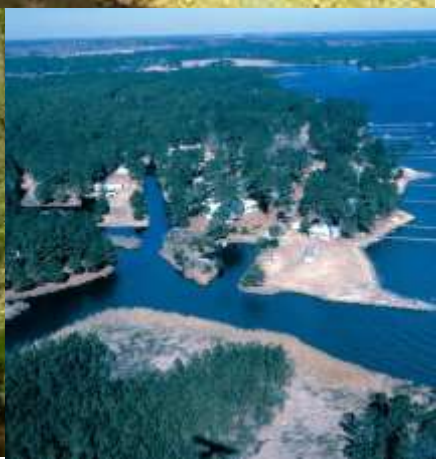


Tar-Pamlico River Basin Restoration Priorities

October 2010

Amended August 2018

TABLE OF CONTENTS

Cover Photos (clockwise from top): Johnny Darter, a species found in the upper Tar River; aerial view of the mouth of the Tar River; Fishing Creek near Oxford, NC.

Introduction

The Tar-Pamlico River Basin Restoration Priorities were set in 2004. This document was then updated in 2010. This 2018 interim amendment is intended to: provide current information regarding planning activities, supplement information regarding land cover within each 8-digit hydrologic unit, restore document links and maintain accurate contact information.

Since the creation of the original document agency, division and personnel changes have occurred. Session Law 2015-1 changed the name of the Ecosystem Enhancement Program (EEP) to the North Carolina Division of Mitigation Services (DMS), March 16, 2015. Furthermore, the Department of Environment and Natural Resources (DENR) was renamed the Department of Environmental Quality (DEQ) on September 18, 2015.

The Division of Mitigation Services is currently in the process of updating its watershed prioritization process. While DMS transitions to a new approach it will maintain the existing watershed priorities and update supporting data. If field observations or land cover analysis identify significant change within an 8-digit hydrologic unit further analysis will be conducted to re-examine the existing watershed priorities.

The original 2004 plan described 29 Hydrologic Units (14-digit HUs as denoted by the United States Geological Survey) to be targeted for stream, wetland, and riparian buffer restoration and protection, and for watershed planning efforts (i.e., Targeted Local Watersheds or TLWs). In the 2010 update, 36 new TLWs were added as targets for restoration and preservation efforts in the Tar-Pamlico River Basin and five were delisted.

Examples of rare high quality wetlands in the upper Tar River Basin.

In addition to updating the DMS Tar-Pamlico River Basin Watershed Restoration Plan, this report complements information found in the *Tar-Pamlico River Basin Water Resources Plan* (NC DWR 2014). These two reports provide much of the justification for selection of HUs by detailing water preservation needs in the Tar-Pamlico River Basin.

In past documents, North Carolina Division of Water Resources (DWR) "subbasin" units were used to organize the document and discussion of the selected TLWs. This document, however, uses the US Geological Survey's (USGS) 8-digit Cataloging Unit in the river basin as the framework for organization and discussion of TLWs.

What is a River Basin Restoration Priority?

DMS develops River Basin Restoration Priorities (RBRPs) to guide its mitigation activities within each of North Carolina's 17 major river basins. The RBRPs designate specific watersheds that exhibit a need for restoration and protection of wetlands, streams and riparian buffers. These priority watersheds, called Targeted Local Watersheds (TLWs), are the

USGS delineated 14-digit HUs that receive priority for DMS planning and project funds. The designation may also benefit stakeholders writing watershed improvement proposals for grant funds (e.g., Section 319 or Clean Water Management Trust Fund) by giving added weight to their proposals.

North Carolina General Statute 143-214.10 charges DMS to pursue wetland and riparian restoration activities in the context of basin restoration plans, with the goal of protecting and enhancing water quality, fisheries, wildlife habitat, recreational opportunities and preventing floods.

Criteria for Selecting a Targeted Local Watershed

DMS evaluates a variety of GIS data and resource and planning documents on water quality and habitat conditions to select TLWs. Public comment and the professional judgment of local resource agency staff also play a critical role in targeting local watersheds. TLWs are chosen based on an evaluation of three factors—problems, assets, and opportunities. Problems reflect the need for restoration; assets reflect the ability for a watershed to recover from degradation and the need for land conservation; and opportunities indicate the potential for local partnerships in restoration and conservation work. Methods for evaluation of these three factors are outlined below:

East Tarboro Canal stream restoration site during construction.

Problems: DMS evaluates DWQ use support ratings, the presence of impaired or 303(d)-listed streams, and DWQ Basinwide Plans to identify streams with known problems. DMS also assesses the potential for degradation by evaluating land cover data, riparian buffer condition, impervious cover, road density, and projected population change.

Assets: In order to gauge the natural resource value of each watershed, DMS considers the forest and wetland area, land in public or private conservation, riparian buffer condition, high quality resource waters, and NC Natural Heritage Program data.

Opportunity: DMS reviews restoration and protection projects that are already in the ground, such as Clean Water Management Trust Fund projects, US Clean Water Act Section 319 initiatives, mitigation banks[1], and land conservation efforts. DMS also considers the potential for partnership opportunities by consulting with local, state, and federal resource agencies and conservation organizations to assess the potential to partner in their priority areas.

Data used for the criteria analysis were current through August 2008.

In addition to these factors, local resource professional feedback is an important element in selecting TLWs. Comments and recommendations of local resource agency professionals, including staff with Soil & Water Conservation districts, the Natural Resources Conservation Service (NRCS), county and municipal planning staff, NC Department of Environmental Quality (DEQ) regional staff (e.g., Wildlife Resources Commission), local and regional land trusts and other watershed organizations provide integral input to the TLW selection process. Local resource professionals often have specific and up-to-date information regarding the condition of local streams and wetlands. Furthermore, local resource professionals may be involved in water resource protection

[1] Army Corps of Engineer data from April 2010 indicates no approved mitigation banks are present in Tar-Pamlico River Basin.

initiatives that provide good partnership opportunities for DMS restoration and preservation projects and DMS Local Watershed Planning initiatives.

Finally, TLWs that were chosen for the last Watershed Restoration Plan or RBRP document are reevaluated. If new information reveals that a watershed is not a good TLW candidate, then it will be removed from the TLW list. An explanation for each delisting is provided in the last section of this document.

Tar-Pamlico River Basin Overview

The Tar-Pamlico River Basin includes five USGS Catalog Units—03020101, 03020102, 03020103, 03020104, and 03020105. This expansive basin originates in Person and Granville counties, flowing from the Piedmont to the outer Coastal Plain. The River is essentially freshwater from its headwaters to Washington where it broadens and begins to assume estuarine characteristics. This Basin is more than 6400 square miles including both land and open water. The Tar-Pamlico watershed contains 29 incorporated municipalities subject to *Stormwater II regulations* including all or portions of the cities and towns of Oxford, Henderson, Louisburg, Nashville, Red Oak, Dortches, Rocky Mount, Tarboro, Greenville, Washington, Bellhaven, and Stonewall.

The five CUs encompass 181 14-digit hydrologic units and contain parts of 15 counties, seven predominantly in the piedmont and eight in the coastal plain.

Tar-Pamlico River Basin Catalog Unit Restoration Goals

Based on an assessment of existing watershed characteristics and resource information, DMS has developed restoration and protection goals for the Basin's five Catalog Units (CUs). General goals for all CUs are to:

- promote nutrient reduction in municipal areas through the implementation of stormwater best management practices
- promote nutrient and sediment reduction in agricultural areas by restoring and preserving wetlands, streams, and riparian buffers
- continue targeted implementation of projects under the Nutrient Offset and Buffer programs, as well as focusing DOT sponsored restoration in areas where they will provide the most functional improvement to the ecosystem
- protect, augment and connect Natural Heritage Areas and other conservation lands

Specific goals for each CU are outlined below. NCDMS intends to:

CU 03020101

- implement planning initiatives including the NCDMS Fishing Creek LWP and the Upper Tar River Basin Collaborative coordinated by the Tar River Land Conservancy
- protect, augment and connect Natural Heritage Areas and other conservation lands

CU 03020101 2011 Land Use/Land Cover Data

Class	Percentage
Water	0.95
Developed	9.65
Barren	0.22
Forest	43.04
Shrubland	4.76
Herbaceous	6.62
Planted/Cultivated	26.75
Wetlands	8.01

CU 03020102

- protect, augment and connect Natural Heritage Areas and other conservation lands

CU 03020102 2011 Land Use/Land Cover Data

Class	Percentage
Water	0.36
Developed	5.24
Barren	0.07
Forest	45.18
Shrubland	7.10
Herbaceous	4.46
Planted/Cultivated	24.80
Wetlands	12.80

CU 03020103

- continue to implement the NCDMS Middle Tar-Pamlico Local Watershed Plan, including projects identified in Hendricks Creek, Greens Mill Run, Cow Swamp, and Crisp Creek
- support removal of barriers to anadromous fish movement and to help improve nursery and spawning habitats
- support implementation of Coastal Habitat Protection Plan (CHPP) strategies

CU 03020103 2011 Land Use/Land Cover Data

Class	Percentage
Water	0.76
Developed	9.14
Barren	0.15
Forest	15.98
Shrubland	10.61
Herbaceous	4.18
Planted/Cultivated	37.78
Wetlands	21.41

Monitoring wells used to collect hydrologic data to determine success of restoration projects.

CU 03020104

- develop additional Strategic Habitat Areas (SHAs) and coordinate data and methodology improvements with other state and federal agencies
- implement agricultural BMPs to reduce nonpoint source inputs to the estuary
- support the removal of barriers to anadromous fish movement to help improve nursery and spawning habitats
- protect, augment and connect Natural Heritage Areas and other conservation lands

CU 03020104 2011 Land Use/Land Cover Data

Class	Percentage
Water	13.01
Developed	3.61
Barren	0.73
Forest	10.17
Shrubland	7.87
Herbaceous	3.11
Planted/Cultivated	29.40
Wetlands	32.16

CU 03020105

- develop additional Strategic Habitat Areas (SHAs) and coordinate data and methodology improvements with other state and federal agencies
- participate in initiatives to map, monitor and restore submerged aquatic vegetation (SAV)
- support the enhancement and restoration of shellfish beds
- implement agricultural BMPs to reduce nonpoint source inputs to the estuary
- support the removal of barriers to anadromous fish movement to help improve nursery and spawning habitats

- ❖ protect, augment and connect Natural Heritage Areas and other conservation lands

CU 03020105 2011 Land Use/Land Cover Data

Class	**Percentage**
Water	16.35
Developed	3.68
Barren	1.90
Forest	1.69
Shrubland	1.71
Herbaceous	0.58
Planted/Cultivated	19.55
Wetlands	54.55

The Tar-Pamlico River Basin offers an array of assets, especially noteworthy are its large forested tracts and conservation areas. Arguably, the most important priority here is to promote projects that reestablish riparian buffers and corridors of substantial width to improve connectivity of these protected areas. Agricultural impacts are also prevalent throughout the lower basin, including nonpoint source runoff and hydrologic modification. Projects that address agricultural runoff are important here. The watershed will also benefit from stream restoration projects that reestablish more natural pattern, hydrology and habitat, especially in heavily ditched headwater areas. Additionally, the lower part of the basin has an abundance of diverse marsh habitats along an extensive shoreline. Wetland and marsh restoration projects, as well as shoreline stabilization are high priorities for areas prone to erosion from natural exposure or from heavy boat traffic.

Tar-Pamlico River Basin TLW Overview

Twenty-nine HUs were targeted in the 2004 Tar-Pamlico River Basin Watershed Restoration Plan. In the 2010 update 5 HUs had their TLW status removed. An additional 36 HUs were designated as new TLWs. In total, 61 HUs were highlighted as TLWs by DMS in the 2010 RBRP.

Table 1 provides a partial summary of information used to select TLWs. Table 2 provides land use/land cover change from 2001-2011 for the selected TLWs. Additionally, Figure 1 is a map of the Tar-Pamlico River Basin showing current TLWs and those with removed TLW designation.

Perched culverts like this one are problematic for upstream movement of fish and other aquatic organisms. As part of restoration projects, culverts can be replaced with natural stream design crossings that will reduce the impacts of aquatic habitat fragmentation.

Table 1. Tar-Pamlico River Basin TLW Summary (pink highlight indicates existing TLWs, turquoise indicates new TLWs, red indicates de-listed TLWs).

HUCODE	HU_Name	HU Area[1] (mi)	Stream Length[2] (mi)	Ag Area[3] (%)	Forest Area[4] (%)	Imperv Area[5] (%)	HQW or ORW Length[6] (%)	WSW Length[7] (%)	SNHA Area[8] (sq mi)	NHEO[9] (#)	Conserv Area[10] (%)	303(d) Length[11] (%)	Animal Ops[12] (#)	Non-forested Stream Buffer[13] (%)
Catalog Unit 03020101														
03020101010010	Upper Tar River	26	58	31	66	0.4	0	100	1.7	57	0.9	0	3	23
03020101010030	Fox Creek	26	62	28	68	0.3	0	100	2.4	68	4.9	0	5	20
03020101010050	Rocky Creek	44	142	38	57	0.5	0	37	1.0	72	0.7	0	15	26
03020101010060	Bollens & Johnson Crks	31	99	29	63	1.0	0	0	1.5	48	1.4	0	3	22
03020101020010	Fishing Creek	48	134	28	54	3.7	0	2	0.5	5	0.1	3	14	29
03020101030010	Sand Creek	14	36	22	74	0.2	0	3	16.4	40	0.2	0	3	9
03020101030020	Gibbs Creek	8	22	23	73	0.2	0	0	0.0	1	0	0	1	11
03020101030070	Ruin Creek	30	79	22	60	3.6	0	0	1.2	41	0	0	6	19
03020101040020	Billys Creek	7	13	22	69	0.7	0	100	0	0	0.1	0	1	7
03020101040060	Bear Swamp Creek	9	19	33	61	0.5	0	100	0	1	0	0	3	14
03020101040070	Wolfpen Branch	21	47	43	47	1.8	0	0	0.2	17	1.9	0	18	33
03020101050010	Cedar Creek	65	159	33	59	1.1	0	7	0.1	6	0.4	0	15	20
03020101080020	Tar River Reservoir	61	118	43	48	0.9	0	43	0.6	62	0.3	0	15	29
03020101090010	Sapony & Little Sapony	66	135	47	42	1.4	0	40	0	2	0.3	0	45	30
03020101100020	Stony Creek	16	36	43	40	3.6	0	0	0.1	7	0.2	0	9	31
03020101100040	Stony Creek	14	28	32	30	9.5	0	0	0	4	0.2	30	2	34
03020101100050	Maple Creek	25	34	39	35	5.3	0	99	0.2	4	2.2	2.4	6	35
03020101120030	Tar River	55	131	49	41	1.4	0	70	7.4	27	0.1	0	10	43
03020101130050	Sandy Creek	52	129	31	64	0.6	0	0	0.3	51	3.3	5.7	23	14
03020101130090	Swift Creek	47	126	44	48	1.1	0	7	7.4	15	0.4	0	17	48
Catalog Unit 03020102														
03020102010010	Shocco Creek	18	40	36	58	0.5	0	0	0	7	0.2	0	6	11
03020102010020	Shocco Creek	24	57	17	79	0.3	0	0	0.4	10	8.1	0	3	5
03020102010030	Little Shocco Creek	14	31	17	80	0.3	0	0	0.8	7	9.6	0	3	3
03020102010040	Shocco Creek	28	62	17	80	0.3	0	0	2.5	29	17.0	0	3	5

HUCODE	HU_Name	HU Area[1] (mi)	Stream Length[2] (mi)	Ag Area[3] (%)	Forest Area[4] (%)	Imperv Area[5] (%)	HQW or ORW Length[6] (%)	WSW Length[7] (%)	SNHA Area[8] (sq mi)	NHEO[9] (#)	Conserv Area[10] (%)	303(d) Length[11] (%)	Animal Ops[12] (#)	Non-forested Stream Buffer[13] (%)
Catalog Unit 03020102 (continued…)														
03020102020010	Upper Fishing Creek	49	117	14	81	0.3	0	0	0.8	35	6.1	0	5	5
03020102020030	Middle Fishing Creek	33	104	22	74	0.3	0	0	0.4	9	11.0	0	9	10
03020102020050	Fishing Creek	35	99	20	75	0.7	0	0	0.3	6	15.8	0	1	8
03020102030030	Little Fishing Creek	64	215	40	54	0.4	0	33	5.1	31	2.6	0	12	29
03020102040010	Fishing Creek	40	106	36	57	0.5	0	54	0.1	9	7.1	0	6	19
03020102040020	Jack Horse Swamp	38	98	47	44	0.8	0	0	0	0	2.5	0	11	37
03020102050010	Burnt Coat Swamp	37	77	47	48	0.3	0	100	0.2	1	0.6	0	11	36
03020102070050	Deep Creek	18	40	36	58	0.5	0	0	0	7	0.2	0	6	11
Catalog Unit 03020103											0			
03020103010010	Tar River	26	71	58	29	2.0	0	7	2.1	37	0.2	10.4	1	71
03020103010020	Hendricks Creek	31	53	40	42	4.2	0	0	2.7	15	1.3	21.8	10	45
03020103040010	Tar River	19	45	48	45	0.4	0	34	1.3	19	0.8	8.6	1	55
03020103040020	Otter Creek	50	123	49	46	0.4	0	12	0.2	6	1.0	0	13	38
03020103050010	Conetoe Creek	13	28	43	53	0.2	0	0	0	0	0.1	26.0	2	39
03020103050020	Fountain Fork Creek	15	31	43	51	0.5	0	0	0	1	0.2	5.8	7	53
03020103050030	Crisp Creek	42	99	54	39	0.7	0	0	0	0	0.1	19.7	10	66
03020103050040	Conetoe Creek	17	40	65	30	0.5	0	0	0	1	0.1	0	9	78
03020103050050	Conetoe Creek	13	38	67	28	0.5	0	81	0	1	0.5	1.7	3	69
03020103060010	Harris Mill Run	13	23	28	41	9.7	0	50	0.8	5	0.9	14.3	3	36
03020103060020	Green Mill Run	13	15	26	22	19	0	0	0	2	1.3	0.1	2	47
03020103070010	Grindle Creek	80	233	48	46	0.7	0	0	1.4	2	0.0	0	17	61
03020103080010	Chicod Creek	57	144	49	46	0.5	0	0	1.3	6	1.5	4.6	37	54
03020103090030	Horsepen Swamp	90	198	41	54	0.6	0	0	6.6	20	5.1	0	4	45
Catalog Unit 03020104														
03020104010010	Chocowinity Creek	39	150	41	53	0.7	0	0	0	2	0	0.5	4	59
03020104010020	Chocowinity Bay	22	45	17	52	2.1	0	0	2.2	6	1.7	13.3	0	44
03020104020020	Kennedy Creek	11	40	27	28	13	0	0	0.4	3	0.5	13.6	2	67

HUCODE	HU_Name	HU Area[1] (mi)	Stream Length[2] (mi)	Ag Area[3] (%)	Forest Area[4] (%)	Imperv Area[5] (%)	HQW or ORW Length[6] (%)	WSW Length[7] (%)	SNHA Area[8] (sq mi)	NHEO[9] (#)	Conserv Area[10] (%)	303(d) Length[11] (%)	Animal Ops[12] (#)	Non-forested Stream Buffer[13] (%)
Catalog Unit 03020104 (continued…)														
03020104040040	Pamlico & Pungo Rivers	70	130	14	33	0.4	0.9	0	0.7	5	4.2	7.2	1	54
03020104060020	South Creek	62	125	16	37	0.6	0	0	0.4	7	0	14.4	0	42
03020104080010	Pungo River	87	332	69	27	0.3	0	0	5.8	7	10.1	0	3	91
03020104090010	Pungo River	167	511	36	57	0.2	0	0	32.8	27	32.5	0	13	67
03020104100010	Upper Pantego Creek	34	204	56	27	1.3	0.2	0	1.4	8	0.5	5.9	3	72
03020104100020	Lower Pantego Creek	40	198	63	32	0.4	0	0	2.3	5	0	0	1	78
03020104110010	Upper Pungo Creek	47	108	18	77	0.3	0	0	0	1	0.3	0	2	47
03020104110020	Lower Pungo Creek	49	210	39	41	0.4	0.5	0	0.6	2	0.2	5.9	1	67
03020104120020	Pungo River	46	158	17	49	0.3	0	0	2.9	3	1.5	8.1	1	57
Catalog Unit 03020105														
03020105010040	Bay River	28	74	39	49	0.3	2.3	0	0.3	0	0.8	0.2	2	57
03020105030010	Germantown Bay	59	286	18	62	0.3	0	0	10.4	14	4.0	3.9	0	47
03020105030020	Swanquarter Bay	73	124	9	44	0.4	0	0	19.0	13	21.0	6.2	1	50
03020105040010	Juniper Bay	65	128	8	67	0.2	0	0	35.5	20	48.3	1.0	0	44
03020105040020	Wysocking Bay	52	153	20	58	0.2	0	0	16.2	5	21.6	1.0	1	57
03020105060010	Lake Mattamuskeet	114	205	10	31	0.7	0	0	77.0	15	74.9	0.0	0	54
03020105070010	Waupopin Canal	36	175	47	38	1.0	2.2	0	3.0	4	1.0	4.9	0	65
03020105080015	Long Shoal River	40	34	0	75	0.1	2.0	0	30.7	24	67.5	7.1	0	27

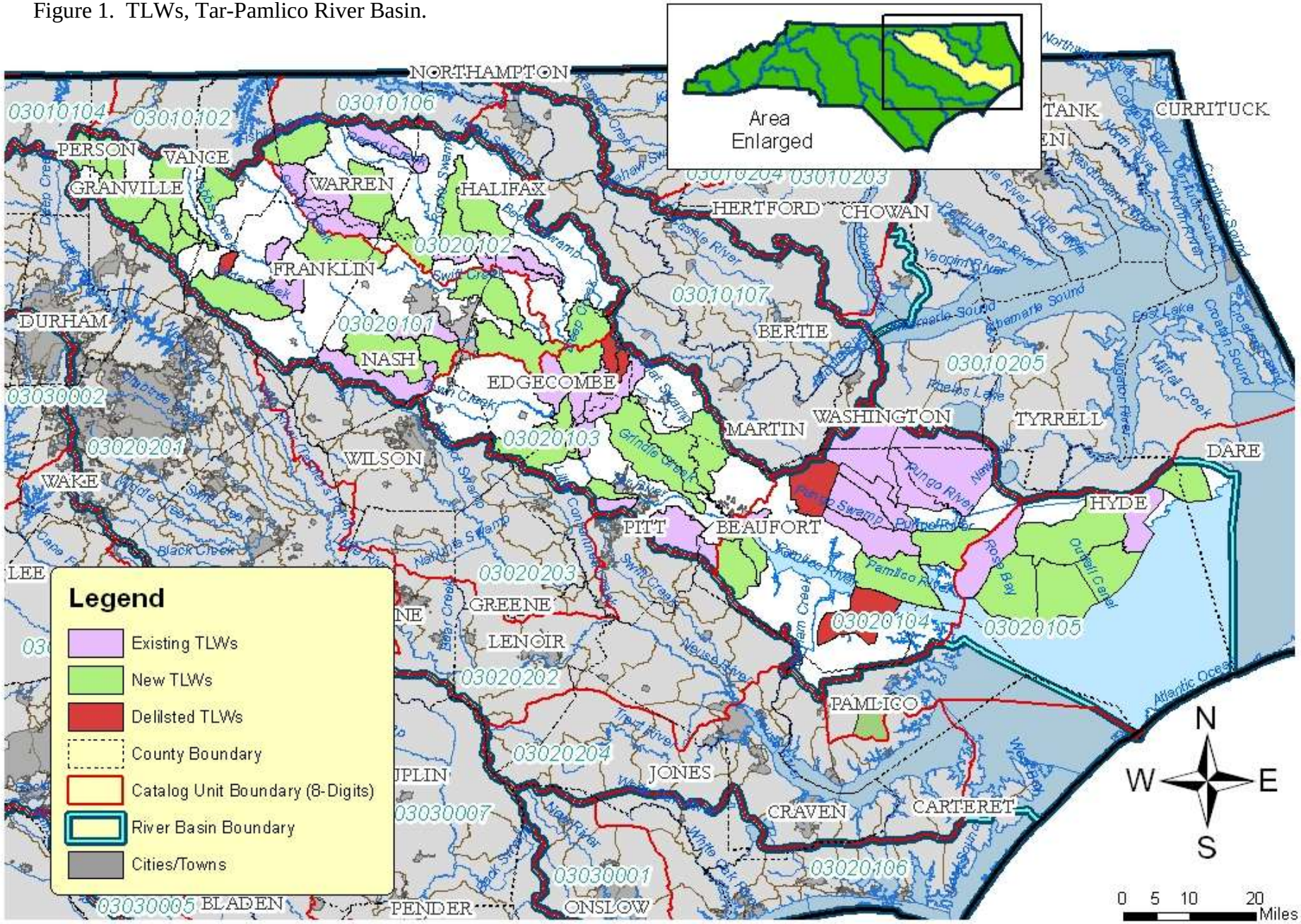
[1]Hydrologic Unit (HU) Area estimate based on USGS 14-digit HU boundaries (USDA NRCS 1998).
[2]Stream Length estimate derived from blue line streams on USGS 1:24,000 scale maps (NC CGIA 2008).
[3]Agricultural Area estimate based on 2001 National Land Cover Database (NLCD) (Homer et al., 2004).
[4]Forest Area estimate based on 2001 NLCD (Homer et al., 2004).
[5]Impervious Area Estimates based on 2001 NLCD (Homer et al., 2004).
[6]High Quality Waters (HQW) and Outstanding Resources Waters (ORW) (NC CGIA 2008).
[7]Water Supply Watershed (WSW) length (NC GIA 2008).
[8]Significant Natural Heritage Areas (SNHA) estimates (NC NHP 2007[1]).
[9]Natural Heritage Element Occurrences (NHEO) (NC NHP 2007[2]).
[10]Conserved Area estimate based on federal, state, and local land under protection (NC CGIA 2008).
[11]303(d) List of impaired waters (NC DWQ 2006[2]).
[12]Animal Operations estimates based on NC estimates for pork, poultry, and bovine operations in 2007 (NCDA, 2007).
[13]Non-forested Stream Buffer estimate based on 2001 NLCD and a 100 foot buffer distance from USGS blue line stream

Table 2. 14- Digit TLWs Land Use/Land Cover Changes from 2001-2011				
	Increased Impervious Surface (acres)	**Forest Converted to Developed (acres)**	**Forest Converted to Agriculture (acres)**	**Loss of Wetland (acres)**
Catalog Unit 03020101				
03020101010010	0.00	0.00	252.86	0.00
03020101010030	0.00	0.00	138.33	0.00
03020101010050	0.00	8.67	139.67	0.00
03020101010060	2.45	37.36	314.24	0.00
03020101020010	81.40	147.67	259.09	0.00
03020101030010	0.00	0.00	65.61	0.00
03020101030020	0.00	0.00	57.60	0.00
03020101030070	52.71	117.20	216.61	0.00
03020101040060	0.00	0.00	200.60	0.00
03020101040070	38.25	14.01	116.54	0.67
03020101050010	30.69	407.43	598.47	24.24
03020101080020	11.79	0.00	133.00	8.67
03020101090010	19.13	9.56	116.76	50.26
03020101100020	24.24	55.60	77.39	3.11
03020101100040	93.85	63.83	19.13	1.33
03020101100050	42.48	80.73	142.78	22.02
03020101120030	38.92	15.57	154.34	4.89
03020101130050	0.22	0.00	280.89	1.11
03020101130090	19.79	0.45	111.64	0.45
Catalog Unit 03020102				
03020102010010	0.00	0.00	172.58	0.00
03020102010020	0.00	1.33	346.49	29.13
03020102010030	0.00	0.00	281.11	0.00
03020102010040	0.00	0.00	226.62	0.00
03020102020010	14.68	4.00	482.38	0.00
03020102020030	0.00	0.00	511.06	1.33
03020102020050	0.00	0.22	537.75	10.01
03020102030030	0.45	0.45	376.96	6.00

	Increased Impervious Surface (acres)	Forest Converted to Developed (acres)	Forest Converted to Agriculture (acres)	Loss of Wetland (acres)
03020102040010	3.78	0.22	330.70	5.56
03020102040020	0.45	0.22	437.45	35.58
03020102050010	1.33	0.45	375.18	19.13
03020102070050	0.67	1.33	184.81	0.22
Catalog Unit 03020103				
03020103010010	9.56	1.56	184.59	4.00
03020103010020	33.58	43.37	269.99	4.67
03020103040010	0.00	0.00	93.85	0.00
03020103040020	0.45	0.00	230.85	0.00
03020103050030	4.89	0.00	186.37	0.00
03020103050040	0.00	1.11	45.15	0.00
03020103050050	0.00	0.00	22.46	0.00
03020103060010	94.74	23.13	13.57	38.25
03020103060020	207.94	137.89	93.41	73.84
03020103070010	7.56	0.00	702.99	0.00
03020103080010	11.34	0.45	676.08	0.67
03020103090030	5.34	0.22	755.48	1.33
Catalog Unit 03020104				
03020104010010	10.45	19.13	737.46	7.56
03020104010020	22.24	9.34	63.61	52.26
03020104020020	68.05	12.68	40.25	38.47
03020104040040	0.00	4.00	480.37	0.00
03020104080010	0.45	0.00	360.50	0.00
03020104090010	46.04	0.00	376.73	0.00
03020104100010	13.34	0.00	34.03	0.00
03020104100020	4.67	0.00	216.39	0.00
03020104110020	2.89	0.00	879.80	0.00
03020104120020	0.00	0.00	77.39	0.00
Catalog Unit 03020105				
03020105010040	0.00	0.00	29.58	0.00
03020105030010	0.67	0.00	826.20	0.00

	Increased Impervious Surface (acres)	Forest Converted to Developed (acres)	Forest Converted to Agriculture (acres)	Loss of Wetland (acres)
03020105030020	3.11	0.00	0.00	0.00
03020105040010	0.89	0.00	7.78	0.00
03020105040020	0.00	0.00	0.00	0.00
03020105060010	0.45	0.00	90.07	0.00
03020105070010	4.67	0.00	0.00	0.00
03020105080010	0.00	0.00	0.00	0.00

Figure 1. TLWs, Tar-Pamlico River Basin.



