Neuse River Basin
Restoration Priorities
2010
Amended August 2018

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Cover Photo: Stoney Creek, Wayne County, NC

Introduction

Little Contentnea Creek headwaters stained with naturally occurring tannins.

The Neuse River Basin Restoration Priorities were set in 2002. 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 2002 plan described 55 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 update, 27 new TLWs were added as targets for restoration and preservation efforts in the Neuse River Basin and nine were delisted.

In addition to updating the *Neuse River Basin Watershed Restoration Plan*, this report complements information found in the *Neuse River Basinwide Water Quality Plan* (NC DWR 2009). These two reports provide much of the justification for selection of HUs by detailing water preservation needs in the Neuse 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:

Newly graded wetland restoration in Havelock being prepared for planting.

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.

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

[1] Army Corps of Engineer data from April 2010 indicates eight approved mitigation banks are present in the Neuse River Basin.

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.

Neuse River Basin Catalog Unit Overview

Seasonally inundated wetland in the lower Neuse.

The Neuse River Basin includes four USGS Catalog Units—03020201, 03020202, 03020203, and 03020204. This expansive originates in Person and Orange counties, flowing from the Piedmont to the outer Coastal Plain. The River is essentially freshwater from its headwaters to New Bern where it broadens and assumes estuarine characteristics. This Basin is more than 6200 square miles including both land and open water. The Neuse watershed contains 77 incorporated municipalities including all or portions of the cities of Raleigh, Durham, Smithfield, Wilson, Goldsboro, New Bern and Havelock; it also includes an abundant number of towns including Butner, Wake Forest, Cary, Clayton, and Kinston.

The four CUs encompass 188 14-digit hydrologic units and contain part or all of 18 counties, eight in the piedmont and 10 in the coastal plain.

Neuse 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 four 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

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

Walnut Creek in the Town of Cary.

CU 03020201

- support the Falls Lake Watershed Management Plan; a separate prioritization process for DMS will be developed in next 1-2 years
- continue to implement planning initiatives including the NCDMS Phase IV LWP for the Upper Neuse (incorporates updates for DMS LWPs including Ellerbe Creek, Lake Rogers/Ledge Creek, Lick Creek, Little Lick Creek, and Upper Swift Creek), the Upper Neuse

River Basin Association's Upper Neuse Watershed Management Plan and the DMS Neuse 01 Regional Watershed Plan.

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

CU 03020201 2011 Land Use/Land Cover Data

Class	Percentage
Water	1.74
Developed	20.22
Barren	0.36
Forest	35.05
Shrubland	3.82
Herbaceous	5.76
Planted/Cultivated	24.07
Wetlands	9.00

CU 03020202

- ❖ continue to implement the NCDMS Stoney Creek Local Watershed Plan
- ❖ protect, augment and connect Natural Heritage Areas and other conservation lands

CU 03020202 2011 Land Use/Land Cover Data

Class	Percentage
Water	1.16
Developed	9.08
Barren	0.36
Forest	14.35
Shrubland	10.81
Herbaceous	4.49
Planted/Cultivated	33.12
Wetlands	26.63

CU 03020203

- ❖ continue to implement the NCDMS Hominy Swamp Creek Local Watershed Plan
- ❖ 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
- ❖ protect, augment and connect Natural Heritage Areas and other conservation lands

CU 03020203 2011 Land Use/Land Cover Data

Class	Percentage
Water	1.09
Developed	8.82
Barren	0.17
Forest	18.63
Shrubland	4.92
Herbaceous	4.17
Planted/Cultivated	43.68
Wetlands	18.52

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

CU 03020204

- 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 03020204 2011 Land Use/Land Cover Data

Class	Percentage
Water	13.07
Developed	5.58
Barren	0.58
Forest	15.78
Shrubland	9.55
Herbaceous	3.01
Planted/Cultivated	16.24
Wetlands	36.20

The Lower Neuse 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 CU, 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, this CU 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.

NCDMS will also actively develop projects that can coincidentally meet CHPP objectives while meeting its primary mitigation requirements within designated planning areas. The program will continue to promote innovative coastal mitigation methods such as the split function crediting strategy proposed expert panels in the White Oak Local Watershed Plan project titled *An Approach to Coordinate Compensatory Mitigation Requirements to Meet the Goals of the Coastal Habitat Protection Plan* (2009).

Perched culverts like this one in Duke Forest can be replaced with concrete spans or bridges to allow for natural stream bed formation below. Frequently called "stream simulation design", the more natural bedform restores upstream passage for migratory fish and reconnects fragmented habitat.

Neuse River Basin TLW Overview

Fifty-five HUs were targeted in the 2002 Neuse River Basin Watershed Restoration Plan. In the 2010 update, however, nine HUs have their TLW status removed. An additional 27 HUs were designated as new TLWs. In total, 73 HUs are 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 Neuse River Basin showing current TLWs and those with removed TLW designation.

In 2015 DMS updated priorities for the Neuse 03020201 8-digit Catalog Unit due to extensive mitigation needs and changes in watershed conditions since the 2010 update. The CU update was conducted with a similar methodology as the previous RBRP however the newest versions of datasets available were used to evaluate the watersheds. Details on DMS's methodology for CU-specific updates may be accessed here: 2015 RBRP Methodology. The updated Neuse 01 targets can be found here: RBRP Transition Approach and Updated TLWs and a map identifying the TLWs can be accessed here: Neuse 01 TLW Update Map.

Table 1. Neuse 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 03020201														
03020201010020	South Flat River	56	153	38	57	0.7	0.0	153	1.1	53	0.0	0	13	23
03020201020010	North Fork Little River	33	88	32	61	0.7	0.0	88	0.3	17	0.6	0.0	11	23
03020201030020	Upper Eno River	39	102	23	61	2.9	0.0	88	2.2	47	1.6	0	7	23
03020201050010	Ellerbe Creek	37	90	11	38	12.6	0.0	76	2.5	9	5.8	8.9	5	42
03020201050020	Little Lick Creek	22	64	15	52	5.6	0.0	64	2.6	3	3.5	7.2	1	31
03020201050030	Lick Creek	22	68	14	78	1.1	0.0	67	0.4	6	3.2	7.9	2	12
03020201060010	Ledge Creek	47	145	23	62	2.4	0.0	145	0.6	28	9.2	0	4	22
03020201065010	New Light Creek	27	65	17	77	0.3	0.0	65	0.4	1	5.4	0.0	6	8
03020201070060	Richland Creek	16	45	18	44	8.1	0.0	34	0.0	1	0.1	0	1	39
03020201070070	Toms Creek	29	79	23	54	4.0	0.0	7.1	0.9	2	0.6	4.0	2	28
03020201070100	Perry Creek	12	28	6	23	17.2	0.0	0.0	0.0	1	0.7	20.5	0	66
03020201080010	Upper Crabtree Creek	53	150	10	35	15.7	0.0	0.0	0.4	5	3.0	6.5	4	54
03020201080020	Crabtree Creek	93	209	5	27	15.9	0.0	0.0	8.6	48	12.0	25.6	8	56
03020201090010	Walnut Creek	46	101	7	29	15.9	0.0	0.0	1.1	6	2.6	5.9	1	52
03020201100020	Marks Creek	29	69	31	61	1.1	0.0	0.0	1.1	3	0.0	0	2	17
03020201110010	Upper Swift Creek	36	84	8	34	10.4	0.0	84	1.7	6	2.4	10.7	2	45
03020201110020	Swift Creek	30	76	18	43	7.7	0.0	76	1.9	6	4.7	0.1	7	33
03020201110050	Little Creek	18	36	40	36	6.1	0.0	0.0	0.0	3	0.1	25.4	9	39
03020201120010	Middle Creek	57	147	28	46	5.2	0.0	0.0	0.6	24	0.3	0.6	19	35
03020201140010	Neuse River	53	128	34	62	0.4	0.0	16	8.9	23	0.9	0	18	26
03020201150050	Lower Mill Creek	35	94	31	66	0.2	0.0	11	5.1	19	4.1	0	42	14
03020201180010	Upper Little River	43	120	49	42	1.1	0.0	119	0.4	17	1.5	0	6	34
03020201180020	Middle Little River	51	126	38	51	1.9	0.0	34	0.5	26	0.3	0.0	10	24

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] (%)
03020201180050	Buffalo Creek	58	130	44	47	1.2	0.0	0.0	1.6	5	0.5	6.4	19	30
03020201020020	South Fork Little River	39	102	34	60	0.5	0.0	101	0.1	23	0.3	0	11	22
03020201030030	Middle Eno River	48	123	19	68	1.8	0.0	64	2.9	47	5.4	0	6	23
03020201030040	Eno River	28	64	8	54	5.1	0.0	64	2.4	34	3.4	0	3	31
03020201060020	Beaverdam Creek	52	161	23	69	0.9	0.0	136	1.6	21	6.4	0.0	8	15
03020201100010	Poplar Creek	9	26	35	47	2.0	0.0	0.0	0.0	0	0.0	0.0	3	27
03020201100030	Beddingfield Creek	41	104	33	55	1.3	0.0	25	1.7	2	1.6	0.0	13	21
03020201100050	Neuse River	52	106	37	45	5.1	0.0	89	0.7	13	0.2	0.0	13	31
03020201120030	Lower Middle Creek	48	132	50	42	1.3	0.0	0.0	0.5	18	0.7	0.0	32	31
03020201150020	Hannah Creek	34	102	54	38	1.0	0.0	0.0	2.1	5	0.2	2.3	44	42
03020201150040	Mill Creek	61	151	55	39	0.7	0.0	0.0	0.4	12	0.8	0.0	75	41
03020201065020	Horse Creek	24	53	20	68	1.3	0.0	46	0.0	0	2.5	0.0	1	14
Catalog Unit 03020202														
03020202010010	Stoney Creek	16	66	59	26	3.4	0.0	0.0	0	0	0.0	6.8	9	70
03020202010020	Stoney Creek	7	20	28	18	18	0.0	0.0	0	1	0.2	5.8	1	79
03020202010021	Stoney Creek	4.4	8	13	15	20	0.0	0.0	0	0	1.8	26.7	1	54
03020202010022	Stoney Creek	12	33	40	26	9	0.0	0.0	0	1	3.1	19.6	8	59
03020202040010	Falling Creek	44	119	59	33	0.0	0.0	0.0	0.0	1	0	0.0	19	56
03020202040020	Lower Falling Creek	33	121	56	33	2	0.0	23	0	0	1.0	9.9	7	70
03020202060030	Neuse River	7.3	14.4	17	23	16.4	0.0	0.0	0.0	2	0.1	16.4	0	58
03020202080010	Core Creek	74	296	39	55	0.6	0.0	0.0	11	14	7.0	6.1	13	57
03020202090030	Clayroot Swamp	50	228	41	53	0.5	0.0	0.0	1.8	2	1.8	6.3	27	49
03020202090060	Lower Swift Creek	68	192	37	58	0.7	0.0	0.0	0.6	12	0.9	14.8	9	41
03020202100020	Bachelor Creek	41	54	37	53	1.0	0.0	0.0	4.6	4	2.4	4.9	3	37
03020202050010	Southwest Creek	66	166	48	46	0.7	0.0	0.0	0	3	0.3	1.0	35	55
03020202050030	Trotters Creek	41	86	50	42	1.2	0.0	49	0	3	0.1	14.6	36	46

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03020202090010	Swift Creek	95	282	52	36	2.7	0.0	0.0	0	4	0.2	9.7	21	59
03020202090020	Grinnell Creek	50	165	42	51	0.6	0.0	0.0	7	11	3.5	1.2	13	59
03020202040030	Neuse River	3.9	9.5	19	17	21.3	0.0	0.0	0.0	0	0.1	37.1	1	55
03020202050040	Neuse River	7.2	16.8	33	38	6.6	0.0	0.0	0.0	0	0.0	17.1	0	49
03020202060020	Briery Run	19.4	51.6	48	37	3.6	0.0	0.0	0.0	0	0.0	0.0	1	56
03020202090040	Creeping Swamp	11.5	41.4	40	57	0.3	0.0	0.0	1.6	0	1.6	4.1	0	51
03020202090050	Creeping Swamp	17.8	59.6	35	62	0.3	0.0	0.0	0.0	0	0.0	5.1	46	4
Catalog Unit 03020203														
03020203020030	Contentnea Creek	16.2	14.3	44	32	6.7	0.0	4.8	0.0	1	0.0	0.0	1	44
03020203020040	Hominy Swamp	15.5	24.1	27	21	15.4	0.0	0.0	0.0	0	0.3	27.6	0	57
03020203060020	Nahunta Swamp	21.3	36.1	57	37	0.4	0.0	0.0	0.0	0	0.2	19.4	17	46
03020203070010	Little Contentnea Creek	41.0	77.2	48	44	1.0	0.0	0.0	0.0	2	0.0	12.5	19	36
03020203070030	Little Contentnea Creek	37.4	67.1	49	42	1.2	0.0	0.0	0.1	0	1.2	7.4	5	41
03020203070040	Upper Middle Swamp	53.9	83.4	52	41	0.9	0.0	0.0	0.0	0	0.9	0.0	31	42
03020203070050	Middle Swamp	33.8	89.6	62	32	0.5	0.0	0.0	0.0	3	0.5	22.7	24	55
03020203010010	Moccasin Creek	82.9	178.4	38	49	1.5	0.0	0.0	3.8	25	1.5	6.0	25	28
03020203010020	Beaverdam Creek	74.8	157.2	37	53	1.4	0.0	0.0	0.8	36	1.4	0.0	23	19
03020203020020	Upper Contentnea Creek	45.5	92.2	53	37	1.4	0.0	46.5	0.2	9	1.4	5.7	22	36
03020203050040	Mid Contentnea Creek	32.2	110.9	56	38	0.4	0.0	0.0	0.0	4	0.4	0.0	27	64
03020203050060	Lower Contentnea Creek	27.8	92.7	50	42	1.1	0.0	0.0	0.3	3	1.1	0.0	3	54
03020203040020	Toisnot Swamp	35.3	64.1	45	33	5.1	0.0	35.4	0.0	0	0.1	0.0	1	49
03020203060010	Nahunta Swamp	17.9	29.6	65	30	0.5	0.0	0.0	0.0	0	0.0	18.0	10	40
03020203060040	Nahunta Swamp	16.0	42.0	64	30	0.4	0.0	0.0	0.0	0	0.0	6.7	14	55
Catalog Unit 03020204														
03020204020010	Lawson Creek (Lower Trent River)	21.6	44.8	9	23	16.8	0.0	0.0	0.6	10	16.8	32.6	0	64
03020204020040	Brice Creek	22.4	34.2	13	73	1.9	0.0	0.0	0.1	7	10.3	27.3	1	22

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] (%)
03020204050050	Adams Creek	71.6	132.3	27	46	0.3	0.0	0.0	0.2	5	0.3	9.3	1	51
03020204070010	South River	115.1	96.9	19	34	0.3	0.0	0.0	9.3	21	0.3	7.7	0	51
03020204010030	Tuckahoe Creek	51.1	101.5	36	60	0.5	0.0	0.0	0.0	2	0.5	0.0	46	31
03020204010040	Upper Trent River	61.0	74.7	24	73	0.2	0.0	0.0	2.4	6	0.2	18.5	17	35
03020204010070	Crooked Run	55.7	93.5	28	68	0.4	0.0	0.0	5.0	14	0.4	28.1	12	48
03020204010080	Middle Trent River	63.4	137.0	43	52	0.4	0.0	0.0	0.5	14	0.4	19.2	20	36
03020204010090	Mill Creek	36.1	59.7	16	81	0.3	0.0	0.0	6.6	16	0.3	0.0	2	21
03020204010100	Lower Trent River	41.4	69.6	21	70	1.0	0.0	0.0	0.7	23	1.0	9.6	8	26
03020204030010	Northwest Creek	27.3	33.7	18	50	2.5	0.0	0.0	6.4	25	2.5	19.7	0	48
03020204050020	Slocum Creek	49.6	65.4	8	62	6.4	0.0	0.0	13.9	91	6.4	0.8	0	37

[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 GIA 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 streams

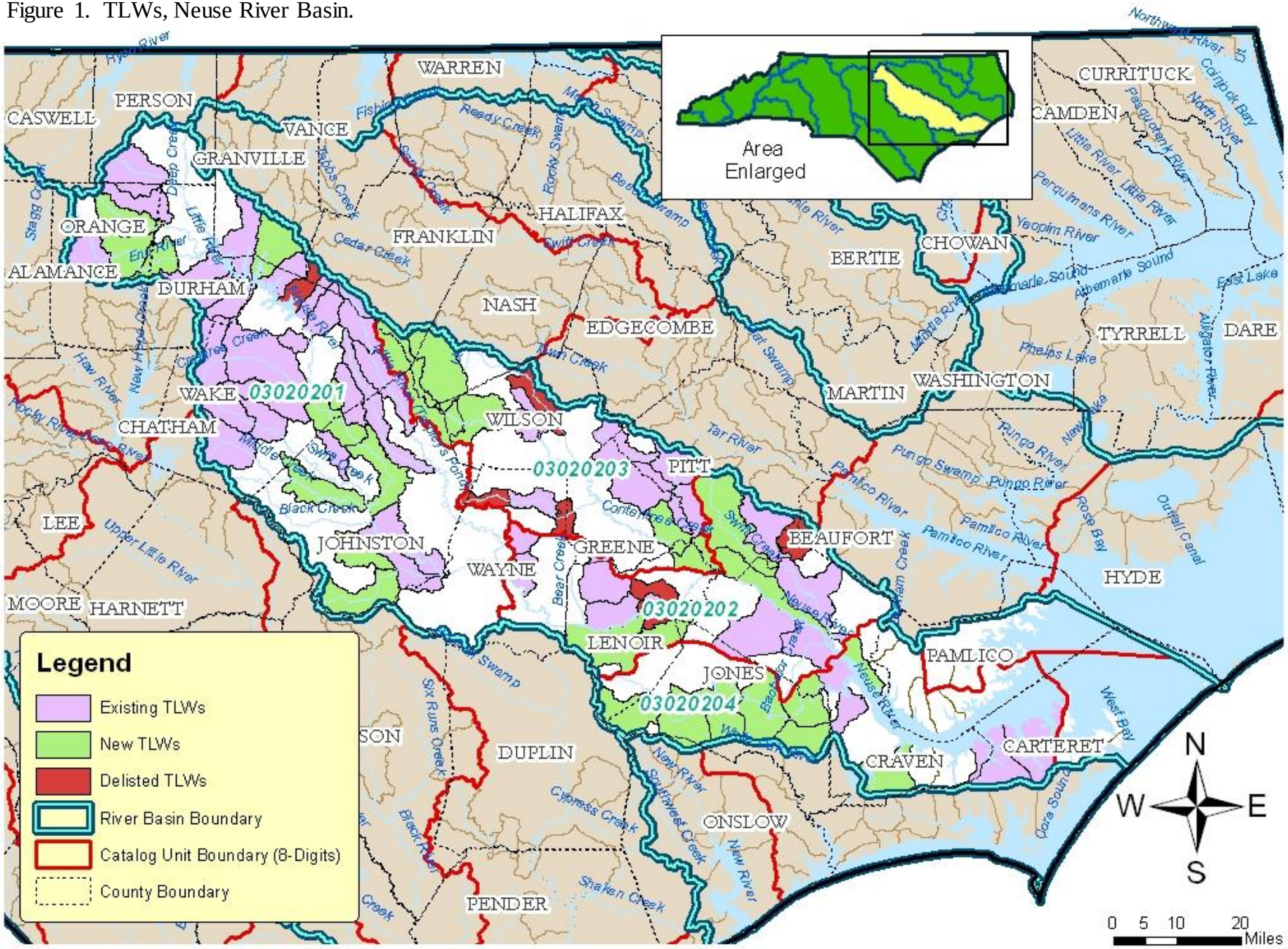
Table 2. 14-Digit TLWs Land Use/Land Cover Changes from 2001-2011				
	Increased Impervious Surface (acres)	**Forest Converted to Developed (acres)**	**Forest Converted to Agriculture (acres)**	**Loss of Wetland (acres)**
Catalog Unit 03020201				
03020201010030	0.45	0.00	45.81	0.00
03020201010050	1.11	0.22	66.50	0.00
03020201020010	0.00	0.00	51.60	0.00
03020201020020	0.00	0.00	31.14	0.00
03020201020040	6.67	120.76	26.47	0.00
03020201030020	27.13	37.36	60.49	0.00
03020201030030	38.48	231.07	40.92	2.00
03020201030040	68.28	159.56	114.76	0.00
03020201030050	80.51	208.16	12.46	6.67
03020201040020	33.58	161.01	31.80	0.00
03020201050010	333.15	279.33	47.59	28.69
03020201050020	66.27	322.92	101.41	16.90
03020201050030	14.46	469.70	160.57	11.12
03020201060010	43.59	162.35	172.58	51.60
03020201060020	10.01	169.24	321.36	10.23
03020201065030	36.70	549.32	6.00	1.78
03020201065040	14.90	144.11	0.00	0.00
03020201070060	221.06	599.13	68.50	5.56
03020201070070	177.69	1661.96	107.64	47.82
03020201070080	211.94	209.94	0.67	2.00
03020201070110	99.86	760.15	105.86	9.12
03020201080020	1637.72	1488.05	46.26	14.23
03020201090010	752.59	972.09	99.19	17.57
03020201100010	14.01	109.20	86.07	2.22
03020201100020	32.69	356.72	303.12	18.46

	Increased Impervious Surface (acres)	Forest Converted to Developed (acres)	Forest Converted to Agriculture (acres)	Loss of Wetland (acres)
03020201100030	74.95	708.77	156.57	3.78
03020201100040	2.89	20.46	32.69	6.00
03020201100050	110.53	588.01	200.82	29.58
03020201110010	289.78	604.03	44.92	0.00
03020201110020	178.36	307.80	77.17	1.78
03020201110040	52.26	381.41	82.73	25.35
03020201110050	88.07	325.59	109.42	16.01
03020201110070	21.13	76.06	17.57	3.56
03020201120010	315.58	1950.40	163.24	60.71
03020201120020	4.67	318.91	24.46	9.56
03020201120030	37.81	244.64	336.71	36.92
03020201130030	13.34	46.04	107.64	20.91
03020201140010	1.56	0.67	473.26	7.56
03020201150010	15.35	1.33	9.79	1.56
03020201150020	7.34	2.45	163.24	2.00
03020201150040	0.45	1.56	145.00	8.67
03020201150050	0.00	4.45	241.97	14.23
03020201160010	10.45	24.91	80.73	12.01
03020201180010	1.78	100.08	109.42	4.89
03020201180020	20.46	131.66	368.73	6.23
03020201180050	40.92	223.06	194.60	20.02
03020201200030	9.56	9.12	90.51	2.22
Catalog Unit 03020202				
03020202010010	39.81	32.91	30.02	56.04
03020202010020	37.14	5.78	150.78	6.00
03020202040010	17.35	18.90	100.52	0.67
03020202040020	48.04	6.45	72.28	14.23
03020202050010	2.89	0.00	488.60	13.79

	Increased Impervious Surface (acres)	Forest Converted to Developed (acres)	Forest Converted to Agriculture (acres)	Loss of Wetland (acres)
03020202050030	14.46	0.00	121.21	8.01
03020202060030	35.81	4.23	10.90	2.45
03020202080010	1.11	0.67	763.48	2.45
03020202090010	277.99	296.01	426.11	190.37
03020202090020	13.57	15.12	158.57	6.00
03020202090030	3.78	0.00	382.08	0.00
03020202090060	16.68	5.34	728.57	9.12
03020202100020	8.67	70.50	527.97	56.49
Catalog Unit 03020203				
03020203010010	35.14	86.07	410.99	21.35
03020203010020	17.57	1.78	430.11	24.69
03020203020020	3.11	42.03	261.09	0.00
03020203020030	46.93	48.26	25.58	19.35
03020203020040	126.77	111.87	52.93	20.91
03020203050040	4.67	0.00	307.35	0.00
03020203050060	7.12	0.22	78.51	1.11
03020203060020	3.11	0.00	48.04	0.00
03020203070010	12.01	0.45	326.48	0.00
03020203070030	6.01	5.78	119.65	0.00
03020203070040	8.45	0.89	508.17	0.00
03020203070050	0.45	0.22	56.27	2.89
Catalog Unit 03020204				
03020204010030	4.45	0.00	515.73	0.00
03020204010040	0.00	1.33	1444.23	0.22
03020204010070	1.11	0.00	1049.04	0.00
03020204010080	4.67	0.45	968.09	0.00
03020204010090	1.33	0.00	144.78	0.00
03020204010100	8.67	55.38	527.30	33.81

	Increased Impervious Surface (acres)	Forest Converted to Developed (acres)	Forest Converted to Agriculture (acres)	Loss of Wetland (acres)
03020204020010	156.79	116.31	2.89	111.64
03020204020040	28.47	119.43	91.40	19.35
03020204030010	16.46	2.45	37.14	1.11
03020204050020	209.72	34.03	71.17	9.12
03020204050050	0.00	1.11	451.91	0.00
03020204070010	0.00	6.23	34.47	1.56

Figure 1. TLWs, Neuse River Basin.



Discussion of Neuse River Basin Targeted Local Watersheds

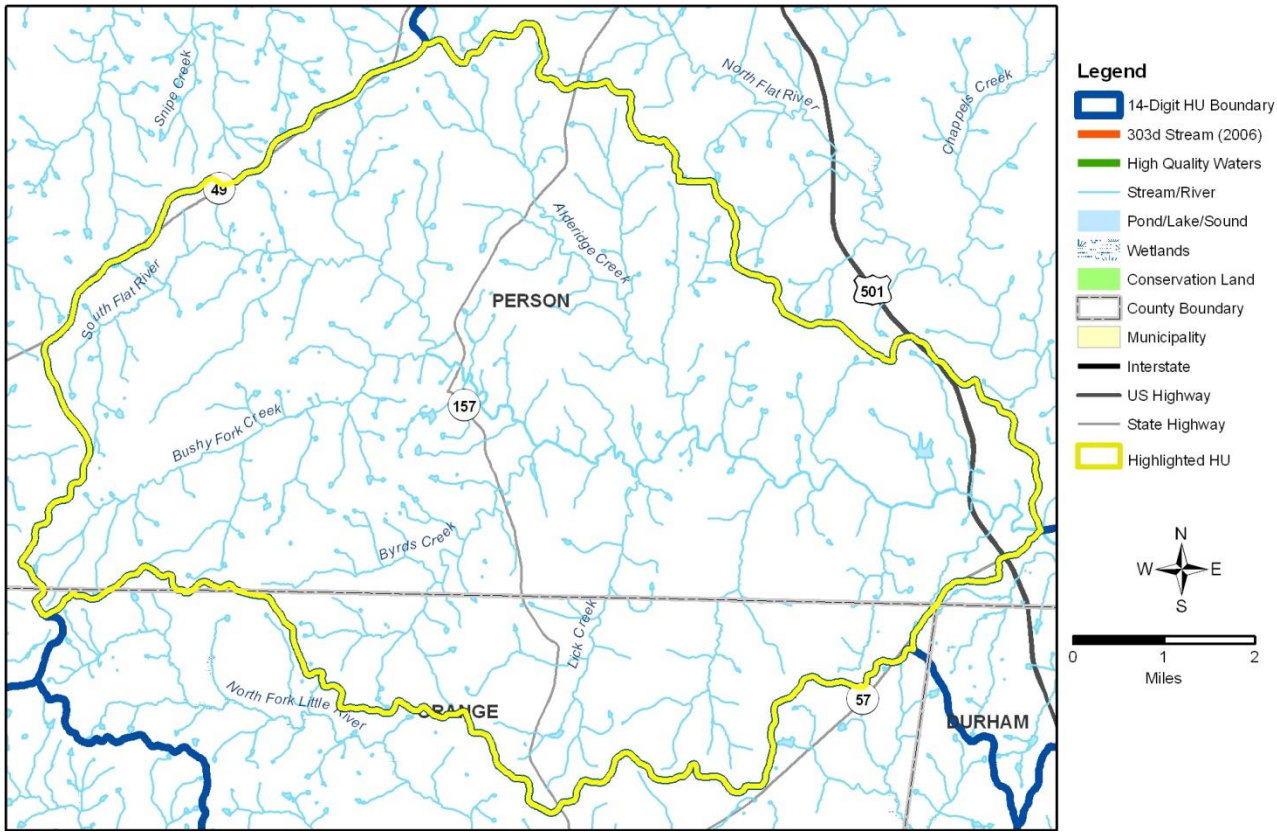
The following section provides maps and descriptions of TLWs and a discussion of the environmental conditions and activities that lead to their selection.

Neuse 01 Targeted Local Watersheds

South Flat River: 03020201010020

The South Flat River HU covers of about 57 square miles of the Piedmont Region with 153 miles of streams, all designated Water Supply Watershed waters by the NC Division of Water Quality (DWQ). Only 5% of the watershed is developed and 57% is forest or wetlands. There are approximately 20 square miles of hydric type B soils here. Thirty-eight percent of the watershed is used for agriculture. Fifty-three documented Natural Heritage Element Occurrences (NHEOs) can be found here. Twenty-three percent of streams are unbuffered. Thirteen permitted animal operations are in this watershed.

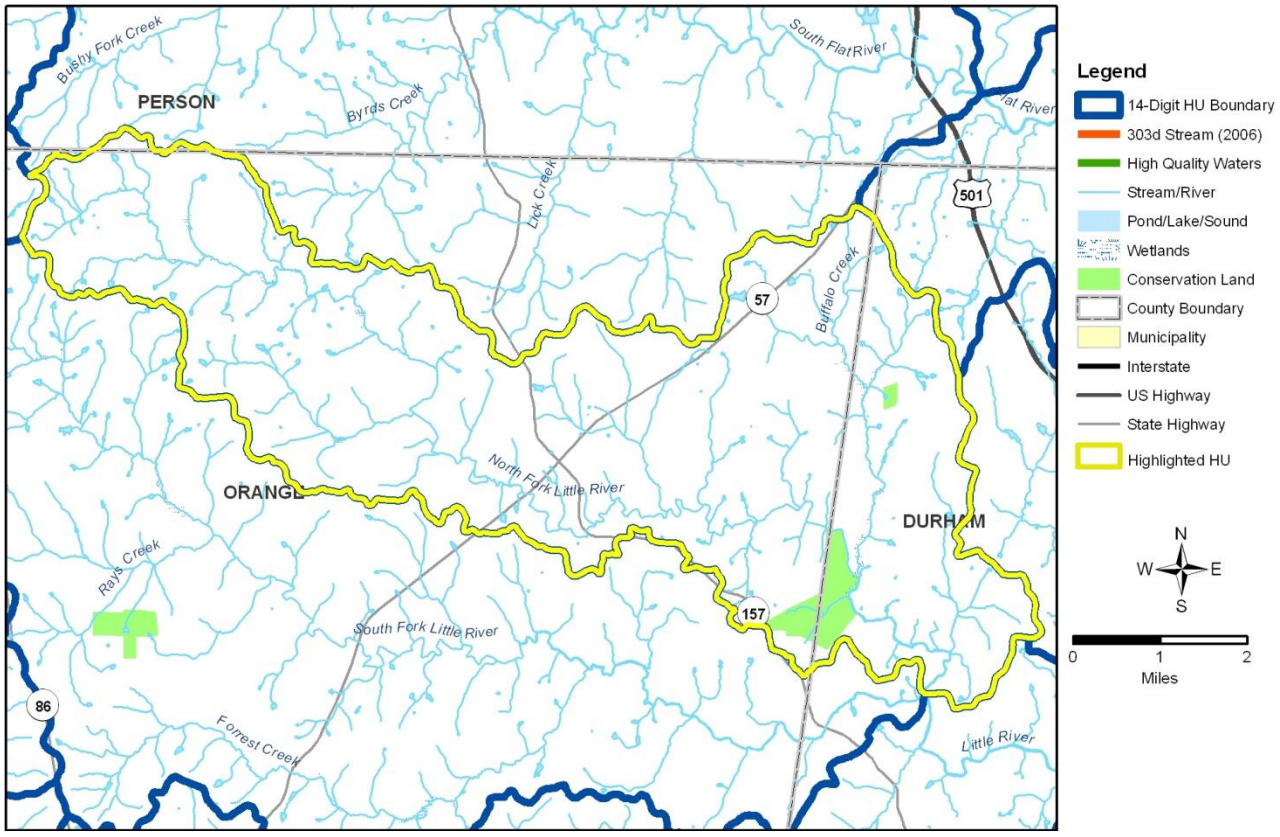
Priorities of the South Flat River watershed include construction of projects that offset nutrient inputs to the streams and agricultural best management practices (BMPs). Stream restoration should be implemented in altered reaches where erosion is a major source of sediment inputs to the stream. Protection of rare species and communities is also important here.



North Fork Little River: 3020201020010

The North Fork Little River HU is 33 square miles in area with 88 miles of streams, 23% unbuffered. Sixty-one percent of the watershed is forested. Seventeen NHEOs are documented here. Thirty-two percent of the watershed is used for agriculture including 11 permitted livestock operations.

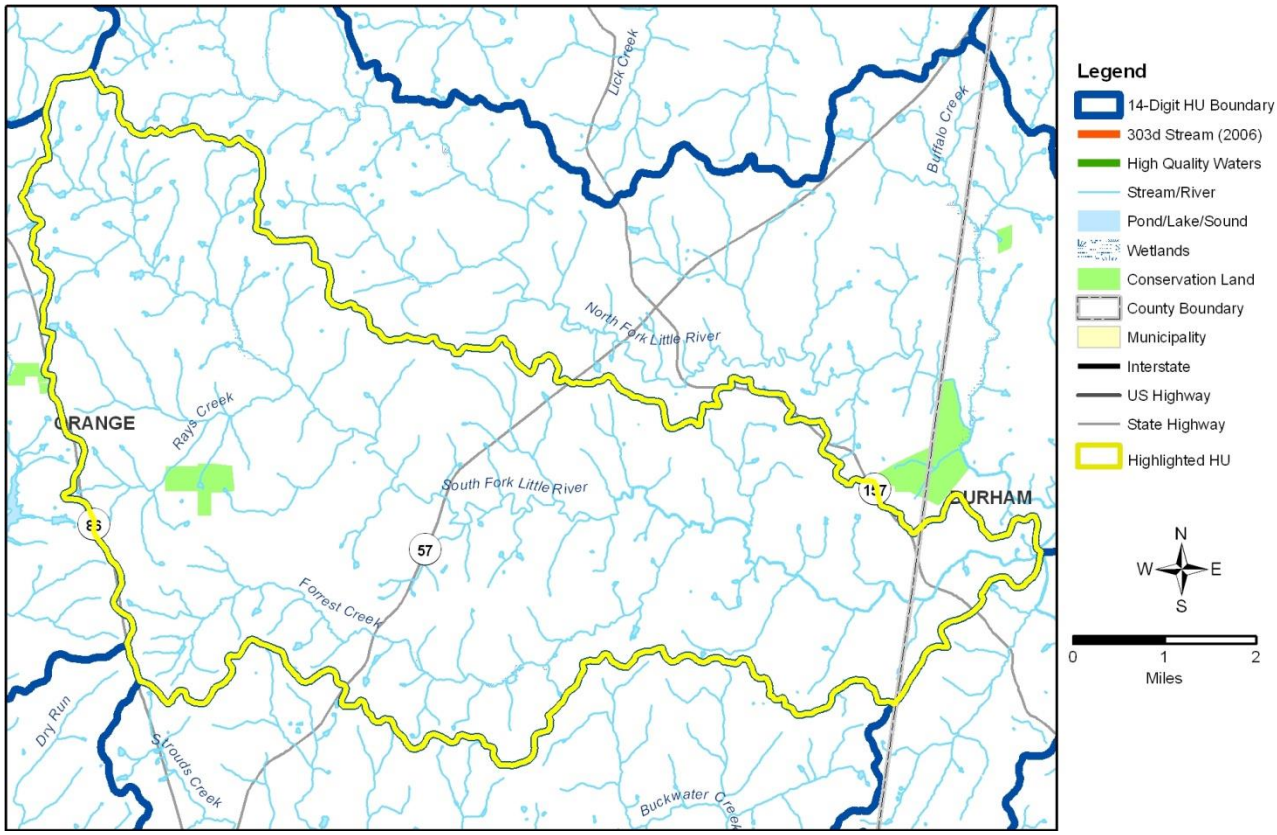
Highest priority projects for the North Fork Little River HU are buffer restoration in degraded riparian areas and those that offset agricultural impacts.



South Fork Little River: 03020201020020

The South Fork of the Little River lies primarily in Orange County and contains about 102 miles of streams, also all designated as Water Supply Waters. Twenty-two percent of streams are unbuffered. This watershed covers approximately 39 square miles. Sixty percent is forested or in wetlands, six percent is developed and 34% is used for agriculture. Twenty-three Natural Heritage Element Occurrences (NHEOs) are documented here. Twenty percent of soils are categorized hydric type B. Hydric type A soils are essentially absent from the watershed. The watershed contains 11 permitted animal operations. There are two Clean Water Management Trust Fund (CWMTF) sponsored projects here and one by the NC Wildlife Resources Commission (WRC).

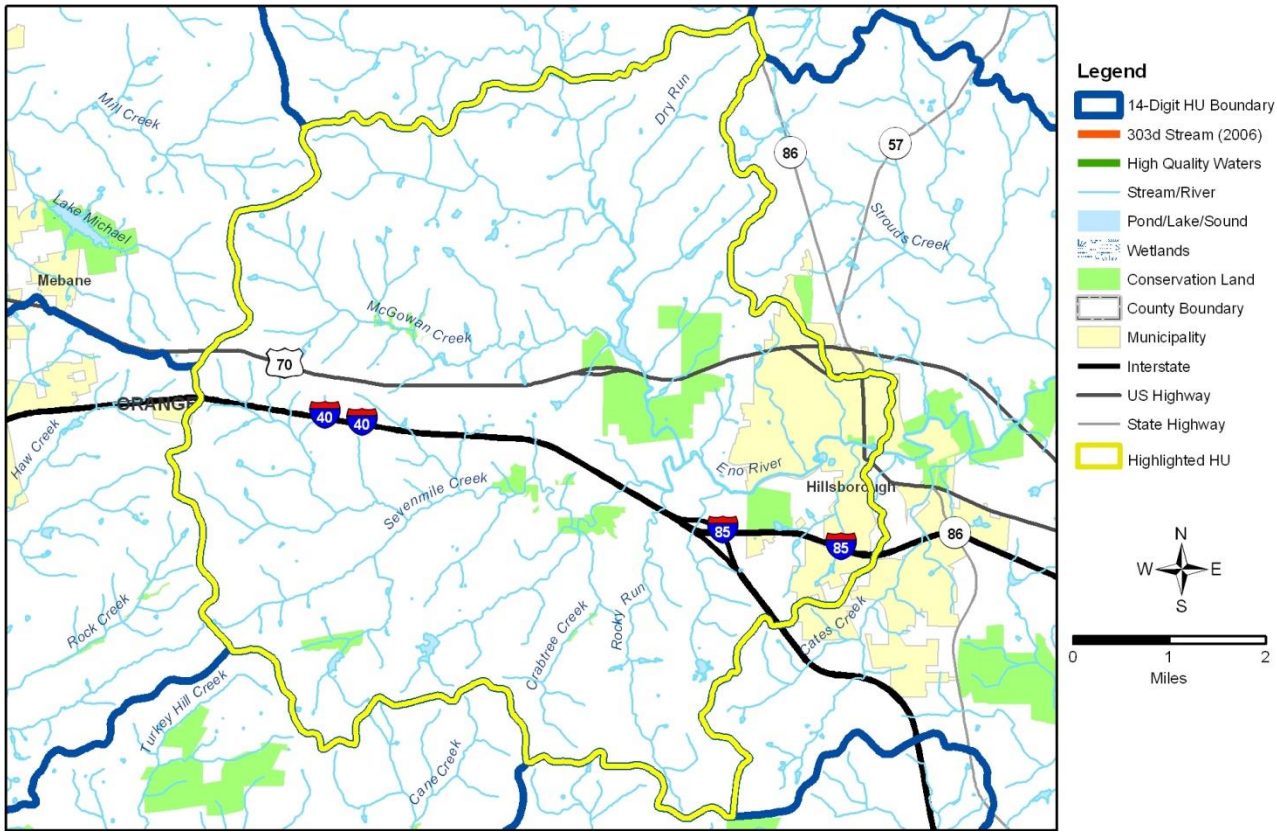
Priority projects for this watershed should address absent or sparse buffers or stormwater inputs from agricultural fields or animal operations. Stream restoration projects are a priority for areas where banks are eroded or straightened.



Upper Eno River: 03020201030020

The Upper Eno River watershed covers approximately 39 square miles of the Carolina Slate Belt. It contains about 102 miles of streams, 89 miles of which are water supply waters. About 23% of these streams lack wooded buffers. There is one surface water intake that supplies the Town of Hillsborough. The watershed is 15% developed with about 23% of land area used for agriculture. Sixty-one percent is forested (14 square miles unfragmented forest) with a small amount of that area in wetlands. A little over two square miles are designated Significant Natural Heritage Area by the Natural Heritage Program (NHP). Forty-seven Natural Heritage Element Occurrences can be found in the watershed also. Seven permitted animal operations are in this watershed. The NC Department of Transportation (DOT) has planned 3.5 miles of Transportation Improvement Program (TIP) projects in the near future. There are two CWMTF projects, one Section 319 project, and one WRC project in the Upper Eno watershed.

