494
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	11	Upland Forest	Forest/Wetland	Runoff	5,834
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	10	Upland Forest	Forest/Wetland	Runoff	4,891
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	15	Pocosin	Pocosin	None	1,922
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	1,679
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	1,509
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	665

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	12	Agriculture	Agriculture	Runoff	510
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	13	Shadow	Forest/Wetland	Runoff	354
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	2	Water	Water	Direct Atmospheric	138
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	3	Developed	Developed	Runoff	96
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	4	Developed	Developed	Runoff	44
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	5	Developed	Developed	Runoff	19
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	18	Marsh	Marsh	Direct Atmospheric	11
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	6	Agriculture	Agriculture	Runoff	7,043
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	10	Upland Forest	Forest/Wetland	Runoff	5,906
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	8	Pine Forest	Forest/Wetland	Runoff	5,294
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	11	Upland Forest	Forest/Wetland	Runoff	3,139
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	1,321
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	911
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	15	Pocosin	Pocosin	None	901
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	617
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	12	Agriculture	Agriculture	Runoff	173
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	13	Shadow	Forest/Wetland	Runoff	169
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	2	Water	Water	Direct Atmospheric	88
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	3	Developed	Developed	Runoff	30
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	4	Developed	Developed	Runoff	18
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	18	Marsh	Marsh	Direct Atmospheric	5
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	5	Developed	Developed	Runoff	2
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	8	Pine Forest	Forest/Wetland	Runoff	7,658
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	6	Agriculture	Agriculture	Runoff	6,949
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	2,472
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	11	Upland Forest	Forest/Wetland	Runoff	2,430
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	15	Pocosin	Pocosin	None	730
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	10	Upland Forest	Forest/Wetland	Runoff	612
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	432
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	13	Shadow	Forest/Wetland	Runoff	300
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	250
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	12	Agriculture	Agriculture	Runoff	140
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	2	Water	Water	Direct Atmospheric	59
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	3	Developed	Developed	Runoff	52
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	4	Developed	Developed	Runoff	23
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	18	Marsh	Marsh	Direct Atmospheric	23
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	5	Developed	Developed	Runoff	10
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	8	Pine Forest	Forest/Wetland	Runoff	6,703
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	6	Agriculture	Agriculture	Runoff	5,099
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	11	Upland Forest	Forest/Wetland	Runoff	2,336
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	837
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	15	Pocosin	Pocosin	None	682
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	513
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	10	Upland Forest	Forest/Wetland	Runoff	492
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	13	Shadow	Forest/Wetland	Runoff	269
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	12	Agriculture	Agriculture	Runoff	111

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	2	Water	Water	Direct Atmospheric	78
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	77
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	3	Developed	Developed	Runoff	31
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	4	Developed	Developed	Runoff	16
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	18	Marsh	Marsh	Direct Atmospheric	1
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	5	Developed	Developed	Runoff	1
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	6	Agriculture	Agriculture	Runoff	20,348
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	8	Pine Forest	Forest/Wetland	Runoff	16,241
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	11	Upland Forest	Forest/Wetland	Runoff	6,915
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	10	Upland Forest	Forest/Wetland	Runoff	5,208
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	4,358
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	15	Pocosin	Pocosin	None	2,670
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	2,085
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	1,165
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	13	Shadow	Forest/Wetland	Runoff	1,122
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	2	Water	Water	Direct Atmospheric	362
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	3	Developed	Developed	Runoff	262
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	12	Agriculture	Agriculture	Runoff	254
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	4	Developed	Developed	Runoff	160
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	18	Marsh	Marsh	Direct Atmospheric	13
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	5	Developed	Developed	Runoff	4
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	20	Sand	Sand	Direct Atmospheric	1
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	8	Pine Forest	Forest/Wetland	Runoff	11,392
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	6	Agriculture	Agriculture	Runoff	10,565
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	11	Upland Forest	Forest/Wetland	Runoff	3,039
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	10	Upland Forest	Forest/Wetland	Runoff	1,997
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	1,837
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,247
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	15	Pocosin	Pocosin	None	1,179
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	666
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	13	Shadow	Forest/Wetland	Runoff	343
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	12	Agriculture	Agriculture	Runoff	150
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	3	Developed	Developed	Runoff	127
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	2	Water	Water	Direct Atmospheric	108
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	4	Developed	Developed	Runoff	102
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	18	Marsh	Marsh	Direct Atmospheric	39
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	5	Developed	Developed	Runoff	5
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	6	Agriculture	Agriculture	Runoff	7,857
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	8	Pine Forest	Forest/Wetland	Runoff	5,080

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	10	Upland Forest	Forest/Wetland	Runoff	2,558
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	11	Upland Forest	Forest/Wetland	Runoff	1,643
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	739
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	730
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	15	Pocosin	Pocosin	None	548
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	380
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	13	Shadow	Forest/Wetland	Runoff	240
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	12	Agriculture	Agriculture	Runoff	123
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	2	Water	Water	Direct Atmospheric	94
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	3	Developed	Developed	Runoff	58
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	4	Developed	Developed	Runoff	31
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	5	Developed	Developed	Runoff	3
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	18	Marsh	Marsh	Direct Atmospheric	2
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	8	Pine Forest	Forest/Wetland	Runoff	7,536
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	6	Agriculture	Agriculture	Runoff	7,373
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	10	Upland Forest	Forest/Wetland	Runoff	5,068
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	11	Upland Forest	Forest/Wetland	Runoff	2,030
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,026
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	15	Pocosin	Pocosin	None	575
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	551
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	13	Shadow	Forest/Wetland	Runoff	132
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	3	Developed	Developed	Runoff	70
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	2	Water	Water	Direct Atmospheric	60
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	12	Agriculture	Agriculture	Runoff	39
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	4	Developed	Developed	Runoff	31
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	5	Developed	Developed	Runoff	3
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	20	Sand	Sand	Direct Atmospheric	0
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	8	Pine Forest	Forest/Wetland	Runoff	6,797
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	6	Agriculture	Agriculture	Runoff	5,233
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	11	Upland Forest	Forest/Wetland	Runoff	1,786
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	10	Upland Forest	Forest/Wetland	Runoff	1,414
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	541
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	15	Pocosin	Pocosin	None	531
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	523
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	354
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	13	Shadow	Forest/Wetland	Runoff	110
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	4	Developed	Developed	Runoff	57
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	3	Developed	Developed	Runoff	45
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	2	Water	Water	Direct Atmospheric	35
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	12	Agriculture	Agriculture	Runoff	16
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	5	Developed	Developed	Runoff	3
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	18	Marsh	Marsh	Direct Atmospheric	3
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	6	Agriculture	Agriculture	Runoff	5,190
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	8	Pine Forest	Forest/Wetland	Runoff	3,695
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	10	Upland Forest	Forest/Wetland	Runoff	2,468

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	11	Upland Forest	Forest/Wetland	Runoff	1,138
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	452
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	15	Pocosin	Pocosin	None	242
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	220
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	13	Shadow	Forest/Wetland	Runoff	78
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	12	Agriculture	Agriculture	Runoff	53
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	2	Water	Water	Direct Atmospheric	18
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	3	Developed	Developed	Runoff	14
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	4	Developed	Developed	Runoff	10
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	2
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	6	Agriculture	Agriculture	Runoff	7,757
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	8	Pine Forest	Forest/Wetland	Runoff	7,235
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	10	Upland Forest	Forest/Wetland	Runoff	4,285
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	11	Upland Forest	Forest/Wetland	Runoff	1,585
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	755
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	475
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	15	Pocosin	Pocosin	None	450
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	13	Shadow	Forest/Wetland	Runoff	143
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	12	Agriculture	Agriculture	Runoff	51
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	2	Water	Water	Direct Atmospheric	38
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	3	Developed	Developed	Runoff	35
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	4	Developed	Developed	Runoff	24
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	5	Developed	Developed	Runoff	5
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	6	Agriculture	Agriculture	Runoff	15,607
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	8	Pine Forest	Forest/Wetland	Runoff	7,768
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	10	Upland Forest	Forest/Wetland	Runoff	7,624
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,901
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	1,007
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	708
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	15	Pocosin	Pocosin	None	607
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	13	Shadow	Forest/Wetland	Runoff	289
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	2	Water	Water	Direct Atmospheric	261
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	4	Developed	Developed	Runoff	117
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	3	Developed	Developed	Runoff	95
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	12	Agriculture	Agriculture	Runoff	79
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	5	Developed	Developed	Runoff	16
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	6	Agriculture	Agriculture	Runoff	14,957
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	10	Upland Forest	Forest/Wetland	Runoff	7,887
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	8	Pine Forest	Forest/Wetland	Runoff	4,553
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,313
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	914
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	603
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	15	Pocosin	Pocosin	None	551
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	13	Shadow	Forest/Wetland	Runoff	391
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	2	Water	Water	Direct Atmospheric	89
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	3	Developed	Developed	Runoff	77
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	4	Developed	Developed	Runoff	73
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	12	Agriculture	Agriculture	Runoff	39
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	5	Developed	Developed	Runoff	2
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	6	Agriculture	Agriculture	Runoff	6,723
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	10	Upland Forest	Forest/Wetland	Runoff	5,283

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	8	Pine Forest	Forest/Wetland	Runoff	2,881
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	661
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	11	Upland Forest	Forest/Wetland	Runoff	651
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	592
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	15	Pocosin	Pocosin	None	329
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	13	Shadow	Forest/Wetland	Runoff	137
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	12	Agriculture	Agriculture	Runoff	37
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	2	Water	Water	Direct Atmospheric	35
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	3	Developed	Developed	Runoff	13
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	4	Developed	Developed	Runoff	5
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	6	Agriculture	Agriculture	Runoff	16,649
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	11	Upland Forest	Forest/Wetland	Runoff	6,205
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	15	Pocosin	Pocosin	None	5,185
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	4,252
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	3,183
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	8	Pine Forest	Forest/Wetland	Runoff	2,531
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	1,472
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	12	Agriculture	Agriculture	Runoff	1,413
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	2	Water	Water	Direct Atmospheric	418
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	4	Developed	Developed	Runoff	196
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	13	Shadow	Forest/Wetland	Runoff	156
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	3	Developed	Developed	Runoff	58
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	20	Sand	Sand	Direct Atmospheric	18
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	6	Agriculture	Agriculture	Runoff	11,292
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	8	Pine Forest	Forest/Wetland	Runoff	5,169
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	11	Upland Forest	Forest/Wetland	Runoff	5,168
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	15	Pocosin	Pocosin	None	4,276
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	2,920
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	1,632
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	1,137
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	12	Agriculture	Agriculture	Runoff	885
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	10	Upland Forest	Forest/Wetland	Runoff	265
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	13	Shadow	Forest/Wetland	Runoff	212
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	2	Water	Water	Direct Atmospheric	167
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	3	Developed	Developed	Runoff	110
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	4	Developed	Developed	Runoff	93
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	5	Developed	Developed	Runoff	9
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	18	Marsh	Marsh	Direct Atmospheric	4
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	6	Agriculture	Agriculture	Runoff	8,421
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	8	Pine Forest	Forest/Wetland	Runoff	4,190
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	11	Upland Forest	Forest/Wetland	Runoff	2,780
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	15	Pocosin	Pocosin	None	1,874
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	1,369
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	1,205
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	780
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	10	Upland Forest	Forest/Wetland	Runoff	438
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	13	Shadow	Forest/Wetland	Runoff	361
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	12	Agriculture	Agriculture	Runoff	222
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	3	Developed	Developed	Runoff	59
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	4	Developed	Developed	Runoff	53
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	2	Water	Water	Direct Atmospheric	22

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	5	Developed	Developed	Runoff	5
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	18	Marsh	Marsh	Direct Atmospheric	3
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	6	Agriculture	Agriculture	Runoff	7,795
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	8	Pine Forest	Forest/Wetland	Runoff	5,990
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	11	Upland Forest	Forest/Wetland	Runoff	2,604
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	1,131
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	10	Upland Forest	Forest/Wetland	Runoff	826
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	15	Pocosin	Pocosin	None	642
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	489
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	13	Shadow	Forest/Wetland	Runoff	176
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	3	Developed	Developed	Runoff	150
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	4	Developed	Developed	Runoff	134
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	103
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	2	Water	Water	Direct Atmospheric	9
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	12	Agriculture	Agriculture	Runoff	8
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	18	Marsh	Marsh	Direct Atmospheric	3
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	5	Developed	Developed	Runoff	2
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	6	Agriculture	Agriculture	Runoff	25,296
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	8	Pine Forest	Forest/Wetland	Runoff	21,743
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	11	Upland Forest	Forest/Wetland	Runoff	8,197
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	6,148
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	10	Upland Forest	Forest/Wetland	Runoff	4,062
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	15	Pocosin	Pocosin	None	2,993
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	2,203
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	13	Shadow	Forest/Wetland	Runoff	1,400
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	987
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	3	Developed	Developed	Runoff	606
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	4	Developed	Developed	Runoff	429
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	2	Water	Water	Direct Atmospheric	375
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	12	Agriculture	Agriculture	Runoff	310
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	5	Developed	Developed	Runoff	31
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	18	Marsh	Marsh	Direct Atmospheric	18
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	20	Sand	Sand	Direct Atmospheric	0
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	5,975
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	6,12	Agriculture	Agriculture	Runoff	5,684
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	8	Pine Forest	Forest/Wetland	Runoff	2,480
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	778
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	15,17	Pocosin	Pocosin	None	432
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	356
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	3,4,5	Developed	Developed	Runoff	23

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	2	Water	Water	Direct Atmospheric	15
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	13	Shadow	Forest/Wetland	Runoff	2
3-01-02-03-02	CHOWAN RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	33,113
3-01-02-03-02	CHOWAN RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	20,148
3-01-02-03-02	CHOWAN RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	19,156
3-01-02-03-02	CHOWAN RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	16,458
3-01-02-03-02	CHOWAN RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	16,154
3-01-02-03-02	CHOWAN RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	6,541
3-01-02-03-02	CHOWAN RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	2,263
3-01-02-03-02	CHOWAN RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	327
3-01-02-03-02	CHOWAN RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	177
3-01-02-03-02	CHOWAN RIVER	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	41
3-01-02-03-02	CHOWAN RIVER	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	1
3-01-02-03-02	CHOWAN RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	0
3-01-02-03-03	CHOWAN RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	13,465
3-01-02-03-03	CHOWAN RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	6,099
3-01-02-03-03	CHOWAN RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,016
3-01-02-03-03	CHOWAN RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	3,012
3-01-02-03-03	CHOWAN RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	2,836
3-01-02-03-03	CHOWAN RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	2,691
3-01-02-03-03	CHOWAN RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	589
3-01-02-03-03	CHOWAN RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	100
3-01-02-03-03	CHOWAN RIVER	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	92
3-01-02-03-03	CHOWAN RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	37
3-01-02-03-03	CHOWAN RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	21
3-01-02-03-03	CHOWAN RIVER	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	3
3-01-02-03-04	CHOWAN RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	8,880
3-01-02-03-04	CHOWAN RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	3,848
3-01-02-03-04	CHOWAN RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	3,042
3-01-02-03-04	CHOWAN RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,822
3-01-02-03-04	CHOWAN RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	2,493
3-01-02-03-04	CHOWAN RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	1,840
3-01-02-03-04	CHOWAN RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,468
3-01-02-03-04	CHOWAN RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	90
3-01-02-03-04	CHOWAN RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	72
3-01-02-03-04	CHOWAN RIVER	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	57
3-01-02-03-04	CHOWAN RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	36
3-01-02-03-04	CHOWAN RIVER	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	5
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	6	Agriculture	Agriculture	Runoff	8,513
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	11	Upland Forest	Forest/Wetland	Runoff	4,116
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	15	Pocosin	Pocosin	None	3,330
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	3,295
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	8	Pine Forest	Forest/Wetland	Runoff	2,784
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,276
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	12	Agriculture	Agriculture	Runoff	809
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	2	Water	Water	Direct Atmospheric	697
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	411
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	4	Developed	Developed	Runoff	50
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	13	Shadow	Forest/Wetland	Runoff	38
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	3	Developed	Developed	Runoff	1
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	137

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	6	Agriculture	Agriculture	Runoff	105
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	11	Upland Forest	Forest/Wetland	Runoff	73
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	8	Pine Forest	Forest/Wetland	Runoff	68
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	37
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	12	Agriculture	Agriculture	Runoff	28
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	15	Pocosin	Pocosin	None	27
3-01-02-03-06	CHOWAN RIVER	BUCKHORN CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	15
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	6,12	Agriculture	Agriculture	Runoff	18,025
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	11,667
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	4,714
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,726
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	15,17	Pocosin	Pocosin	None	1,794
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	833
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	335
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	130
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	3,4,5	Developed	Developed	Runoff	106
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	6,12	Agriculture	Agriculture	Runoff	24,611
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	20,615
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	8	Pine Forest	Forest/Wetland	Runoff	5,709
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	4,460
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	15,17	Pocosin	Pocosin	None	1,468
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,017
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	3,4,5	Developed	Developed	Runoff	110
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	13	Shadow	Forest/Wetland	Runoff	83
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	2	Water	Water	Direct Atmospheric	31
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	6	Agriculture	Agriculture	Runoff	10,014
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	10	Upland Forest	Forest/Wetland	Runoff	5,086
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	11	Upland Forest	Forest/Wetland	Runoff	3,324
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	8	Pine Forest	Forest/Wetland	Runoff	2,774
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	1,796
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	15	Pocosin	Pocosin	None	683
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	597
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	463
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	12	Agriculture	Agriculture	Runoff	414
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	13	Shadow	Forest/Wetland	Runoff	96
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	2	Water	Water	Direct Atmospheric	51
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	5	Developed	Developed	Runoff	35
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	3	Developed	Developed	Runoff	26
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	4	Developed	Developed	Runoff	14
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	10	Upland Forest	Forest/Wetland	Runoff	12,787
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	6	Agriculture	Agriculture	Runoff	9,863
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	7,090
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	5,663
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	11	Upland Forest	Forest/Wetland	Runoff	4,336
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	1,488
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	15	Pocosin	Pocosin	None	1,158
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	790

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	12	Agriculture	Agriculture	Runoff	520
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	255
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	219
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	4	Developed	Developed	Runoff	114
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	3	Developed	Developed	Runoff	113
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	5	Developed	Developed	Runoff	1
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	10	Upland Forest	Forest/Wetland	Runoff	4,814
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	4,503
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	6	Agriculture	Agriculture	Runoff	2,021
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,477
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	744
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	367
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	15	Pocosin	Pocosin	None	353
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	122
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	12	Agriculture	Agriculture	Runoff	15
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	3	Developed	Developed	Runoff	14
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	10
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	8
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	4	Developed	Developed	Runoff	5
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	10	Upland Forest	Forest/Wetland	Runoff	2,456
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	8	Pine Forest	Forest/Wetland	Runoff	1,708
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	6	Agriculture	Agriculture	Runoff	1,630
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	11	Upland Forest	Forest/Wetland	Runoff	674
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	380
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	15	Pocosin	Pocosin	None	123
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	74
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	25
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	2	Water	Water	Direct Atmospheric	14
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	4	Developed	Developed	Runoff	11
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	12	Agriculture	Agriculture	Runoff	9
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	3	Developed	Developed	Runoff	9
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	13	Shadow	Forest/Wetland	Runoff	8
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	6	Agriculture	Agriculture	Runoff	3,676
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	10	Upland Forest	Forest/Wetland	Runoff	3,436
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	8	Pine Forest	Forest/Wetland	Runoff	3,027
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	11	Upland Forest	Forest/Wetland	Runoff	987
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	491
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	276
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	15	Pocosin	Pocosin	None	187
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	52
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	13	Shadow	Forest/Wetland	Runoff	30
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	4	Developed	Developed	Runoff	16
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	3	Developed	Developed	Runoff	15
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	2	Water	Water	Direct Atmospheric	10
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	12	Agriculture	Agriculture	Runoff	9
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	10	Upland Forest	Forest/Wetland	Runoff	5,946
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	4,654
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	6	Agriculture	Agriculture	Runoff	3,718
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,508
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	1,097
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	433