Discussion of Tar-Pamlico River Basin Targeted Local Watersheds

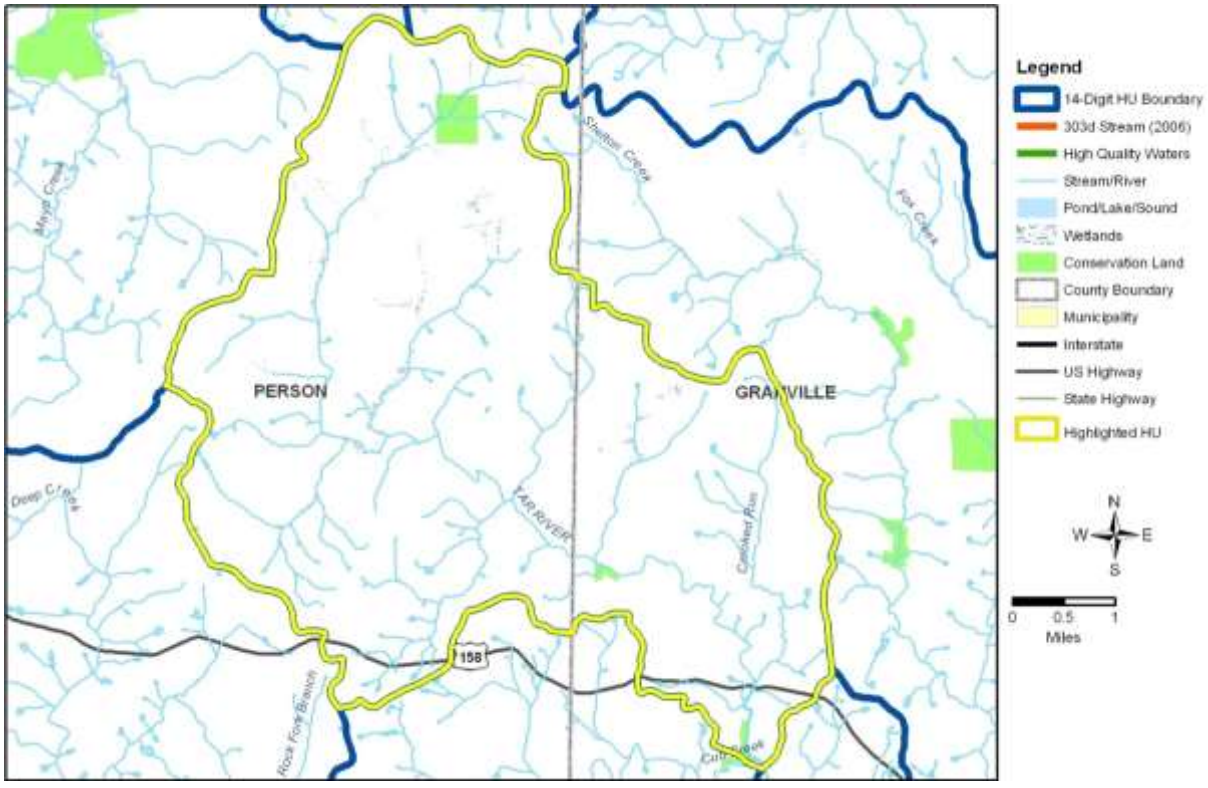
The following section provides maps and descriptions of TLWs and a discussion of the environmental conditions and activities that lead to their selection.

Tar-Pamlico 01 Targeted Local Watersheds

Upper Tar River: 03020101010010

This HU is the headwaters watershed of the Tar River. It covers 26 square miles and includes 58 miles of streams (23% unbuffered). It lies completely within the Carolina Slate Belt ecoregion. Sixty-six percent of the watershed is forested with pockets of small wetlands. About 46% of soils are hydric B soils with essentially no hydric A soils. Approximately 1.7 square miles are designated Significant Natural Heritage Area (SNHA) and the watershed houses 57 Natural Heritage Element Occurrences (NHEO). One watershed improvement project sponsored by Clean Water Management Trust Fund (CWMTF) and one by the Wildlife Resources Commission (WRC) can be found here. The watershed is about 3% developed with a low average imperviousness of 0.4%. The Department of Transportation (DOT) has programmed approximately 3 miles of Transportation Improvement Program (TIP) projects here. About one-third of the watershed is used for agriculture, including three permitted livestock operations.

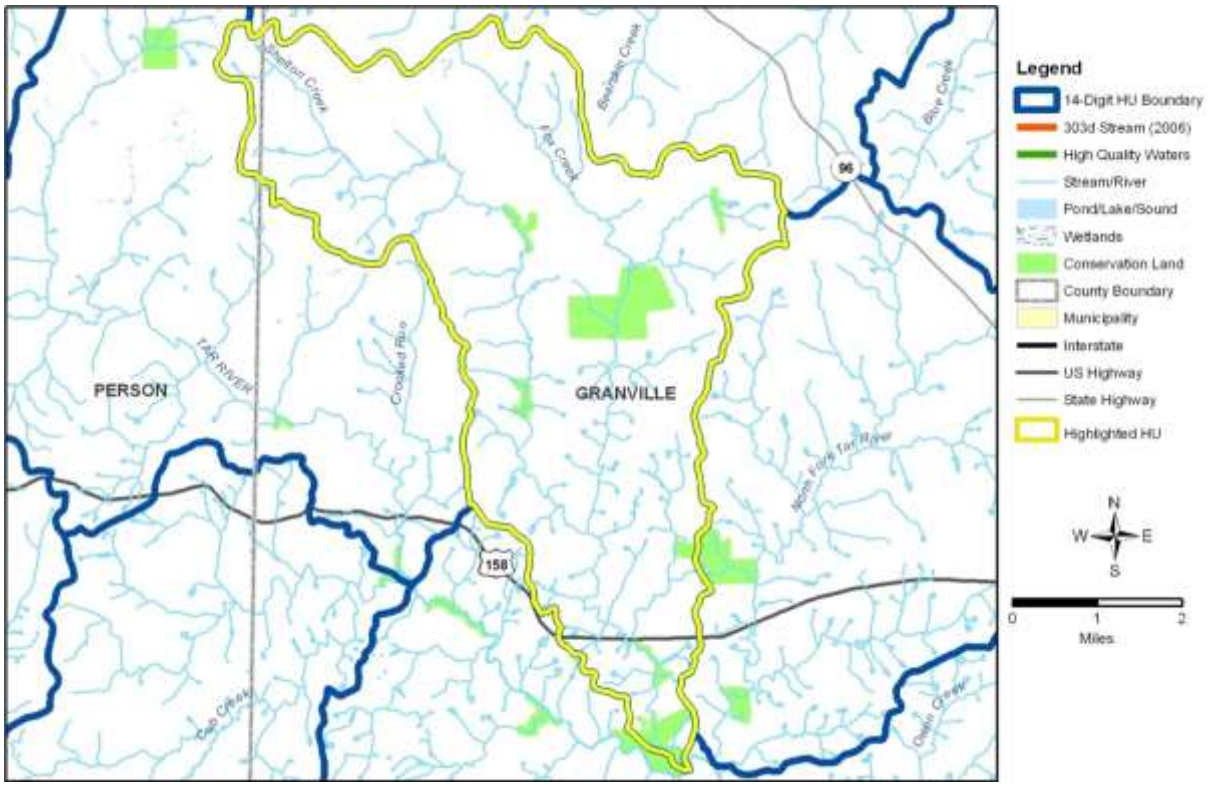
Priorities for this watershed are projects that address agricultural inputs (nutrients and sediment) and those that reestablish woody buffers.



Fox Creek: 03020101010030

This watershed encompasses 26 square miles with 62 miles of streams (20% unbuffered). Sixty-eight percent of the watershed is forested with small isolated wetlands. Nearly 10 square miles of SNHA occur here with 68 documented NHEOs. Twenty-eight percent of the watershed is in agricultural land use. There are five permitted animal operations. CWMTF and WRC have each completed one watershed improvement project here. Three percent of the watershed is considered developed and 1.7 miles of TIP projects have been programmed here.

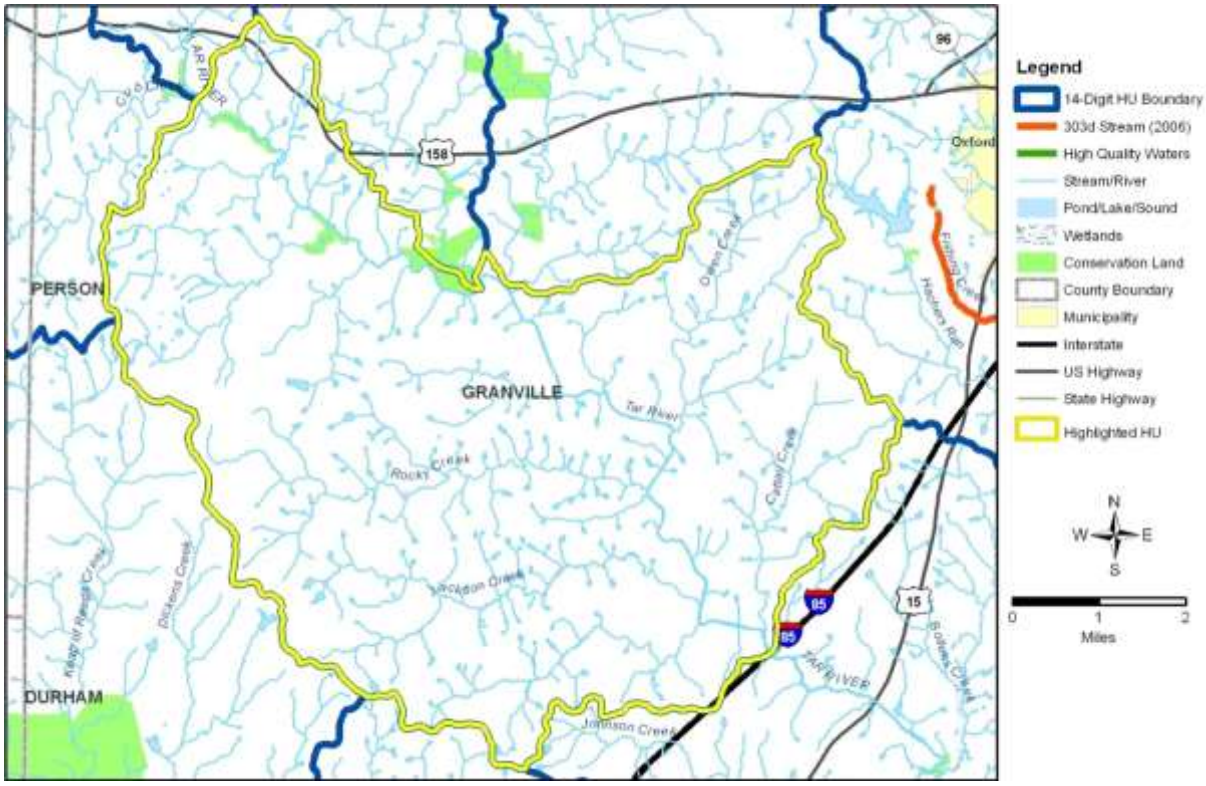
Planting riparian buffers is a high priority here as are projects that reduce sediment and nutrient inputs to the streams. Projects adding to the protection of rare species or augmenting conservation lands are also important here.



Rocky Creek: 03020101010050

This HU covers 44 square miles. There are 142 miles of streams here (26% unbuffered) and a single surface water intake. Fifty-seven percent of the watershed is forested with isolated wetlands. Seventy-two NHEOs are documented here, including several rare mussel species. The watershed is 5% developed with 38% of land area used for agriculture. There are 15 permitted livestock production farms. Five agricultural Best Management Practices projects (BMPs) have been implemented here. DOT has planned 1.8 TIP projects for the near future.

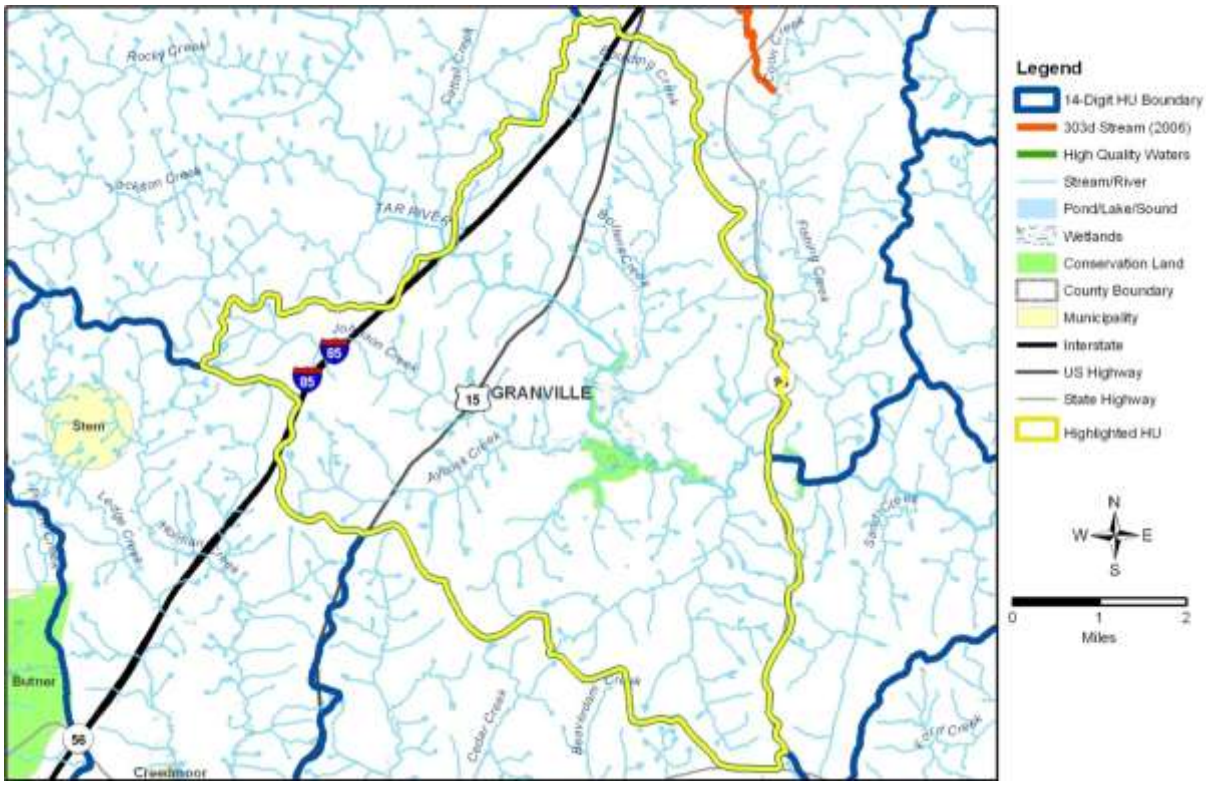
Wooded buffer establishment is a top priority in Rocky Creek as are projects that reduce nutrient and sediment inputs.



Bollens and Johnson Creeks: 03020101010060

The Bollens and Johnson Creeks watershed includes 99 miles of stream in an area covering 31 square miles. Twenty-two percent of the streams lack significant, contiguous woody buffers. Seven percent of the watershed is developed with about 1% imperviousness. Approximately 63% of the watershed is wooded with small isolated wetlands. More significant wetlands occur at the confluence of larger stream systems. Five percent of the watershed is designated SNHA and the watershed is home to 48 NHEOs. Twenty-nine percent of the HU is used for agriculture including three animal operations. Two agricultural BMPs have been implemented here. Twenty-nine CWMTF projects and a single WRC project have been completed here.

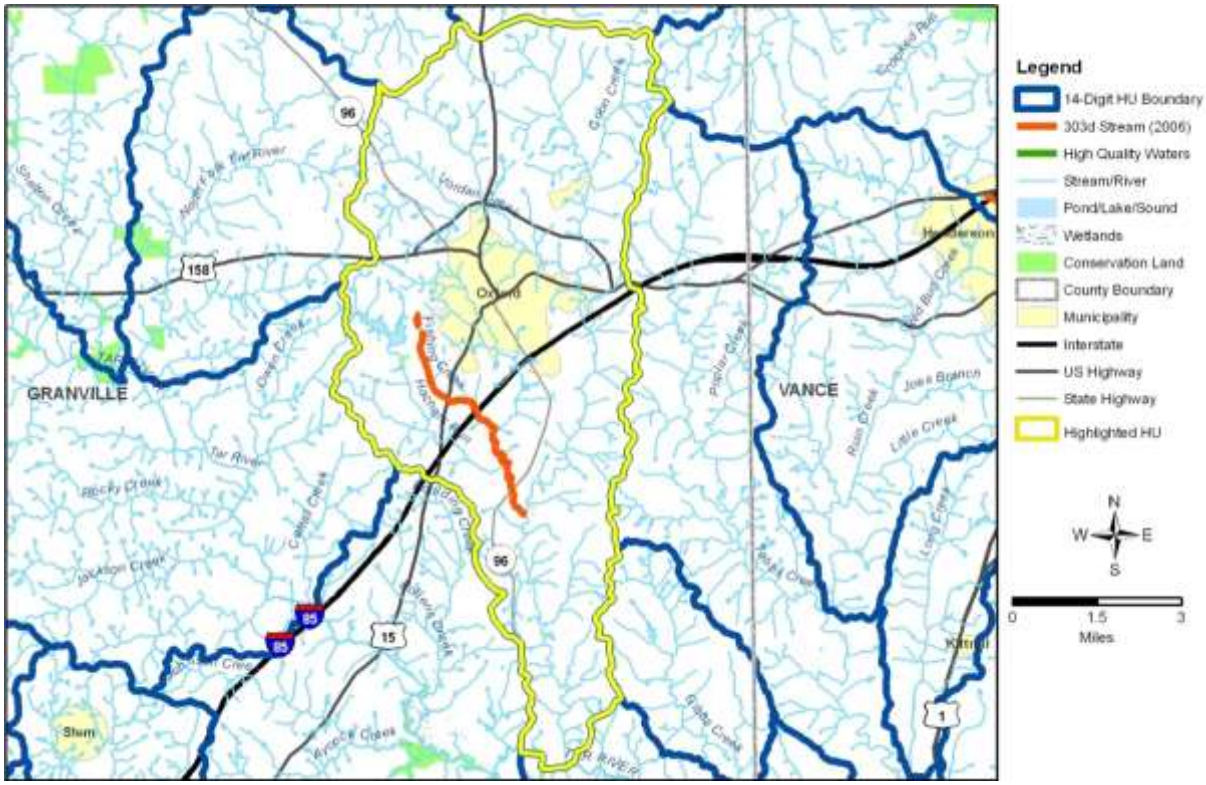
Buffer, nutrient reduction and sediment reduction are priorities here. Acquisition projects that augment or reconnect existing conservation lands is also a high priority in Bollens and Johnson creeks.



Fishing Creek: 03020101020010

The Fishing Creek watershed is the largest of the three HUs comprising the Fishing Creek Local Watershed Planning area. It covers 48 square miles and includes 134 miles of streams (29% unbuffered). Three percent of streams are listed as impaired (NC 303(d) List, 2006). There is a single permitted surface water intake in the watershed. One square mile is designated SNHA and there are 6.7 square miles of unfragmented forest. Fifty-four percent of the watershed is forested with small pockets of wetlands. Seventeen percent of the HU is developed with 3.7% imperviousness, primarily concentrated around Oxford. DOT has programmed 7.6 miles of TIP projects here for development in the near future. Twenty-eight percent of the land area is in agriculture with 14 permitted livestock facilities. Three agricultural BMPs have been installed. CWMTF sponsored 10 projects here and WRC sponsored one.

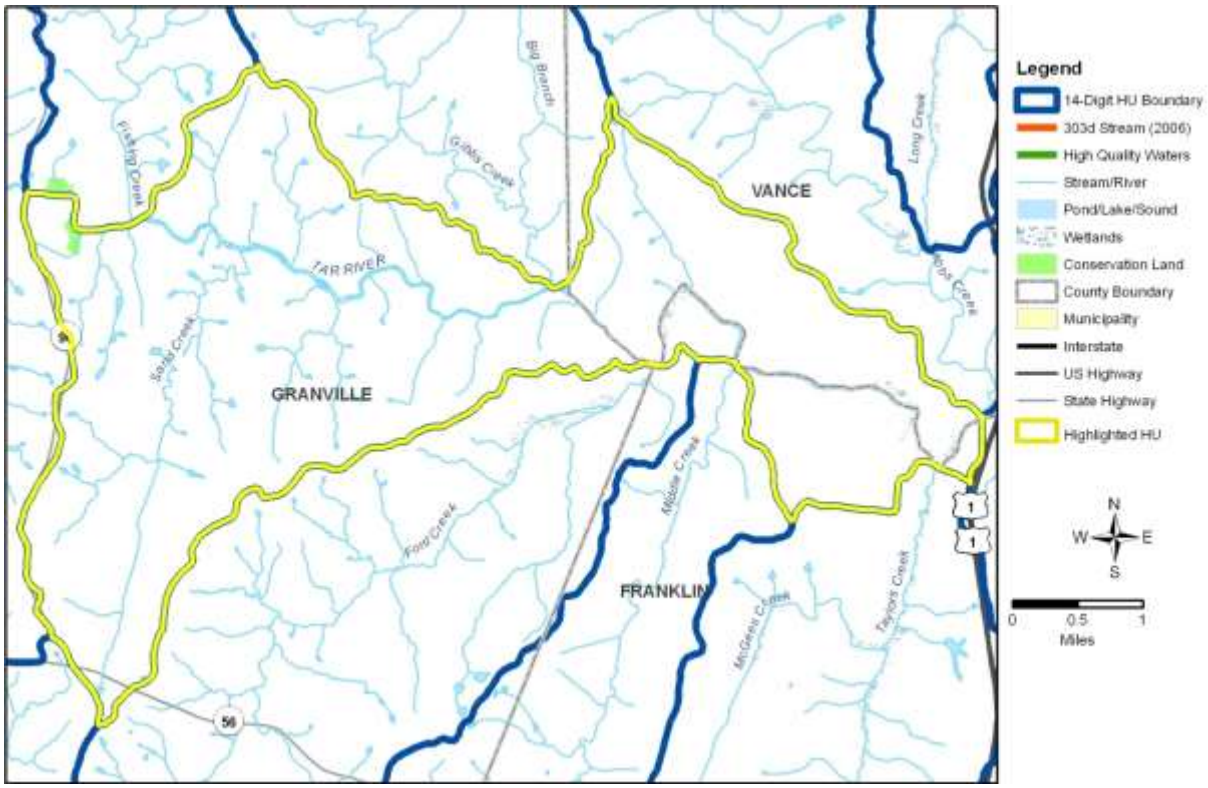
Projects that promote protection of rare species and reconnection of conservation areas are important here. Projects that reduce sediment impacts and reestablish riparian buffers are a top priority for the Fishing Creek watershed.



Sand Creek: 03020101030010

The Sand Creek watershed is a small HU in the southern portion of the Fishing Creek Local Watershed Planning area. The Tar River runs through it from west to east. It encompasses 14 square miles and includes 36 miles of stream. Seventy-four percent of the watershed is forested with small amounts of wetlands, mostly along the river and major streams. Nearly 9% of streams are unbuffered. There are 2.3 square miles SNHA with 40 NHEOs present in the watershed. WRC has one watershed improvement project here. Nearly 5 square miles unfragmented forest occur in the watershed. Twenty-two percent of the watershed is agricultural with a single agricultural BMP installed. Three animal operations are found in the Sand Creek watershed. Nearly 4% of the watershed is developed.

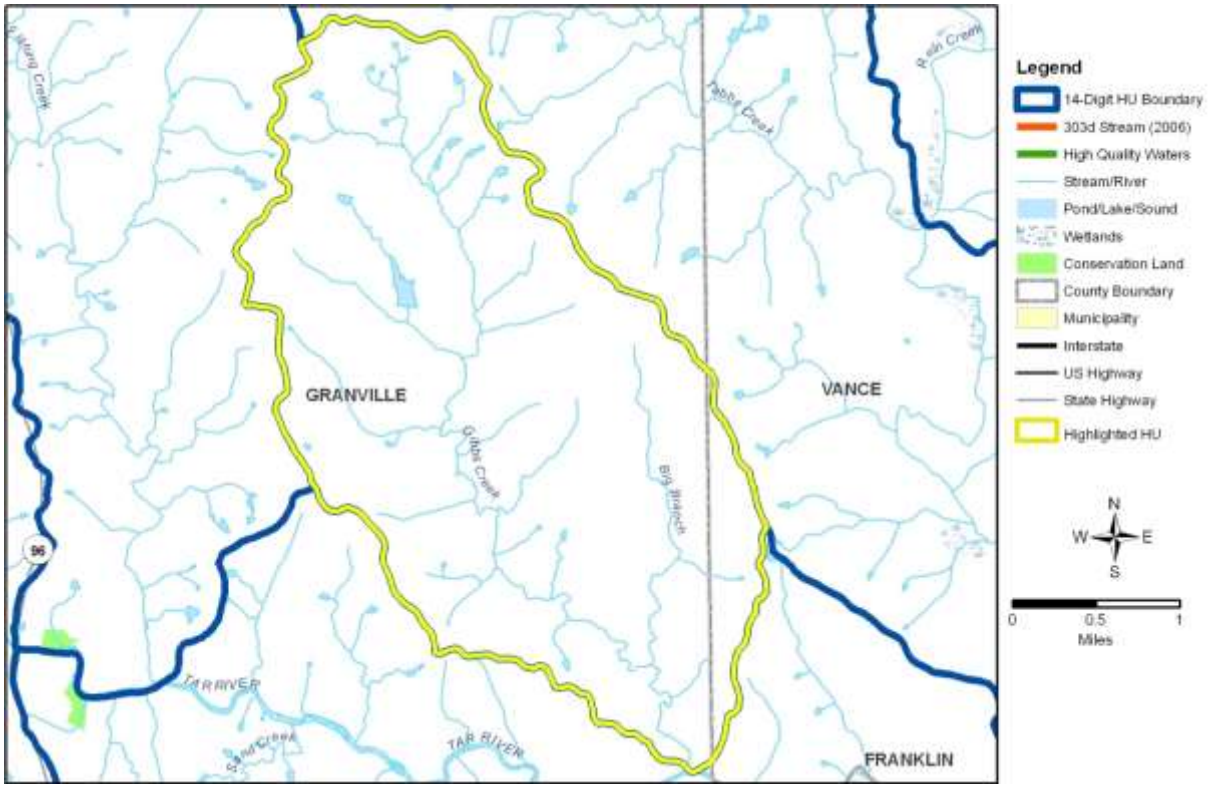
Highest priority projects here augment conservation areas and contribute to riparian corridor expansion.



Gibbs Creek: 03020101030020

The Gibbs Creek watershed is about eight square miles total area with 22 miles of streams, 11% unbuffered. This is the third and smallest of the HUs included in the Fishing Creek Local Watershed Planning area. Seventy-three percent is forested, including a significant amount of forestry management land. Twenty-three percent is in agriculture and about 3% is developed. There is a single permitted hog farm exists in the watershed. WRC has established one watershed improvement project here.

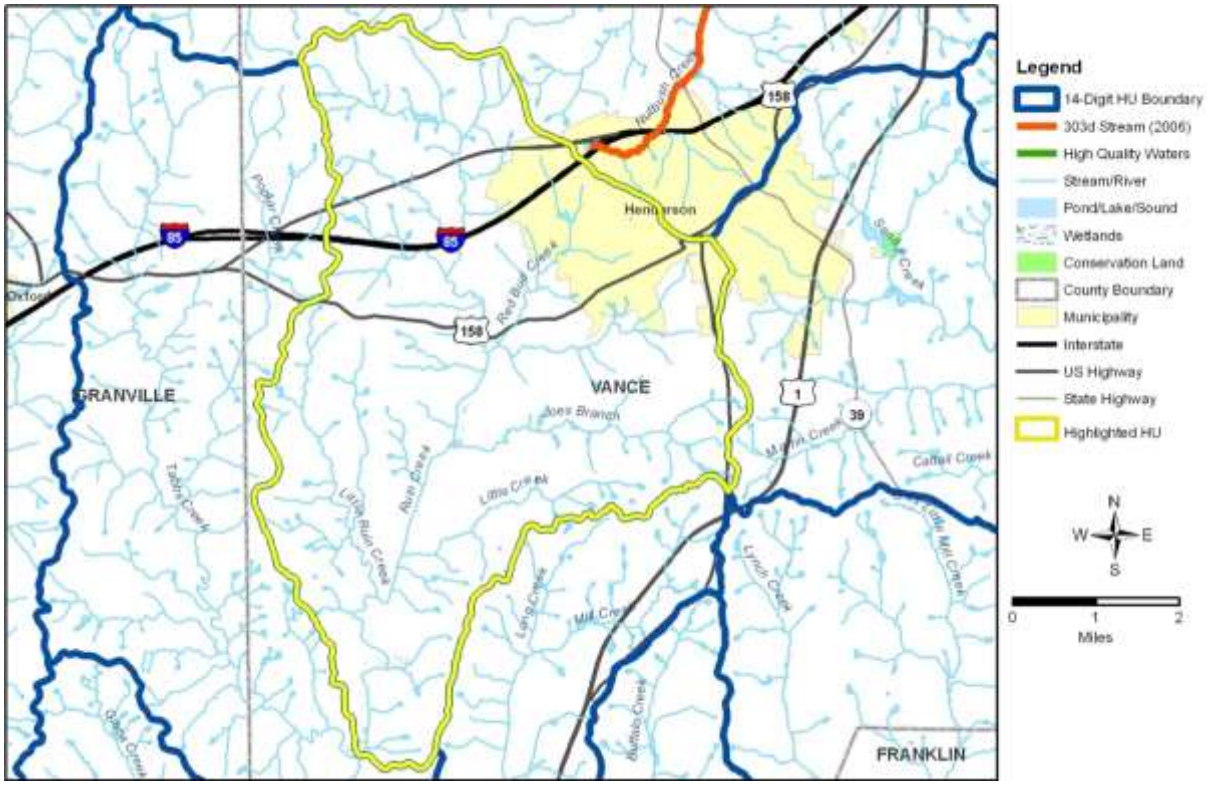
Highest priority projects include those that reduce sediment and promote establishment of riparian buffers.