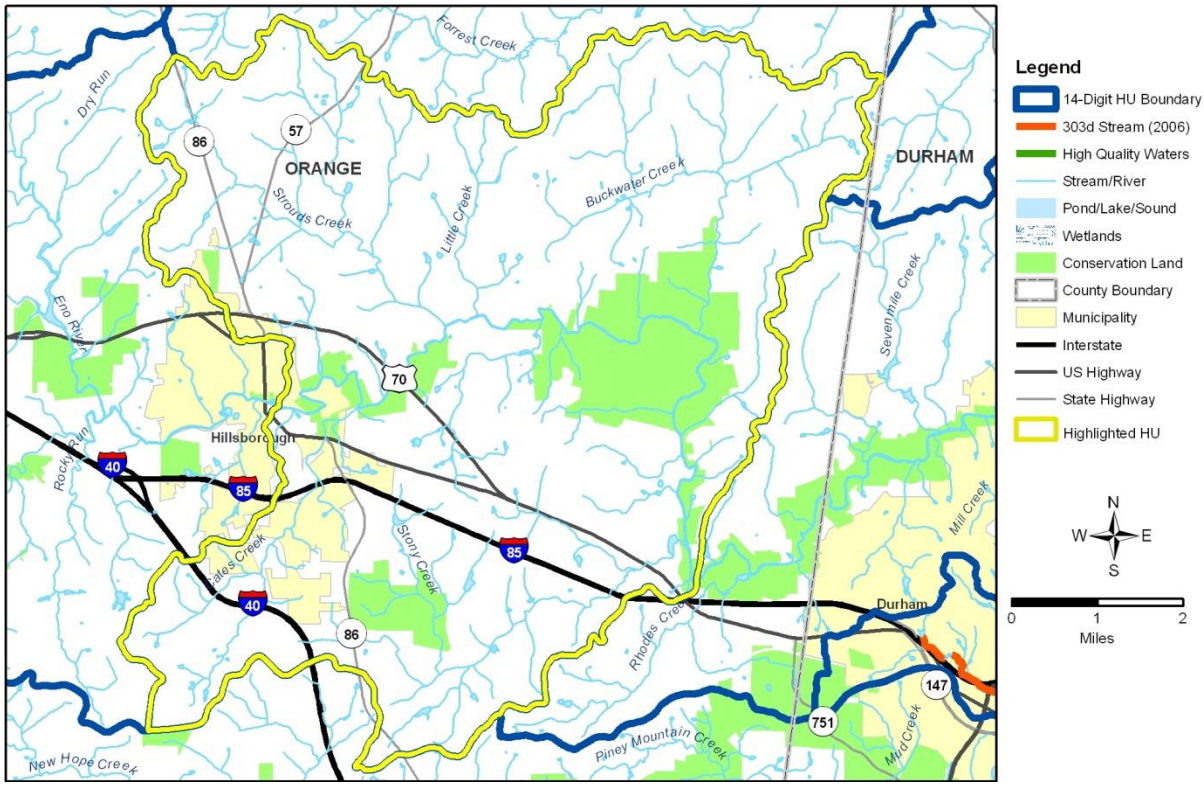
High priority projects here should improve buffers and provide habitat of rare species via preservation and restoration. Stormwater projects are recommended to reduce inputs especially in the Hillsborough vicinity. Stream restoration and enhancement should be pursued where feasible.



Middle Eno River: 03020201030030

The HU that contains the Middle Eno River is approximately 50 square miles. It lies within the Carolina Slate Belt ecoregion and as such, has very well-drained soils and small streams prone to drying out. There are nearly 123 miles of streams, 23% of which are not adequately buffered. More than half of streams are designated Water Supply Waters (WSW). The watershed is has about 12% of land area developed with a relatively low amount of impervious surface (2%). Nineteen percent of land is in agricultural usage. Six permitted animal operations occur here. Hydric soils (all type B) cover 12 square miles in this watershed. Sixty-eight percent of the watershed is forested with nearly 14 square miles considered unfragmented. There are three square miles of SNHA and 47 NHEOs. DOT has planned eight miles of TIP projects here. CWMTF has completed seven projects in the Middle Eno River watershed. The local land trust and WRC have each completed one project in the area.

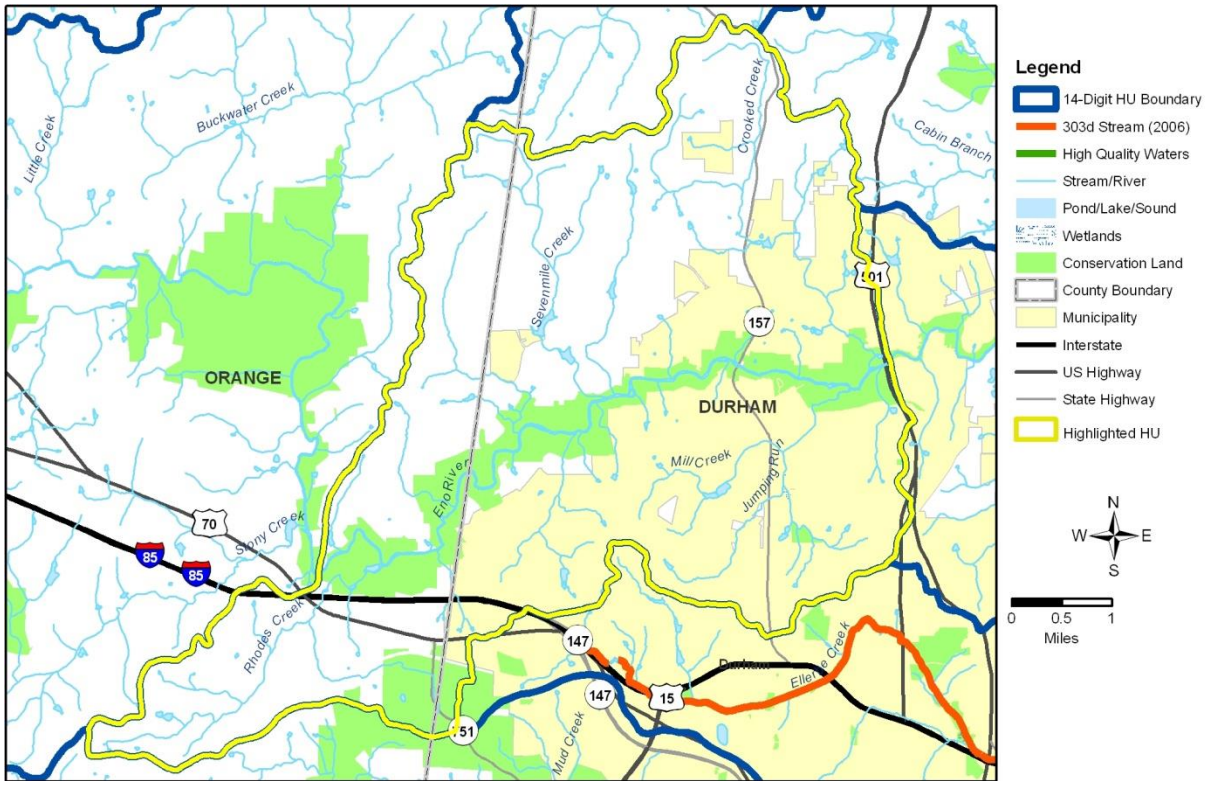
Priority projects should increase or improve buffers here as well as address stormwater issues of eastern Hillsborough. Restoration and preservation opportunities that augment existing easements are important here also.



Eno River: 03020201030040

This segment of the Eno River watershed covers 28 square miles of the Carolina Slate Belt. There are 64 miles of streams, all designated WSW. About 31% of these streams are unbuffered. The northern portion of the City of Durham covers about 12 square miles of this watershed and is subject to Phase II stormwater regulations. The watershed contains about 11% developed land with a total of 5% impervious surface. Only 8% of the land is used for agriculture, including three animal operations. Nearly 14% of soils are designated hydric, 1% type A and 13% type B. Fifty-four percent is forested or wetland. There are 34 NHEOs here and 2.4 square miles of designated SNHA, existing primarily as the corridor along the mainstem of the river. DOT has planned a little over 6 miles of TIP projects in the watershed.

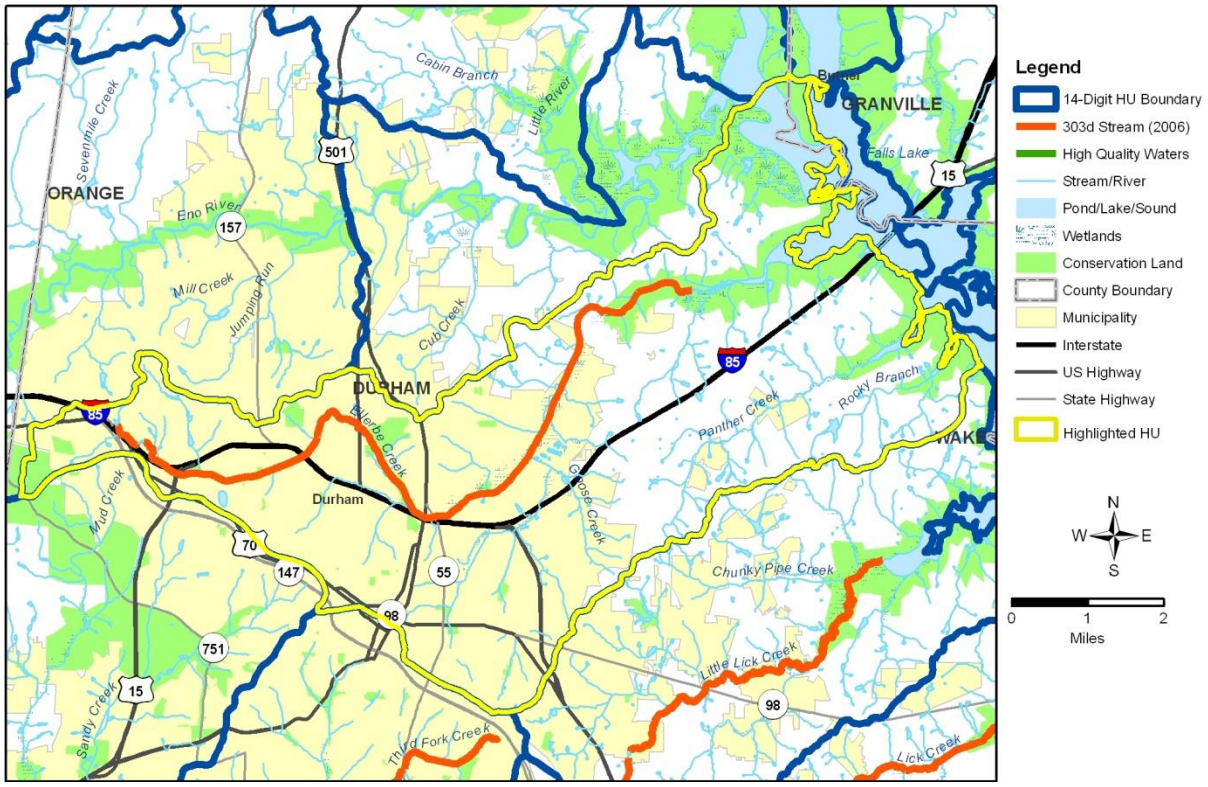
Priorities for this watershed include stormwater management projects, especially in the city limits. Preservation and restoration that improves habitat for rare species is important here also. Buffer establishment along streams is a high priority for this part of the Eno River watershed as well.



Ellerbe Creek: 03020201050010

The Ellerbe Creek watershed is 37 square miles in area. It lies primarily in the Triassic Basin ecoregion with rocky, well-drained soils. Five percent of soils are designated hydric type A and 12% hydric type B. There are 90 miles of streams here with 1.5% open water of the total HU area. This open water cover exists where the HU boundary cuts across Falls Lake. Seventy-six miles of the total 90 are designated Water Supply Watershed waters. Forty-two percent of streams are unbuffered and 9% is 303(d)-listed. Forty-nine percent of the watershed is developed with a total of 13% impervious surface. The impervious surface lies predominantly in the City of Durham. Half the watershed is subject to Phase II stormwater regulations. Eleven percent of the land is used for agriculture. Six square miles is designated conservation area including over two square miles of SNHA. Nine miles of TIP projects are planned by DOT.

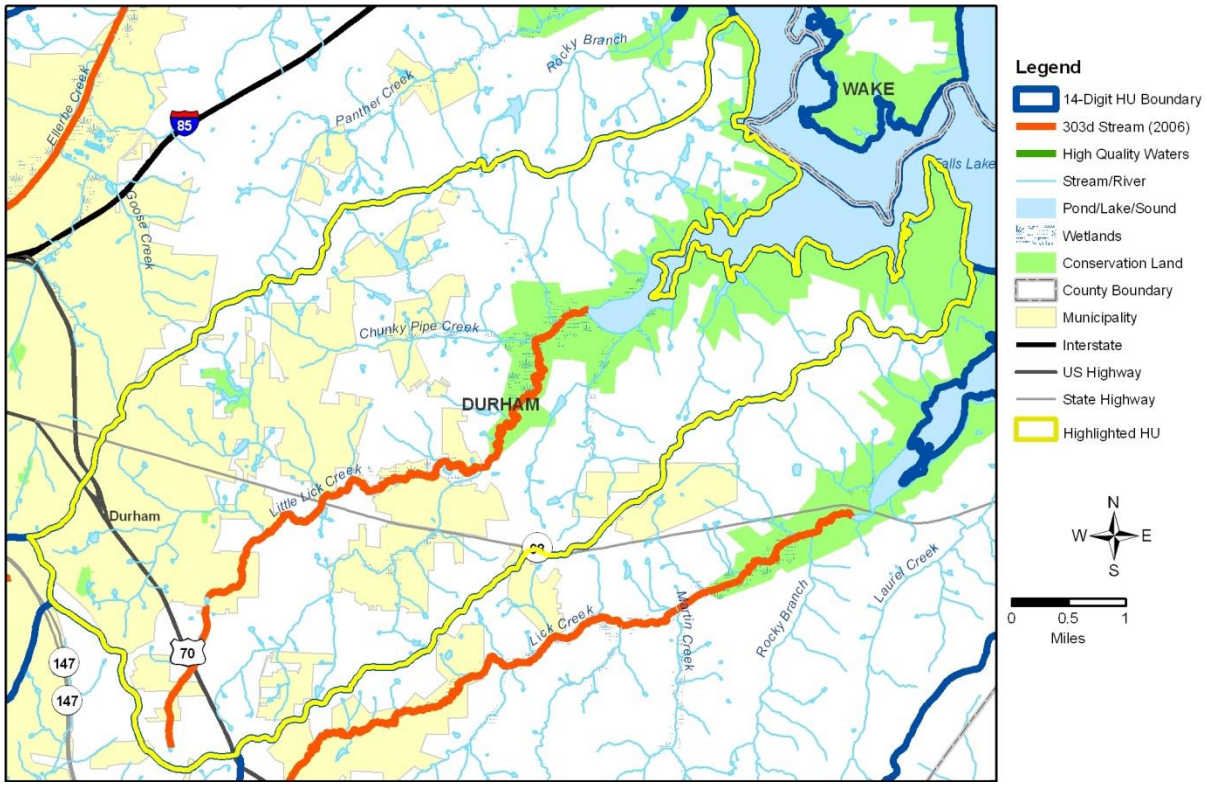
DMS developed a Local Watershed Plan (LWP) for Ellerbe Creek and is currently working of Phase IV plan implementation. Highest priority projects for this watershed are described in the LWP Project Atlas (Local Watershed Plan Factsheet), including many preservation and nutrient offset projects.



Little Lick Creek: 03020201050020

The Little Lick Creek watershed covers 22 square miles, including a small amount of open water on Falls Lake. DMS has developed a Local Watershed Plan (LWP) for Little Lick Creek and is currently implementing Phase IV projects here. It rests completely within the Triassic Basin ecoregion. There are 64 miles of stream, all of which are considered WSW waters. Thirty-one percent of streams are unbuffered and over 7% of the waters here are on the 303(d) list of impaired waters. Very little of the soils here are hydric. Over half of the watershed is forested and 15% of the land is used for agriculture. Thirty-two percent of the watershed is developed and nearly 6% is considered impervious surface. Nearly three square miles of SNHA occurs here. Two agricultural BMPs and one Section 319 project has been constructed here. Over six square miles of the City of Durham falls in the watershed boundary and is subject to Phase II stormwater rules.

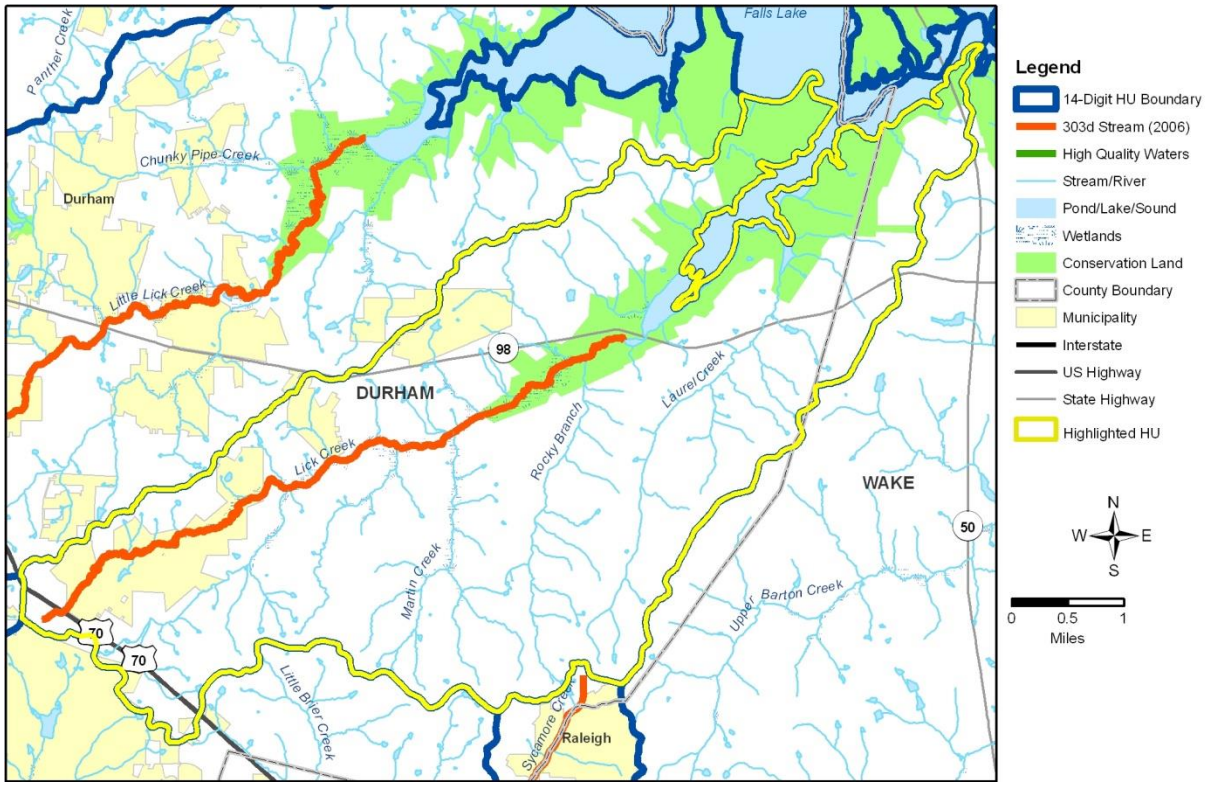
Priorities for this watershed include stormwater management projects and buffer establishment along streams. Priority projects for this watershed have been identified in the LWP Project Atlas (Local Watershed Plan Factsheet), including primarily riparian buffer, nutrient offset, and stormwater retrofit projects.



Lick Creek: 03020201050030

Lick Creek is about 22 square miles in area. The Upper Neuse River Basin Association has developed a watershed restoration plan for the watershed. About 80% of the watershed lies in the Triassic Basin ecoregion. There are 68 miles of stream here, all WSW waters with nearly 8% designated impaired on the state's 303(d) list. Twelve percent of streams are unbuffered. The watershed is only 7% developed, and 78% forested (12 square miles unfragmented). Fourteen percent 14% of land is in agriculture. Three square miles of land is designated conservation area. Two stormwater Best Management Practice (BMP) projects have been constructed by the City of Durham here.

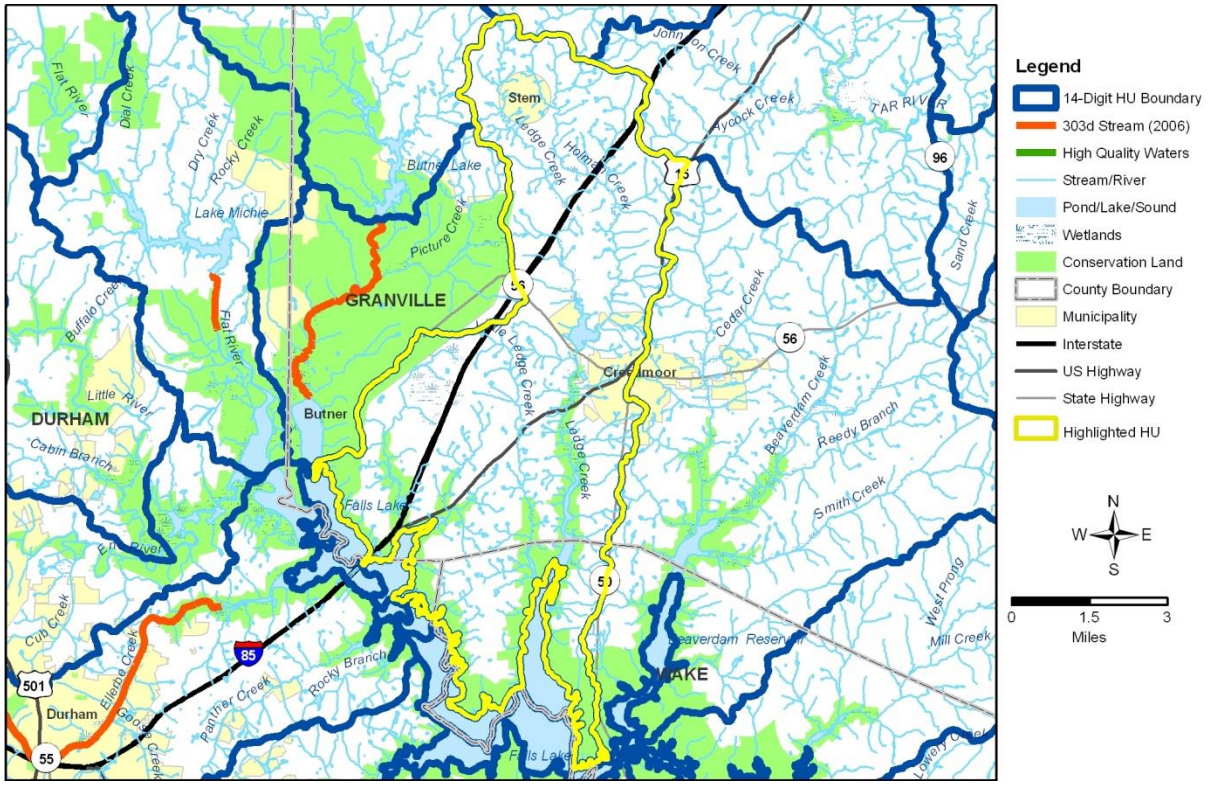
Priority projects for this watershed should include preservation efforts that augment existing natural areas and buffer establishment along streams. Priority projects for this watershed have been identified in the LWP Project Atlas (Local Watershed Plan Factsheet) including primarily riparian buffer projects.



Ledge Creek: 03020201060010

The Ledge Creek watershed is 47 square miles in area and lies predominantly in the Triassic Basin ecoregion. DMS developed a LWP for the Lake Rogers portion of the watershed and is currently pursuing Phase IV implementation of priority projects. There are 145 stream miles in the watershed, all designated WSW. Twenty-two percent of streams are unbuffered. Three percent of the watershed area is open water due to Lake Rogers and the part of Falls Lake within the watershed boundaries. Approximately 62% of the watershed is either forest or wetland. Seven square miles of the forest are considered unfragmented. There are nine square miles of conservation area in the watershed. Twenty-eight NHEOs occur here. Twenty-three percent of soils are hydric (6% type A, 17% type B). Twenty-three percent of the watershed is used for agriculture and 12% is developed. There are four permitted animal operations in the watershed. Three agricultural BMPs have been implemented here to help improve water quality in Falls Lake.

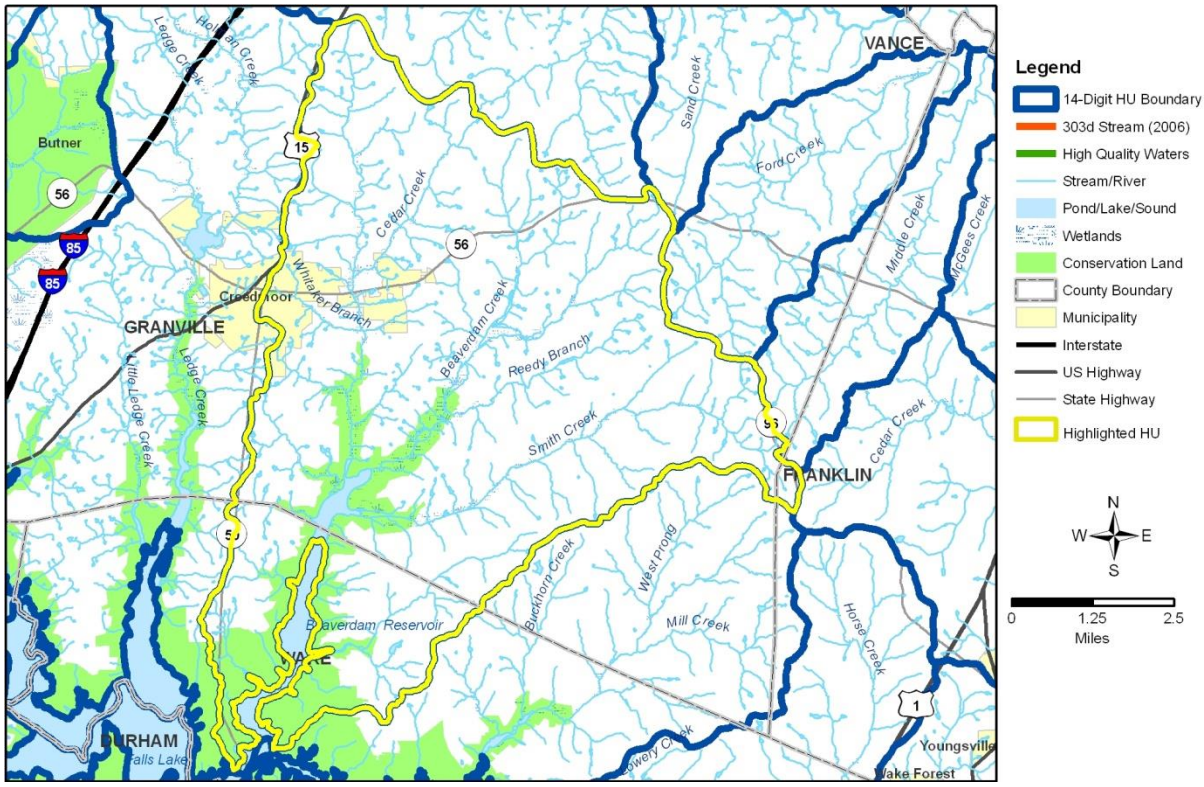
Priorities for this watershed include preservation and restoration that extends the forest and creates forested corridors. Buffer projects are also needed here. Priority projects for this watershed have been identified in the LWP Project Atlas (Local Watershed Plan Factsheet) and are predominantly nutrient offset and stream and wetland preservation projects.



Beaverdam Creek: 03020201060020

The Beaverdam Creek HU lies primarily in the Triassic Basin and covers 52 square miles. There are 161 miles of stream, 136 of them designated WSW. Fifteen percent of streams here lack woody buffers. One-and-a-half percent of the watershed is open water where watershed boundaries incorporate a small part of Falls Lake. Most of the watershed is wooded (69% forest or wetlands, 14% unfragmented forest). Only 12% of the soils are hydric, type B only. Six percent of the watershed is developed with less than 1% impervious surface. Another 23% is used for agricultural purposes including eight permitted animal operations. Over six square miles is dedicated conservation area including 1.6 square miles SNHA. There are 21 documented NHEOs here as well.

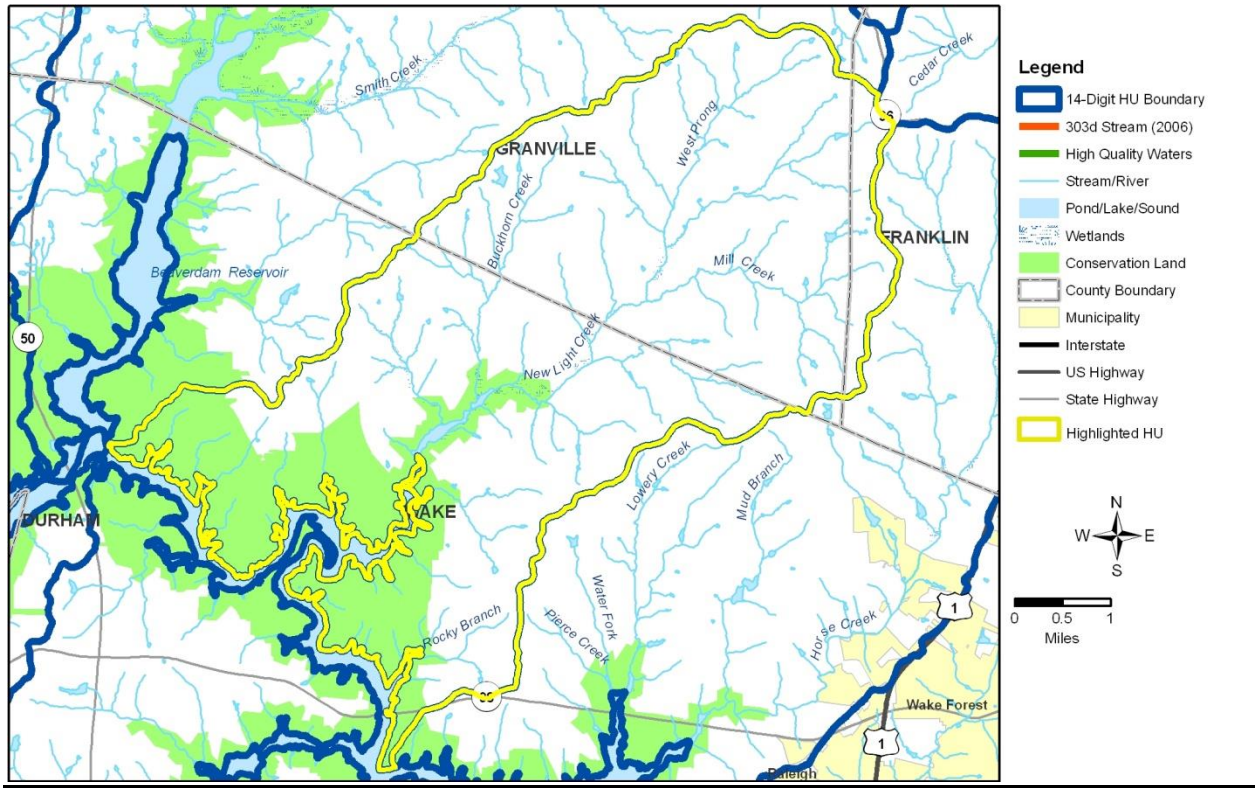
Priorities for this watershed are similar to the other minimally developed watersheds draining into Falls Lake; preservation and restoration of riparian corridors and buffers. Stream restoration and stabilization should be implemented where feasible.



New Light Creek: 3020201065010

The New Light Creek watershed is 27 square miles with 65 miles of streams, with only 8% lacking wooded buffers. Seventy-seven percent is forested or forested wetlands. Seventeen percent of the watershed is used for agriculture. There are six permitted animal operations here. This watershed drains into Falls Lake.

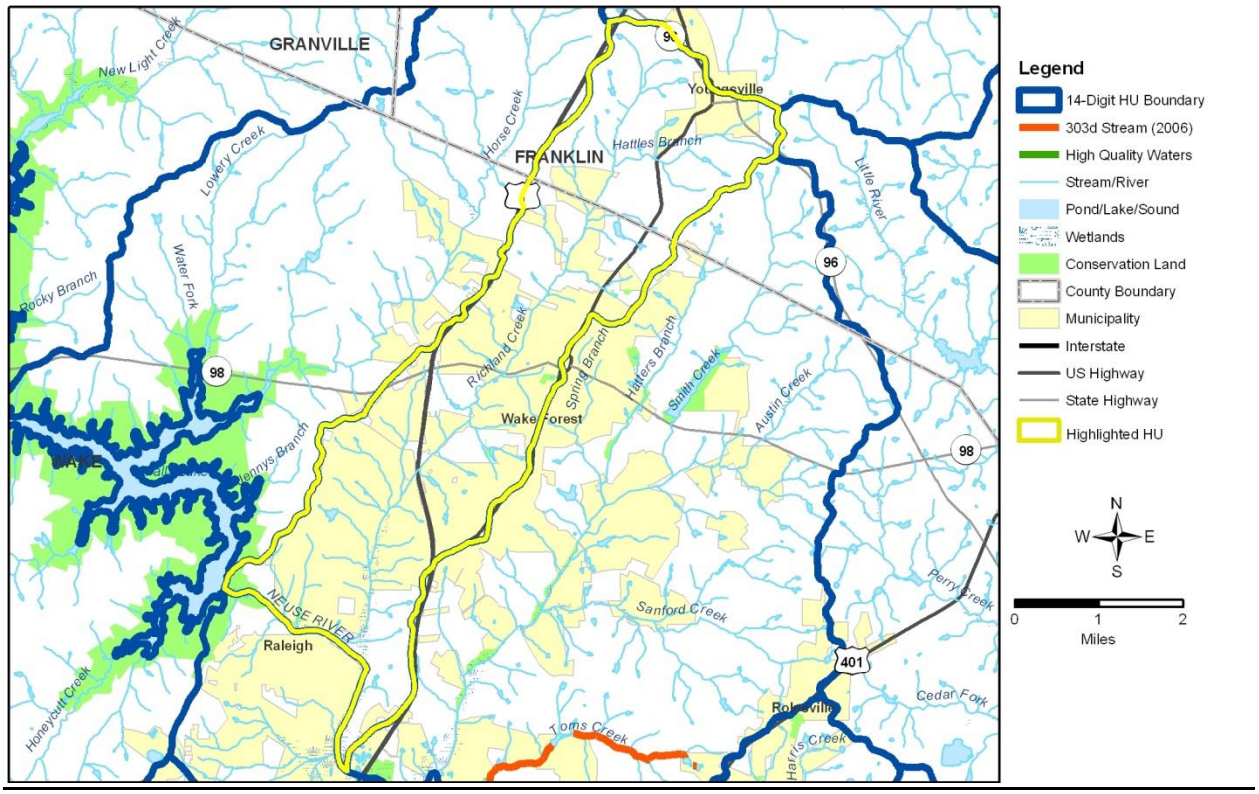
High priority projects for this watershed should address agricultural inputs.



Richland Creek: 03020201070060

The Richland Creek HU is approximately 16 square miles and lying entirely in the Northern Outer Piedmont ecoregion. There are 45 miles of streams in the watershed, 34 miles of which are designated WSW. Thirty-nine percent of streams are unbuffered. The watershed is 44% forested and approximately 18% agriculture. Thirty-seven percent of the HU is developed with over 8% imperviousness. Portions of Raleigh, Wake Forest, and Youngsville account for most of this imperviousness are subject to Phase II stormwater regulation.

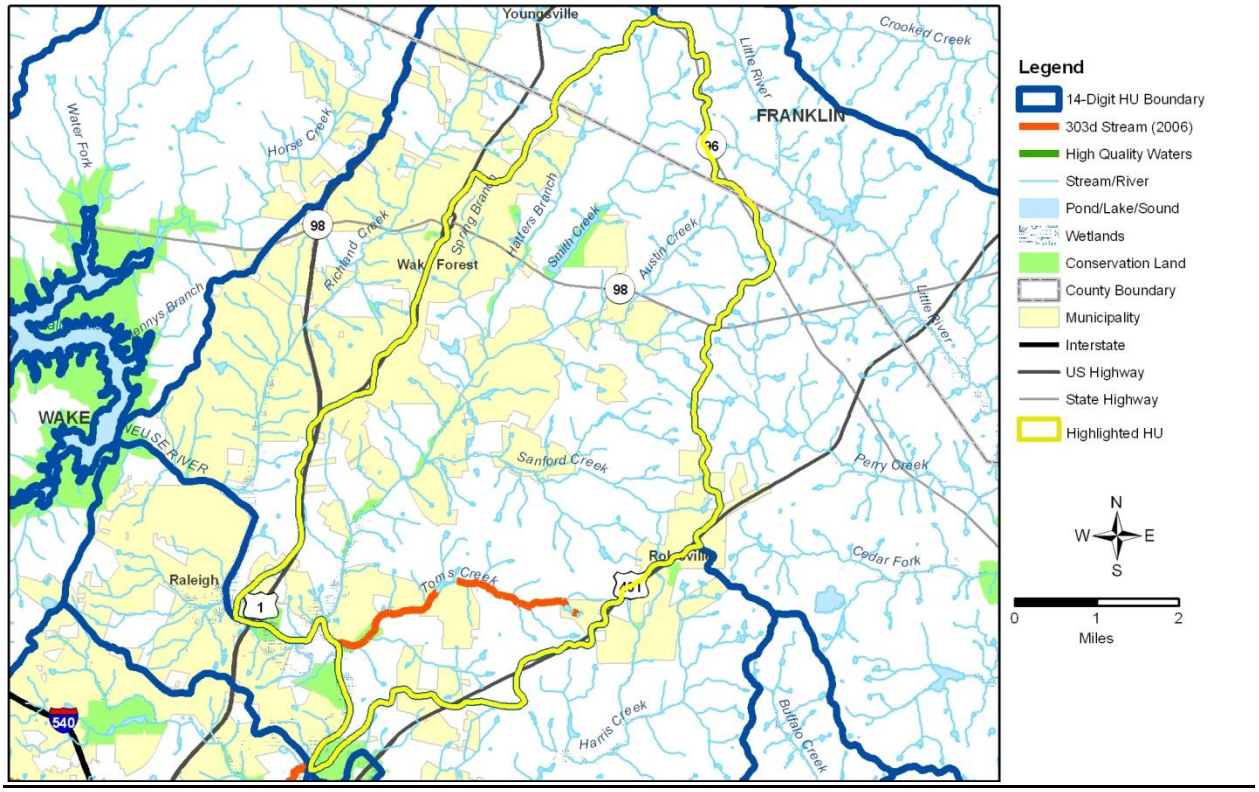
Priorities for the Richland Creek watershed are to establish buffers where absent or inadequate and stream stabilization and restoration. Stormwater projects are critical for developed areas in the watershed.



Toms Creek: 03020201070070

The Toms Creek watershed covers about 29 square miles and contains 79 miles of streams. Over seven miles are designated WSW and 28% of streams lack wooded buffers. Four percent of streams here are impaired. The HU is 21% developed with 4% impervious surface. Portions of five municipalities here are subject to Phase II stormwater regulations. Fifty-four percent of the watershed is forested, including 6 square miles unfragmented, interior forest. Nearly one-quarter of land here is used for agriculture. DOT has planned three miles of TIP projects in the watershed. CWMTF has completed five projects here and sponsored a detailed watershed assessment project conducted by the Watershed Assessment and Restoration Project in DWQ.

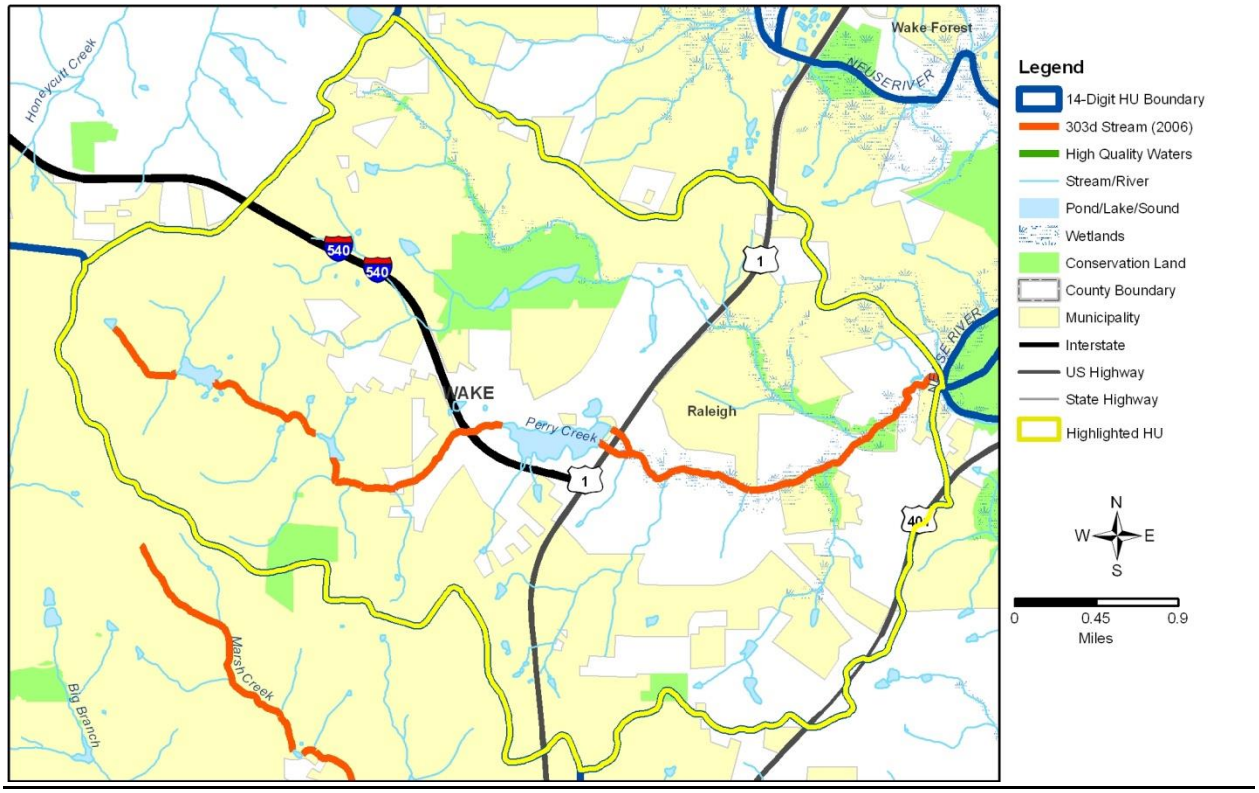
Priorities for this HU include buffer and stream restoration and enhancement. Stormwater projects are recommended for developed areas in the municipalities.



Perry Creek: 3020201070100

The Perry Creek HU is 12 square miles in area and has 28 miles of streams, two-thirds of which are unbuffered. Twenty-three percent of the watershed is forested with six percent used for agriculture. The watershed is situated in the heart of the City of Raleigh and has about 17% imperviousness. Twenty-one percent of the streams are 303(d)-listed. The watershed is subject to Phase II stormwater regulations.

