

# Watershed Restoration Plan for the Roanoke River Basin



2001



## EXECUTIVE SUMMARY

This document, prepared by the North Carolina Wetlands Restoration Program (NCWRP), presents a description of Targeted Local Watersheds within the Roanoke River Basin. It is the first update since the original Basinwide Wetlands and Riparian Restoration Plan for the Roanoke River Basin was released in 1998. This plan is different from the preceding document in that a more in-depth description is provided focusing on the areas of interest, the Targeted Local Watersheds. Local watersheds are targeted based on their need and opportunity for stream, wetland and riparian buffer restoration. The watershed approach is the outgrowth of the recognition that water quality improvements are likely to have more pronounced and longer lasting effects if assessments and restoration efforts are focused on the local watershed level as opposed to discrete and isolated stream segments within the basin as a whole. The NCWRP hopes that the geographic targets provided will be used by other agencies, groups and local governments for the location of water quality improvement projects. Coordinating project implementation in watersheds with significant restoration need can allow for organizations with similar goals to generate greater positive ecological impact on North Carolina's aquatic resources through complementary efforts with cumulative impacts.

This document is designed for use in conjunction with the Guide to NCWRP's Watershed Restoration Planning Strategy. General information pertaining to program goals and plan methodology is provided in the planning guide. Information relating to Roanoke River Basin restoration goals and basin-specific resource assessments are contained within this Restoration Plan.

In general, this document provides an overview of the Roanoke River Basin, and describes each Targeted Local Watershed. In the overview of the basin (Section 2) is a map showing all eight Roanoke River subbasins highlighting the 17 Targeted Local Watersheds. Section 2 contains a general description of the basin, habitat information, permitted wetlands losses and use support information.

In Section 3, basin-specific restoration goals are outlined, as well as a brief discussion regarding the Targeted Local Watershed selection process. This section also provides detailed information regarding the stakeholder process that was a valuable part of the development of this plan, as public input was solicited and weighed heavily in the selection of Targeted Local Watersheds.

Targeted Local Watersheds, organized by subbasin, are described in Section 4. Each section describes a subbasin and is followed by a map of that subbasin. Maps of Targeted Local Watersheds follow the text describing the watersheds within the subbasin section.

Section 5 contains contact information for various water quality initiatives taking place within the Roanoke River Basin, as well as programs and projects.

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## **SECTION 1: INTRODUCTION**

### ***Purpose and Background of the NC Wetlands Restoration Program***

Recognizing the value of wetlands and riparian areas for maintaining water quality, storing floodwaters, providing fish and wildlife habitat, and performing other valuable functions, the North Carolina General Assembly established the North Carolina Wetlands Restoration Program (NCWRP) in 1996. The purpose of the NCWRP is to restore, enhance, preserve and create wetlands, stream and riparian buffer areas throughout North Carolina's seventeen major river basins (G.S. 143-214.9). The goals of the program are:

- To protect and improve water quality by restoring wetland and stream functions and values lost through historic, current and future permitted impacts.
- To achieve a net increase in wetlands acres, functions, and values in all of North Carolina's major river basins.
- To promote a comprehensive approach for protecting natural resources.
- To provide a consistent approach to addressing wetland and stream mitigation requirements associated with wetland regulations, and to increase the ecological effectiveness of mitigation projects.

### ***Purpose of Watershed Restoration Plans***

To accomplish the goals described above, the NCWRP develops Watershed Restoration Plans to focus planning and implementation of restoration activities within each of the 17 major river basins. These plans provide information on areas in the state that the NCWRP has determined are a priority for restoration efforts. The NCWRP uses the Watershed Restoration Plans to target degraded wetland and riparian areas which, if restored, could contribute significantly to the goal of protecting and enhancing watershed functions.

The purpose of this document is to communicate to interested parties and individuals specific areas in the Roanoke River Basin where the NCWRP will consider implementing restoration projects. This document also provides justification for those choices. It is intended to complement two other NC Division of Water Quality (DWQ) documents: 1) the Roanoke River Basinwide Water Quality Plan (2001), and 2) the Guide to the NCWRP's Watershed Restoration Planning Strategy.

One purpose for communicating the specific watersheds where the NCWRP intends to focus its projects is to encourage other groups and organizations to consider implementing projects in these areas also. The NCWRP believes that multiple restoration projects concentrated within a local watershed will result in greater benefits to water quality.

### ***Application of Geographic Information Systems (GIS)***

In order to target areas of focus, the NCWRP relies heavily on geographic data. With a variety of habitat and water quality data available digitally, NCWRP staff can view a variety of information about river basins, subbasins and local watersheds to evaluate watersheds for restoration need and opportunity. The NCWRP uses the following data for this analysis: water

quality data (use support ratings and surface water quality classifications), resource information (location of streams, wetlands and important aquatic habitats), and basic location references (such as municipalities, roads and county boundaries).

As a component of the Watershed Restoration Plans, the NCWRP develops GIS-based maps to communicate NCWRP priority areas for restoration projects. Each restoration plan includes maps of the river basin, all subbasins that contain Targeted Local Watersheds, and each Targeted Local Watershed. To reduce printing costs, most of these maps are black and white. However, a full set of color maps are provided through the NCWRP web site for anyone interested in referencing more thorough and detailed geographic information on NCWRP targeted watersheds.