Ruin Creek: 03020101030070

Ruin Creek is a 30 square mile HU with 79 miles of streams (19% unbuffered). Sixty percent of the watershed is forested with some small wetlands. Nearly six square miles are unfragmented forest. About 1.2 square miles of SNHA occur in the watershed as do 41 NHEOs. A single WRC project has been completed here. Seventeen percent of the watershed is developed with 3.6% impervious surface. There are 9.6 miles of TIP projects scheduled here. Twenty-two percent of Ruin Creek is in agricultural land use with six permitted livestock operations.

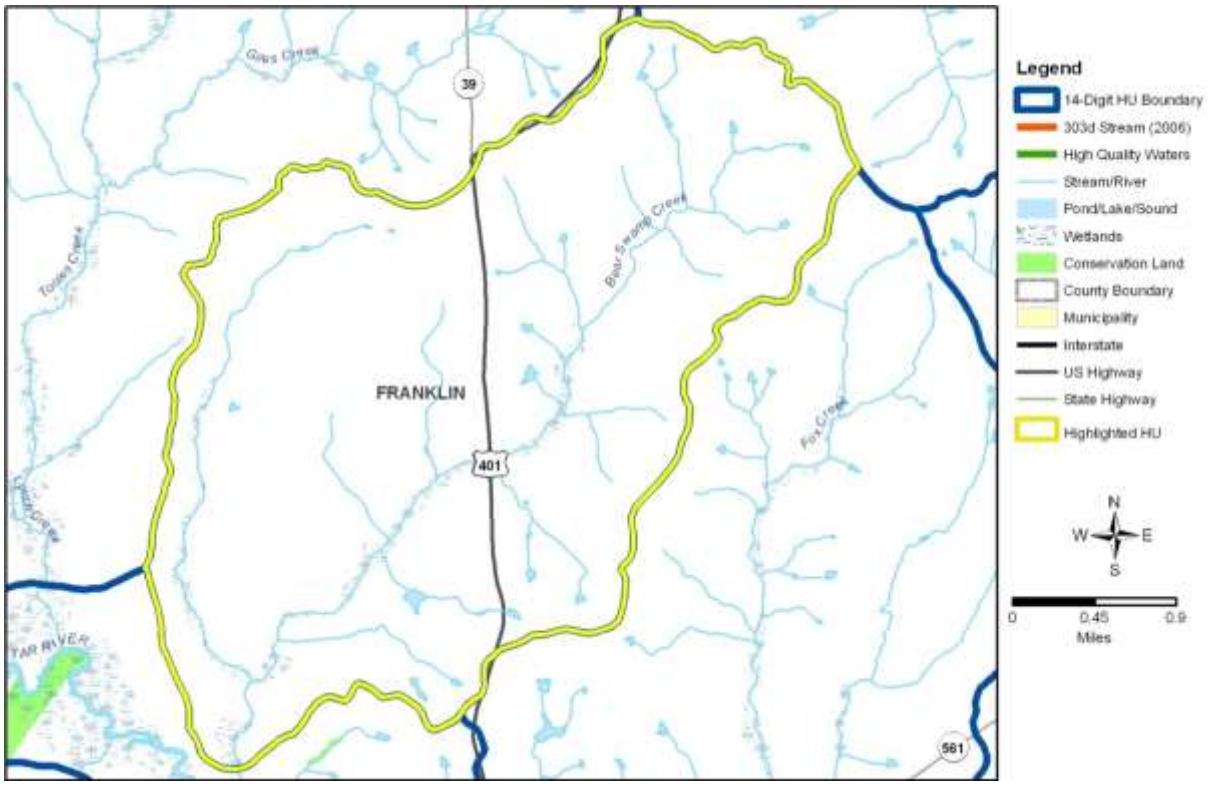
Priorities for this HU include buffer establishment and projects that reduce agricultural inputs. Stormwater BMPs are a very important priority for the drainages originating in Henderson.



Bear Swamp Creek: 03020101040060

The Bear Swamp Creek HU is also a small watershed in Franklin County. It covers nine square miles and has 19 miles of streams. The watershed is about 5% developed and has 61% forest cover. One-third of the watershed is used for agriculture. DMS has constructed one stream restoration project here.

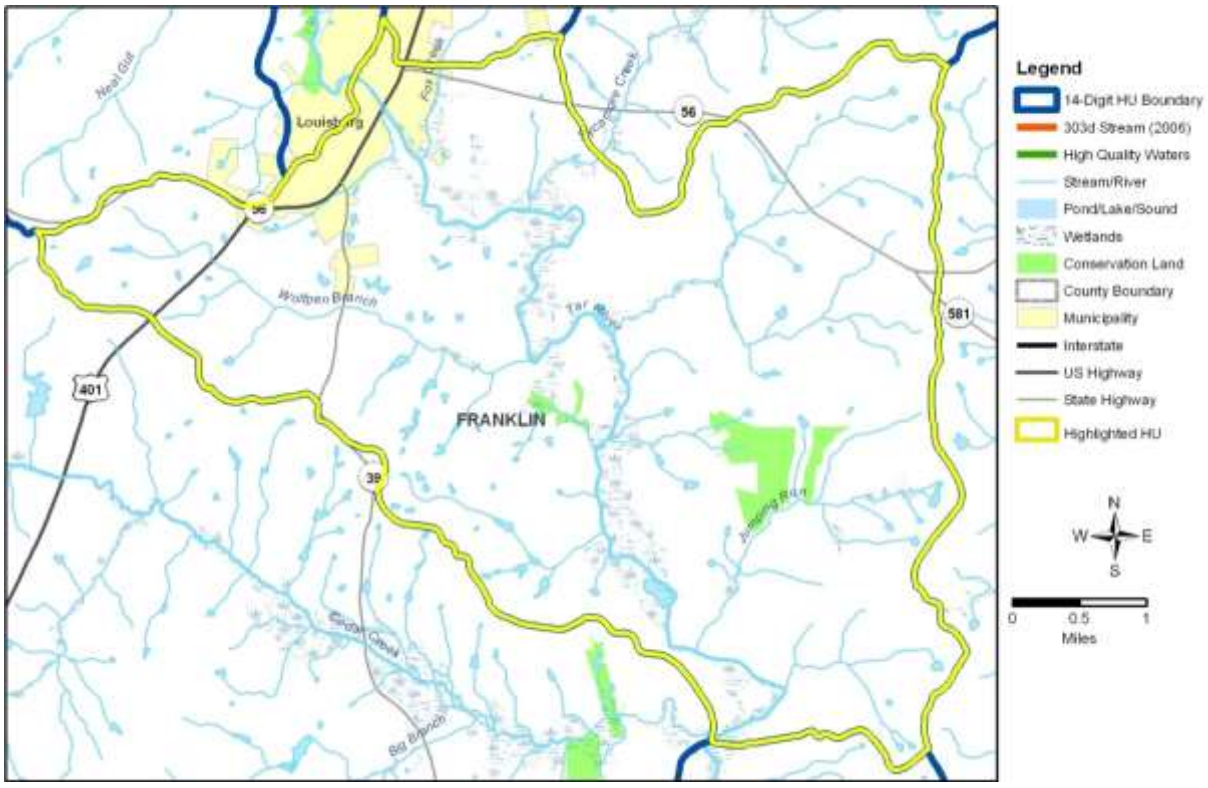
Priority projects here include those that offset agricultural impacts and riparian buffer restoration and preservation.



Wolfpen Branch: 03020101040070

Wolfpen Branch is a watershed encompassing 21 square miles. Forty-seven miles of streams occur in the HU, one-third lacking significant wooded riparian buffers. Forty-seven percent of the HU is forested (2.7 square miles unfragmented) with significant wetlands along the mainstem of the Tar. Seventeen NHEOs can be found here as can one Section 319 project and one WRC project. Eight percent of the watershed is developed with 1.8% impervious surface. Forty-three percent is in agriculture, including 2 agricultural BMPs. Eighteen permitted animal operations occur in the Wolfpen Branch watershed. DOT has programmed 1.8 TIP project miles.

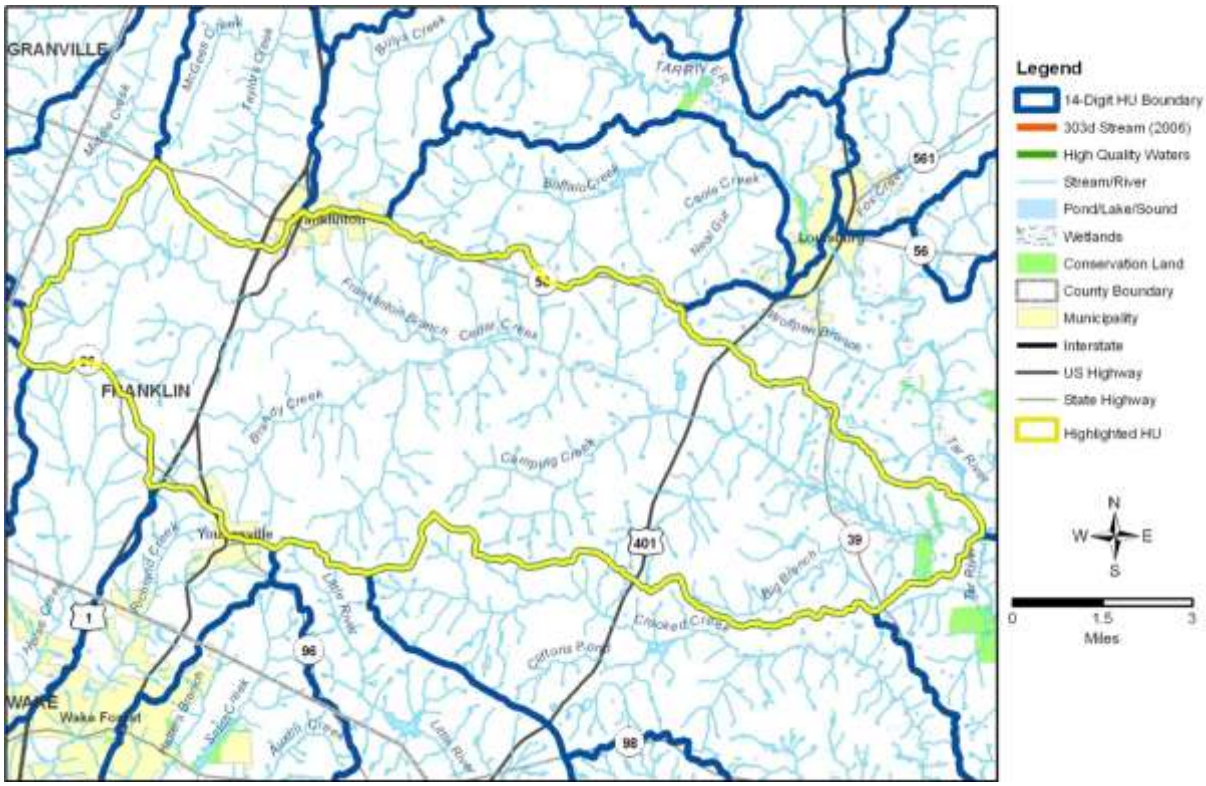
High priority projects here include improving riparian buffer integrity and reduce agricultural inputs. Stormwater management projects are important in the region around Louisburg.



Cedar Creek: 03020101050010

This watershed covers 65 square miles with 159 miles of streams (20% unbuffered). Fifty-nine percent is forested with significant forested wetlands occurring in the downstream portion of the watershed. Twelve square miles of unfragmented forest and six NHEOs can be found here. Thirty-three percent of the HU is used for agriculture with two implement agricultural BMPs. Fifteen animal operations, including 13 swine farms, are scattered throughout the watershed. Nearly 8% of Cedar Creek is developed with slightly more than 1% imperviousness. Franklinton is subject to Stormwater Phase II regulation, covering 0.4 square miles in this HU. There are 4.3 miles of TIP projects planned here.

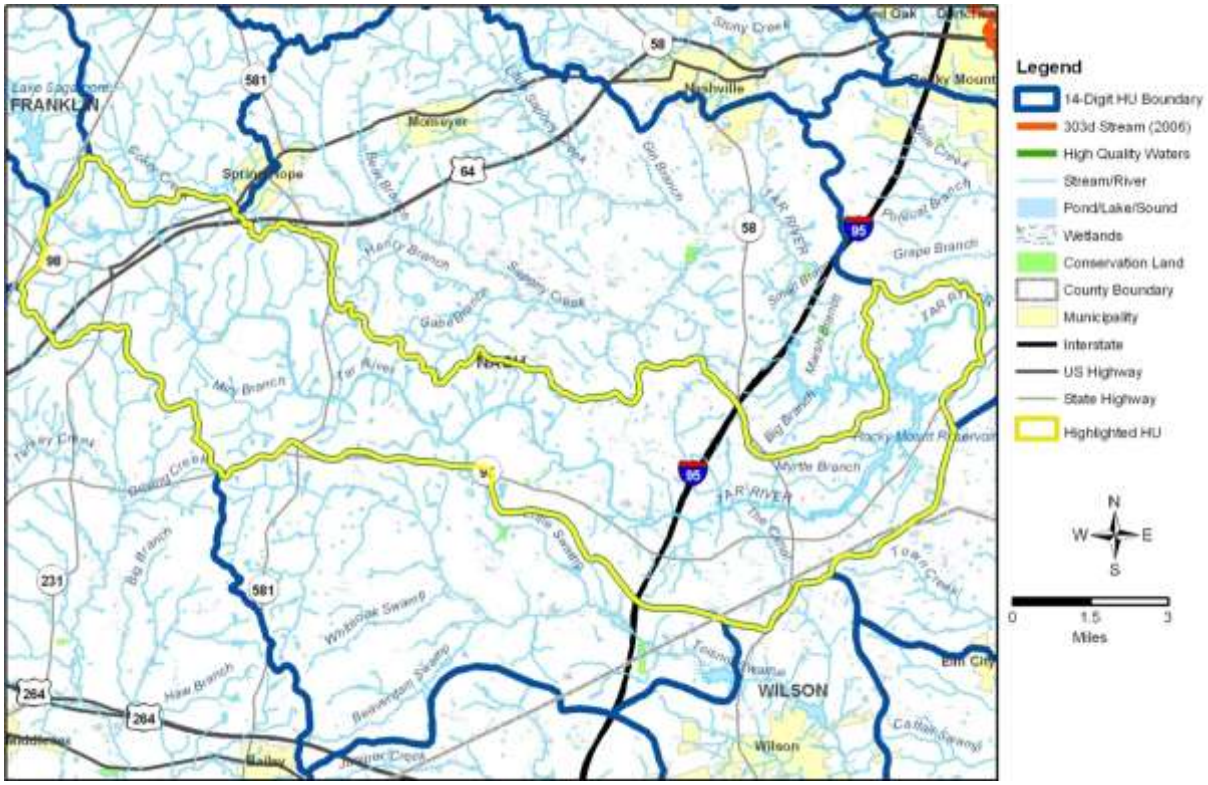
Riparian buffer establishment and runoff reduction projects are highest priority in Cedar Creek.



Tar River: 03020101080020

This HU on the Tar River covers 61 square miles and includes 118 miles of streams (29% unbuffered). The Rocky Mount Reservoir is situated in the downstream end of the watershed and accounts for approximately 2.3% of open water coverage of the total HU area. Forty-eight percent of the watershed is forested or forested wetlands. Nearly 10 square miles of forest is unfragmented. Fifty-six percent of soils here are hydric. One percent of the watershed is designated SNHA with 62 NHEOs occurring in the watershed. Seven percent of this HU is developed with slightly less than 1% impervious surface. Forty-three percent of the watershed is in agriculture and two agricultural BMPs have been implemented here. Fifteen animal operations are permitted in the watershed, five cattle, five poultry, and five hog farms. CWMTF has a single project completed here as does the Tar River Land Conservancy and the Wildlife Resources Commission.

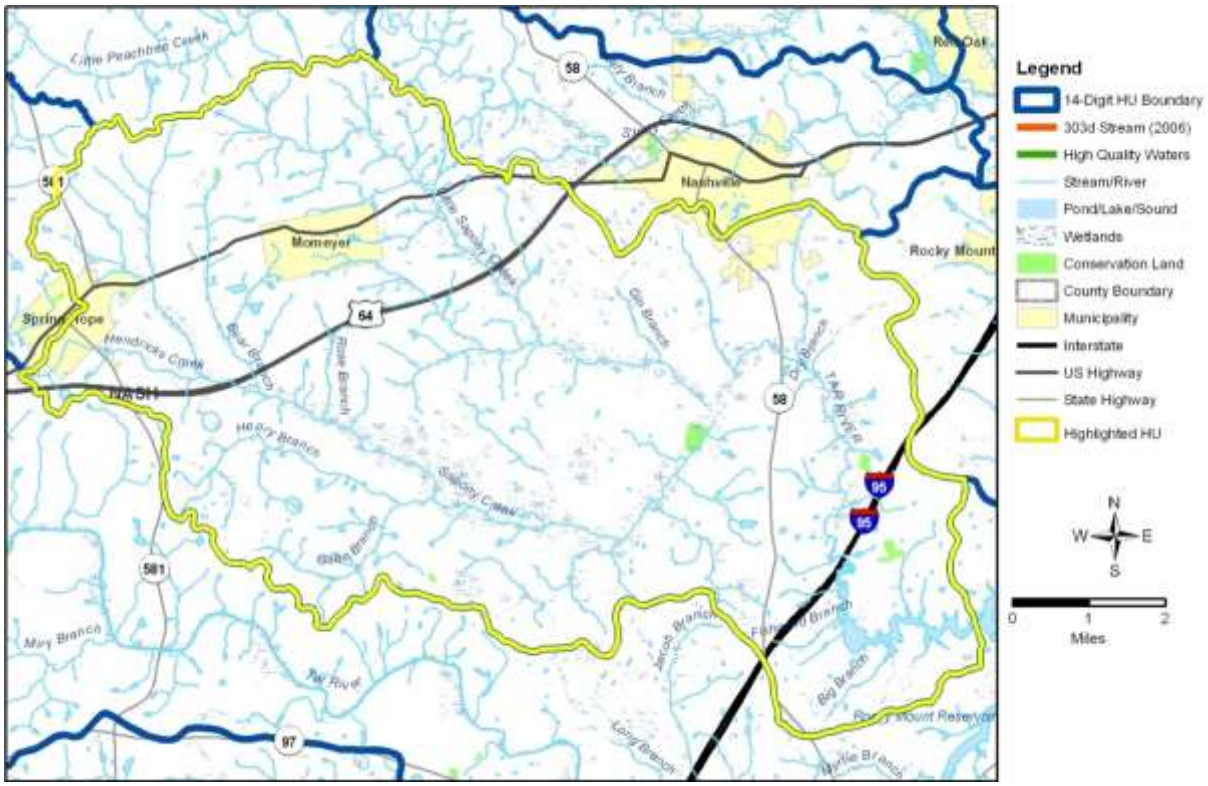
Highest priority projects here will expand and connect intact wetlands and forests along riparian corridors. Buffer and nutrient reduction projects are also high priority here.



Sapony and Little Sapony Creeks: 03020101090010

The Sapony and Little Sapony Creeks watershed spans 66 square miles. There are 135 miles of stream here, with 30% of them lacking wooded riparian buffers. In the downstream part of the watershed is the Rocky Mount Reservoir which accounts for the 1.5% open water coverage. Forty-two percent is forested or in wetlands; 36% of soils are hydric A and 31% is hydric B. Over nine percent of the HU is developed including 1.4% impervious surface. A small amount of incorporated Nashville occurs in this HU (0.7 square miles) and is subject to Stormwater Phase II regulations. Forty-seven percent is used for agriculture. There is a large amount of livestock production here including 13 cattle, 12 hog, and 20 poultry farms (45 operations total). Two agricultural BMPs have been implemented here.

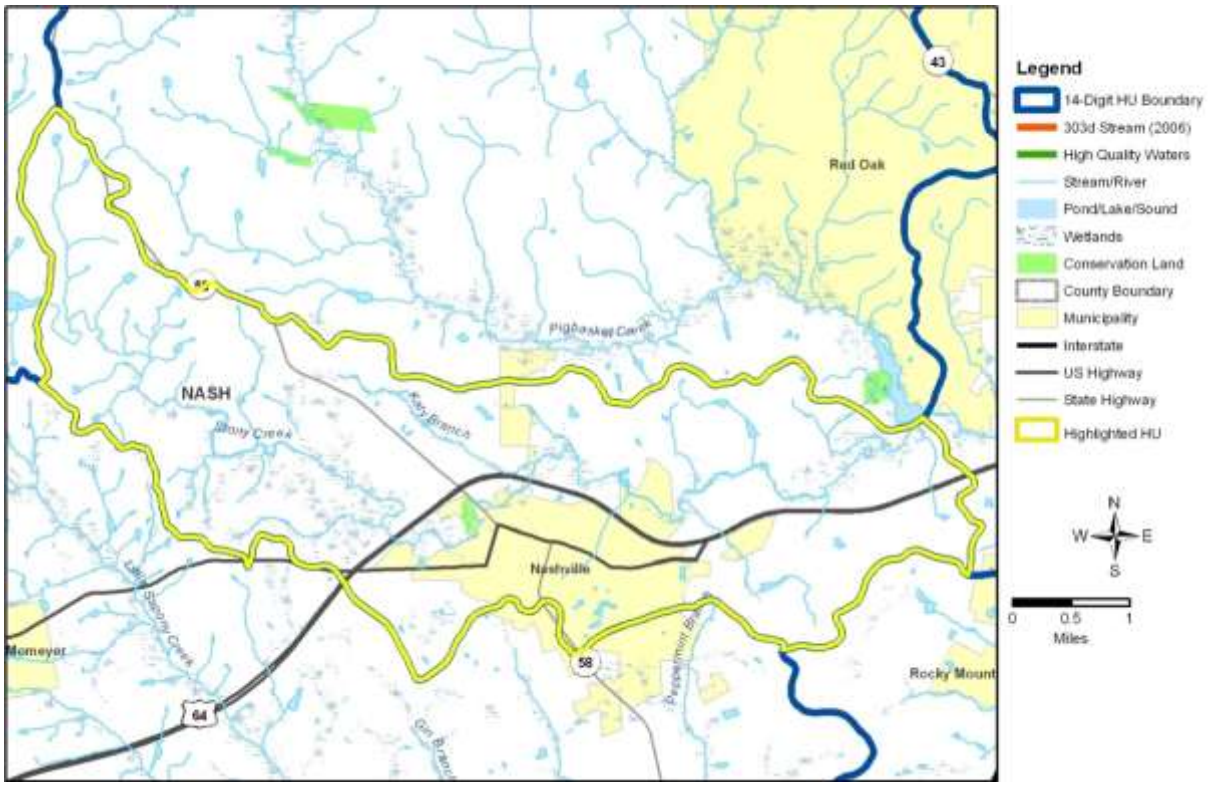
Projects that reduce or treat agricultural inputs, especially those related to livestock production, are highest priority. Buffer establishment and stormwater management in developed areas are both very important in this HU as well.



Stony Creek: 03020101100020

This Stony Creek watershed is 16 square miles and includes 36 miles of streams. A third of streams lack wooded buffers. Much of Nashville falls within the watershed borders (16% developed land area) and accounts for 3.6% imperviousness. Forty-three percent of the watershed is in agriculture.

Priorities for this watershed include BMPs that offset the impacts of stormwater runoff, especially in the vicinity of Nashville. Riparian buffer restoration along streams lacking buffer is also important here.



Lower Stony Creek: 03020101100040

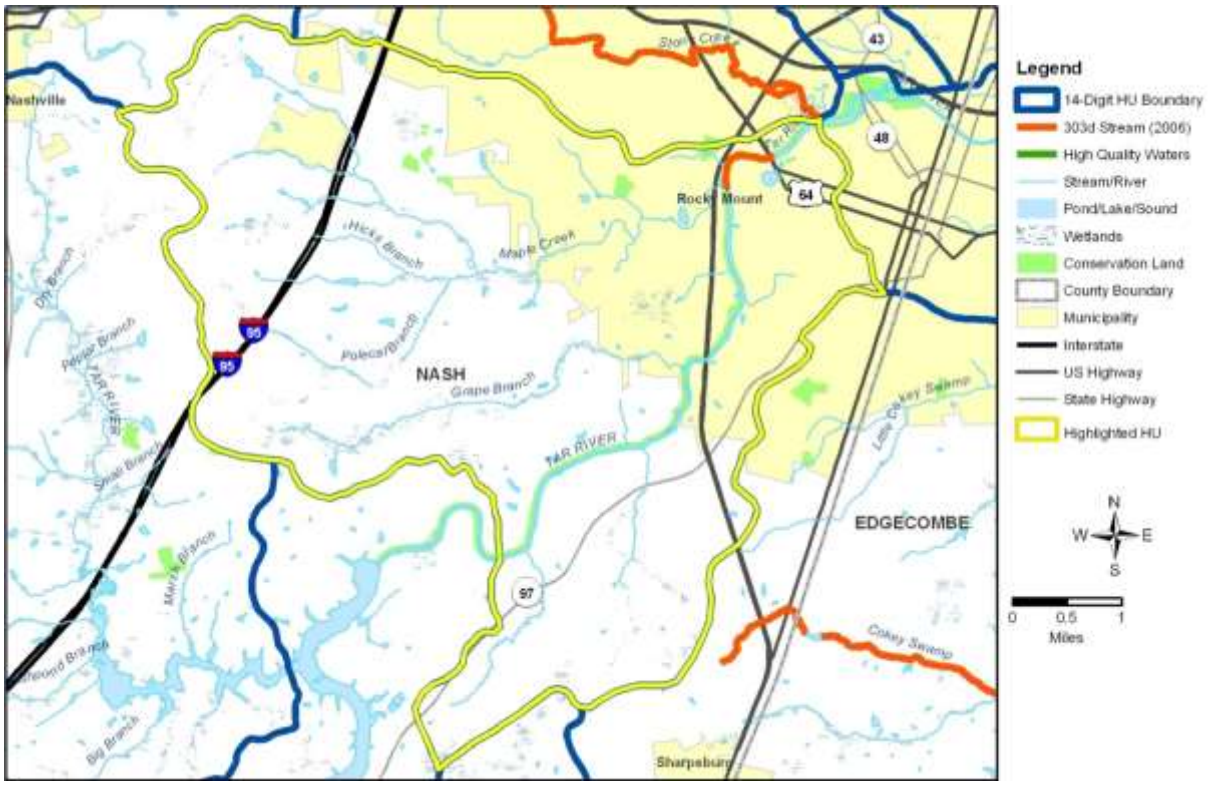
The Lower Stony Creek watershed is 14 square miles and has 28 miles of streams (one-third unbuffered). A significant amount of streams are listed as impaired here (30%). The watershed is 37% developed, including incorporated portions of Rocky Mount, Dortches, and Red Oak. Impervious surface covers 9.5% of the watershed.

The most important projects here are BMPs that address impervious surface runoff in the municipal areas.

Maple Creek: 03020101100050

Maple Creek is a HU covering 25 square miles with 34 miles of stream (35% unbuffered). Over 2.4% of the waters here are listed on the 2006 303(d) list of impaired waters. A single water supply intake is permitted here. One percent of the total HU area is open water associated with the Rocky Mount Reservoir. Thirty-five percent of the watershed is forested or wetlands. Seventy percent of soils are hydric here. Twenty-five percent of Maple Creek is developed accounting for 5% imperviousness. A significant amount (7.3 square miles) of Rocky Mount lies in this watershed and is subject to Phase II stormwater regulations. Thirty-nine percent of the watershed is in agricultural land use, including six permitted animal operations. CWMTF has sponsored a single project in the watershed.

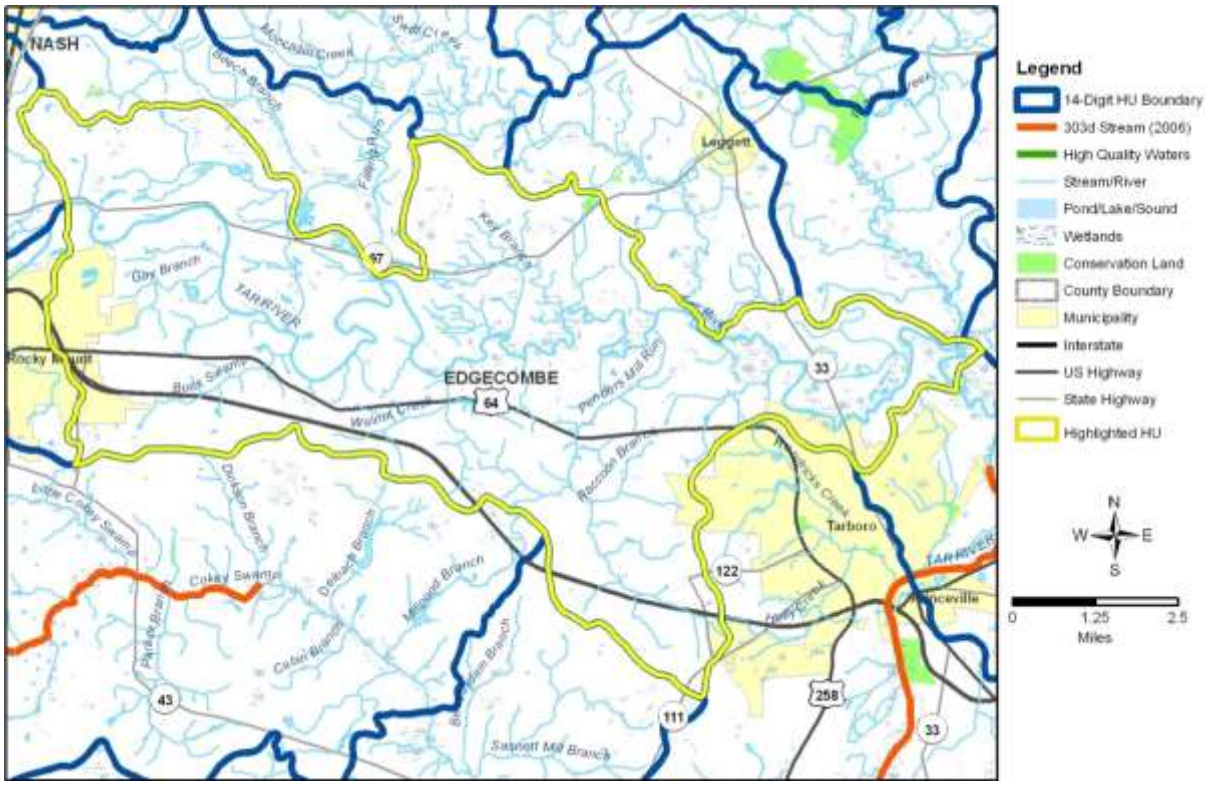
Stormwater management projects are a high priority for the Rocky Mount portion of the watershed. Riparian buffer projects are a priority for most of the watershed as well.