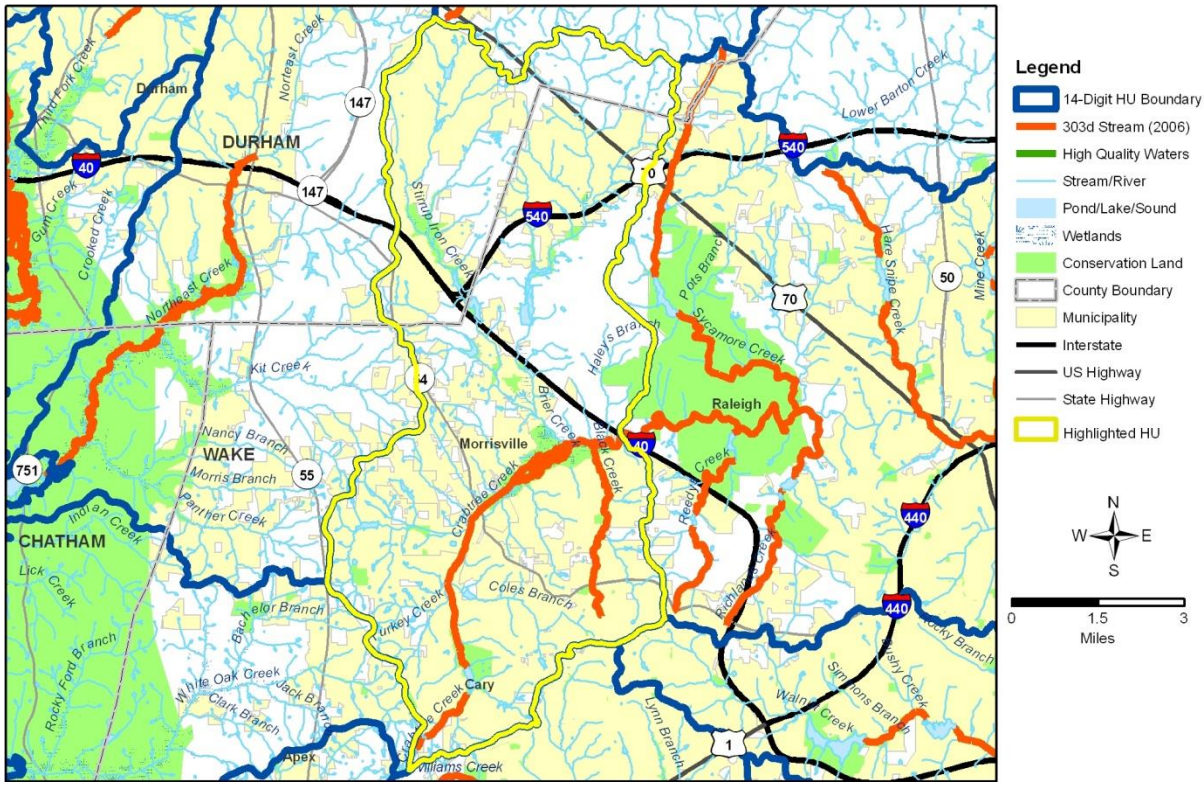
Highest priority projects for Perry Creek are BMPs that offset the impacts of impervious surface. In riparian areas with degraded banks and riparian areas, bank stabilization and woody buffer plantings are priority.



Upper Crabtree Creek: 03020201080010

Upper Crabtree Creek is comprised of 53 square miles of the Piedmont, predominantly in the Triassic Basin ecoregion. There are 150 miles of stream and 2.5% of the HU area is open water. Over half the streams are unbuffered (54%) and 6.5% are 303(d)-listed, including Black Creek and the headwaters of Crabtree Creek. Fifty-three percent of the watershed is developed including much of the towns of Morrisville and Cary. Thirty-five square miles of the watershed is subject to Phase II stormwater rules. There is an estimated 16% imperviousness in the watershed and related stormwater issues are evident here. Agricultural land use here is low (10%) while there is still a relatively large amount of forested area (35% total, 6% unfragmented). One WRC and one Section 319 project can be found in the watershed. DOT has planned 18 miles of road projects in the watershed.

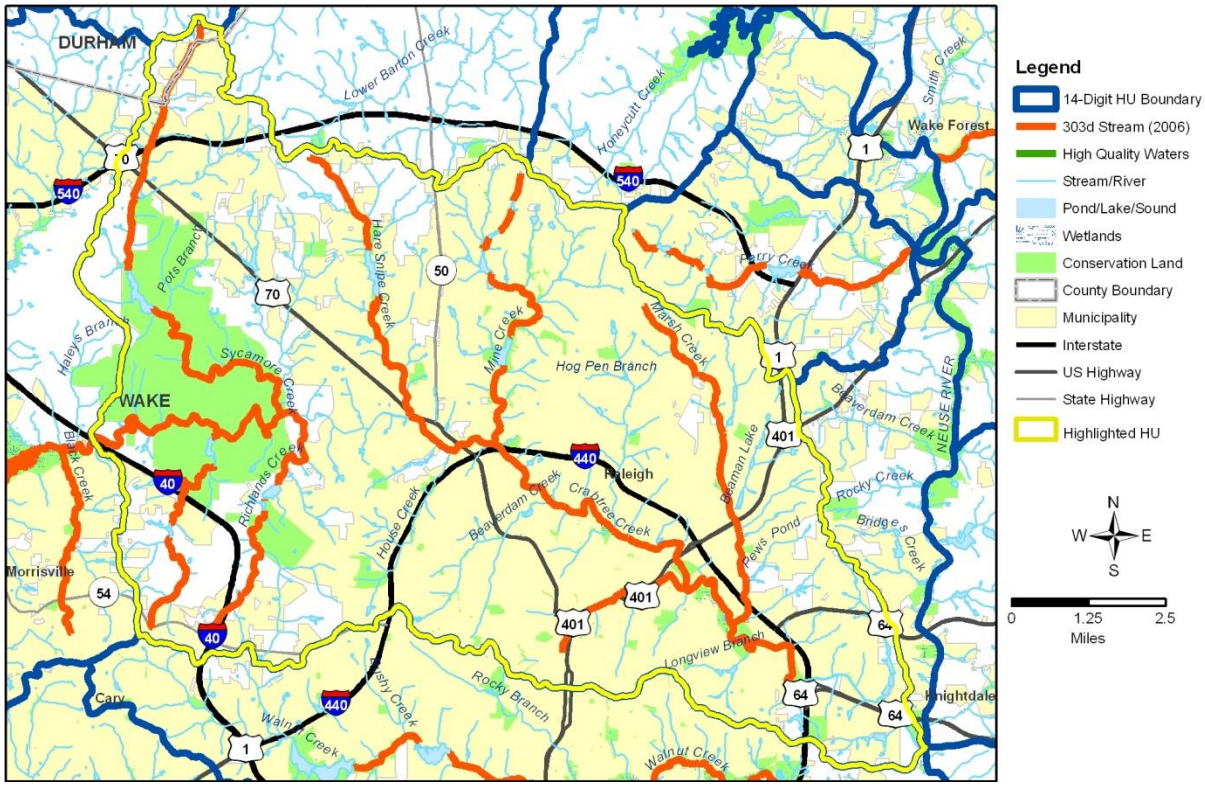
Highest priorities for Upper Crabtree Creek include projects that address stormwater runoff and establish riparian buffers.



Crabtree Creek: 03020201080020

This segment of Crabtree Creek is 93 square miles in area and lies predominantly in the Northern Outer Piedmont ecoregion. Approximately 209 miles of stream run through this watershed. Twenty-six percent of these are listed as impaired on the state's 303(d) list, including Richlands Creek, Sycamore Creek, Hare Snipe Creek, Mine Creek and two major segments of Crabtree Creek. Fifty-six percent of streams are unbuffered. The watershed is highly developed (67%) with a high level of imperviousness (16%). Seventy-six square miles of the watershed are subject to Phase II stormwater regulations. Only 27% of the watershed is forested while 5% is dedicated to agricultural use. There are eight permitted animal production operations here. Forty-eight NHEOs have been documented here and 9 square miles are dedicated SNHA. Two CWMTF, three local land trust, and one WRC projects have been implemented in the watershed. DOT has planned 12.4 miles of TIP road projects here.

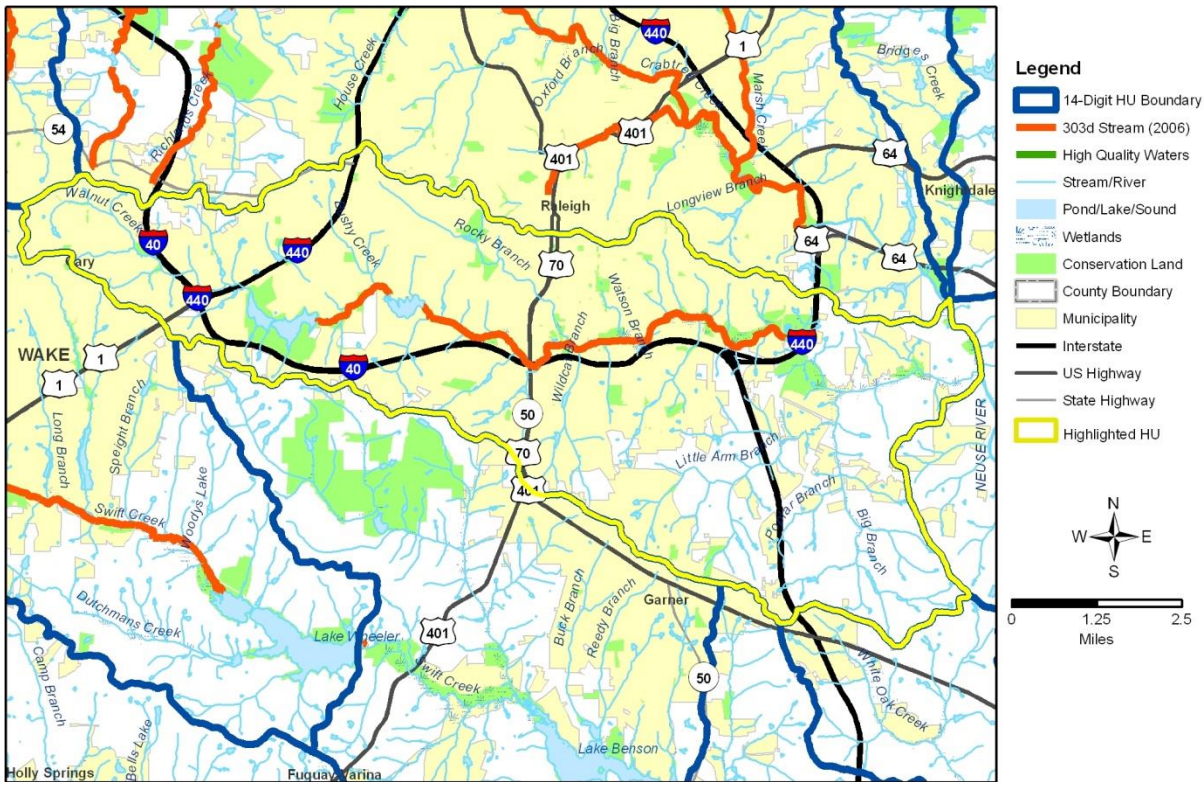
Stormwater and buffer projects are the highest priorities for the Crabtree Creek watershed.



Walnut Creek: 03020201090010

The Walnut Creek watershed covers a 46 square mile area of the Northern Outer Piedmont. There are 101 stream miles here including over 6 miles of 303(d)-listed impaired streams. Fifty-two percent of these streams lack significantly woody buffers. Approximately 62% of the watershed is developed, 32 square miles of which are subject to Phase II stormwater regulations. About 16% of the watershed is considered impervious. Twenty-nine percent is forested or in wetlands while only 7% is used for agriculture. One CWMTF and 4 Section 319 watershed improvement projects have been completed here.

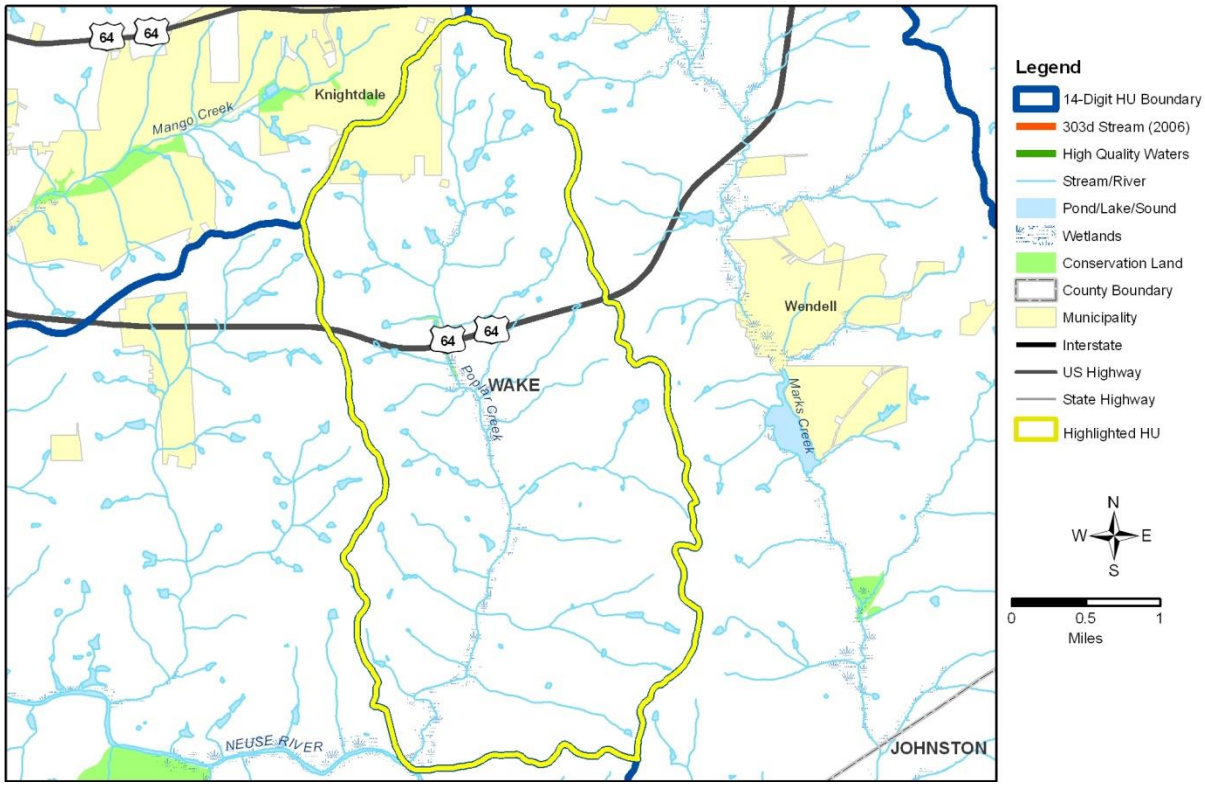
Projects that improve the instream condition of Walnut Creek are a priority here. Stormwater and buffer projects are critical.



Poplar Creek: 03020201100010

The Poplar Creek watershed is one of five HUs included in the Wake-Johnston Collaborative Local Watershed Planning area (WJCLWP). It is a small watershed covering only about nine square miles. There are 26 miles of stream here, 27% of which are not adequately buffered. Seventeen percent of the area is developed, mostly low-density residential with a portion of the City of Knightdale in the north. Approximately 35% of the watershed is used for agriculture and 47% is forest or wetland. DOT has planned two miles of TIP projects here.

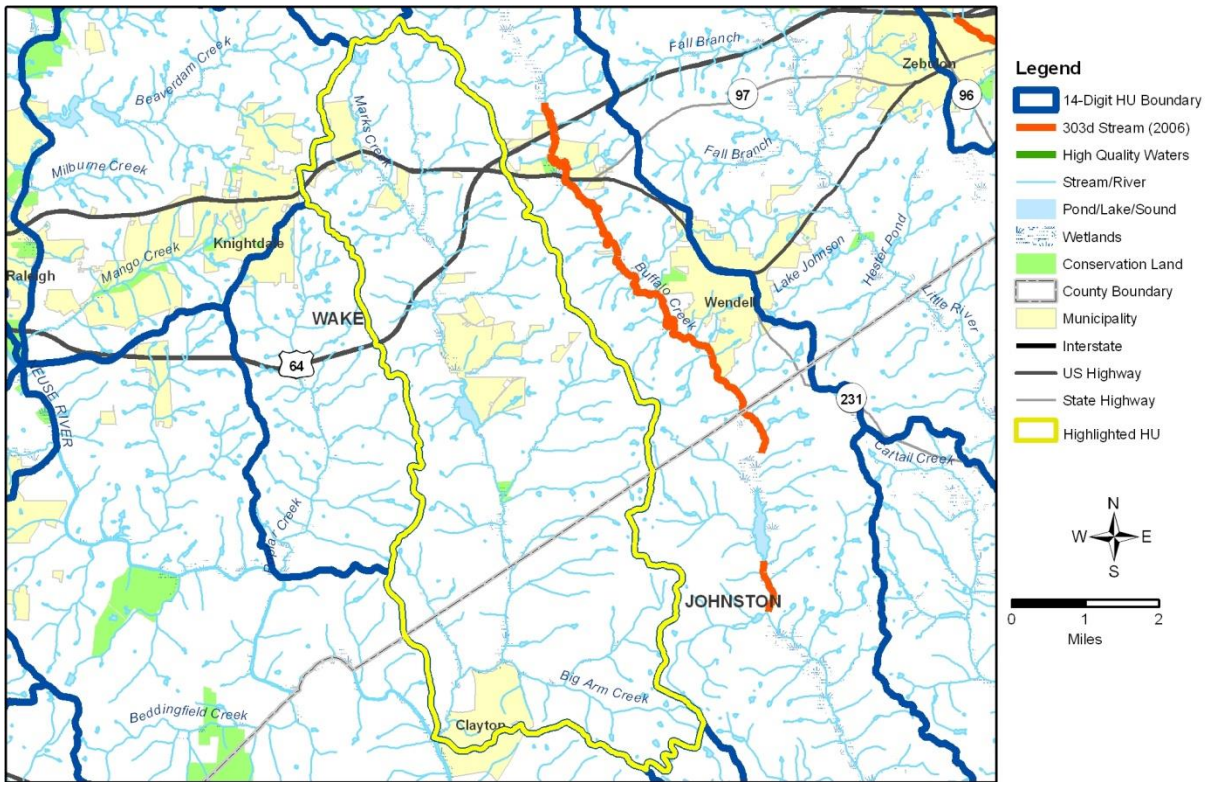
Preservation of intact riparian corridors is important in Poplar Creek. Restoration of streams and buffers are high priorities for the watershed.



Marks Creek: 03020201100020

Marks Creek is also one of the watersheds of the WJCLWP. It covers 29 square miles and includes 69 miles of stream (17% unbuffered). Only 7% of the watershed is developed with less than one percent impervious surface total. Sixty-one percent of the watershed is forested, including a small amount of wetlands. Six square miles of this forest is unfragmented. Thirty-one percent of the land area is used for agriculture. CWMTF has sponsored six watershed improvement projects in this HU. There are three miles of planned TIP projects here as well.

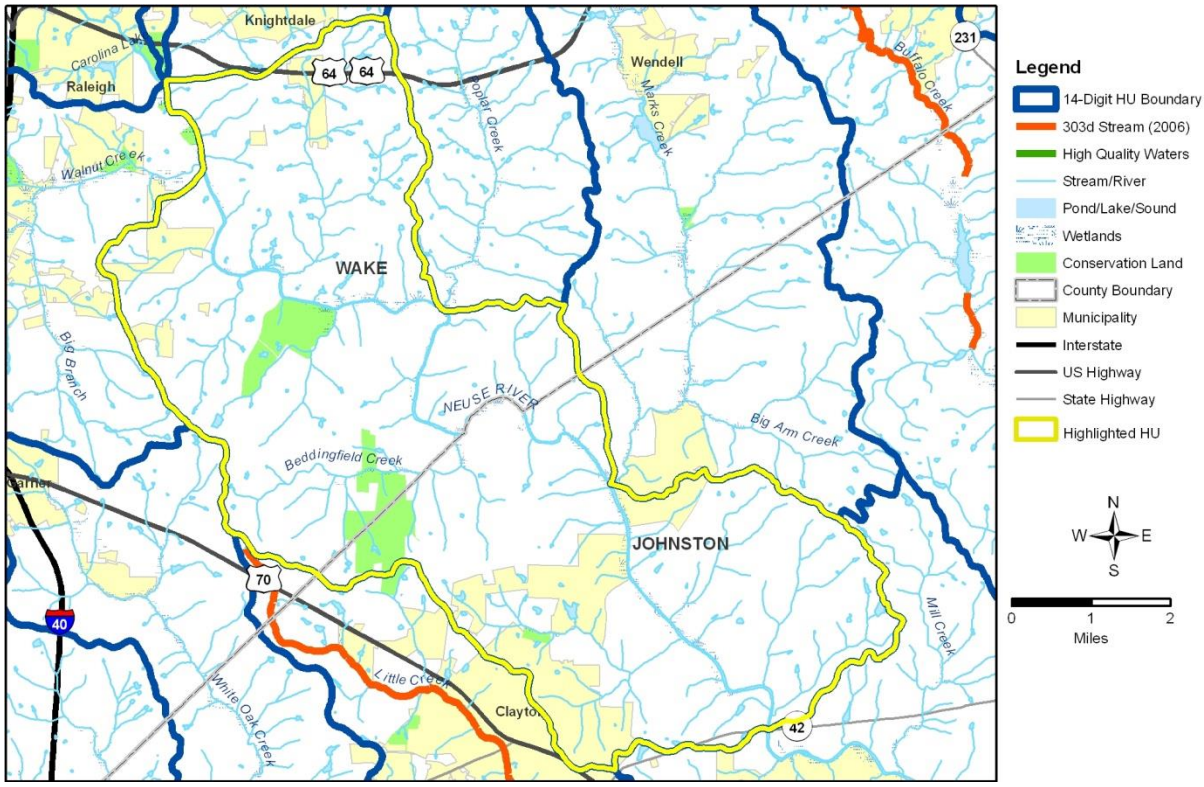
Priority projects for the watershed will address streambank erosion and absent or inadequate wooded buffers in the riparian zone. The large amount of forested area here indicates good opportunities for preservation and habitat reconnection via corridors.



Beddingfield Creek: 03020201100030

The Beddingfield Creek watershed encompasses a large segment of the Neuse River downstream of the City of Raleigh. Most of this HU is included in the WJCLWP study area is spans approximately 41 square miles. There are 104 miles of stream here with 21% unbuffered. Almost 25% of the area is designated WSW by DWQ. The watershed houses 13 permitted animal operations and 33% is agricultural land. Fifty-five percent of the area is forest or wetland, and 7.6 square miles of the forest is unfragmented. A small portion of the watershed is designated SNHA (1.7 square miles). About 10% of soils here are hydric. Eleven percent of the watershed is developed with 1.3% imperviousness concentrated primarily in the vicinity of the Town of Clayton. DOT has programmed four miles of TIP projects. There is one CWMTF project completed in the watershed. The Triangle Land Conservancy is actively pursuing acquisition in the Beddingfield Creek area to expand current conservation areas.

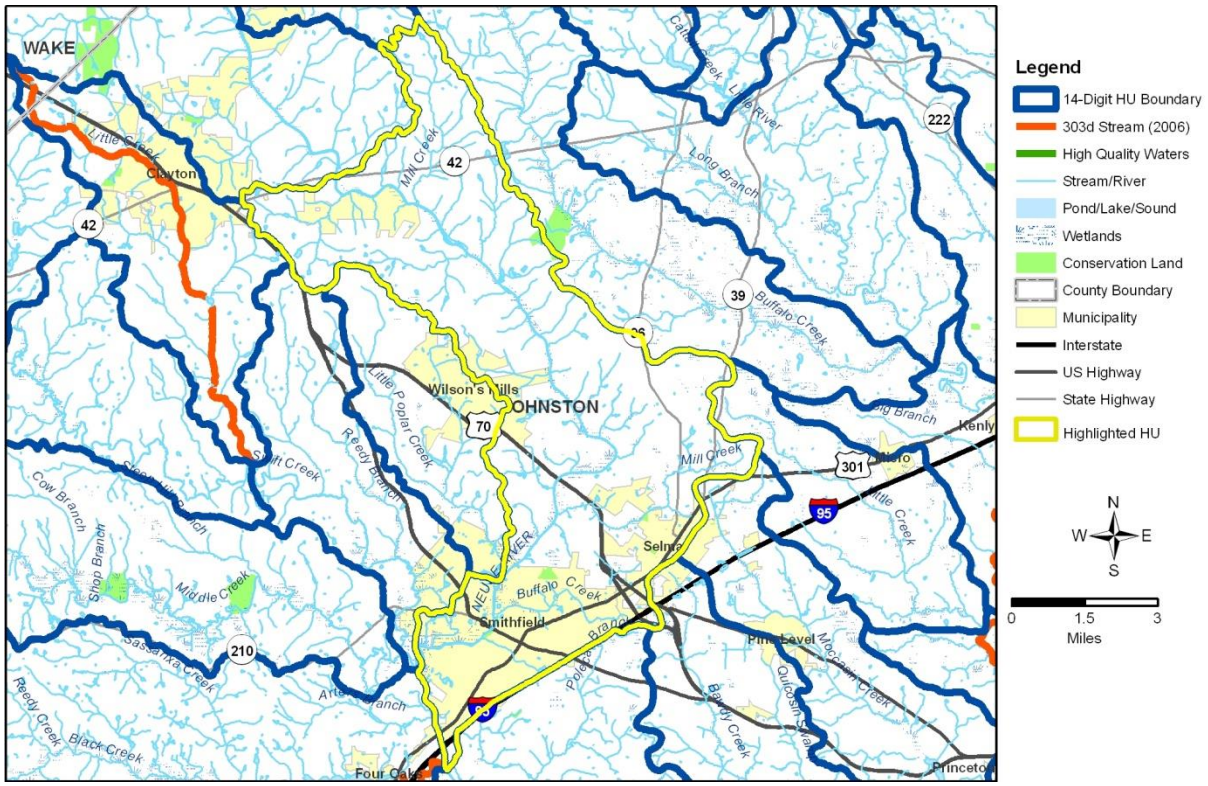
Priorities for this watershed include expansion and reconnection of conservation areas with intact habitat and buffer establishment on eroding streams. Stormwater projects should be sought in developed areas. Stream restoration projects are a priority in localized areas of degradation.



Neuse River: 03020201100050

This Neuse River HU encompasses 52 square miles of the Rolling Coastal Plain ecoregion. Eighty-nine miles of the 106 miles of stream are WSW streams. About one-third of streams lack woody buffers. Forty-five percent of the watershed land cover is forest or wetland. Wetland soils cover nearly half of the area, 17% hydric A and 31% hydric B soils. There are 13 documented NHEOs in the watershed. Thirty-seven percent of land is used for agriculture including 13 animal operations. Seventeen percent of the area is developed approaching 5% imperviousness total. There is one WRC project and one 319 project in this part of the Neuse River. Nine miles of TIP projects are scheduled by DOT here.

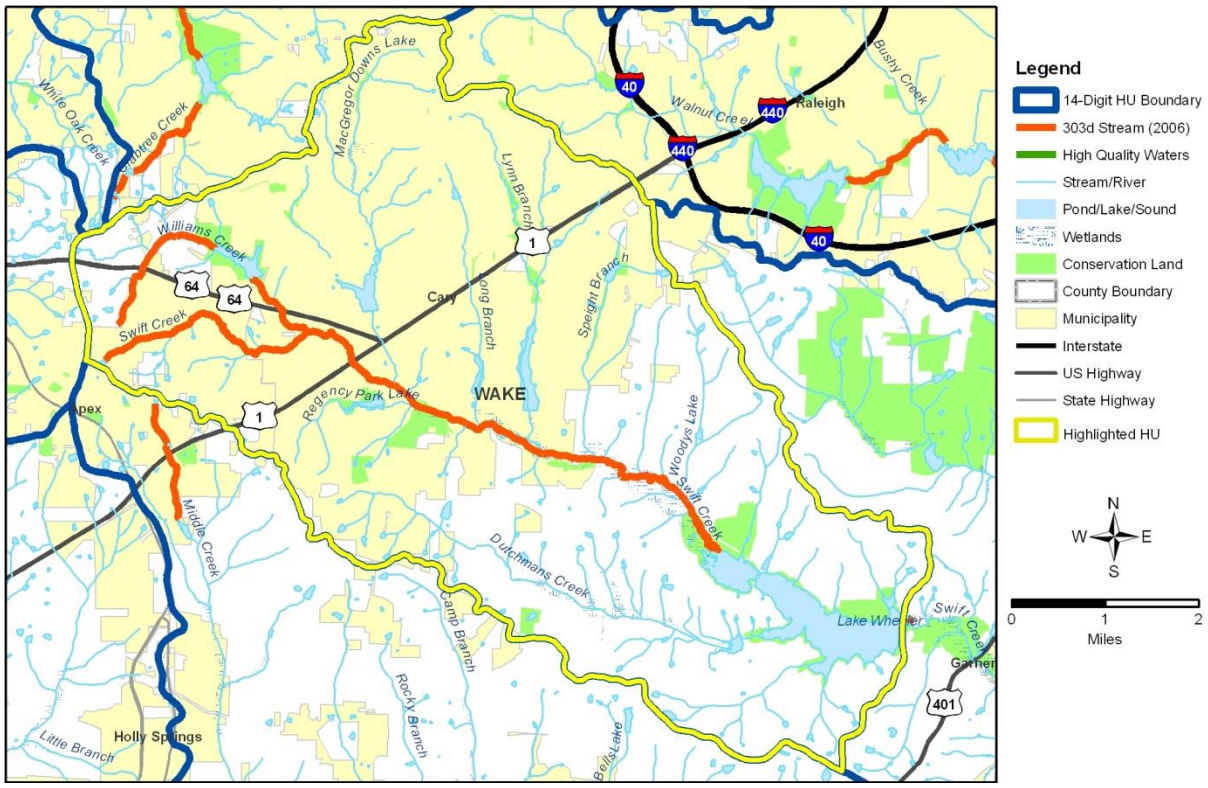
High priority projects here should address buffer and wetland restoration needs. Stormwater management projects are needed to offset runoff, especially near the Town of Smithfield. As the town expands, impervious surface will increase, surpassing the critical 7% benchmark.



Upper Swift Creek: 03020201110010

Much of the 36 square mile Swift Creek watershed lies in the Town of Cary. Clean Water Management Trust Fund sponsored a detailed study of the watershed (Watershed Assessment and Restoration Project Report, 2003) and DMS followed this with the Upper Swift Creek LWP (Local Watershed Plan Fact Sheet) Currently DMS is pursuing Phase IV priority projects from the plan's Project Atlas. It includes 84 miles of stream running through this section of the Northern Outer Piedmont ecoregion. Forty-five percent of the streams here are unbuffered. Over 3.6 square miles of open water occur in the form of multiple smaller lakes on tributaries of Swift Creek and one major lake on the mainstem, Lake Wheeler. A small amount (8%) of agriculture persists here. Fifty-four percent of this watershed is developed and 10% is considered impervious. Nineteen square miles (53%) is required to follow Phase II stormwater regulations. DOT has planned 2.5 miles of TIP projects. The mainstem of Swift and all of Williams Creek is impaired, resulting in 11% of the stream total on the 303(d) list. Despite the large amount of development, 34% of the watershed is forested. There are 1.7 square miles of SNHA in the watershed. Triangle Land Conservancy maintains one conservation area called Swift Creek Bluffs and the Town of Cary maintains another called Hemlock Bluffs. These two natural areas are home to a relic eastern hemlock forest community.

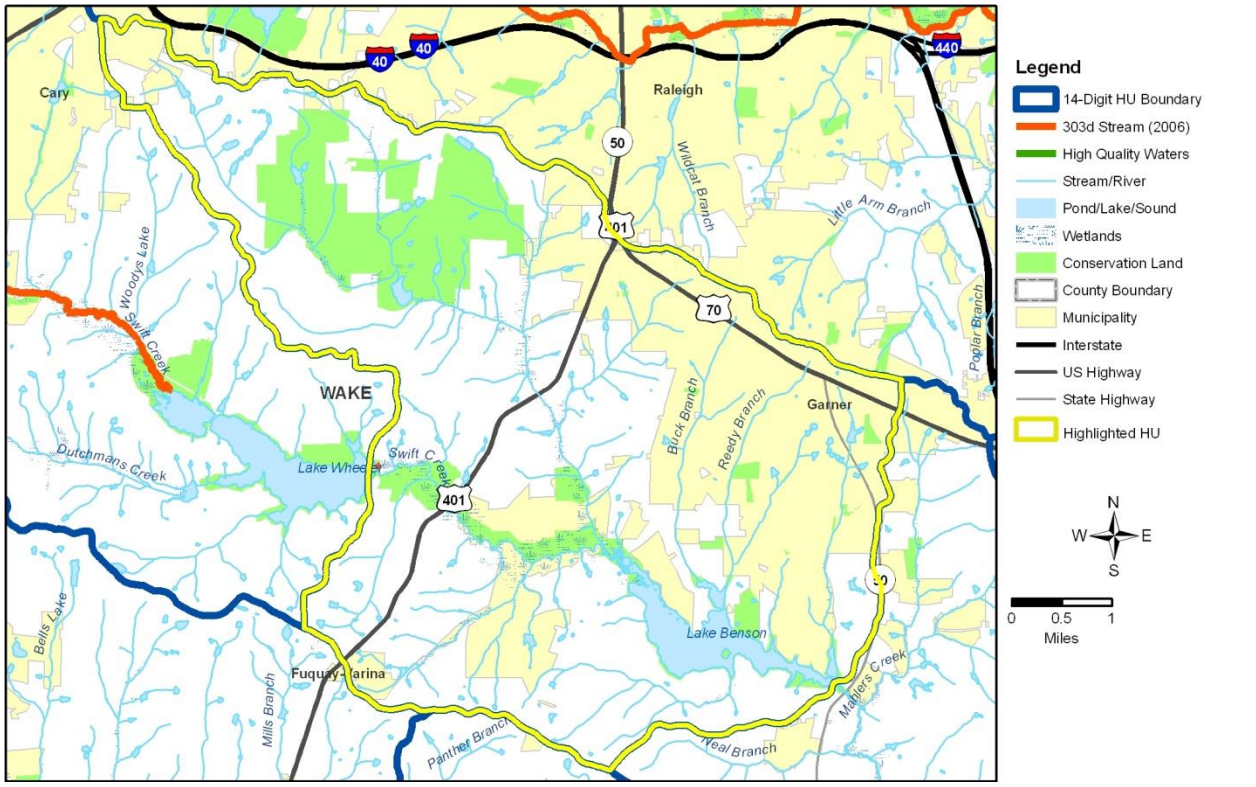
High priorities for this watershed are hydrologic restoration projects including stream enhancement, dam removal and flow management from impoundments. Preservation and corridor enhancement are a high priority for maintaining rare habitats. Stormwater management projects are critical in the Cary vicinity to improve water quality in the creek and Lake Wheeler. DWQ developed a Total Maximum Daily Load (TMDL) plan to guide improvement of the benthic macroinvertebrate community. This "biological TMDL" is the first of its kind for NC and is aimed at removing Swift and Williams creeks from the 303(d) list.



Swift Creek: 03020201110020

This is the second HU comprising the Upper Swift Creek LWP study area. It covers 30 square miles and has approximately 76 miles of streams, all designated WSW. Thirty-three percent of streams are unbuffered. Lake Benson accounts for most of the 2.4% open water land cover. There is one surface water intake here. Thirty-seven percent of the watershed is developed with nearly 8% impervious surface. Raleigh, Garner, and Cary each have jurisdiction in the watershed that is subject to stormwater regulation. Forty-three percent of the watershed is forested. Six NHEOs are documented here and there are nearly two square miles of SNHA. Eighteen percent of the HU is agricultural with 7 permitted animal operations. WRC has completed one and CWMTF has completed two watershed improvement projects.

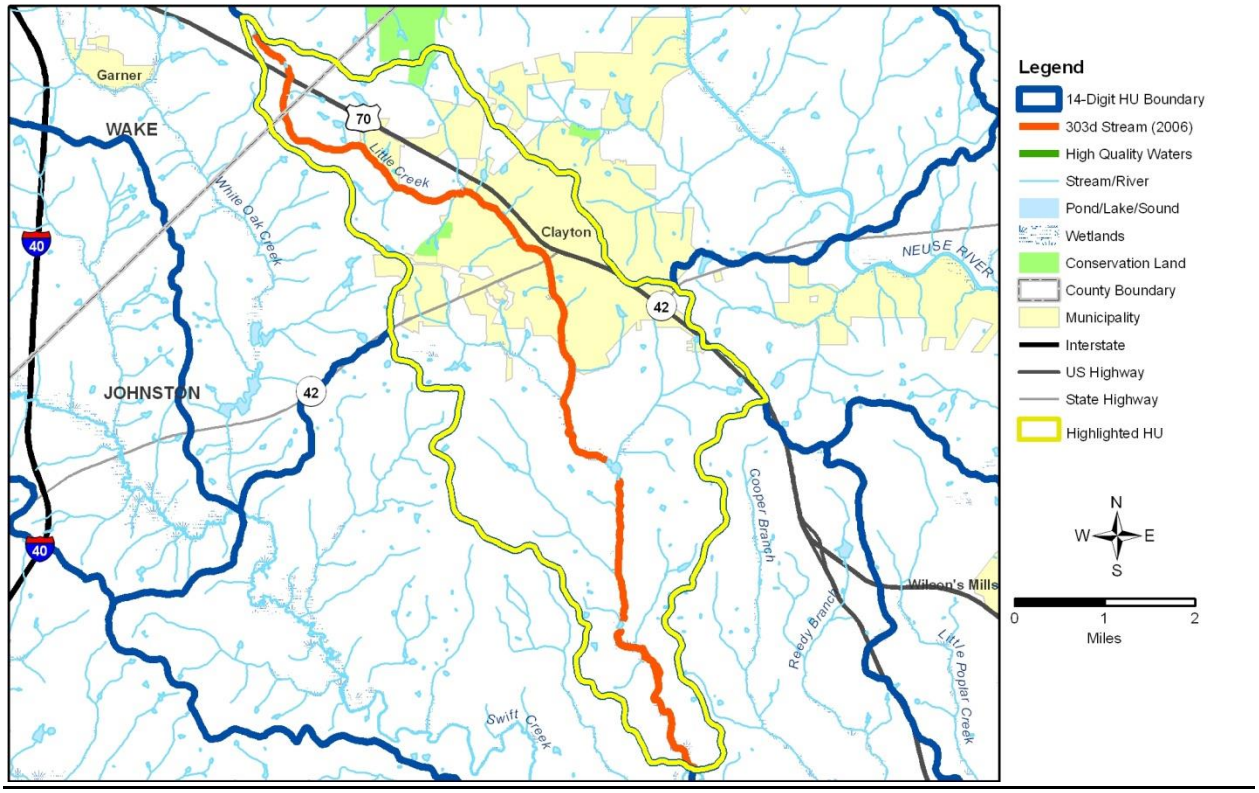
Highest priority for this watershed is to establish wooded buffers in the riparian zone of denuded streams. Stormwater projects that reduce runoff from impervious surfaces is a priority for concentrated development.



Little Creek: 03020201110050

The Little Creek watershed covers 18 square miles with 36 miles of streams (39% unbuffered). One-quarter of the streams here are listed on the state's impaired waters 303(d) list. Thirty-six percent of the HU is forested. A significant portion of the watershed is occupied by western Clayton, accounting for an average of 6% imperviousness. Forty percent of the Little Creek watershed is used for agriculture with nine permitted animal operations.

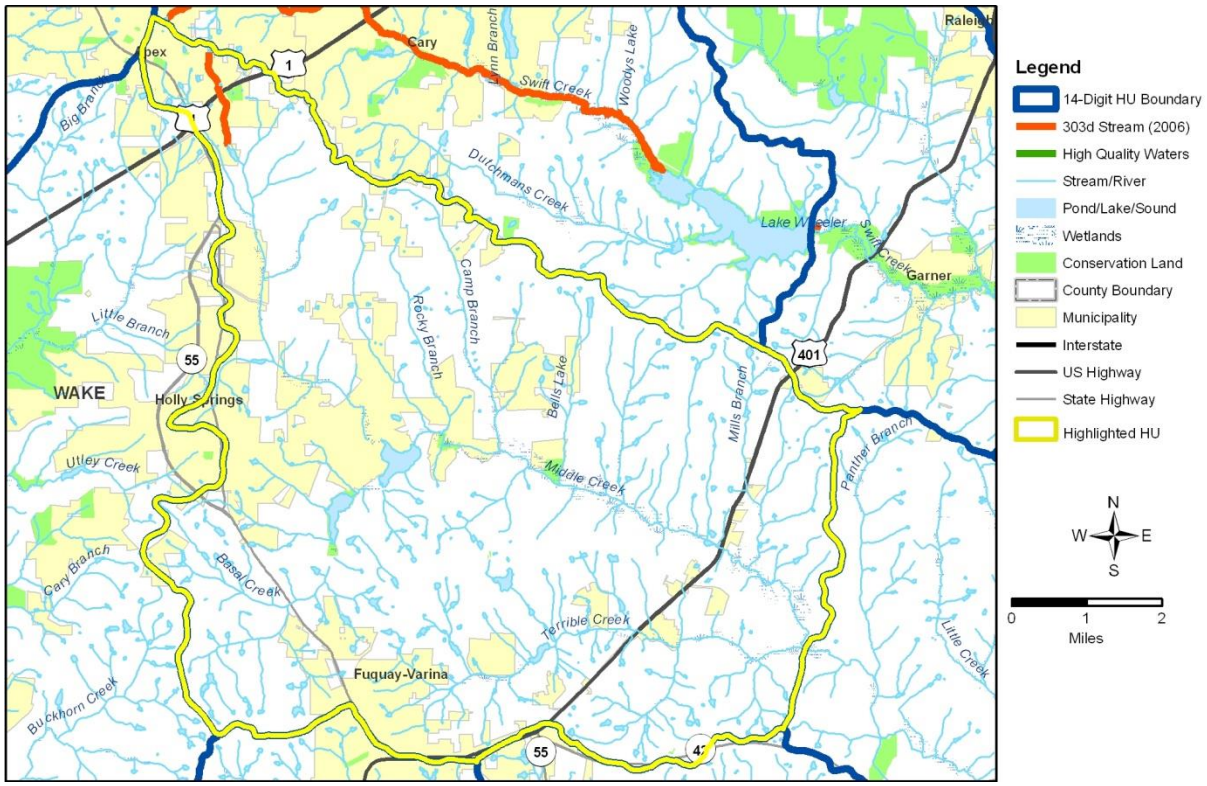
Highest priority projects here address the impacts of agriculture or reestablish degraded buffers. Stormwater BMPs are important in localized areas in Clayton where they can reduce inputs in storm runoff.