To evaluate watershed conditions, the NCWRP assesses multiple data and information sources describing the location and condition of natural resources. The information described in Sections 2 and 3 was compiled from a number of existing sources including DWQ's Basinwide Water Quality Plans, the Natural Heritage Program's Rare Plant and Animal Lists and the Wildlife Resource Commission's Division of Game and Inland Fisheries Draft Management Plan for the Roanoke River Basin. A more detailed discussion of the types of information evaluated by the NCWRP is included in Section 2 of the Guide to NCWRP's Watershed Restoration Planning Strategy.

## **SECTION 2: OVERVIEW OF THE ROANOKE RIVER BASIN**

The Roanoke River Basin (Figure 1) begins in the Blue Ridge Mountains of Virginia and flows in a general southeastern direction into the Albemarle Sound in North Carolina. The North Carolina portion of the Roanoke Basin is composed of two major parts: the Dan River and its tributaries in the western section, upstream of Kerr Lake, and the Roanoke River as it enters North Carolina in the eastern section. The Roanoke River mainstem enters North Carolina through Kerr Lake and then flows into Lake Gaston and Roanoke Rapids Lake before regaining its riverine form. The most populated areas are located northeast of the Greensboro/Winston-Salem/High Point area, and around the larger municipalities in the basin such as Roanoke Rapids, Eden, Williamston and Plymouth. Over half of the land in the river basin is forested.

### ***Habitat Information***

The Roanoke River Basin is located within the piedmont and coastal plain physiographic provinces of the state. The basin contains examples of high quality wetland communities such as Coastal Plain Bottomland Hardwoods and Cypress - Gum Swamps.

### ***Wetland and Riparian Area Species Information***

The Roanoke River Basin contains over 100 rare plant and animal species. There are a total of 32 endangered, threatened, or special concern animal species and 11 such plant species, listed by federal and state agencies within the Roanoke River Basin (Natural Heritage Program, 1999).

Numerous fish species inhabit waters of the Roanoke River Basin including many of significant recreational and commercial importance. The Roanoke River downstream of Roanoke Rapids Lake Dam supports highly popular recreational fisheries for striped bass and hickory shad. These anadromous species along with American shad and river herring, migrate into the Roanoke River and its tributaries to spawn during the spring. The lower Roanoke River supports commercial fisheries for herring, shad, white perch and catfish. Fishing activities in the Roanoke River are managed by the North Carolina Wildlife Resources Commission and the North Carolina Division of Marine Fisheries.

Four species of fish in the Roanoke River Basin are listed by federal and state agencies as endangered species. Ten species of mollusks are classified as either endangered, threatened, or of special concern and one species of crayfish is classified as of special concern. Atlantic sturgeon once had abundant populations in the Roanoke River Basin, but are currently believed to be in very low abundance.

In addition, the Roanoke River Basin has over fifty rare plant species, including two federally listed endangered species. Some rare plants in the Roanoke River Basin grow in the wet soils of bogs or bottomlands and are indirectly affected by water quality and quantity (Natural Heritage Program, 1999).

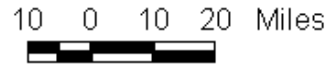
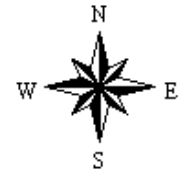
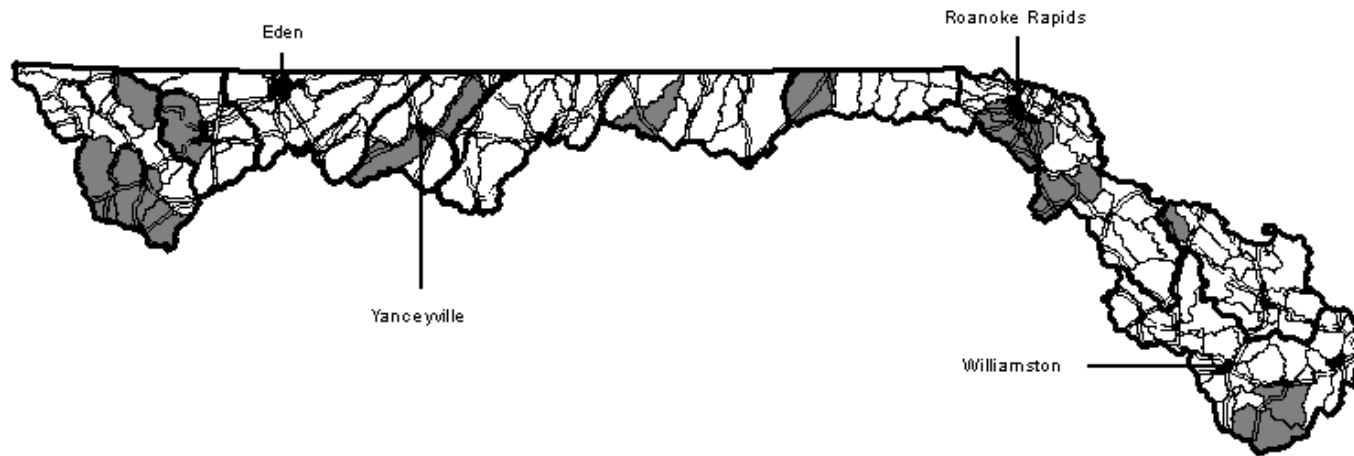