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	15	Pocosin	Pocosin	None	287
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	161
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	12	Agriculture	Agriculture	Runoff	33
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	3	Developed	Developed	Runoff	23
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	11
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	4	Developed	Developed	Runoff	8
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	5
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	10	Upland Forest	Forest/Wetland	Runoff	7,297
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	6	Agriculture	Agriculture	Runoff	4,990
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	3,688
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,819
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	1,621
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	435
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	15	Pocosin	Pocosin	None	220
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	203
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	12	Agriculture	Agriculture	Runoff	46
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	3	Developed	Developed	Runoff	43
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	4	Developed	Developed	Runoff	23
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	20
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	13
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	6	Agriculture	Agriculture	Runoff	9,361
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	10	Upland Forest	Forest/Wetland	Runoff	6,720
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	8	Pine Forest	Forest/Wetland	Runoff	4,149
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	11	Upland Forest	Forest/Wetland	Runoff	1,428
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	1,260
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	468
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	15	Pocosin	Pocosin	None	216
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	143
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	12	Agriculture	Agriculture	Runoff	110
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	13	Shadow	Forest/Wetland	Runoff	72
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	3	Developed	Developed	Runoff	49
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	2	Water	Water	Direct Atmospheric	49
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	4	Developed	Developed	Runoff	31
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	5	Developed	Developed	Runoff	0
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	10	Upland Forest	Forest/Wetland	Runoff	8,438
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	6	Agriculture	Agriculture	Runoff	6,425
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	8	Pine Forest	Forest/Wetland	Runoff	5,192
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	11	Upland Forest	Forest/Wetland	Runoff	1,778
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	9	Bottomland Swamp	Forest/Wetland	Runoff	1,461
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	7	Low Density Vegetation	Forest/Wetland	Runoff	675
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	15	Pocosin	Pocosin	None	343
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	14	Bottomland Swamp	Forest/Wetland	Runoff	182
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	13	Shadow	Forest/Wetland	Runoff	85
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	12	Agriculture	Agriculture	Runoff	40
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	3	Developed	Developed	Runoff	38
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	4	Developed	Developed	Runoff	11
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	2	Water	Water	Direct Atmospheric	7

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	5	Developed	Developed	Runoff	1
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	10	Upland Forest	Forest/Wetland	Runoff	7,629
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	6	Agriculture	Agriculture	Runoff	6,682
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	4,548
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,468
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	1,072
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	361
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	15	Pocosin	Pocosin	None	225
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	72
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	3	Developed	Developed	Runoff	66
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	31
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	12	Agriculture	Agriculture	Runoff	24
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	5	Developed	Developed	Runoff	20
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	4	Developed	Developed	Runoff	19
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	12
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	6	Agriculture	Agriculture	Runoff	9,808
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	10	Upland Forest	Forest/Wetland	Runoff	7,126
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	8	Pine Forest	Forest/Wetland	Runoff	5,880
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,451
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	1,026
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	718
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	15	Pocosin	Pocosin	None	670
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	13	Shadow	Forest/Wetland	Runoff	363
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	3	Developed	Developed	Runoff	55
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	12	Agriculture	Agriculture	Runoff	51
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	4	Developed	Developed	Runoff	30
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	2	Water	Water	Direct Atmospheric	20
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	5	Developed	Developed	Runoff	1
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	20	Sand	Sand	Direct Atmospheric	0
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	6	Agriculture	Agriculture	Runoff	3,328
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	10	Upland Forest	Forest/Wetland	Runoff	2,203
3-01-02-04-14	MEHERRIN RIVER	UPPER FONTAINE CREEK	15	Pocosin	Pocosin	None	1,224
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	11	Upland Forest	Forest/Wetland	Runoff	1,106
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	9	Bottomland Swamp	Forest/Wetland	Runoff	1,043
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	8	Pine Forest	Forest/Wetland	Runoff	934
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	14	Bottomland Swamp	Forest/Wetland	Runoff	435
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	12	Agriculture	Agriculture	Runoff	307
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	7	Low Density Vegetation	Forest/Wetland	Runoff	194
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	15	Pocosin	Pocosin	None	167
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	13	Shadow	Forest/Wetland	Runoff	58
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	3	Developed	Developed	Runoff	33
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	2	Water	Water	Direct Atmospheric	23
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	4	Developed	Developed	Runoff	3
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	5	Developed	Developed	Runoff	0
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	10	Upland Forest	Forest/Wetland	Runoff	5,763
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	6	Agriculture	Agriculture	Runoff	4,820
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	11	Upland Forest	Forest/Wetland	Runoff	2,583
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	8	Pine Forest	Forest/Wetland	Runoff	2,275
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	984
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	15	Pocosin	Pocosin	None	696
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	387

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	12	Agriculture	Agriculture	Runoff	255
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	103
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	2	Water	Water	Direct Atmospheric	70
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	3	Developed	Developed	Runoff	27
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	13	Shadow	Forest/Wetland	Runoff	23
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	4	Developed	Developed	Runoff	13
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	5	Developed	Developed	Runoff	2
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	8	Pine Forest	Forest/Wetland	Runoff	6,474
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	6	Agriculture	Agriculture	Runoff	2,595
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	11	Upland Forest	Forest/Wetland	Runoff	1,914
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	648
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	607
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	93
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	12	Agriculture	Agriculture	Runoff	35
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	13	Shadow	Forest/Wetland	Runoff	27
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	2	Water	Water	Direct Atmospheric	24
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	3	Developed	Developed	Runoff	13
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	4	Developed	Developed	Runoff	1
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	5	Developed	Developed	Runoff	0
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	8,150
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	7,669
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	2,952
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,592
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	933
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	558
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	475
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	301
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	217
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	69
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	13
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	1
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	6,12	Agriculture	Agriculture	Runoff	37,124
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	2	Water	Water	Direct Atmospheric	21,236
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	8	Pine Forest	Forest/Wetland	Runoff	12,569
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	12,390
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	4,603
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	15,17	Pocosin	Pocosin	None	4,186
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	18,19	Marsh	Marsh	Direct Atmospheric	3,336
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	3,4,5	Developed	Developed	Runoff	1,098
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	912
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	13	Shadow	Forest/Wetland	Runoff	317
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	16	White Cedar	Forest/Wetland	Runoff	48
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	20	Sand	Sand	Direct Atmospheric	23
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	2	Water	Water	Direct Atmospheric	98,876

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	8	Pine Forest	Forest/Wetland	Runoff	60,727
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	33,901
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	15,17	Pocosin	Pocosin	None	28,479
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	6,12	Agriculture	Agriculture	Runoff	25,391
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	18,19	Marsh	Marsh	Direct Atmospheric	2,816
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	2,648
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	16	White Cedar	Forest/Wetland	Runoff	1,933
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	20	Sand	Sand	Direct Atmospheric	1,168
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	13	Shadow	Forest/Wetland	Runoff	1,108
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	1,023
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	3,4,5	Developed	Developed	Runoff	160
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	56,186
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	38,447
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	21,311
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	10,116
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	4,717
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	2,780
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	2,413
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	2,275
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	899
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	468
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	189
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	22
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	6,12	Agriculture	Agriculture	Runoff	37,861
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	2	Water	Water	Direct Atmospheric	33,800
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	8	Pine Forest	Forest/Wetland	Runoff	17,454
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	12,725
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	15,17	Pocosin	Pocosin	None	10,372
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	2,020
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	20	Sand	Sand	Direct Atmospheric	1,926
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	1,737
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	18,19	Marsh	Marsh	Direct Atmospheric	802
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	16	White Cedar	Forest/Wetland	Runoff	614
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	3,4,5	Developed	Developed	Runoff	125
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	13	Shadow	Forest/Wetland	Runoff	7
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	43,704
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	25,121
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	15,561
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	10,514
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	7,630
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	5,448
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	1,862
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	986
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	731
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	521
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	385
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	297
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	2	Water	Water	Direct Atmospheric	18,689
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	6,12	Agriculture	Agriculture	Runoff	2,924

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	8	Pine Forest	Forest/Wetland	Runoff	2,504
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	18,19	Marsh	Marsh	Direct Atmospheric	1,178
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	9,14	Bottomland Swamp	Forest/Wetland	Runoff	869
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	20	Sand	Sand	Direct Atmospheric	856
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	3,4,5	Developed	Developed	Runoff	596
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	15,17	Pocosin	Pocosin	None	588
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	7	Low Density Vegetation	Forest/Wetland	Runoff	208
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	13	Shadow	Forest/Wetland	Runoff	146
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	10,11	Upland Forest	Forest/Wetland	Runoff	107
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	16	White Cedar	Forest/Wetland	Runoff	12
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	2	Water	Water	Direct Atmospheric	11,085
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	6	Agriculture	Agriculture	Runoff	5,588
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	18	Marsh	Marsh	Direct Atmospheric	3,273
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	8	Pine Forest	Forest/Wetland	Runoff	2,454
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	14	Bottomland Swamp	Forest/Wetland	Runoff	725
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	4	Developed	Developed	Runoff	591
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	20	Sand	Sand	Direct Atmospheric	427
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	15	Pocosin	Pocosin	None	378
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	9	Bottomland Swamp	Forest/Wetland	Runoff	362
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	7	Low Density Vegetation	Forest/Wetland	Runoff	239
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	19	Marsh	Marsh	Direct Atmospheric	225
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	11	Upland Forest	Forest/Wetland	Runoff	125
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	3	Developed	Developed	Runoff	60
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	16	.White Cedar	Forest/Wetland	Runoff	38
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	13	Shadow	Forest/Wetland	Runoff	24
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	17	Pocosin	Pocosin	None	11
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	12	Agriculture	Agriculture	Runoff	6
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	6	Agriculture	Agriculture	Runoff	16,155
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	8	Pine Forest	Forest/Wetland	Runoff	6,447
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	3,730
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	18	Marsh	Marsh	Direct Atmospheric	3,501
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	2,362
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	4	Developed	Developed	Runoff	1,846
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	2	Water	Water	Direct Atmospheric	1,816
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	15	Pocosin	Pocosin	None	1,128
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,031
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	3	Developed	Developed	Runoff	745
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	19	Marsh	Marsh	Direct Atmospheric	710
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	676
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	12	Agriculture	Agriculture	Runoff	112
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	13	Shadow	Forest/Wetland	Runoff	104
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	16	.White Cedar	Forest/Wetland	Runoff	32
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	17	Pocosin	Pocosin	None	27
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	20	Sand	Sand	Direct Atmospheric	16
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	5	Developed	Developed	Runoff	6
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	6	Agriculture	Agriculture	Runoff	11,613
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	8	Pine Forest	Forest/Wetland	Runoff	6,078
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	9	Bottomland Swamp	Forest/Wetland	Runoff	2,271
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	14	Bottomland Swamp	Forest/Wetland	Runoff	2,190
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	18	Marsh	Marsh	Direct Atmospheric	1,311
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	15	Pocosin	Pocosin	None	1,230

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	11	Upland Forest	Forest/Wetland	Runoff	1,029
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	812
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	19	Marsh	Marsh	Direct Atmospheric	334
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	4	Developed	Developed	Runoff	181
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	2	Water	Water	Direct Atmospheric	153
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	12	Agriculture	Agriculture	Runoff	126
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	13	Shadow	Forest/Wetland	Runoff	100
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	3	Developed	Developed	Runoff	7
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	17	Pocosin	Pocosin	None	4
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	16	.White Cedar	Forest/Wetland	Runoff	4
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	20	Sand	Sand	Direct Atmospheric	2
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	6	Agriculture	Agriculture	Runoff	1,173
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	8	Pine Forest	Forest/Wetland	Runoff	347
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	9	Bottomland Swamp	Forest/Wetland	Runoff	192
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	14	Bottomland Swamp	Forest/Wetland	Runoff	60
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	18	Marsh	Marsh	Direct Atmospheric	46
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	15	Pocosin	Pocosin	None	46
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	40
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	19	Marsh	Marsh	Direct Atmospheric	28
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	11	Upland Forest	Forest/Wetland	Runoff	23
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	4	Developed	Developed	Runoff	22
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	2	Water	Water	Direct Atmospheric	11
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	12	Agriculture	Agriculture	Runoff	4
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	3	Developed	Developed	Runoff	2
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	17	Pocosin	Pocosin	None	0
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	16	.White Cedar	Forest/Wetland	Runoff	0
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	14	Bottomland Swamp	Forest/Wetland	Runoff	13,077
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	8	Pine Forest	Forest/Wetland	Runoff	11,019
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	11	Upland Forest	Forest/Wetland	Runoff	10,768
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	6	Agriculture	Agriculture	Runoff	6,777
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	15	Pocosin	Pocosin	None	6,345
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	9	Bottomland Swamp	Forest/Wetland	Runoff	2,542
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	18	Marsh	Marsh	Direct Atmospheric	1,343
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	2	Water	Water	Direct Atmospheric	1,335
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	838
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	12	Agriculture	Agriculture	Runoff	392
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	16	.White Cedar	Forest/Wetland	Runoff	226
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	17	Pocosin	Pocosin	None	116
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	4	Developed	Developed	Runoff	80
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	19	Marsh	Marsh	Direct Atmospheric	57
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	3	Developed	Developed	Runoff	28
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	13	Shadow	Forest/Wetland	Runoff	17
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	35,625
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	30,867
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	16,248
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	13,292
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	10,035
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	5,970
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	144
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	88
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	22,245

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	18,843
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	9,161
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	3,460
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,233
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,693
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	746
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	388
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	139
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	6,12	Agriculture	Agriculture	Runoff	15,482
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	14,852
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	8	Pine Forest	Forest/Wetland	Runoff	5,088
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,832
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	3,4,5	Developed	Developed	Runoff	2,337
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,488
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	15,17	Pocosin	Pocosin	None	561
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	2	Water	Water	Direct Atmospheric	96
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	13	Shadow	Forest/Wetland	Runoff	38
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	15,686
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	10,741
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	2,266
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	825
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	596
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	572
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	401
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	140
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	56
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	17,496
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	14,579
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	3,135
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,257
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	702
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	464
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	257
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	128
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	42
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	26,981
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	17,076
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	3,587
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,048
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,313
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	632
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	273
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	204
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	38
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	18,876
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	8	Pine Forest	Forest/Wetland	Runoff	12,139
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	6,12	Agriculture	Agriculture	Runoff	8,170
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,187
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	15,17	Pocosin	Pocosin	None	2,078
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,506
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	3,4,5	Developed	Developed	Runoff	33

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	13	Shadow	Forest/Wetland	Runoff	33
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	2	Water	Water	Direct Atmospheric	31
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	37,708
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	6,12	Agriculture	Agriculture	Runoff	23,739
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	8	Pine Forest	Forest/Wetland	Runoff	14,508
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	7,286
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	15,17	Pocosin	Pocosin	None	2,903
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	2,892
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	3,4,5	Developed	Developed	Runoff	1,732
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	13	Shadow	Forest/Wetland	Runoff	143
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	2	Water	Water	Direct Atmospheric	112
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	6,12	Agriculture	Agriculture	Runoff	45,682
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	30,512
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	7,805
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	8	Pine Forest	Forest/Wetland	Runoff	6,699
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	2,221
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	15,17	Pocosin	Pocosin	None	1,485
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	3,4,5	Developed	Developed	Runoff	169
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	13	Shadow	Forest/Wetland	Runoff	90
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	2	Water	Water	Direct Atmospheric	73
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	3,924
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	1,396
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	365
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	265
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	77
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	56
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	28
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	14
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	8
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	6,12	Agriculture	Agriculture	Runoff	9,383
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	4,994
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	8	Pine Forest	Forest/Wetland	Runoff	2,839
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	635
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	15,17	Pocosin	Pocosin	None	401
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	130
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	3,4,5	Developed	Developed	Runoff	22
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	13	Shadow	Forest/Wetland	Runoff	3
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	2	Water	Water	Direct Atmospheric	2
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	47,574
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	25,320
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	8,075
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,461
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,300
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	1,039
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	348
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	198
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	36
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	37,588
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	11,826
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	8,378
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	7,958

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	4,957
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	4,776
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	739
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	453
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	38
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	31,768
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	9,864
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	8,726
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	4,789
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	3,882
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	3,668
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	344
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	35
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	21
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	6,12	Agriculture	Agriculture	Runoff	1,882
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	719
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	9,14	Bottomland Swamp	Forest/Wetland	Runoff	224
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	15,17	Pocosin	Pocosin	None	162
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	10,11	Upland Forest	Forest/Wetland	Runoff	127
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	18,19	Marsh	Marsh	Direct Atmospheric	89
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	8	Pine Forest	Forest/Wetland	Runoff	33
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	3,4,5	Developed	Developed	Runoff	18
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	6,12	Agriculture	Agriculture	Runoff	101,125
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	63,027
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	2	Water	Water	Direct Atmospheric	49,936
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	24,614
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	15,17	Pocosin	Pocosin	None	20,574
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	19,777
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	10,904
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	8,754
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	20	Sand	Sand	Direct Atmospheric	3,860
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	3,4,5	Developed	Developed	Runoff	2,203
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	13	Shadow	Forest/Wetland	Runoff	587
3-02-01-04-02	PAMLICO RIVER ESTUAR	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	3
3-02-01-05-01	PAMLICO SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	6,388
3-02-01-05-01	PAMLICO SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	6,075
3-02-01-05-01	PAMLICO SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	2,110
3-02-01-05-01	PAMLICO SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	657
3-02-01-05-01	PAMLICO SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	621
3-02-01-05-01	PAMLICO SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	162
3-02-01-05-01	PAMLICO SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	69
3-02-01-05-01	PAMLICO SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	34
3-02-01-05-01	PAMLICO SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	23
3-02-01-05-01	PAMLICO SOUND	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	10
3-02-01-05-01	PAMLICO SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	2
3-02-01-05-02	PAMLICO SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	122,589
3-02-01-05-02	PAMLICO SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	2,111
3-02-01-05-02	PAMLICO SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	1,574
3-02-01-05-02	PAMLICO SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	1,243
3-02-01-05-02	PAMLICO SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,142
3-02-01-05-02	PAMLICO SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	797

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-01-05-02	PAMLICO SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	579
3-02-01-05-02	PAMLICO SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	289
3-02-01-05-02	PAMLICO SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	180
3-02-01-05-02	PAMLICO SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	173
3-02-01-05-02	PAMLICO SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	31
3-02-01-05-02	PAMLICO SOUND	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	1
3-02-01-05-03	PAMLICO SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	224,434
3-02-01-05-03	PAMLICO SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	29,511
3-02-01-05-03	PAMLICO SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	28,176
3-02-01-05-03	PAMLICO SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	10,804
3-02-01-05-03	PAMLICO SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	9,777
3-02-01-05-03	PAMLICO SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	8,008
3-02-01-05-03	PAMLICO SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	3,675
3-02-01-05-03	PAMLICO SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,336
3-02-01-05-03	PAMLICO SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	913
3-02-01-05-03	PAMLICO SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	438
3-02-01-05-03	PAMLICO SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	404
3-02-01-05-03	PAMLICO SOUND	UNNAMED	16	White Cedar	Forest/Wetland	Runoff	13
3-02-01-05-04	PAMLICO SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	37,755
3-02-01-05-04	PAMLICO SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	7,109
3-02-01-05-04	PAMLICO SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	6,442
3-02-01-05-04	PAMLICO SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	5,924
3-02-01-05-04	PAMLICO SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	4,563
3-02-01-05-04	PAMLICO SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	4,559
3-02-01-05-04	PAMLICO SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	2,595
3-02-01-05-04	PAMLICO SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	1,475
3-02-01-05-04	PAMLICO SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	1,067
3-02-01-05-04	PAMLICO SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	141
3-02-01-05-04	PAMLICO SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	15
3-02-01-06-01	CORE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	70,108
3-02-01-06-01	CORE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	6,434
3-02-01-06-01	CORE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,855
3-02-01-06-01	CORE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	2,616
3-02-01-06-01	CORE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	1,570
3-02-01-06-01	CORE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	1,544
3-02-01-06-01	CORE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	606
3-02-01-06-01	CORE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	513
3-02-01-06-01	CORE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	404
3-02-01-06-01	CORE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	279
3-02-01-06-01	CORE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	133
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	27,380
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	19,009
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	9,579
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	8,945
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	6,287
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	5,734
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	3,010
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	1,017
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	506
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	277
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	59