Tar River: 03020101120030

This segment of the Tar River has 131 miles of streams and river (44% unbuffered) within 55 square miles total HU area. Forty-four percent of streams lack woody buffers. Over 1.2% of the watershed is open water. Forty-one percent of the watershed is wetlands or forest. Nearly 70% of soils are hydric soils. Thirteen percent of the HU is designated 13% SNHA and 27 NHEOs occur here. Almost half of the HU is used for agriculture, including 10 permitted livestock farms. Two agricultural BMPs have been implemented here. Nine percent of this Tar River watershed is developed with 1.4% impervious surface. Small amounts of Rocky Mount and Tarboro occur within the watershed boundaries (2.2 square miles) and are subject to stormwater regulation.

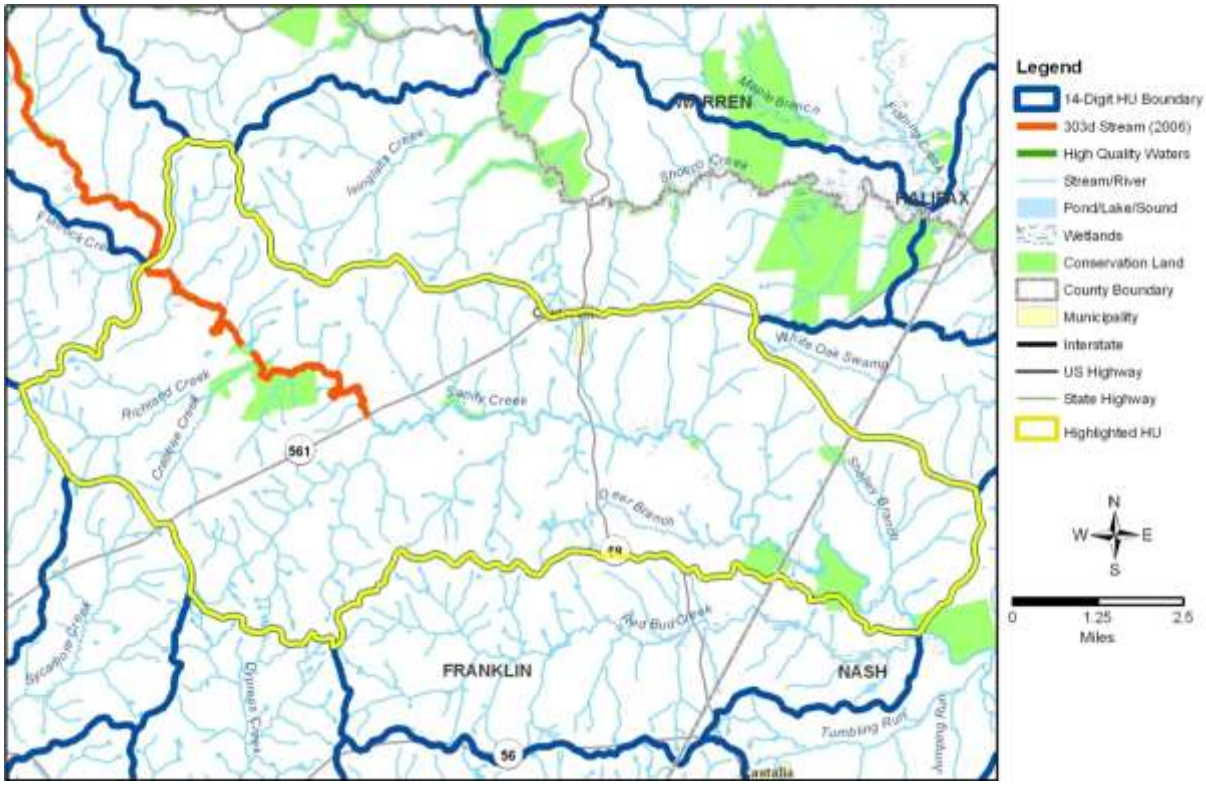
Buffer establishment and reduction of agricultural inputs are highest priority here. In developed areas, stormwater BMPs should be a high priority.



Sandy Creek: 03020101130050

The Sandy Creek HU covers 52 square miles and contains 129 miles of streams, all designated Outstanding Resource Waters (ORW). Fourteen percent of streams are unbuffered and 5.7% are designated impaired. Sixty-four percent of the watershed is forested with isolated wetlands. Nearly 12 square miles are unfragmented forest. Fifty-one NHEOs occur here. CWMTF has sponsored 10 projects in the Sandy Creek watershed and WRC has sponsored one. Thirty-one percent is used for agriculture, including 23 animal operations (12 cattle, 6 poultry, and 5 hog farms). Three agricultural BMPs have been implemented here. The watershed is 4.6% developed with only 0.6% imperviousness.

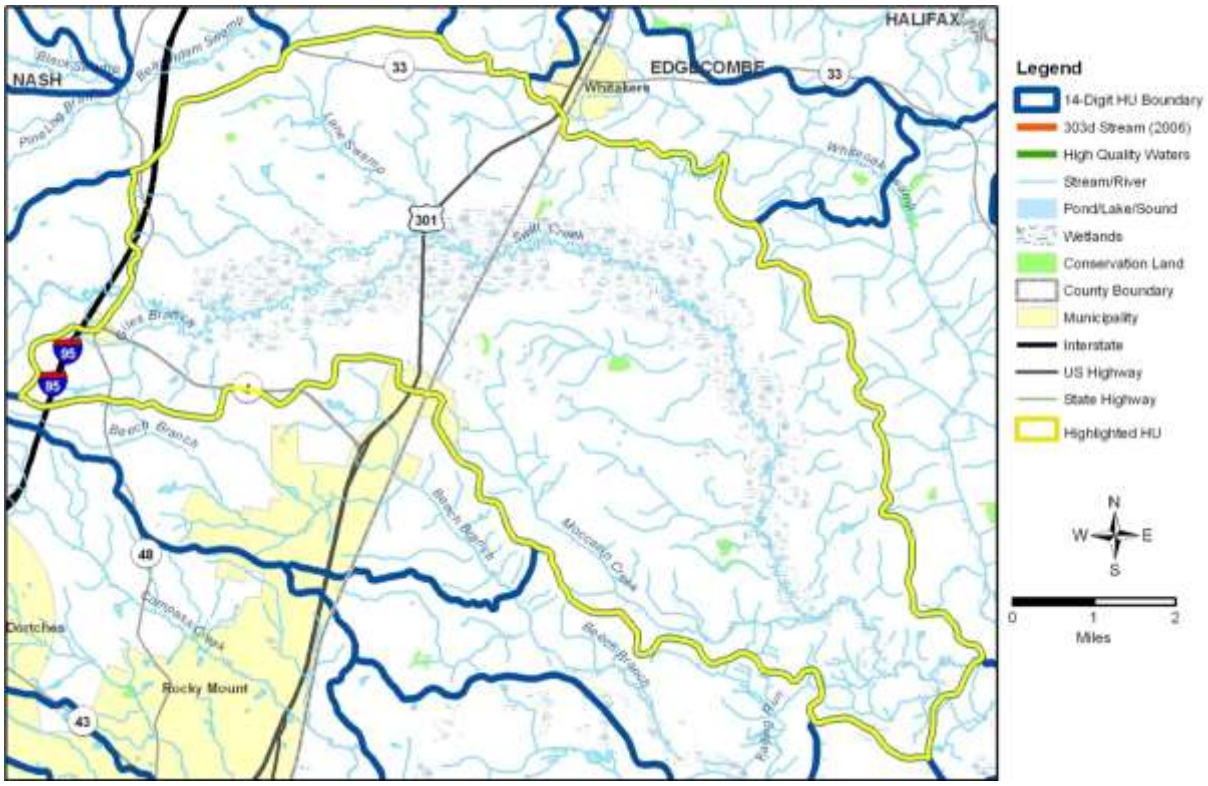
Priority projects in Sandy Creek should address agricultural inputs. Protection of rare species and habitats is also a high priority here.



Swift Creek: 03020101130090

This HU encompasses 47 square miles total and includes 126 miles of streams (48% unbuffered). Eighty-eight percent of the soils are hydric and wetlands occur extensively along the main stem of Swift Creek. Forty-eight percent of the HU is forested, with over 10 square miles of unfragmented forest. Sixteen percent of the Swift Creek is designated SNHA and 15 NHEOs are documented here. Approximately 7.6% of the watershed is developed with a little over 1% impervious surface. A small portion of Rocky Mount occurs in the watershed (0.4 square miles) and is subject to Phase II stormwater regulations. Forty-four percent is used for agriculture, with 17 animal operations, mostly poultry farms. Three agricultural BMP projects and one WRC project have been implemented here.

Riparian buffer establishment and reduction of agricultural and livestock inputs are the highest priority projects for this watershed.

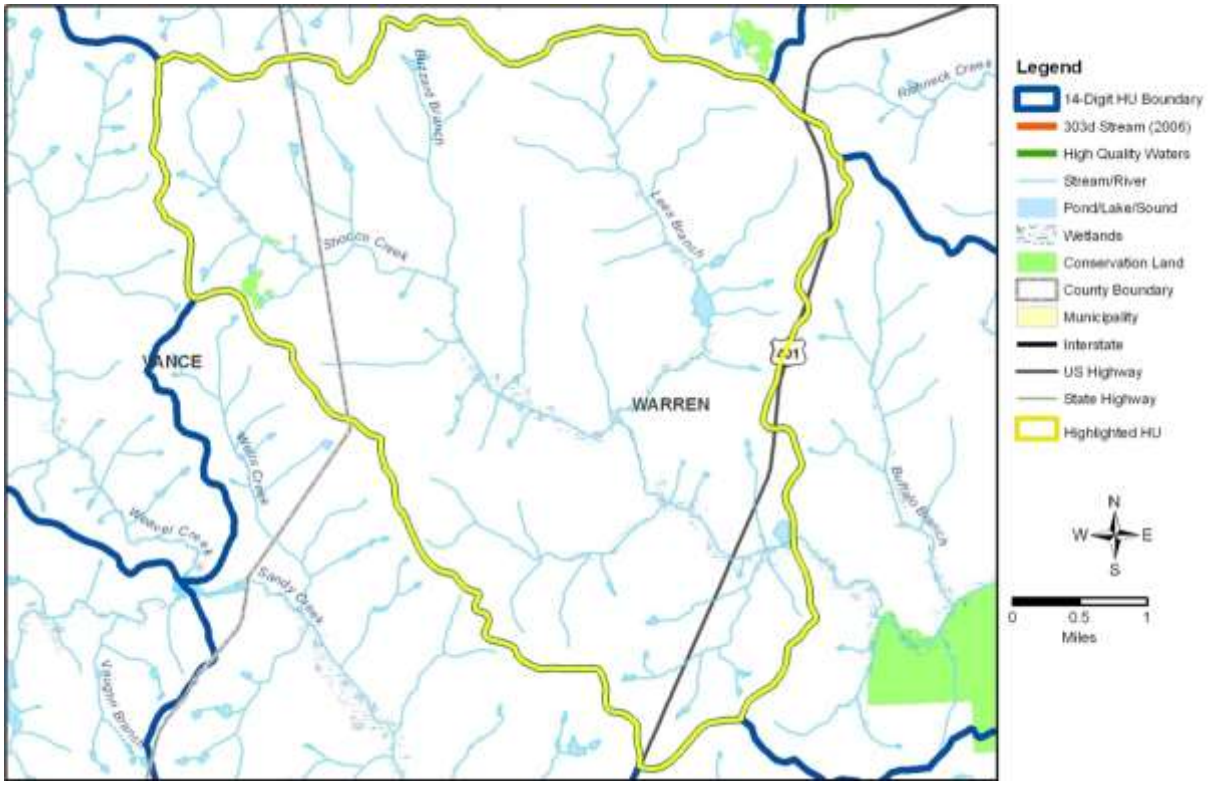


Tar-Pamlico 02 Targeted Local Watersheds

Shocco Creek: 03020102010010

This watershed of 18 square miles and 40 miles of streams is approximately 58% forested. Thirty-six percent of the watershed is agricultural and includes three permitted cattle and three permitted poultry farms. The part of Shocco Creek contains important habitat for rare mussel species.

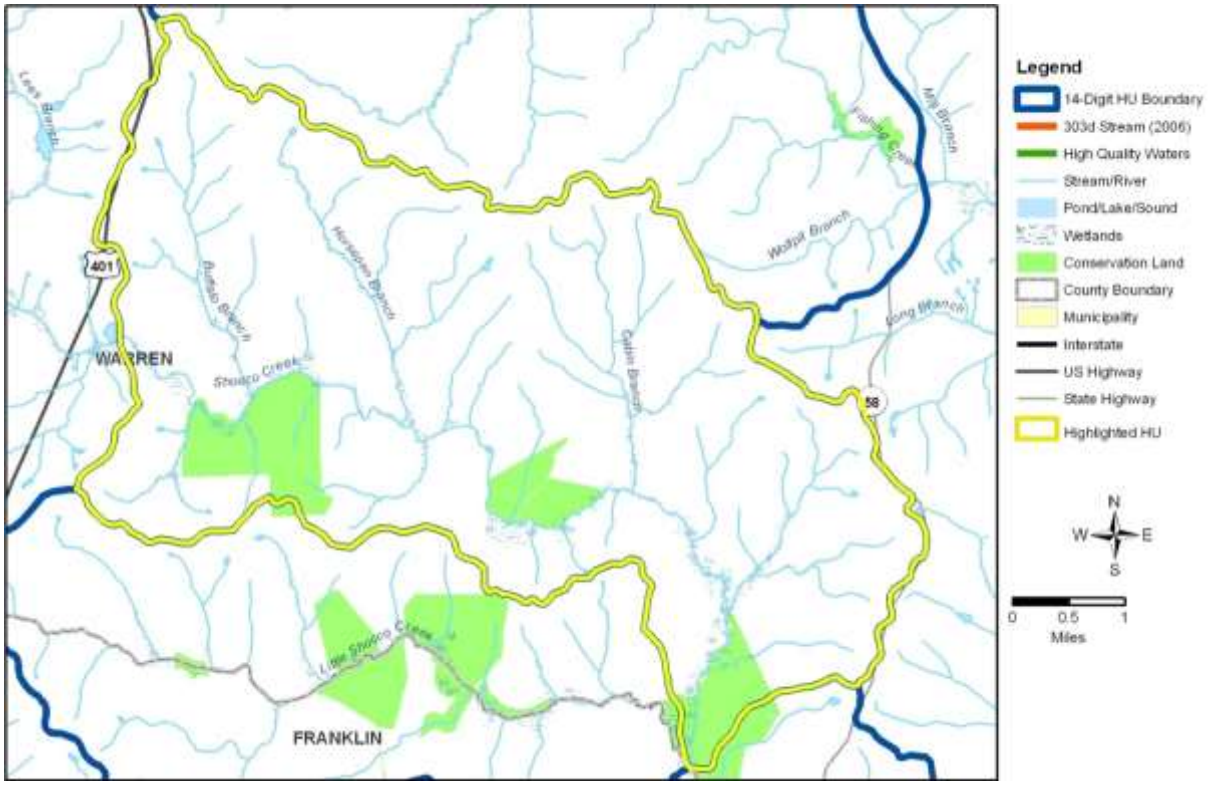
Priority projects for the watershed address impacts related to agricultural runoff and degraded riparian buffer, especially those that improve and protect mussel habitat.



Shocco Creek: 03020102010020

This watershed is 24 square miles and includes 57 miles of streams, over five percent unbuffered. Seventy-nine percent of the watershed is forested and 17% is used for agriculture. This part of Shocco Creek also provides important habitat for rare mussel species.

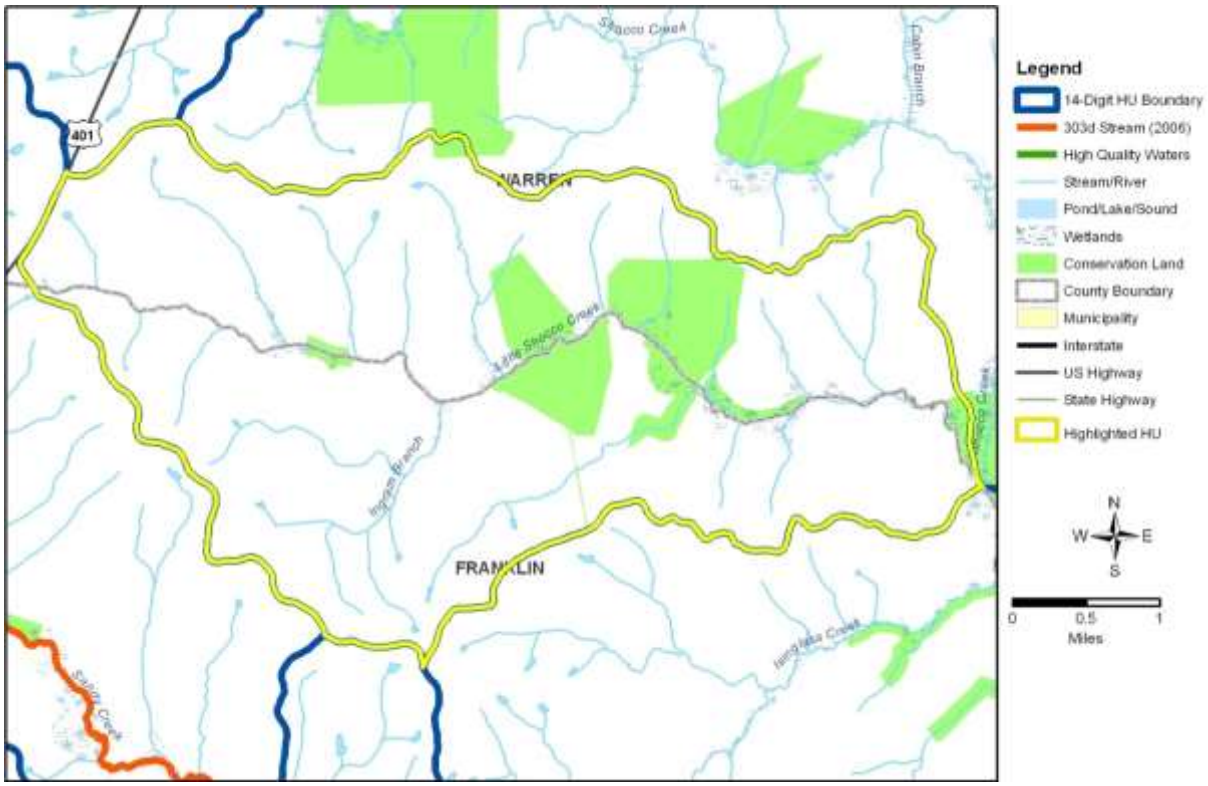
Highest priority projects here include preservation of intact riparian and instream habitat. Projects that augment or connect conservation lands are also highly important.



Little Shocco Creek: 03020102010030

The Little Shocco Creek watershed is only 14 square miles and has 31 miles of streams. Eighty percent of the HU is forested and includes 5% designated SNHA. Seven NHEOs occur here. Seventeen percent of the watershed is in agricultural land use. This tributary to Shocco Creek also provides habitat for rare mussels.

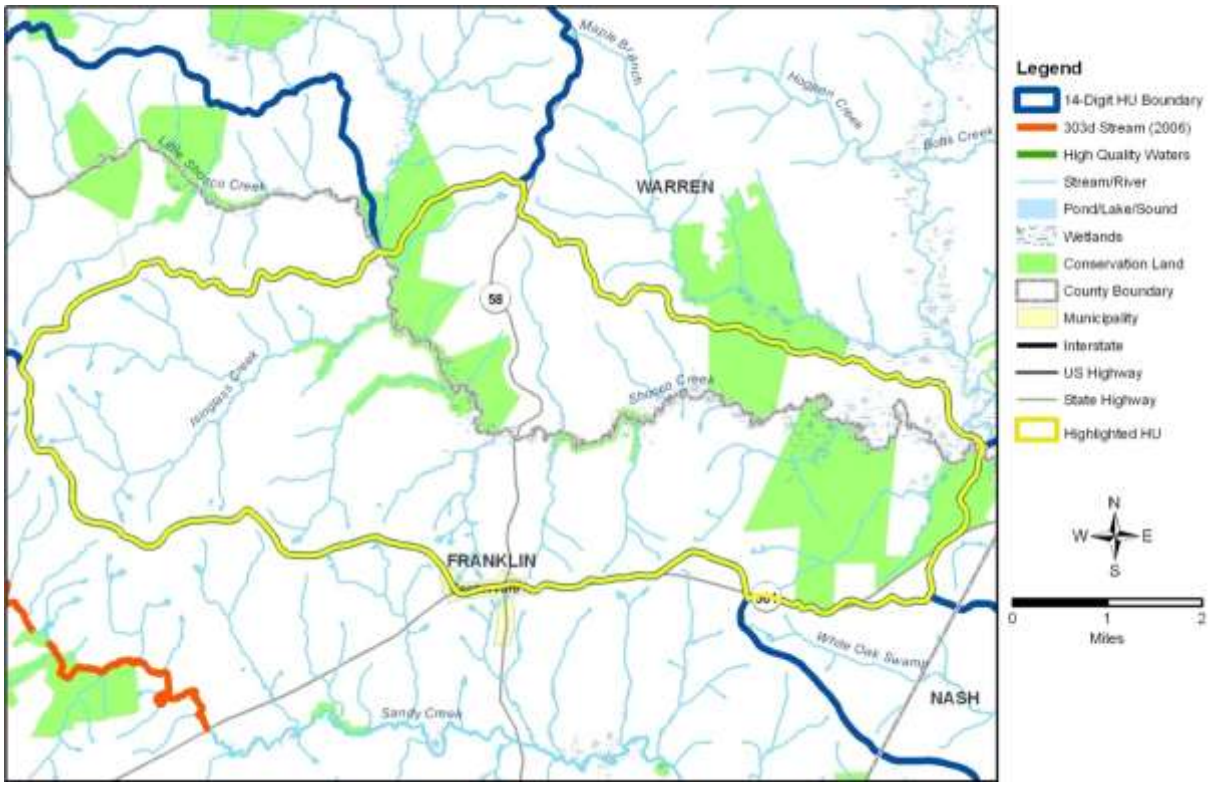
Highest priority projects in Little Shocco Creek should provide protection of intact riparian forested areas and connect or augment conservation lands. Agricultural BMPs should also be implemented where appropriate.



Shocco Creek: 03020102010040

This Shocco Creek watershed is only 28 square miles with 62 miles of streams (5% unbuffered). Eighty percent is forested or forested wetlands with 13 square miles of unfragmented forest. Nine percent is designated SNHA and 29 NHEOs are documented in the watershed. Seventeen percent of the watershed is used for agriculture and there are three permitted hog farms here. Three CWMTF projects and one WRC project have been constructed here.

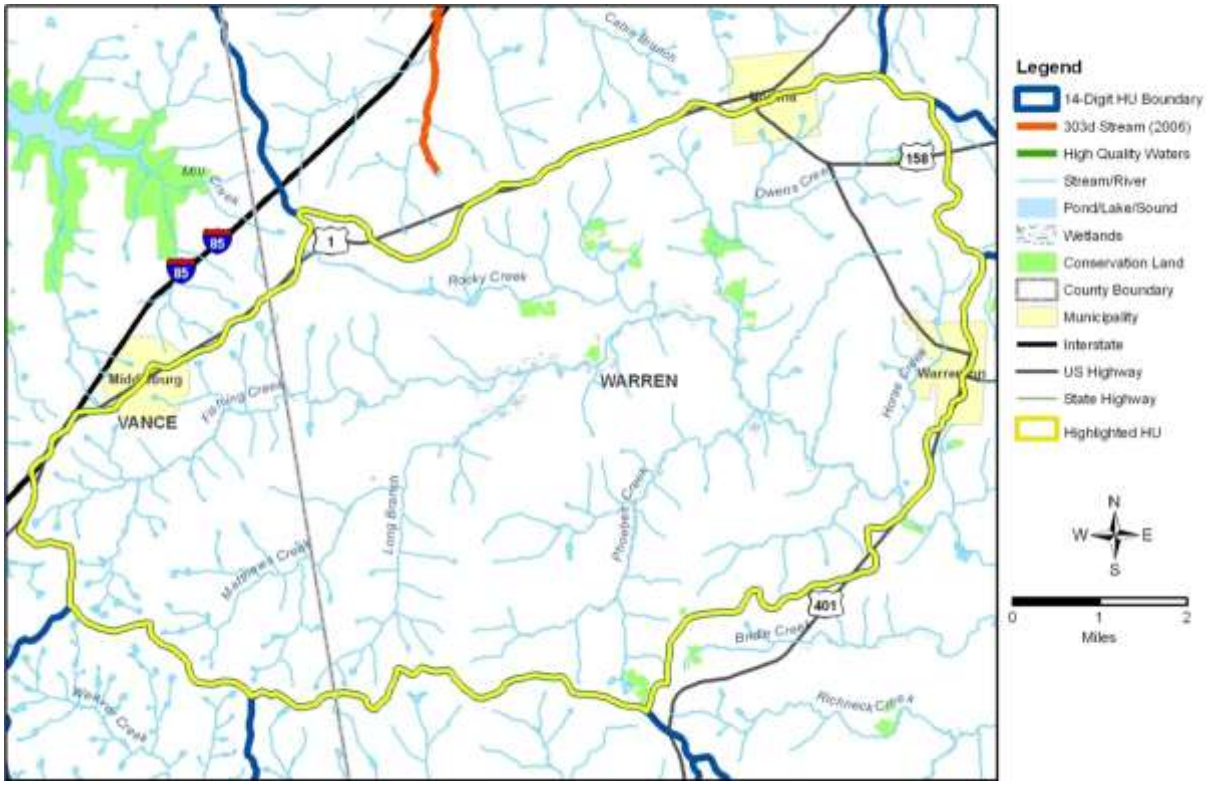
This watershed is a high priority watershed for preservation projects, especially those that connect or augment existing conservation lands or improve protection of rare species.



Upper Fishing Creek: 03020102020010

The Upper Fishing Creek HU has 110 miles of streams (15% unbuffered) within 52 square miles of land area. Very few wetlands occur here, although 64% is forested, 14% unfragmented. Eight percent of the HU is developed with 1.3% impervious surface. Approximately half of Warrenton occurs in this HU. Over 4 miles of TIP projects are programmed for future development. Twenty-seven percent of the watershed is in agricultural land use. Ten permitted livestock operations occur here, including seven cattle farms. Two agricultural BMPs have been completed here.

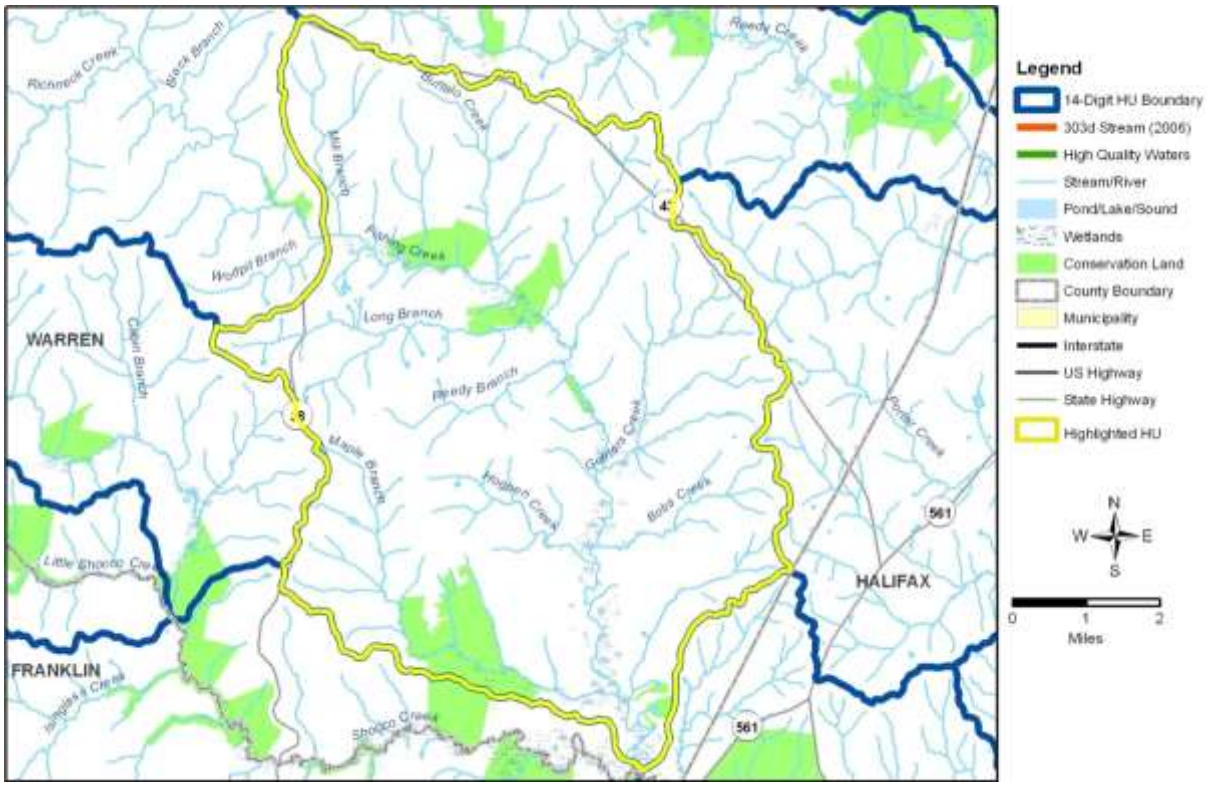
High priority projects for the Upper Fishing Creek watershed should address agricultural and livestock inputs to streams. Stormwater BMPs are recommended on the Horse Creek subwatershed draining western Warrenton.