Middle Creek: 03020201120010

The Middle Creek watershed covers 57 square miles of the Northern Outer Piedmont (72%) and Rolling Coastal Plain (28%) ecoregions. There are 147 miles of stream here and about 1% open water land cover. One-third of streams are unbuffered. Forty-six percent of land is forested or in wetlands (13.5% hydric type B soils). Twenty-four NHEOs have been documented in the watershed. There are 19 permitted animals operations here and 28% of the land is used for agriculture. One-quarter of the area is developed with 5.2% imperviousness. Twelve square miles are subject to stormwater regulation. DOT has programmed 3.5 miles of TIP projects. There are two agricultural BMPs and one WRC project constructed here.

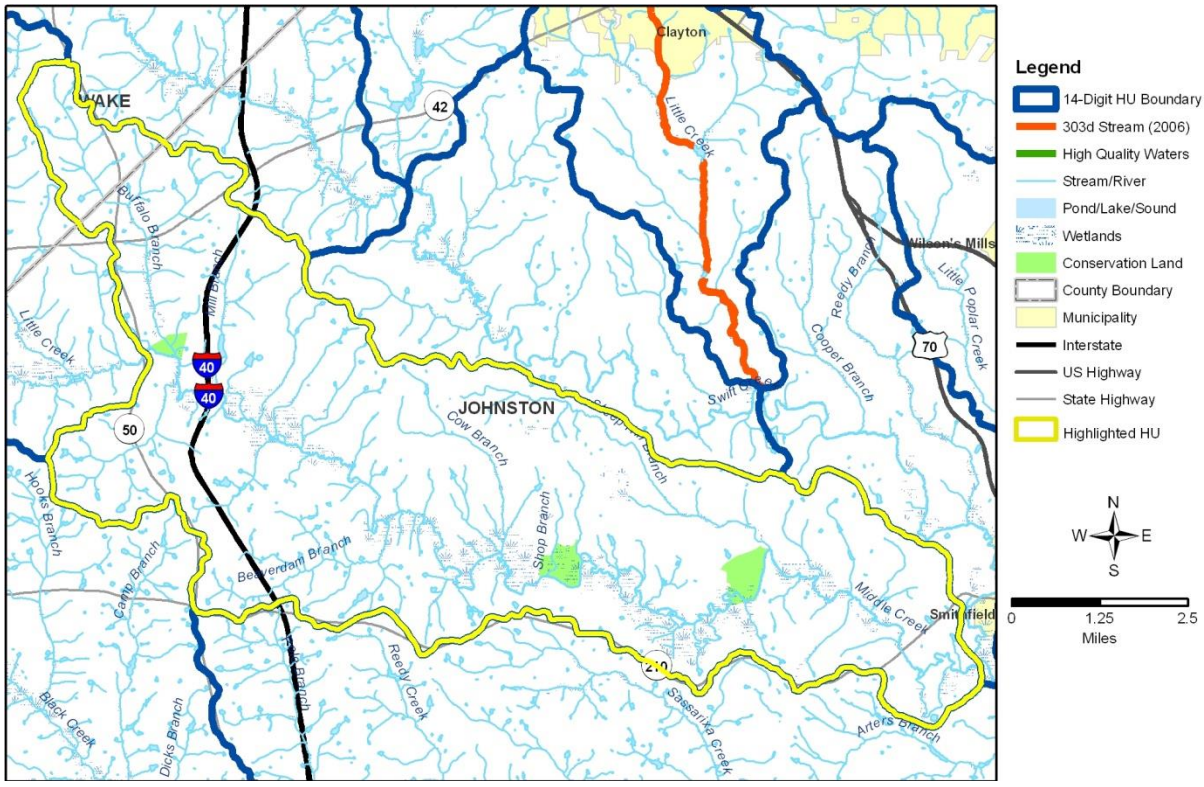
Stormwater management projects are a priority here, especially in the vicinity of Holly Springs and Fuquay-Varina. Buffer and stream restoration projects are critical in areas of bank instability.



Lower Middle Creek: 03020201120030

The Lower Middle Creek watershed is 48 square miles of the Rolling Coastal Plain ecoregion. There are 132 miles of stream here, 31% unbuffered. The watershed is largely agricultural (50%) and houses 32 permitted animal facilities, mostly cattle production. Forty-two percent of the watershed is forested or forested wetland. About 56% of soils are hydric (21% type A, 35% type B). There are 18 documented NHEOs here, as well as two land trust projects, one agricultural BMP and two WRC projects.

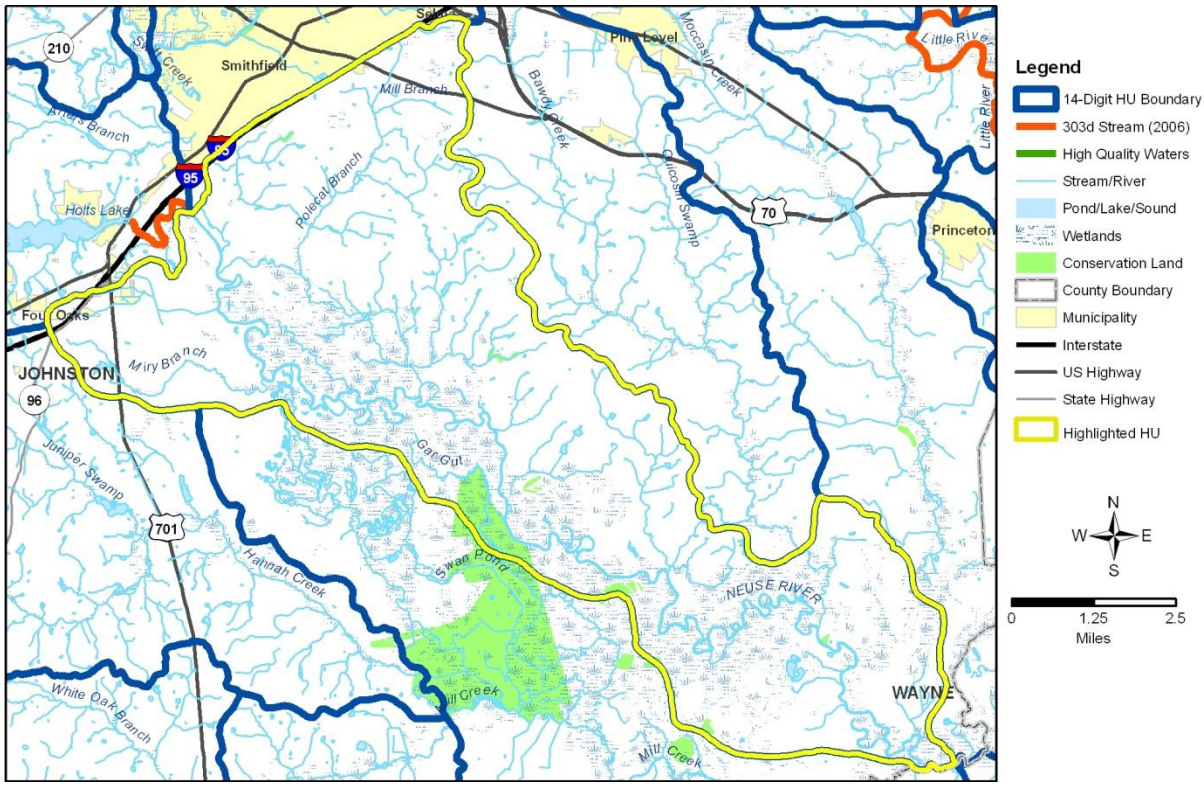
High priority projects for Lower Middle Creek should address the large amount of unbuffered stream and agricultural inputs. Wetland restoration and enhancement projects that improve treatment of runoff are critical here as well.



Neuse River: 030202011400 10

This Neuse River HU covers 53 square miles, comprised mostly of Southeastern Floodplains and Terrace ecoregion. There are 138 miles of stream with more than a quarter of these unbuffered. Thirty-four percent of the watershed is used for agriculture including 18 permitted animal operations. Sixty-two percent is forest or wetland, including 16 square miles of unfragmented forest. Most of the soils here are hydric, 44% hydric A and 43% hydric B. Nine square miles are designated SNHA by the Natural Heritage Program who has also documented 23 NHEOs here. Two agricultural BMPs have been implemented in the watershed as well as one WRC project. DOT has scheduled 4.2 miles of TIP projects.

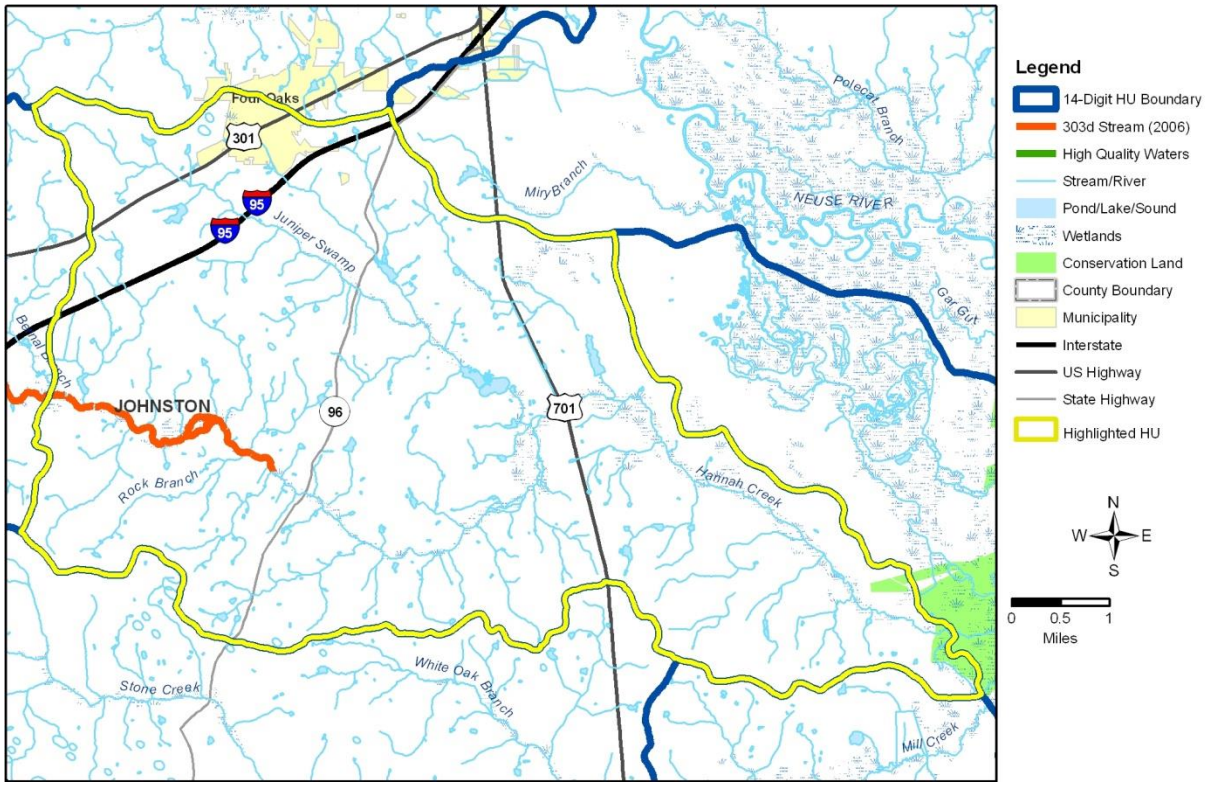
Priorities for the watershed include wetlands restoration and enhancement that contribute to the improvement of water quality downstream in the estuary. Buffer and stream projects in the headwaters will also contribute to the watershed goals.



Hannah Creek: 03020201150020

Hannah Creek includes 34 square miles of watershed area, mostly Rolling Coastal Plains. Forty-two percent of the 102 stream miles lack wooded buffers. A significant reach of Hannah Creek in the western part of the HU is 303(d)-listed, accounting for 2.3% of the total. Seven percent of the watershed is developed. Thirty-eight percent is forested or forested wetland and over 60% of soils are hydric (26% type A, 35% type B). Fifty-four percent of the watershed is used for agriculture. Forty-four permitted animal operations occur here including 32 cattle farms and 12 swine farms. Despite these stressors, the NHP has designated 2.1 square miles as SNHA. DOT has planned 6.4 miles of road improvement projects.

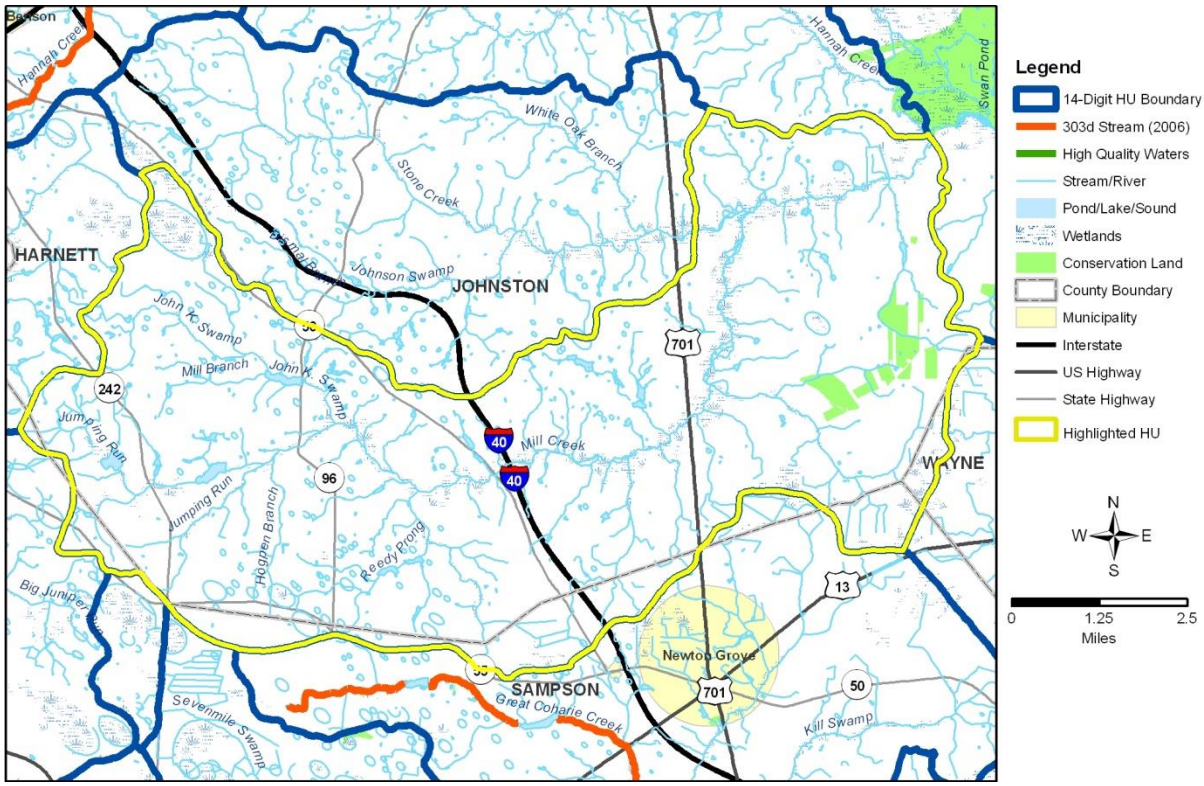
Buffer projects are high priority for this watershed as are wetland restoration and enhancement. Agricultural BMPs should also be implemented where feasible.



Mill Creek: 03020201150040

The Mill Creek HU consists of 61 square miles of land area. It is situated in the Rolling Coastal Plain ecoregion. Forty-one percent of the 151 stream miles here have inadequate buffers. Thirty-nine percent of the watershed is wetlands or forest. Nearly 80% of soils are hydric (28% type A, 51% type B). Twelve NHEOs are documented here. Fifty-five percent of the watershed is used for agriculture. Seven agricultural BMPs have been constructed to manage stormwater runoff. Seventy-five permitted animal operations, including 15 cattle, 25 poultry, and 35 hog farms. There is little development here (5%) with less than 1% imperviousness. CWMTF and WRC have each sponsored one project in the watershed.

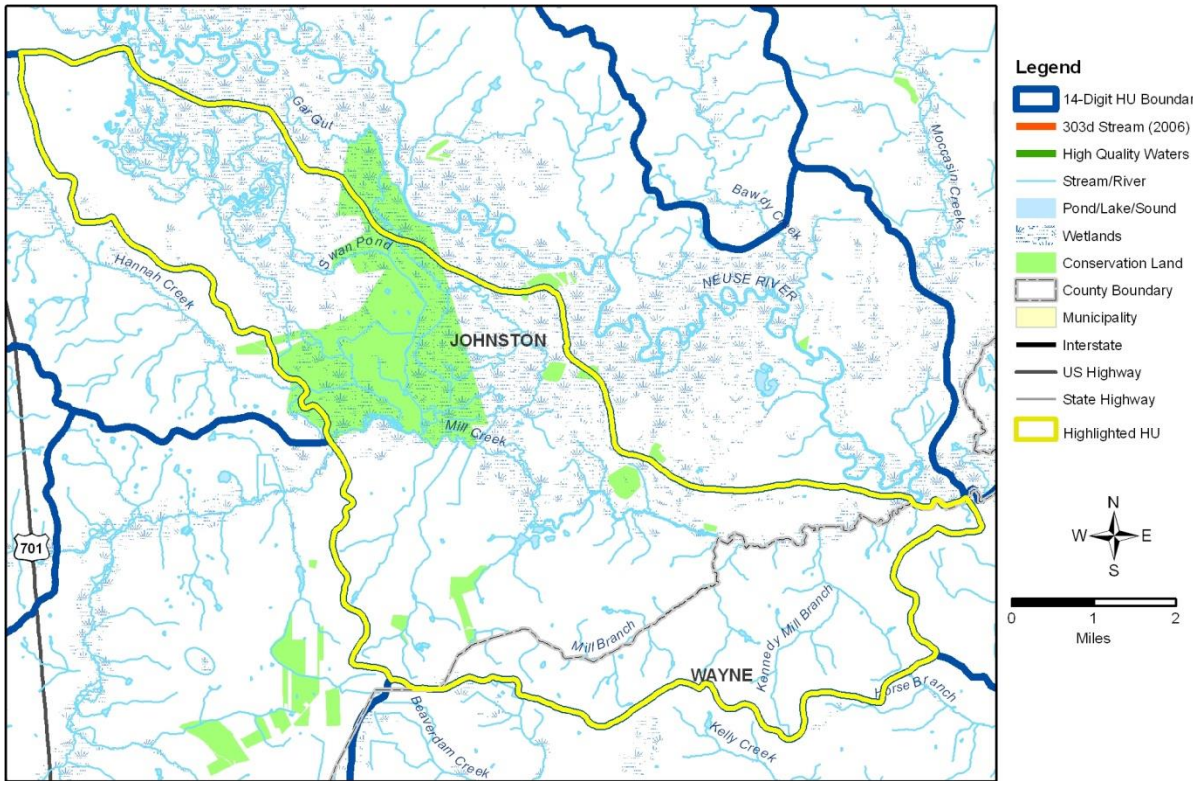
Buffer projects are a high priority for the watershed, but stream and wetland restoration are needed in much of the watershed. Due to the abundance of livestock production here, projects that reduce these inputs are also very high priority.



Lower Mill Creek: 03020201150050

The Lower Mill Creek HU spans 35 square miles of the Southeastern Floodplains and Terraces and the Rolling Coastal Plain ecoregions. Ninety-four miles of streams flow through the watershed with a relatively low percentage unbuffered (14%). There is very little development or imperviousness in this watershed. Sixty-six percent of the area is forested or forested wetland with 13 square miles of unfragmented forest. Soils are predominantly hydric with 46% type A and 27% type B. Thirty-one percent of land is used for agriculture. There are 42 permitted livestock production facilities here including 26 swine farms. There are over five square miles of designated SNHA and 19 NHEOs have been documented here. CWMTF and WRC have each constructed two projects in the watershed. There are also two significant agricultural BMPs built in Lower Mill Creek.

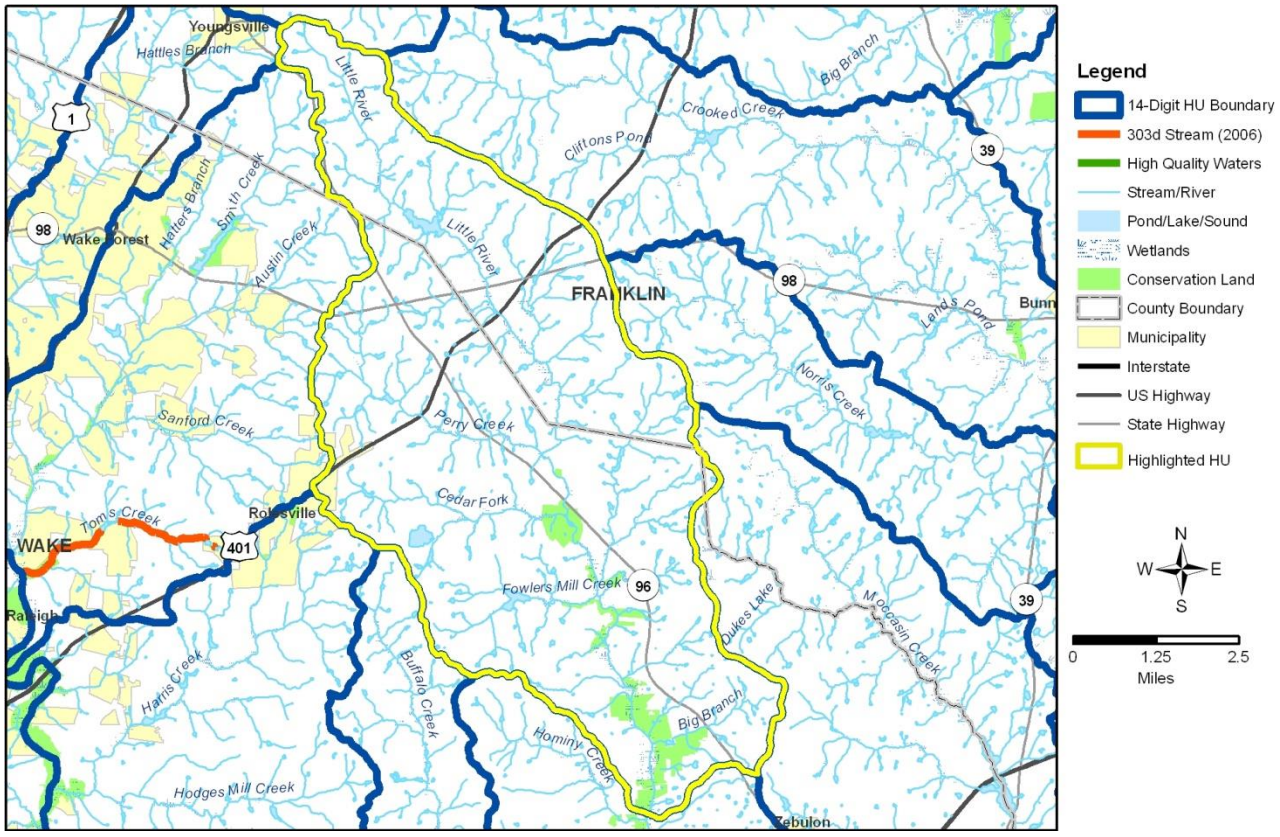
Preservation opportunities that augment the existing assets of SNHAs and unfragmented forests are high priority. Projects that reduce the water quality impacts of row crops and livestock productions are also highly recommended.



Upper Little River: 03020201180010

The Upper Little River watershed covers 43 square miles of the Northern Outer Piedmont. There are 120 miles of stream here, approximately one-third lacking wooded buffers in the riparian zone. There is little hydric soil here. Forty-two percent of the area is forested. Only 7% of the HU is developed with a relatively low imperviousness of 1.1%. Nearly half the watershed is used for agriculture, mostly for crop production. There are six animal production operations here. Seventeen NHEOs can be found here. There are three agricultural BMP projects here as well as one CWMTF project and one WRC project. DOT has programmed 6 miles of TIP projects. The US Army Corps of Engineers is currently investigating the feasibility of a new reservoir in this segment of the Little River.

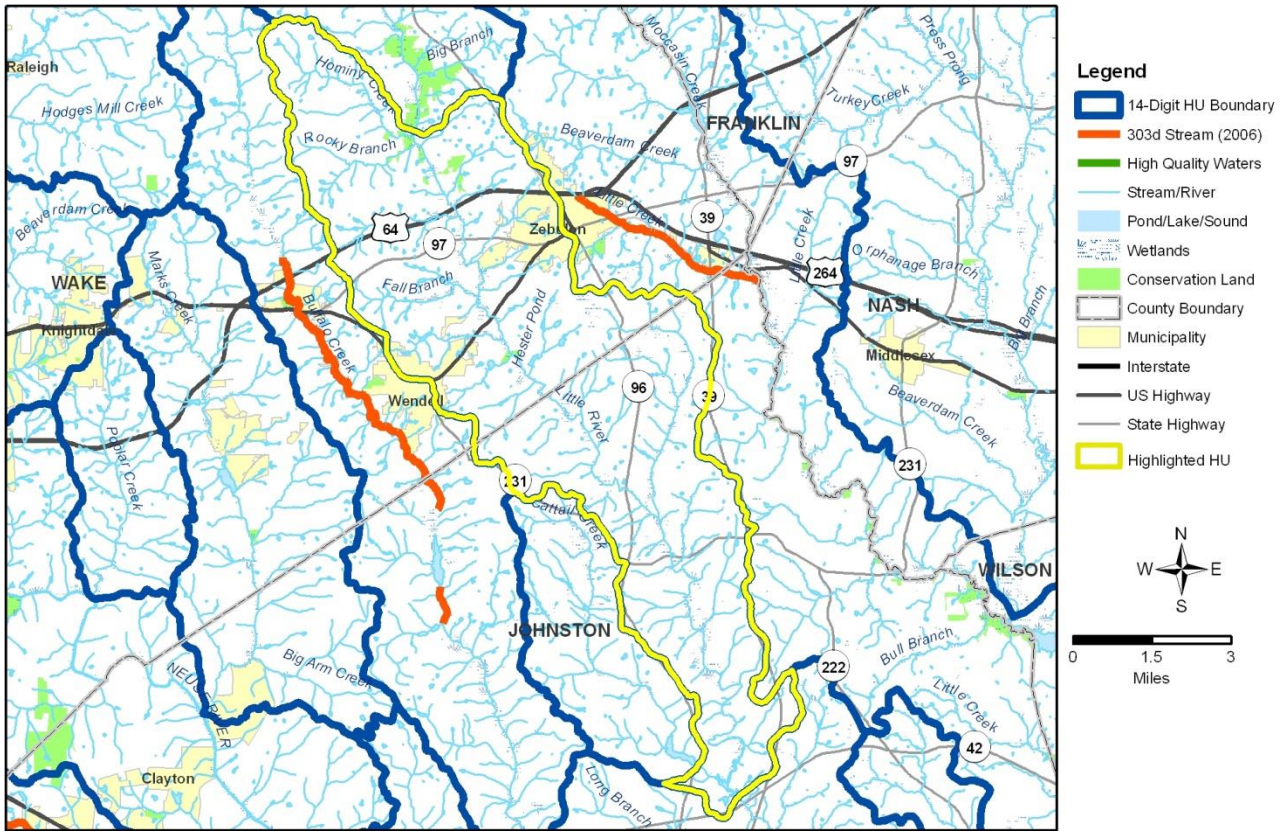
Highest priorities here include buffer restoration and agricultural BMPs that address crop runoff.



Middle Little River: 03020201180020

The Middle Little River is part of the WJCLWP study area and spans 51 square miles of the Northern Outer Piedmont ecoregion. There are 126 miles of stream here, with nearly one-quarter of them unbuffered. There are 34 miles of WSW waters and a single water intake in the river. Fifty-one percent of the watershed is either forest or wetland, with approximately 11% hydric soils. There are 26 documented NHEOs here. Thirty-eight percent of the HU is agricultural land use. There are 10 permitted animal operations, most of them cattle farms. Ten percent of the watershed is developed with a low imperviousness of about 2%. Two land trust projects, four agricultural BMPs, and one WRC project have been implemented here.

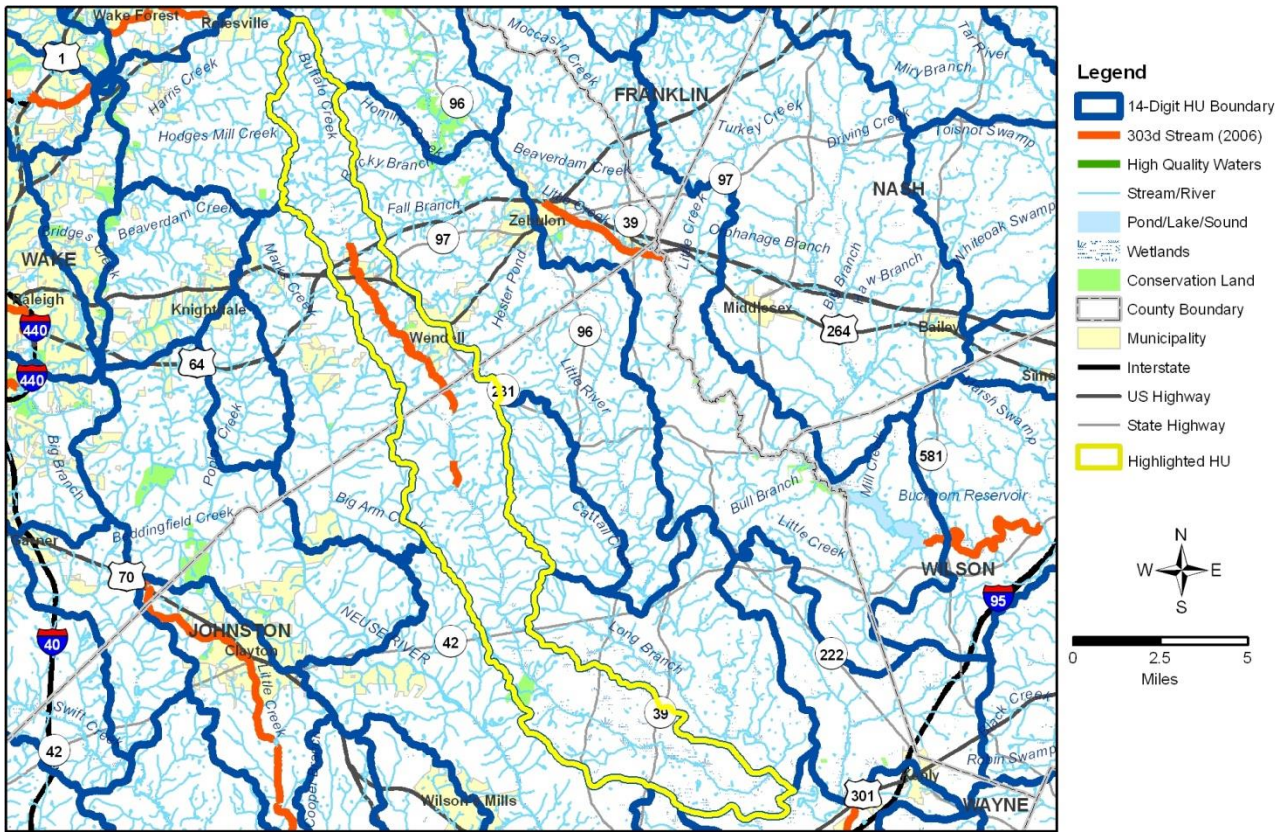
Buffer and stream restoration projects are most important here. Projects that improve natural flow of streams should be considered high priority also.



Buffalo Creek: 03020201180050

Buffalo Creek is a central watershed of the WJCLWP. Of its 131 miles of streams, 6.4% are on the 303(d) list. Thirty percent are unbuffered. The watershed covers 58 square miles of the Northern Outer Piedmont. Forty-seven percent of the HU are forested or forested wetlands. Over 30% of soils here are hydric (17% type A, 14% type B). The forested area includes six square miles of unfragmented, interior forest. There are 1.6 square miles of designated SNHA. Forty-four percent of land is in agriculture including 19 animal operations—14 cattle, 3 poultry, and two hog farms. Eight percent of the watershed is developed with relatively low impervious surface (1.2%). There are 13 agricultural BMPs constructed here, as well as one local land trust project and one WRC watershed improvement project.

Projects that address flow restoration and reduction of impoundments are high priority for this watershed. Buffer projects are also very important here.

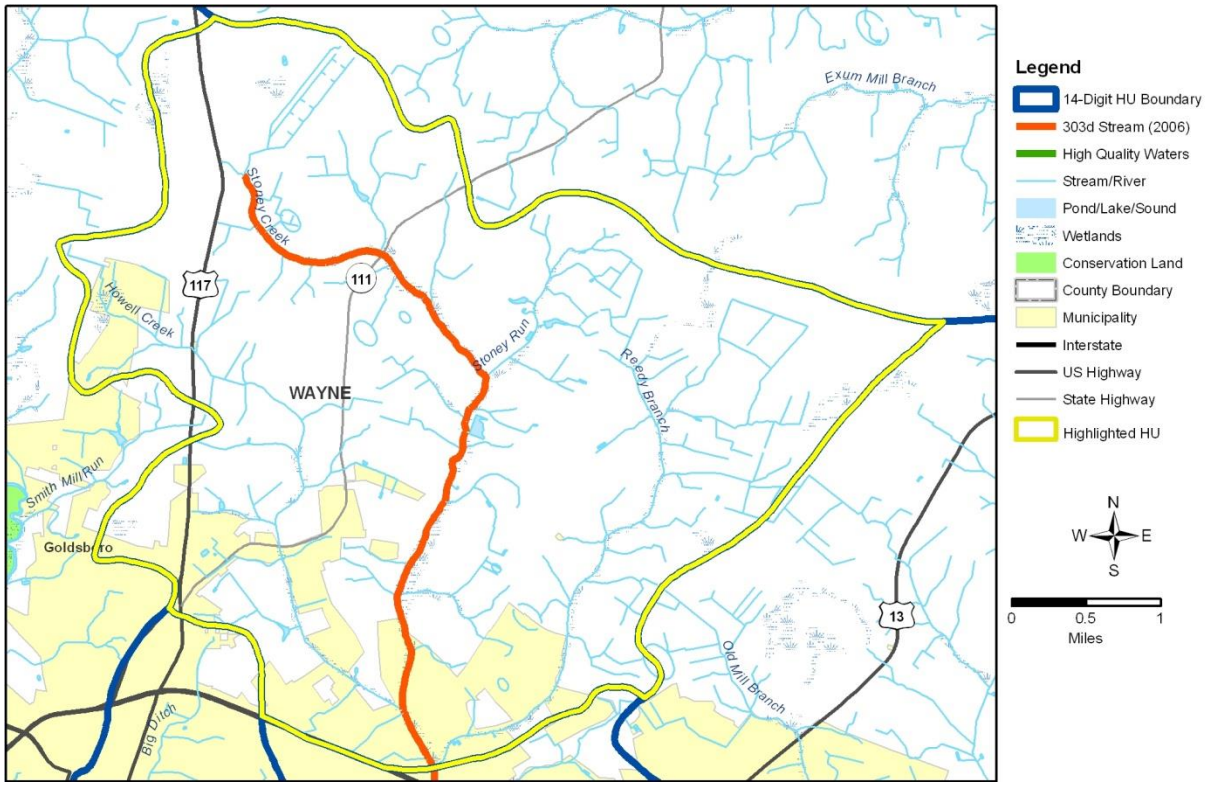


Neuse 02 Targeted Local Watersheds

Stoney Creek: 03020202010010

This portion of Stoney Creek lies to the north of the City of Goldsboro and includes the headwaters of mainstem Stoney Creek, Howell Creek, Stoney Run and Reedy Branch. This watershed was one of the four component HUs of the Stoney Creek LWP. The watershed covers 16 square miles and has a relatively large of amount of streams (66 miles). Nearly 7% of streams are designated impaired on the state's 303(d) list. Seventy percent of them lack sufficient woody buffer vegetation. Fifty-nine percent of the land area is used for agriculture and there are nine permitted livestock operations here, mostly hog farms. Twenty-six percent of the HU is forested or forested wetland, with 58% of soils being hydric (37% type A, 21% type B). Fifteen percent of the watershed is developed yielding 3% imperviousness. Over two square miles of northern Goldsboro lie inside this HU and are subject to Phase II stormwater regulations. Five miles of TIP projects have been planned.

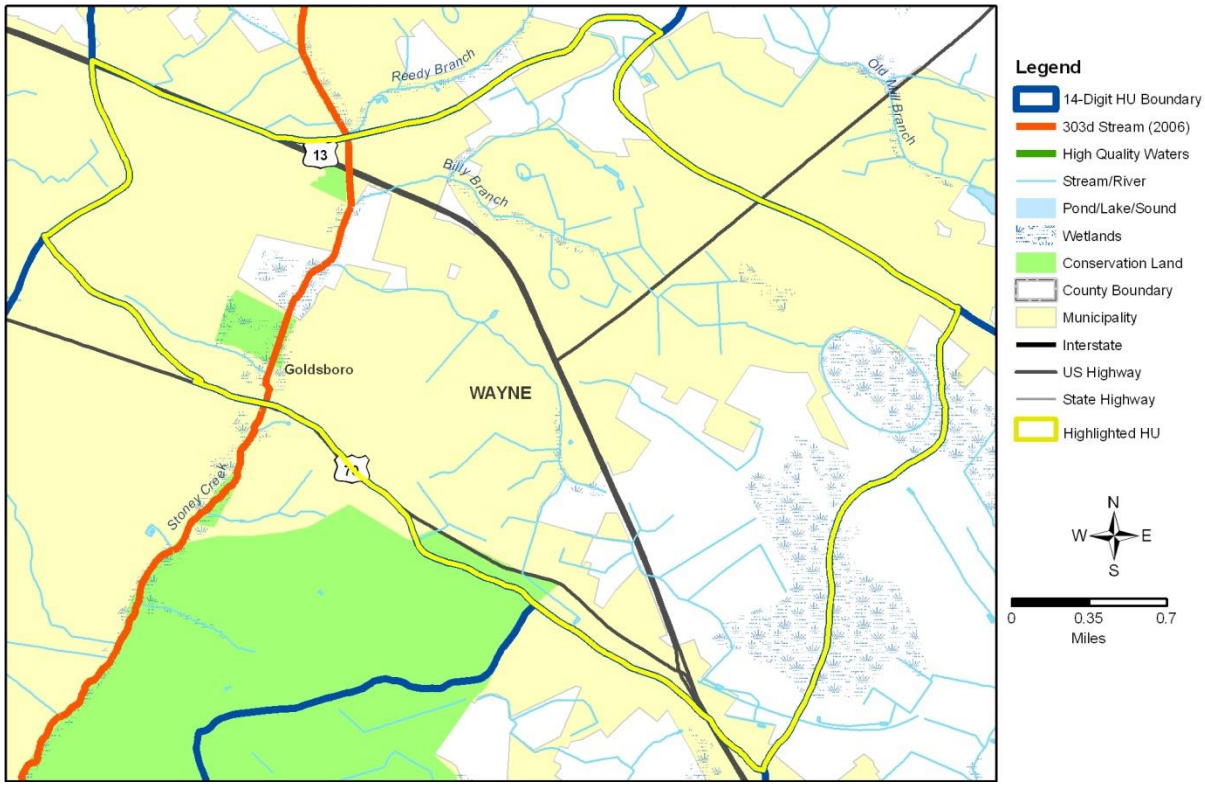
Projects that restore flow and establish buffers are important for this part of Stoney Creek. Priority projects including stream, wetland and stormwater management practices are outlined in the Stoney Creek LWP (Local Watershed Plan Fact Sheet).



Stoney Creek: 03020202010020

This Stoney Creek HU is very small with only seven square miles of the Rolling Coastal Plain. There are 20 miles of stream here with nearly 6% listed on the state's 303(d) list. Seventy-nine percent are unbuffered. Fifty-four percent of the watershed is developed yielding 18% imperviousness. The City of Goldsboro accounts for most of the developed area and five square miles of the watershed are subject to Phase II stormwater rules. About 28% of the watershed remains in agriculture and 18% is either forested or wetlands. A little over 70% of the soils in the part of Stoney Creek are hydric (48% type A, 23% type B). CWMTF has funded two projects here. DOT has programmed 2 miles of TIP projects.

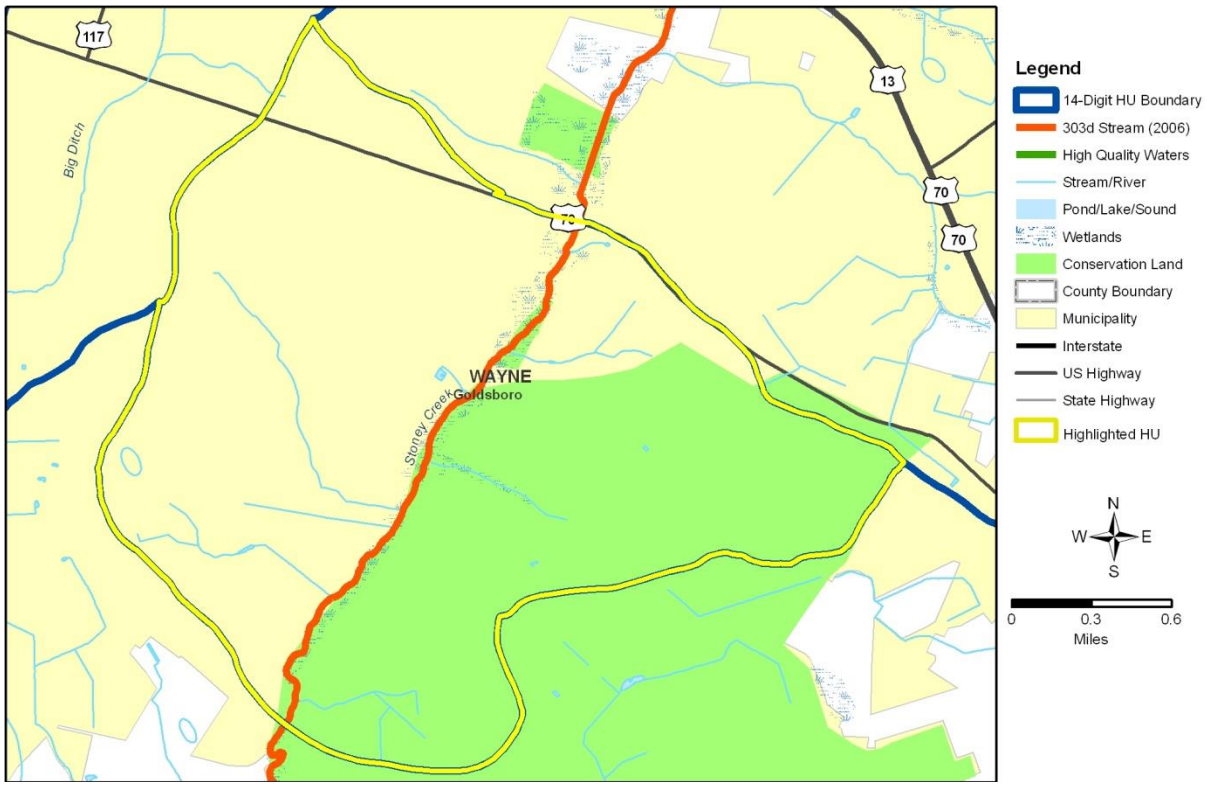
This is another of the four HUs that make up the Stoney Creek LWP study area. The creek was part of an earlier study funded by the CWMTF (Watershed Assessment and Restoration Project Report, 2003). The plan recommends priority projects for this area that offset the impacts of stormwater as well as some localized stream repair and buffer establishment.