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-01-06-03	CORE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	17,412
3-02-01-06-03	CORE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	7,828
3-02-01-06-03	CORE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	6,268
3-02-01-06-03	CORE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	4,293
3-02-01-06-03	CORE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	2,721
3-02-01-06-03	CORE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	2,498
3-02-01-06-03	CORE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,439
3-02-01-06-03	CORE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	894
3-02-01-06-03	CORE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	500
3-02-01-06-03	CORE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	359
3-02-01-06-03	CORE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	33
3-02-01-06-04	CORE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	9,981
3-02-01-06-04	CORE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	957
3-02-01-06-04	CORE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	919
3-02-01-06-04	CORE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	552
3-02-01-06-04	CORE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	465
3-02-01-06-04	CORE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	187
3-02-01-06-04	CORE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	151
3-02-01-06-04	CORE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	87
3-02-01-06-04	CORE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	46
3-02-01-06-04	CORE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	32
3-02-01-06-04	CORE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	18
3-02-01-06-05	BOGUE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	14,355
3-02-01-06-05	BOGUE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	12,335
3-02-01-06-05	BOGUE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	7,007
3-02-01-06-05	BOGUE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	4,994
3-02-01-06-05	BOGUE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	3,051
3-02-01-06-05	BOGUE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,591
3-02-01-06-05	BOGUE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	2,333
3-02-01-06-05	BOGUE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	2,156
3-02-01-06-05	BOGUE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	1,168
3-02-01-06-05	BOGUE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	290
3-02-01-06-05	BOGUE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	155
3-02-01-06-06	BOGUE SOUND	UNNAMED	15,17	Pocosin	Pocosin	None	4,231
3-02-01-06-06	BOGUE SOUND	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	3,987
3-02-01-06-06	BOGUE SOUND	UNNAMED	2	Water	Water	Direct Atmospheric	2,969
3-02-01-06-06	BOGUE SOUND	UNNAMED	6,12	Agriculture	Agriculture	Runoff	2,252
3-02-01-06-06	BOGUE SOUND	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	1,923
3-02-01-06-06	BOGUE SOUND	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,229
3-02-01-06-06	BOGUE SOUND	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	405
3-02-01-06-06	BOGUE SOUND	UNNAMED	3,4,5	Developed	Developed	Runoff	343
3-02-01-06-06	BOGUE SOUND	UNNAMED	13	Shadow	Forest/Wetland	Runoff	132
3-02-01-06-06	BOGUE SOUND	UNNAMED	20	Sand	Sand	Direct Atmospheric	39
3-02-01-06-06	BOGUE SOUND	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	29
3-02-02-01-05	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	33,408
3-02-02-01-05	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	25,454
3-02-02-01-05	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	22,517
3-02-02-01-05	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	21,196
3-02-02-01-05	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	7,300
3-02-02-01-05	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	2,471
3-02-02-01-05	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	652

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-02-01-05	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	222
3-02-02-01-05	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	94
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	6,12	Agriculture	Agriculture	Runoff	15,512
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	7,916
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	3,4,5	Developed	Developed	Runoff	6,938
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	8	Pine Forest	Forest/Wetland	Runoff	5,950
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,389
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	860
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	2	Water	Water	Direct Atmospheric	547
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	13	Shadow	Forest/Wetland	Runoff	76
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	15,17	Pocosin	Pocosin	None	12
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	6,12	Agriculture	Agriculture	Runoff	9,751
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	4,103
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	3,4,5	Developed	Developed	Runoff	3,529
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	8	Pine Forest	Forest/Wetland	Runoff	2,306
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,333
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	418
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	2	Water	Water	Direct Atmospheric	126
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	13	Shadow	Forest/Wetland	Runoff	30
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	6,12	Agriculture	Agriculture	Runoff	6,585
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	2,599
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	3,4,5	Developed	Developed	Runoff	1,187
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	8	Pine Forest	Forest/Wetland	Runoff	986
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	771
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	251
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	2	Water	Water	Direct Atmospheric	24
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	15,17	Pocosin	Pocosin	None	17
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	13	Shadow	Forest/Wetland	Runoff	14
3-02-02-01-09	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	40,199
3-02-02-01-09	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	15,341
3-02-02-01-09	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	5,378
3-02-02-01-09	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	4,642
3-02-02-01-09	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	4,482
3-02-02-01-09	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	980
3-02-02-01-09	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	384
3-02-02-01-09	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	322
3-02-02-01-09	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	133
3-02-02-01-10	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	16,013
3-02-02-01-10	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	10,705
3-02-02-01-10	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,327
3-02-02-01-10	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	3,309
3-02-02-01-10	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	580
3-02-02-01-10	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	248
3-02-02-01-10	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	164
3-02-02-01-10	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	96
3-02-02-01-10	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	16
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	6,12	Agriculture	Agriculture	Runoff	30,047
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	16,439
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	8	Pine Forest	Forest/Wetland	Runoff	6,191
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	3,4,5	Developed	Developed	Runoff	3,093
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,479

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	1,121
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	15,17	Pocosin	Pocosin	None	378
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	2	Water	Water	Direct Atmospheric	243
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	13	Shadow	Forest/Wetland	Runoff	89
3-02-02-01-12	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	13,458
3-02-02-01-12	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	6,269
3-02-02-01-12	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	1,575
3-02-02-01-12	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	303
3-02-02-01-12	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	170
3-02-02-01-12	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	86
3-02-02-01-12	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	84
3-02-02-01-12	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	24
3-02-02-01-12	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	10
3-02-02-01-13	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	19,656
3-02-02-01-13	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	12,404
3-02-02-01-13	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	3,256
3-02-02-01-13	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,253
3-02-02-01-13	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	825
3-02-02-01-13	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	707
3-02-02-01-13	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	377
3-02-02-01-13	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	173
3-02-02-01-13	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	128
3-02-02-02-01	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	36,669
3-02-02-02-01	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	16,935
3-02-02-02-01	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	5,863
3-02-02-02-01	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	1,419
3-02-02-02-01	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,081
3-02-02-02-01	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	721
3-02-02-02-01	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	480
3-02-02-02-01	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	422
3-02-02-02-01	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	34
3-02-02-02-02	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	10,309
3-02-02-02-02	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	3,048
3-02-02-02-02	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	1,151
3-02-02-02-02	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	363
3-02-02-02-02	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	149
3-02-02-02-02	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	80
3-02-02-02-02	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	71
3-02-02-02-02	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	41
3-02-02-02-02	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	2
3-02-02-02-03	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	22,402
3-02-02-02-03	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	14,148
3-02-02-02-03	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	7,307
3-02-02-02-03	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	2,479
3-02-02-02-03	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	1,700
3-02-02-02-03	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	1,495
3-02-02-02-03	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	446
3-02-02-02-03	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	247
3-02-02-02-03	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	70
3-02-02-02-03	NEUSE RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	10
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	6,12	Agriculture	Agriculture	Runoff	30,879

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	22,116
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	8	Pine Forest	Forest/Wetland	Runoff	18,402
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	5,929
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	15,17	Pocosin	Pocosin	None	4,709
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	3,863
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	3,4,5	Developed	Developed	Runoff	176
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	2	Water	Water	Direct Atmospheric	68
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	13	Shadow	Forest/Wetland	Runoff	35
3-02-02-02-05	NEUSE RIVER	UNNAMED	6,12	Agriculture	Agriculture	Runoff	19,661
3-02-02-02-05	NEUSE RIVER	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	12,881
3-02-02-02-05	NEUSE RIVER	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	10,676
3-02-02-02-05	NEUSE RIVER	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	6,792
3-02-02-02-05	NEUSE RIVER	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	4,054
3-02-02-02-05	NEUSE RIVER	UNNAMED	15,17	Pocosin	Pocosin	None	3,778
3-02-02-02-05	NEUSE RIVER	UNNAMED	3,4,5	Developed	Developed	Runoff	1,030
3-02-02-02-05	NEUSE RIVER	UNNAMED	2	Water	Water	Direct Atmospheric	740
3-02-02-02-05	NEUSE RIVER	UNNAMED	20	Sand	Sand	Direct Atmospheric	202
3-02-02-02-05	NEUSE RIVER	UNNAMED	13	Shadow	Forest/Wetland	Runoff	107
3-02-02-02-05	NEUSE RIVER	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	3
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	6,12	Agriculture	Agriculture	Runoff	18,443
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	15,985
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	8	Pine Forest	Forest/Wetland	Runoff	3,617
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	950
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	647
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	2	Water	Water	Direct Atmospheric	538
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	15,17	Pocosin	Pocosin	None	337
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	3,4,5	Developed	Developed	Runoff	218
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	13	Shadow	Forest/Wetland	Runoff	62
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	6,12	Agriculture	Agriculture	Runoff	76,489
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	35,979
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	8	Pine Forest	Forest/Wetland	Runoff	10,084
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,320
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	2,036
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	15,17	Pocosin	Pocosin	None	1,303
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	3,4,5	Developed	Developed	Runoff	665
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	2	Water	Water	Direct Atmospheric	392
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	13	Shadow	Forest/Wetland	Runoff	95
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	6,12	Agriculture	Agriculture	Runoff	12,965
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	10,11	Upland Forest	Forest/Wetland	Runoff	5,231
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	8	Pine Forest	Forest/Wetland	Runoff	1,527
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	7	Low Density Vegetation	Forest/Wetland	Runoff	550
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	15,17	Pocosin	Pocosin	None	138
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	3,4,5	Developed	Developed	Runoff	116
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	9,14	Bottomland Swamp	Forest/Wetland	Runoff	88
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	2	Water	Water	Direct Atmospheric	37
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	13	Shadow	Forest/Wetland	Runoff	3
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	6,12	Agriculture	Agriculture	Runoff	39,400
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	10,11	Upland Forest	Forest/Wetland	Runoff	19,600
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	8	Pine Forest	Forest/Wetland	Runoff	5,658
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	9,14	Bottomland Swamp	Forest/Wetland	Runoff	2,019
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	15,17	Pocosin	Pocosin	None	1,778

Table A-4: Land Use By Hydrologic Unit

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use #	Land Use (Level 1 Aggregation)	Land Use (Level 2 Aggregation)	Loading Category	Area (ha)
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	7	Low Density Vegetation	Forest/Wetland	Runoff	1,389
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	3,4,5	Developed	Developed	Runoff	198
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	2	Water	Water	Direct Atmospheric	50
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	13	Shadow	Forest/Wetland	Runoff	18
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	6,12	Agriculture	Agriculture	Runoff	9,614
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	8	Pine Forest	Forest/Wetland	Runoff	9,477
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	15,17	Pocosin	Pocosin	None	8,455
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	5,001
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	4,284
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	3,624
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	3,4,5	Developed	Developed	Runoff	1,126
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	13	Shadow	Forest/Wetland	Runoff	206
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	18,19	Marsh	Marsh	Direct Atmospheric	134
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	20	Sand	Sand	Direct Atmospheric	53
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	8	Pine Forest	Forest/Wetland	Runoff	19,294
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	6,12	Agriculture	Agriculture	Runoff	18,234
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	15,17	Pocosin	Pocosin	None	11,302
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	9,14	Bottomland Swamp	Forest/Wetland	Runoff	9,498
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	7	Low Density Vegetation	Forest/Wetland	Runoff	9,187
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	10,11	Upland Forest	Forest/Wetland	Runoff	4,788
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	3,4,5	Developed	Developed	Runoff	1,192
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	13	Shadow	Forest/Wetland	Runoff	421
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	2	Water	Water	Direct Atmospheric	234
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	20	Sand	Sand	Direct Atmospheric	57
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	18,19	Marsh	Marsh	Direct Atmospheric	29
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	2	Water	Water	Direct Atmospheric	49,038
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	8	Pine Forest	Forest/Wetland	Runoff	41,651
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	15,17	Pocosin	Pocosin	None	25,088
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	6,12	Agriculture	Agriculture	Runoff	18,496
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	9,14	Bottomland Swamp	Forest/Wetland	Runoff	13,710
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	10,11	Upland Forest	Forest/Wetland	Runoff	11,969
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	7	Low Density Vegetation	Forest/Wetland	Runoff	11,114
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	18,19	Marsh	Marsh	Direct Atmospheric	7,086
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	3,4,5	Developed	Developed	Runoff	3,140
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	13	Shadow	Forest/Wetland	Runoff	363
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	20	Sand	Sand	Direct Atmospheric	175

Table A-5: Runoff Nutrient Loading By Hydrologic Unit

Hydrologic Unit	Major Drainage	Land Use (Level 2)	N Loading (kg/yr)	P Loading (kg/yr)
3-01-01-06-01	ROANOKE RIVER	Agriculture	7,398	747
3-01-01-06-01	ROANOKE RIVER	Forest/Wetland	3,195	178
3-01-01-06-01	ROANOKE RIVER	Developed	501	71
3-01-01-07-01	ROANOKE RIVER	Agriculture	445,593	45,014
3-01-01-07-01	ROANOKE RIVER	Forest/Wetland	147,425	8,225
3-01-01-07-01	ROANOKE RIVER	Developed	3,483	492
3-01-01-07-02	ROANOKE RIVER	Agriculture	397,758	40,182
3-01-01-07-02	ROANOKE RIVER	Forest/Wetland	164,052	9,153
3-01-01-07-02	ROANOKE RIVER	Developed	5,377	760
3-01-01-07-03	ROANOKE RIVER	Agriculture	202,684	20,475
3-01-01-07-03	ROANOKE RIVER	Forest/Wetland	119,561	6,671
3-01-01-07-03	ROANOKE RIVER	Developed	974	138
3-01-02-01-01	NOTTOWAY RIVER	Agriculture	53,807	5,436
3-01-02-01-01	NOTTOWAY RIVER	Forest/Wetland	16,285	909
3-01-02-01-01	NOTTOWAY RIVER	Developed	250	35
3-01-02-01-02	NOTTOWAY RIVER	Agriculture	84,478	8,534
3-01-02-01-02	NOTTOWAY RIVER	Forest/Wetland	23,285	1,299
3-01-02-01-02	NOTTOWAY RIVER	Developed	378	53
3-01-02-01-03	NOTTOWAY RIVER	Agriculture	72,185	7,292
3-01-02-01-03	NOTTOWAY RIVER	Forest/Wetland	45,988	2,566
3-01-02-01-03	NOTTOWAY RIVER	Developed	846	120
3-01-02-01-04	NOTTOWAY RIVER	Agriculture	124,331	12,560
3-01-02-01-04	NOTTOWAY RIVER	Forest/Wetland	52,256	2,916
3-01-02-01-04	NOTTOWAY RIVER	Developed	1,194	169
3-01-02-01-05	NOTTOWAY RIVER	Agriculture	70,718	7,144
3-01-02-01-05	NOTTOWAY RIVER	Forest/Wetland	40,442	2,256
3-01-02-01-05	NOTTOWAY RIVER	Developed	378	53
3-01-02-01-06	NOTTOWAY RIVER	Agriculture	69,466	7,018
3-01-02-01-06	NOTTOWAY RIVER	Forest/Wetland	32,980	1,840
3-01-02-01-06	NOTTOWAY RIVER	Developed	642	91
3-01-02-01-07	NOTTOWAY RIVER	Agriculture	51,063	5,158
3-01-02-01-07	NOTTOWAY RIVER	Forest/Wetland	26,163	1,460
3-01-02-01-07	NOTTOWAY RIVER	Developed	359	51
3-01-02-01-08	NOTTOWAY RIVER	Agriculture	201,906	20,397
3-01-02-01-08	NOTTOWAY RIVER	Forest/Wetland	86,427	4,822
3-01-02-01-08	NOTTOWAY RIVER	Developed	3,190	451
3-01-02-01-09	NOTTOWAY RIVER	Agriculture	105,007	10,608
3-01-02-01-09	NOTTOWAY RIVER	Forest/Wetland	47,812	2,668
3-01-02-01-09	NOTTOWAY RIVER	Developed	1,749	247
3-01-02-01-10	NOTTOWAY RIVER	Agriculture	78,204	7,900
3-01-02-01-10	NOTTOWAY RIVER	Forest/Wetland	26,490	1,478
3-01-02-01-10	NOTTOWAY RIVER	Developed	688	97
3-01-02-01-11	NOTTOWAY RIVER	Agriculture	72,630	7,337
3-01-02-01-11	NOTTOWAY RIVER	Forest/Wetland	38,082	2,125
3-01-02-01-11	NOTTOWAY RIVER	Developed	781	110
3-01-02-01-12	NOTTOWAY RIVER	Agriculture	51,442	5,197
3-01-02-01-12	NOTTOWAY RIVER	Forest/Wetland	26,855	1,498
3-01-02-01-12	NOTTOWAY RIVER	Developed	795	112
3-01-02-01-13	NOTTOWAY RIVER	Agriculture	51,381	5,191
3-01-02-01-13	NOTTOWAY RIVER	Forest/Wetland	18,762	1,047
3-01-02-01-13	NOTTOWAY RIVER	Developed	176	25
3-01-02-01-14	NOTTOWAY RIVER	Agriculture	76,527	7,731
3-01-02-01-14	NOTTOWAY RIVER	Forest/Wetland	33,737	1,882
3-01-02-01-14	NOTTOWAY RIVER	Developed	476	67
3-01-02-01-15	NOTTOWAY RIVER	Agriculture	153,719	15,529