Middle Fishing Creek: 03020102020030

The Middle Fishing Creek watershed is 49 square miles and has 117 miles of streams (over 5% unbuffered). There are very few, small, isolated wetlands here. Eighty-one percent is forested, including 22 square miles of unfragmented forest. About 1.7% of the watershed is designated SNHA and 35 NHEOs are documented here. Three CWMTF projects and one WRC project have been completed here. Four percent of the watershed is developed and 14% is in agricultural production. Five animal operations are active here; four are hog farms. Two agricultural BMP projects have been implemented in Middle Fishing Creek.

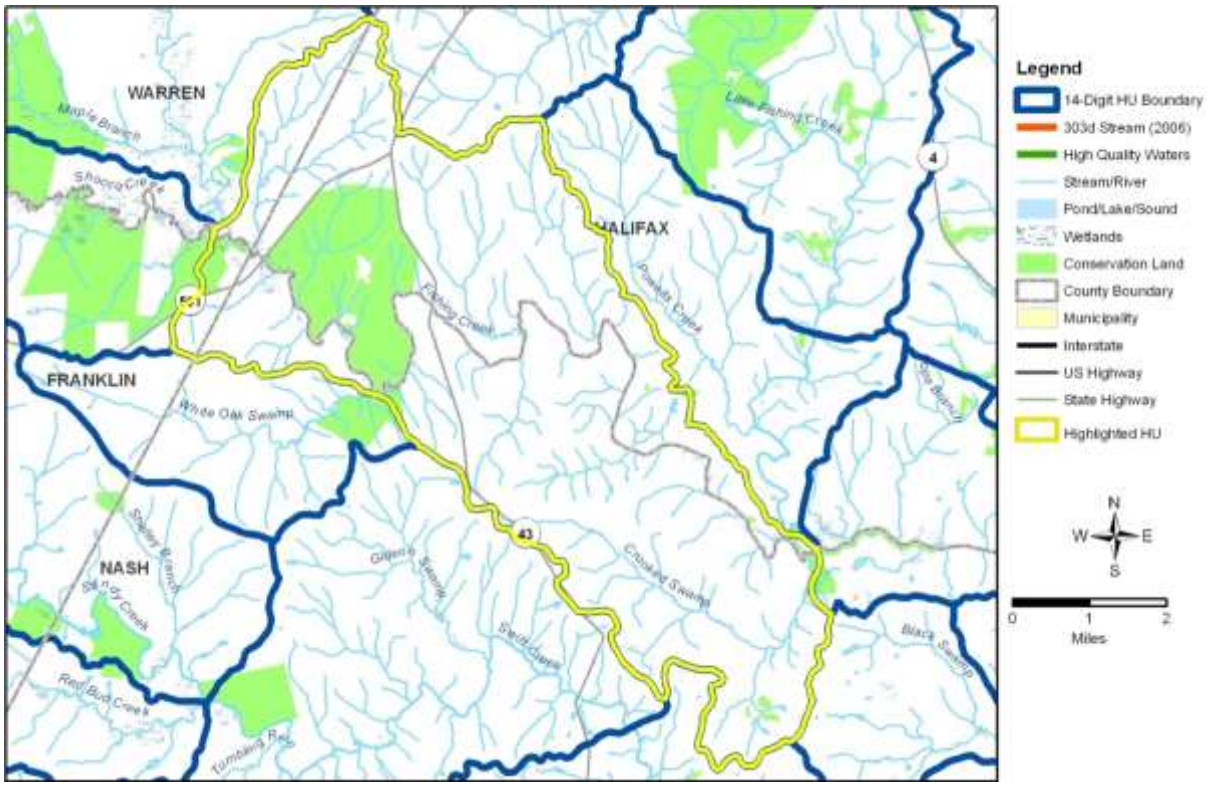
The highest priority projects here should augment existing preservation areas improve buffer condition in riparian corridors.



Lower Fishing Creek: 03020102020050

The Lower Fishing Creek HU has 104 miles of stream (10% unbuffered) within 33 total square miles. Seventy-four percent of the watershed is forested or forested wetlands. Over twelve square miles of forests are unfragmented. Twenty-three percent of soils are hydric (10% hydric A, 13% hydric B). SNHA accounts for 1.2% of the HU and the watershed houses 9 NHEOs. One CWMTF and one WRC project have been completed here. Twenty-two percent of land is agricultural and includes 9 permitted animal operations (5 swine, 2 cattle, and 2 poultry farms). The watershed is approximately 4% developed.

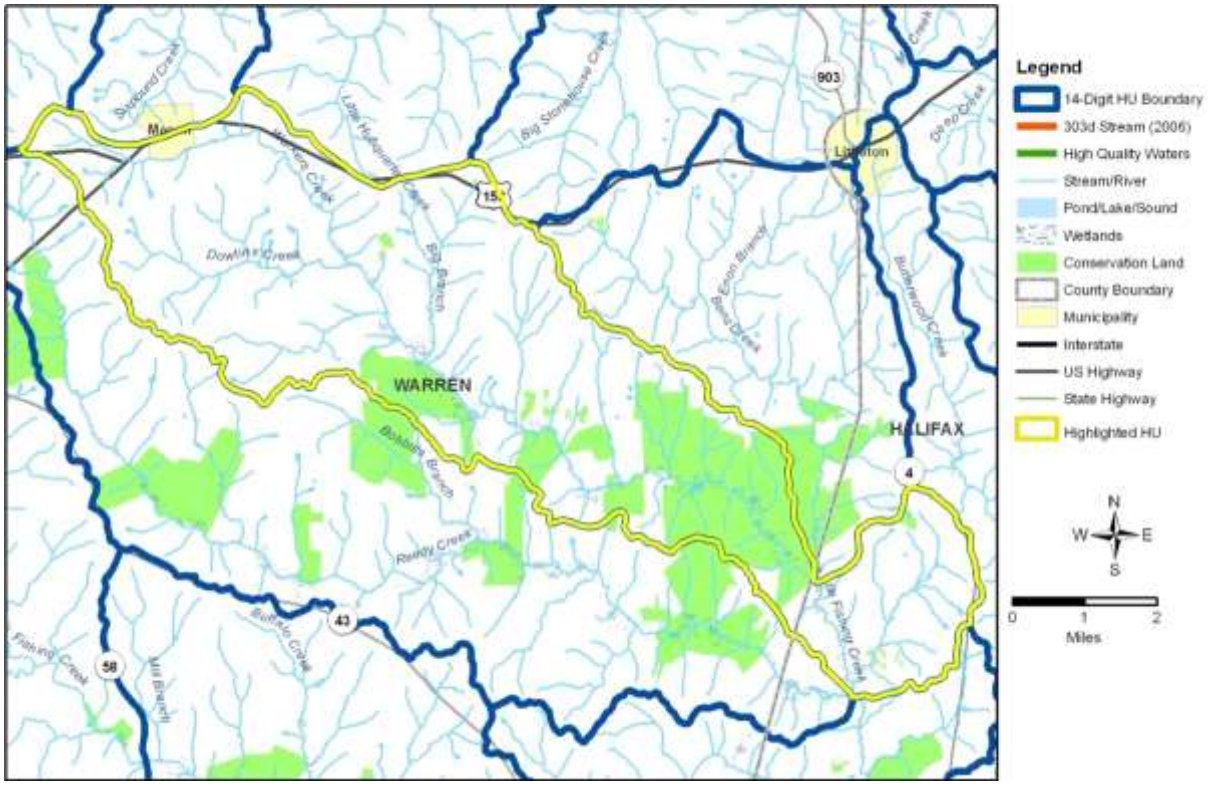
Projects that reduce impacts due to agriculture are highest priority in this HU. Acquisitions that increase conservation area and improve riparian corridors are high priority also.



Walkers Creek: 03020102030030

Walkers Creek is about 35 square miles with 99 miles of streams (8% unbuffered). Three-quarters of the watershed is forested. Sixteen percent of the area is conservation lands, including 13 square miles unfragmented forest. Six NHEOs are documented in the HU. Twenty percent of is used for agricultural production with 2 agricultural BMPs implemented. Five percent of the watershed is developed with only 0.7% impervious surface. DOT has programmed 6.2 miles of TIP projects for development in the near future.

Highest priority projects in Walkers Creek should augment conservation lands or offset the impacts of agriculture.



Fishing Creek: 03020102040010

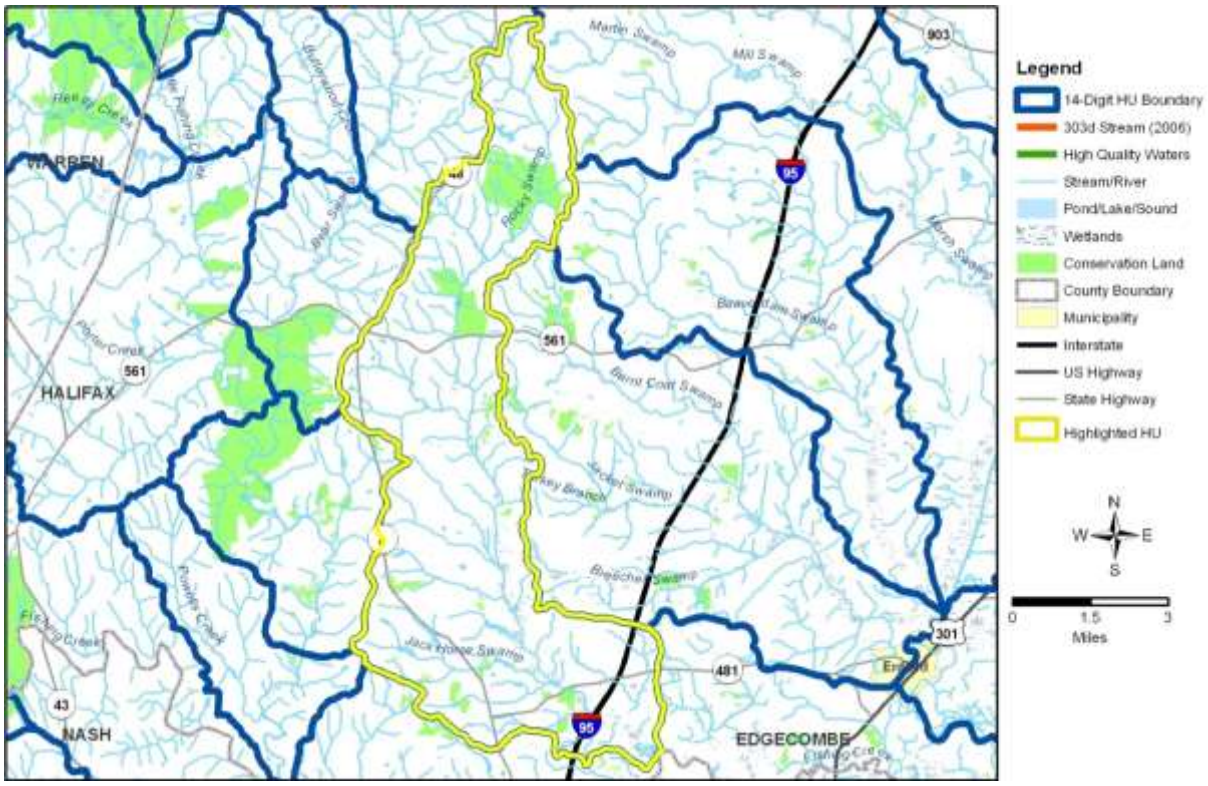
This HU covers 64 square miles and includes 215 stream miles of which 29% are unbuffered. There is one surface water intake here. Fifty-four percent is forested or forested wetlands, including 27 square miles of unfragmented forest. Most of this unfragmented forest occurs along the riparian corridor of Fishing Creek. Sixty-eight percent of soils are hydric (half type A, half type B). Eight percent is designated SNHA and 31 NHEOs occur in the watershed. A single CWMTF project and one WRC project have been implemented here. Five percent of the watershed is developed and 2.1 miles of TIP projects have been planned for the HU. Forty percent of this watershed is in agricultural land use, including 12 permitted livestock production farms.

Projects that further protect and enhance the intact riparian corridor of Fishing Creek are a high priority for the watershed. Reestablishment of buffers throughout the watershed are also very important.

Jack Horse Swamp: 03020102040020

Jack Horse Swamp covers 40 square miles and contains 106 miles of streams (19% unbuffered). Fifty-seven percent of the watershed is forested. Twenty-four percent of the soils here are hydric. Approximately 6% of the land is developed and DOT has programmed 2.8 miles of TIP projects. The HU is 36% agricultural and has six animal operations, including 5 hog farms.

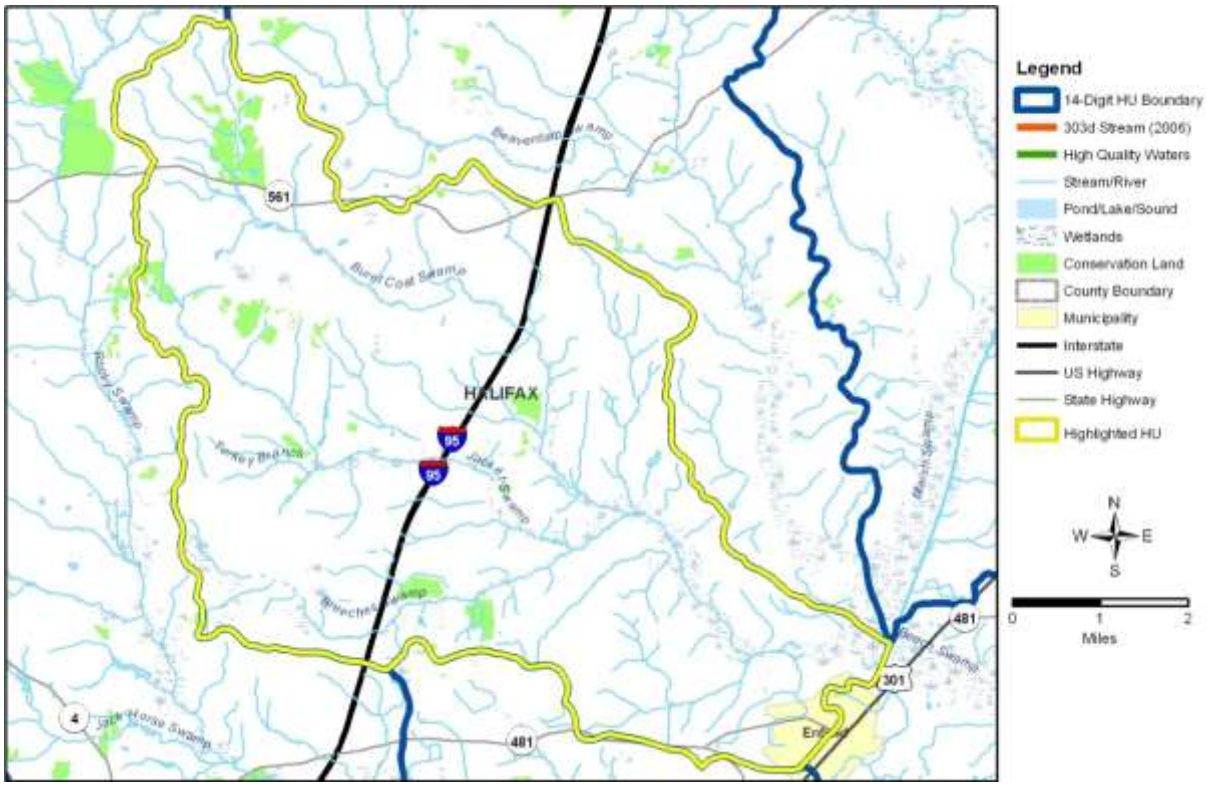
Priority projects here should address agricultural runoff. Buffer reestablishment is important here as well.



Burnt Coat Swamp: 03020102050010

The Burnt Coat Swamp HU has 98 miles of streams (37% unbuffered) and covers 38 square miles. Forty-four percent of the watershed is forested. Forty-four percent of soils are hydric. Forty-seven percent of the land is used for agriculture, including 11 animal operations (7 swine, 2 each cattle and poultry). Nearly 9% of the watershed is developed with only 0.8% imperviousness. DOT has planned 5.4 miles of TIP projects.

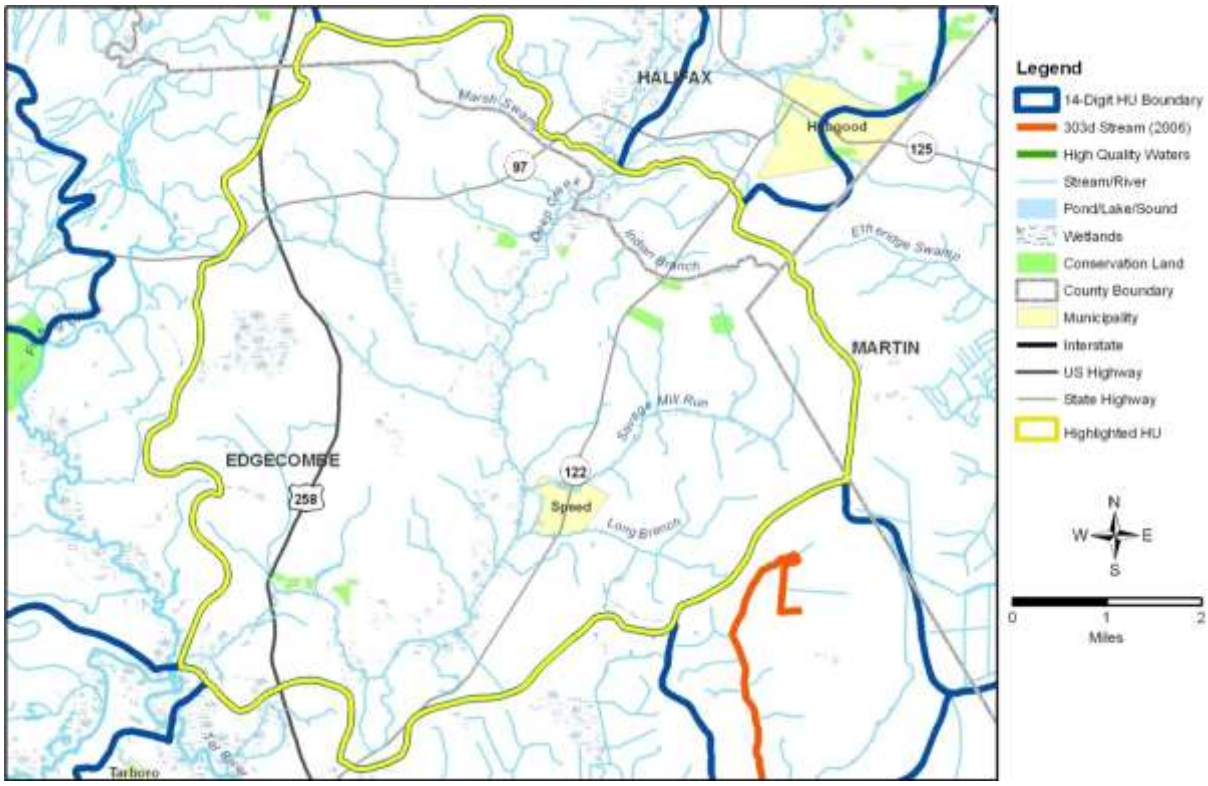
The highest priority for the watershed is the enhancement or reestablishment of riparian buffers. Projects that reduce impacts of agriculture are a high priority also.



Deep Creek: 03020102070050

The Deep Creek HU is 37 square miles and has 77 miles of streams (36% unbuffered). Most of the soils here are hydric (87%) and 485 of the area is forest or forested wetlands. Nearly 13 square miles of the forests are considered unfragmented. Forty-seven percent of Deep Creek is in agricultural land use, including 11 livestock operations (mostly poultry). Two agricultural BMPS have been implemented in the watershed. Five percent of the HU is developed.

Buffer projects and agricultural runoff projects are the highest priority for this watershed.

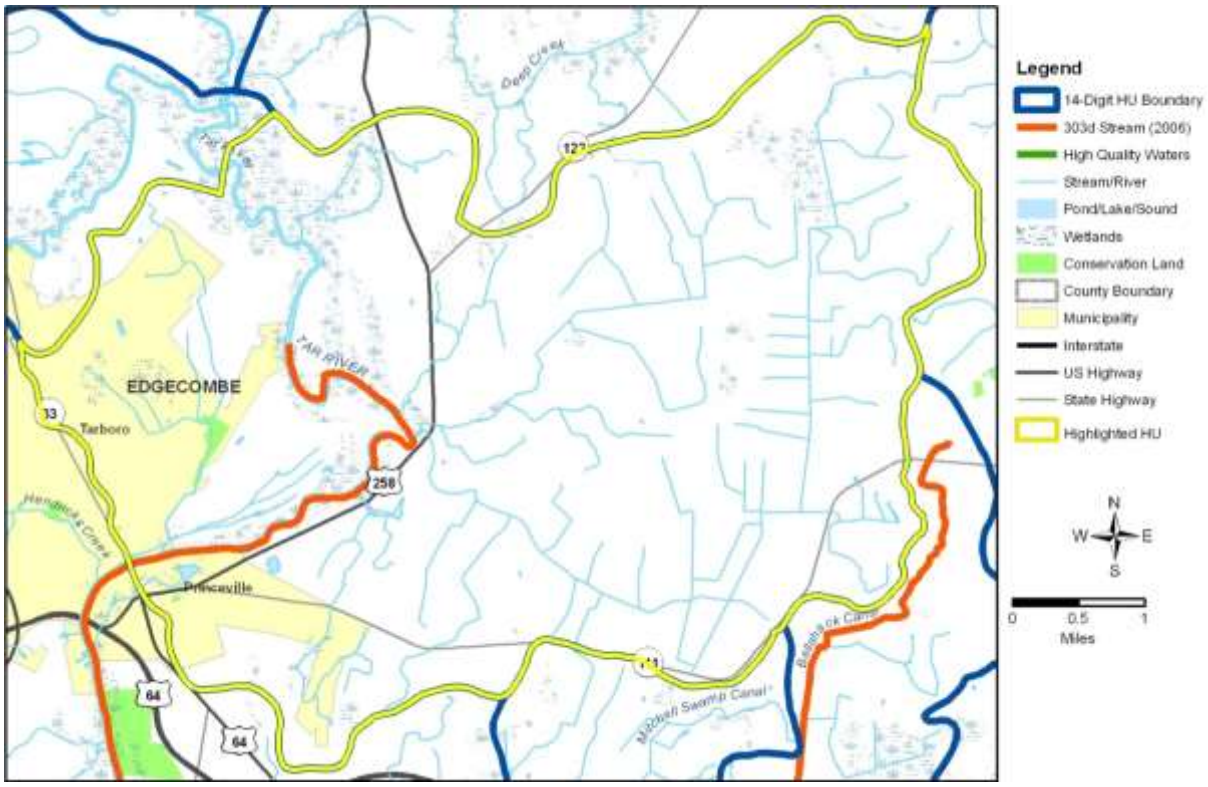


Tar-Pamlico 03 Targeted Local Watersheds

Tar River: 03020103010010

This section of the Tar River is a 26 square mile HU with 71 miles of streams (71% unbuffered). Twenty-nine percent is forested or forested wetlands with 70% hydric soils in the watershed. Eight percent of the watershed is designated SNHA and 37 NHEOs occur here. Over 10% of streams are 303(d)-listed. Eleven percent of the HU is developed with 2% impervious surface. Approximately 1.6 miles of TIP projects are programmed here. Fifty-eight percent of the watershed is in agricultural land use.

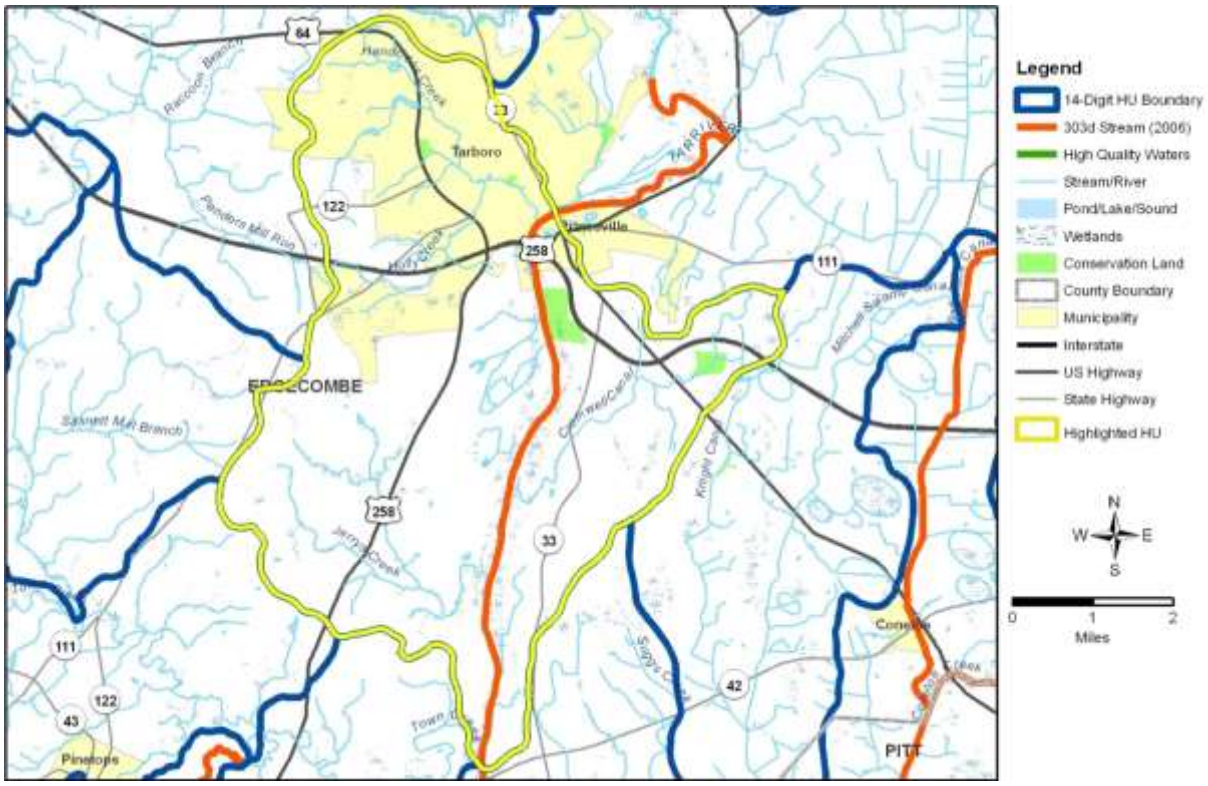
With the highest buffer impairment in the basin, this HU has the highest priority buffer enhancement and creation needs. Projects that address the impacts of ditching and agriculture are also high priorities.



Hendricks Creek: 03020103010020

The Hendricks Creek watershed is one of four HUs that contain part of the Middle Tar-Pamlico Local Watershed Planning area. It covers 31 square miles and contains 53 miles of streams, 46% unbuffered. Twenty-two percent of streams are 303(d)-listed. Forty-two percent of the HU is forested or forested wetlands; 69% of soils are hydric. Eight-and-a-half percent is designated SNHA with 15 NHEOs occurring in the watershed. Sixteen percent of the watershed is developed accounting for an imperviousness of 4.2%. Nearly six miles of TIP projects are slated for Hendricks Creek. Forty percent of the watershed is agricultural with 5 agricultural BMPs implemented. Ten permitted animal operations can be found here, five cattle farms and five swine operations.

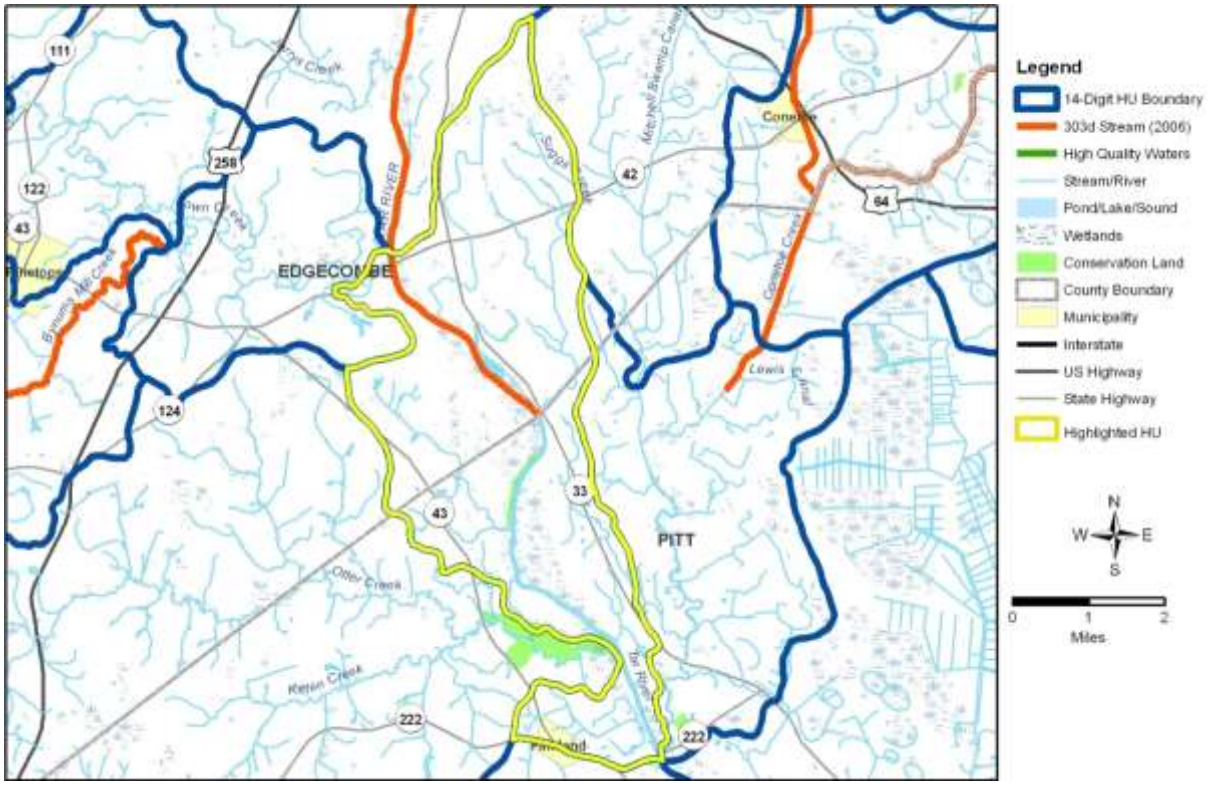
Buffer restoration is a high priority here as is the reduction of sediment and nutrient inputs due to agriculture.