Stoney Creek: 03020202010021

This Stoney Creek HU is also small containing only 4.4 square miles of land area. There are only eight miles of stream in the watershed over half of which lack buffers. Twenty-seven percent of streams are 303(d)-listed here. Fifteen percent of the watershed exists as forest or wetlands. Sixty-four percent of soils are hydric here. Seventy-two percent of the area is developed accounting for 20% impervious surface, primarily in the City of Goldsboro. The entire watershed is subject to Phase II stormwater regulations. Despite these issues, there is still 1.8 square miles of land conserved by the Seymour-Johnson Air Force Base.

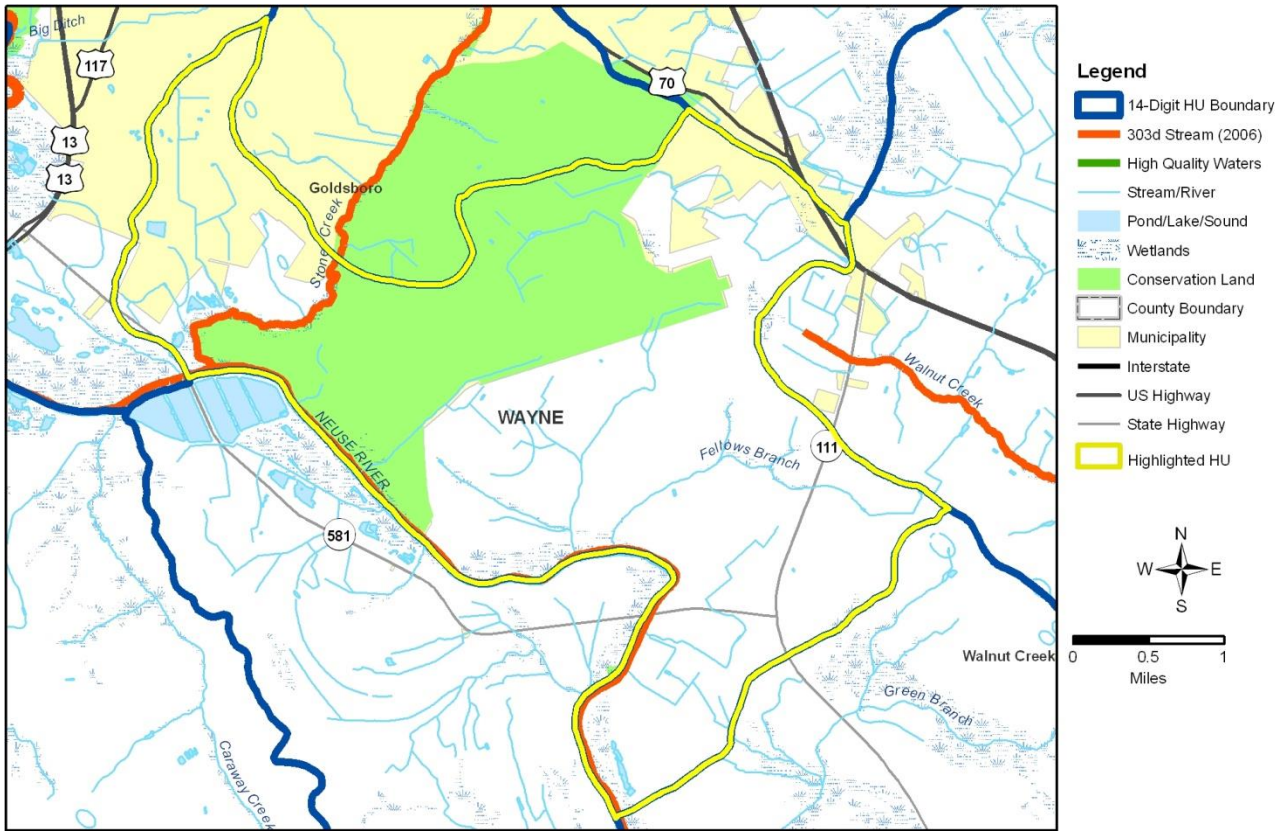
Priorities for this part of Stoney Creek are outlined in the LWP. (Local Watershed Plan Fact Sheet).



Stoney Creek: 03020202010022

This is the fourth HU in Stoney Creek included in the LWP study area. It includes 12 square miles, about a quarter of which lies within Seymour-Johnson Air Force Base. The watershed is split nearly evenly between the Southeastern Floodplains and Terraces ecoregion and the Rolling Coastal Plain. There are 33 miles of stream here, about 59% unbuffered. Twenty percent of them are listed on the state's 303(d) list. Thirty-two percent of the watershed is developed resulting in about 9% imperviousness. Nearly five square miles are subject to Phase II regulations. Twenty-six percent of the area is forested or forested wetlands. Thirty-seven percent of soils are hydric type A and 28% are hydric type B. Forty percent of the watershed is used for agriculture including eight animal operations. CWMTF has two completed projects here.

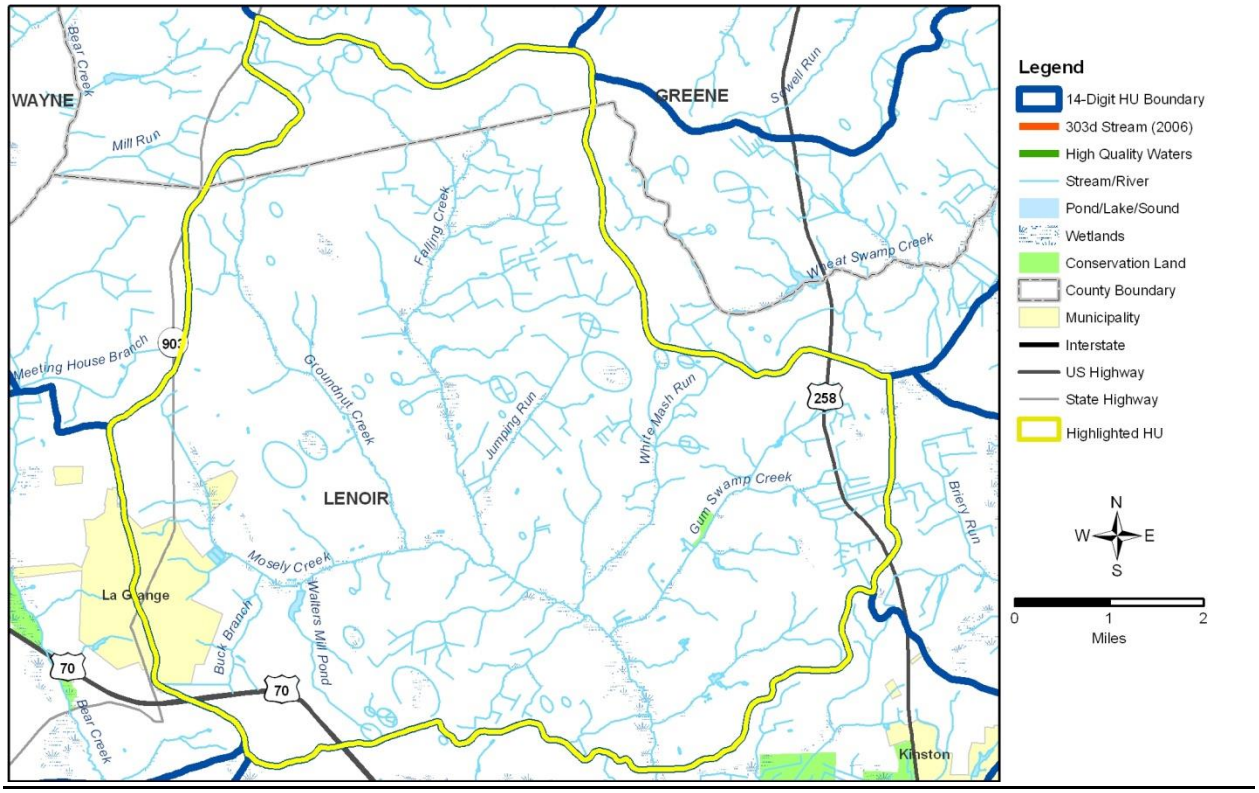
High priority project here address buffer problems and stormwater management. Specific high priority projects are outline in the Stoney Creek LWP Project Atlas. (Local Watershed Plan Factsheet).



Falling Creek: 3020202040010

The Falling Creek watershed contains a portion of the Town of La Grange accounting for a small amount of imperviousness here. The HU is 44 square miles in area with 119 miles of streams, 56% lack woody buffers. Thirty-three percent is forested. An additional 59% is used for agriculture and there are 19 permitted livestock facilities here.

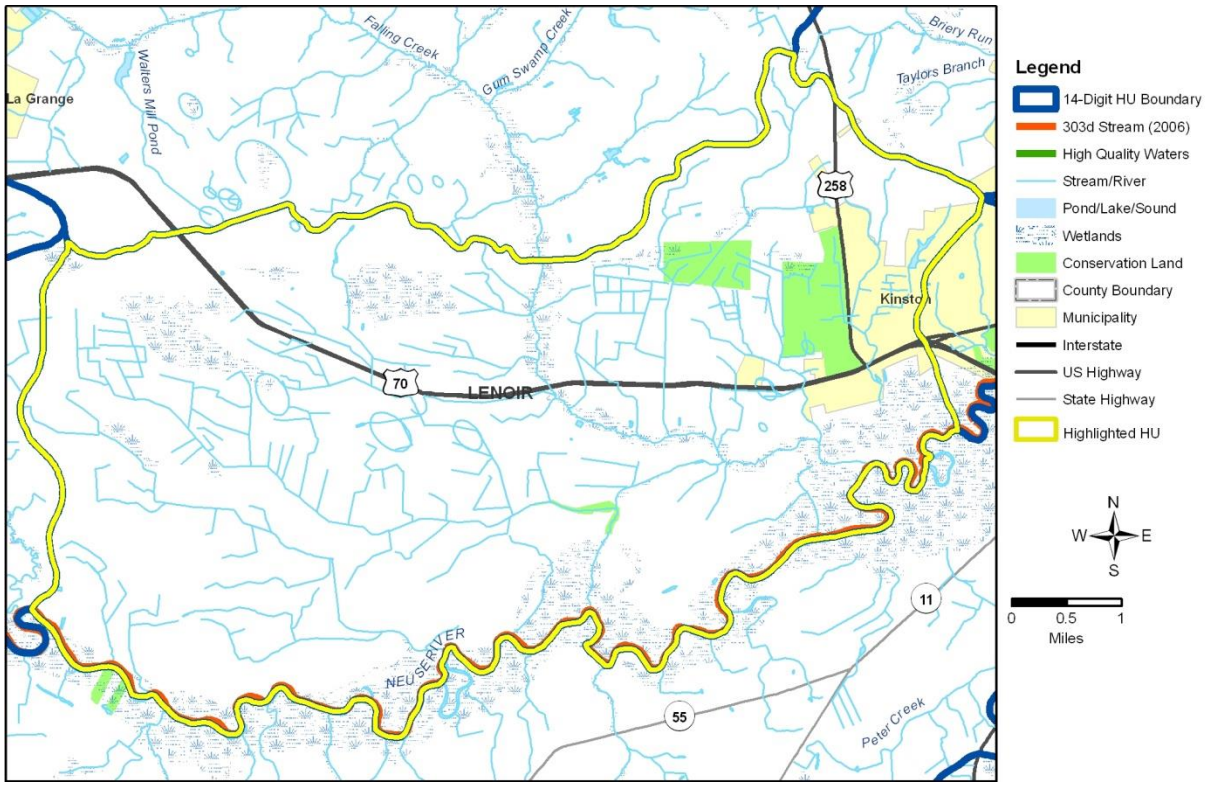
Highest priority projects in Falling Creek address the impacts of agriculture or restore degraded riparian buffers. Preservation and restoration of Carolina Bays are important here also.



Lower Falling Creek: 03020202040020

The Lower Falling Creek watershed is 33 square miles in area and lies predominantly in the Southeastern Floodplains and Terraces ecoregion. The City of Kinston lies in the easternmost part of the watershed. There are 121 miles of stream here 10% of which are impaired. Seventy percent of streams are unbuffered. Fifty-six percent of the watershed is used for agriculture including seven permitted animal operations, mostly hog farms. There are four agricultural BMP projects completed here. About one-third of the HU is forest or wetland with 89% hydric soils (47% type A, 42% type B). Ten percent is developed and 2% is impervious surface. There are two land trust preservation projects here and 5.8 miles of programmed TIP projects.

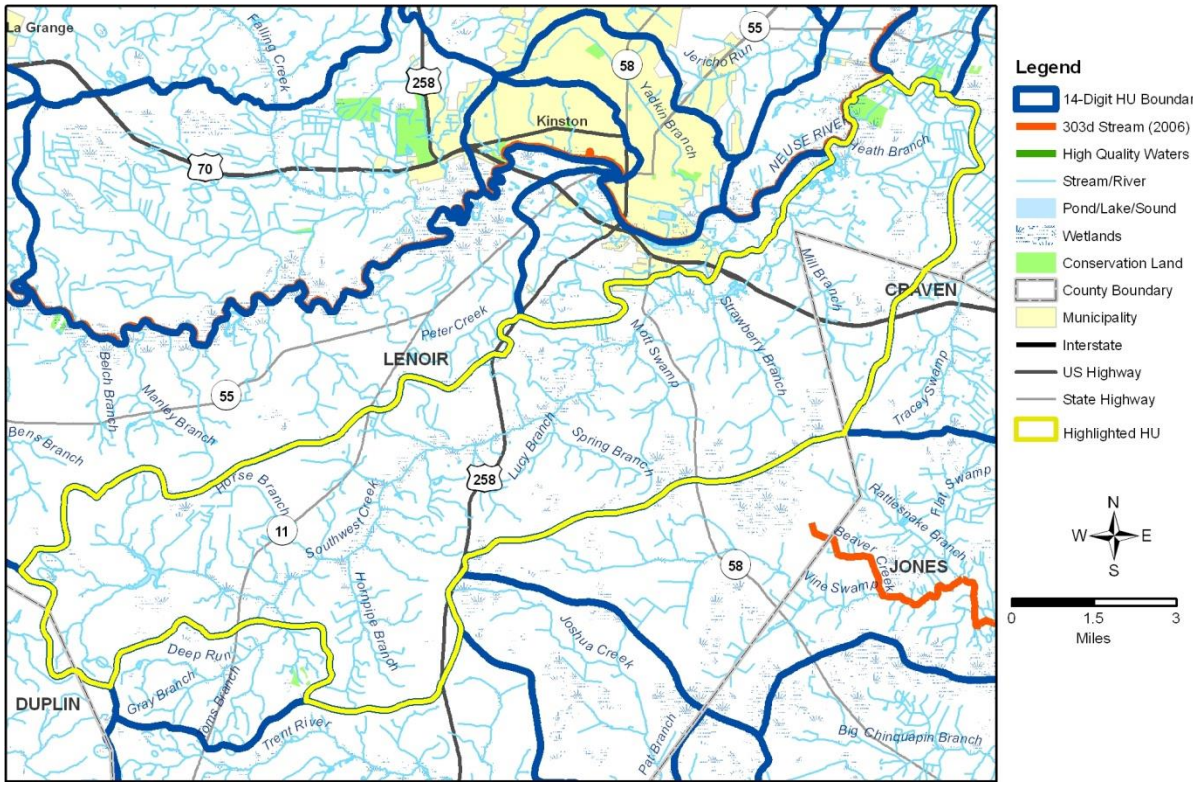
Priority projects here should address restoration of ditches in the headwaters and the replacement of wooded buffers throughout the watershed. Stormwater projects should be a local priority in the vicinity of Kinston.



Southwest Creek: 03020202050010

Southwest Creek has a watershed area of 66 square miles and contains about 166 miles of stream flowing through the Rolling Coastal Plain ecoregion. Fifty-five percent of streams lack buffers. Forty-eight percent of land is in agriculture and there are 35 livestock operations here—19 hog farms, 10 poultry facilities, and 6 cattle farms. Thirteen agricultural BMP projects have been implemented here to reduce inputs to the waterways. Forty-six percent of the watershed is wetland or forest (11 square miles unfragmented). Soils are mostly hydric here—38% type A and 37% type B. Five percent of the watershed is developed with less than 1% imperviousness estimated. DOT has planned 10.7 miles of road improvements. CWMTF and the local land trust have each completed one watershed improvement project in the watershed.

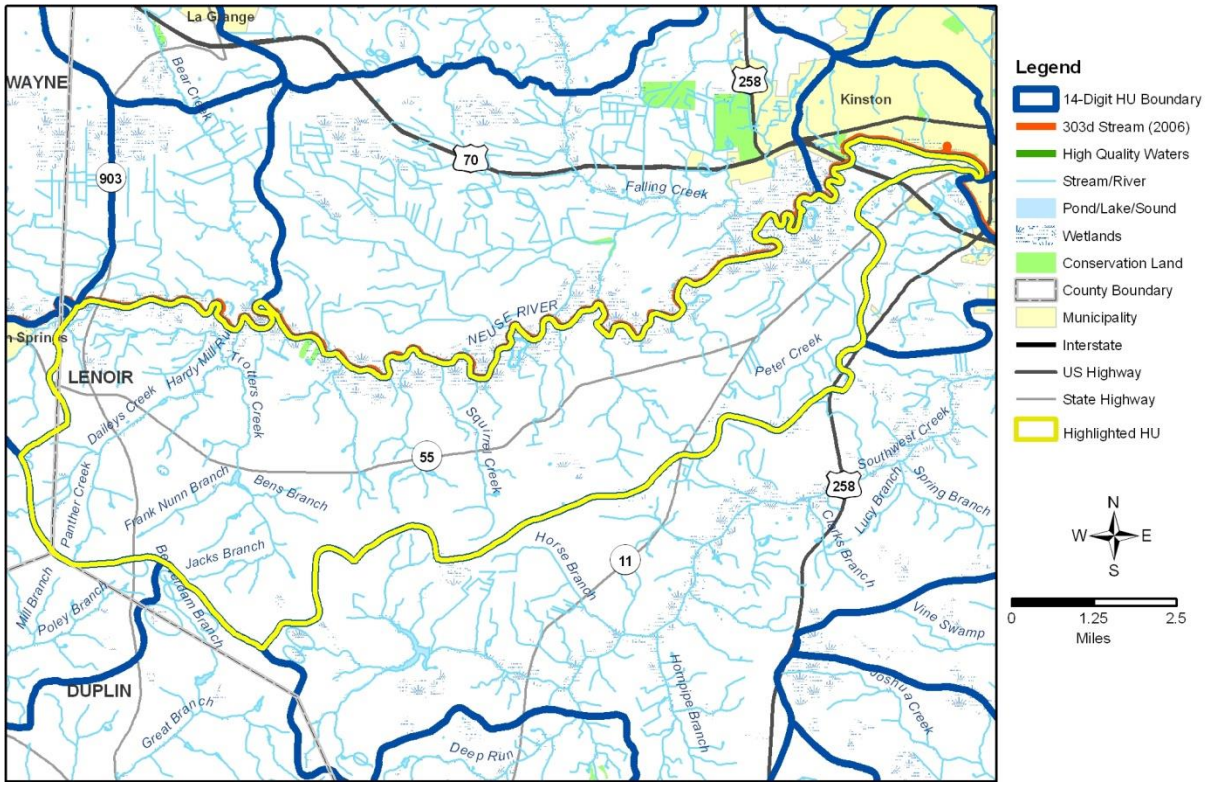
Priority projects here need to address buffers, unstable streambanks, and agricultural runoff.



Trotters Creek: 03020202050030

The Trotters Creek watershed is 41 square miles and lies predominantly in the Rolling Coastal Plain. There are 86 miles of stream including 49 miles designated WSW. Forty-six percent of streams are unbuffered and 15% are 303(d)-listed, primarily accounted for by the Neuse River flowing along the northern HU border. Half the watershed is used for agriculture and there are 36 animal operations—13 cattle, 7 poultry, and 16 swine facilities. Four agricultural BMPs have been implemented here. Forty-two percent of land area is either forest or wetland, with 59% hydric soils (23% type A, 36% type B). Seven percent is developed producing 1.2% impervious surface. DOT has planned 5 miles of TIP projects. The local land trust has developed two watershed improvement projects in the watershed.

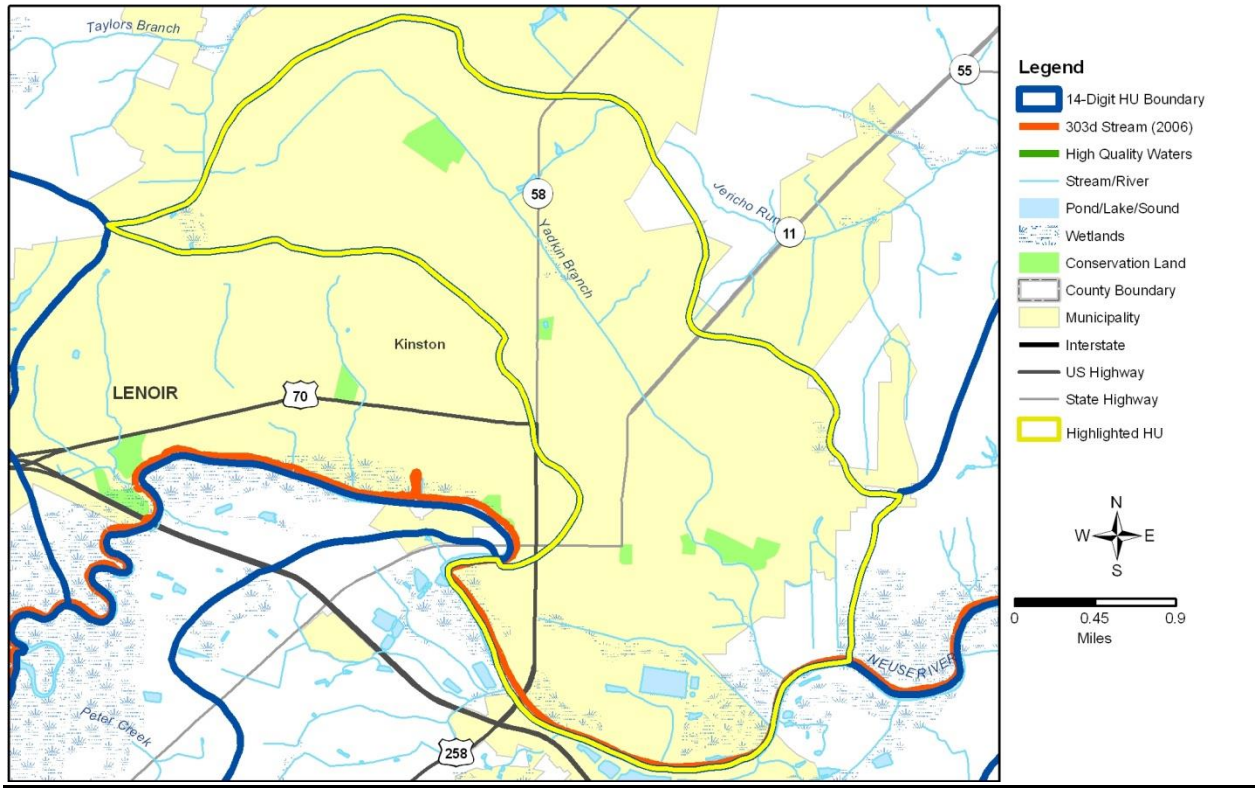
High priorities for Trotters Creek should include buffer projects and agricultural BMPs that reduce inputs to the Neuse. This is particularly important in areas like this where many small catchments flow directly into a major waterway.



Neuse River: 3020202060030

This HU also contains a significant portion of the City of Kinston, accounting for 16% imperviousness. The watershed covers 7 square miles and has 14 miles of streams, over half unbuffered. Sixteen percent of waters here are listed on the 303(d) list of impaired waters. Twenty-three percent of this watershed is forested and 17% is in agriculture.

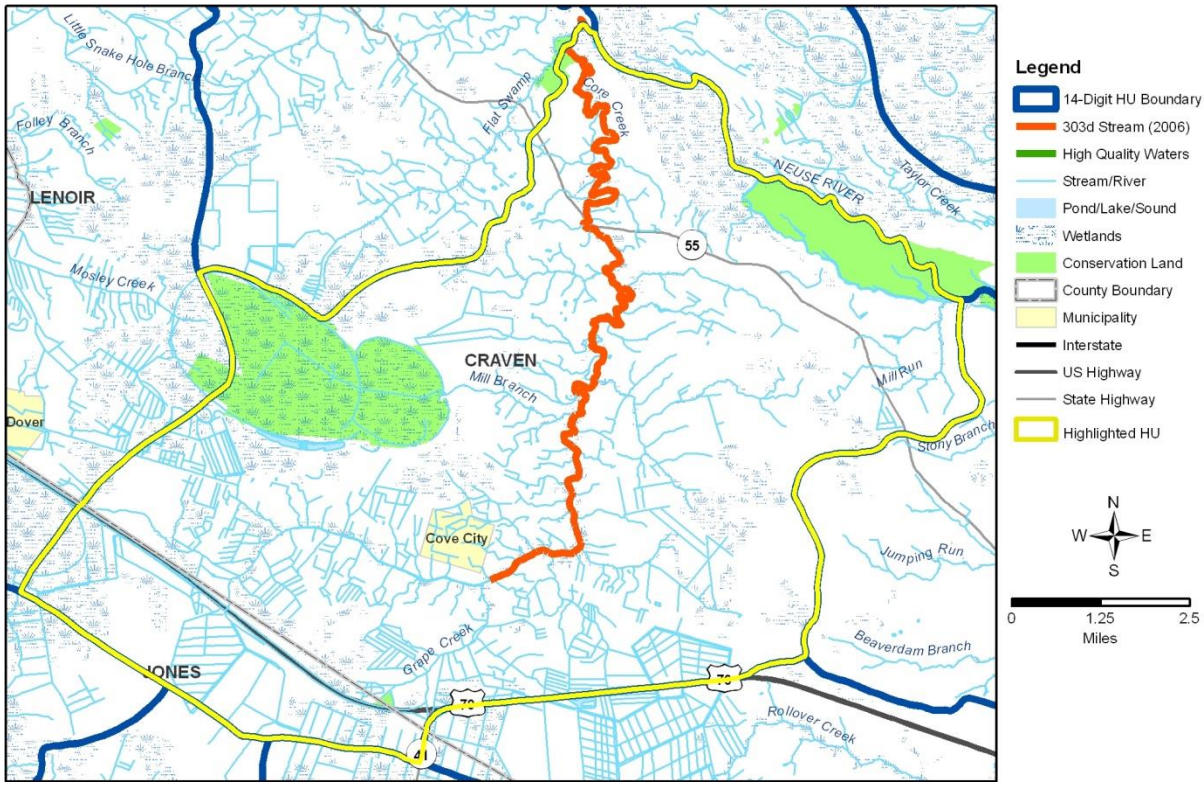
Highest priority projects for this section of the Neuse address the impacts of stormwater runoff.



Core Creek: 03020202080010

The Core Creek HU consists of 74 square miles of land area, predominantly in the Carolina Flatwoods ecoregion. There are 296 miles of streams here with about 57% unbuffered. Over 6% of streams are on the 303(d) list. Fifty-five percent of the watershed is forested with nearly all hydric soils (71% type A, 26% type B). There are 17.5 square miles of interior, unfragmented forest, 11 square miles of SNHA, and 14 NHEOs in the watershed. There are two CWMTF projects and two local land trust projects here. Thirty-nine percent of the area is in agricultural land use. There are 13 permitted livestock operations. Five percent of the watershed is developed with very little impervious surface. There are 0.3 square miles of shellfish closure area on the mainstem of the Neuse.

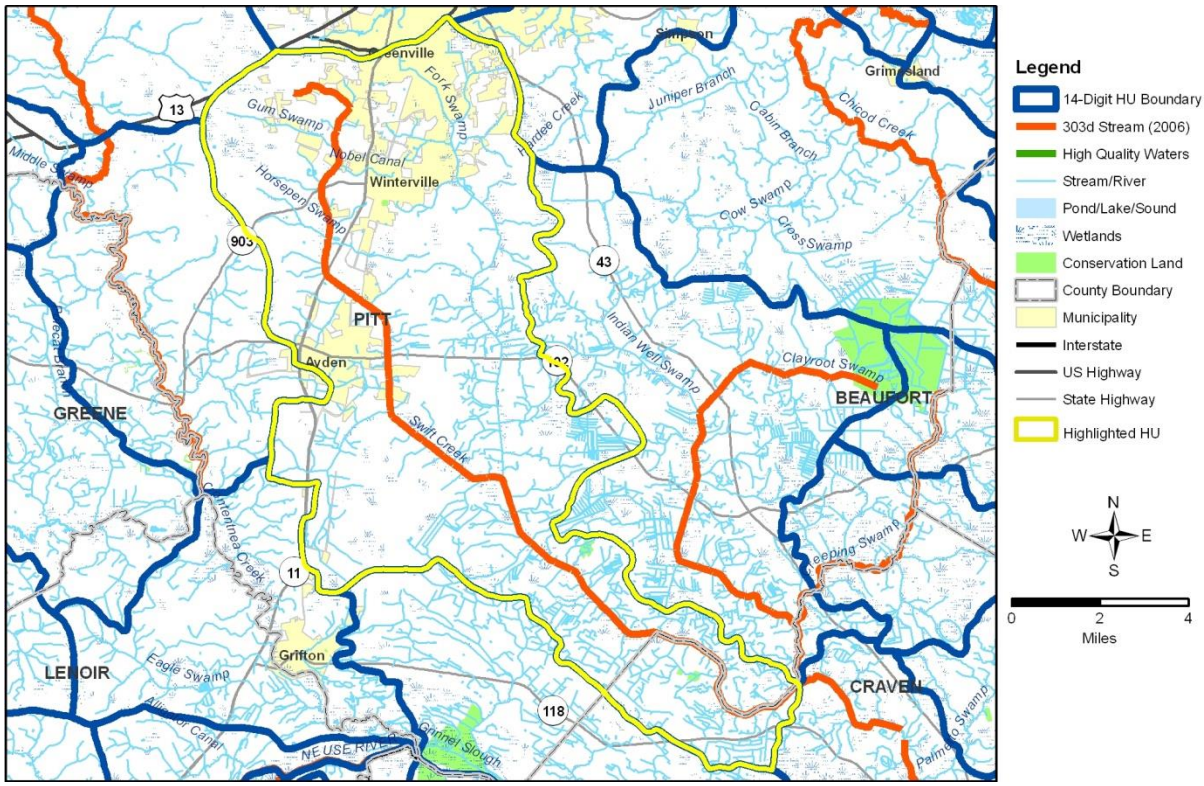
Priorities for this watershed include restoration of ditched streams and establishment of wooded buffers in the riparian corridors. Priority should also be given to projects that preserve rare habitats and species.



Swift Creek: 03020202090010

The Swift Creek watershed consists primarily of Mid-Atlantic Flatwoods and covers 95 square miles. There are 282 miles of stream here, 59% of which lacks buffers. Nearly 10% of streams here are impaired. Fifty-two percent of the watershed is agricultural land use. Eight agricultural BMP projects have been completed here. There are 21 animal operations including 16 hog farms and five cattle operations. Thirty-six percent of the HU is forested, including 12 square miles of intact interior forest. Hydric soils are extensive throughout the watershed (51% type A, 27% type B). Twelve percent of the watershed is developed with 2.7% imperviousness. Twelve square miles are subject to Phase II stormwater rules, including parts of Greenville and Winterville. There are nine miles of TIP planned for the HU.

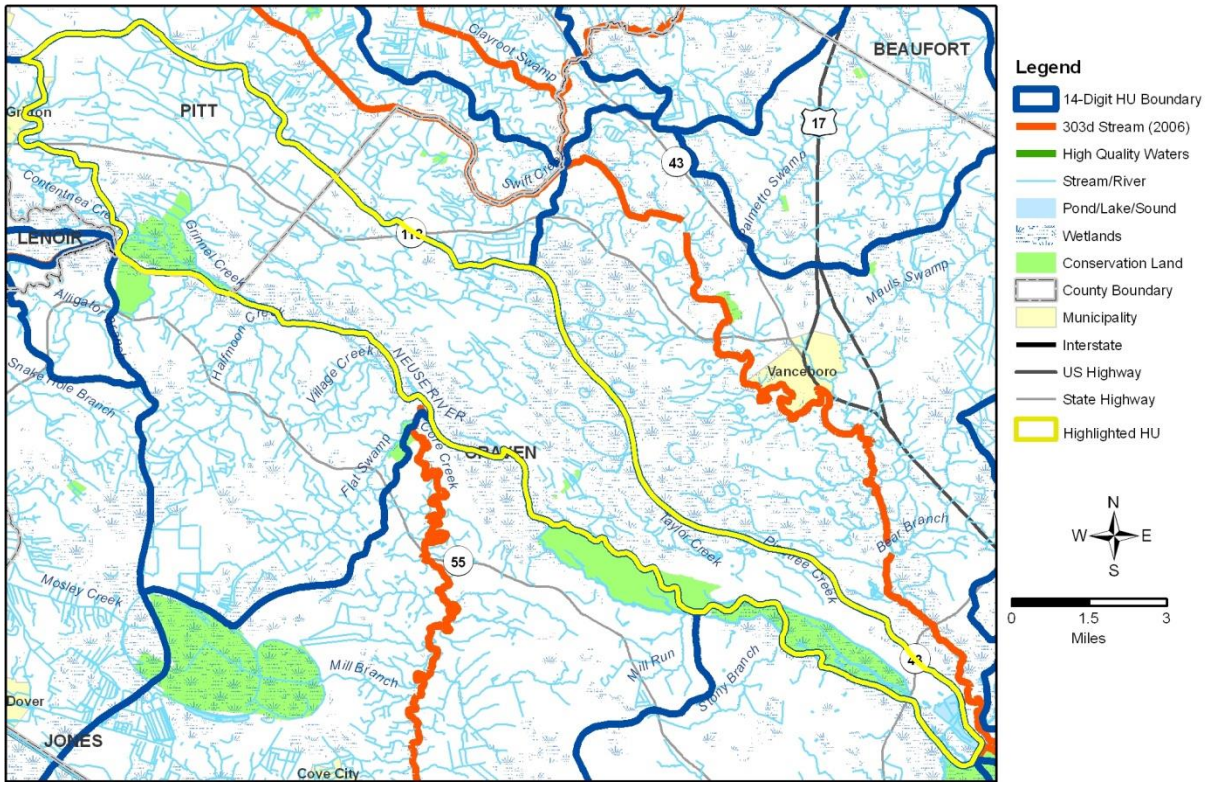
Priority projects for this watershed should address the lack of woody buffers and should reduce the inputs from agricultural sources.



Grinnell Creek: 03020202090020

Grinnell Creek covers 50 square miles of the Mid-Atlantic Floodplains and Terraces ecoregion. There are 165 miles of stream here, 59% unbuffered. Nearly 3% of the area is open water, including 0.8 square miles of shellfish closure area. Fifty-one percent of the watershed is characterized as forest or wetland land cover. Nearly three-quarters of soils are hydric (55% type A, 19% type B). There are 7.4 square miles of SNHA and 11 NHEOs occur in the watershed. Forty-two percent of the area is used for agricultural purposes. Thirteen animal operations are located here. Five percent of the watershed is developed. There is about 1 mile of TIP project planned for the area. The watershed contains two completed agricultural BMP projects, two CWMTF project and two local land trust projects.

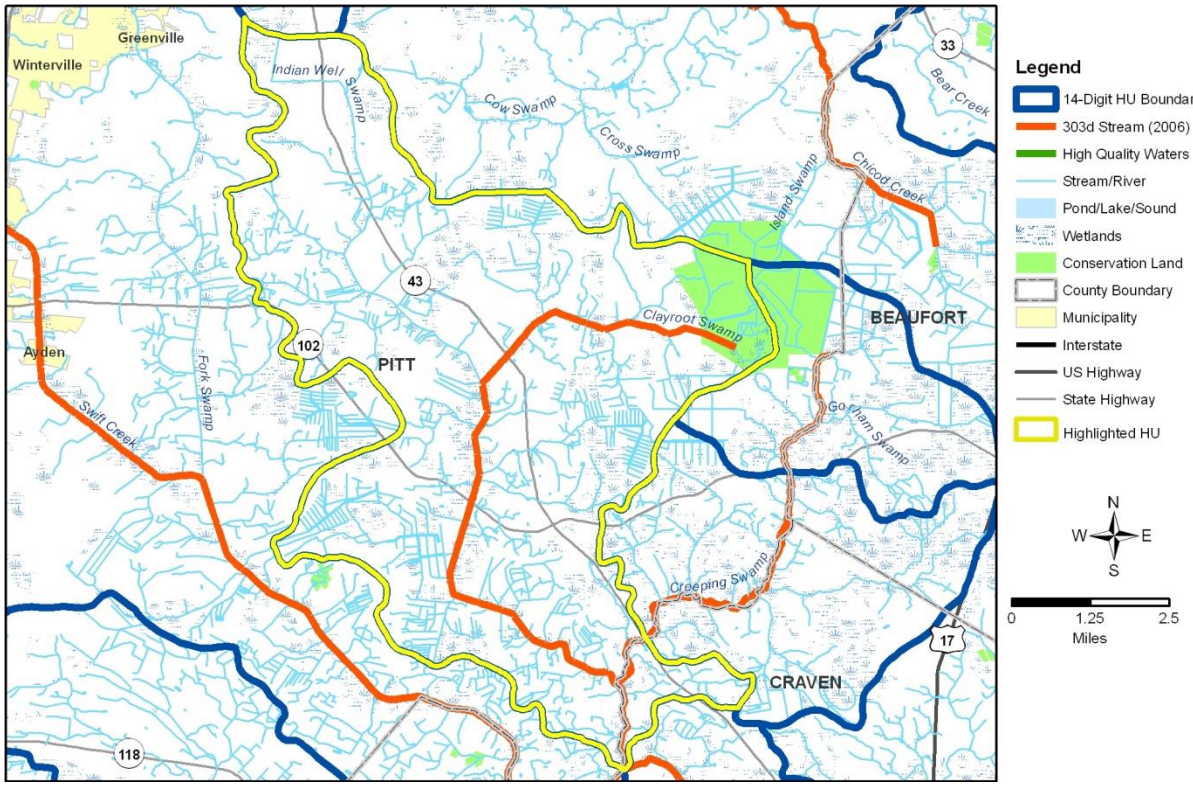
Buffer projects are a high priority here as are stream restoration of straightened, dredged ditches in the headwaters. Preservation and restoration of unique features like Carolina Bays are also a high priority here.



Clayroot Swamp: 03020202090030

The Clayroot Swamp watershed is 50 square miles in area, lying predominantly in the Mid-Atlantic Flatwoods ecoregion. There are 228 miles of stream here, 6.3% of which is impaired. Forty-nine percent of streams are unbuffered. Fifty-three percent of the watershed is either forest or wetlands. There are 12 square miles of unfragmented forest here. Soils are mostly hydric including 55% type A and 27% type B. Nearly two square miles are designated SNHA. Forty-one percent of the watershed is used for agriculture. There are 27 livestock farms here, including 24 hog farms. Two agricultural BMP projects have been implemented. There is little impervious surface (<1%) and only 5% of developed land in the watershed.

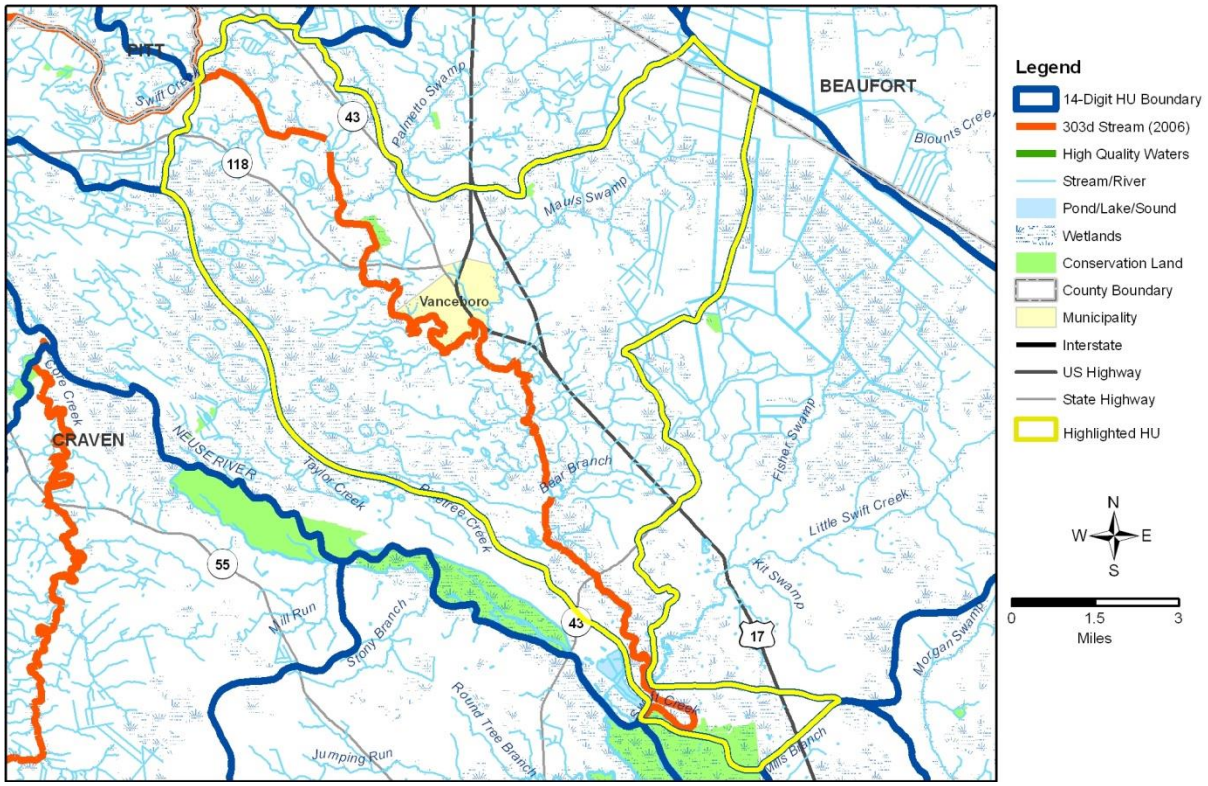
Buffer reestablishment is a very high priority for Clayroot Swamp as well as projects that address agricultural runoff.