Table A-5: Runoff Nutrient Loading By Hydrologic Unit

Hydrologic Unit	Major Drainage	Land Use (Level 2)	N Loading (kg/yr)	P Loading (kg/yr)
3-01-02-01-15	NOTTOWAY RIVER	Forest/Wetland	44,962	2,509
3-01-02-01-15	NOTTOWAY RIVER	Developed	1,711	242
3-01-02-01-16	NOTTOWAY RIVER	Agriculture	146,959	14,846
3-01-02-01-16	NOTTOWAY RIVER	Forest/Wetland	36,493	2,036
3-01-02-01-16	NOTTOWAY RIVER	Developed	1,135	160
3-01-02-01-17	NOTTOWAY RIVER	Agriculture	66,246	6,692
3-01-02-01-17	NOTTOWAY RIVER	Forest/Wetland	23,773	1,326
3-01-02-01-17	NOTTOWAY RIVER	Developed	135	19
3-01-02-02-01	BLACKWATER RIVER	Agriculture	177,005	17,881
3-01-02-02-01	BLACKWATER RIVER	Forest/Wetland	41,472	2,314
3-01-02-02-01	BLACKWATER RIVER	Developed	1,902	269
3-01-02-02-02	BLACKWATER RIVER	Agriculture	119,331	12,055
3-01-02-02-02	BLACKWATER RIVER	Forest/Wetland	38,451	2,145
3-01-02-02-02	BLACKWATER RIVER	Developed	1,589	225
3-01-02-02-03	BLACKWATER RIVER	Agriculture	84,700	8,556
3-01-02-02-03	BLACKWATER RIVER	Forest/Wetland	25,915	1,446
3-01-02-02-03	BLACKWATER RIVER	Developed	877	124
3-01-02-02-04	BLACKWATER RIVER	Agriculture	76,470	7,725
3-01-02-02-04	BLACKWATER RIVER	Forest/Wetland	26,371	1,471
3-01-02-02-04	BLACKWATER RIVER	Developed	2,146	303
3-01-02-02-05	BLACKWATER RIVER	Agriculture	250,942	25,350
3-01-02-02-05	BLACKWATER RIVER	Forest/Wetland	104,242	5,816
3-01-02-02-05	BLACKWATER RIVER	Developed	7,995	1,130
3-01-02-03-01	CHOWAN RIVER	Agriculture	55,707	5,628
3-01-02-03-01	CHOWAN RIVER	Forest/Wetland	22,346	1,247
3-01-02-03-01	CHOWAN RIVER	Developed	172	24
3-01-02-03-02	CHOWAN RIVER	Agriculture	324,512	32,782
3-01-02-03-02	CHOWAN RIVER	Forest/Wetland	144,873	8,083
3-01-02-03-02	CHOWAN RIVER	Developed	2,453	347
3-01-02-03-03	CHOWAN RIVER	Agriculture	131,956	13,330
3-01-02-03-03	CHOWAN RIVER	Forest/Wetland	21,337	1,190
3-01-02-03-03	CHOWAN RIVER	Developed	749	106
3-01-02-03-04	CHOWAN RIVER	Agriculture	87,021	8,791
3-01-02-03-04	CHOWAN RIVER	Forest/Wetland	22,986	1,282
3-01-02-03-04	CHOWAN RIVER	Developed	543	77
3-01-02-03-05	CHOWAN RIVER	Agriculture	91,354	9,229
3-01-02-03-05	CHOWAN RIVER	Forest/Wetland	27,776	1,550
3-01-02-03-05	CHOWAN RIVER	Developed	379	54
3-01-02-03-06	CHOWAN RIVER	Agriculture	1,297	131
3-01-02-03-06	CHOWAN RIVER	Forest/Wetland	766	43
3-01-02-04-01	CHOWAN RIVER	Agriculture	176,642	17,844
3-01-02-04-01	CHOWAN RIVER	Forest/Wetland	49,093	2,739
3-01-02-04-01	CHOWAN RIVER	Developed	792	112
3-01-02-04-02	CHOWAN RIVER	Agriculture	241,192	24,365
3-01-02-04-02	CHOWAN RIVER	Forest/Wetland	74,292	4,145
3-01-02-04-02	CHOWAN RIVER	Developed	828	117
3-01-02-04-03	MEHERRIN RIVER	Agriculture	102,192	10,323
3-01-02-04-03	MEHERRIN RIVER	Forest/Wetland	32,938	1,838
3-01-02-04-03	MEHERRIN RIVER	Developed	565	80
3-01-02-04-04	MEHERRIN RIVER	Agriculture	101,758	10,280
3-01-02-04-04	MEHERRIN RIVER	Forest/Wetland	75,511	4,213
3-01-02-04-04	MEHERRIN RIVER	Developed	1,708	241
3-01-02-04-05	MEHERRIN RIVER	Forest/Wetland	28,042	1,565
3-01-02-04-05	MEHERRIN RIVER	Agriculture	19,948	2,015
3-01-02-04-05	MEHERRIN RIVER	Developed	138	20

Table A-5: Runoff Nutrient Loading By Hydrologic Unit

Hydrologic Unit	Major Drainage	Land Use (Level 2)	N Loading (kg/yr)	P Loading (kg/yr)
3-01-02-04-06	MEHERRIN RIVER	Agriculture	16,066	1,623
3-01-02-04-06	MEHERRIN RIVER	Forest/Wetland	12,409	692
3-01-02-04-06	MEHERRIN RIVER	Developed	143	20
3-01-02-04-07	MEHERRIN RIVER	Agriculture	36,113	3,648
3-01-02-04-07	MEHERRIN RIVER	Forest/Wetland	19,338	1,079
3-01-02-04-07	MEHERRIN RIVER	Developed	236	33
3-01-02-04-08	MEHERRIN RIVER	Agriculture	36,768	3,714
3-01-02-04-08	MEHERRIN RIVER	Forest/Wetland	32,175	1,795
3-01-02-04-08	MEHERRIN RIVER	Developed	230	33
3-01-02-04-09	MEHERRIN RIVER	Agriculture	49,356	4,986
3-01-02-04-09	MEHERRIN RIVER	Forest/Wetland	35,148	1,961
3-01-02-04-09	MEHERRIN RIVER	Developed	494	70
3-01-02-04-10	MEHERRIN RIVER	Agriculture	92,819	9,377
3-01-02-04-10	MEHERRIN RIVER	Forest/Wetland	33,176	1,851
3-01-02-04-10	MEHERRIN RIVER	Developed	604	85
3-01-02-04-11	MEHERRIN RIVER	Agriculture	63,360	6,401
3-01-02-04-11	MEHERRIN RIVER	Forest/Wetland	41,501	2,315
3-01-02-04-11	MEHERRIN RIVER	Developed	381	54
3-01-02-04-12	MEHERRIN RIVER	Agriculture	65,720	6,639
3-01-02-04-12	MEHERRIN RIVER	Forest/Wetland	35,373	1,974
3-01-02-04-12	MEHERRIN RIVER	Developed	783	111
3-01-02-04-13	MEHERRIN RIVER	Agriculture	90,241	9,116
3-01-02-04-13	MEHERRIN RIVER	Forest/Wetland	36,049	2,011
3-01-02-04-13	MEHERRIN RIVER	Developed	598	84
3-01-02-04-14	MEHERRIN RIVER	Agriculture	35,626	3,599
3-01-02-04-14	MEHERRIN RIVER	Forest/Wetland	13,917	777
3-01-02-04-14	MEHERRIN RIVER	Developed	273	39
3-01-02-04-15	MEHERRIN RIVER	Agriculture	49,733	5,024
3-01-02-04-15	MEHERRIN RIVER	Forest/Wetland	28,236	1,575
3-01-02-04-15	MEHERRIN RIVER	Developed	312	44
3-01-02-04-16	MEHERRIN RIVER	Agriculture	25,775	2,604
3-01-02-04-16	MEHERRIN RIVER	Forest/Wetland	22,748	1,269
3-01-02-04-16	MEHERRIN RIVER	Developed	108	15
3-01-02-05-01	ALBEMARLE SOUND	Agriculture	75,153	7,592
3-01-02-05-01	ALBEMARLE SOUND	Forest/Wetland	13,027	727
3-01-02-05-01	ALBEMARLE SOUND	Developed	1,624	230
3-01-02-05-02	ALBEMARLE SOUND	Agriculture	363,817	36,753
3-01-02-05-02	ALBEMARLE SOUND	Forest/Wetland	71,855	4,009
3-01-02-05-02	ALBEMARLE SOUND	Developed	8,238	1,164
3-01-02-05-03	ALBEMARLE SOUND	Agriculture	248,834	25,137
3-01-02-05-03	ALBEMARLE SOUND	Forest/Wetland	236,120	13,174
3-01-02-05-03	ALBEMARLE SOUND	Developed	1,204	170
3-01-02-05-04	ALBEMARLE SOUND	Agriculture	550,620	55,624
3-01-02-05-04	ALBEMARLE SOUND	Forest/Wetland	86,144	4,806
3-01-02-05-04	ALBEMARLE SOUND	Developed	6,741	953
3-01-02-05-05	ALBEMARLE SOUND	Agriculture	371,038	37,482
3-01-02-05-05	ALBEMARLE SOUND	Forest/Wetland	80,517	4,492
3-01-02-05-05	ALBEMARLE SOUND	Developed	935	132
3-01-02-05-06	CURRITUCK SOUND	Agriculture	246,188	24,870
3-01-02-05-06	CURRITUCK SOUND	Forest/Wetland	68,386	3,816
3-01-02-05-06	CURRITUCK SOUND	Developed	3,905	552
3-01-02-05-07	ALBEMARLE SOUND	Agriculture	28,656	2,895
3-01-02-05-07	ALBEMARLE SOUND	Forest/Wetland	8,960	500
3-01-02-05-07	ALBEMARLE SOUND	Developed	4,472	632
3-01-02-05-08	CURRITUCK SOUND	Agriculture	54,821	5,538

Table A-5: Runoff Nutrient Loading By Hydrologic Unit

Hydrologic Unit	Major Drainage	Land Use (Level 2)	N Loading (kg/yr)	P Loading (kg/yr)
3-01-02-05-08	CURRITUCK SOUND	Forest/Wetland	9,246	516
3-01-02-05-08	CURRITUCK SOUND	Developed	4,878	689
3-01-02-05-09	CURRITUCK SOUND	Agriculture	159,420	16,105
3-01-02-05-09	CURRITUCK SOUND	Forest/Wetland	33,510	1,870
3-01-02-05-09	CURRITUCK SOUND	Developed	19,472	2,752
3-01-02-05-10	CURRITUCK SOUND	Agriculture	115,036	11,621
3-01-02-05-10	CURRITUCK SOUND	Forest/Wetland	29,088	1,623
3-01-02-05-10	CURRITUCK SOUND	Developed	1,416	200
3-01-02-05-11	ALBEMARLE SOUND	Agriculture	11,529	1,165
3-01-02-05-11	ALBEMARLE SOUND	Forest/Wetland	1,542	86
3-01-02-05-11	ALBEMARLE SOUND	Developed	178	25
3-01-02-05-12	ALBEMARLE SOUND	Forest/Wetland	89,673	5,003
3-01-02-05-12	ALBEMARLE SOUND	Agriculture	70,263	7,098
3-01-02-05-12	ALBEMARLE SOUND	Developed	806	114
3-02-01-01-01	TAR-PAMLICO RIVER	Agriculture	349,127	35,269
3-02-01-01-01	TAR-PAMLICO RIVER	Forest/Wetland	147,277	8,217
3-02-01-01-01	TAR-PAMLICO RIVER	Developed	99,687	14,089
3-02-01-01-02	TAR-PAMLICO RIVER	Agriculture	218,001	22,023
3-02-01-01-02	TAR-PAMLICO RIVER	Forest/Wetland	77,049	4,299
3-02-01-01-02	TAR-PAMLICO RIVER	Developed	25,951	3,668
3-02-01-01-03	TAR-PAMLICO RIVER	Agriculture	151,719	15,327
3-02-01-01-03	TAR-PAMLICO RIVER	Forest/Wetland	56,615	3,159
3-02-01-01-03	TAR-PAMLICO RIVER	Developed	17,531	2,478
3-02-01-01-04	TAR-PAMLICO RIVER	Agriculture	153,727	15,530
3-02-01-01-04	TAR-PAMLICO RIVER	Forest/Wetland	33,747	1,883
3-02-01-01-04	TAR-PAMLICO RIVER	Developed	1,054	149
3-02-01-01-05	TAR-PAMLICO RIVER	Agriculture	171,459	17,321
3-02-01-01-05	TAR-PAMLICO RIVER	Forest/Wetland	45,935	2,563
3-02-01-01-05	TAR-PAMLICO RIVER	Developed	1,929	273
3-02-01-01-06	TAR-PAMLICO RIVER	Agriculture	264,411	26,711
3-02-01-01-06	TAR-PAMLICO RIVER	Forest/Wetland	58,393	3,258
3-02-01-01-06	TAR-PAMLICO RIVER	Developed	2,051	290
3-02-01-02-01	TAR-PAMLICO RIVER	Forest/Wetland	83,276	4,646
3-02-01-02-01	TAR-PAMLICO RIVER	Agriculture	80,064	8,088
3-02-01-02-01	TAR-PAMLICO RIVER	Developed	249	35
3-02-01-02-02	TAR-PAMLICO RIVER	Agriculture	232,644	23,502
3-02-01-02-02	TAR-PAMLICO RIVER	Forest/Wetland	145,710	8,130
3-02-01-02-02	TAR-PAMLICO RIVER	Developed	12,990	1,836
3-02-01-02-03	TAR-PAMLICO RIVER	Agriculture	447,684	45,225
3-02-01-02-03	TAR-PAMLICO RIVER	Forest/Wetland	110,271	6,152
3-02-01-02-03	TAR-PAMLICO RIVER	Developed	1,267	179
3-02-01-03-01	TAR-PAMLICO RIVER	Agriculture	38,458	3,885
3-02-01-03-01	TAR-PAMLICO RIVER	Forest/Wetland	4,933	275
3-02-01-03-01	TAR-PAMLICO RIVER	Developed	209	30
3-02-01-03-02	TAR-PAMLICO RIVER	Agriculture	91,950	9,289
3-02-01-03-02	TAR-PAMLICO RIVER	Forest/Wetland	20,044	1,118
3-02-01-03-02	TAR-PAMLICO RIVER	Developed	162	23
3-02-01-03-03	TAR-PAMLICO RIVER	Agriculture	466,226	47,098
3-02-01-03-03	TAR-PAMLICO RIVER	Forest/Wetland	84,329	4,705
3-02-01-03-03	TAR-PAMLICO RIVER	Developed	2,607	369
3-02-01-03-04	TAR-PAMLICO RIVER	Agriculture	368,359	37,212
3-02-01-03-04	TAR-PAMLICO RIVER	Forest/Wetland	76,834	4,287
3-02-01-03-04	TAR-PAMLICO RIVER	Developed	3,397	480
3-02-01-03-05	TAR-PAMLICO RIVER	Agriculture	311,327	31,450
3-02-01-03-05	TAR-PAMLICO RIVER	Forest/Wetland	63,073	3,519

Table A-5: Runoff Nutrient Loading By Hydrologic Unit

Hydrologic Unit	Major Drainage	Land Use (Level 2)	N Loading (kg/yr)	P Loading (kg/yr)
3-02-01-03-05	TAR-PAMLICO RIVER	Developed	2,578	364
3-02-01-04-01	TAR-PAMLICO RIVER	Agriculture	18,447	1,863
3-02-01-04-01	TAR-PAMLICO RIVER	Forest/Wetland	2,570	143
3-02-01-04-01	TAR-PAMLICO RIVER	Developed	135	19
3-02-01-04-02	PAMLICO RIVER ESTUARY	Agriculture	991,023	100,114
3-02-01-04-02	PAMLICO RIVER ESTUARY	Forest/Wetland	277,065	15,459
3-02-01-04-02	PAMLICO RIVER ESTUARY	Developed	16,519	2,335
3-02-01-05-01	PAMLICO SOUND	Forest/Wetland	17,288	965
3-02-01-05-01	PAMLICO SOUND	Agriculture	1,591	161
3-02-01-05-01	PAMLICO SOUND	Developed	15	2
3-02-01-05-02	PAMLICO SOUND	Agriculture	20,692	2,090
3-02-01-05-02	PAMLICO SOUND	Forest/Wetland	7,227	403
3-02-01-05-02	PAMLICO SOUND	Developed	2,171	307
3-02-01-05-03	PAMLICO SOUND	Agriculture	289,210	29,216
3-02-01-05-03	PAMLICO SOUND	Forest/Wetland	103,468	5,773
3-02-01-05-03	PAMLICO SOUND	Developed	3,284	464
3-02-01-05-04	PAMLICO SOUND	Agriculture	63,129	6,377
3-02-01-05-04	PAMLICO SOUND	Forest/Wetland	29,821	1,664
3-02-01-05-04	PAMLICO SOUND	Developed	11,066	1,564
3-02-01-06-01	CORE SOUND	Agriculture	15,386	1,554
3-02-01-06-01	CORE SOUND	Forest/Wetland	13,167	735
3-02-01-06-01	CORE SOUND	Developed	2,095	296
3-02-01-06-02	WHITE OAK RIVER	Forest/Wetland	107,666	6,007
3-02-01-06-02	WHITE OAK RIVER	Agriculture	87,659	8,855
3-02-01-06-02	WHITE OAK RIVER	Developed	7,625	1,078
3-02-01-06-03	CORE SOUND	Agriculture	76,719	7,750
3-02-01-06-03	CORE SOUND	Forest/Wetland	27,545	1,537
3-02-01-06-03	CORE SOUND	Developed	2,690	380
3-02-01-06-04	CORE SOUND	Agriculture	5,411	547
3-02-01-06-04	CORE SOUND	Forest/Wetland	1,659	93
3-02-01-06-04	CORE SOUND	Developed	651	92
3-02-01-06-05	BOGUE SOUND	Forest/Wetland	52,389	2,923
3-02-01-06-05	BOGUE SOUND	Agriculture	48,938	4,944
3-02-01-06-05	BOGUE SOUND	Developed	8,762	1,238
3-02-01-06-06	BOGUE SOUND	Agriculture	22,071	2,230
3-02-01-06-06	BOGUE SOUND	Forest/Wetland	17,884	998
3-02-01-06-06	BOGUE SOUND	Developed	2,570	363
3-02-02-01-05	NEUSE RIVER	Agriculture	327,397	33,074
3-02-02-01-05	NEUSE RIVER	Developed	190,904	26,981
3-02-02-01-05	NEUSE RIVER	Forest/Wetland	125,135	6,982
3-02-02-01-06	NEUSE RIVER	Agriculture	152,020	15,357
3-02-02-01-06	NEUSE RIVER	Developed	52,035	7,354
3-02-02-01-06	NEUSE RIVER	Forest/Wetland	40,055	2,235
3-02-02-01-07	NEUSE RIVER	Agriculture	95,561	9,654
3-02-02-01-07	NEUSE RIVER	Developed	26,471	3,741
3-02-02-01-07	NEUSE RIVER	Forest/Wetland	19,082	1,065
3-02-02-01-08	NEUSE RIVER	Agriculture	64,531	6,519
3-02-02-01-08	NEUSE RIVER	Forest/Wetland	10,766	601
3-02-02-01-08	NEUSE RIVER	Developed	8,901	1,258
3-02-02-01-09	NEUSE RIVER	Agriculture	393,950	39,797
3-02-02-01-09	NEUSE RIVER	Forest/Wetland	59,596	3,325
3-02-02-01-09	NEUSE RIVER	Developed	40,334	5,701
3-02-02-01-10	NEUSE RIVER	Agriculture	156,930	15,853
3-02-02-01-10	NEUSE RIVER	Forest/Wetland	41,792	2,332
3-02-02-01-10	NEUSE RIVER	Developed	1,232	174