Figure 1  
Roanoke  
River Basin



- Municipalities
- ▤ Primary Roads
- ▭ Roanoke Subbasins
- Targeted Local Watersheds
- ▭ Local Watershed Boundaries

Roanoke River Basin



This map was produced on 04/20/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.  
The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS 1980  
Units: Meters

A detailed listing of the state’s rare animal and plant species can be found in the “Natural Heritage Program List of Rare Animal Species of North Carolina” or the “Natural Heritage Program List of the Rare Plant Species of North Carolina” which are published annually. In addition, more information about fisheries in the Roanoke River Basin can be found in the “Draft Fisheries Management Plan for the Roanoke River Basin” developed by the N.C. Wildlife Resources Commission, Division of Inland Fisheries’.

**Permitted Wetland and Stream Losses**

The Division of Water Quality regulates activities near streams and wetlands to ensure that construction projects cause minimal damage to these resources and that unavoidable impacts are addressed through mitigation projects. One important role of the NCWRP is to provide compensation for permitted impacts to wetlands and streams that fall below the regulatory threshold of less than one acre for wetlands and less than 150 feet for streams. The NCWRP uses the permitting database maintained by the Wetlands/401 Unit of the Water Quality Section in the Division of Water Quality to evaluate where the permitted impacts to wetlands and streams across the river basin are the greatest and where NCWRP projects are needed to offset unmitigated impacts.

**Table 1:** Permitted Wetland Impacts (acres) in the Roanoke River Basin by subbasin from 1997-2000.

Division of Water Quality Subbasins	Counties in Subbasin	1997	1998	1999	2000	Subbasin Total
03-02-01	Surry, Stokes, Forsyth	.98	0.1	0	0	1.08
03-02-02	Stokes, Rockingham	0	1	0	0	1
03-02-03	Rockingham, Caswell	1.19	0		0.01	1.2
03-02-04	Caswell, Person	0.15	0	0	0	.15
03-02-05	Caswell, Person, Orange	0	0	0	0	0
03-02-06	Person, Granville, Vance	0	0	0	0.28	0.28
03-02-07	Warren, Halifax, Northampton	0	.02	0	0	.02
03-02-08	Halifax, Northampton, Bertie, Martin	1.03	3.28	0	0.04	4.35
03-02-09	Martin, Bertie, Washington	0	0.79	0.6	5.48	6.87
03-02-10	Bertie	0	1	1.07	0.02	2.09
	<b>TOTAL ACRES</b>	<b>3.35</b>	<b>6.19</b>	<b>1.67</b>	<b>5.83</b>	<b>17.04</b>

Wetland impacts were greatest in subbasins 08 and 09 reflecting the greater abundance of wetlands in the lower coastal plain.

**Table 2:** Permitted stream impacts (linear feet) in the Roanoke River Basin by subbasin from 1997-2000.

Division of Water Quality Subbasins	Counties in Subbasin	1997	1998	1999	2000	Subbasin Totals
03-02-01	Surry, Stokes, Forsyth	81	189	284	300	854
03-02-02	Stokes, Rockingham	28	0	0	0	28
03-02-03	Rockingham, Caswell	40	0	60	1948	2048
03-02-04	Caswell, Person	0	0	0	625	625
03-02-05	Caswell, Person, Orange	0	0	0	0	0
03-02-06	Person, Granville, Vance	0	0	0	0	0
03-02-07	Warren, Halifax, Northampton	0	30	0	0	30
03-02-08	Halifax, Northhampton, Bertie, Martin	0	0	0	0	0
03-02-09	Martin, Bertie, Washington	0	0	0	770	770
03-02-10	Bertie	0	0	0	124	124
	<b>TOTAL LINEAR FEET</b>	<b>149</b>	<b>219</b>	<b>344</b>	<b>3767</b>	<b>4479</b>

Stream impacts are significantly greater in the upper subbasins that are experiencing the most population growth due to the proximity of Winston-Salem and Greensboro. Stokes County occupies the majority of subbasin 01 and is the fastest growing county in the Roanoke Basin (DWQ, 2001). Subbasin 03 has a large portion of the stream impacts for the entire Roanoke Basin ( 2,048 linear feet or 46%). This is due to a large Virginia Department of Transportation Project that entered North Carolina several times in this subbasin. Subbasins 05, 06, 07 and 08 have very little population growth and few stream impacts.

***Division of Water Quality Use Support Ratings***

Waters are classified according to their best-intended uses. Determining how well a water body supports its designated uses is an important method of interpreting water quality data and assessing water quality. The NCWRP uses the use support assessments as criteria in determining restoration need within a local watershed. A water body that is designated as "partially supporting" or "not supporting" its designated uses indicates that wetland and/or stream restoration initiatives within that local watershed could be beneficial to water quality. These two use support designations will cause a water body to be listed as "impaired". If nonpoint source pollution issues are indicated as factors affecting water quality, the NCWRP may consider it as a water body in need of restoration.