Lower Swift Creek: 03020202090060

The Lower Swift Creek watershed has 192 miles of stream flowing through 68 square miles of the Mid-Atlantic Flatwoods ecoregion. Forty-one percent of streams are unbuffered and 15% of waters in the HU are on the 303(d) list of impaired waters. Half a square mile of open water on the Neuse is closed to shellfish harvesting. Fifty-eight percent of the watershed is forested and 90% of soils are hydric. Twelve NHEOs can be found here. One land trust and two CWMTF projects have been completed here. Thirty-seven percent of the watershed is used for agriculture including nine permitted animal production farms. Five percent is developed land (<1% imperviousness). DOT has scheduled nine miles of TIP road projects here.

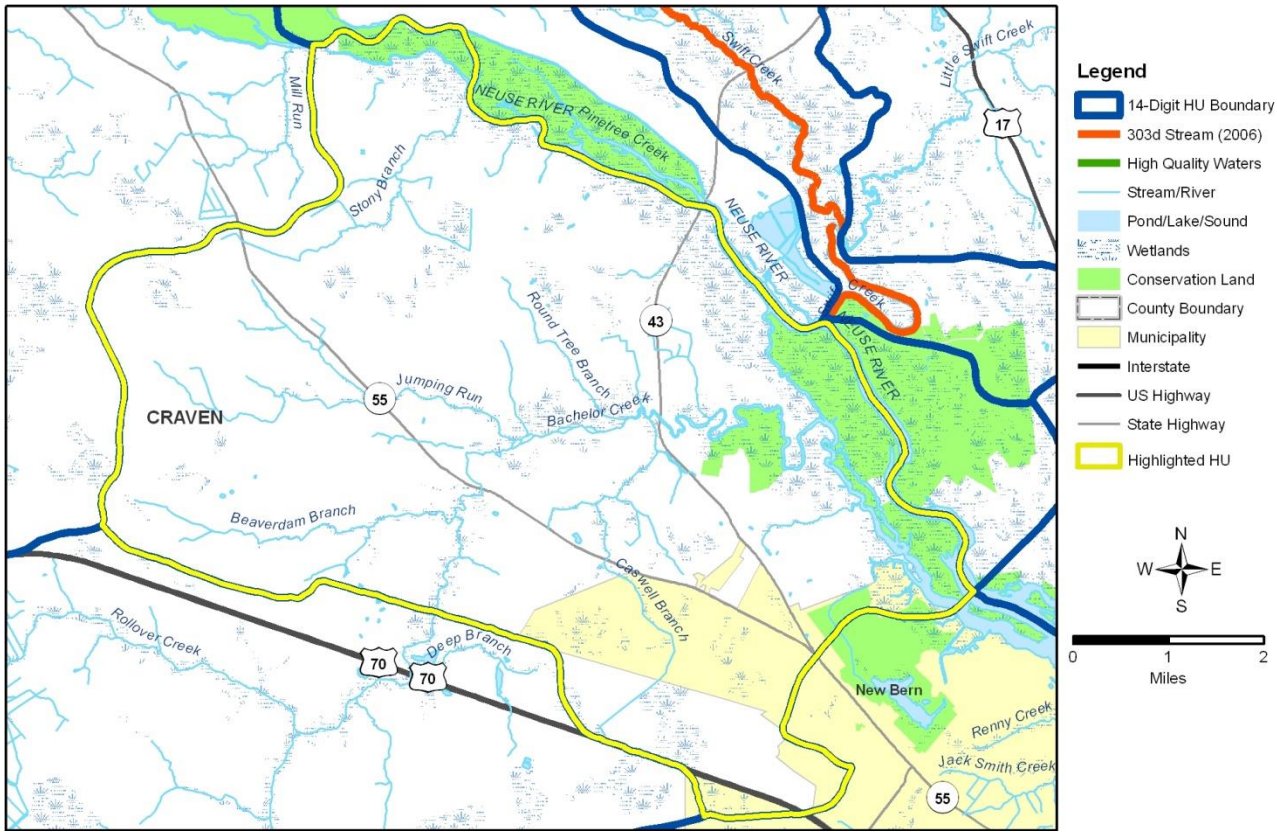
High priority should be given to buffer and wetland restoration projects. Preservation of Carolina Bays and other intact forested areas is also a priority.



Bachelor Creek: 03020202100020

Bachelor Creek spans 41 square miles and contains 54 miles of stream. The predominant ecoregion is the Carolina Flatwoods ecoregion. Thirty-seven percent of streams are unbuffered and nearly 5% of the waters are 303(d)-listed. The watershed includes two square miles of open water, 0.9 square miles of which are closed to shellfish harvest. Fifty-three percent of the watershed is forested wetland, including 48% hydric A soils and 45% hydric B soils. The Natural Heritage Program has designated 4.6 square miles as SNHA. Thirty-seven percent of the area is in agricultural use. Seven percent is developed with low imperviousness (1%). DOT has planned 7 miles of TIP projects. There are four land trust projects and two CWMTF projects completed in the watershed.

Again, priority projects here should address absent or diminished buffers and promote the preservation of rare habitats. Reduction of agricultural inputs is important here. Projects that address estuarine water quality are of high importance too.

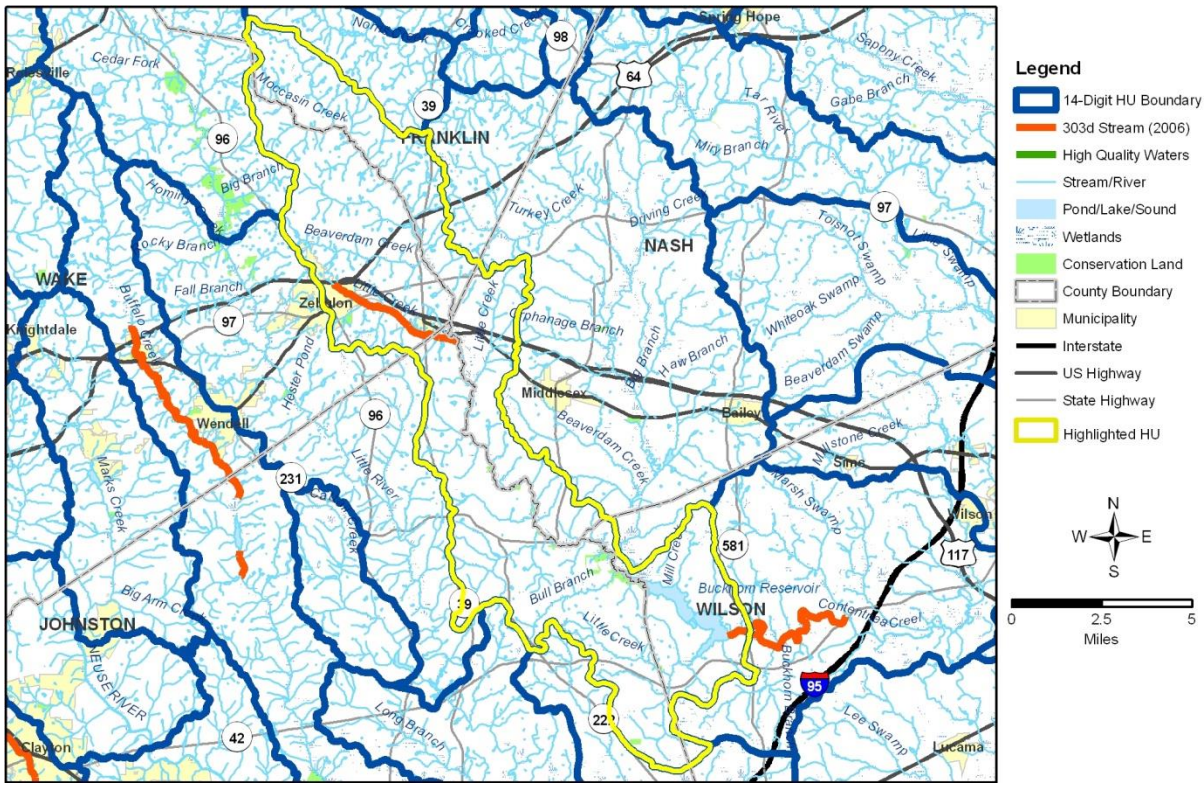


Neuse 03 Targeted Local Watersheds

Moccasin Creek: 03020203010010

The Moccasin Creek watershed is 83 square miles and lies in the Northern Outer Piedmont. There are 178 miles of stream here, 28% of which is unbuffered and 6% of which is impaired. Over 4% of the area exists as open water. Forty-nine percent of the watershed is wetland or forest, 11 square miles of it unfragmented. There are 28% hydric soils here. Approximately four square miles of SNHA have been designated here and there are 25 NHEOs documented. The local land trust and WRC have each completed one watershed improvement project in the HU. Thirty-eight percent of the watershed is used for agriculture including 25 animal operations. Seven BMP projects have been implemented to address agricultural issues. Eight percent of the watershed is developed with about 1.5% impervious surface.

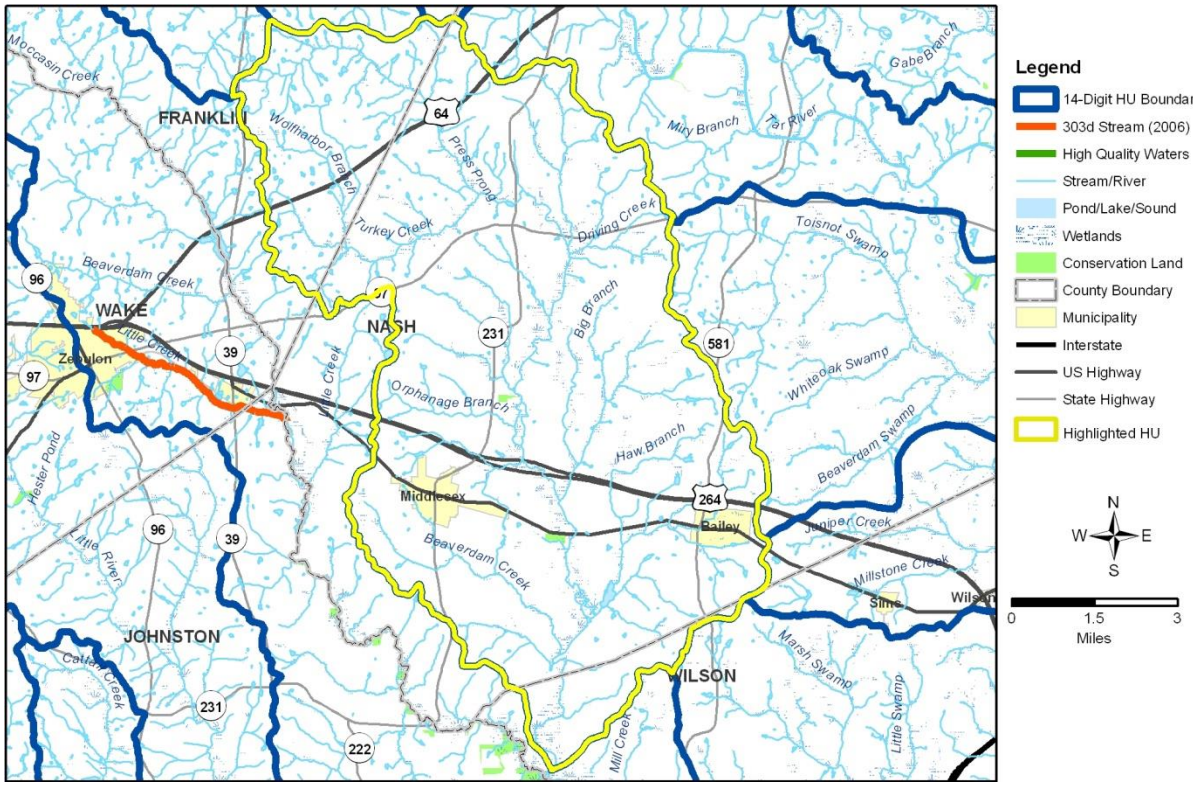
Priorities here include buffer establishment and protection of rare habitats and species.



Beaverdam Creek: 03020203010020

The Beaverdam Creek watershed covers 75 square miles of the Northern Outer Piedmont and contains 157 miles of stream. Nineteen percent of streams lack buffers. There is about 1.6% open water. About 53% of the HU is either forest or wetland. Twenty-seven percent of soils are hydric (23% type A, 14% type B). Eleven square miles of unfragmented forest habitat occurs here. Nearly one square mile of the watershed is designated SNHA and there are 36 records of NHEOs. Thirty-seven percent of the watershed is used for agricultural purposes. There are 23 permitted livestock operations. Nearly 9% of land area is developed with 1.4% imperviousness. WRC has completed one project in the area.

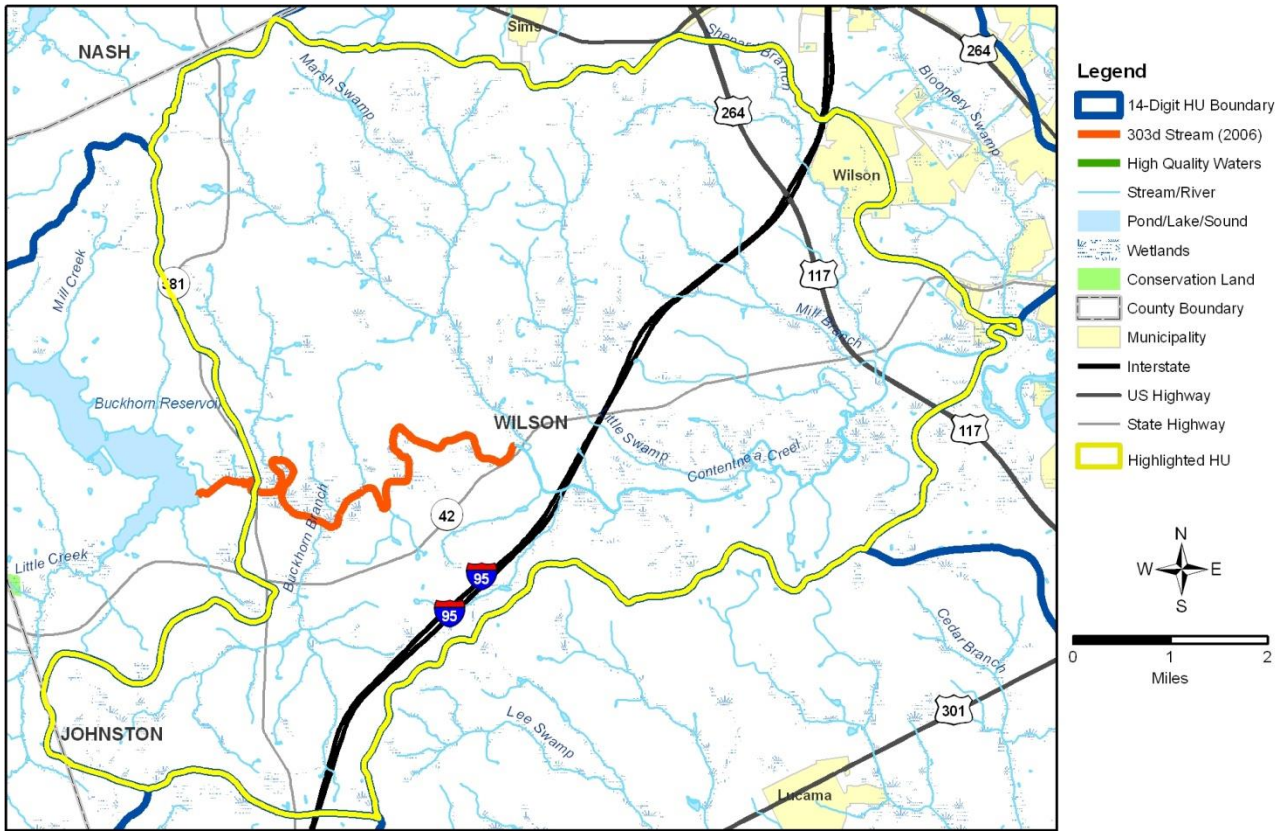
High priority projects will address agricultural impacts and reestablish buffer habitat in the riparian zone of altered streams. Preservation opportunities should be pursued where feasible.



Upper Contentnea Creek: 03020203020020

The Upper Contentnea Creek HU covers 46 square miles of the Rolling Coastal Plan ecoregion. It contains 92 miles of stream, over a third unbuffered. Approximately 6% of streams here are 303(d)-listed. Fifty-three percent of the watershed is used for agriculture and there are 22 animal operations here (11 cattle, 3 poultry, and 8 hog farms). Three agricultural BMP projects have been implemented here. Thirty-seven percent of the area is forest or wetland. Hydric soils account for 72% of the area (33% type A, 39% type B). Nine percent of the watershed is developed resulting in approximately 1.4% impervious surface.

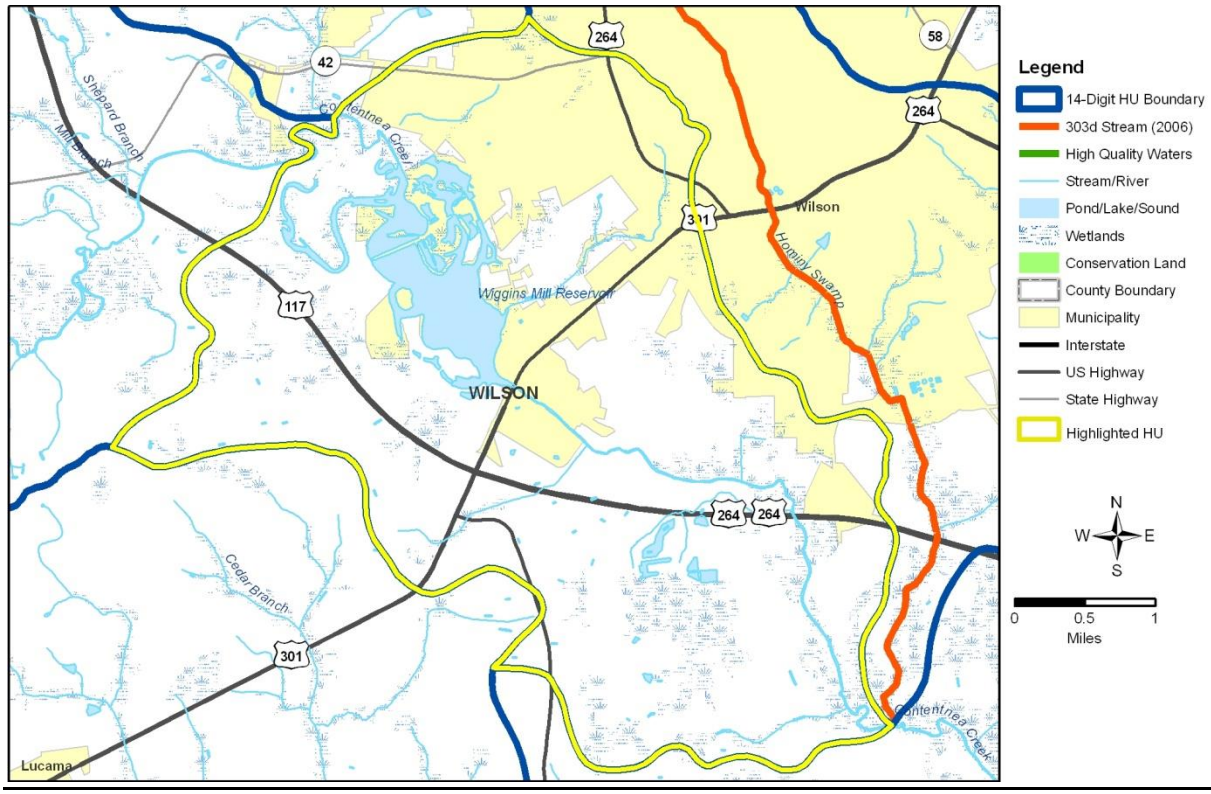
Buffer restoration is a priority here as are projects that offset agricultural inputs to the streams.



Contentnea Creek: 03020203020030

The Contentnea Creek watershed covers 16 square miles, mostly in the Rolling Coastal Plain ecoregion. There are 14 miles of stream here and an extensive amount of wetlands along the mainstem. Nearly five miles of streams are designated WSW and 44% of streams lack buffers. The City of Wilson occupies much of the northern portion of the watershed (approximately 21% of land area) and surrounds much of the Wiggins Mill Reservoir. There is a single surface water intake here. The watershed has approximately 7% impervious surface. Forty-four percent of the watershed is used for agriculture and about 32% is forested, mostly wetlands. Soils in the watershed are predominantly hydric (74%, half type A, half type B). DOT has programmed 6.2 miles of TIP projects for construction in the near future.

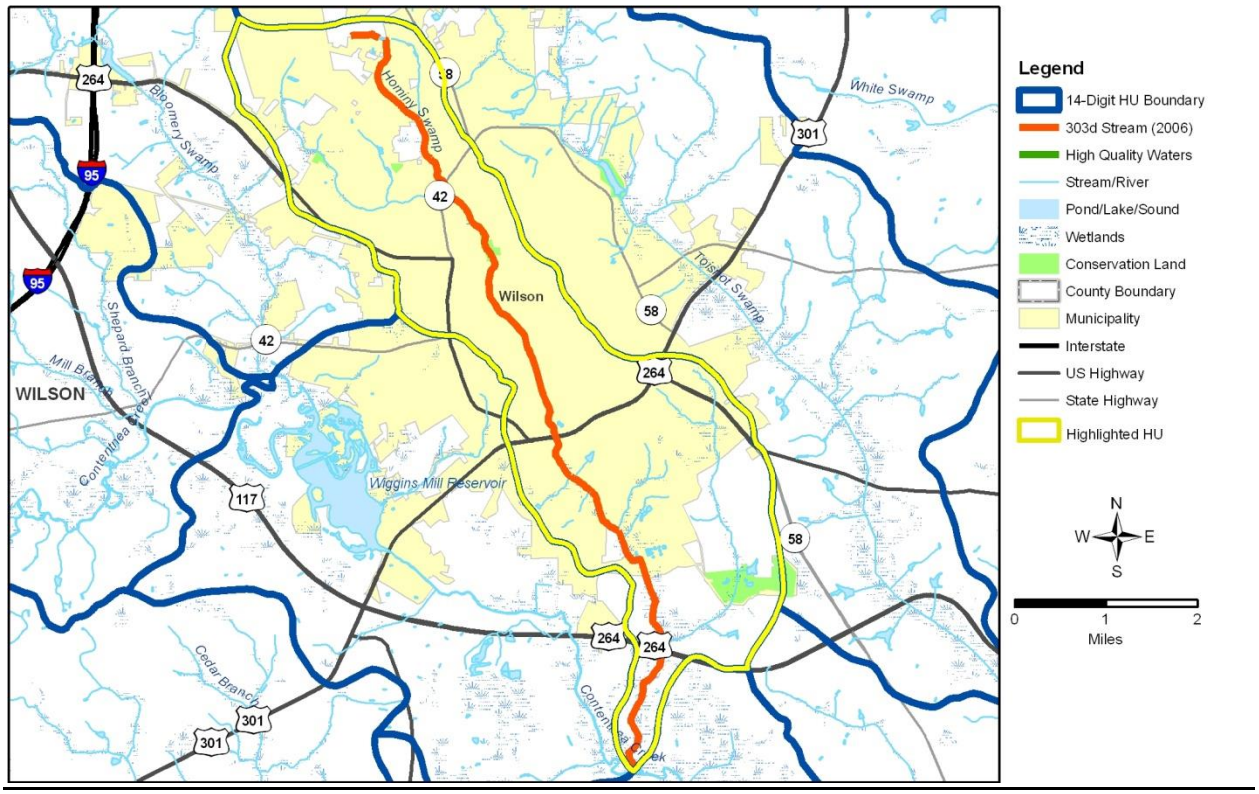
Priorities for this HU include restoration of buffers and stormwater management projects in concentrated development around Wilson.



Hominy Swamp: 03020203020040

The Hominy Swamp watershed covers about 16 square miles and is part of an DMS planning effort completed in 2004. The watershed contains much of the City of Wilson and lies mostly in the Rolling Coastal Plain ecoregion. There are 24 miles of stream here with about 57% of them unbuffered. Over one-quarter of the waters here is 303(d)-listed. Wilson accounts for most of the HU's impervious surface and the 51% of developed land. Twenty-seven percent of the watershed is used for agriculture and 21% is forested. Hydric soils exist over 73% of the watershed.

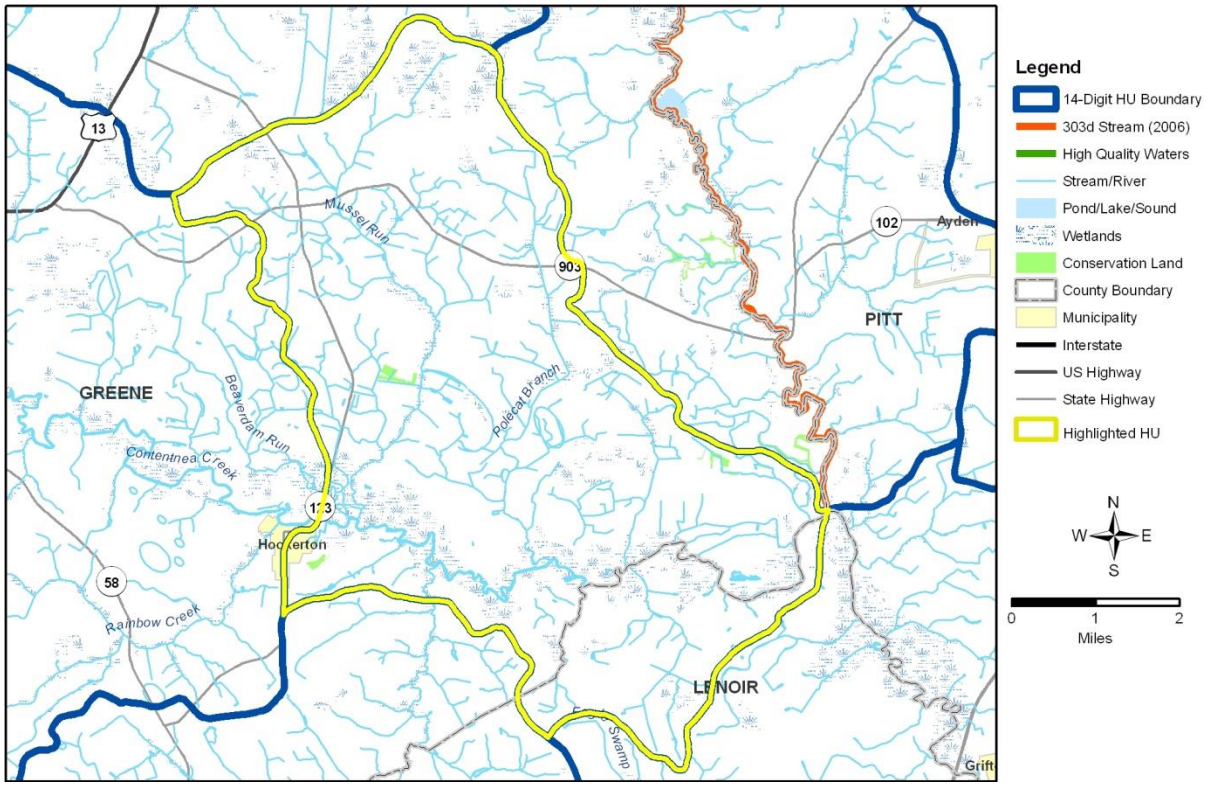
Stormwater projects are a high priority for this watershed as well as reestablishment of buffers on streams.



Middle Contentnea Creek: 03020203050040

The Middle Contentnea Creek watershed lies in the Rolling Coastal Plain ecoregion and spans 32 square miles. It contains 111 miles of stream (64% unbuffered). Fifty-six percent of the land is used for agriculture and there are 27 livestock production farms here. Thirty-eight percent of the watershed is forested wetland. Over 90% of soils here are hydric (36% type A, 55% type B). Five percent of the HU is developed but there is very little imperviousness (<1%). One Section 319 project and one CWMTF project has been completed here.

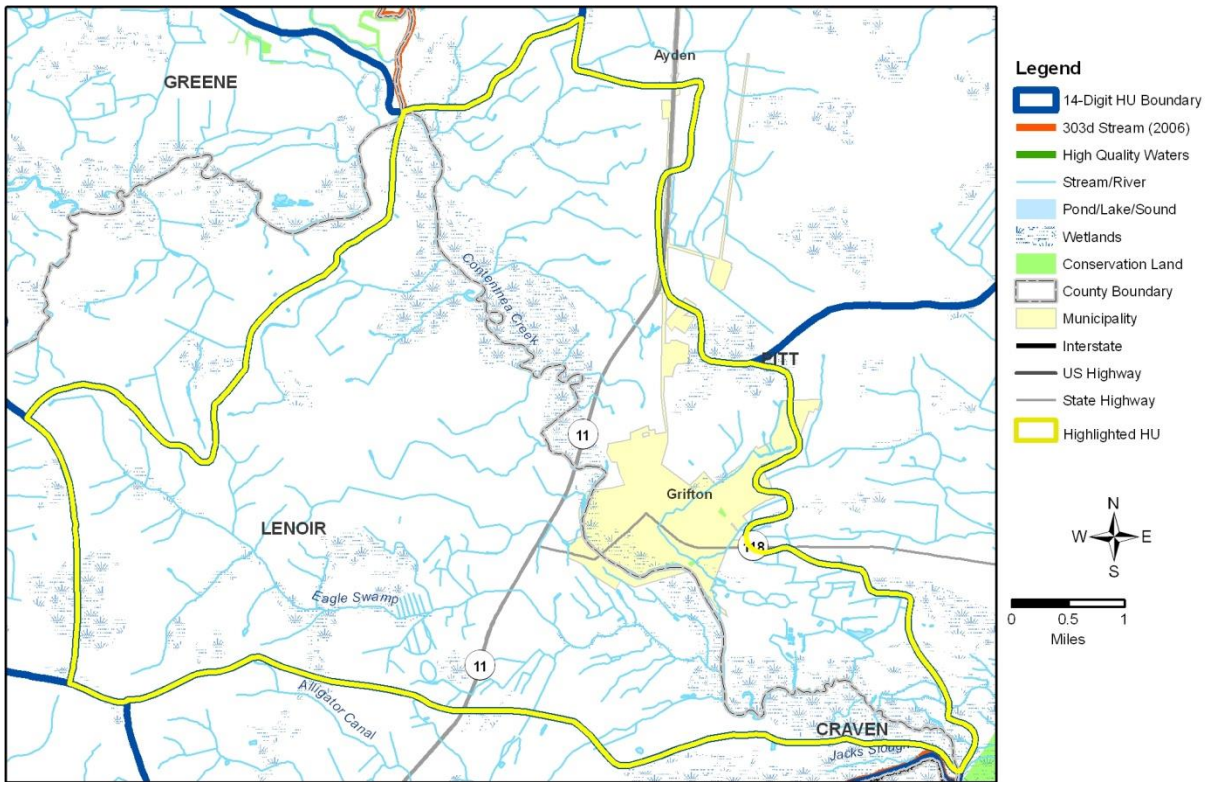
Priorities for the watershed should address buffer restoration and enhancement and reduction of agricultural runoff.



Lower Contentnea Creek: 03020203050060

The Lower Contentnea Creek watershed is 28 square miles in area. It contains 93 miles of stream with 54% of them unbuffered. It lies predominantly in the Southeastern Floodplains and Terraces ecoregion. There is approximately one square mile of open water. Half the watershed is in agricultural land use. Three agricultural BMP projects have been implemented here. Forty-two percent of the area is forest or wetlands and nearly 80% of soils are hydric (42% type A, 37% type B). Seven percent of the watershed is developed with little impervious surface (1.1%). Grifton is the only stormwater II regulated community in the watershed. CWMTF completed a single project in this HU.

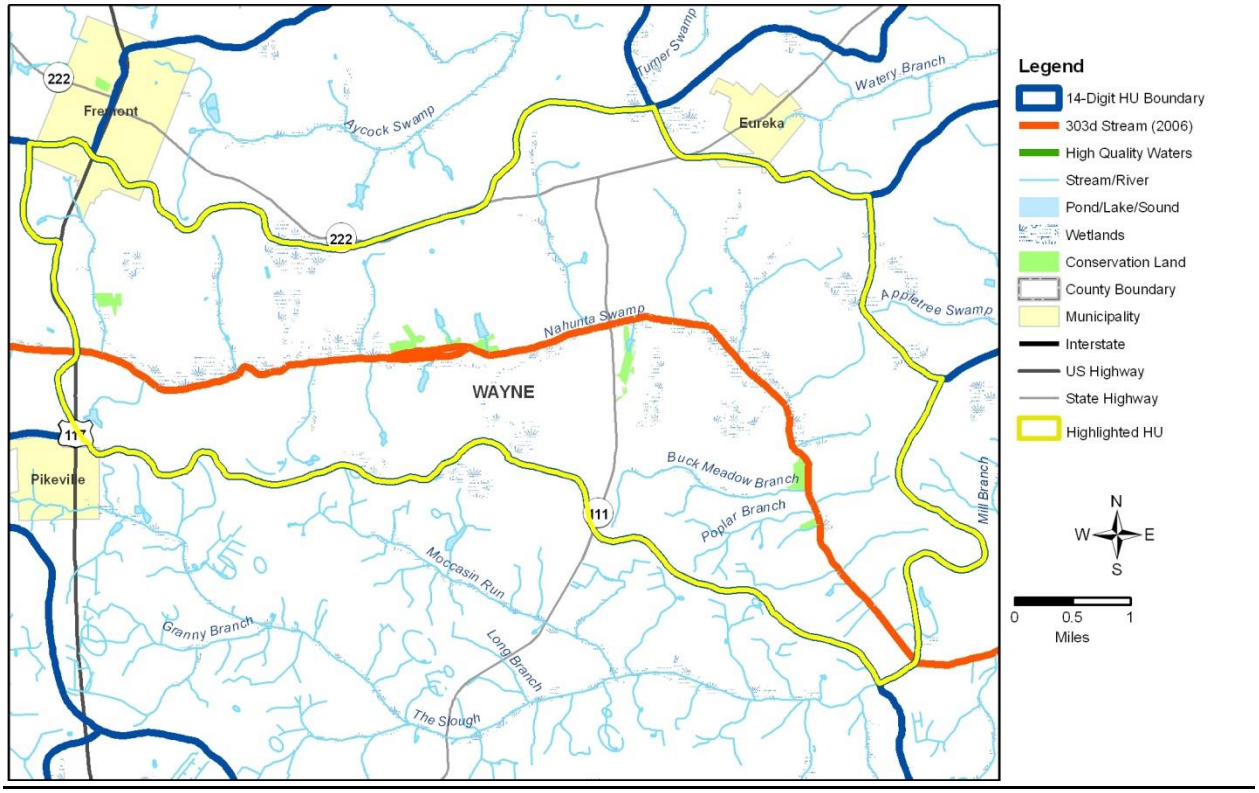
Highest priority projects should include buffer restoration and agricultural runoff reduction.



Nahunta Swamp: 3020203060020

This HU contains the middle segment of Nahunta Swamp. It covers 23 square miles and has 36 miles of streams (46% unbuffered). Nineteen percent of streams here are 303(d)-listed. Thirty-seven percent of the watershed is forested. Fifty-seven percent of the watershed is used for agriculture, including 17 permitted animal operations.

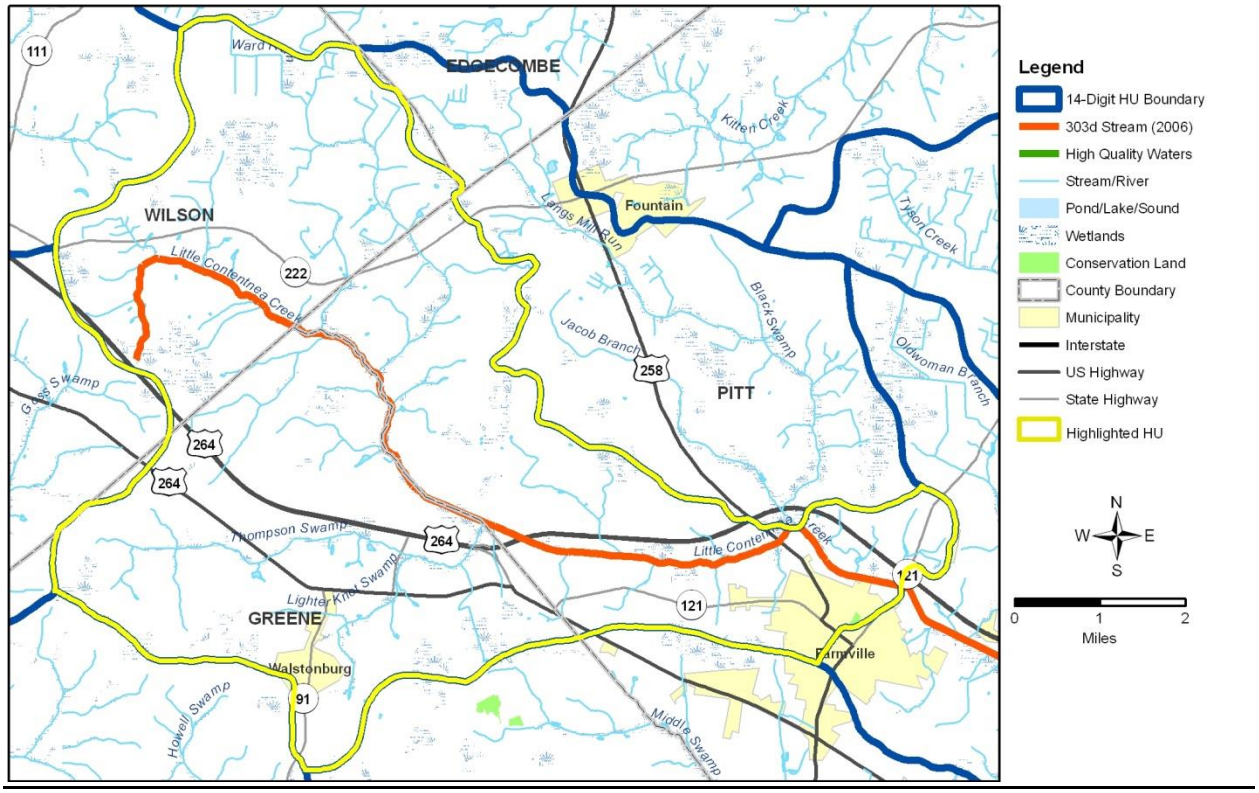
The highest priority projects in Nahunta Swamp should address the lack and degradation of existing riparian buffers. Agricultural BMPs that reduce inputs to streams are also important here.



Little Contentnea Creek: 03020203070010

This HU contains the part of the Little Contentnea watershed between Wilson and Farmville. It covers about 41 square miles of the Rolling Coastal Plain. There are 77 miles of stream here with 12.5% on the 303(d) list and about 36% unbuffered. Agriculture accounts for about 48% of the land use here, including 19 permitted animal operations (5 cattle, 1 poultry, and 13 hog farms). There are three completed agricultural BMPs here. Forty-four percent of the watershed is forested, including over 6 square miles of unfragmented forest habitat. Wetland soils account for about 87% of the HU. Nearly 8% is developed with a low imperviousness of 1%.

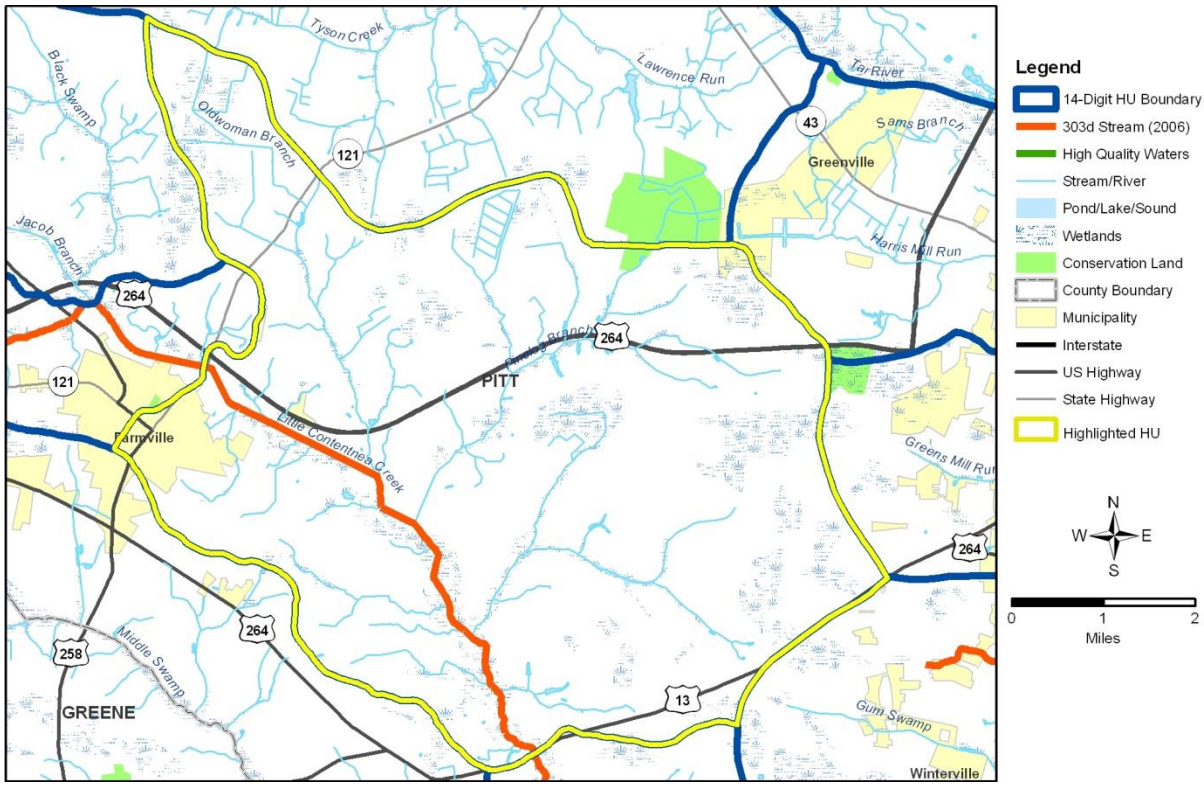
High priorities for this watershed include reestablishing buffers along streams and stream restoration projects that reduce agricultural impacts on the mainstem.