Table A-5: Runoff Nutrient Loading By Hydrologic Unit

Hydrologic Unit	Major Drainage	Land Use (Level 2)	N Loading (kg/yr)	P Loading (kg/yr)
3-02-02-01-11	NEUSE RIVER	Agriculture	294,459	29,746
3-02-02-01-11	NEUSE RIVER	Forest/Wetland	61,322	3,421
3-02-02-01-11	NEUSE RIVER	Developed	23,195	3,278
3-02-02-01-12	NEUSE RIVER	Agriculture	131,888	13,323
3-02-02-01-12	NEUSE RIVER	Forest/Wetland	19,402	1,083
3-02-02-01-12	NEUSE RIVER	Developed	644	91
3-02-02-01-13	NEUSE RIVER	Agriculture	192,628	19,459
3-02-02-01-13	NEUSE RIVER	Forest/Wetland	41,350	2,307
3-02-02-01-13	NEUSE RIVER	Developed	2,827	400
3-02-02-02-01	NEUSE RIVER	Agriculture	359,352	36,302
3-02-02-02-01	NEUSE RIVER	Forest/Wetland	59,024	3,293
3-02-02-02-01	NEUSE RIVER	Developed	3,597	508
3-02-02-02-02	NEUSE RIVER	Agriculture	101,024	10,206
3-02-02-02-02	NEUSE RIVER	Forest/Wetland	10,798	602
3-02-02-02-02	NEUSE RIVER	Developed	307	43
3-02-02-02-03	NEUSE RIVER	Agriculture	219,539	22,178
3-02-02-02-03	NEUSE RIVER	Forest/Wetland	59,888	3,341
3-02-02-02-03	NEUSE RIVER	Developed	3,346	473
3-02-02-02-04	NEUSE RIVER	Agriculture	302,615	30,570
3-02-02-02-04	NEUSE RIVER	Forest/Wetland	117,305	6,545
3-02-02-02-04	NEUSE RIVER	Developed	1,319	188
3-02-02-02-05	NEUSE RIVER	Agriculture	192,681	19,465
3-02-02-02-05	NEUSE RIVER	Forest/Wetland	80,407	4,486
3-02-02-02-05	NEUSE RIVER	Developed	7,722	1,091
3-02-02-03-01	NEUSE RIVER	Agriculture	180,737	18,258
3-02-02-03-01	NEUSE RIVER	Forest/Wetland	49,539	2,764
3-02-02-03-01	NEUSE RIVER	Developed	1,636	231
3-02-02-03-02	NEUSE RIVER	Agriculture	749,587	75,724
3-02-02-03-02	NEUSE RIVER	Forest/Wetland	117,696	6,567
3-02-02-03-02	NEUSE RIVER	Developed	4,985	704
3-02-02-03-03	NEUSE RIVER	Agriculture	127,053	12,835
3-02-02-03-03	NEUSE RIVER	Forest/Wetland	17,239	962
3-02-02-03-03	NEUSE RIVER	Developed	873	123
3-02-02-03-04	NEUSE RIVER	Agriculture	386,122	39,006
3-02-02-03-04	NEUSE RIVER	Forest/Wetland	66,834	3,729
3-02-02-03-04	NEUSE RIVER	Developed	1,484	210
3-02-02-04-01	NEUSE RIVER	Agriculture	94,214	9,518
3-02-02-04-01	NEUSE RIVER	Forest/Wetland	52,641	2,937
3-02-02-04-01	NEUSE RIVER	Developed	8,445	1,194
3-02-02-04-02	NEUSE RIVER	Agriculture	178,693	18,052
3-02-02-04-02	NEUSE RIVER	Forest/Wetland	100,627	5,614
3-02-02-04-02	NEUSE RIVER	Developed	8,943	1,264
3-02-02-04-03	NEUSE RIVER ESTUARY	Forest/Wetland	183,621	10,245
3-02-02-04-03	NEUSE RIVER ESTUARY	Agriculture	181,262	18,311
3-02-02-04-03	NEUSE RIVER ESTUARY	Developed	23,549	3,328
		Total	23,927,169	2,183,668

Table A-6:Atmospheric Nitrogen Loading Estmates (Export Coefficient and RADM)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use (Level 2)	Area (ha)	Export (kg/y)	RADM (kg/ha y)	RADM N (kg/y)
3-01-01-06-01	ROANOKE RIVER	UNNAMED	Water	257	3,187	8.10	2,082
3-01-01-07-01	ROANOKE RIVER	UNNAMED	Water	1,516	18,798	7.15	10,841
3-01-01-07-02	ROANOKE RIVER	UNNAMED	Water	2,512	31,152	6.37	16,015
3-01-01-07-02	ROANOKE RIVER	UNNAMED	Sand	87	1,079	6.37	555
3-01-01-07-02	ROANOKE RIVER	UNNAMED	Marsh	48	595	6.37	306
3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER	Water	266	3,292	6.63	1,760
3-01-02-01-01	NOTTOWAY RIVER	DARDEN MILL RUN	Water	257	3,185	6.01	1,545
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	Water	158	1,965	6.47	1,026
3-01-02-01-02	NOTTOWAY RIVER	MILL SWAMP	Marsh	13	162	6.47	84
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	Water	42	515	6.52	271
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	Marsh	2	21	6.52	11
3-01-02-01-03	NOTTOWAY RIVER	ASSAMOOSICK SWAMP	Sand	0	1	6.52	1
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	Water	138	1,712	6.59	910
3-01-02-01-04	NOTTOWAY RIVER	ANGELICO CREEK	Marsh	11	130	6.59	69
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	Water	88	1,094	6.97	614
3-01-02-01-05	NOTTOWAY RIVER	OTTERDAM SWAMP	Marsh	5	61	6.97	35
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	Water	59	736	6.74	400
3-01-02-01-06	NOTTOWAY RIVER	NOTTOWAY RIVER	Marsh	23	284	6.74	154
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	Water	78	964	6.81	529
3-01-02-01-07	NOTTOWAY RIVER	SPRING CREEK	Marsh	1	13	6.81	7
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	Water	362	4,488	7.00	2,533
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	Marsh	13	167	7.00	94
3-01-02-01-08	NOTTOWAY RIVER	JONES HOLE SWAMP	Sand	1	12	7.00	7
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	Water	108	1,339	7.00	756
3-01-02-01-09	NOTTOWAY RIVER	BUCKSIN CREEK	Marsh	39	484	7.00	273
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	Water	94	1,171	7.00	661
3-01-02-01-10	NOTTOWAY RIVER	STONY CREEK	Marsh	2	23	7.00	13
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	Water	60	744	6.96	418
3-01-02-01-11	NOTTOWAY RIVER	BUTTERWOOD CREEK	Sand	0	1	6.96	1
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	Water	35	429	7.00	242
3-01-02-01-12	NOTTOWAY RIVER	SAPPONY CREEK	Marsh	3	34	7.00	19
3-01-02-01-13	NOTTOWAY RIVER	STURGEON CREEK	Water	18	226	6.60	120
3-01-02-01-14	NOTTOWAY RIVER	TURKEY EGG CREEK	Water	38	476	6.50	250

Table A-6:Atmospheric Nitrogen Loading Estmates (Export Coefficient and RADM)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use (Level 2)	Area (ha)	Export (kg/y)	RADM (kg/he y)	RADM N (kg/y)
3-01-02-01-15	NOTTOWAY RIVER	NOTTOWAY RIVER	Water	261	3,233	6.22	1,622
3-01-02-01-16	NOTTOWAY RIVER	LITTLE NOTTOWAY RIVER	Water	89	1,107	6.50	580
3-01-02-01-17	NOTTOWAY RIVER	UPPER NOTTOWAY RIVER	Water	35	435	6.50	228
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	Water	418	5,189	6.41	2,682
3-01-02-02-01	BLACKWATER RIVER	LOWER BLACKWATER RIVER	Sand	18	220	6.41	113
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	Water	167	2,067	6.50	1,083
3-01-02-02-02	BLACKWATER RIVER	SEACOCK SWAMP	Marsh	4	52	6.50	27
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	Water	22	273	6.50	143
3-01-02-02-03	BLACKWATER RIVER	UPPER BLACKWATER RIVER	Marsh	3	35	6.50	19
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	Water	9	106	6.48	55
3-01-02-02-04	BLACKWATER RIVER	MILL SWAMP	Marsh	3	33	6.48	17
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	Water	375	4,654	6.70	2,514
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	Marsh	18	222	6.70	120
3-01-02-02-05	BLACKWATER RIVER	UPPER BLACKWATER RIVER	Sand	0	6	6.70	3
3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK	Water	15	185	6.71	100
3-01-02-03-02	CHOWAN RIVER	UNNAMED	Water	2,263	28,065	6.74	15,253
3-01-02-03-02	CHOWAN RIVER	UNNAMED	Marsh	41	515	6.74	280
3-01-02-03-02	CHOWAN RIVER	UNNAMED	Sand	0	3	6.74	2
3-01-02-03-03	CHOWAN RIVER	UNNAMED	Water	6,099	75,627	6.74	41,103
3-01-02-03-03	CHOWAN RIVER	UNNAMED	Marsh	92	1,137	6.74	618
3-01-02-03-03	CHOWAN RIVER	UNNAMED	Sand	37	456	6.74	248
3-01-02-03-04	CHOWAN RIVER	UNNAMED	Water	3,848	47,719	6.50	25,029
3-01-02-03-04	CHOWAN RIVER	UNNAMED	Sand	90	1,120	6.50	588
3-01-02-03-04	CHOWAN RIVER	UNNAMED	Marsh	57	711	6.50	373
3-01-02-03-05	CHOWAN RIVER	SOMERTON CREEK	Water	697	8,645	5.77	4,023
3-01-02-04-01	CHOWAN RIVER	MEHERRIN RIVER	Water	335	4,151	7.32	2,451
3-01-02-04-02	CHOWAN RIVER	POTECASI CREEK	Water	31	384	10.02	311
3-01-02-04-03	MEHERRIN RIVER	TARRARA CREEK	Water	51	630	6.26	318
3-01-02-04-04	MEHERRIN RIVER	MEHERRIN RIVER	Water	219	2,712	6.56	1,435
3-01-02-04-05	MEHERRIN RIVER	MEHERRIN RIVER	Water	10	130	6.50	68
3-01-02-04-06	MEHERRIN RIVER	ROSES CREEK	Water	14	168	6.43	87
3-01-02-04-07	MEHERRIN RIVER	GREAT CREEK	Water	10	129	6.37	66
3-01-02-04-08	MEHERRIN RIVER	MEHERRIN RIVER	Water	5	66	6.50	35

Table A-6:Atmospheric Nitrogen Loading Estmates (Export Coefficient and RADM)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use (Level 2)	Area (ha)	Export (kg/y)	RADM (kg/ha y)	RADM N (kg/y)
3-01-02-04-09	MEHERRIN RIVER	MEHERRIN RIVER	Water	13	157	6.50	82
3-01-02-04-10	MEHERRIN RIVER	FLAT ROCK CREEK	Water	49	605	6.50	317
3-01-02-04-11	MEHERRIN RIVER	LOWER NORTH MEHERRIN RIV	Water	7	89	6.50	46
3-01-02-04-12	MEHERRIN RIVER	MIDDLE MEHERRIN RIVER	Water	12	150	6.52	79
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	Water	19	231	6.50	121
3-01-02-04-13	MEHERRIN RIVER	NORTH MEHERRIN RIVER	Sand	0	1	6.50	1
3-01-02-04-14	MEHERRIN RIVER	MILL SWAMP/FONTAINE CREE	Water	23	291	6.50	153
3-01-02-04-15	MEHERRIN RIVER	FONTAINE CREEK	Water	70	874	6.50	458
3-01-02-04-16	MEHERRIN RIVER	UPPER FONTAINE CREEK	Water	24	295	6.50	155
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	Water	8,150	101,061	6.20	50,536
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	Sand	301	3,738	6.20	1,869
3-01-02-05-01	ALBEMARLE SOUND	UNNAMED	Marsh	69	858	6.20	429
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	Water	21,236	263,323	6.13	130,216
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	Marsh	3,336	41,364	6.13	20,455
3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER	Sand	23	282	6.13	140
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	Water	98,876	1,226,067	4.57	452,321
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	Marsh	2,816	34,919	4.57	12,882
3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER	Sand	1,168	14,489	4.57	5,345
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	Water	38,447	476,742	6.13	235,703
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	Marsh	2,413	29,919	6.13	14,792
3-01-02-05-04	ALBEMARLE SOUND	UNNAMED	Sand	189	2,341	6.13	1,157
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	Water	33,800	419,118	5.90	199,491
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	Sand	1,926	23,887	5.90	11,370
3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER	Marsh	802	9,947	5.90	4,735
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	Water	43,704	541,929	5.77	252,223
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	Marsh	7,630	94,617	5.77	44,036
3-01-02-05-06	CURRITUCK SOUND	UNNAMED	Sand	986	12,220	5.77	5,688
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	Water	18,689	231,746	4.30	80,364
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	Marsh	1,178	14,604	4.30	5,064
3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND	Sand	856	10,617	4.30	3,682
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	Water	11,085	137,456	4.50	49,883
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	Marsh	3,273	40,582	4.50	14,727
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	Sand	427	5,300	4.50	1,923

Table A-6:Atmospheric Nitrogen Loading Estmates (Export Coefficient and RADM)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use (Level 2)	Area (ha)	Export (kg/y)	RADM (kg/ha y)	RADM N (kg/y)
3-01-02-05-08	CURRITUCK SOUND	BACK BAY	Marsh	225	2,793	4.50	1,014
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	Marsh	3,501	43,416	4.80	16,817
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	Water	1,816	22,513	4.80	8,720
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	Marsh	710	8,802	4.80	3,409
3-01-02-05-09	CURRITUCK SOUND	NORTH LANDING RIVER	Sand	16	192	4.80	75
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	Marsh	1,311	16,261	5.04	6,604
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	Marsh	334	4,135	5.04	1,679
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	Water	153	1,894	5.04	769
3-01-02-05-10	CURRITUCK SOUND	NORTHWEST RIVER	Sand	2	21	5.04	9
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	Marsh	46	571	5.00	230
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	Marsh	28	351	5.00	142
3-01-02-05-11	ALBEMARLE SOUND	INDIAN CREEK	Water	11	131	5.00	53
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	Marsh	1,343	16,655	5.75	7,723
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	Water	1,335	16,558	5.75	7,678
3-01-02-05-12	ALBEMARLE SOUND	DISMAL SWAMP	Marsh	57	704	5.75	326
3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED	Water	144	1,780	9.63	1,382
3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED	Water	388	4,810	8.14	3,156
3-02-01-01-03	TAR-PAMLICO RIVER	SWIFT CREEK	Water	96	1,193	8.38	806
3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED	Water	572	7,089	6.99	3,999
3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED	Water	128	1,585	7.15	914
3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED	Water	204	2,532	6.74	1,376
3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK	Water	31	384	8.10	251
3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK	Water	112	1,384	8.06	899
3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK	Water	73	907	7.05	516
3-02-01-03-01	TAR-PAMLICO RIVER	UNNAMED	Water	8	103	6.70	56
3-02-01-03-02	TAR-PAMLICO RIVER	CONETOE CREEK	Water	2	20	6.70	11
3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED	Water	198	2,450	6.65	1,314
3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED	Water	739	9,161	6.20	4,578
3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED	Water	35	428	6.27	217
3-02-01-04-01	TAR-PAMLICO RIVER	VAN SWAMP	Marsh	89	1,098	6.20	549
3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED	Water	49,936	619,210	5.53	276,035
3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED	Marsh	8,754	108,552	5.53	48,391
3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED	Sand	3,860	47,867	5.53	21,339

Table A-6:Atmospheric Nitrogen Loading Estmates (Export Coefficient and RADM)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use (Level 2)	Area (ha)	Export (kg/y)	RADM (kg/ha y)	RADM N (kg/y)
3-02-02-01-09	NEUSE RIVER	UNNAMED	Water	384	4,760	7.01	2,692
3-02-02-01-10	NEUSE RIVER	UNNAMED	Water	96	1,184	6.30	602
3-02-02-01-11	NEUSE RIVER	LITTLE RIVER	Water	243	3,009	7.74	1,877
3-02-02-01-12	NEUSE RIVER	UNNAMED	Water	24	303	6.37	156
3-02-02-01-13	NEUSE RIVER	UNNAMED	Water	825	10,225	6.27	5,170
3-02-02-02-01	NEUSE RIVER	UNNAMED	Water	422	5,234	6.09	2,569
3-02-02-02-02	NEUSE RIVER	UNNAMED	Water	80	987	6.20	493
3-02-02-02-03	NEUSE RIVER	UNNAMED	Water	247	3,058	5.77	1,422
3-02-02-02-03	NEUSE RIVER	UNNAMED	Sand	10	118	5.77	55
3-02-02-02-04	NEUSE RIVER	SWIFT CREEK	Water	68	849	5.85	400
3-02-02-02-05	NEUSE RIVER	UNNAMED	Water	740	9,177	5.65	4,184
3-02-02-02-05	NEUSE RIVER	UNNAMED	Sand	202	2,503	5.65	1,141
3-02-02-02-05	NEUSE RIVER	UNNAMED	Marsh	3	37	5.65	17
3-02-02-03-01	NEUSE RIVER	CONTENTNEA CREEK	Water	538	6,666	7.60	4,085
3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK	Water	392	4,858	6.53	2,557
3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP	Water	37	456	6.20	228
3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK	Water	50	623	6.19	311
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	Marsh	134	1,658	10.83	1,448
3-02-02-04-01	NEUSE RIVER	TRENT RIVER	Sand	53	658	10.83	575
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	Water	234	2,906	5.46	1,281
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	Sand	57	706	5.46	311
3-02-02-04-02	NEUSE RIVER	TRENT RIVER	Marsh	29	355	5.46	156
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	Water	49,038	608,074	4.84	237,374
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	Marsh	7,086	87,862	4.84	34,299
3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED	Sand	175	2,171	4.84	848

Table A-6:Atmospheric Nitrogen Loading Estmates (Export Coefficient and RADM)

Hydrologic Unit	Major Drainage	Minor Drainage	Land Use (Level 2)	Area (ha)	Export (kg/y)	RADM (kg/ha y)	RADM N (kg/y)
3-02-01-05-01	PAMLICO SOUND	UNNAMED	Water	6,388	79,213	3.80	24,275
3-02-01-05-01	PAMLICO SOUND	UNNAMED	Marsh	69	862	3.80	264
3-02-01-05-02	PAMLICO SOUND	UNNAMED	Water	122,589	1,520,099	3.80	465,837
3-02-01-05-02	PAMLICO SOUND	UNNAMED	Marsh	1,243	15,415	3.80	4,724
3-02-01-05-02	PAMLICO SOUND	UNNAMED	Sand	797	9,877	3.80	3,027
3-02-01-05-03	PAMLICO SOUND	UNNAMED	Water	224,434	2,782,979	3.95	885,446
3-02-01-05-03	PAMLICO SOUND	UNNAMED	Marsh	9,777	121,239	3.95	38,574
3-02-01-05-03	PAMLICO SOUND	UNNAMED	Sand	913	11,322	3.95	3,602
3-02-01-05-04	PAMLICO SOUND	UNNAMED	Water	37,755	468,159	4.68	176,773
3-02-01-05-04	PAMLICO SOUND	UNNAMED	Marsh	7,109	88,147	4.68	33,284
3-02-01-05-04	PAMLICO SOUND	UNNAMED	Sand	141	1,754	4.68	662
3-02-01-06-01	CORE SOUND	UNNAMED	Water	70,108	869,337	3.78	264,659
3-02-01-06-01	CORE SOUND	UNNAMED	Marsh	6,434	79,782	3.78	24,289
3-02-01-06-01	CORE SOUND	UNNAMED	Sand	404	5,005	3.78	1,524
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	Water	6,287	77,954	5.20	32,690
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	Marsh	277	3,436	5.20	1,441
3-02-01-06-02	WHITE OAK RIVER	UNNAMED	Sand	59	729	5.20	306
3-02-01-06-03	CORE SOUND	UNNAMED	Water	17,412	215,906	3.80	66,165
3-02-01-06-03	CORE SOUND	UNNAMED	Marsh	2,498	30,973	3.80	9,492
3-02-01-06-03	CORE SOUND	UNNAMED	Sand	33	408	3.80	125
3-02-01-06-04	CORE SOUND	UNNAMED	Water	9,981	123,766	3.30	32,938
3-02-01-06-04	CORE SOUND	UNNAMED	Sand	957	11,868	3.30	3,159
3-02-01-06-04	CORE SOUND	UNNAMED	Marsh	919	11,392	3.30	3,032
3-02-01-06-05	BOGUE SOUND	UNNAMED	Water	12,335	152,953	4.70	57,974
3-02-01-06-05	BOGUE SOUND	UNNAMED	Marsh	2,156	26,739	4.70	10,135
3-02-01-06-05	BOGUE SOUND	UNNAMED	Sand	290	3,598	4.70	1,364
3-02-01-06-06	BOGUE SOUND	UNNAMED	Water	2,969	36,813	4.70	13,953
3-02-01-06-06	BOGUE SOUND	UNNAMED	Sand	39	488	4.70	185
3-02-01-06-06	BOGUE SOUND	UNNAMED	Marsh	29	361	4.70	137
3-02-02-01-05	NEUSE RIVER	UNNAMED	Water	652	8,090	8.52	5,556
3-02-02-01-06	NEUSE RIVER	SWIFT CREEK	Water	547	6,782	7.99	4,372
3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK	Water	126	1,557	8.26	1,038
3-02-02-01-08	NEUSE RIVER	MIDDLE CREEK	Water	24	297	7.57	181