Tar River: 03020103040010

This section of the Tar River includes 19 square miles, three-quarters of which are Southeastern Floodplains and Low Terraces ecoregion, relatively rare in the Tar-Pamlico Basin. Forty-five miles of streams flow through the HU, 55% of them lack significant woody buffers. Nearly 9% of streams are impaired according to the 2006 303(d) list. Forty-five percent of the watershed is forested or forested wetlands and 59% of soils are hydric. Seven percent of the area is designated SNHA and 19 NHEOs can be found in the HU. CWMTF, the local land conservancy, and WRC have each completed a watershed improvement project in this watershed. Five percent of the watershed is considered developed and DOT has planned 7.5 miles TIP projects. Forty-eight percent of the land is in agricultural land use.

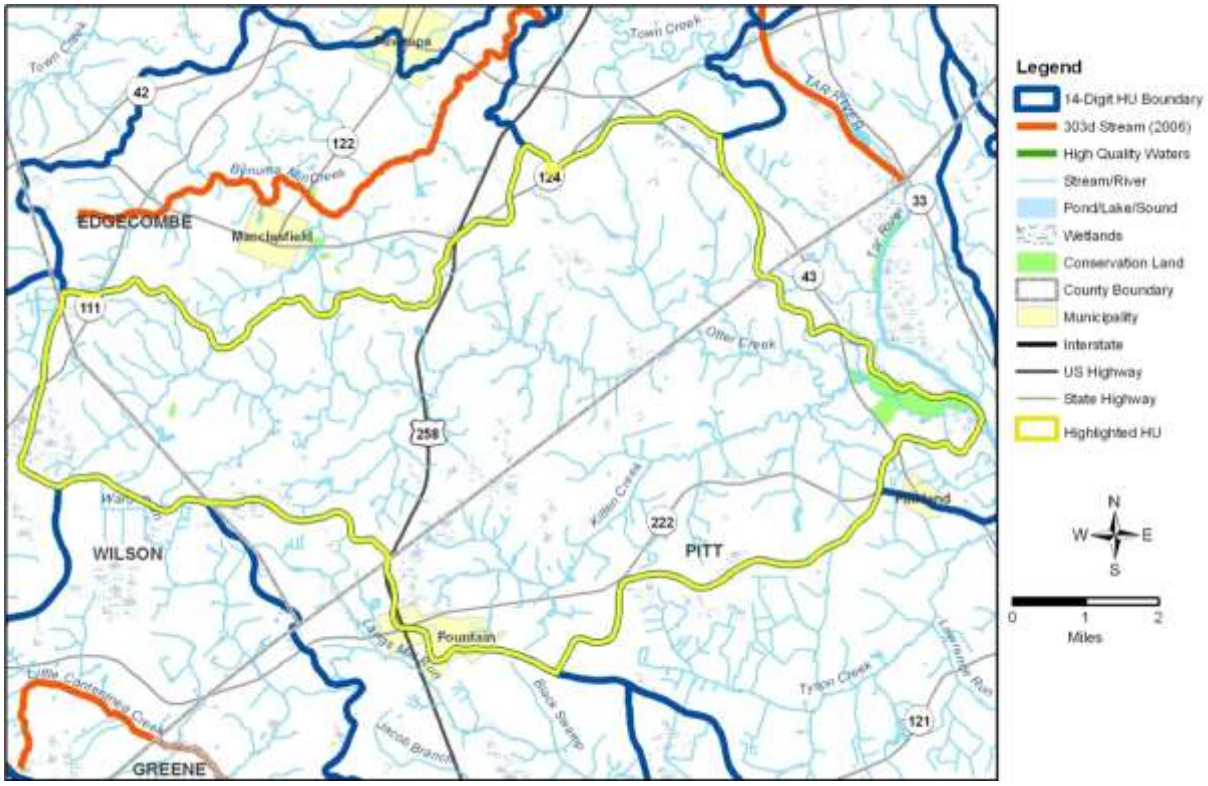
Buffer establishment and reduction of agricultural inputs are highest priorities here.



Otter Creek: 03020103040020

The Otter Creek watershed expands over 50 square miles and contains about 123 miles of streams (38% unbuffered). Soils are primarily hydric (73%) and 46% of the area is forested or forested wetlands. Six-and-a-half square miles of unfragmented forest occurs here. The watershed is home to 6 documented NHEOs. CWMTF, WRC, and a local land conservancy have each developed a single watershed improvement project in the HU. The watershed is 4.7% developed and 49% in agriculture. There are 13 animal operations, nine of which are hog farms.

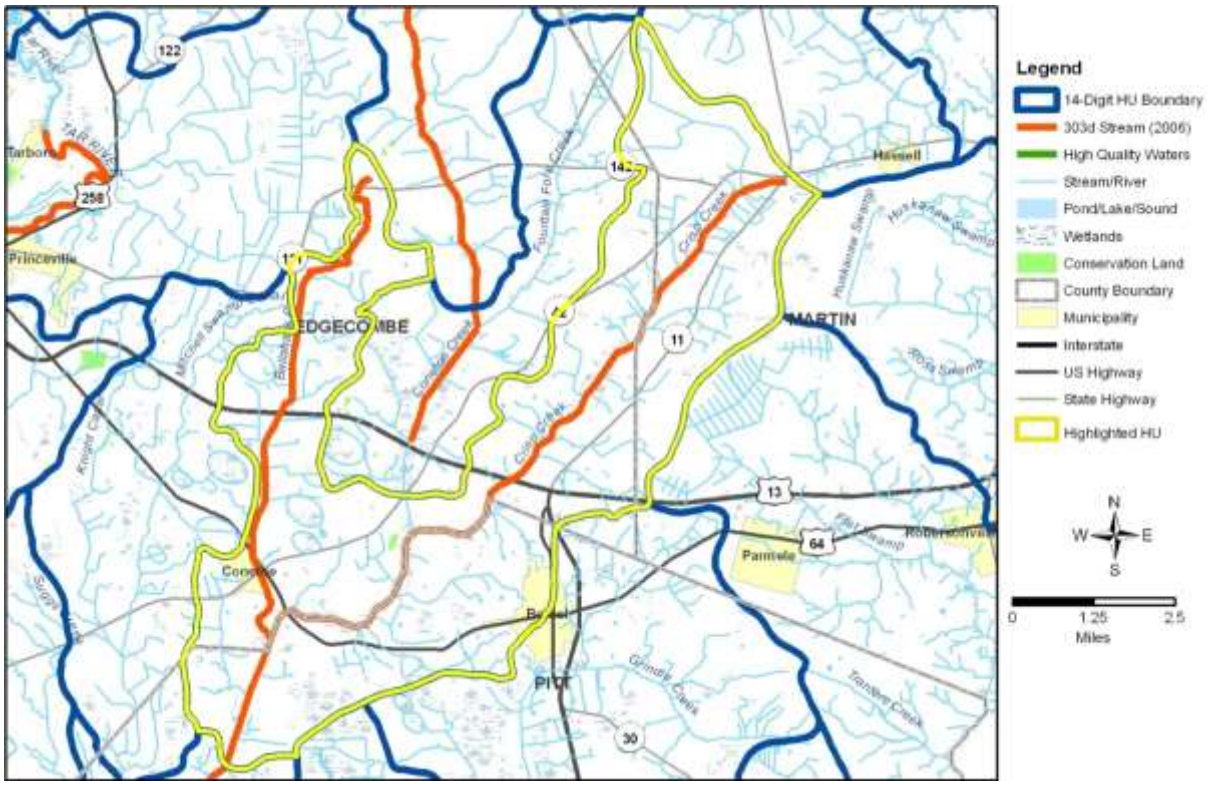
Nutrient and sediment offset projects, as well as buffer restoration projects, are the highest priorities in this HU.



Crisp Creek: 03020103050030

The Crisp Creek watershed is another of the four HUs containing portions of the Middle Tar-Pamlico Local Watershed Planning area. It covers 42 square miles with 99 miles of streams (two-thirds lacking significant buffers). Crisp Creek is part of an agricultural drainage district. Twenty percent of streams are 303(d)-listed. Thirty-nine percent of the watershed is forested with a significant amount of wetlands; 87% of soils are hydric soils. Seven square miles of unfragmented forest can be found here. Over 6% of the watershed is developed with 1 mile of TIP projects planned. Fifty-four percent of the watershed is used for agricultural production, including 10 permitted livestock production facilities (6 swine). Six agricultural BMPs have been implemented in the HU.

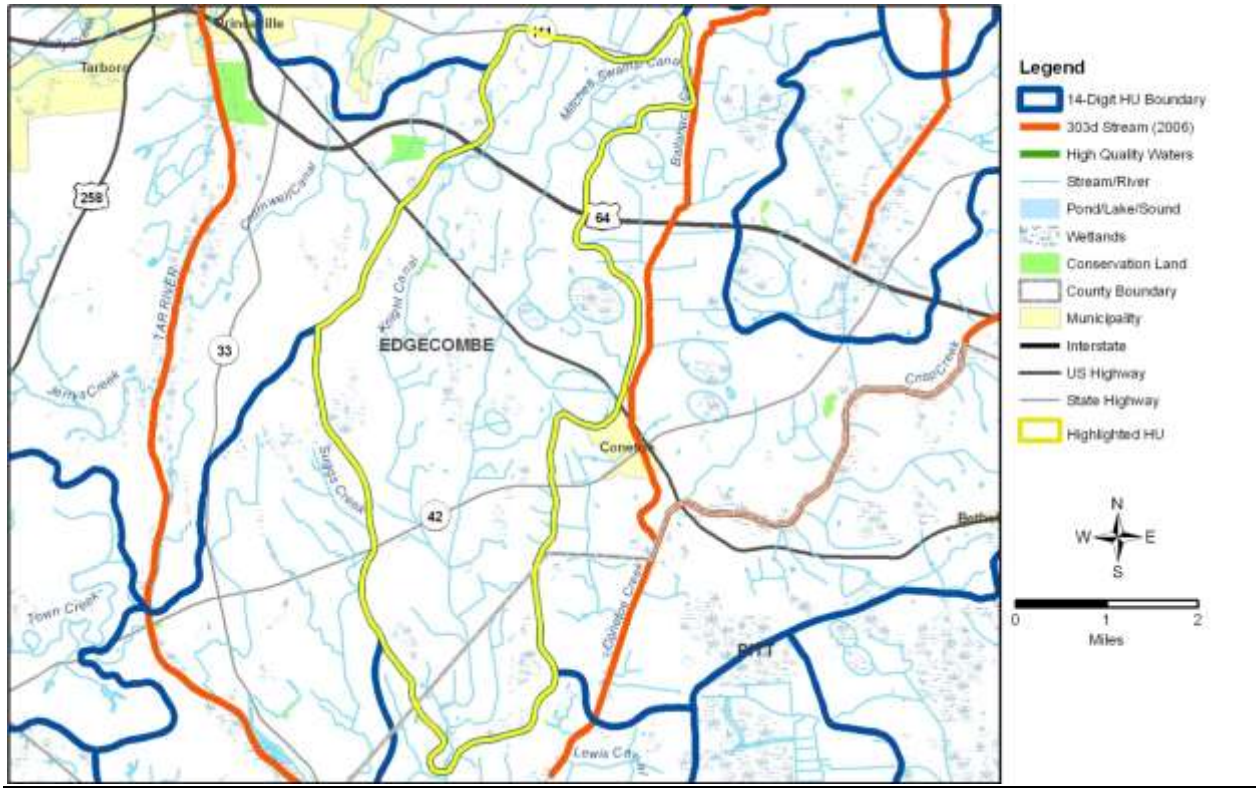
The highest priority projects in Crisp Creek should address the lack of wooded riparian buffers. Agricultural inputs must also be the focus for water quality improvement projects here.



Conetoe Creek: 03020103050040

This Conetoe Creek watershed is 17 square miles with 40 miles of streams (three-quarters lacking wooded buffers). Over 80% of soils are hydric and 30% is forested. Five percent of the watershed is developed and 65% is in agriculture. Seven of the nine permitted livestock operations here are swine farms.

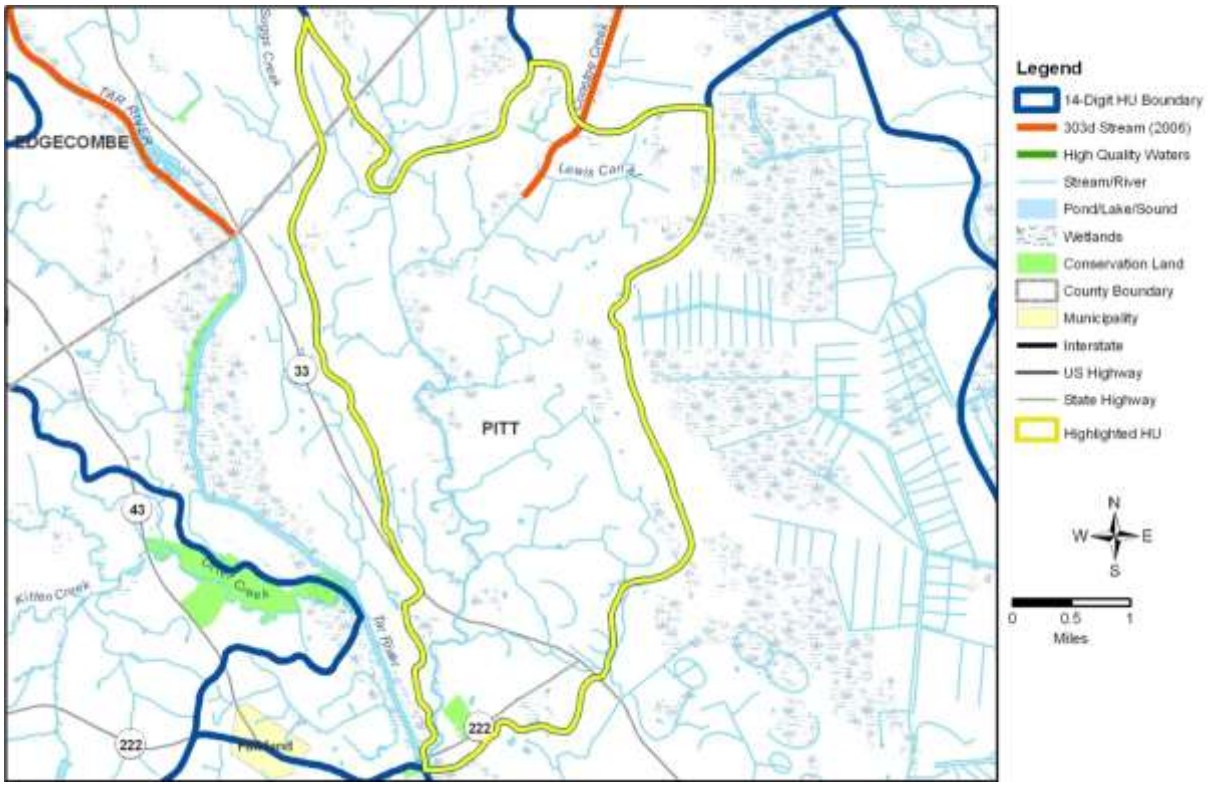
Priority projects for this part of Conetoe Creek should address agricultural inputs to streams. Restoration of Carolina Bays and riparian buffers are important here as well.



Conetoe Creek: 03020103050050

This Conetoe Creek watershed is 13 square miles with 38 miles of streams (69% unbuffered). Sixty-five percent of the watershed has hydric soils. Twenty-eight percent of the watershed is forested. The watershed is nearly 5% developed. Two-thirds of the HU is used for agriculture, including one each of permitted livestock production facilities (1 cattle, 1 poultry, and 1 hog farm).

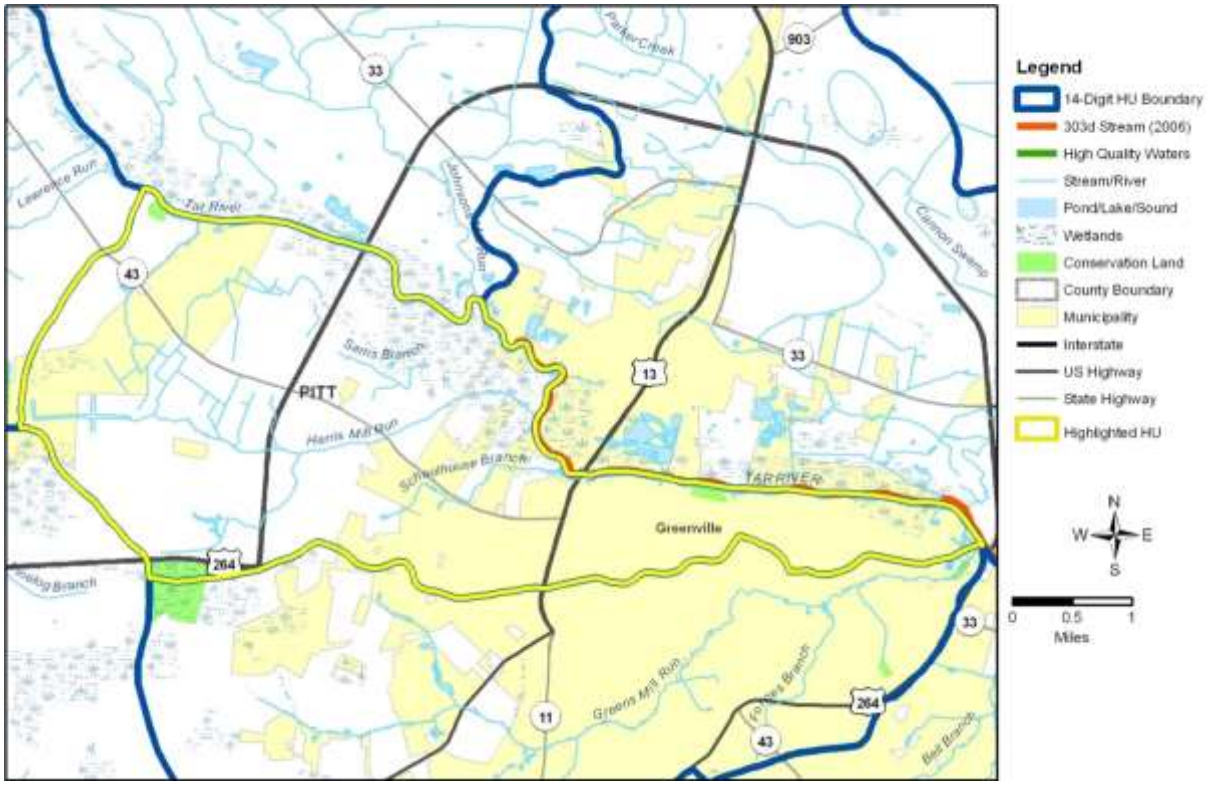
Projects that offset impacts of agriculture are highest priority here. Restoration of degraded riparian buffers and Carolina Bays are a high priority here also.



Harris Mill Run: 03020103060010

This HU is only 13 square miles and contains only 23 miles of streams (one-third unbuffered). Fourteen percent of the waters here are impaired, all occurring along the Tar River proper. The watershed includes a substantial amount of the City of Greenville with 5.5 square miles of its jurisdiction subject to Phase II stormwater rules. There is a single surface water intake here. Nearly half the soils are hydric and 41% of the watershed is either forest or forested wetlands. Two percent is open water. A little over one-quarter is used for agriculture and 29% is developed. Greenville contributes most of the watersheds 9.7% imperviousness.

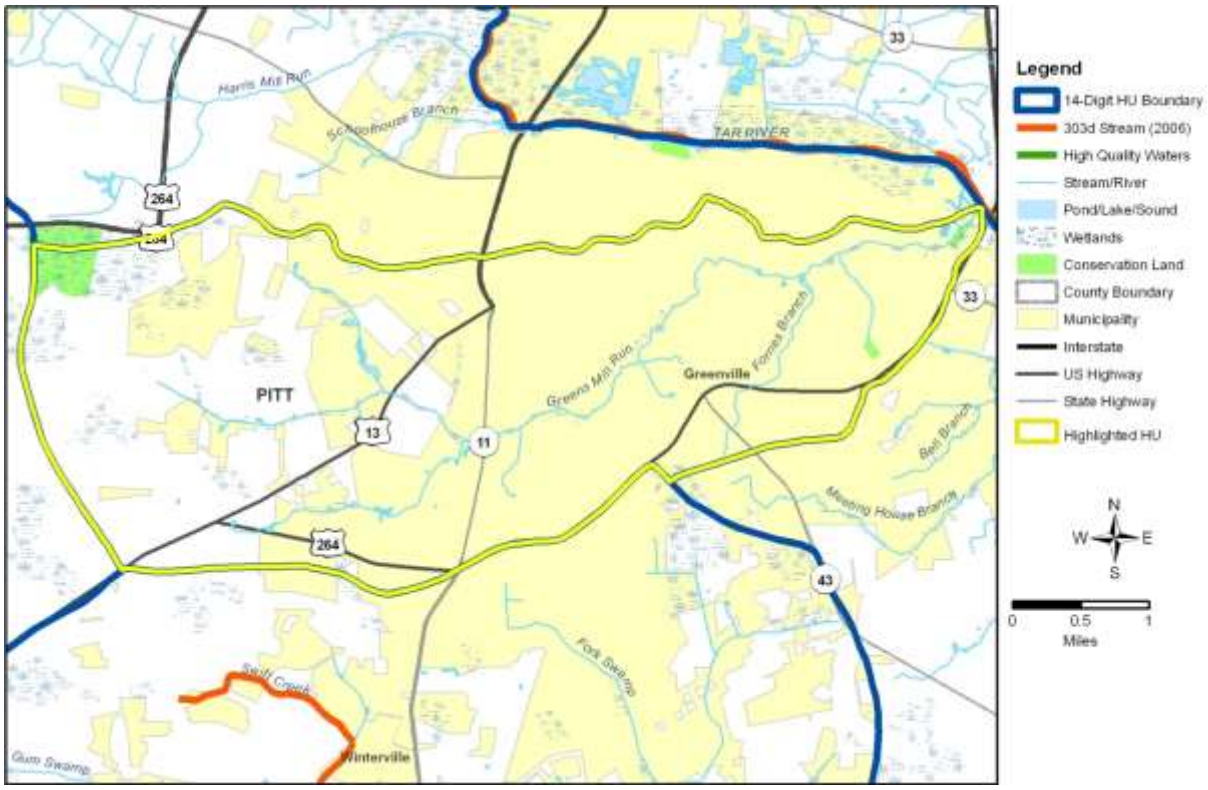
High priority projects in the Harris Mill Run watershed should address the impacts of stormwater runoff in the developed area. Streams lacking buffers should also be targeted for restoration projects.



Green Mill Run: 03020103060020

The Green Mill Run watershed is one of four HUs that contain part of the Middle Tar-Pamlico Local Watershed Planning area. It covers 13 square miles and contains 15 miles of streams, 47% unbuffered. Twenty-two percent of the HU is forested or forested wetlands. Nineteen percent of the watershed is impervious and about 70% is developed and subject to Phase II stormwater regulation (City of Greenville). About 26% of the HU is in agriculture.

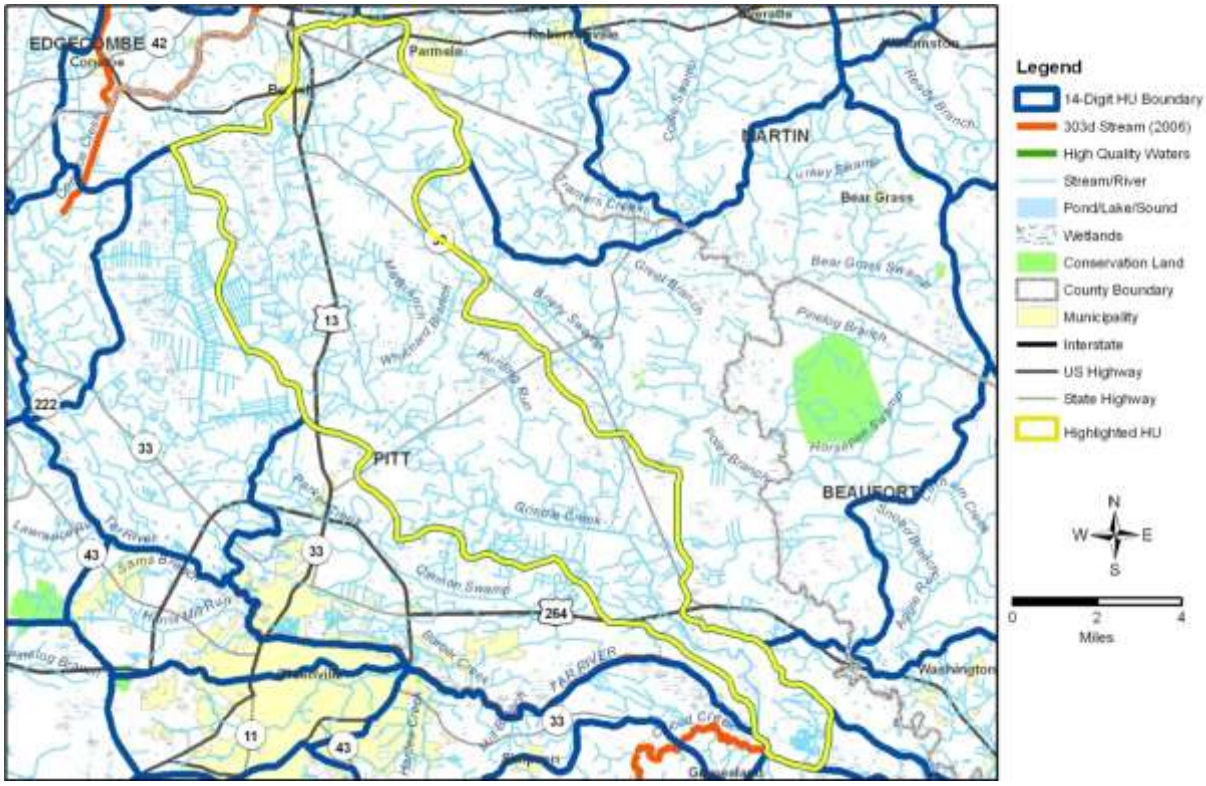
BMPs that offset the impacts of development are a very high priority for the Green Mill Run watershed. Buffer restoration is also a high priority.



Grindle Creek: 03020103070010

Grindle Creek covers 80 square miles with 233 miles of streams (61% unbuffered). Forty-six percent of the watershed is forested or forested wetlands, including 15 square miles of unfragmented forest. Over three-quarters of soils here are hydric. There is a great deal of ditching to the north of Greenville related to the extensive amount of agriculture there (48% agricultural land use in the watershed). Seventeen permitted livestock production facilities are in the watershed—three cattle, five poultry, and nine hog farms. Five percent of Grindle Creek is developed and DOT has planned 9.3 miles of TIP projects here.

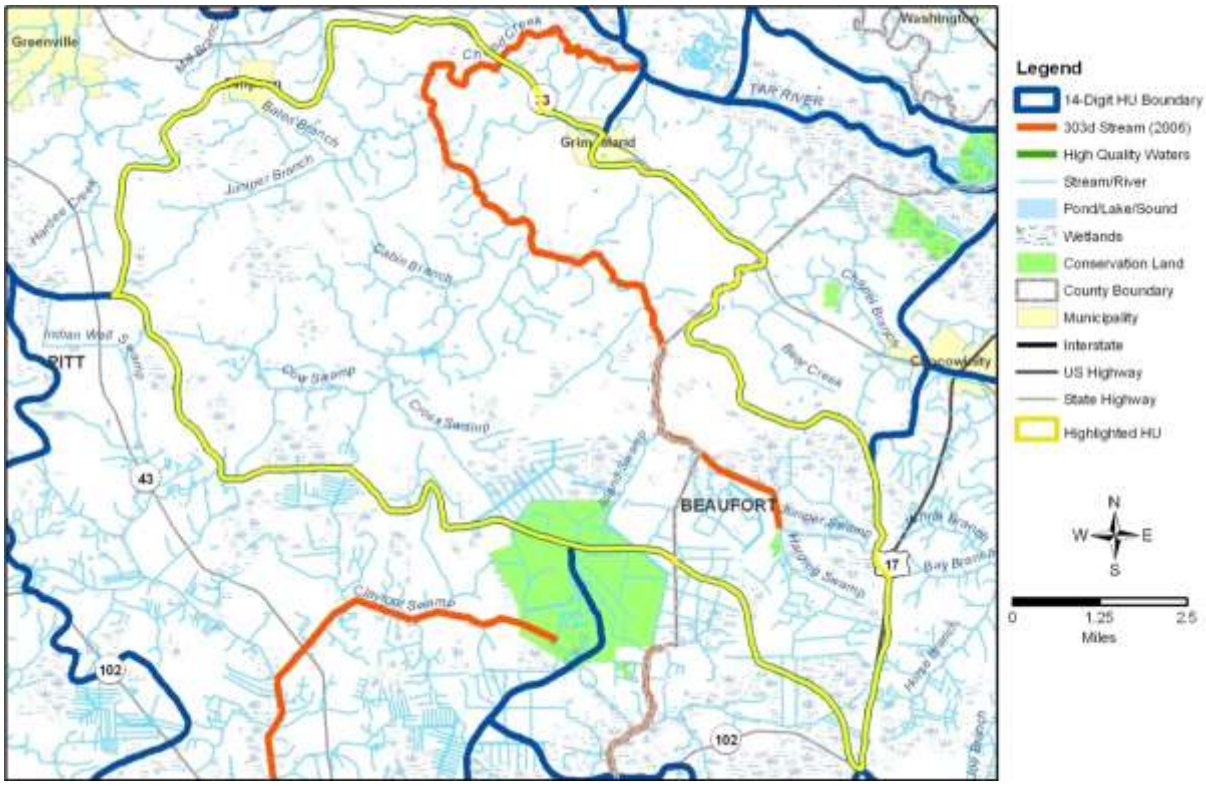
Buffer restoration is a high priority here as is the reduction of sediment and nutrient loading due to agriculture. Stream restoration projects that restore more natural channels and hydrology to ditched streams are also a key strategy for the watershed.