Little Contentnea Creek: 03020203070030

The Little Contentnea Creek watershed is 37 square miles of the Rolling Coastal Plain. Sixty-seven miles of stream flow through the watershed. Forty-one percent of them are not buffered adequately with woody vegetation. Over 7% of waters here are impaired. Nearly half the watershed is in agricultural land use, including five permitted animal production operations. Two agricultural BMP projects have been implemented here. Forty-two percent of the watershed is forested or forested wetland, including 6.3 square miles of unfragmented forest. Soils are primarily hydric here with 44% type A and 24% type B. Eight percent of the HU is developed with about 1.2% imperviousness. DOT has programmed 1.2 miles of TIP projects for development in the near future.

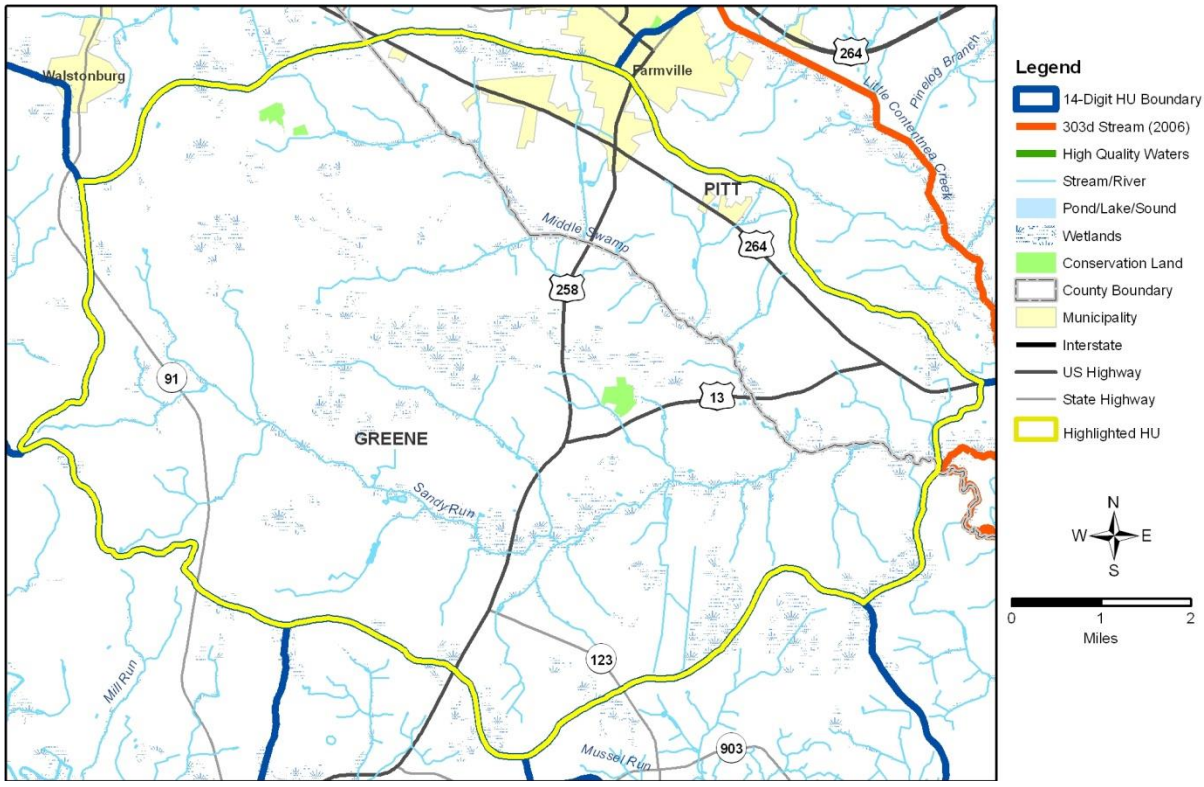
Priority projects for Little Contentnea Creek should address agricultural runoff and buffer restoration. Stream restoration should be focused in areas of excessive ditching.



Upper Middle Swamp: 03020203070040

The Upper Middle Swamp watershed includes 54 square miles of Rolling Coastal Plain. There are 83 miles of streams here. Forty-two percent of them lack buffers. Fifty-two percent of the watershed is used for agriculture and there are 30 swine operations and one cattle farm. Three agricultural BMP projects have been constructed in the watershed. Forty-one percent of land area is forest or forested wetlands. Hydric soils predominate—33% hydric type A and 59% hydric type B. Over eight square miles of unfragmented forest can be found here too. One CWMTF project was completed here. Six percent of the watershed is developed with less than 1% impervious surface.

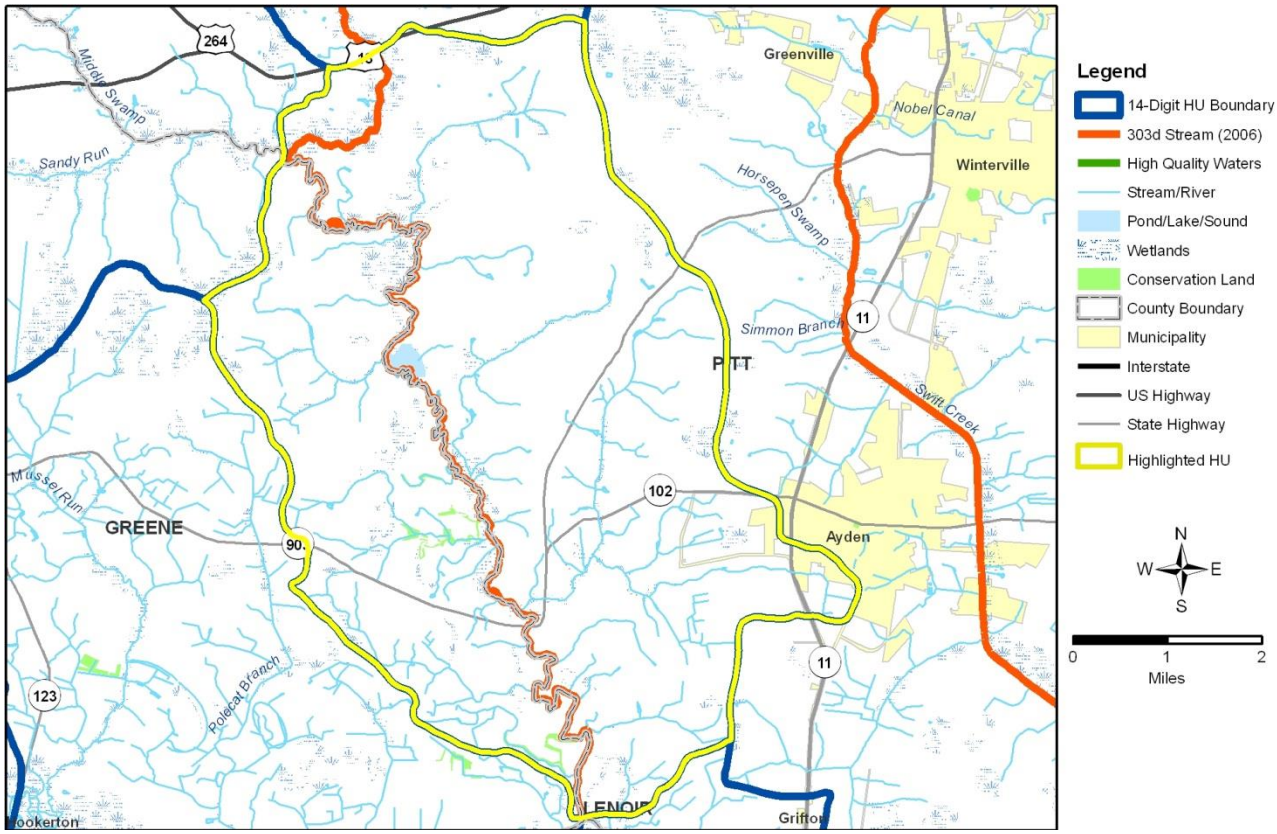
Priority projects here should address buffer inadequacies and agricultural runoff.



Middle Swamp: 03020203070050

The Middle Swamp HU lies in the Rolling Coastal Plain and covers 34 square miles. There are 90 miles of stream here with 55% of them lacking wooded buffers. Twenty-three percent of streams here are impaired and are on the state's 303(d) list. Sixty-two percent of the watershed is used for agriculture and there are 24 livestock production operations here. Thirty-two percent of the watershed is wetland or forest. Sixty-three percent of soils are hydric (25% type A, 38% type B). There is a single CWMTF project in the watershed. Only about 5% of the watershed is developed.

Priority projects for the watershed should reestablish buffers or reduce agricultural inputs to streams.

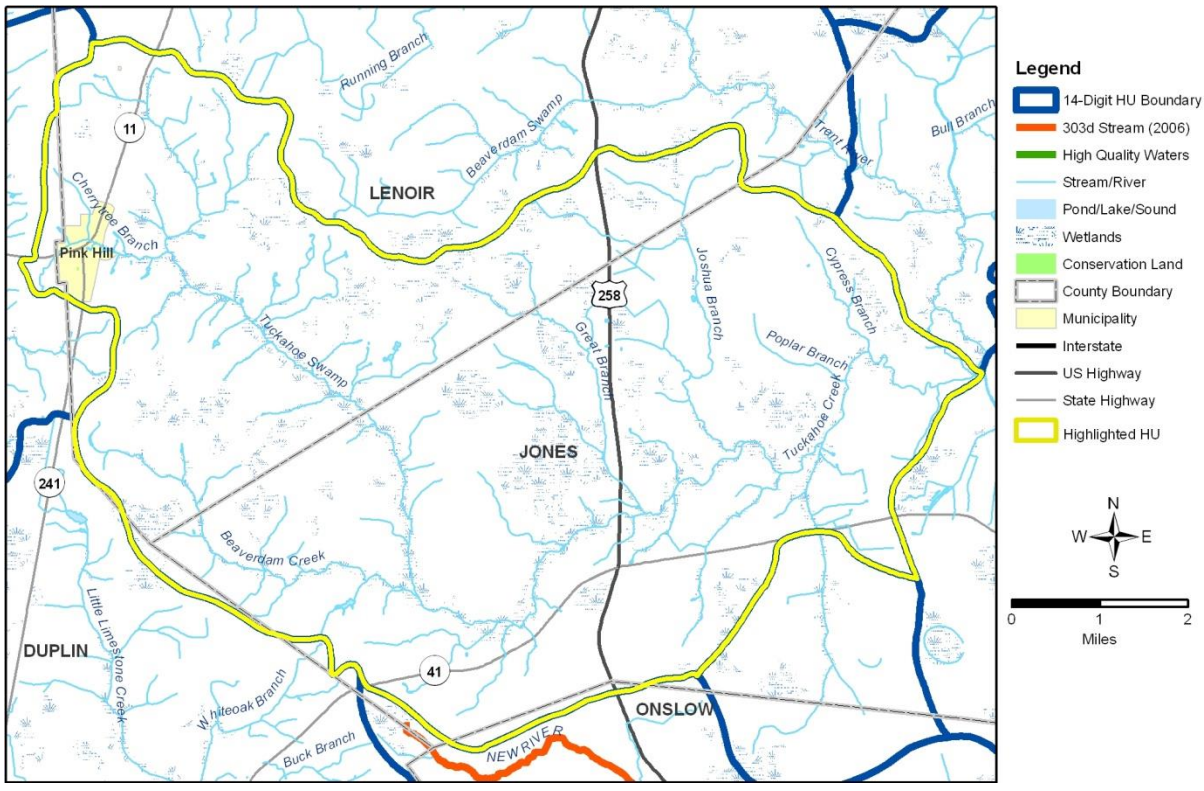


Neuse 04 Targeted Local Watersheds

Tuckahoe Creek: 03020204010030

Tuckahoe Creek is about 51 square miles of the Carolina Flatwoods ecoregion. There are 102 miles of stream here (31% unbuffered). No streams are currently listed as impaired. Sixty percent of the watershed is forest or wetland. Most soils here are hydric (48% type A, 39% type B). Thirteen square miles is interior, unfragmented forest. Thirty-six percent of the watershed is used for agriculture. There are 46 permitted animal production facilities, nearly one per square mile—eight cattle, 12 poultry, and 26 hog farms. There are six agricultural BMP projects here. A low percentage of the HU (4%) is developed. There is one 319 project and one WRC project in the watershed. DOT has planned 2.3 miles of TIP projects for development in the near future.

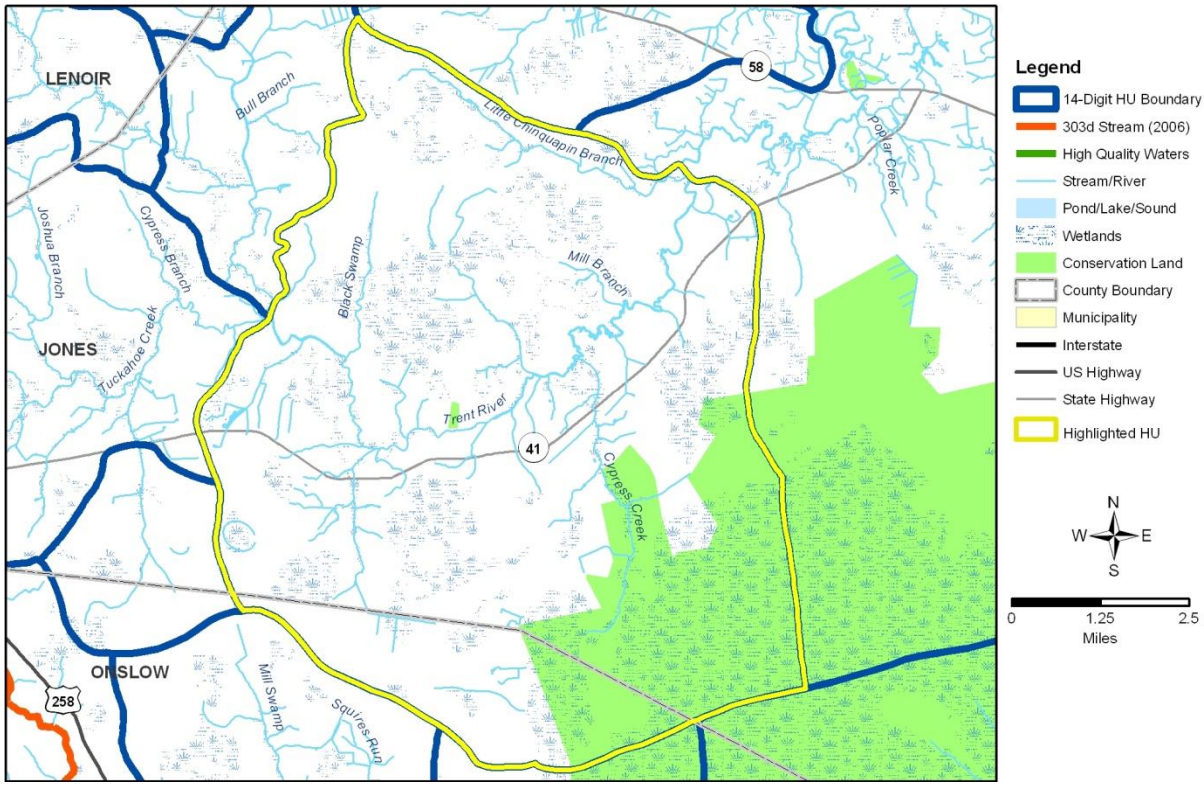
Buffer projects and reduction of agricultural inputs are high priorities here.



Upper Trent River: 03020204010040

The Upper Trent River is 61 square miles of Carolina Flatwoods. Seventy-five miles of stream here include 26 miles of unbuffered riparian zone. Approximately 19% of streams are 303(d)-listed. Seventy-three percent of the HU is forested wetland including 28 square miles of unfragmented forest. Ninety-seven percent of soils are hydric. Twenty-four percent of land is agricultural and there are 17 permitted animal operations. A low 3% of the watershed is developed and very little imperviousness. There are 2.4 square miles of designated SNHA here. Two agricultural BMPs have been constructed as well as one WRC watershed improvement project.

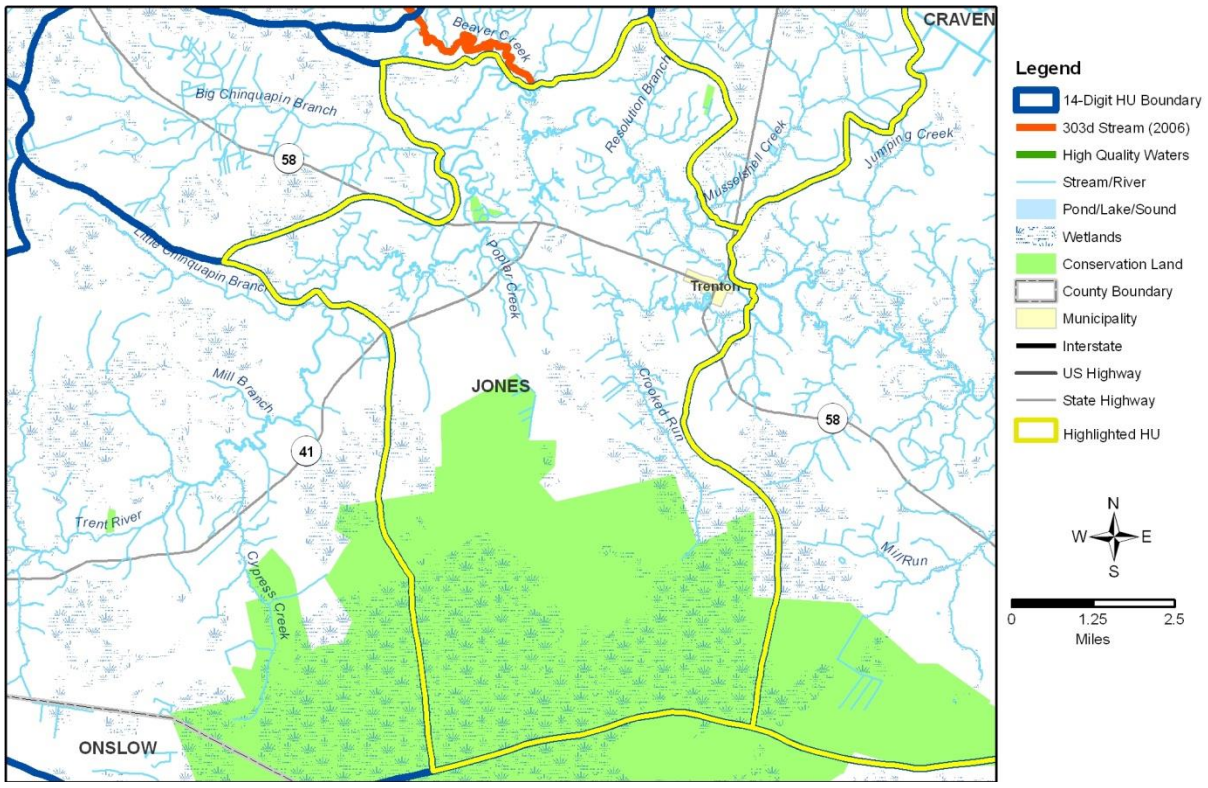
Priorities for this watershed include establishing buffers. The watershed offers a great deal of wetland preservation opportunities as well.



Crooked Run: 03020204010070

The Crooked Run watershed is 56 square miles. There are 94 miles of stream here with nearly half of them unbuffered. Sixty-eight percent of the watershed is forested wetland. Ninety-four percent of soils are hydric (68 type A, 26% type B). Twenty square miles of forest are considered unfragmented. There are five square miles designated SNHA and 14 NHEOs here. Twenty-eight percent of the land is used for agriculture. There are 12 permitted livestock operations here. Only 4% of the watershed is developed. There is a single WRC project in the watershed.

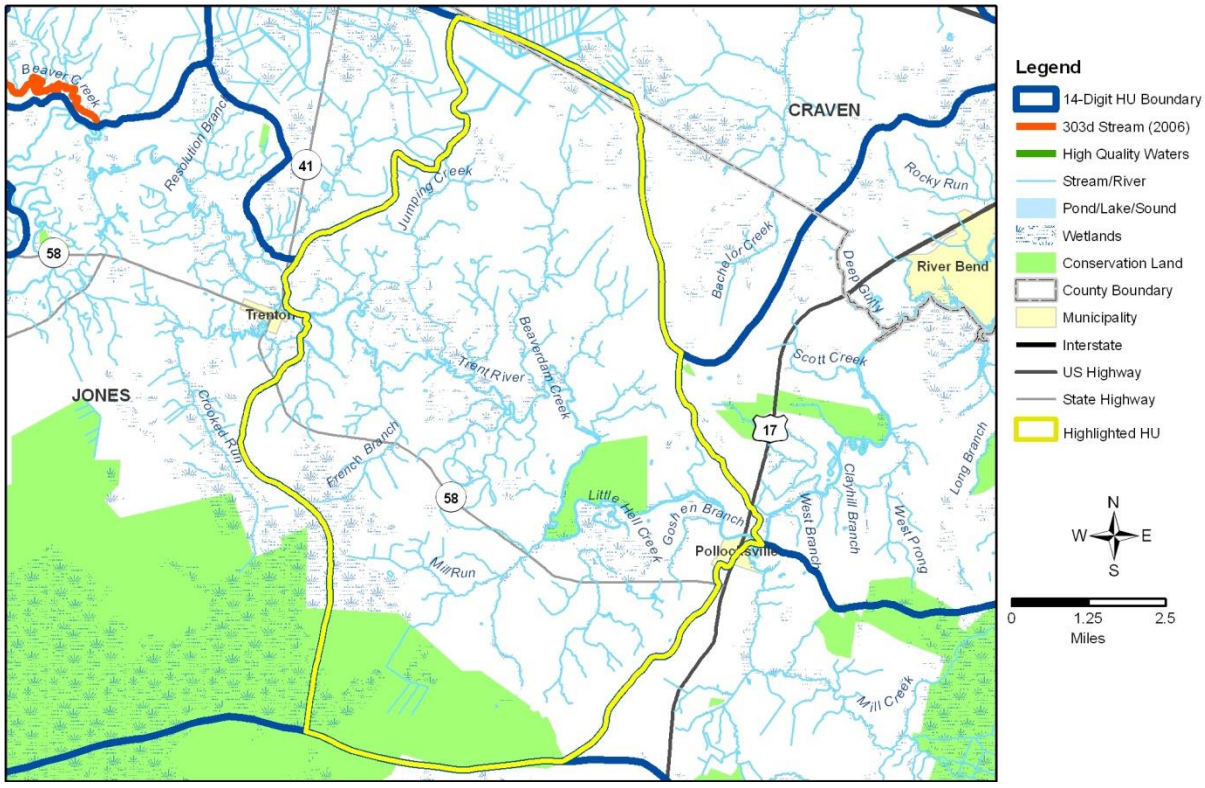
Priority projects here also address buffer inadequacies and preservation or restoration of contiguous forested wetland habitat.



Middle Trent River: 03020204010080

The Middle Trent River watershed covers 63 square miles of the Carolina Flatwoods ecoregion. Thirty-six percent of the 137 miles of stream here lack adequate buffers. Nineteen percent of streams are 303(d)-listed. Over half the watershed is forested wetland and 96% of soils are hydric. Fourteen NHEOs are documented in the watershed. Forty-three percent of the watershed is agricultural including 20 animal operations. Four percent is developed. DOT has programmed less than one mile of TIP projects here.

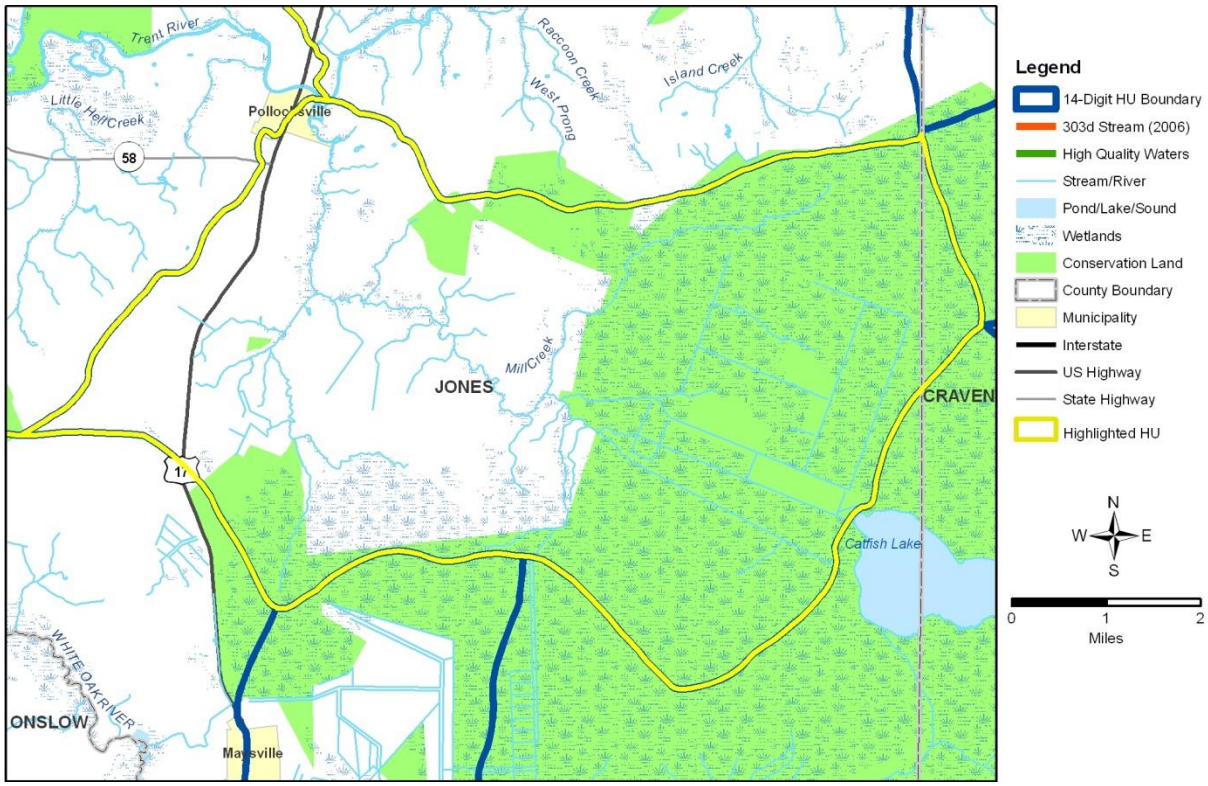
Buffer projects and wetland restoration projects are high priorities here. Localized stream restoration should be focused in ditched areas, especially in headwaters.



Mill Creek: 03020204010090

The Mill Creek watershed spans 36 square miles of Carolina Flatwoods. There are 60 miles of streams, 21% unbuffered. The watershed is 81% forested wetland and soils here are extensively hydric (79% type A, 19% type B). Twenty-two square miles of contiguous, unfragmented forest can be found in this HU. Agricultural land use is relatively low (19%). Two agricultural BMP projects have been completed here. Three percent of the watershed is considered developed with very little impervious surface compared to other watersheds. There are 6.6 square miles of designated SNHA and 16 documented NHEOs. Section 319 and WRC have each sponsored a single project here. DOT has planned four miles of TIP projects.

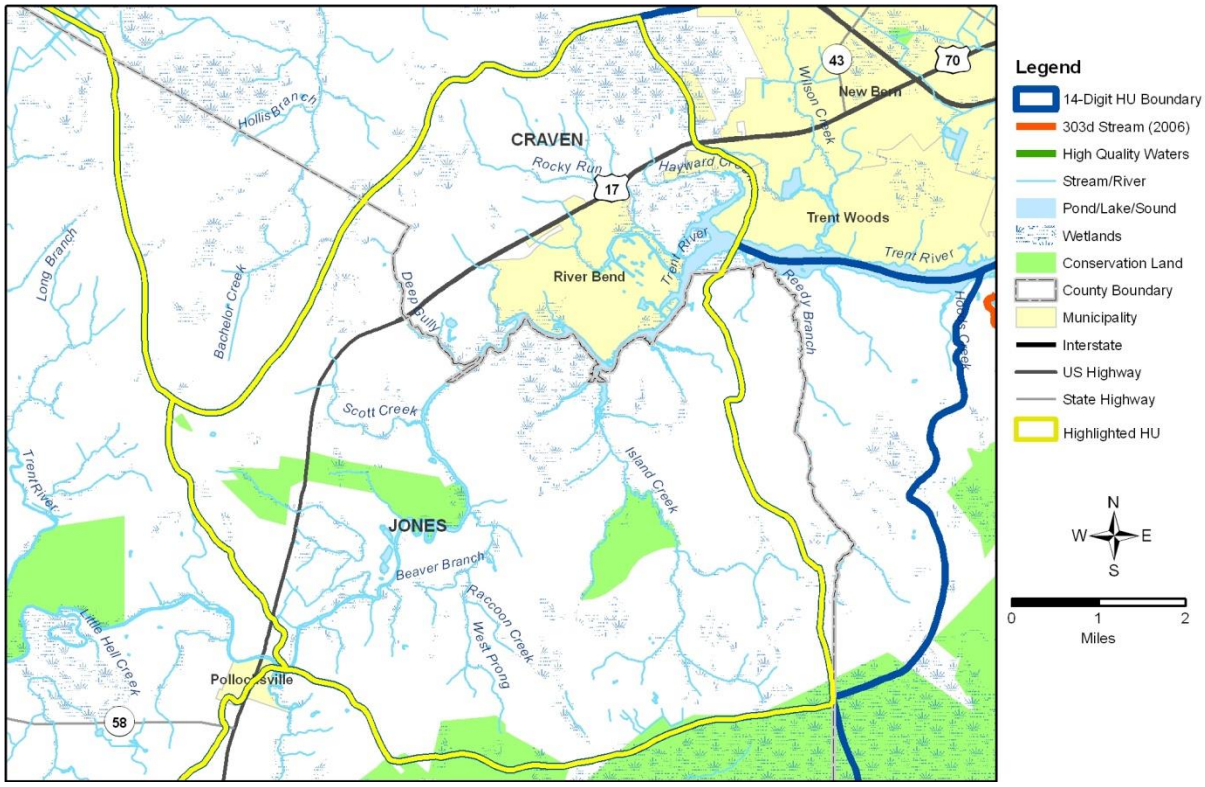
Priorities for the Mill Creek watershed include preservation of intact forested wetlands and restoration of more natural stream channels in ditched areas. Buffer reestablishment is locally important as well.



Lower Trent River: 03020204010100

The Lower Trent River HU contains 41 square miles of the Carolina Flatwoods ecoregion with 70 miles of stream flowing through it. Over one-quarter of streams lack wooded buffers and 9.6% of streams are 303(d)-listed. About 1.6 square miles of open water cover exists here, primarily on the Trent River near River Bend. Most of the watershed is covered by forested wetlands (70%). There are 12 square miles of unfragmented forest. Soils are mostly hydric (35% type A, 53% type B). Twenty-one percent of the HU is used for agriculture and there are 8 permitted livestock operations here. A single BMP project is documented for the watershed. Eight percent is developed with about 1% imperviousness. Less than a square mile of SNHA is designated here and there are 23 NHEOs in the watershed. DOT has programmed 6.6 miles of TIP projects. The local land trust has completed a single project here as has WRC.

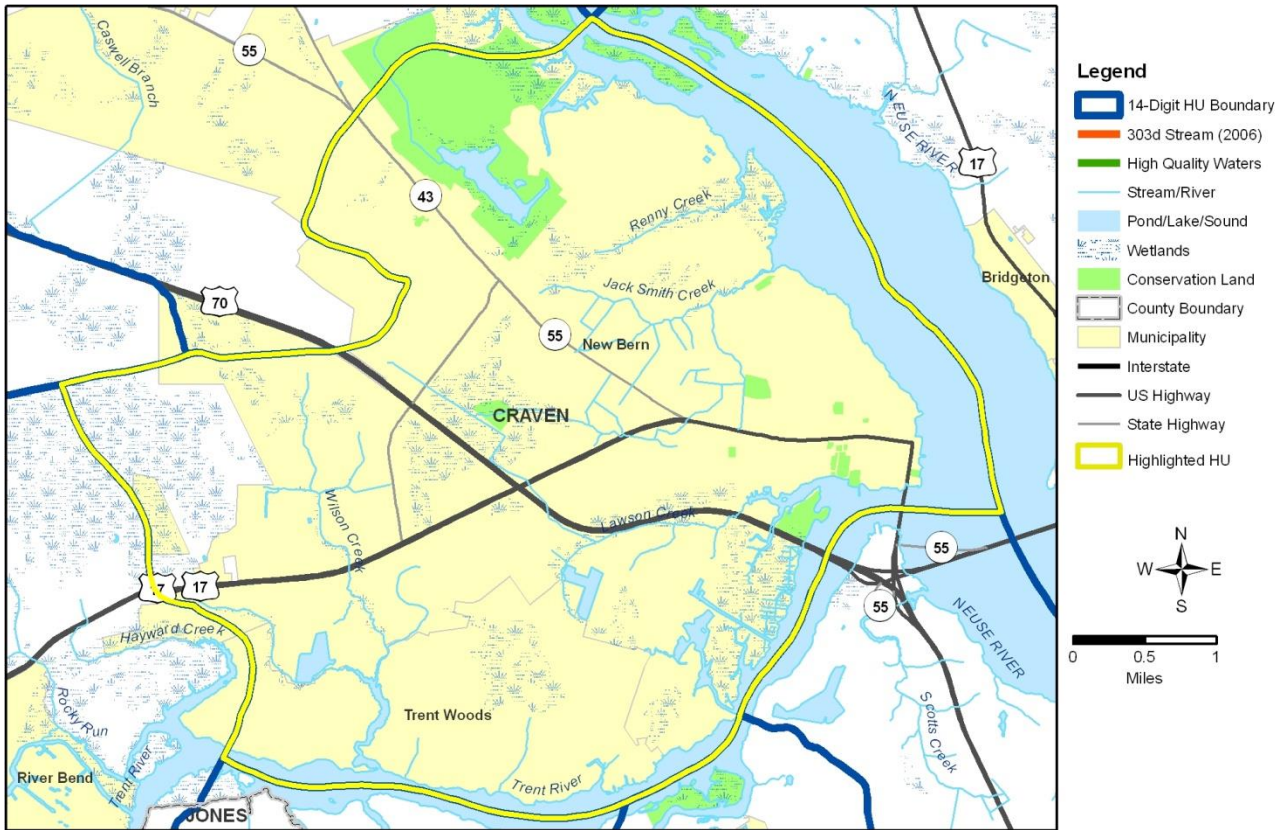
High priority projects in the Lower Trent River include preservation and establishment of riparian corridors connecting forested wetland areas.



Lawson Creek (Lower Trent River): 03020204020010

The Lawson Creek watershed is 22 square miles, containing 45 miles of stream (64% unbuffered). It lies in the Carolina Flatwoods ecoregion. The City of New Bern accounts for most of the 52% of developed area in the watershed. The watershed has a high level of imperviousness (17%). About one-third of the waters here are 303(d)-listed. Approximately 23% is forest or wetland and there is very little unfragmented forest. Soils are 63% hydric—38% type A and 25% type B. Only 9% of this watershed is used for agriculture.
Sixteen percent of the HU is open water along the Neuse and Trent rivers. There are 2.7 square miles of shellfish closure area here. Ten NHEOs are documented here and there is a small amount of designated SNHA (0.6 square miles). CWMTF has two projects here and WRC has completed one. There are 1.4 miles of TIP projects planned for the HU.

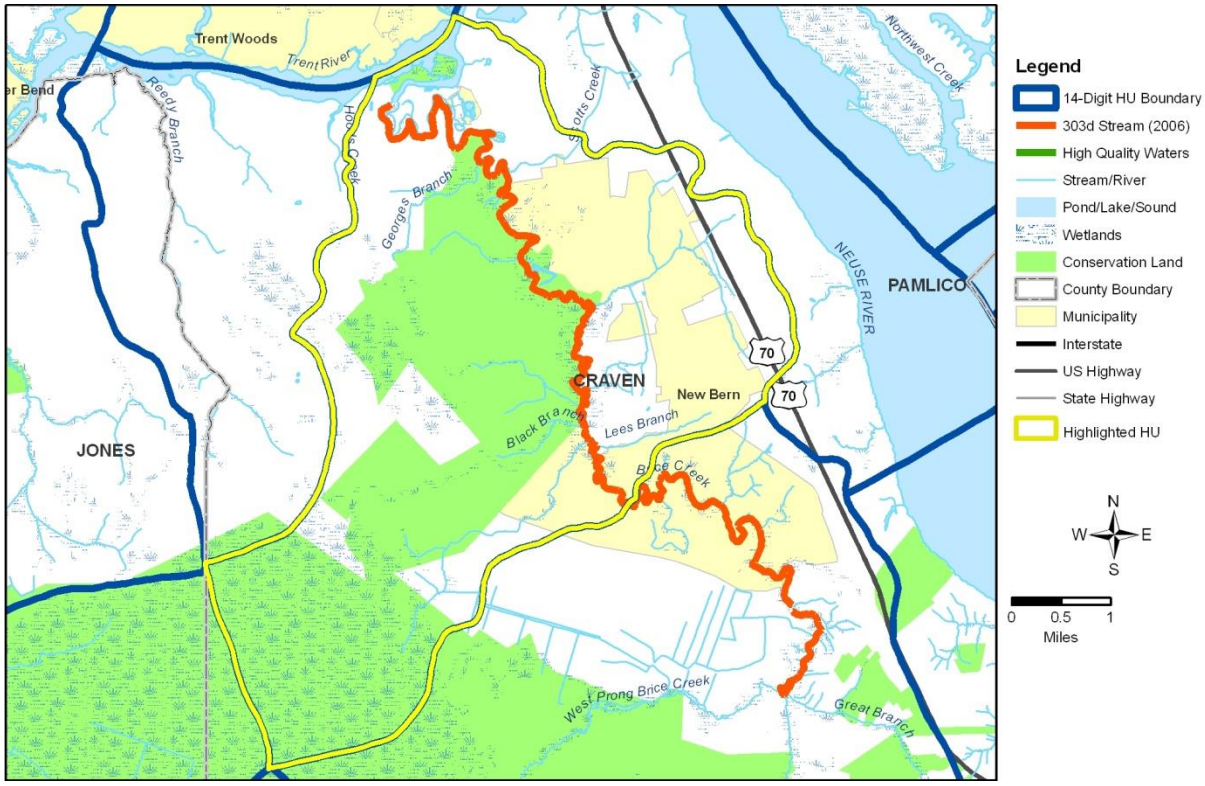
Highest priority for this watershed is the development of stormwater projects that reduce the inputs to the surrounding rivers. Wetland and stream restoration are important in areas where ditching has extensively altered hydrology and habitat.



Brice Creek: 3020204020040

The Brice Creek watershed is 22 square miles with 34 miles of streams. Twenty-two percent of streams here lack wooded buffers and 27% are 303(d)-listed. Seventy-three percent of the HU is forested and 13% is used for agriculture. A portion of the City of New Bern lies within this watershed and contributes to an average imperviousness of about two percent. Seven NHEOs occur here and approximately 10% of the land area is conservation land.

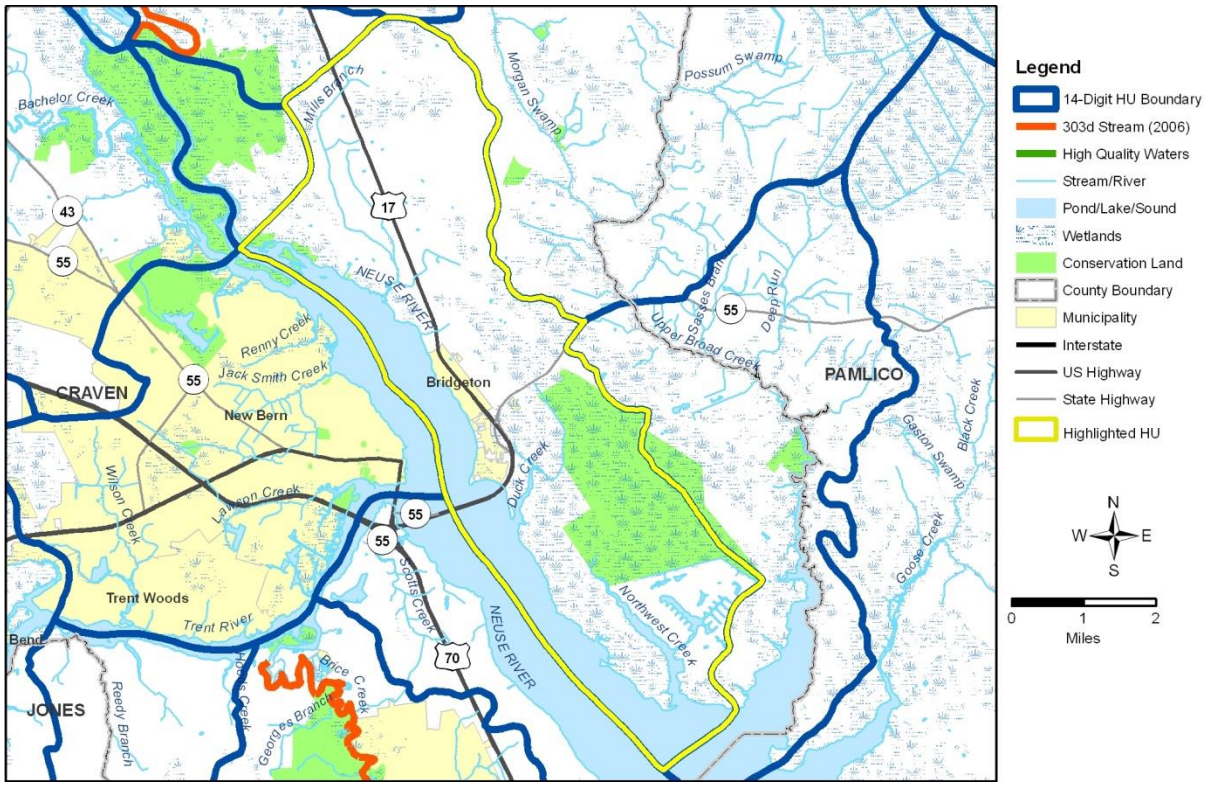
High priority projects for Brice Creek address stormwater runoff in the vicinity of New Bern. Preservation projects that augment conservation areas are also important here.