The Roanoke River Basin has a total of 2212 miles of freshwater streams. Of these streams, 0.4% are not supporting; 2.2% are partially supporting; and 50.3% are fully supporting aquatic life. The remaining 47.1% of freshwater streams in the Roanoke River Basin was not rated.

For individuals wanting more detail about water quality use support ratings, the Roanoke River Basinwide Water Quality Plan can be downloaded from the Division of Water Quality website at <http://h2o.enr.state.nc.us/basinwide/index.html> or is available from the Division of Water Quality at (919) 733-5083 ext. 354.

**Table 3:** Impaired waters in the Roanoke River Basin (DWQ, 2001).

Subbasin	Listed Water	Use Support Rating	Problem Parameters	Potential Sources of Impairment
03-02-01	Town Fork Creek	<b>Not Supporting</b> Aquatic Life/ Secondary Recreation	Habitat Degradation	Agriculture, Hydromodification
03-02-03, 03-02-04	Dan River	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Turbidity	
03-02-03	Smith River	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Habitat Degradation	Sources Outside State Jurisdiction
03-02-05	Marlowe Creek	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Unknown toxicity	Minor Industrial Point Sources Municipal Collection System Overflows
03-02-06	Nutbush Creek	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Habitat Degradation, Toxicity,Nutrients	Municipal Point Source, Urban Runoff
03-02-07	Smith Creek	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Habitat Degradation	Agriculture
03-02-08	Quankey Creek	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Habitat Degradation	Hydromodification
03-02-08	Roanoke Rapids Lake	<b>Partially Supporting</b> Aquatic Life/ Secondary Recreation	Aquatic Weeds	
03-02-08, 03-02- 09	Roanoke River	<b>Partially Supporting</b> Fish Consumption	Fish Consumption Advisory Statewide Bowfin	
03-02-09	Albemarle Sound	<b>Partially Supporting</b> Fish Consumption	Fish Consumption Advisory Statewide Bowfin	
03-02-09	Welch Creek	<b>Partially Supporting</b> Fish Consumption	Fish Consumption Advisory Statewide Bowfin	
03-02-10	Cashie River	<b>Partially Supporting</b> Fish Consumption	Fish Consumption Advisory Statewide Bowfin	

Section 303(d) of the federal Clean Water Act requires states to develop a list of waters not meeting water quality standards and to submit this list to the U.S. Environmental Protection Agency biennially. Waters are placed on North Carolina's 303(d) List primarily due to a partially or not supporting use support rating. Addressing water quality impairment in waters that are on the state's 303(d) List is a priority for the state. For this reason, the NCWRP evaluates the 303(d) List in selecting watersheds for restoration efforts. All of the above waters are on the 303(d) list except for Town Fork Creek, Smith River, Cashie River, and the Albemarle Sound.

### ***Federal Watershed Restoration Programs or Initiatives in the Roanoke River Basin***

#### **EPA Phase II Stormwater Requirements**

The EPA's Phase I stormwater requirements only applied to cities with a population of over 100,000 people. No municipality in the Roanoke River Basin is that large. At minimum, only four municipalities within the Roanoke River Basin, Reidsville and Eden (subbasin 03), Henderson (subbasin 06), and Roanoke Rapids (subbasin 08) may have to comply with the EPA's Phase II Stormwater program. Phase II mandates the following Stormwater controls:

- Public Education and Outreach
- Public Participation and Involvement
- Elicit Discharge Detection and Elimination
- Construction Site Runoff Control - 1 or more acres of land
- Post-Construction Runoff Control
- Pollution Prevention /Good Housekeeping

Eden, Reidsville, Henderson, and Roanoke Rapids may have to apply for NPDES Stormwater permits with a detailed plan of how they intend to implement these six facets of the Phase II stormwater rule. The towns must have received their permits by February 2003. For more information about the EPA's Phase II requirements see the web page at:

<http://www.epa.gov/owm/sw/phase2/>

### **SECTION 3: RESTORATION GOALS FOR THE ROANOKE RIVER BASIN**

Based on an assessment of existing watershed characteristics and resource information, the NCWRP has developed four broad restoration goals for the Roanoke River Basin. Each goal reflects the NCWRP's watershed restoration strategy to focus restoration projects within local watersheds in order to address water quality impacts from nonpoint source pollution. The goals also reflect the NCWRP's focus on restoring wetland and riparian area values such as maintaining and enhancing water quality, increasing storage of floodwaters, and improving fish and wildlife habitat. The restoration goals for the Roanoke River Basin are:

- Reduce sediment loading and other pollutants from surface runoff by increasing the soil retention, filtration, and nutrient uptake functions of wetland and riparian areas;
- Stabilize streambanks and to reduce erosion and sedimentation;
- Restore and protect wildlife buffers, corridors, and other key links to high-value habitat areas and;
- Restore and protect natural breeding, nesting and feeding habitat to promote species richness and diversity.