Chicod Creek: 03020103080010

The Chicod Creek watershed has 144 miles of streams (54% unbuffered) and covers 57 square miles. About 4.6% of streams are impaired. Nine-and-a-half square miles of forest is unfragmented and forest or forested wetlands cover 46% of the watershed. Hydric soils are extensive here and over 2% of the watershed is designated SNHA. Five percent is developed but imperviousness is low at 0.5%. DOT has programmed 1.6 miles of TIP projects in the watershed. Forty-nine percent of the HU is used for agricultural production, including a whopping 37 animal operations—29 hog, six cattle, and two poultry farms. Three agricultural BMPs have been implemented in Chicod Creek.

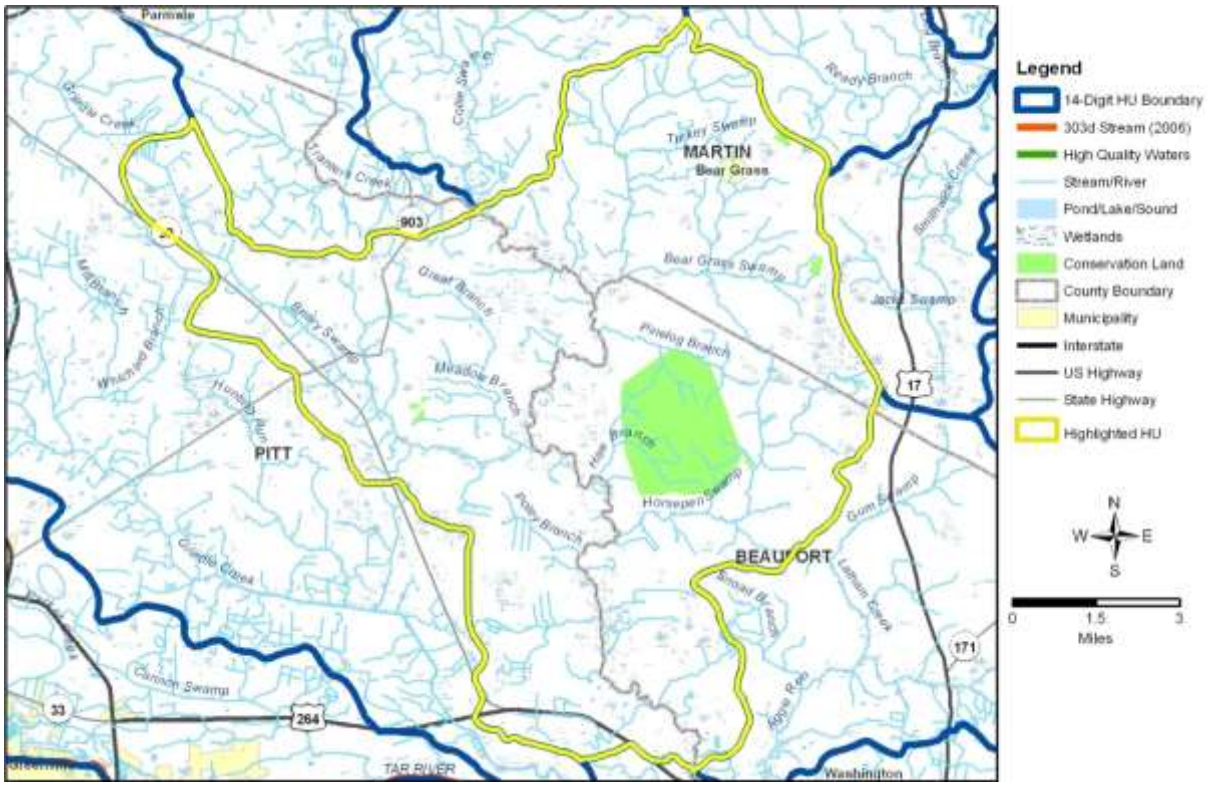
Highest priorities for this watershed are reduction of agricultural inputs (especially due to livestock) and reestablishment of buffers. Restoration projects that address ditching and straightening of streams is also a high priority in ditched areas.



Horsepen Swamp: 03020103090030

Horsepen Swamp is a large watershed of 90 square miles with 198 miles of streams (45% unbuffered). Fifty four percent of the HU is forested with significant wetlands throughout. Eighty-five percent of the watershed has hydric soils. Over 20 square miles of contiguous forest habitat occurs here. Seven percent of the watershed is designated SNHA with 20 NHEOs occurring in Horsepen Swamp. Five percent of the watershed is developed with very little imperviousness. Forty-one percent of the watershed is used for agriculture, including four animal operations. Seven agricultural BMPs have been implemented in the watershed.

Buffer restoration and agricultural input reduction are the highest priorities for the watershed. Restoration of functions to ditched streams is also important where they occur.

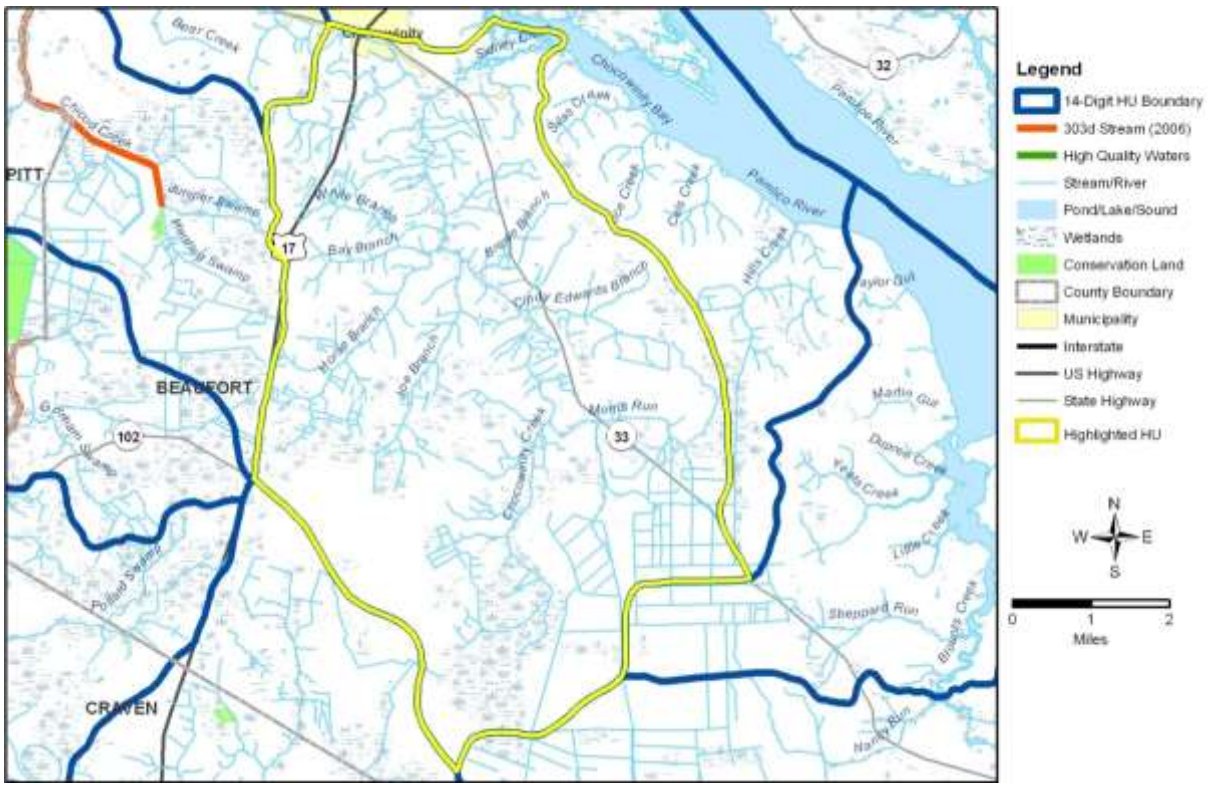


Tar-Pamlico 04 Targeted Local Watersheds

Chocowinity Creek: 03020104010010

The Chocowinity Creek HU covers 39 square miles and includes 150 miles of streams (59% unbuffered). Fifty-three percent of the watershed is forested, including extensive amounts of wetlands. Over 90% of soils are hydric. Over six percent of the HU is developed. DOT has programmed 4.5 miles of TIP projects in the watershed. Forty-one percent of the watershed is used for agriculture including four permitted hog farms. Two agricultural BMPs have been constructed in the watershed to offset impacts due to stormwater runoff.

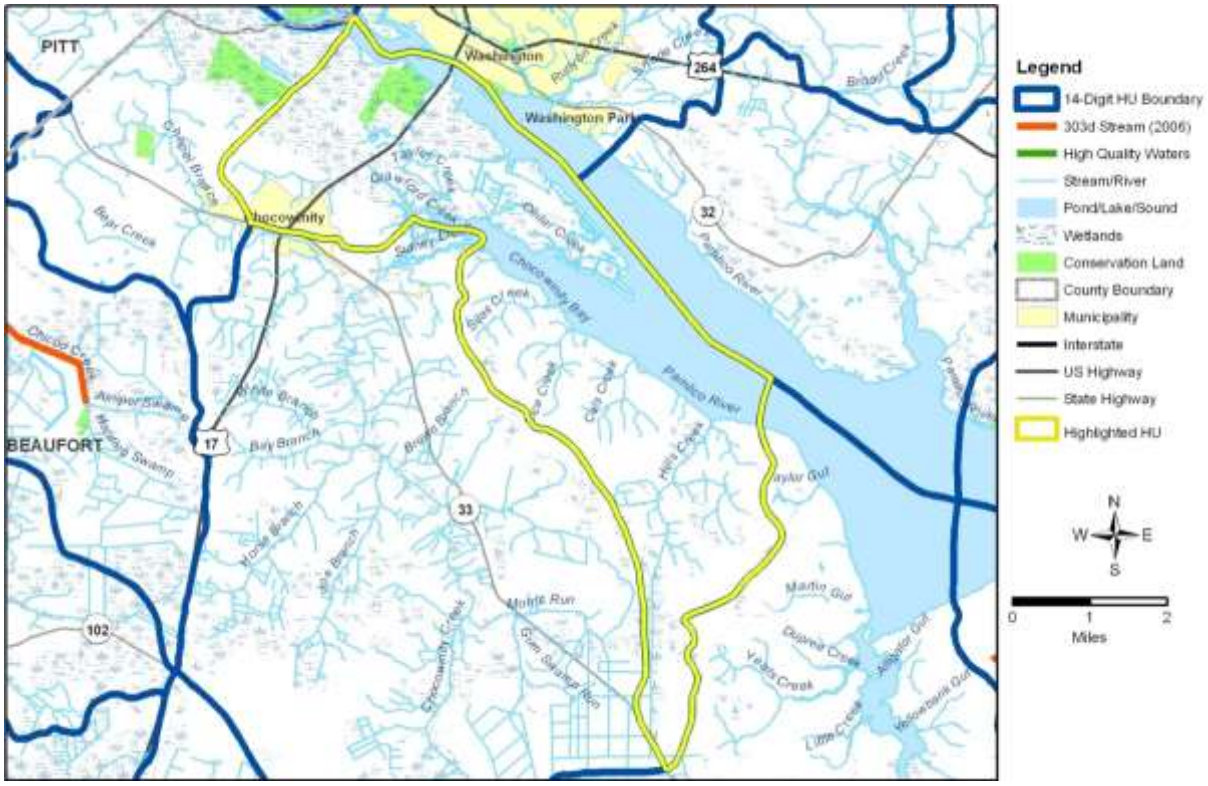
Buffer and stream restoration are priority projects for this watershed. Agricultural input reductions (nutrients and sediment) should be addressed by all projects in Chocowinity Creek.



Chocowinity Bay: 03020104010020

The Chocowinity Bay watershed is 22 square miles running along the south side of the Pamlico River. It contains a total of 45 miles of streams (44% unbuffered). Thirteen percent of streams are listed as impaired. Over sixty percent of soils are hydric and approximately 52% of land area is covered by forested wetlands. Ten percent of the watershed is designated SNHA and 6 NHEOs occur in the watershed. One-fifth of the HU is covered by open water with 2.8 square miles of primary and secondary nursery habitat. Four-and-a-half square miles of the open water habitat is closed to shellfish harvesting. Seventeen percent of the watershed is used for agriculture and 11% is developed (2.1% impervious).

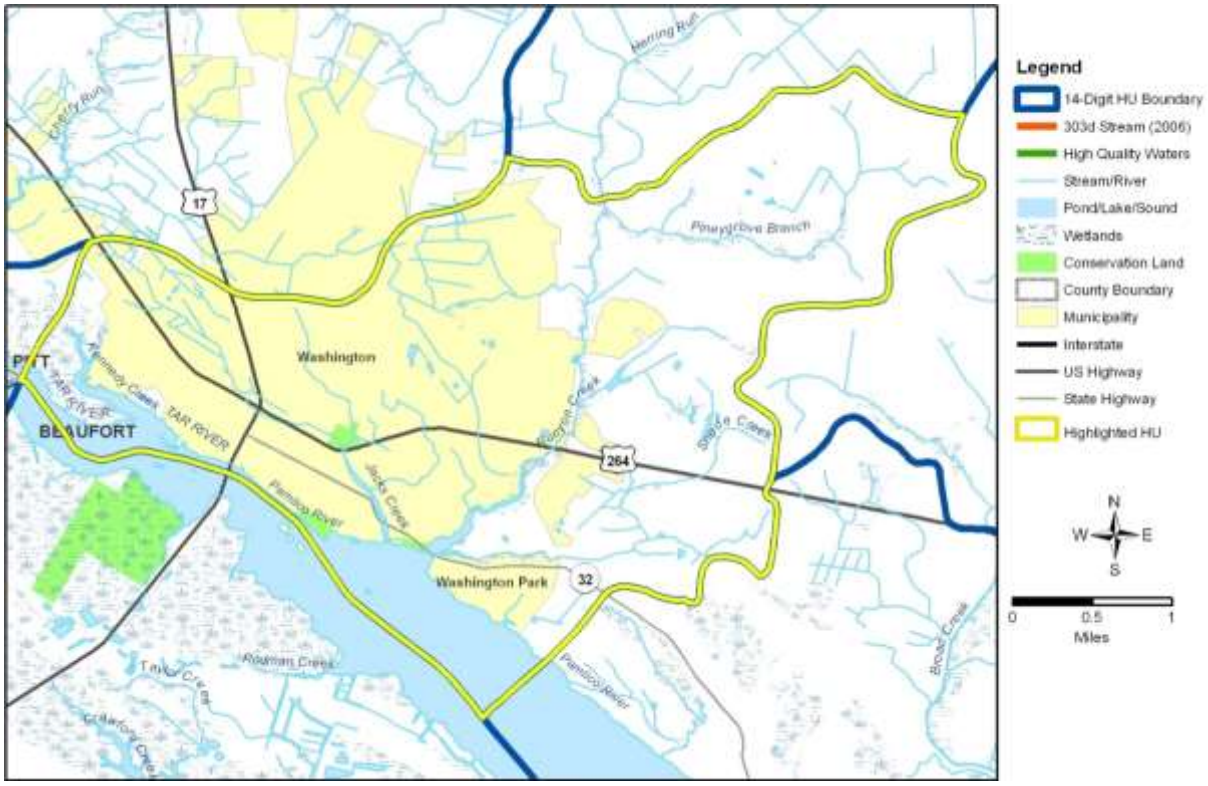
Projects that reduce inputs to the estuary (especially sediment and nutrients) that impact shellfish are particularly important here. Restoration of buffers is also a high priority.



Kennedy Creek: 03020104020020

This watershed is only 11 square miles and includes 40 miles of streams, two-thirds unbuffered. Fourteen percent of waters are listed as impaired. Nine percent is open water and 36% is developed. The 13% imperviousness can be attributed primarily to Washington.

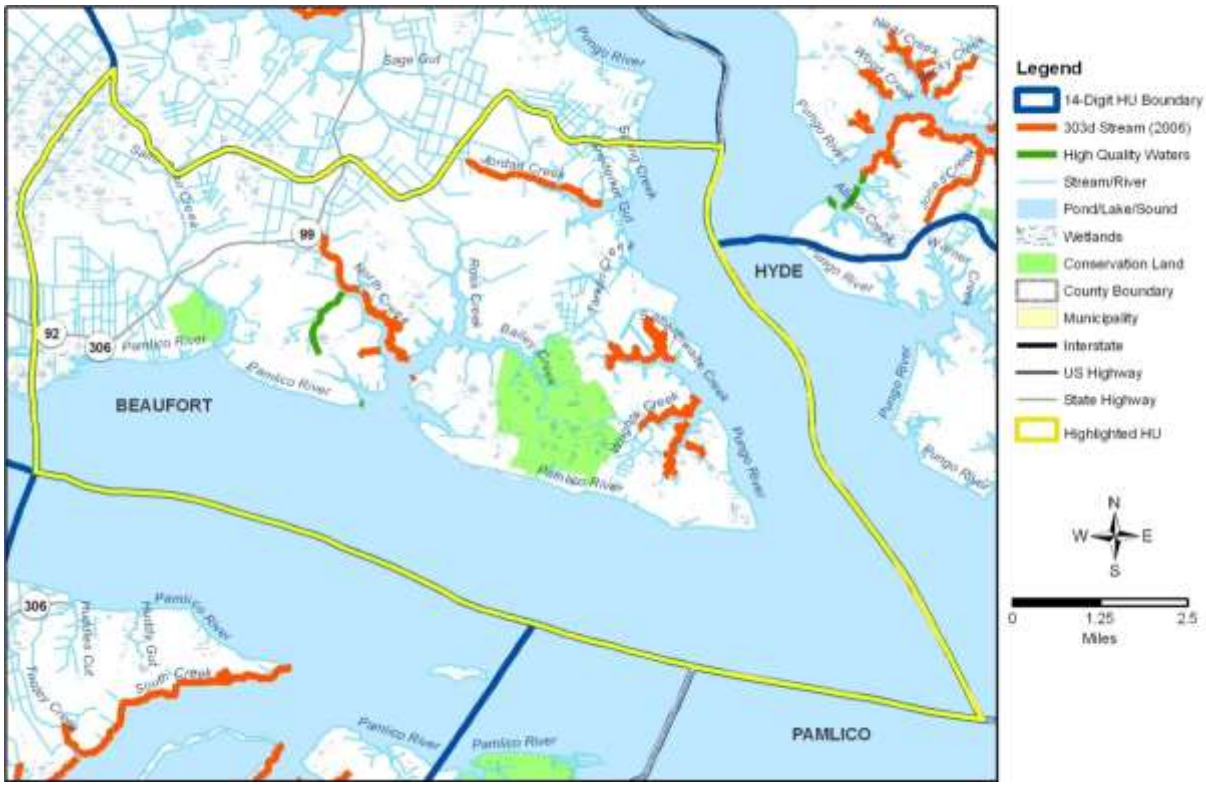
High priority projects for Kennedy Creek include BMPs that offset the impacts of impervious surfaces around Washington and riparian buffer restoration throughout the watershed.



Pamlico and Pungo Rivers: 03020104040040

The confluence of the Pamlico and Pungo Rivers creates rich fish and shellfish habitat. This HU covers 70 square miles and 130 miles of streams (54% unbuffered, 7% impaired). Over one mile of high quality waters (HQW) occurs in the North Creek subwatershed. Five NHEOs are documented here. Over half of the HU is open water with 1.1 square miles of primary and secondary fish nursery habitat. Nearly ten square miles is closed to shellfishing. All soils present in the watershed are hydric and 33% of the HU cover is forested wetlands. Over 2% of the watershed is developed and 14% is in agriculture.

Priorities for the watershed include restoration of ditched streams and projects that reduce sediment and nutrient impacts.



Pungo River Canal: 03020104080010

This HU encompasses 87 square miles and includes 332 miles of "streams" (mostly drainage ditches). Ninety-one percent of streams and ditches lack wooded buffers. All soils are hydric and 27% of the HU is forested wetlands. Thirteen square miles of unfragmented forest and 6.7% SNHA occurs here. Seven NHEOs can be found in the watershed. Approximately 3.4% of the watershed is developed and 69% is agricultural. Three swine operations are permitted here. Two agricultural BMPs have been completed here and four CWMTF watershed improvement projects.

Highest priority projects here reduce the impacts of the extensive ditching; stream and buffer restoration are most important. BMPs reducing agricultural impacts are very important here as well.

Pungo Lake: 03020104090010

The Pungo Lake watershed is very large at167 square miles. Eighty percent of the HU is comprised of Swamps and Peatlands (level 4 ecoregion designation). Approximately 511 miles of "streams" occur in the watershed, mostly ditched. Sixty-seven percent of streams and ditches are unbuffered. Virtually all soils here are hydric and the watershed has approximately 57% forested wetland cover. Fifty-seven square miles of unfragmented forest occurs here and 33% of the watershed is conservation land. One-fifth of the watershed is designated SNHA and 27 NHEOs can be found here. Over 3% of the watershed cover is open water, primarily due to Pungo Lake. Thirty-six percent of the HU is used for agriculture including 11 swine operations and two permitted cattle farms. Five agricultural BMPs, one Section 319 project, and one WRC project have been implemented here to help improve water quality. Over three percent of the watershed is developed.

Projects that address the impacts of extreme ditching are highest priority in the Pungo Lake watershed. Projects that reduce agricultural runoff are very important to the watershed as well.

Pantego Creek: 03020104100010

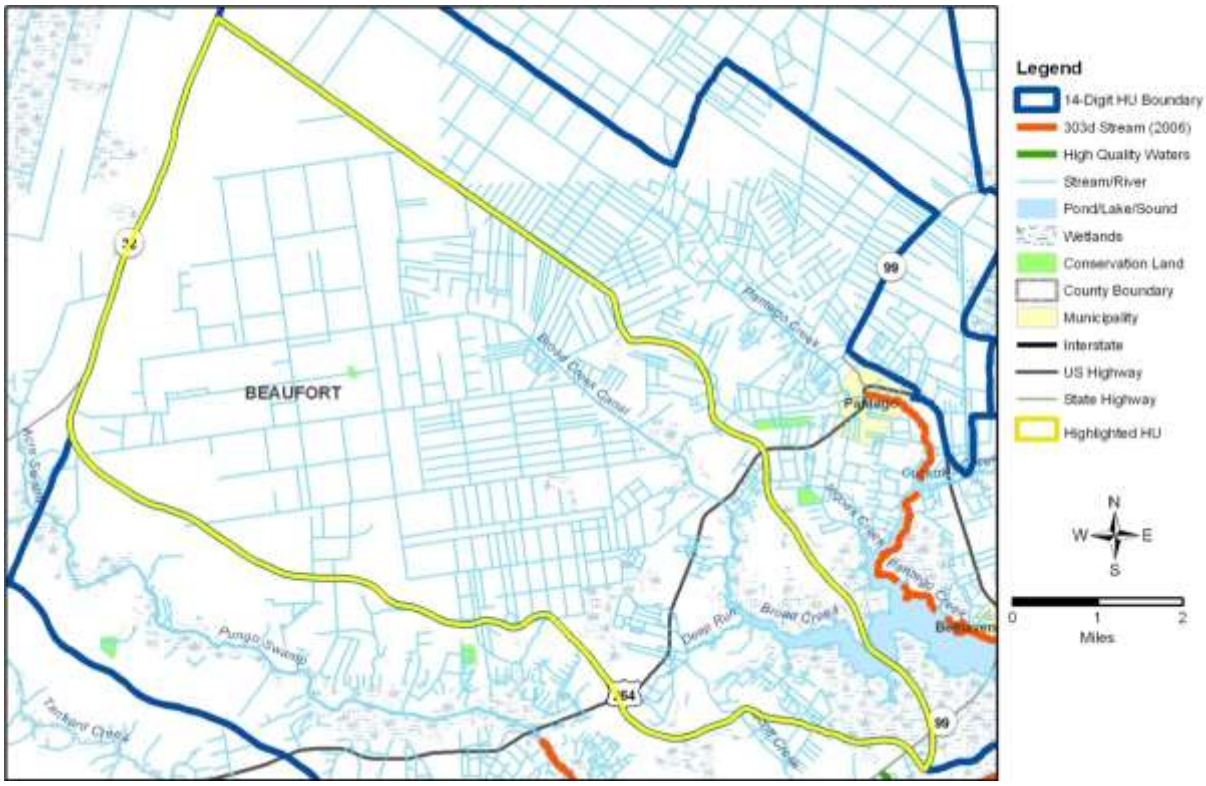
The Pantego Creek watershed is 34 square miles and has 204 miles of "streams", most are ditched. Seventy-two percent of these streams and ditches lack wooded buffers. Six percent of streams are 303(d)-listed. One-half mile of HQW occurs in Battalina Creek in the eastern part of the watershed; 11% of open water cover occurs in this downstream region also. Twenty-seven percent of the watershed is forested wetlands. Eight NHEOs are documented here. Fifty-six percent of the watershed is in agricultural land use with 3 BMP projects implemented. Seven percent of the HU is developed with 1.3% imperviousness.

Buffer enhancement and restoration is highest priority here. Restoration of ditches to a more natural stream condition is important in this watershed also.

Lower Pantego Creek: 03020104100020

This HU encompasses 40 square miles and includes 198 miles of streams, most of which are ditched. Over 78% of streams lack significant buffers. All soils are hydric here and 32% of the watershed is forested wetlands. The watershed is 63% agricultural and 4% developed.

Highest priority projects here are stream restoration projects that restore a more natural condition to highly ditched parts of the watershed. Riparian zone buffer restoration is very important to this watershed also.



Pungo Creek: 03020104110020

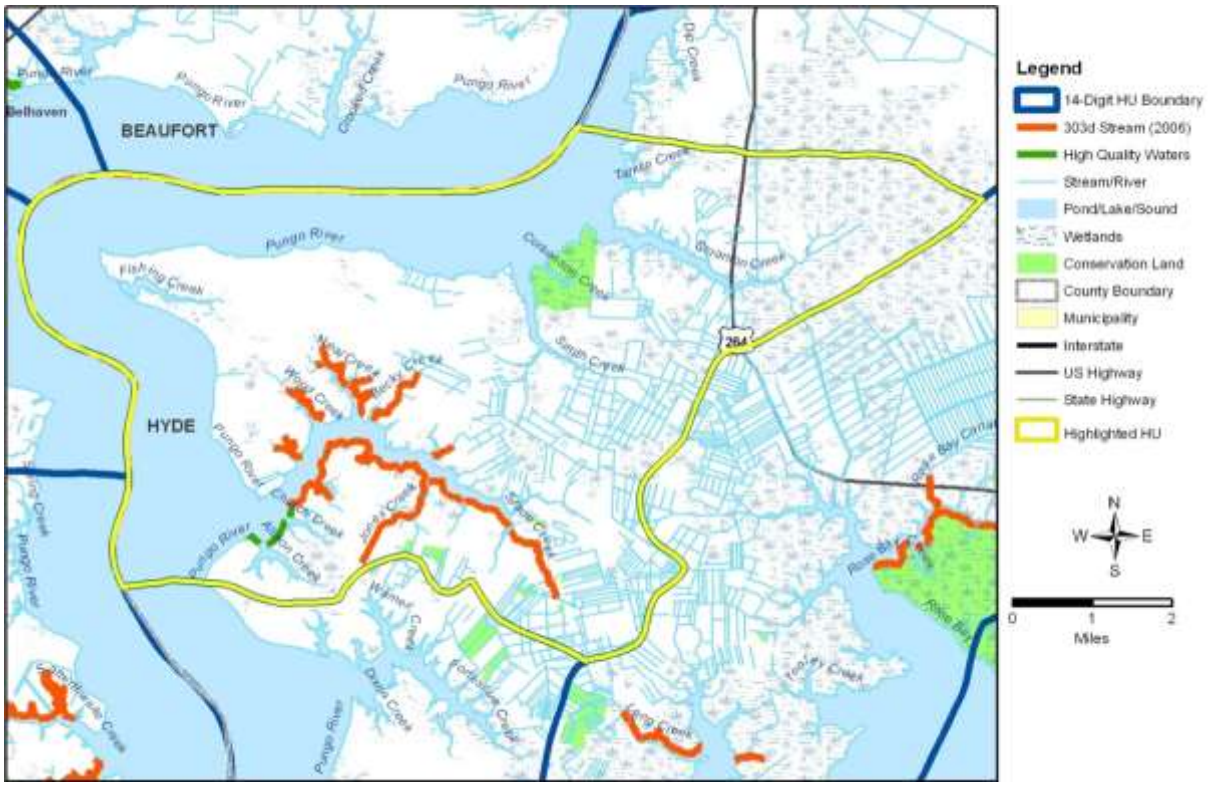
The Pungo Creek watershed covers 49 square miles and has 210 miles of streams and ditches (67% unbuffered). Six percent of streams, all on the main stem of Pungo Creek are 303(d)-listed. Over one mile of HQW occurs in the watershed. Sixteen percent of watershed is open water. All soils are hydric here and the watershed includes 41% forested wetlands. Four percent of the watershed is developed and 39% is in agriculture. Two agricultural BMPs have been constructed here.

Highest priorities here are reducing agricultural inputs and restoring ditched streams. Establishing woody vegetation along denuded banks are also critical.

Pungo River: 03020104120020

This Pungo River HU covers 46 square miles and 158 miles of streams, many ditched and 57% unbuffered. Eight percent of streams here are impaired, primarily consisting of small streams draining into the Slade Creek. Thirty-two percent of the HU area is open water including 6.2 square miles of shellfish closure area. Half the watershed is forested wetlands and 6% is designated SNHA. Seventeen percent of the watershed is in agriculture and 2% is developed.

Projects that address impacts to impaired streams are most important. Restoration of ditched streams and buffers are high priority also.