Northwest Creek: 03020204030010

Northwest Creek is a 27 square mile watershed with 34 miles of stream in the Mid-Atlantic Floodplains and Low Terraces ecoregion. Nearly half of streams here are unbuffered and 20% of waters are listed as impaired. About 5.6 square miles of open water is closed to shellfishing. Fifty percent of the watershed consists of forest or wetland habitat, including 6.3 square miles of unfragmented, interior forest. Three-quarters of soils are hydric (66% type A, 8% type B). The area supports 25 NHEOs and 6.4 square miles of the watershed is designated SNHA. Eighteen percent of the area is agricultural. Eleven percent is developed with about 2.5% impervious surface. CWMTF has completed on watershed improvement project here. The Department of Transportation has planned 6.8 miles of improvement projects in the watershed.

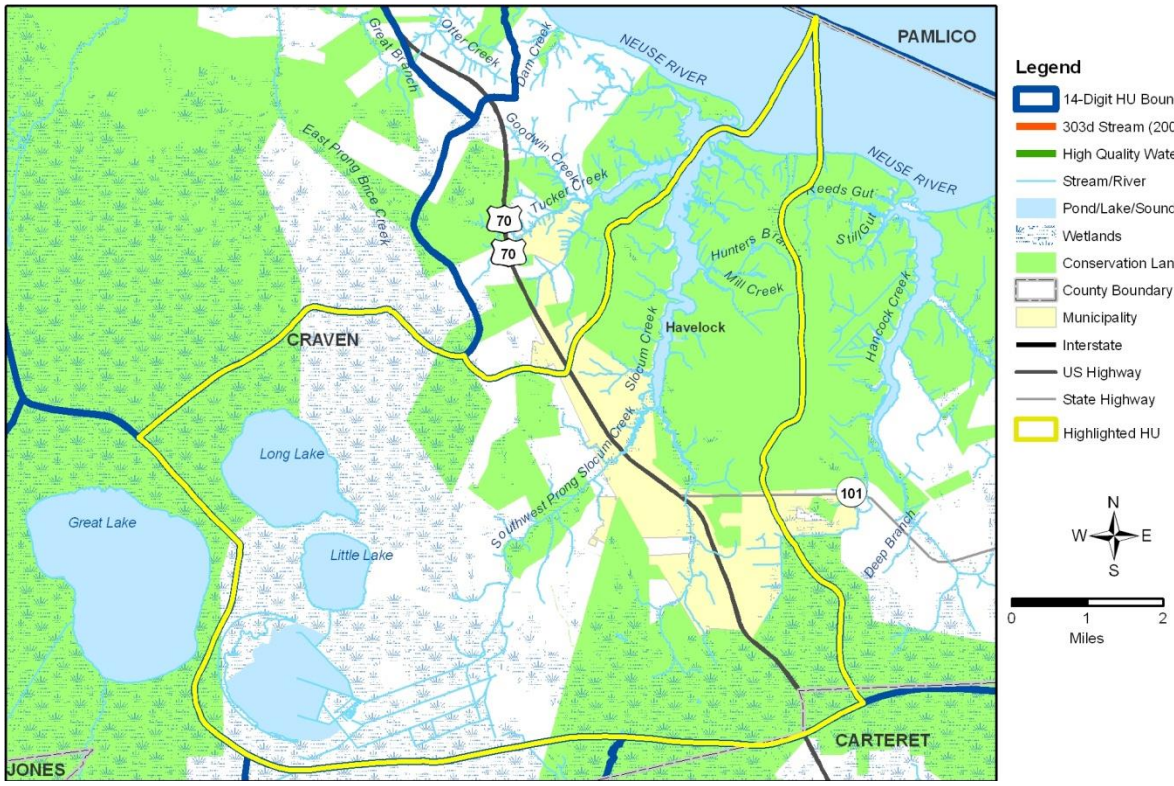
Buffer projects are a high priority for the watershed as is preservation and restoration of forested wetlands.



Slocum Creek: 03020204050020

The Slocum Creek watershed is 50 square miles, predominantly Carolina flatwoods, with about 12% open water area. Over 75% of the land consists of hydric soils. There are 65 miles of stream, 37% of which lacks woody buffers. The City of Havelock cuts through the watershed along the US70 corridor, occupying about 19% of the land area. A total of 6.4% of the area is considered impervious. Of the remaining land area, 62% is either forested or in wetlands (19 square miles unfragmented), with a relatively small amount of agriculture (8% of land area). The NC DOT Transportation Improvement Program has slated six miles of projects in the watershed. Twenty-three square miles of the area is considered conservation area, with 14 square miles designated as Significant Natural Heritage Area. There are 91 Natural Heritage Element Occurrences here. CWMTF funded three projects and WRC funded one project in this watershed. Shellfish Sanitation maintains 1.8 square miles of shellfish closure area.

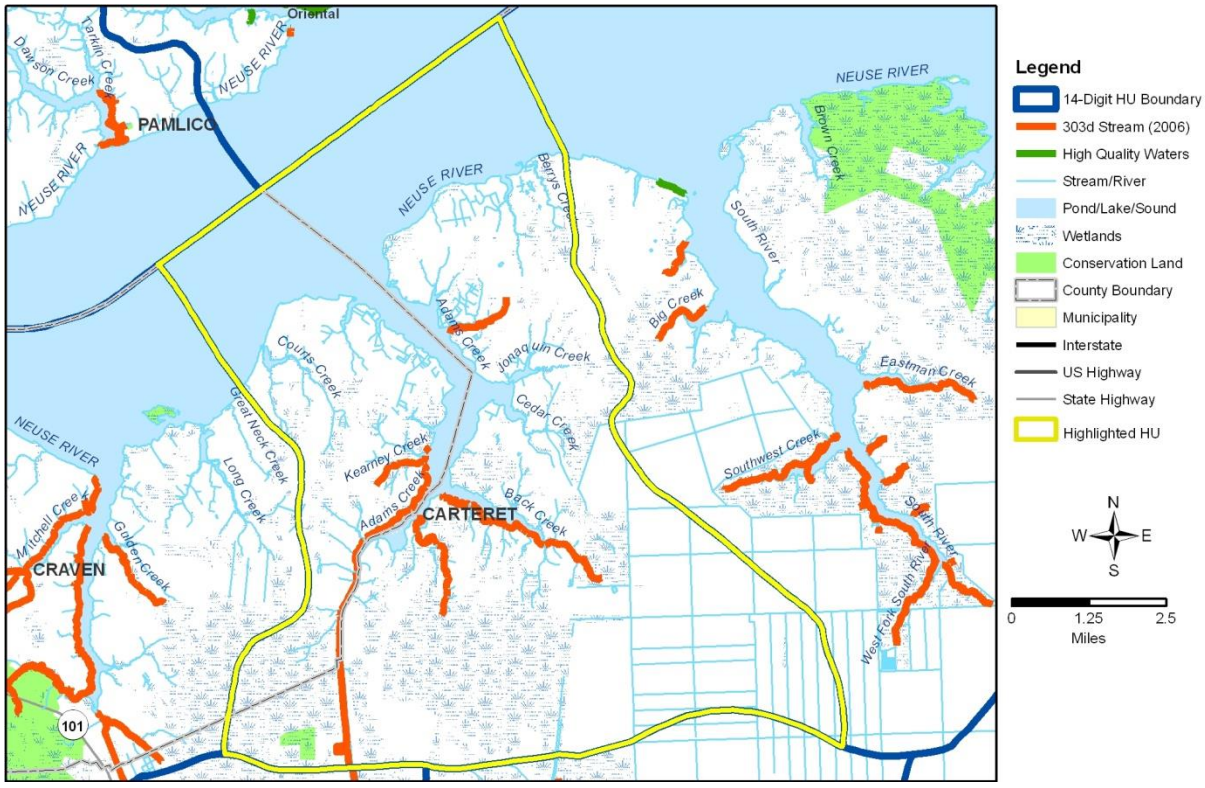
High priorities for the watershed include stormwater projects that help offset the effects of paved surfaces around Havelock as well as the establishment of buffers along streams that lack them.



Adams Creek: 03020204050050

The Adams Creek HU encompasses 72 square miles, 24% of which is open water. There are 132 miles of stream (9% 303(d)-listed, 51% unbuffered). Approximately 70% of soils here are hydric with 46% of land area existing as wetlands or forest (17 square miles unfragmented). Two-and-a-half percent of land is developed and 27% is used for agriculture. About two square miles of shellfish beds are closed to harvesting and one square mile is designated primary & secondary fish nursery habitat.

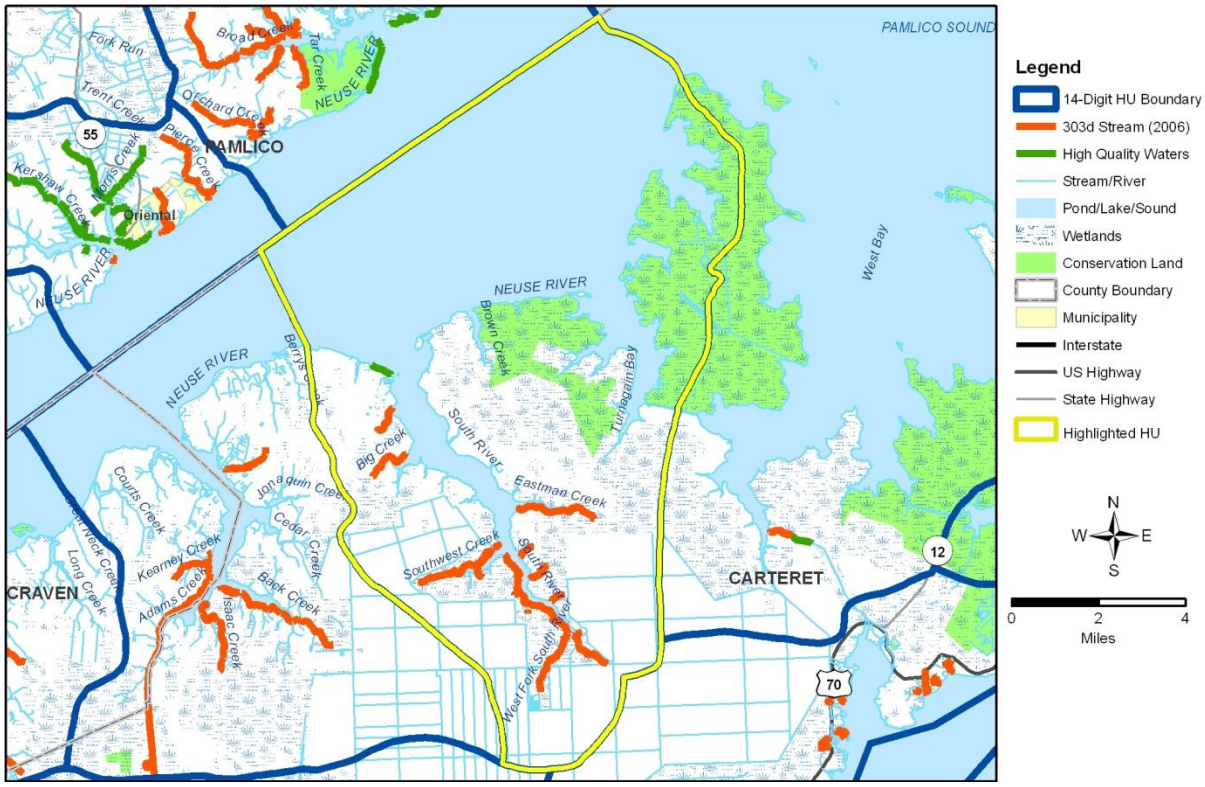
Priority projects here should include buffering streambanks and managing stormwater to help improve water quality in the estuarine habitat.



South River: 03020204070010

The South River watershed is a 115 square mile area consisting primarily of Chesapeake-Pamlico lowlands and tidal marshes. There are 97 miles of stream here with about 45% of the HU in open water. Eight percent of streams are included on the NC 303(d) list of impaired waters and 51% are unbuffered. About half the soils in the watershed are hydric. A very small amount is developed (1.4%) with 34% forested land (17 square miles unfragmented) or wetlands. Nineteen percent of the land is used for agriculture. Over nine square miles are designated Significant Natural Heritage Area and 21 Natural Heritage Element Occurrences exist in the watershed. Two existing water quality improvement projects were sponsored by the Clean Water Management Trust Fund in the watershed.

Priorities for this HU include restoring ditched and straightened headwaters and stormwater management projects that enhance water quality in the estuary where shellfish and finfish reproduce.

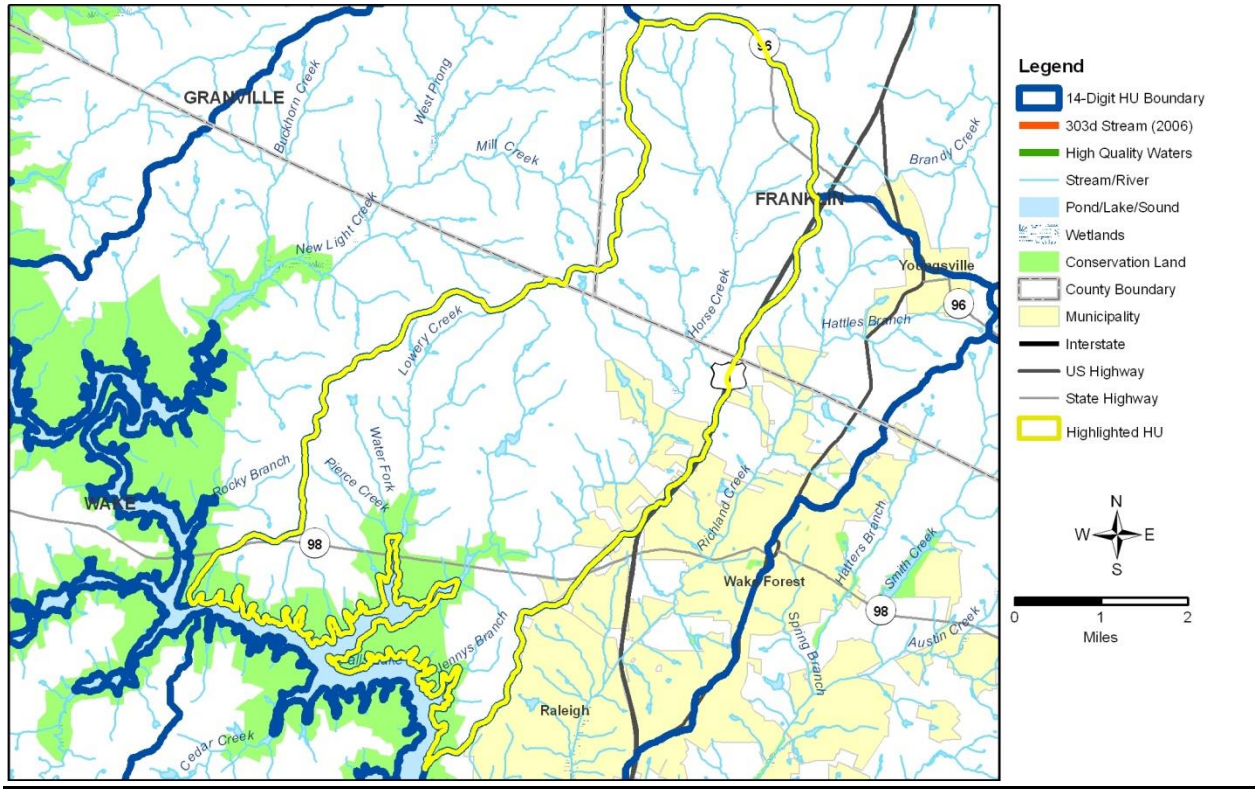


Information on Watersheds with removed TLW designation

This section contains information on HUs that had their TLW designation removed. This change in designation affected nine TLWs in the Neuse.

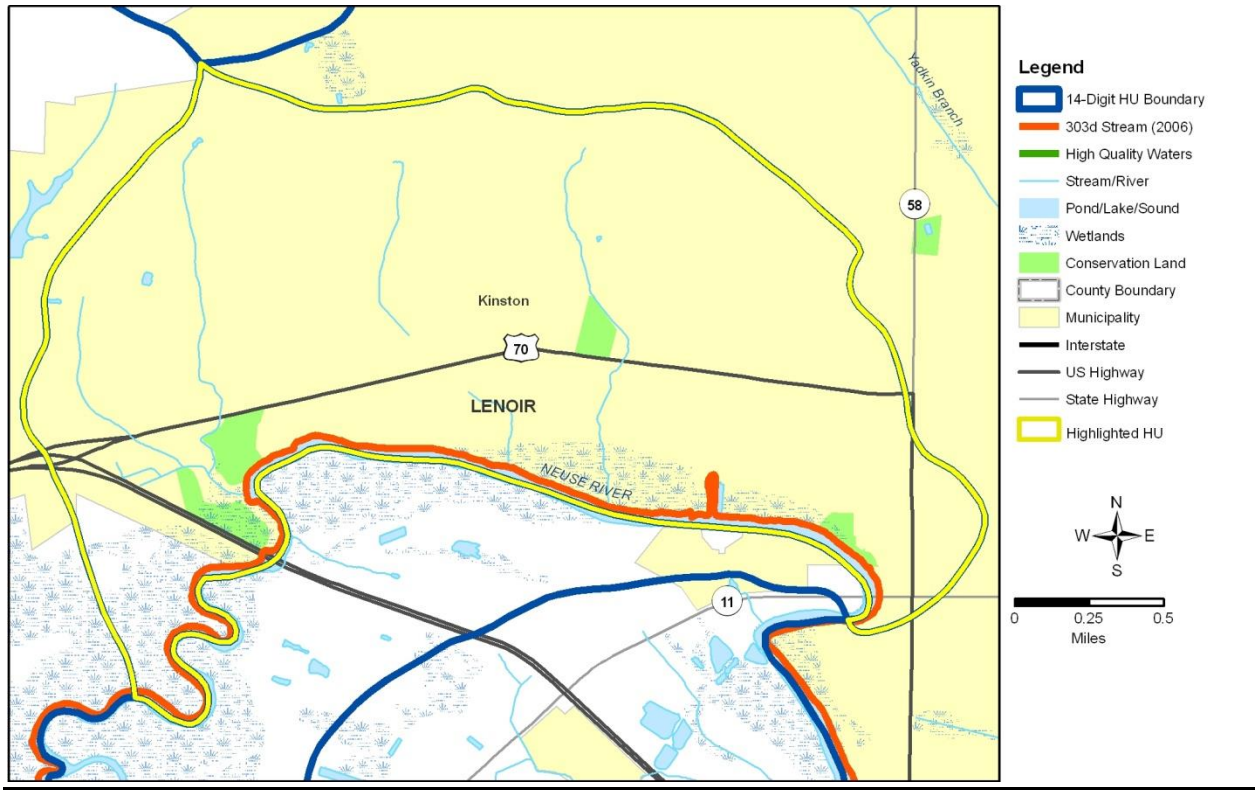
Horse Creek: 3020201065020

The Horse Creek watershed ranked low for all indicator categories. The small amount of Wake Forest and Raleigh inside the HU boundaries (qualifying the watershed for two Phase II communities in the analysis) was not sufficient to raise the opportunities score high enough for inclusion as a TLW. This watershed has been delisted.



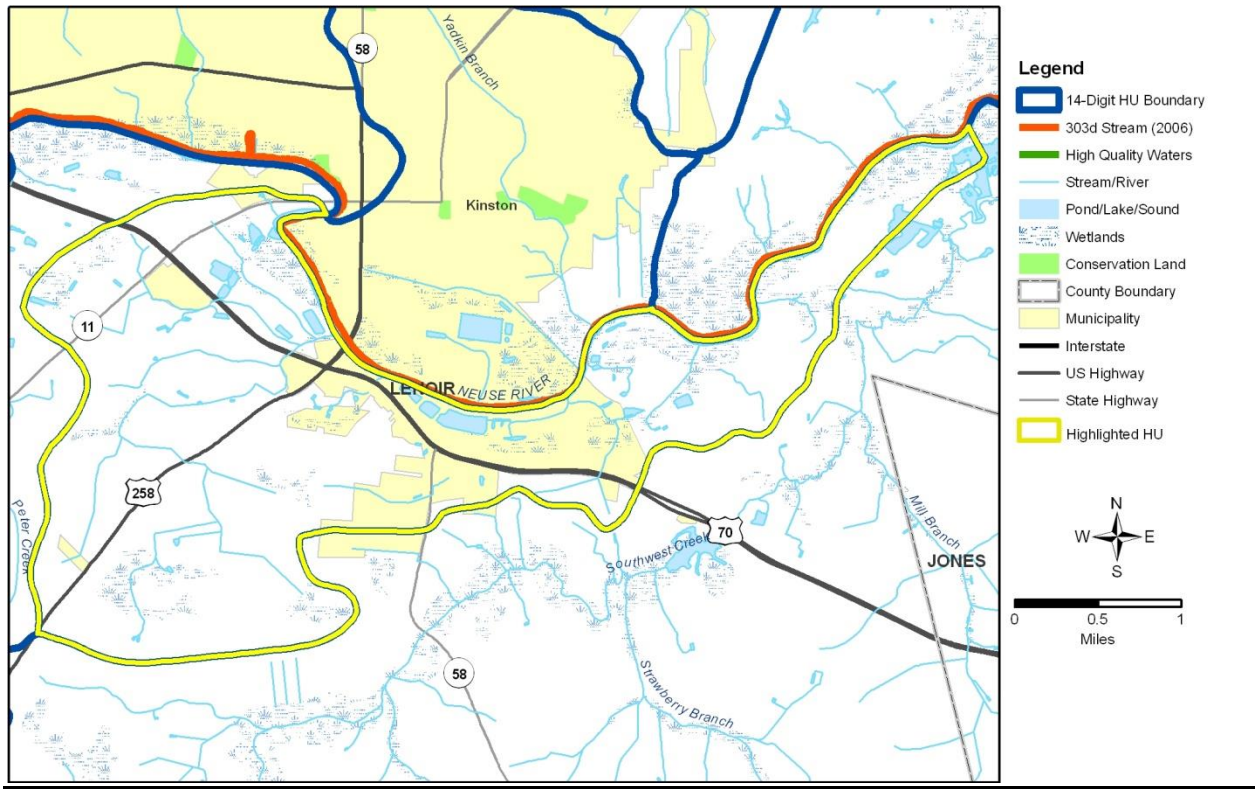
Neuse River: 3020202040030

This watershed on the Neuse River proper includes much of the City of Kinston. It has a moderate score for problem metrics including 37% 303(d)-listed waters, 21% imperviousness, and 55% unbuffered streams. However, due to its comparatively low scores for both assets and opportunities, this HU has been delisted.



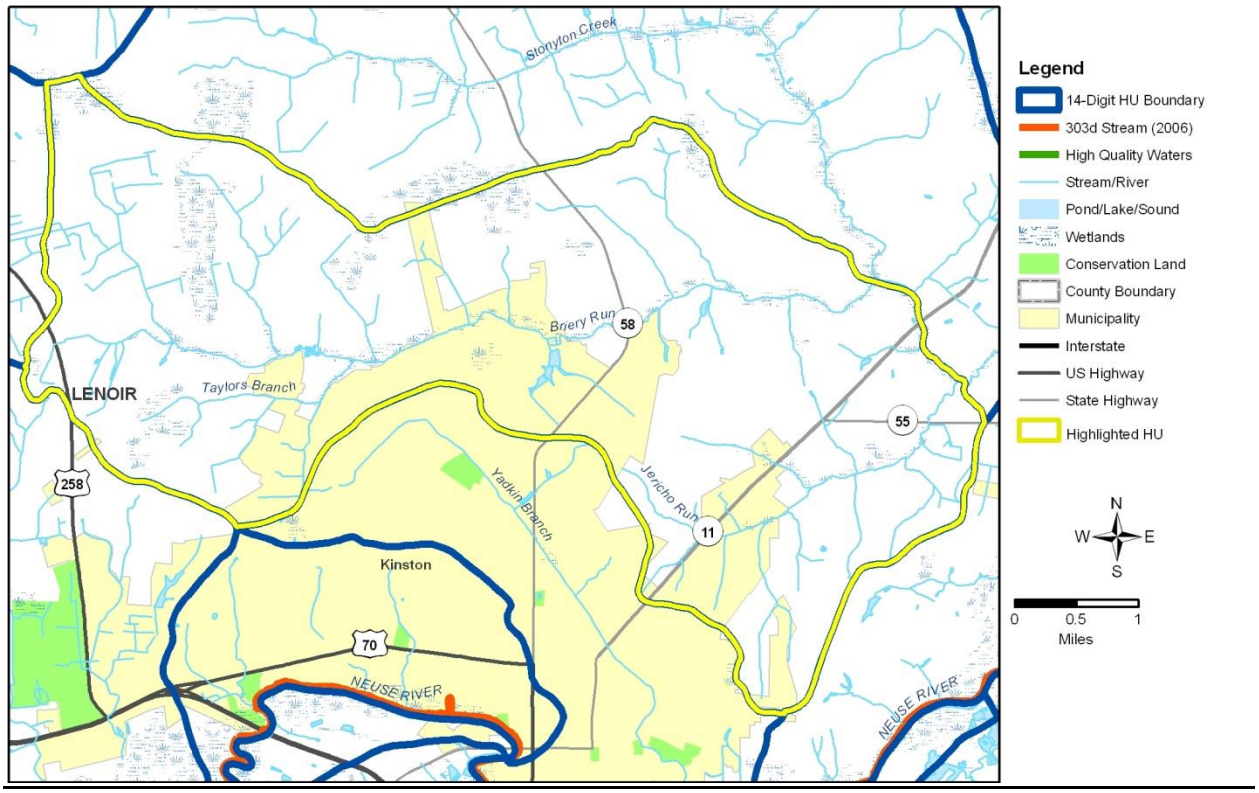
Neuse River: 3020202050040

This HU on the Neuse River also contains part of the City of Kinston. It scored moderately low for problems (17% impaired waters and 6.6% imperviousness) and very low on asset and opportunity metrics. This watershed has been delisted.



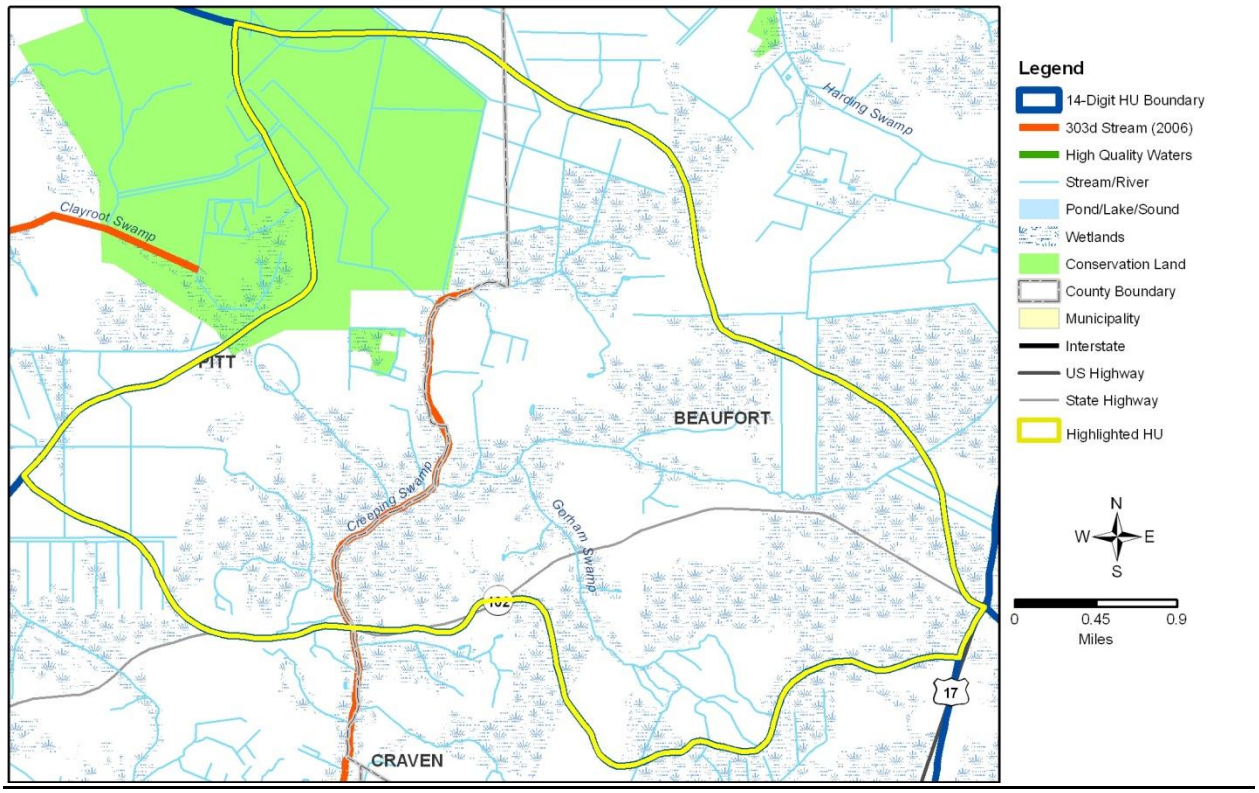
Briery Run: 3020202060020

Part of the City of Kinston also lies in this watershed. The HU scored low in all three categories of metrics. Despite some imperviousness (3.6% impervious surface) and poor buffer condition (56% unbuffered streams), this watershed has been delisted.



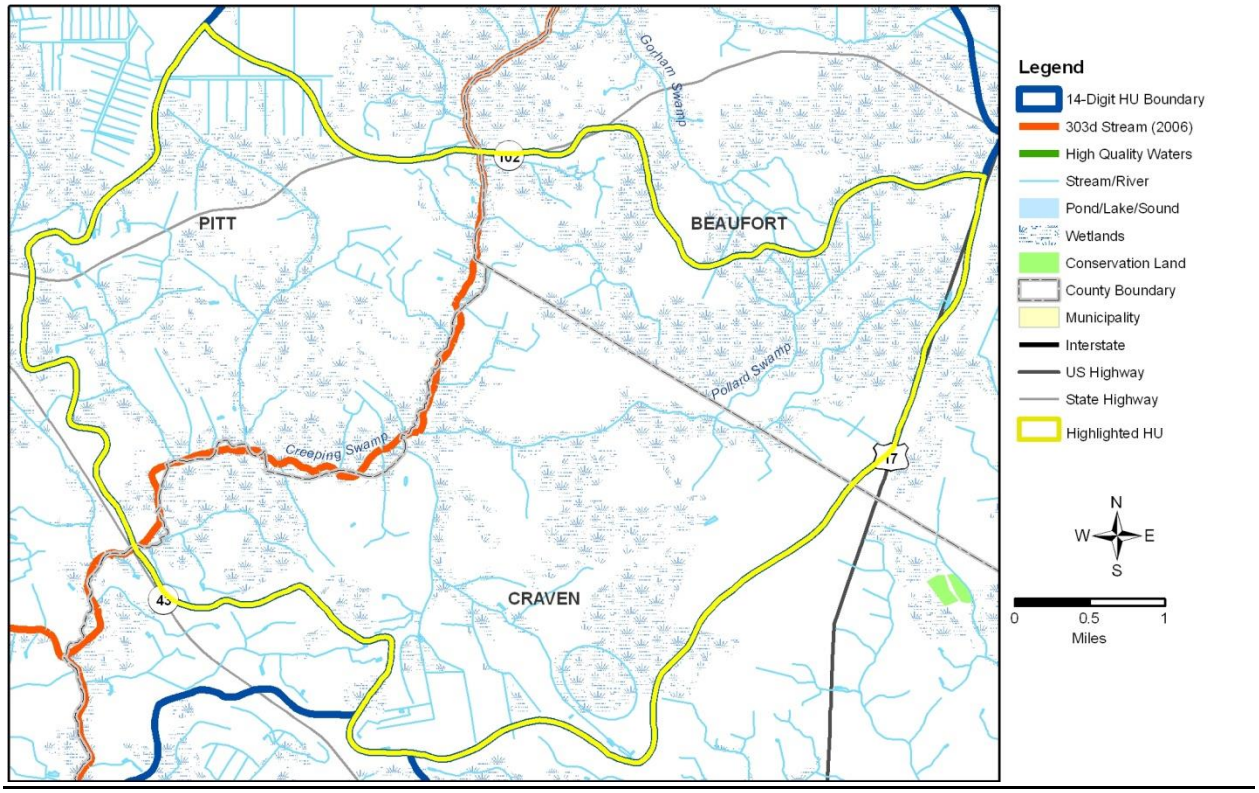
Creeping Swamp: 3020202090040

The Creeping Swamp watershed scored low in all categories. It does lack adequate buffers in most of the watershed (51% unbuffered streams), but compared with other HUs in the catalog unit, it still scored in the low range. This watershed has been delisted.



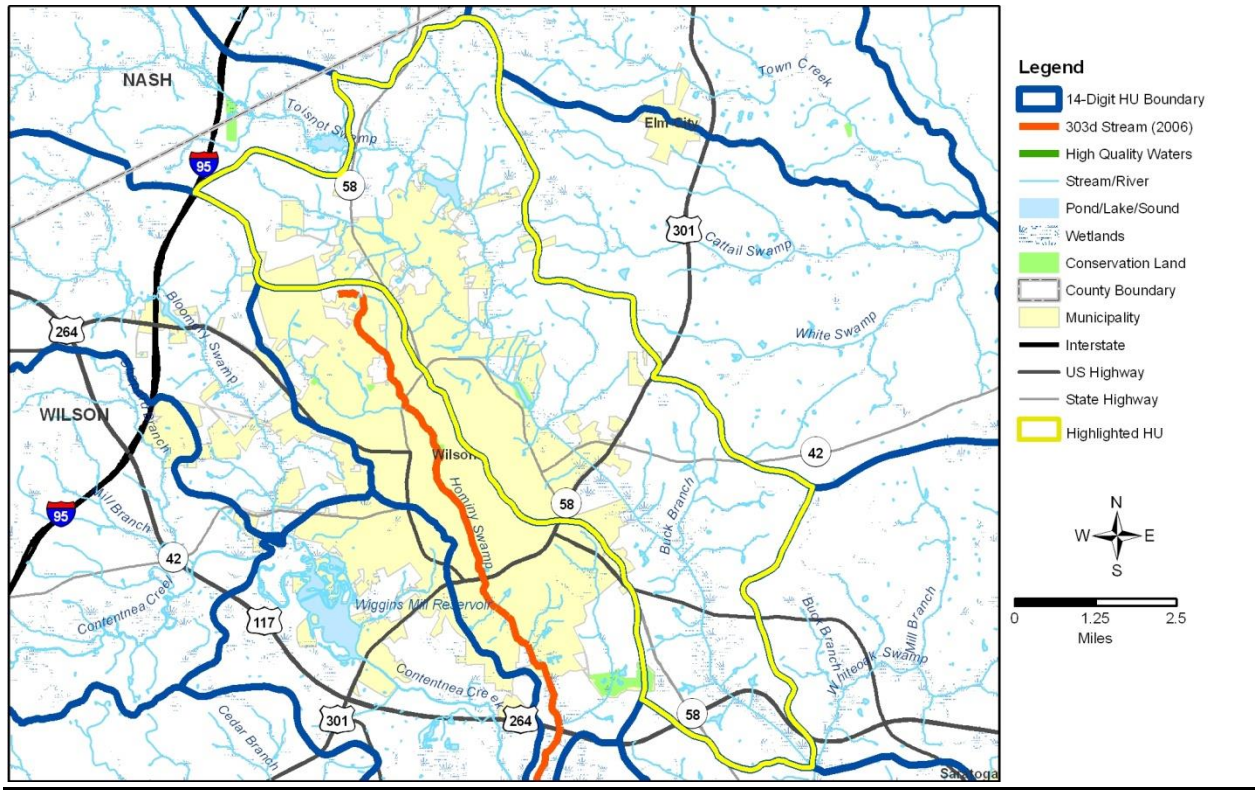
Creeping Swamp: 3020202090050

This Creeping Swamp HU also scored low in all categories. It also has been delisted.



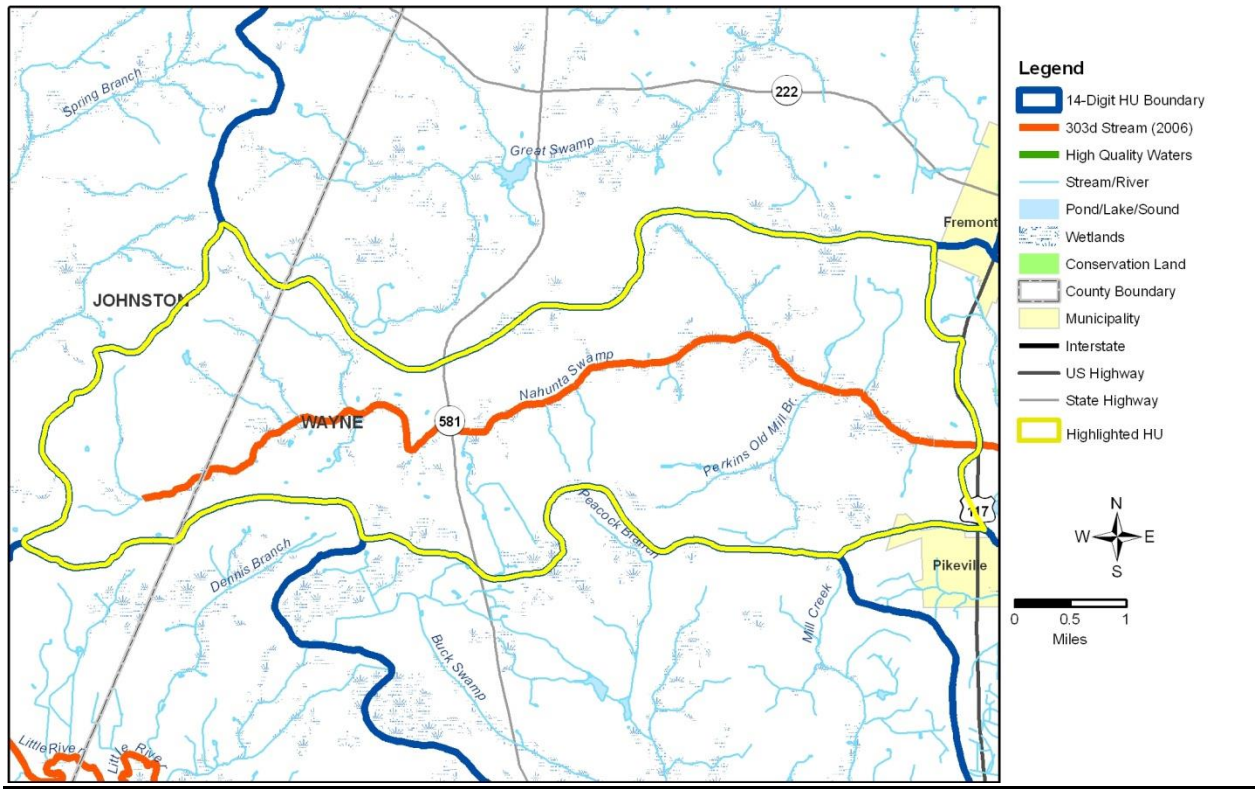
Toisnot Swamp: 3020203040020

Toisnot Swamp contains part of the City of Wilson. Five percent of the watershed is impervious surface and all of the waters are designated water supply waters. Despite these features, it scored low in all categories. The watershed has been removed from the list of Targeted Local Watersheds.



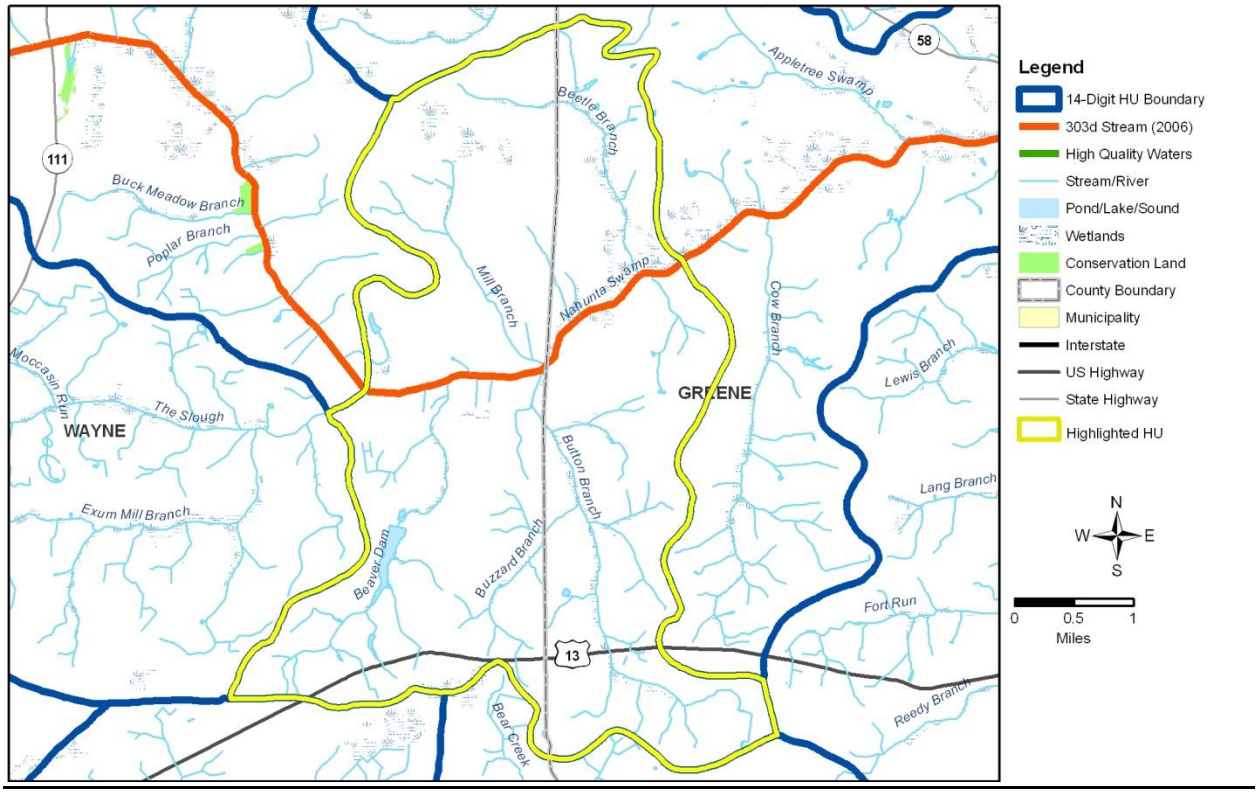
Nahunta Swamp: 3020203060010

Nahunta Swamp lies in three hydrologic units including this one and the next two. The watershed scored low in all metric categories, despite having a significant amount of impaired streams (18%). The watershed has been delisted.



Nahunta Swamp: 3020203060040

This lower segment of Nahunta Swamp also has a significant amount of impaired streams (6.7%) but it scored low in all categories. It 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 DEQ 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.

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.

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