#### ***Targeted Local Watersheds***

In order to meet the identified restoration goals, the NCWRP has identified 17 Targeted Local Watersheds in the Roanoke River Basin. These geographic priorities have been selected based on need and opportunity for restoration in order to focus projects in specific areas in the basin. The decision-making process used to make these selections is described in detail in the Guide to NCWRP's Watershed Restoration Planning Strategy –Version 2. The purpose for selecting the Targeted Local Watersheds for NCWRP focus is to concentrate project efforts in areas with the highest need and opportunity for restoration. In doing so, projects are more likely to result in water quality protection and improvement through the cumulative effect of multiple projects.

### ***Public Input into the Targeted Local Watershed Selection Process***

To solicit input on Targeted Local Watershed selections, the NCWRP held two Resource Professionals Meetings: one, on December 14, 2000 at Cobb's Restaurant in Williamston, NC and another on December 15, 2000 at the Natural Resources Conservation Service Office in Wentworth, NC. The purpose of the meetings was threefold:

1. Explain the NCWRP to local resource personnel;
2. Describe the types of sites NCWRP seeks for stream and wetland restoration, and find out about existing and ongoing water quality improvement projects within the basin; and
3. To gather information from local resource professionals and citizens about which local watersheds NCWRP should target.

The following agencies and groups were notified about these meetings:  
The Natural Resources Conservation Service, NC Soil and Water Conservation Districts, Department of Environment and Natural Resources (Winston-Salem and Washington Regional Offices), The Nature Conservancy, The US Fish and Wildlife Service, the North Carolina Wildlife Resources Commission, North Carolina Farm Service Agency, Piedmont Land Conservancy, and county and municipal governments within the Roanoke River basin.

As a follow up to the Resource Professionals Meetings, a letter was sent out to all invitees on January 17, 2001 informing them of the Draft Targeted Local Watersheds. Information packets were also made available at Basinwide Planning Public Meetings. The deadline for commenting on the Draft Targeted Local Watersheds was February 20, 2001. The Piedmont Land Conservancy sent comments to the NCWRP during the comment period.

## SECTION 4: TARGETED LOCAL WATERSHEDS IN THE ROANOKE RIVER BASIN BY SUBBASIN

This section summarizes the condition of natural resources within each of the Targeted Local Watersheds in the Roanoke River Basin. Information on Targeted Local Watersheds is organized by subbasin. Only subbasins that contain Targeted Local Watersheds are presented and briefly described. This section also includes information about potential causes of resource degradation within these areas from the Division of Water Quality's Roanoke River Basinwide Water Quality Plan, comments provided by resource professionals within the basin, and comments from the public within the basin. Maps of each described subbasin showing the Targeted Local Watersheds are provided.

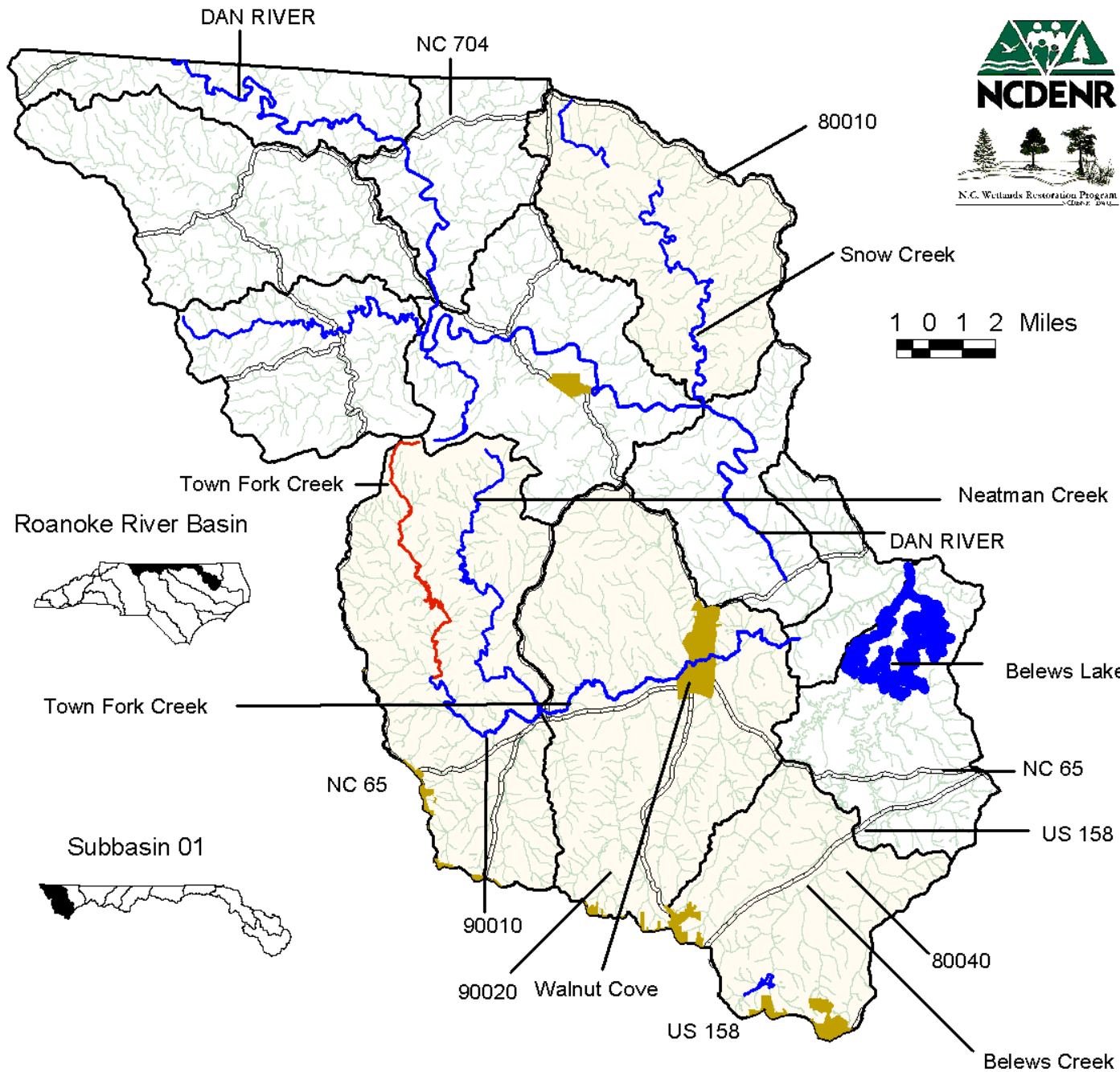
The term "local watershed" denotes a small, defined drainage area within a larger subbasin. Specifically, the term "local watershed" or "Targeted Local Watershed" refers to the 14-digit hydrologic unit as defined by the United States Department of Agriculture Natural Resources Conservation Service. The term "subbasin" is reserved solely to denote a subbasin of the larger Roanoke River Basin, as defined by the Division of Water Quality.