APPENDIX B

Point Source Loading

Table B-1: NC Permitted Point Source Loading for Dischargers With Self Monitoring Data

FACILITY	NPDES	FLOW MGD	TN MG/L	TN KG/Y	TP MG/L	TP KG/Y	Hydro Unit
ALBEMARLE & PAMLICO SOUNDS							
ELIZABETH CITY WWTP, CITY OF	NC0025011	1.554	19.00	43,399	2.50	5,710	3-01-02-06-02
HERTFORD WWTP, TOWN OF	NC0021849	0.269	11.17	4,180	0.46	171	3-01-02-06-04
MANTEO WWTP, TOWN OF	NC0025488	0.196	10.29	2,389	1.00	229	3-01-02-06-03
COLUMBIA WWTP, TOWN OF	NC0020443	0.090	8.12	1,009	0.96	45	3-01-02-06-06
ROPER WWTP, TOWN OF	NC0036315	0.063	4.13	369	2.76	240	3-01-02-06-06
KILL DEVIL HILLS WWTP, TOWN OF	NC0028313	0.040	26.04	1,456	4.62	255	3-01-02-06-07
EDENTON WTP (TOWN OF)	NC0007582	0.010	1.46	80	0.10	1	3-01-02-06-01
EDENTON WTP (TOWN OF)	NC0007582	0.010	1.34	19	0.08	1	3-01-02-06-01
HATTERAS WASH BASKET INC	NC0001724	0.004	NO DATA	NO DATA	0.96	8	3-02-01-06-02
TOTAL		2.262		82,715		6,661	
CHOWAN RIVER							
PERDUE INC. COFIELD PLANT	NC0049191	1.180	1.15	1,874	0.58	945	3-01-02-03-02
UNITED PIECE DYE WORKS LTD.PA	NC0003867	0.816	12.40	13,974	0.80	569	3-01-02-03-04
COLERAIN WWTP, TOWN OF	NC0020630	0.091	9.23	1,160	0.44	55	3-01-02-03-03
DOC - GATES CO. SUBSIDIARY	NC0029700	0.015	21.30	441	5.55	115	3-01-02-03-02
NORTHAMPTON CO SCH-NCHS EAST	NC0031330	0.007	10.18	96	1.96	19	3-01-02-04-02
GATES CO SCH - GATES CO H.S.	NC0033821	0.006	48.40	334	6.01	35	3-01-02-03-02
GATES CO SCH - SUNBURY PRIMAR	NC0033791	0.004	40.22	222	5.82	33	3-01-02-03-02
GATES CO SCH - GATESVILLE ELE	NC0033782	0.003	26.40	109	8.40	35	3-01-02-03-02
GATES CO SCH - BUCKLAND ELEM	NC0043974	0.003	32.16	133	4.96	21	3-01-02-03-02
CHOWAN CO SCH - CHOWAN JR. HS	NC0039462	0.003	21.45	89	2.18	9	3-01-02-03-03
BERTIE CO SCH-C G WHITE ELEM	NC0032441	0.002	13.77	36	1.10	3	3-01-02-03-02
GATES CO SCH - CENTRAL JR HIG	NC0033812	0.002	47.09	130	5.20	14	3-01-02-03-02
CHOWAN CO SCH - WHITE OAK SCH	NC0039454	0.002	36.75	107	6.90	19	3-01-02-03-04
GATES CO SCH - T S COOPER ELE	NC0033804	0.001	56.24	80	5.78	8	3-01-02-03-02
TOTAL		2.134		18,791		1,874	
NEUSE RIVER							
RALEIGH NEUSE RIVER WWTP	NC0029033	29.067	9.82	382,147	2.03	81,487	3-02-02-01-05
WEYERHAEUSER-NEW BERN *	NC0003191	26.360	6.40	232,892	0.80	21,834	3-02-02-02-05
WILSON WWTP, TOWN OF	NC0023906	8.440	11.33	132,068	1.10	12,821	3-02-02-03-02
GOLDSBORO WWTP, CITY OF	NC0023949	5.892	NO DATA	NO DATA	1.91	15,541	3-02-02-01-13
KINSTON, CITY-PEACHTREE PLANT	NC0020541	3.971	7.00	36,366	1.50	8,226	3-02-02-02-03
CARY-SOUTH WWTP, TOWN OF	NC0065102	3.724	17.20	88,457	1.20	6,171	3-02-02-01-07
CENTRAL JOHNSTON COUNTY WWTP	NC0030716	2.846	13.09	61,448	1.09	4,284	3-02-02-01-10
E. I. DUPONT, KINSTON	NC0003760	2.479	3.50	11,962	1.24	4,245	3-02-02-02-03
BURLINGTON IND., WAKE PLANT	NC0001376	2.480	7.85	26,968	3.22	10,939	3-02-02-01-05
CARY-NORTH WWTP, TOWN OF	NC0048879	2.189	8.00	23,883	3.33	9,929	3-02-02-01-05
FARMVILLE WWTP, TOWN OF	NC0029572	2.027	5.45	15,298	2.80	7,836	3-02-02-03-04
CP&L LEE S.E. (PWR PLT)	NC0003417	1.814	16.47	36,711	0.02	45	3-02-02-01-13
CONTENTNEA SEWAGE DIST. WWTP	NC0032077	1.449	11.70	23,413	0.76	1,521	3-02-02-03-04
CLAYTON WWTP, TOWN OF	NC0025453	0.957	6.60	8,723	1.10	1,454	3-02-02-01-06
BENSON WWTP, TOWN OF	NC0020389	0.818	11.71	19,228	3.01	3,400	3-02-02-01-09
APEX, TOWN OF (MIDDLE CRK.)	NC0064060	0.815	21.01	23,647	1.99	2,240	3-02-02-01-07
KINSTON-NORTHSIDE WWTP	NC0024236	0.716	8.54	8,453	1.09	1,076	3-02-02-02-03
WAKE FOREST-SMITH CREEK WWTP	NC0030759	0.548	8.31	6,269	1.80	1,362	3-02-02-01-05
STANTONSBURG WWTP, TOWN OF	NC0057606	0.449	6.02	3,753	0.89	552	3-02-02-03-02
ZEBULON WWTP, TOWN OF	NC0024368	0.448	15.80	9,776	2.10	1,299	3-02-02-03-01
LA GRANGE WWTP, TOWN OF	NC0021644	0.440	NO DATA	NO DATA	1.72	1,045	3-02-02-02-01
KENLY NEW WWTP, TOWN OF	NC0064891	0.378	6.70	3,496	1.65	861	3-02-02-01-11
WENDELL WWTP, TOWN OF	NC0025020	0.225	10.22	3,176	3.23	1,004	3-02-02-01-11
PRINCETON, TOWN OF WWTP	NC0026662	0.194	7.26	1,945	0.96	256	3-02-02-01-12
CRA. CO. WOOD ENERGY LIM. PAR	NC0075281	0.189	0.63	164	0.57	149	3-02-02-02-05
SNOW HILL WWTP, TOWN OF	NC0020842	0.185	8.96	2,294	1.16	296	3-02-02-03-02

Table B-1: NC Permitted Point Source Loading for Dischargers With Self Monitoring Data

FACILITY	NPDES	FLOW MGD	TN MG/L	TN KG/Y	TP MG/L	TP KG/Y	Hydro Unit
VANCEBORO WWTP, TOWN OF	NC0031828	0.120	16.98	2,814	2.18	361	3-02-02-02-04
WAYNE COUNTY (GENOA IND. WWTP	NC0030392	0.100	8.75	1,348	1.34	185	3-02-02-01-13
DOC - EASTN CORR. CTR.-GREEN	NC0029718	0.062	5.40	612	0.85	82	3-02-02-03-04
CAROLINA WATER SER-RIVER BEND	NC0030406	0.070	10.00	967	1.95	189	3-02-02-04-02
PINK HILL WWTP, TOWN OF	NC0020001	0.070	3.80	338	1.28	124	3-02-02-04-01
MIDDLESEX WWTP, TOWN OF	NC0021083	0.066	13.90	1,240	0.90	82	3-02-02-03-01
MORRISVILLE WWTP, TOWN OF	NC0050041	0.063	2.11	184	1.21	106	3-02-02-01-05
MORRISVILLE(PERIMETER PK),TOW	NC0050038	0.060	3.71	298	0.72	60	3-02-02-01-05
UNIPROP, INC./RIVER WALK MHP	NC0039292	0.042	18.49	1,072	2.48	144	3-02-02-01-05
WALNUT CREEK, VILLAGE OF	NC0039233	0.024	8.57	294	2.74	91	3-02-02-02-01
CROSS CREEK MOBILE ESTATES	NC0058301	0.021	11.85	338	3.36	97	3-02-02-01-05
CAROLINA WATER SERVICE, INC.	NC0051322	0.020	12.77	369	1.86	55	3-02-02-01-05
HOOKERTON WWTP, TOWN OF	NC0025712	0.020	7.03	194	1.86	52	3-02-02-03-02
WALSTONBURG WWTP, TOWN OF	NC0020362	0.017	20.48	481	2.10	49	3-02-02-03-04
TRENTON WWTP, TOWN OF	NC0021342	0.017	8.00	188	1.39	33	3-02-02-04-02
CAROLINA WATER SERVICE,INC.	NC0060330	0.016	12.65	277	3.20	71	3-02-02-01-05
COMPASS DEVELOPMENT CORP.	NC0063541	0.014	4.82	89	1.12	22	3-02-02-01-05
IRA D LEE ASSOC., INC. DEERCH	NC0063746	0.013	17.30	311	4.02	72	3-02-02-01-05
PITT CO SCH-D H CONLEY HS	NC0034169	0.013	23.10	416	3.00	54	3-02-02-02-04
STRAWNS CROSSING	NC0062367	0.012	10.30	171	1.74	29	3-02-02-01-05
LENOIR CO SCH-N. LENOIR HIGH	NC0032565	0.012	7.66	127	2.50	41	3-02-02-03-04
WAKE HIGH MEADOWS HOMEOWNERS	NC0058246	0.011	15.32	233	4.80	73	3-02-02-01-05
LENOIR CO SCH-S. LENOIR HIGH	NC0032557	0.010	12.38	171	4.66	64	3-02-02-02-03
INDIAN CREEK OVERLOOK DEV.	NC0060771	0.009	22.23	276	5.60	70	3-02-02-01-05
LENOIR CO SCH - CONTENTNEA EL	NC0032581	0.009	18.89	236	5.25	65	3-02-02-02-03
LENOIR CO SCH - WOODINGTON MI	NC0032549	0.009	15.85	196	4.82	60	3-02-02-04-02
COMPASS DEVELOPMENT CORP.	NC0063633	0.008	5.83	61	1.96	22	3-02-02-01-05
LENOIR CO SCH - SAVANNAH MIDD	NC0032522	0.008	7.93	83	0.82	9	3-02-02-02-03
JOHNSTON CO SCH-S. JOHNSTON H	NC0036854	0.007	16.00	185	3.68	36	3-02-02-01-09
HEATER UTILITIES-BEACHWOOD	NC0060577	0.006	29.83	247	4.02	33	3-02-02-01-05
JOHNSTON CO SCH-CORINTH HOLDE	NC0036838	0.006	12.14	101	6.65	54	3-02-02-01-11
CRAVEN CO SCH - W. CRAVEN HIG	NC0033081	0.006	5.10	42	0.67	6	3-02-02-02-04
HEATER UTILITIES-MALLARD XING	NC0058505	0.005	22.82	188	4.40	30	3-02-02-01-05
CWS-PINE HOLLOW (WILLOW BROOK	NC0064378	0.005	14.65	101	2.25	16	3-02-02-01-05
MILL RUN ASSC./UNIPROP	NC0058408	0.005	15.30	106	2.06	14	3-02-02-01-05
LENOIR CO SCH - SOUTHWOOD ELE	NC0032531	0.005	15.15	105	3.80	26	3-02-02-02-03
LENOIR CO SCH-MOSS HILL ELEM.	NC0032573	0.004	28.36	146	6.80	36	3-02-02-02-01
THE DURANT GROUP	NC0060801	0.003	8.06	33	1.74	7	3-02-02-01-05
TRADEWINDS HOMEOWNERS ASSO.IN	NC0065714	0.003	22.98	95	4.80	20	3-02-02-01-05
RIVER MILL HOMEOWN. ASSOC.,IN	NC0058278	0.002	9.21	25	2.12	6	3-02-02-01-05
NERO UTILITY, INC.	NC0061638	0.002	6.10	17	1.10	3	3-02-02-01-07
CRAVEN EVAL/TRAIN CTR	NC0042765	0.002	10.30	28	0.80	2	3-02-02-02-05
S. F. DOUGLASS WAREHOUSE	NC0058890	0.001	22.20	31	5.35	7	3-02-02-01-05
		99.827		1,102,999		202,801	
NEUSE RIVER ESTUARY							
NEW BERN WWTP, CITY OF	NC0026348	2.967	18.82	76,884	4.00	16,334	3-02-02-04-03
USMC-CHERRY POINT MCAS	NC0003816	2.133	12.70	97,410	1.22	3,894	3-02-02-04-03
HAVELOCK WWTP, CITY OF	NC0021253	1.069	4.95	7,238	2.85	3,729	3-02-02-04-03
NORTHEAST CRAVEN UTILITY CO #2	NC0033111	0.216	7.95	2,380	2.25	668	3-02-02-04-03
NORTHEAST CRAVEN UTILITY CO #1	NC0033111	0.085	8.80	668	3.37	256	3-02-02-04-03
ORIENTAL WWTP	NC0057011	0.064	4.83	360	1.92	143	3-02-02-04-03
PHILLIPS PLATING COMPANY	NC0001881	0.025	3.62	125	0.17	6	3-02-02-04-03
SHIPYARD PROPERTY	NC0056545	0.013	14.45	299	1.90	34	3-02-02-04-03
CAROLINA PINES UTILITY CO.	NC0056618	0.010	2.49	34	0.53	7	3-02-02-04-03
TOTAL		5.521		125,211		24,772	
PAMLICO RIVER ESTUARY							
TEXASGULF CHEMICALS (PIPE 1)	NC0003255	55.489	NO DATA	NO DATA	10.48	802,821	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 2)	NC0003255	1.162	NO DATA	NO DATA	1.16	1,865	3-02-01-04-02

Table B-1: NC Permitted Point Source Loading for Dischargers With Self Monitoring Data

FACILITY	NPDES	FLOW MGD	TN MG/L	TN K/Y	TP MG/L	TP K/Y	Hydro Unit
TEXASGULF CHEMICALS (PIPE 5)	NC0003256	0.890	NO DATA	NO DATA	0.11	136	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 9)	NC0003256	0.667	NO DATA	NO DATA	0.16	166	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 11)	NC0003256	0.290	NO DATA	NO DATA	0.05	20	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 3)	NC0003256	0.271	NO DATA	NO DATA	0.17	64	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 10)	NC0003256	0.216	NO DATA	NO DATA	0.10	30	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 4)	NC0003256	0.135	NO DATA	NO DATA	0.12	22	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 8)	NC0003256	0.041	NO DATA	NO DATA	0.16	9	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 6)	NC0003256	0.037	NO DATA	NO DATA	0.89	46	3-02-01-04-02
TEXASGULF CHEMICALS (PIPE 7)	NC0003256	0.021	NO DATA	NO DATA	0.87	2	3-02-01-04-02
TOTAL		89.189		NO DATA		894,089	
ROANOKE RIVER							
WEYERHAEUSER, PLYMOUTH	NC0000680	47.006	6.73	438,871	1.97	69,468	3-01-01-07-02
CHAMPION INTERNATIONAL-R RAPI	NC0000752	17.881	5.93	144,877	0.84	13,193	3-01-01-06-01
ROANOKE RAPIDS SANITARY DIST.	NC0024201	6.133	9.20	77,921	1.36	11,434	3-01-01-07-01
PERDUE INC.-LEWISTON PLT	NC0028836	2.410	23.20	77,214	10.80	35,946	3-01-01-07-01
WILLIAMSTON WWTP, TOWN OF	NC0020044	1.567	10.44	23,026	1.80	3,529	3-01-01-07-02
WEST POINT PEPPERELL,HAMILTON	NC0001961	0.922	10.83	13,790	4.47	5,692	3-01-01-07-02
PLYMOUTH WWTP, TOWN OF	NC0020028	0.489	10.26	6,804	1.62	1,027	3-01-01-07-02
WELDON WWTP, TOWN OF	NC0025721	0.436	39.85	24,104	2.90	1,391	3-01-01-07-01
DOC - CALENDONIA CORRECTIONAL	NC0027626	0.378	11.20	5,847	1.99	1,039	3-01-01-07-01
WINDSOR WWTP, TOWN OF	NC0026781	0.292	4.93	1,986	0.92	371	3-01-01-07-03
LIBERTY FABRICS,INC	NC0023710	0.180	19.96	4,133	5.50	1,098	3-01-01-07-02
JAMESVILLE WWTP, TOWN OF	NC0035858	0.083	10.49	1,202	2.44	280	3-01-01-07-02
DOC - ODOM CORRECTIONAL INST.	NC0027642	0.070	21.60	2,066	3.83	360	3-01-01-07-01
LEWISTON-WOODVILLE UTILITIES	NC0023116	0.069	NO DATA	NO DATA	1.82	132	3-01-01-07-03
RICH SQUARE WWTP, TOWN OF	NC0025437	0.044	13.50	820	1.75	106	3-01-01-07-01
HALIFAX NEW WWTP	NC0066192	0.028	16.91	857	3.80	192	3-01-01-07-01
TOTAL		77.769		821,821		146,236	
TAR-PAMLICO RIVER							
ROCKY MOUNT (TAR RIVER WWTP)	NC0030317	10.786	13.31	197,707	2.63	30,184	3-02-01-01-06
GREENVILLE UTILITIES	NC0023931	8.202	11.39	129,014	1.90	21,821	3-02-01-03-04
TARBORO WWTP, TOWN OF	NC0020905	2.086	13.75	39,611	1.18	3,399	3-02-01-03-03
OXFORD (RENOVATED WWTP)	NC0025054	1.779	11.90	29,296	1.05	2,580	3-02-01-01-01
WASHINGTON WWTP, TOWN OF	NC0020648	1.586	8.68	19,096	1.24	2,719	3-02-01-04-02
NATIONAL SPINNING CO. WASHTO	NC0001627	1.036	9.64	13,779	0.78	1,115	3-02-01-04-02
ROBERSONVILLE WWTP, TOWN OF	NC0026042	1.029	11.85	16,585	2.15	3,065	3-02-01-03-05
BETHEL, TOWN OF (WWTP)	NC0061514	0.674	6.62	6,162	0.76	707	3-02-01-03-02
LOUISBURG WWTP, TOWN OF	NC0020231	0.637	12.55	11,040	0.95	836	3-02-01-01-02
BELHAVEN WWTP, TOWN OF	NC0026492	0.390	2.13	1,174	0.72	397	3-02-01-04-02
WARREN CO WWTP	NC0020834	0.395	9.20	5,019	7.90	4,091	3-02-01-02-02
PINETOPS WWTP, TOWN OF	NC0020435	0.343	8.11	3,842	0.78	369	3-02-01-03-03
FRANKLIN WATER & SEWER AUTHOR	NC0068911	0.188	9.90	2,570	1.89	369	3-02-01-01-02
SPRING HOPE WWTP, TOWN OF	NC0020061	0.162	17.12	3,890	1.84	412	3-02-01-01-04
LITTLETON WWTP, TOWN OF	NC0025691	0.154	12.79	2,720	0.95	202	3-02-01-02-01
CSX TRANSPORTATION-SEABOARD R #1	NC0001503	0.149	9.85	2,027	0.13	27	3-02-01-03-03
EAGLE SNACKS, INC. (PIPE 2)	NC0051195	0.141	10.31	2,008	0.08	16	3-02-01-03-05
BUNN WWTP, TOWN OF	NC0042269	0.031	6.45	276	1.10	47	3-02-01-01-02
MACCLESFIELD WWTP, TOWN OF	NC0050661	0.022	12.54	381	1.46	44	3-02-01-03-03
CSX TRANSPORTATION-SEABOARD R #2	NC0001503	0.017	9.45	222	0.15	4	3-02-01-03-03
PITT CO SCH-STOKES ELEM.	NC0034142	0.010	38.90	537	2.32	32	3-02-01-03-04
PITT CO SCH-N. PITT HIGH SCH.	NC0034134	0.006	26.93	223	2.32	19	3-02-01-03-04
WILSON CO. SCH.-GARDNERS	NC0057321	0.001	23.40	32	6.17	8	3-02-01-03-03
TOTAL		28.804		467,660		72,144	
AREAWIDE TOTAL		277.5		2,667,727		1,258,048	
* From NCDEM, 1987							