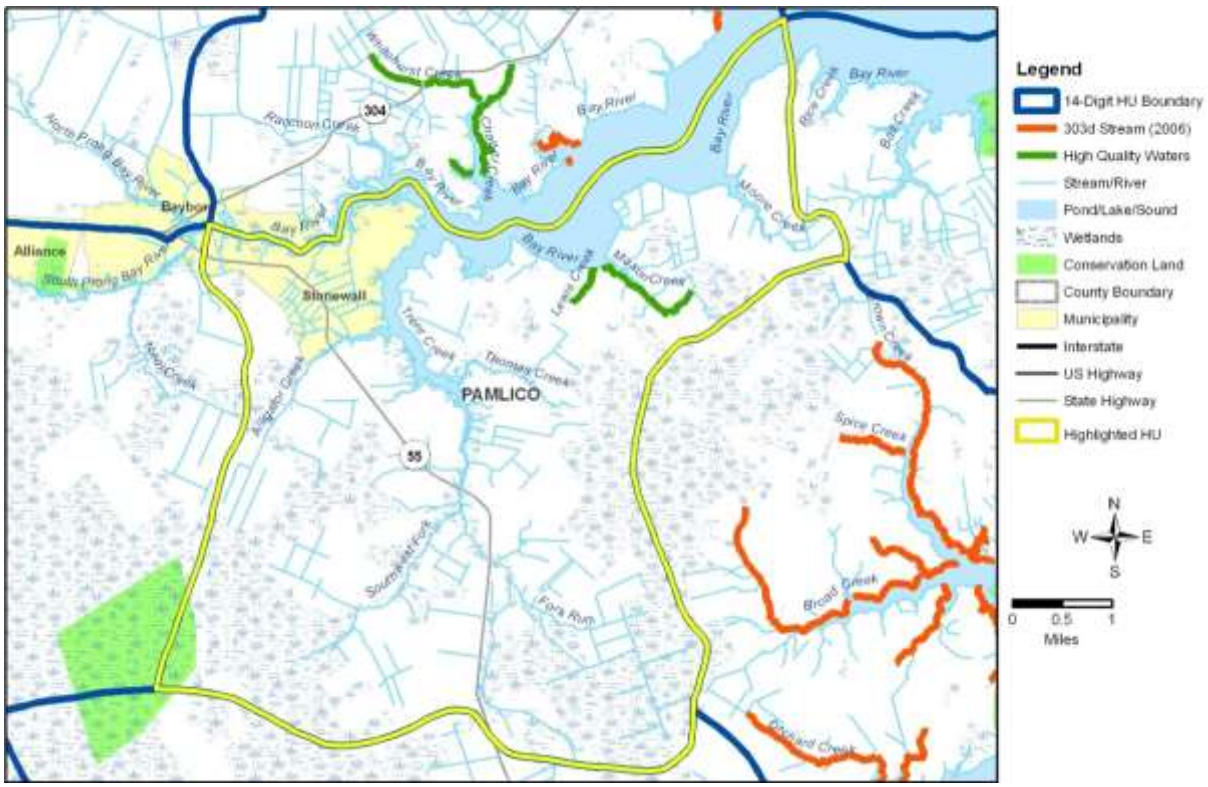


Tar-Pamlico 05 Targeted Local Watersheds

Bay River: 03020105010040

The Bay River watershed is 28 square miles with 74 miles of streams (57% unbuffered). Approximately 1.7 miles are designated HQW. Sixty percent of soils are hydric type A with 49% of the watershed forested wetlands. Eight percent of the HU is open water including two square miles of shellfish closure area. Thirty-nine percent of the watershed is used for agriculture. Two agricultural BMPs have been constructed here and the watershed houses two permitted hog farms. Three-and-a-half percent of the watershed is developed.

High priorities for the Bay River watershed include buffer restoration and restoring ditched streams to a more natural condition.



Germantown Bay: 03020105030010

The Germantown Bay HU is 59 square miles with 286 miles of streams and ditches. Nearly half of these are unbuffered. Eighteen percent of the HU is open water. Nearly ten square miles is designated primary and secondary fish nursery habitat and 1.2 square miles of water is closed to shellfishing. The watershed includes 62% forested wetlands and 2.7% development. Eighteen percent of the watershed is designated SNHA.

Highest priority projects for this watershed include stream restoration projects that return highly ditched portions of the watershed to a more natural condition. Establishment of riparian buffers in degraded portions of streams is also very important to Germantown Bay.

Swanquarter Bay: 03020105030020

This HU covers 73 square miles and includes 124 miles of stream, most are ditched and half are unbuffered. Most soils here are hydric and 44% of the HU is forested wetlands. Twenty-six percent of the watershed is designated SNHA and 13 NHEOs occur here. Over 6% of waters here is 303(d)-listed and 7.6% are designated ORW. Forty-five percent of the HU is open water. Seventeen square miles are primary and secondary fish nursery habitat. Nine percent of the HU is in agriculture and 1.3% is developed.

High priorities for this watershed are projects that improve the impacts due to extensive ditching. Other projects that establish buffers or create riparian corridors to connect conservation or intact habitat fragments are also high priority.

Juniper Bay: 03020105040010

The Juniper Bay HU is 65 square miles and has 128 miles of streams. Most streams are ditched and 44% of them lack buffers. Over 6% of waters are designated ORW and a small amount of impaired waters in Northwest Creek. Twenty-four percent of the HU is open water with 4 square miles of primary and secondary fish nursery habitat. Two-thirds of the HU is forested wetlands including 33 square miles unfragmented forest. Fifty-five percent of the watershed is designated SNHA and 20 NHEOs are documented here. Eight percent of the watershed is agricultural. Two agricultural BMPs and one CWMTF watershed improvement project have been implemented here.

Highest priorities for the watershed include buffer restoration and stream restoration in ditched areas. Projects that augment conservation areas or connect fragmented habitats.

Wysocking Bay: 03020105040020

This watershed covers 52 square miles and has 153 miles of streams, most of which are ditched. Fifty-seven percent of the streams are unbuffered. Virtually all soils are hydric and the watershed contains 58% forested wetlands, including 20 square miles of unfragmented forest. Thirty-one percent is designated SNHA. Twenty-one percent of the HU is open water with 6.2 square miles primary and secondary fish nursery habitat. Twenty percent of the watershed is in agriculture and three agricultural BMPs have been developed here to help improve water quality.

High priority projects for this watershed include those that restore buffers and ditched streams. Also high priority are projects that improve connectivity of intact habitats and augment existing conservation areas.

Lake Mattamuskeet: 03020105060010

This large HU covers 114 square miles with 205 miles of streams and ditches, 54% unbuffered. Thirty-one percent of the watershed is forested wetlands, including 16% unfragmented forest. Sixty-eight percent of the HU is designated SNHA and 15 documented NHEOs can be found around Lake Mattamuskeet. The lake accounts for most of the watershed's 56% open water coverage. Three-quarters of the HU is protected in parks or other designated conservation. Ten percent of the watershed is in agricultural land use and includes two agricultural BMPs. A single land trust project has been implemented here to enhance conservation efforts. Very little of the watershed is developed (2.5%) and there is very little imperviousness (0.7%).

High priorities for this HU are restoration of ditched streams and buffer restoration projects. Augmenting conservation areas are also high priority here.

Waupopin Canal: 03020105070010

The Waupopin Canal watershed has 175 miles of streams and ditches (65% unbuffered) and covers 36 square miles. Over 2% of waters here are designated HQW and about 5% is listed as impaired. Nine percent of the HU is open water with 1 square mile each of shellfish closure area and designated primary and secondary fish nursery habitat. All soils here are hydric (89% hydric A) and 38% of the watershed is forested wetlands. This includes 15% unfragmented forest. Over 8.3% of the HU is SNHA. Forty-seven percent of the watershed is used for agriculture with two agricultural BMPs and one CWMTF watershed improvement project. Over five percent is developed and 1% is impervious surface.

The Waupopin Canal watershed will benefit most by restoring ditched areas to more natural stream conditions. Buffers are a high priority throughout the watershed.

Long Shoal River: 03020105080015

The Long Shoal River watershed is 40 square miles, over half of which is part of the relatively rare Swamp and Peatlands ecoregion. The 34 miles of streams lack buffers on approximately 27% of them. Seven percent are listed as impaired and 0.7% are designated HQW. All the soils in this watershed are hydric (77% hydric A). Seventy-five percent of the watershed is forested wetlands and 63% of the watershed is unfragmented forest. Three-quarters of the HU is SNHA and the watershed includes 24 documented NHEOs. There is a single CWMTF project here. Nearly one-quarter of the HU is open water, including 6.6 square miles of primary and secondary nursery habitat and 1.1 square miles closed to shellfishing. About 1.4% of the HU is developed.

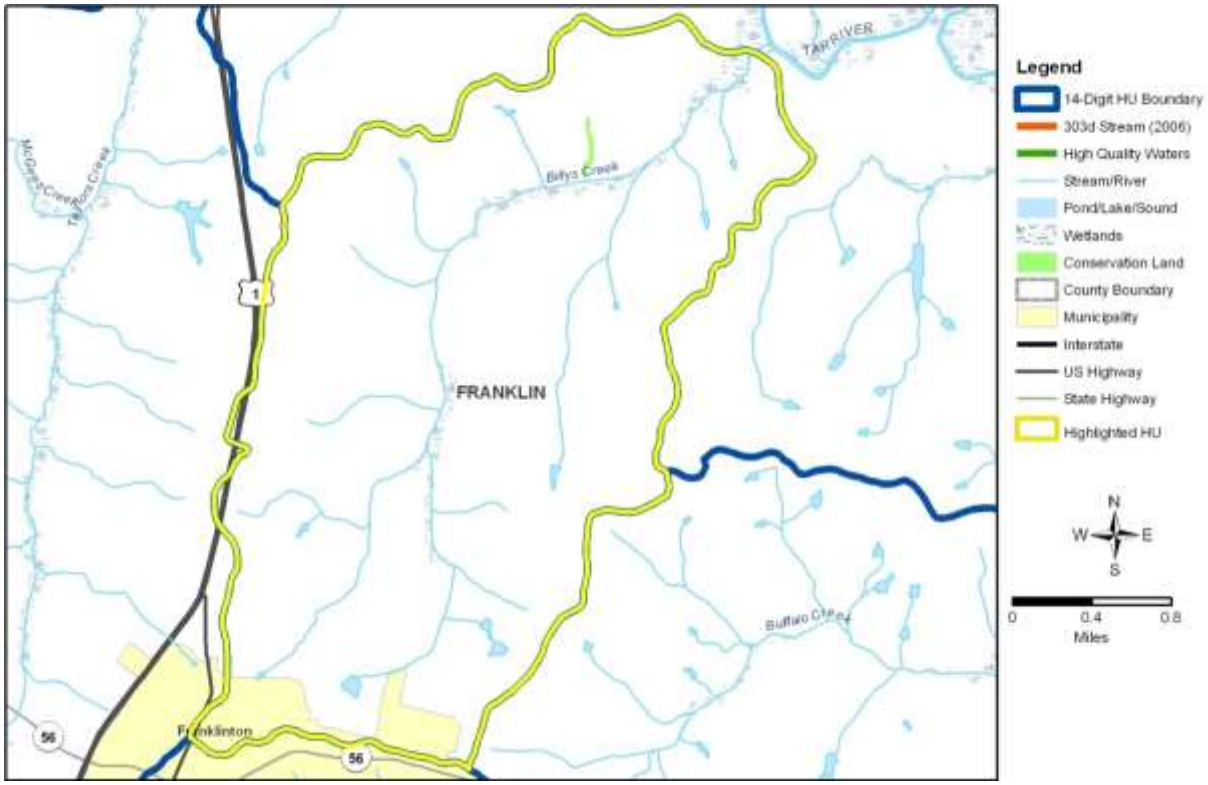
Priority projects here include buffer restoration and the establishment of riparian corridors. Projects that improve the protection of rare species are important here too.

Information on Watersheds with removed TLW designation

This section contains information on HUs that had their TLW designation removed. This change in designation affected 17 TLWs in the Tar-Pamlico.

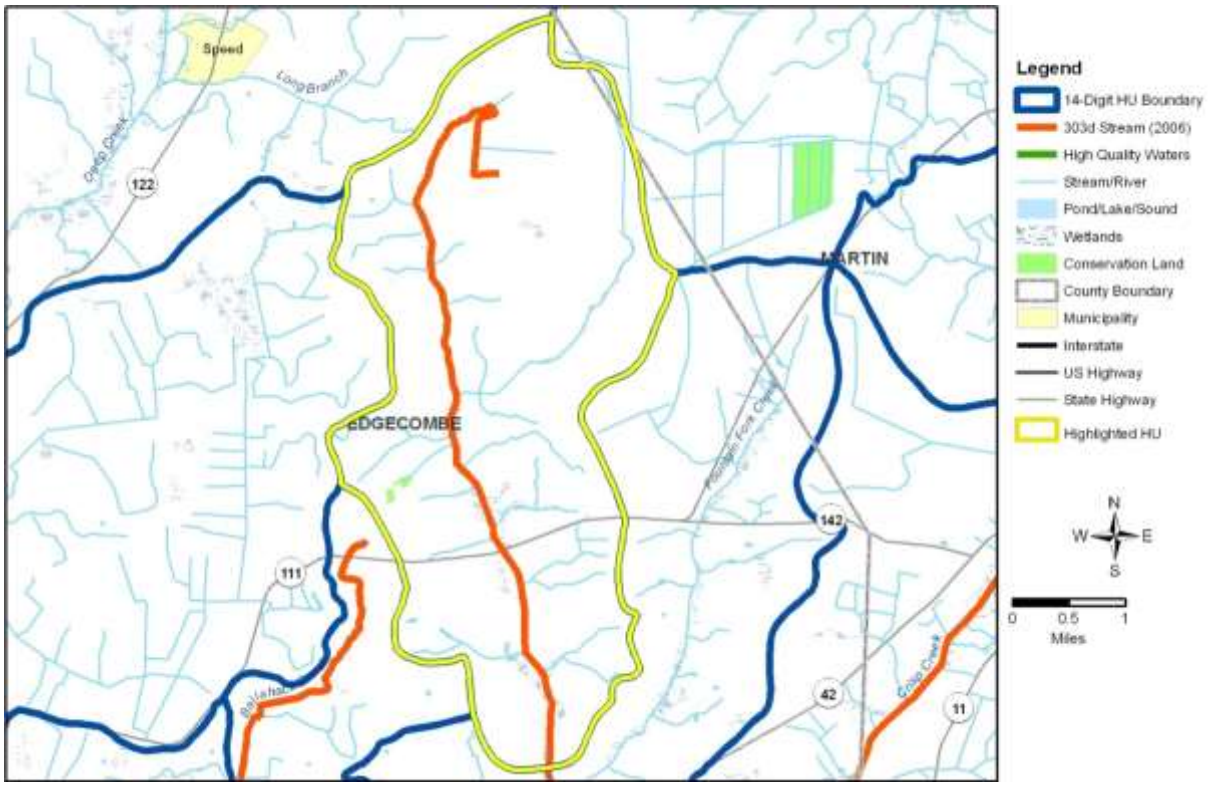
Billys Creek: 03020101040020

Billys Creek is a small watershed of seven square miles total area and 13 miles of streams in Franklin County. It is 69% forested and 22% agricultural. This HU had low scores in all categories (assets, problems, and opportunities) compared to other watersheds in the Tar-Pamlico 01 CU. It has been delisted.



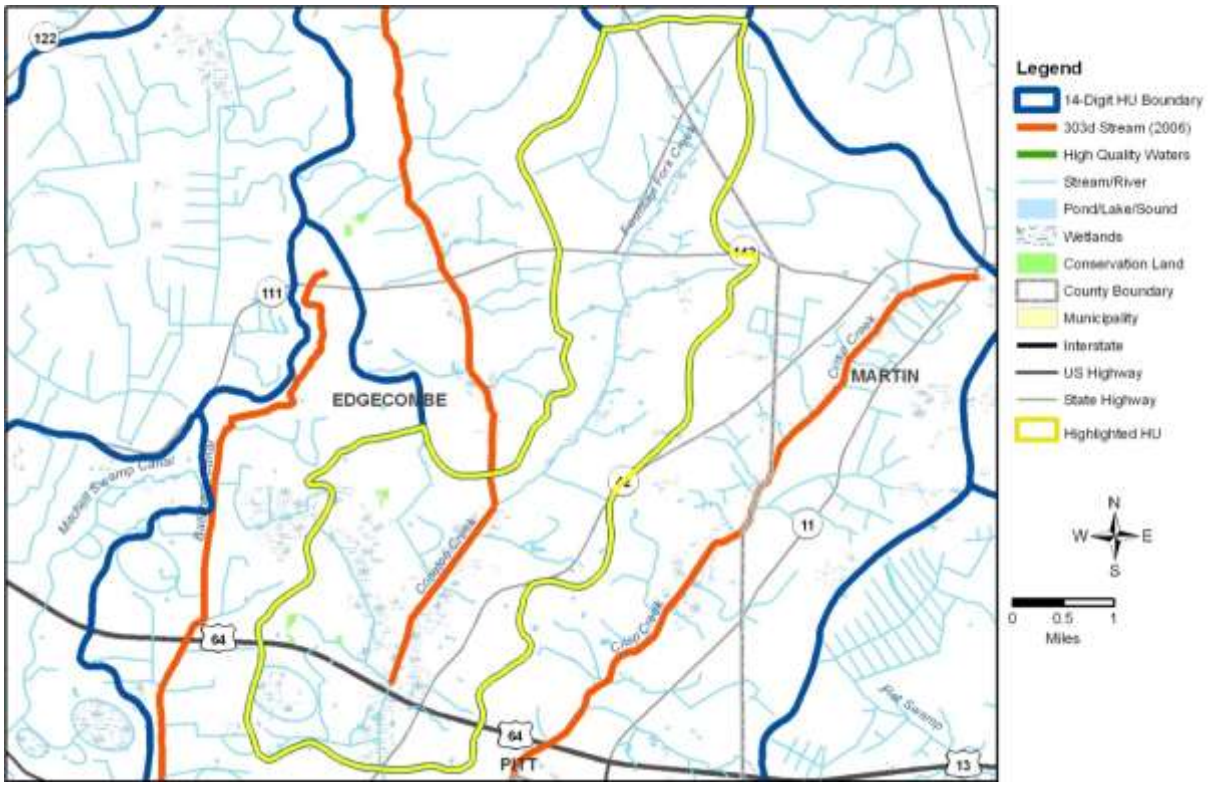
Conetoe Creek: 03020103050010

The Conetoe Creek watershed is also small at 13 square miles and includes 28 miles of streams (39% unbuffered). Soils here are virtually all hydric and 53% of the watershed is forested. Nearly four percent of the HU is developed and one-quarter of streams are listed as impaired. Forty-three percent of the watershed is in agriculture. Due to relatively low assets, problems, and opportunities scores, this HU has been delisted.



Fountain Fork Creek: 03020103050020

Fountain Fork Creek is 15 square miles and has 31 miles of streams, about 53% unbuffered. Most soils are hydric and the watershed is 51% forested (32% unfragmented forest). Nearly six percent of streams are 303(d)-listed. Forty-three percent of the HU is used for agriculture, including six swine and one poultry operation. The watershed scored low in all categories when compared to other HUs in Tar-Pam CU03. It has been delisted.

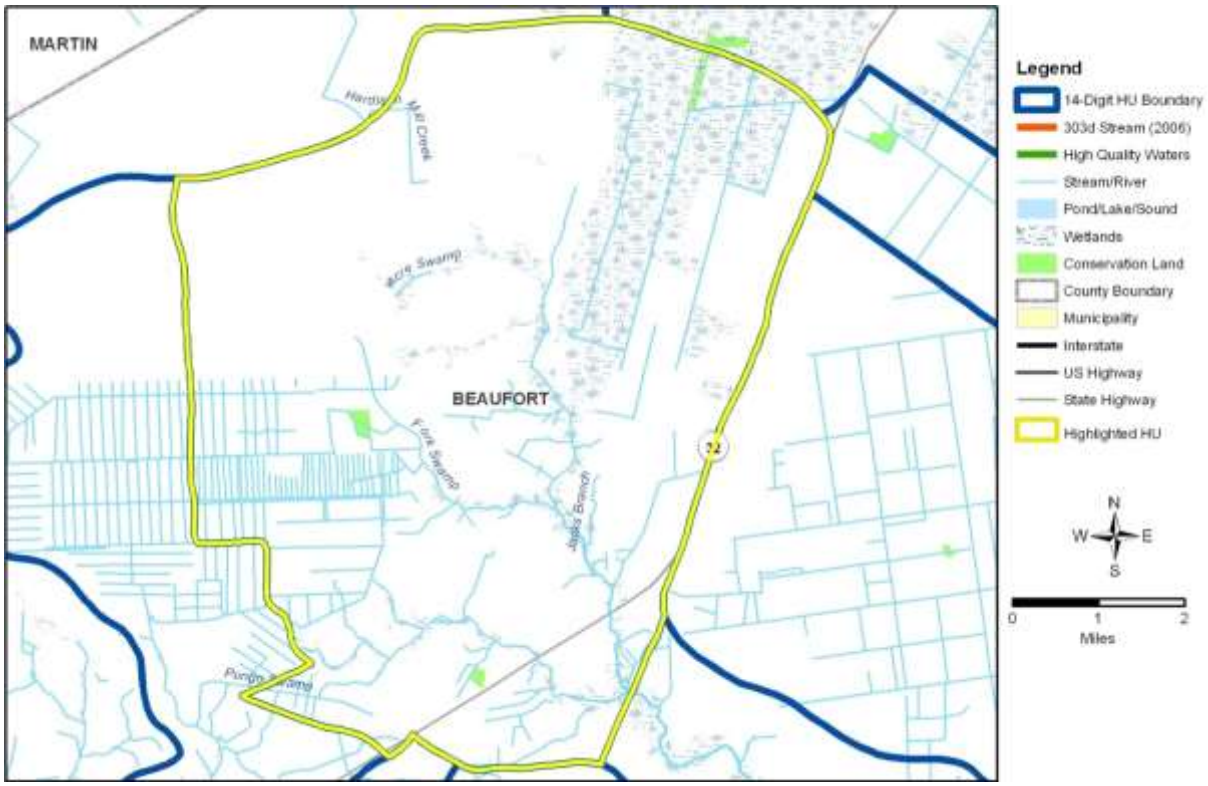


South Creek: 03020104060020

The South Creek watershed covers 62 square miles and has 125 miles of streams, 42% unbuffered. Over one-third of the HU is open water with 4.3 square miles of primary and secondary fish nursery habitat. Thirteen square miles of waters have been closed to shellfishing and 14% of waters here are 303(d)-listed. Despite these problems, the watershed scored low in all categories when compared to other HUs in Tar-Pamlico CU 04 and has been delisted.

Jacks Branch and Fork Swamp: 03020104110010

This watershed is 47 square miles and includes 108 miles of streams (47% unbuffered). Seventy-seven percent of the watershed is forested wetlands and 18% agricultural. All categories had low scores and the watershed has been delisted.



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For More Information

Visit the DMS Watershed Planning Contacts page located here: https://files.nc.gov/ncdeq/Mitigation%20Services/Watershed_Planning/Planning_Guidance_Docs/Watershed%20Planning%20Contacts.pdf

Definitions

303(d) List – This refers to Section 303(d) of the federal Clean Water Act, under which the U.S. EPA requires states to submit biennially a list of all impaired water bodies. Impaired water bodies are streams and lakes not meeting state water quality standards linked to their designated uses (e.g., water supply, recreation/fishing, propagation of aquatic life). Best professional judgment (in interpreting water quality monitoring data and observations) along with numeric and narrative standards/criteria are considered when evaluating the ability of a water body to serve its uses.

8-digit Catalog Unit (CU) – The USGS developed a hydrologic coding system to delineate the country into uniquely identified watersheds that can be commonly referenced and mapped. North Carolina has 54 of these watersheds uniquely defined by an 8-digit number. DMS typically addresses watershed – based planning and restoration in the context of the 17 river basins (each has a unique 6-digit number), 54 catalog units and 1,601 14-digit hydrologic units.

14–digit Hydrologic Unit (HU) – In order to address watershed management issues at a smaller scale, the U.S. Natural Resources Conservation Service (NRCS) developed methodology to delineate and uniquely identify watersheds at a scale smaller than the 8-digit catalog unit. A hydrologic unit is a drainage area delineated to nest in a multilevel, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream or similar surface waters. North Carolina has 1,601 14-digit hydrologic units.

Animal Operations – Inventory of animal farms (bovine; swine; poultry) provided by NC Department of Agriculture (NCDA) in December 2007.

Aquatic Habitat – the wetlands, streams, lakes, ponds, estuaries, and streamside (riparian) environments where aquatic organisms (e.g., fish, benthic macroinvertebrates) live and reproduce; includes the water, soils, vegetation, and other physical substrate (rocks, sediment) upon and within which the organisms occur.

Benthic Macroinvertebrates – organisms living in or on the bottom substrate of aquatic habitats; include insect larvae, worms, snails, crayfish and mussels; can be used as indicators of stream water quality and stream habitat condition.

BMPs (best management practices) – any land or stormwater management practice or structure used to mitigate flooding, reduce erosion & sedimentation, or otherwise control water pollution from runoff; includes urban stormwater management BMPs and agriculture/forestry BMPs.

DMS – The North Carolina Division of Mitigation Services combines existing wetlands restoration initiatives (formerly the Wetlands Restoration Program or NCWRP and the Ecosystem Enhancement Program or EEP) of the N.C. Department of Environmental Quality with ongoing efforts by the N.C. Department of Transportation (NCDOT) to offset unavoidable environmental impacts from transportation-infrastructure improvements.

GIS - A geographic information system integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

High Quality Waters (HQW) - Supplemental NC DWQ classification intended to protect waters with quality higher than state water quality standards. In general, there are two means by which a water body may be classified as HQW. They may be HQW by definition, or they may qualify for HQW by supplemental designation and then be classified as HQW through the rule-making process.

1) The following are HQW by definition:

- (Water Supply) WS-I, WS-II,
- SA (shellfishing area),
- ORW (outstanding resource water),
- Waters designated as Primary Nursery Areas (PNA) or other functional nursery areas by the Marine Fisheries Commission, or
- Native and special native (wild) trout waters as designated by the Wildlife Resources Commission.

2) The following waters can qualify for supplemental HQW designation:

- Waters for which DWQ has received a petition for reclassification to either WS-I or WS-II, or
- Waters rated as Excellent by DWQ.

II. Classifications by Other State and Federal Agencies.

NC DWQ – North Carolina Division of Water Quality.

NC WRP – The North Carolina Wetlands Restoration Program was a wetland restoration program under NC DENR and a predecessor of the NCDMS.

Natural Heritage Element Occurrences (NHEOs) – NC Natural Heritage Program (NHP) documented locations of rare and endangered species (plant and animal) populations and occurrences of unique or exemplary natural ecosystems and special wildlife habitats (terrestrial and palustrine community types).

Outstanding Resource Waters (ORW) - Supplemental NC DWQ classification intended to protect unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance. To qualify, waters must be rated Excellent by DWQ and have one of the following outstanding resource values:

- Outstanding fish habitat or fisheries,
- Unusually high level of water-based recreation,
- Some special designation such as NC or National Wild/Scenic/Natural/Recreational River, National Wildlife Refuge, etc.,
- Important component of state or national park or forest, or
- Special ecological or scientific significance (rare or endangered species habitat, research or educational areas).
- No new discharges or expansions of existing discharges shall be permitted.

There are associated development controls enforced by DWQ. ORW areas are HQW by definition.

Phase II Stormwater Regulation – federal policy requiring municipalities and counties with concentrated populations to implement defined minimum control measures to offset the impact of their storm sewer systems.

Preservation – the long-term protection of an area with high habitat and/or water quality protection value (e.g., wetland, riparian buffer), generally effected through the purchase or donation of a conservation easement by/to a government agency or non-profit group (e.g., land trust); such areas are generally left in their natural state, with minimal human disturbance or land-management activities.

RBRP - The River Basin Restoration Priorities are documents that delineate specific watersheds (Targeted Local Watersheds) within a River Basin that exhibit both the need and opportunity for wetland, stream and riparian buffer restoration.

Resource Professionals – staff of state, federal, regional or local (city, county) natural resource agencies –including planners, water resources and storm water engineers, parks & recreation departments, water quality programs, regional councils of government, local/regional land trusts or other non-profit groups with knowledge/expertise and/or interest in local watershed issues and initiatives

Restoration – the re-establishment of wetlands or stream hydrology and wetlands vegetation into an area where wetland conditions (or stable streambank and stream channel conditions) have been lost; examples include: stream restoration using natural channel design methods coupled with re-vegetation of the riparian buffer; riparian wetlands restoration through the plugging of ditches, re-connection of adjacent stream channel to the floodplain, and planting of native wetland species; this type of compensatory mitigation project receives the greatest mitigation credit under the 401/404 regulatory framework.

Riparian –relating to the strip of land adjacent to streams and rivers, including streambanks and adjoining floodplain area; important streamside zones of natural vegetation that, when disturbed or removed, can have serious negative consequences for water quality and habitat in streams and rivers.

Significant Natural Heritage Areas (SNHA) – NC Natural Heritage Program identified areas containing ecologically significant natural communities or rare species. May be on private or public lands, and may or may not be in conserved status.

TLW - Targeted Local Watershed, are 14-digit hydrologic units which receive priority for DMS planning and restoration project funds.

TMDL – Total Maximum Daily Load, is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. It is used to establish limits on sources of the pollutant.

Use Support –refers to the DWQ system for classifying surface waters based on their designated best use(s); at present, the DWQ primary stream classifications include the following: class C

[fishing/boating & aquatic life propagation]; class B [primary recreation/direct contact]; SA [shellfish harvesting]; and WSW [water supply]. Supplemental classifications include High Quality Waters (HQW), Outstanding Resource Waters (ORW), Nutrient Sensitive Waters (NSW), Trout Waters (Tr), and Swamp Waters (Sw). All waters must at least meet the standards for class C waters.

USGS – United States Geological Survey.

Watershed –all the land area which contributes runoff to a particular point along a stream or river; also known as a "drainage basin", although the term *Basin* usually implies a very large drainage system, as of an entire river and its tributary streams.

Watershed Restoration Plan – Older versions of RBRP documents were called Watershed Restoration Plans. In essence, they are the same thing.

WSW—Water Supply Watershed