<b>Subbasin 03-02-01</b>	
<i>Area (square miles):</i> 453	
<i>1990 Population Estimate:</i> 45,777	
<i>Land Cover:</i>	
Forest/Wetland	72.8%
Surface Water	1.9%
Urban	0.6%
Cultivated Crop	2.9%
Pasture/managed herbaceous	21.8%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	288
• Partially Supporting	0
• Not Supporting	8
• Not Rated	137

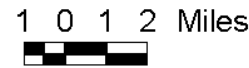
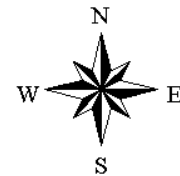
### ***Subbasin 03-020-01 - Upper Reaches of the North Carolina Portion of the Dan River:***

Roanoke River subbasin 01 (Figure 2) contains the uppermost reaches of the Dan River in North Carolina, although headwater reaches of the Dan River are in Virginia. Major tributaries in North Carolina include Town Fork Creek, Snow Creek and Double Creek. This subbasin is borderline between the mountain and piedmont ecoregions and contains some characteristics of both. As a result of fairly steep to moderate topography, headwater reaches of most tributaries are forested while many downstream sections are intensively farmed. Elevated concentrations of fecal coliform bacteria and turbidity have been noted in this area potentially resulting from nonpoint source pollution runoff. Habitat Degradation from a variety of land uses degrades water quality in this subbasin (DWQ

2001). Table 4 provides a statistical summary of Targeted Local Watersheds in this subbasin.



**Figure 2**  
**Subbasin 01**  
**Roanoke River Basin**



**Use Support Ratings**

- Fully Supporting
- Partially Supporting
- Not Supporting
- Not Monitored
- Primary Roads
- County Boundary
- Municipalities
- Targeted Local Watershed
- Local Watershed Boundaries

This map was produced on 03/15/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.  
 The map is based on:  
 Projection: Stateplane  
 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters

**Snow Creek****Targeted Local Watershed 80010**

Snow Creek (Figure 3) received a low bioclassification when samples were collected in 1999. Sedimentation, infrequent riffle areas and a significant lack of riparian vegetation have been observed. Identification and reduction of nonpoint sources of pollution that contribute to habitat degradation are needed to protect the aquatic community (DWQ 2001).

**Belews Creek****Targeted Local Watershed 80040**

Upper Belews Creek (Figure 4) is undergoing a lot of suburban growth. However, this watershed still maintains some remnant high quality wetlands (Natural Heritage Program, 1998). Kernersville Lake has changed from mesotrophic in 1994 to eutrophic in 1999 indicating high nitrogen and phosphorous concentrations, and its chlorophyll *a* standards were greater than state standards (DWQ 2001). Kernersville Lake was created as a water supply reservoir for Kernersville in 1952 and still functions as an emergency water supply.