Table B-2: NC Dischargers With Flow Data

FACILITY	NPDES	FLOW (mgd)	HYDRO UNIT	MAJOR DRAINAGE	MINOR DRAINAGE
MARTIN MARIETTA-NEW BERN	NC0000931	9.552	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
MARTIN MARIETTA-CLARKS QUARRY	NC0061191	8.150	3-02-02-02-05	NEUSE RIVER	UNNAMED
FARMVILLE WWTP, TOWN OF	NC0029572	2.027	3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK
SEYMOUR JOHNSON AIR FORCE BASE	NC0063177	1.147	3-02-02-02-01	NEUSE RIVER	UNNAMED
ENFIELD WWTP, TOWN OF	NC0025402	0.553	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
VEPCO-ROANOKE RAPIDS HYDRO STA	NC0056316	0.548	3-01-01-06-01	ROANOKE RIVER	UNNAMED
BURROUGHS-WELLCOME COMPANY	NC0001058	0.441	3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED
BURROUGHS-WELLCOME COMPANY	NC0001058	0.441	3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED
CRAVEN CO SCH - W. CRAVEN MIDD	NC0029904	0.400	3-02-02-02-05	NEUSE RIVER	UNNAMED
SCOTLAND NECK WWTP, TOWN OF	NC0023337	0.345	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
LEE OPERATING CO.-TRAVEL WORLD	NC0029262	0.300	3-01-01-07-01	ROANOKE RIVER	UNNAMED
MARTIN MARIETTA-FOUNTAIN	NC0043273	0.144	3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED
MARTIN MARIETTA-BENSON	NC0058033	0.090	3-02-02-01-09	NEUSE RIVER	UNNAMED
AURORA WWTP, TOWN OF	NC0021521	0.084	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
DARE COUNTY LANDFILL	NC0049140	0.084	3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER
CAPE HATTERAS WATER ASSOC.,INC	NC0033103	0.051	3-02-01-05-02	PAMLICO SOUND	UNNAMED
FRANKLINTON WTP, TOWN OF	NC0002852	0.049	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
ELIZABETH CITY WTP, TOWN OF	NC0036447	0.047	3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER
PERQUIMANS CO.WAT.DEPT./BETHEL	NC0068861	0.047	3-01-02-05-04	ALBEMARLE SOUND	UNNAMED
GEORGIA PACIFIC-BRIDGETON	NC0001813	0.044	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
CRESWELL WWTP, TOWN OF	NC0048861	0.034	3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER
EUREKA WWTP, TOWN OF	NC0048062	0.034	3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP
PHILLIPS FIBERS CORPORATION	NC0031348	0.029	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
WALNUT CREEK, VILLAGE OF	NC0039233	0.024	3-02-02-02-01	NEUSE RIVER	UNNAMED
DARE CO. REGNL WATER SUPPLY	NC0035670	0.024	3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER
RENNY CREEK MINE	NC0051888	0.023	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
KITTRELL JOB CORP. CENTER	NC0029131	0.021	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
DOC - HALIFAX SUBSIDIARY	NC0029734	0.018	3-01-01-07-01	ROANOKE RIVER	UNNAMED
DOC - MARTIN CO. SUBSIDIARY	NC0027791	0.018	3-01-01-07-02	ROANOKE RIVER	UNNAMED
ZEBULON WTP, TOWN OF	NC0000809	0.017	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
TEXASGULF CHEMICALS	NC0069647	0.015	3-02-02-02-03	NEUSE RIVER	UNNAMED
COUNTRYSIDE MOBILE ESTATES	NC0030724	0.012	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
DOC - VANCE SUBSIDIARY #4260	NC0041858	0.010	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
WAKE TECHNICAL INSTITUTE	NC0025631	0.010	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
BERTIE CO SCH-BERTIE HIGH SCH.	NC0032450	0.010	3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER
GEORGIA PACIFIC-ENFIELD	NC0039624	0.009	3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK
DOC - NASH ADVANCEMENT CENTER	NC0027821	0.009	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
WAKE CO. SCH.-E. WAKE HIGH SCH	NC0031763	0.009	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
DOT-GRANVILLE CO. I-85 REST AR	NC0024724	0.008	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
SINGER FURNITURE	NC0033197	0.008	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
HEATER UTIL.-BRIARWOOD FARM MH	NC0062740	0.008	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
NOVO NORDISK BIOCHEM INC	NC0047899	0.008	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
HOWELL'S CHILD CARE CENTER INC	NC0038741	0.008	3-02-02-02-02	NEUSE RIVER	UNNAMED
HYDE COUNTY WATER SYSTEM	NC0068233	0.008	3-02-01-05-03	PAMLICO SOUND	UNNAMED
NASH CO SCH-SOUTHERN NASH HS	NC0037915	0.007	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
EDGECOMBE CO SCH-N. EDGECOMBE	NC0050431	0.007	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
MID-EAST REGIONAL HOUSING AUTH	NC0035751	0.006	3-02-01-05-03	PAMLICO SOUND	UNNAMED
VILLAS ASSOCIATION, INC.	NC0023027	0.005	3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND
HERITAGE MEADOWS LONG TERM CAR	NC0047279	0.005	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
WAYNE CO SCH-EASTERN WAYNE HS	NC0038075	0.005	3-02-02-02-02	NEUSE RIVER	UNNAMED
NASH CO SCH-S. NASH JR HS	NC0037885	0.005	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
THE FISHER NUT COMPANY	NC0073385	0.005	3-01-02-05-01	ALBEMARLE SOUND	UNNAMED
PINES MOBILE HOME PARK #2	NC0068985	0.004	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
CORRY/HIEBERT	NC0036854	0.004	3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED
BAN INN, INC. DBA SCOTTISH INN	NC0039144	0.004	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
EDGECOMBE CO SCH-PHILLIPS	NC0050415	0.004	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
GRANVILLE CO SCH - WILTON SCH.	NC0043109	0.004	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED

Table B-2: NC Dischargers With Flow Data

FACILITY	NPDES	FLOW (mgd)	HYDRO UNIT	MAJOR DRAINAGE	MINOR DRAINAGE
LAUREL HILLS HEALTH CARE	NC0069009	0.003	3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED
FRANKLIN CO SCH-BEST MIDDLE	NC0067186	0.003	3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED
BEAUFORT CO SCH-BEAUFORT ELEM.	NC0036919	0.003	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
WILSON CO. SCH.-ROCK RIDGE SCH	NC0042889	0.003	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
THE FORTY NINERS CLUB, INC.	NC0035181	0.003	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
WAYNE CO SCH-NORWAYNE JR HIGH	NC0034801	0.003	3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP
WAYNE CO SCH-C. S. AYCOCK H.S.	NC0034819	0.003	3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP
SPENCER'S REST HOME	NC0040584	0.002	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
CAMDEN CO SCH-GRANDY ELEM	NC0037214	0.002	3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER
CRAVEN CO SCH - BRIDGETON ELEM	NC0032981	0.002	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
HYDE CO SCH-MATTAMUSKEET SCH	NC0032468	0.002	3-02-01-05-03	PAMLICO SOUND	UNNAMED
WAKE CO. SCH.-WILLOW SPRINGS E	NC0049093	0.002	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
EASTERN SHORE TOWNHOUSES OA	NC0061450	0.002	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
NASH CO SCH-COOPERS ELEM	NC0037931	0.002	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
GATES CO BD OF COMM. WTP	NC0047112	0.002	3-01-02-03-02	CHOWAN RIVER	UNNAMED
BERTIE CO SCH-ASKEWVILLE ELEM	NC0032409	0.001	3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER
WARREN CO. SCH-VAUGHAN ELEM	NC0050016	0.001	3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK
WILSON CO. SCH.SPRINGFD.MIDDLE	NC0042854	0.001	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
NASH CO SCH-SWIFT CREEK ELEM	NC0037893	0.001	3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK
BRISTOL MEYERS/ SQUIBB INC.	NC0048194	0.001	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
NASH CO SCH-CEDAR GROVE ELEM	NC0037923	0.001	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
PERQUIMANS CO SCH-UNION SCH.	NC0033618	0.001	3-01-02-05-04	ALBEMARLE SOUND	UNNAMED
PERQUIMANS CO SCH-CENTRAL GRAM	NC0033626	0.001	3-01-02-05-04	ALBEMARLE SOUND	UNNAMED
EDGECOMBE CO SCH-W. EDGECOMBE	NC0050423	0.001	3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED
D & M ENTERPRISES	NC0036587	0.001	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
HENDERSON HEAD START CENTER	NC0035521	0.000	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
EDENBURG HARDWOOD LUMBER CO.	NC0036391	0.000	3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED
RILEY HILL SCHOOL	NC0049042	0.000	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
HALIFAX CO SCH-WM. DAVIE MID	NC0038385	0.000	3-01-01-07-01	ROANOKE RIVER	UNNAMED
HALIFAX CO SCH-BAKERS ELEM.	NC0038636	0.000	3-01-01-07-01	ROANOKE RIVER	UNNAMED
MARTIN MARIETTA-WELDON	NC0058041	0.000	3-01-01-07-01	ROANOKE RIVER	UNNAMED
MARTIN CO SCH-W MARTIN ELEM	NC0037249	0.000	3-01-01-07-02	ROANOKE RIVER	UNNAMED
EASTERN FUELS, INC.	NC0073598	0.000	3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK
BANDAG INC.	NC0001236	0.000	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
RIVIERA UTIL./LAKE ROYALLE	NC0042510	0.000	3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED
ROCKY MOUNT, WTP(TAR RIVER)	NC0072125	0.000	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
ROCKY MOUNT, CITY OF (SUNSET)	NC0072133	0.000	3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED
HALIFAX CO SCH-AURELIAN SPRING	NC0038393	0.000	3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK
HALIFAX CO SCH-EASTMAN HIGH	NC0038580	0.000	3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK
HALIFAX CO SCH-NORTHWEST HS	NC0038323	0.000	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
HALIFAX CO SCH-PITTMAN ELEM.	NC0038610	0.000	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
HALIFAX CO SCH-DAWSON ELEM.	NC0038644	0.000	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
FARMER OIL COMPANY	NC0041734	0.000	3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED
ROBERSONVILLE ICE & COAL CO.	NC0003069	0.000	3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED
MARTIN CO SCH-BEAR GRASS ELEM	NC0037231	0.000	3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED
POTTER OIL COMPANY INC	NC0037044	0.000	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
COASTAL WATER SYSTEMS, INC	NC0039268	0.000	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
STAR ENTERPRISE - APEX	NC0022217	0.000	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
COLONIAL PIPELINE - APEX	NC0031003	0.000	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
CELOTEX CORP	NC0050695	0.000	3-02-02-01-13	NEUSE RIVER	UNNAMED
WORSLEY COMPANIES-SCOTCHMAN#76	NC0074667	0.000	3-02-02-01-13	NEUSE RIVER	UNNAMED
STANDARD COMMERCIAL TOBACCO,CO	NC0023388	0.000	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
MAURY SANITARY LAND DISTRICT	NC0061492	0.000	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
	TOTAL	25.027			

Table B-2: NC Dischargers With Flow Data

FACILITY	NPDES	FLOW (mgd)	HYDRO UNIT	MAJOR DRAINAGE	MINOR DRAINAGE
MARTIN MARIETTA-NEW BERN	NC0000931	9.552	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
MARTIN MARIETTA-CLARKS QUARRY	NC0061191	5.150	3-02-02-02-06	NEUSE RIVER	UNNAMED
FARMVILLE WWTP, TOWN OF	NC0029572	2.027	3-02-02-03-04	NEUSE RIVER	LITTLE CONTENTNEA CREEK
SEYMOUR JOHNSON AIR FORCE BASE	NC0063177	1.147	3-02-02-02-01	NEUSE RIVER	UNNAMED
ENFIELD WWTP, TOWN OF	NC0025402	0.563	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
VEPCO-ROANOKE RAPIDS HYDRO STA	NC0056316	0.548	3-01-01-06-01	ROANOKE RIVER	UNNAMED
BURROUGHS-WELLCOME COMPANY	NC0001066	0.441	3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED
BURROUGHS-WELLCOME COMPANY	NC0001066	0.441	3-02-01-03-04	TAR-PAMLICO RIVER	UNNAMED
CRAVEN CO SCH - W. CRAVEN MIDD	NC0029904	0.400	3-02-02-02-06	NEUSE RIVER	UNNAMED
SCOTLAND NECK WWTP, TOWN OF	NC0023337	0.345	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
LEE OPERATING CO.-TRAVEL WORLD	NC0029262	0.300	3-01-01-07-01	ROANOKE RIVER	UNNAMED
MARTIN MARIETTA-FOUNTAIN	NC0043273	0.144	3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED
MARTIN MARIETTA-BENSON	NC0058033	0.090	3-02-02-01-09	NEUSE RIVER	UNNAMED
AURORA WWTP, TOWN OF	NC0021521	0.084	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
DARE COUNTY LANDFILL	NC0049140	0.084	3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER
CAPE HATTERAS WATER ASSOC.,INC	NC0033103	0.051	3-02-01-05-02	PAMLICO SOUND	UNNAMED
FRANKLINTON WTP, TOWN OF	NC0002852	0.049	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
ELIZABETH CITY WTP, TOWN OF	NC0036447	0.047	3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER
PERQUIMANS CO.WAT.DEPT./BETHEL	NC0058661	0.047	3-01-02-05-04	ALBEMARLE SOUND	UNNAMED
GEORGIA PACIFIC-BRIDGETON	NC0001813	0.044	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
CRESWELL WWTP, TOWN OF	NC0048861	0.034	3-01-02-05-05	ALBEMARLE SOUND	SCUPPERNONG RIVER
EUREKA WWTP, TOWN OF	NC0048062	0.034	3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP
PHILLIPS FIBERS CORPORATION	NC0031348	0.029	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
WALNUT CREEK, VILLAGE OF	NC0039233	0.024	3-02-02-02-01	NEUSE RIVER	UNNAMED
DARE CO. REGNL WATER SUPPLY	NC0035670	0.024	3-01-02-05-03	ALBEMARLE SOUND	ALLIGATOR RIVER
RENNY CREEK MINE	NC0051888	0.023	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
KITTRELL JOB CORP. CENTER	NC0029131	0.021	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
DOC - HALIFAX SUBSIDIARY	NC0029734	0.018	3-01-01-07-01	ROANOKE RIVER	UNNAMED
DOC - MARTIN CO. SUBSIDIARY	NC0027791	0.018	3-01-01-07-02	ROANOKE RIVER	UNNAMED
ZEBULON WTP, TOWN OF	NC0000809	0.017	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
TEXASGULF CHEMICALS	NC0069647	0.015	3-02-02-02-03	NEUSE RIVER	UNNAMED
COUNTRYSIDE MOBILE ESTATES	NC0030724	0.012	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
DOC - VANCE SUBSIDIARY #4260	NC0041858	0.010	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
WAKE TECHNICAL INSTITUTE	NC0025631	0.010	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
BERTIE CO SCH-BERTIE HIGH SCH.	NC0032450	0.010	3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER
GEORGIA PACIFIC-ENFIELD	NC0039624	0.009	3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK
DOC - NASH ADVANCEMENT CENTER	NC0027821	0.009	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
WAKE CO. SCH.-E. WAKE HIGH SCH	NC0031763	0.009	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
DOT-GRANVILLE CO. I-85 REST AR	NC0024724	0.008	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
SINGER FURNITURE	NC0033197	0.008	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
HEATER UTIL.-BRIARWOOD FARM MH	NC0062740	0.008	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
NOVO NORDISK BIOCHEM INC	NC0047899	0.008	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
HOWELL'S CHILD CARE CENTER INC	NC0038741	0.008	3-02-02-02-02	NEUSE RIVER	UNNAMED
HYDE COUNTY WATER SYSTEM	NC0068233	0.008	3-02-01-05-03	PAMLICO SOUND	UNNAMED
NASH CO SCH-SOUTHERN NASH HS	NC0037915	0.007	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
EDGECOMBE CO SCH-N. EDGECOMBE	NC0050491	0.007	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
MID-EAST REGIONAL HOUSING AUTH	NC0035751	0.006	3-02-01-05-03	PAMLICO SOUND	UNNAMED
VILLAS ASSOCIATION, INC.	NC0023027	0.006	3-01-02-05-07	ALBEMARLE SOUND	ROANOKE SOUND
HERITAGE MEADOWS LONG TERM CAR	NC0047279	0.006	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
WAYNE CO SCH-EASTERN WAYNE HS	NC0038075	0.006	3-02-02-02-02	NEUSE RIVER	UNNAMED
NASH CO SCH-S. NASH JR HS	NC0037885	0.006	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
THE FISHER NUT COMPANY	NC0073385	0.006	3-01-02-05-01	ALBEMARLE SOUND	UNNAMED
PINES MOBILE HOME PARK #2	NC0068985	0.004	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
CORRYHIEBERT	NC0036854	0.004	3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED
BAN INN, INC. DBA SCOTTISH INN	NC0039144	0.004	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
EDGECOMBE CO SCH-PHILLIPS	NC0050415	0.004	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
GRANVILLE CO SCH - WILTON SCH.	NC0043109	0.004	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED

Table B-2: NC Dischargers With Flow Data

FACILITY	NPDES	FLOW (mgd)	HYDRO UNIT	MAJOR DRAINAGE	MINOR DRAINAGE
LAUREL HILLS HEALTH CARE	NC0058009	0.003	3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED
FRANKLIN CO SCH-BEST MIDDLE	NC0057185	0.003	3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED
BEAUFORT CO SCH-BEAUFORT ELEM.	NC0036919	0.003	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
WILSON CO. SCH.-ROCK RIDGE SCH	NC0042889	0.003	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
THE FORTY NINERS CLUB, INC.	NC0035181	0.003	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
WAYNE CO SCH-NORWAYNE JR HIGH	NC0034801	0.003	3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP
WAYNE CO SCH-C. B. AYCOCK H.S.	NC0034819	0.003	3-02-02-03-03	NEUSE RIVER	NAHUNTA SWAMP
SPENCER'S REST HOME	NC0040584	0.002	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
CAMDEN CO SCH-GRANDY ELEM	NC0037214	0.002	3-01-02-05-02	ALBEMARLE SOUND	PASQUOTANK RIVER
CRAVEN CO SCH - BRIDGETON ELEM	NC0032981	0.002	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
HYDE CO SCH-MATTAMUSKEET SCH	NC0032468	0.002	3-02-01-05-03	PAMLICO SOUND	UNNAMED
WAKE CO. SCH.-WILLOW SPRINGS E	NC0048003	0.002	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
EASTERN SHORE TOWNHOUSES OA	NC0061450	0.002	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
NASH CO SCH-COOPERS ELEM	NC0037931	0.002	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
GATES CO BD OF COMM. WTP	NC0047112	0.002	3-01-02-03-02	CHOWAN RIVER	UNNAMED
BERTIE CO SCH-ASKEWVILLE ELEM	NC0032409	0.001	3-01-01-07-03	ROANOKE RIVER	CASHIE RIVER
WARREN CO. SCH-VAUGHAN ELEM	NC0060016	0.001	3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK
WILSON CO. SCH.SPRINGFD.MIDDLE	NC0042854	0.001	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
NASH CO SCH-SWIFT CREEK ELEM	NC0037893	0.001	3-02-01-02-02	TAR-PAMLICO RIVER	FISHING CREEK
BRISTOL MEYERS/ SQUIBB INC.	NC0048194	0.001	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
NASH CO SCH-CEDAR GROVE ELEM	NC0037923	0.001	3-02-01-01-06	TAR-PAMLICO RIVER	UNNAMED
PERQUIMANS CO SCH-UNION SCH.	NC0033618	0.001	3-01-02-05-04	ALBEMARLE SOUND	UNNAMED
PERQUIMANS CO SCH-CENTRAL GRAM	NC0033626	0.001	3-01-02-05-04	ALBEMARLE SOUND	UNNAMED
EDGECOMBE CO SCH-W. EDGECOMBE	NC0050423	0.001	3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED
D & M ENTERPRISES	NC0036587	0.001	3-02-02-04-03	NEUSE RIVER ESTUARY	UNNAMED
HENDERSON HEAD START CENTER	NC0035521	0.000	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
EDINBURG HARDWOOD LUMBER CO.	NC0036391	0.000	3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED
RILEY HILL SCHOOL	NC0049042	0.000	3-02-02-01-11	NEUSE RIVER	LITTLE RIVER
HALIFAX CO SCH-WM. DAVIE MID	NC0038385	0.000	3-01-01-07-01	ROANOKE RIVER	UNNAMED
HALIFAX CO SCH-BAKERS ELEM.	NC0038636	0.000	3-01-01-07-01	ROANOKE RIVER	UNNAMED
MARTIN MARIETTA-WELDON	NC0058041	0.000	3-01-01-07-01	ROANOKE RIVER	UNNAMED
MARTIN CO SCH-W MARTIN ELEM	NC0037249	0.000	3-01-01-07-02	ROANOKE RIVER	UNNAMED
EASTERN FUELS, INC.	NC0073598	0.000	3-01-02-03-01	CHOWAN RIVER	AHOSKIE CREEK
BANDAG INC.	NC0001236	0.000	3-02-01-01-01	TAR-PAMLICO RIVER	UNNAMED
RIVIERA UTIL./LAKE ROYALLE	NC0042510	0.000	3-02-01-01-02	TAR-PAMLICO RIVER	UNNAMED
ROCKY MOUNT, WTP(TAR RIVER)	NC0072125	0.000	3-02-01-01-04	TAR-PAMLICO RIVER	UNNAMED
ROCKY MOUNT, CITY OF (SUNSET)	NC0072133	0.000	3-02-01-01-05	TAR-PAMLICO RIVER	UNNAMED
HALIFAX CO SCH-AURELIAN SPRING	NC0038393	0.000	3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK
HALIFAX CO SCH-EASTMAN HIGH	NC0038580	0.000	3-02-01-02-01	TAR-PAMLICO RIVER	LITTLE FISHING CREEK
HALIFAX CO SCH-NORTHWEST HS	NC0036323	0.000	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
HALIFAX CO SCH-PITTMAN ELEM.	NC0038610	0.000	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
HALIFAX CO SCH-DAWSON ELEM.	NC0038644	0.000	3-02-01-02-03	TAR-PAMLICO RIVER	FISHING CREEK
FARMER OIL COMPANY	NC0041734	0.000	3-02-01-03-03	TAR-PAMLICO RIVER	UNNAMED
ROBERSONVILLE ICE & COAL CO.	NC0003069	0.000	3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED
MARTIN CO SCH-BEAR GRASS ELEM	NC0037231	0.000	3-02-01-03-05	TAR-PAMLICO RIVER	UNNAMED
POTTER OIL COMPANY INC	NC0037044	0.000	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
COASTAL WATER SYSTEMS, INC	NC0039268	0.000	3-02-01-04-02	PAMLICO RIVER ESTUARY	UNNAMED
STAR ENTERPRISE - APEX	NC0022217	0.000	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
COLONIAL PIPELINE - APEX	NC0031003	0.000	3-02-02-01-07	NEUSE RIVER	MIDDLE CREEK
CELOTEX CORP	NC0060895	0.000	3-02-02-01-13	NEUSE RIVER	UNNAMED
WORSLEY COMPANIES-SCOTCHMAN#76	NC0074667	0.000	3-02-02-01-13	NEUSE RIVER	UNNAMED
STANDARD COMMERCIAL TOBACCO,CO	NC0023388	0.000	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
MAURY SANITARY LAND DISTRICT	NC0061492	0.000	3-02-02-03-02	NEUSE RIVER	CONTENTNEA CREEK
	TOTAL	25.027			

Table B-3: Virginia Point Source Dischargers

				ACTUAL		ACTUAL		
			PERMITTED	TN		TP		
FACILITY	I/M	NPDES	FLOW	(mg/l)	(kg/d)	mg/l	kg/d	RIVER
Union Camp Fine Paper Division #1	I	VA0004162	101.000	1.6	608,630	5.67	2,167,562	Blackwater
Spurlock Company	I	VA0004782	0.219	ND	ND	ND	ND	Blackwater
Sentry Food Mart #3	I	VA0061795	0.057	ND	ND	ND	ND	Blackwater
Union Camp Fine Paper Division #2	I	VA0004162	0.030	1.66	189	6.45	733	Blackwater
Franklin STP	M	VA0023922	2.000		63,455		3,091	Blackwater
Waverly STP	M	VA0061310	0.350	ND	ND	ND	ND	Blackwater
Masonite Corporation	M	VA0004022	0.161	ND	ND	ND	ND	Blackwater
Wakefield Lagoon	M	VA0022365	0.134	ND	ND	ND	ND	Blackwater
Berkeley Manor STP	M	VA0030643	0.099	ND	ND	ND	ND	Blackwater
Clydes Dale Mobile Home Park	M	VA0067318	0.040	ND	ND	ND	ND	Blackwater
Edgehill Subdivision Lagoon	M	VA0060551	0.040	ND	ND	ND	ND	Blackwater
Twin Ponds Mobile Home Park	M	VA0073952	0.022	ND	ND	ND	ND	Blackwater
VDOC - Nansemond Corr. Unit #3	M	VA0023337	0.021	ND	ND	ND	ND	Blackwater
Surry High Sch. & Elem. School	M	VA0029025	0.020	ND	ND	ND	ND	Blackwater
Pine Street Apartments	M	VA0067270	0.010	ND	ND	ND	ND	Blackwater
J.E.J. Moore Jr. High School	M	VA0028754	0.010	ND	ND	ND	ND	Blackwater
Manning Mobile Home Park	M	VA0061492	0.010	ND	ND	ND	ND	Blackwater
Harrison Elementary School	M	VA0028789	0.009	ND	ND	ND	ND	Blackwater
Windsor Apartment	M	VA0069302	0.008	ND	ND	ND	ND	Blackwater
Smithfield Carroll - Farm #14	M	VA0063950	0.007	ND	ND	ND	ND	Blackwater
South Elementary School	M	VA0028771	0.006	ND	ND	ND	ND	Blackwater
Ivor Elementary School	M	VA0027383	0.003	ND	ND	ND	ND	Blackwater
Smithfield Carroll - Grain Mill	M	VA0063933	0.002	ND	ND	ND	ND	Blackwater
S. W. Rawls	M	VA0055841	0.001	ND	ND	ND	ND	Blackwater
Hedgepeth - Residence	M	VA0063321	0.001	ND	ND	ND	ND	Blackwater
Edward Brown - Residence	M	VA0064123	0.001	ND	ND	ND	ND	Blackwater
Ivey, James B. Jr. - Residence	M	VA0070483	0.001	ND	ND	ND	ND	Blackwater
Edwards, Larry Roland - Res.	M	VA0067296	0.001	ND	ND	ND	ND	Blackwater
Prince George Texaco	M	VA0064530	0.001	ND	ND	ND	ND	Blackwater
Begshaw, Donald A	M	VA0075540	0.000	ND	ND	ND	ND	Blackwater
Hardock Residence	M	VA0062554	0.000	ND	ND	ND	ND	Blackwater
Transcont. Gas Pipe Line Corp.	I	VA0064310	1.790	ND	ND	ND	ND	Meherrin
Transcont. Gas Pipe Line Corp.	I	VA0064328	1.790	ND	ND	ND	ND	Meherrin
Georgia Pacific Corp. - Emporia	I	VA0006483	1.025	ND	ND	ND	ND	Meherrin
Trego Stone Corporation	I	VA0050547	0.720	ND	ND	ND	ND	Meherrin
Boykins Narrow Fabrics Corp.	I	VA0003069	0.160	ND	ND	ND	ND	Meherrin
Emporia WTP	I	VA0006220	0.130	ND	ND	ND	ND	Meherrin
Kenbridge WTP	I	VA0006173	0.095	ND	ND	ND	ND	Meherrin
South Hill WTP	I	VA0029149	0.006	ND	ND	ND	ND	Meherrin
Emporia WWTP	M	VA0020346	1.500	ND	ND	ND	ND	Meherrin
Lawrenceville STP	M	VA0020354	0.600	ND	ND	ND	ND	Meherrin
Victoria - West Lagoon	M	VA0020176	0.250	ND	ND	ND	ND	Meherrin
Falling Run STP	M	VA0070271	0.160	ND	ND	ND	ND	Meherrin
Boykins, Town of	M	VA0026417	0.103	ND	ND	ND	ND	Meherrin
Vulcan Materials - Lawrenceville	M	VA0004952	0.102	ND	ND	ND	ND	Meherrin
Alberta STP	M	VA0026816	0.100	ND	ND	ND	ND	Meherrin
VA Dyeing & Finishing Corp.	M	VA0003051	0.081	ND	ND	ND	ND	Meherrin
La Crosse Meherrin Lagoon	M	VA0026182	0.072	ND	ND	ND	ND	Meherrin

Table B-3: Virginia Point Source Dischargers

				ACTUAL		ACTUAL		
			PERMITTED	TN		TP		
FACILITY	I/M	NPDES	FLOW	(mg/l)	(kg/d)	mg/l	kg/d	RIVER
Econo Lodge Skippers	M	VA0028916	0.036	ND	ND	ND	ND	Meherrin
I-95 Rest Area	M	VA0023060	0.023	ND	ND	ND	ND	Meherrin
Greenbriar Hamlet	M	VA0073326	0.011	ND	ND	ND	ND	Meherrin
Beid.-Haus., Weldon Mills STP	M	VA0062201	0.010	ND	ND	ND	ND	Meherrin
Georgia Pacific Skippers Plan	M	VA0059072	0.008	ND	ND	ND	ND	Meherrin
Meherrin Powellton Elem. School.	M	VA0027022	0.006	ND	ND	ND	ND	Meherrin
Pigford, Ottis H. - Residence	M	VA0063461	0.006	ND	ND	ND	ND	Meherrin
Sturgeon Elem. School	M	VA0027014	0.005	ND	ND	ND	ND	Meherrin
Boykins Elementary School	M	VA0027391	0.004	ND	ND	ND	ND	Meherrin
Williams, W. H. - Residence	M	VA0065277	0.001	ND	ND	ND	ND	Meherrin
Gritzzard, Conrad E.	M	VA0063070	0.001	ND	ND	ND	ND	Meherrin
Lifsey, Woodrow W. - Residence	M	VA0062766	0.001	ND	ND	ND	ND	Meherrin
Burner, Farrell	M	VA0081183	0.001	ND	ND	ND	ND	Meherrin
Hall Residence	M	VA0067679	0.001	ND	ND	ND	ND	Meherrin
Roberts Residence	M	VA0084441	0.001	ND	ND	ND	ND	Meherrin
Martin, Mildred W. - Residence	M	VA0084557	0.001	ND	ND	ND	ND	Meherrin
Lawrenceville STP	M	VA0005991	0.000	ND	ND	ND	ND	Meherrin
Hobbs Residence	M	VA0083232	0.000	ND	ND	ND	ND	Meherrin
Lifsey, Ellen - Residence	M	VA0062677	0.000	ND	ND	ND	ND	Meherrin
Morris, Roy - Residence	M	VA0072419	0.000	ND	ND	ND	ND	Meherrin
Robinson Residence	M	VA0079944	0.000	ND	ND	ND	ND	Meherrin
Coles, Deborah S. - Residence	M	VA0083348	0.000	ND	ND	ND	ND	Meherrin
Kenne, Snow E. - Residence	M	VA0064823	0.000	ND	ND	ND	ND	Meherrin
Land, Daniel - Residence	M	VA0067539	0.000	ND	ND	ND	ND	Meherrin
Fichter, Don	M	VA0073971	0.000	ND	ND	ND	ND	Meherrin
Lafoon Residence	M	VA0085600	0.000	ND	ND	ND	ND	Meherrin
Powell, Thomas L. Sr. - Res.	M	VA0078191	0.000	ND	ND	ND	ND	Meherrin
Oliver Residence	M	VA0084263	0.000	ND	ND	ND	ND	Meherrin
New England Log Homes	M	VA0081353	ND	ND	ND	ND	ND	Meherrin
Hercules, Inc. - Franklin	I	VA0003433	6.300	ND	ND	ND	1,361	Nottoway
Georgia-Pacific, Jarratt Plant	I	VA0003255	0.655	ND	ND	ND	ND	Nottoway
Atlantic Wood Indust - Newsoms	I	VA0059056	0.300	ND	ND	ND	ND	Nottoway
Hadson Power 11 - Southampton	I	VA0082767	0.270	ND	ND	ND	ND	Nottoway
Velvet Textile Co., Inc.	I	VA0057525	0.122	ND	ND	ND	ND	Nottoway
Fort Pickett WTP	I	VA0005827	0.020	ND	ND	ND	ND	Nottoway
Victoria WTP	I	VA0030015	0.016	ND	ND	ND	ND	Nottoway
Dinwiddie WWTP	M	VA0082171	2.000	ND	ND	ND	ND	Nottoway
Fort Pickett WWTP	M	VA0025194	2.000	ND	ND	ND	ND	Nottoway
Three Creek STP	M	VA0077259	0.750	ND	ND	ND	ND	Nottoway
Medium Security Instit. No. 2	M	VA0066869	0.350	ND	ND	ND	ND	Nottoway
VDOC - Southampton Corr. Cntr	M	VA0062499	0.350	ND	ND	ND	ND	Nottoway
Courtland & Environs	M	VA0061859	0.303	ND	ND	ND	ND	Nottoway
Kenbridge STP	M	VA0026239	0.300	ND	ND	ND	ND	Nottoway
Victoria - East Lagoon	M	VA0020184	0.203	ND	ND	ND	ND	Nottoway
Jarratt STP	M	VA0020761	0.160	ND	ND	ND	ND	Nottoway
McKenney STP	M	VA0060402	0.100	ND	ND	ND	ND	Nottoway
Prince George Sew. & Water Co.	M	VA0031356	0.071	ND	ND	ND	ND	Nottoway
Dinwiddie Courthouse	M	VA0081779	0.050	ND	ND	ND	ND	Nottoway

Table B-3: Virginia Point Source Dischargers

				ACTUAL		ACTUAL		
			PERMITTED	TN		TP		
FACILITY	I/M	NPDES	FLOW	(mg/l)	(kg/d)	mg/l	kg/d	RIVER
Bexley Trailer Court	M	VA0077241	0.040	ND	ND	ND	ND	Nottoway
Rose Garden Inn & Restaurant	M	VA0061506	0.040	ND	ND	ND	ND	Nottoway
Berean Village	M	VA0082759	0.040	ND	ND	ND	ND	Nottoway
Stony Creek STP	M	VA0062669	0.040	ND	ND	ND	ND	Nottoway
I-85 Rest Area	M	VA0061379	0.036	ND	ND	ND	ND	Nottoway
Plantation Pipeline Co - Crewe	M	VA0058149	0.036	ND	ND	ND	ND	Nottoway
Crewe STP	M	VA0050016	0.035	ND	ND	ND	ND	Nottoway
Nottoway Co. Sr. High School	M	VA0061158	0.026	ND	ND	ND	ND	Nottoway
Green Acres Mobile Home Park	M	VA0062596	0.025	ND	ND	ND	ND	Nottoway
Dinwiddie High School	M	VA0022977	0.022	ND	ND	ND	ND	Nottoway
Southside Community College	M	VA0028479	0.021	ND	ND	ND	ND	Nottoway
Dinwiddie Jr. High	M	VA0022951	0.020	ND	ND	ND	ND	Nottoway
I-85 Rest Area	M	VA0029394	0.020	ND	ND	ND	ND	Nottoway
Sussex Central High Sch & Annx	M	VA0031721	0.017	ND	ND	ND	ND	Nottoway
Nottoway Motel and Restaurant	M	VA0028291	0.016	ND	ND	ND	ND	Nottoway
Sussex Courthouse Complex	M	VA0080390	0.015	ND	ND	ND	ND	Nottoway
Southside Elem. School	M	VA0022934	0.014	ND	ND	ND	ND	Nottoway
H & B of Virginia Incorporated	M	VA0070564	0.013	ND	ND	ND	ND	Nottoway
Harrison Mobile Home Park	M	VA0063045	0.011	ND	ND	ND	ND	Nottoway
Prince George Manor	M	VA0075230	0.010	ND	ND	ND	ND	Nottoway
Burkeville Veneer STP	M	VA0062332	0.008	ND	ND	ND	ND	Nottoway
Emporia Travel Plaza	M	VA0063061	0.007	ND	ND	ND	ND	Nottoway
Motel Emporia	M	VA0063444	0.007	ND	ND	ND	ND	Nottoway
Old Stuckey Building	M	VA0080225	0.007	ND	ND	ND	ND	Nottoway
Belfield Elementary School	M	VA0021652	0.006	ND	ND	ND	ND	Nottoway
Hunterdale Elementary School	M	VA0027405	0.005	ND	ND	ND	ND	Nottoway
Red Oak Elementary School	M	VA0027049	0.005	ND	ND	ND	ND	Nottoway
Reete' Motel STP	M	VA0062774	0.004	ND	ND	ND	ND	Nottoway
Georgia Pacific Corporation	M	VA0065137	0.004	ND	ND	ND	ND	Nottoway
Capron Elementary School	M	VA0027375	0.004	ND	ND	ND	ND	Nottoway
Burkeville Elementary School	M	VA0020061	0.003	ND	ND	ND	ND	Nottoway
Dinwiddie Car Wash	M	VA0080659	0.002	ND	ND	ND	ND	Nottoway
Johnson, W. E. - Apt/Shop Cmplx	M	VA0069264	0.002	ND	ND	ND	ND	Nottoway
Georgian Ruthskeller	M	VA0063312	0.001	ND	ND	ND	ND	Nottoway
Taylor's Exxon	M	VA0063479	0.001	ND	ND	ND	ND	Nottoway
Anderson Residence STP	M	VA0076619	0.001	ND	ND	ND	ND	Nottoway
Weisel, Mr. & Mrs. Frank - Res	M	VA0070980	0.001	ND	ND	ND	ND	Nottoway
Estate of Alma & Albert Lewis	M	VA0080438	0.000	ND	ND	ND	ND	Nottoway
Bassett Veneer Company	M	VA0080411	0.000	ND	ND	ND	ND	Nottoway
Epps, James & Ruth - Residence	M	VA0080420	0.000	ND	ND	ND	ND	Nottoway
Greenville Water & Sewer Auth	M	VA0076520	ND	ND	ND	ND	ND	Nottoway
Southeastern Lumber Division	M	VA0081213	ND	ND	ND	ND	ND	Nottoway
		TOTAL	127.945		672,274		2,172,747	