**Town Fork Creek****Targeted Local Watersheds 90010 and 90020**

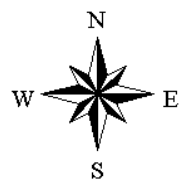
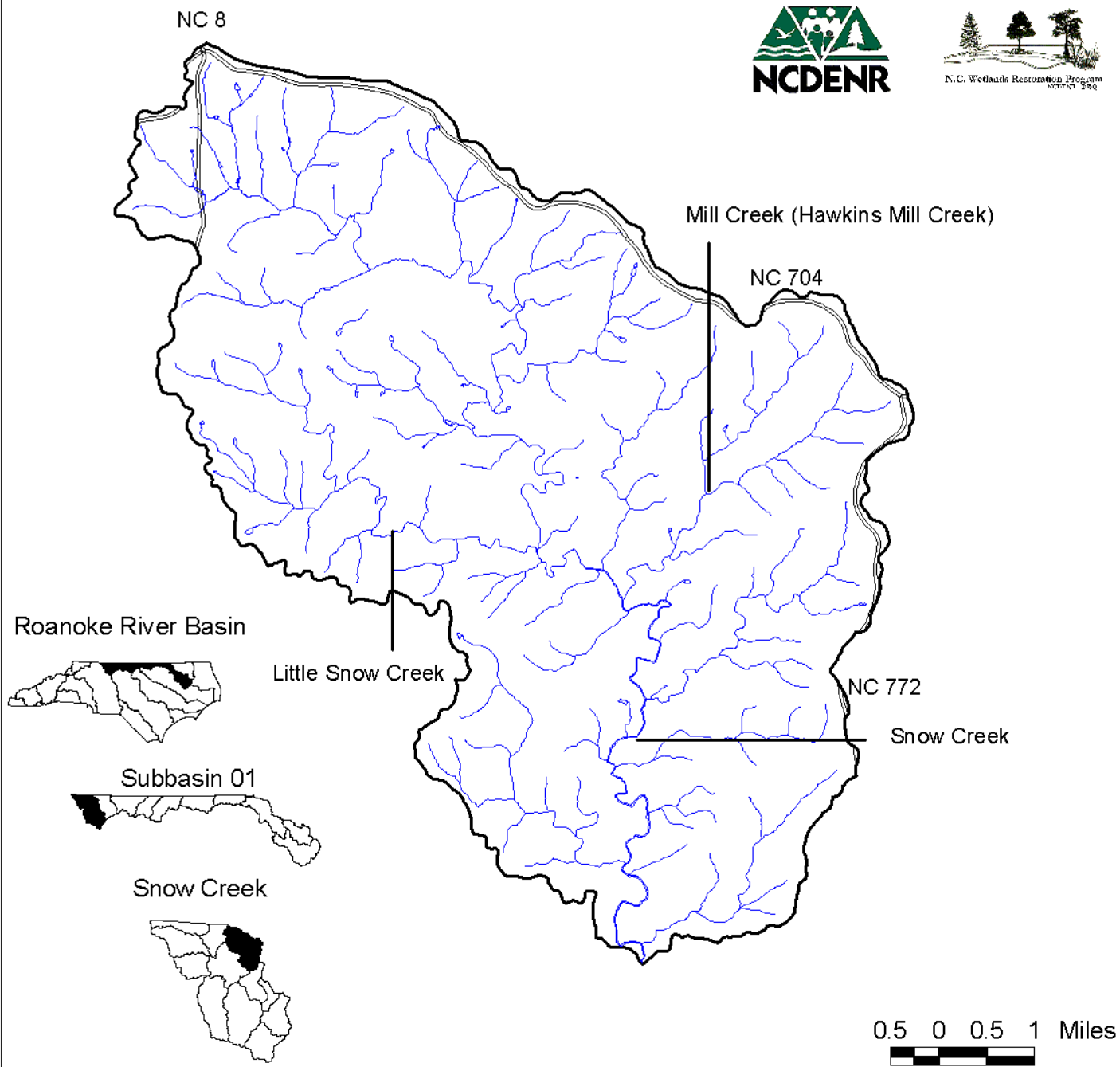
Town Fork Creek (Figure 4) is the only impaired stream (habitat degradation) in the subbasin. Town Fork Creek received a poor benthic macroinvertebrate bioclassification. Town Fork Creek is not listed on the current 303(d) list, but will likely be added in 2002. Land use within the watershed is comprised of both agricultural and residential uses, with an increase in residential growth coming from Winston-Salem. There is one point source discharge to the stream but records indicate that it is not causing any problems (DWQ 2001).

**Table 4:** Summary of information about Targeted Local Watersheds in Roanoke River Basin Subbasin 01.

Targeted Local Watershed	Snow Creek	Belews Creek	Town Fork Creek	Town Fork Creek
County	Stokes	Forsyth	Stokes/Forsyth	Stokes/Forsyth
14-digit Hydrologic Unit #	03010103180010	03010103180040	03010103190010	03010103190020
Land Area (Square Miles):	43.77	37.57	62.83	71.42
Miles of Impaired Streams <sup>1</sup> :	0	0	8	0
Possible Causes of Degradation <sup>2</sup> :	NA	NA	Habitat Degradation, Hydromodification,	NA
Possible Sources of Degradation <sup>2</sup> :	NA	NA	Non-urban development, Agriculture	NA
Stream on NC 2000 303(d) List <sup>3</sup> ?	No	No	No	NA
Cleared Land Cover:	27%	34%	25%	26%
Developed Land Cover:	0%	0%	0%	0%
Forested Land Cover:	73%	64%	74%	73%
Within DWQ Water Supply Watershed <sup>5</sup>	No	Yes	No	No
DWQ Designated High Quality or Outstanding Resource Water <sup>5</sup>	No	No	No	No
Presence of Aquatic Natural Heritage Element <sup>7</sup>	Yes	No	Yes	No
<p>1 Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).</p> <p>2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).</p> <p>3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).</p> <p>4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.</p> <p>5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.</p> <p>6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.</p> <p>7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed.</p>				



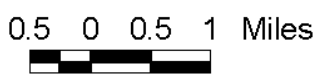
**Figure 3**  
**Roanoke**  
**River Basin**  
**Subbasin 01**  
**Targeted Local**  
**Watershed**  
**80010**  
**Snow Creek**

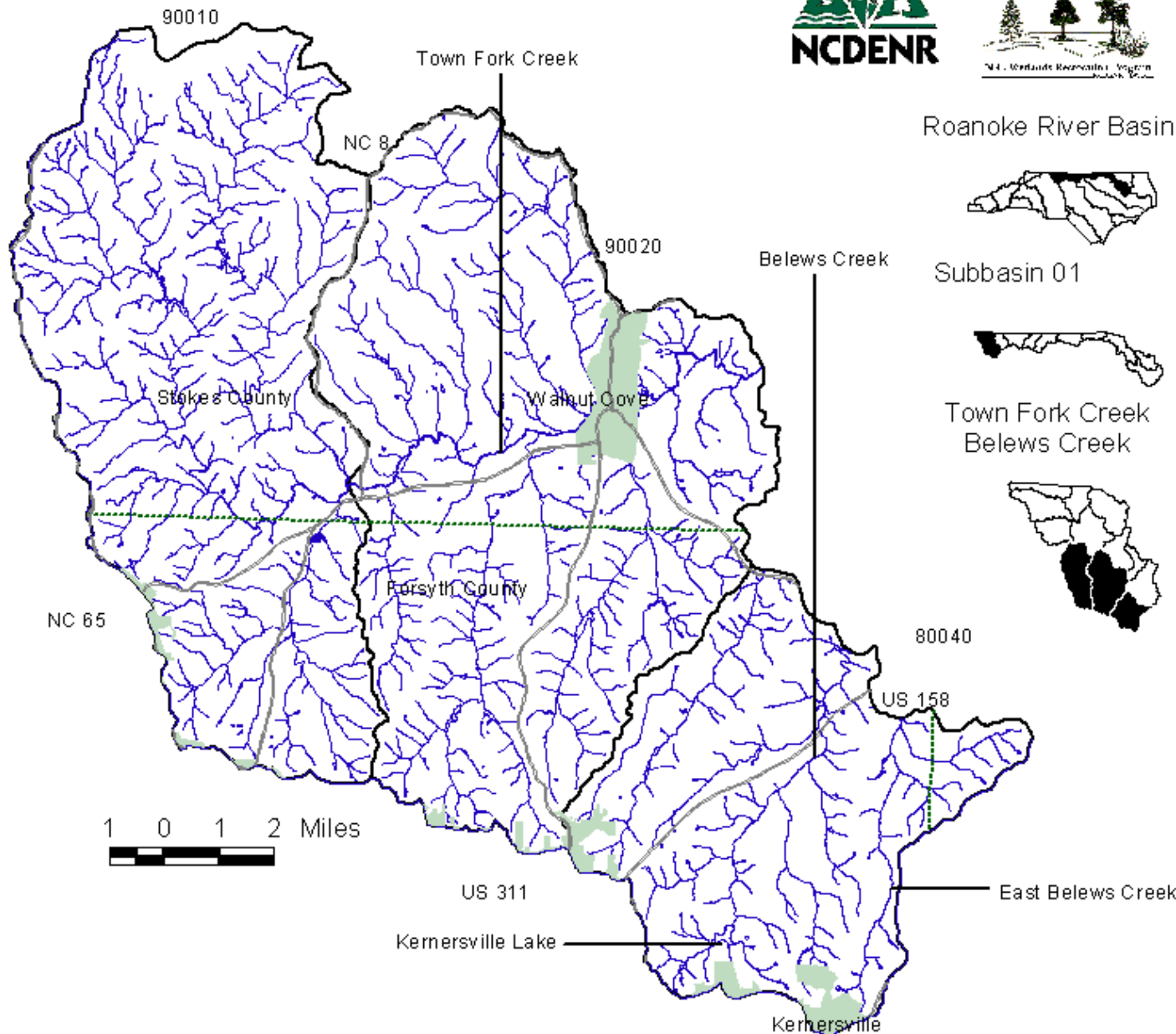


- Hydrography
- Primary Roads
- Hydrography
- Local Watershed Boundaries

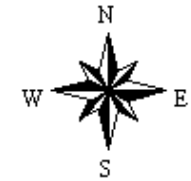
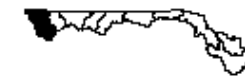
This map was produced on 03/21/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
 Projection: Stateplane  
 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters





**Figure 4**  
**Roanoke**  
**River Basin**  
**Subbasin 01**  
**Targeted**  
**Local Watersheds**  
**90010 and 90020**  
**Town Fork Creek and**  
**80040**  
**Belews Creek**



- Primary Roads
- County Boundaries
- Municipalities
- Hydrography
- Local Watershed Boundaries

This map was produced on 03/15/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

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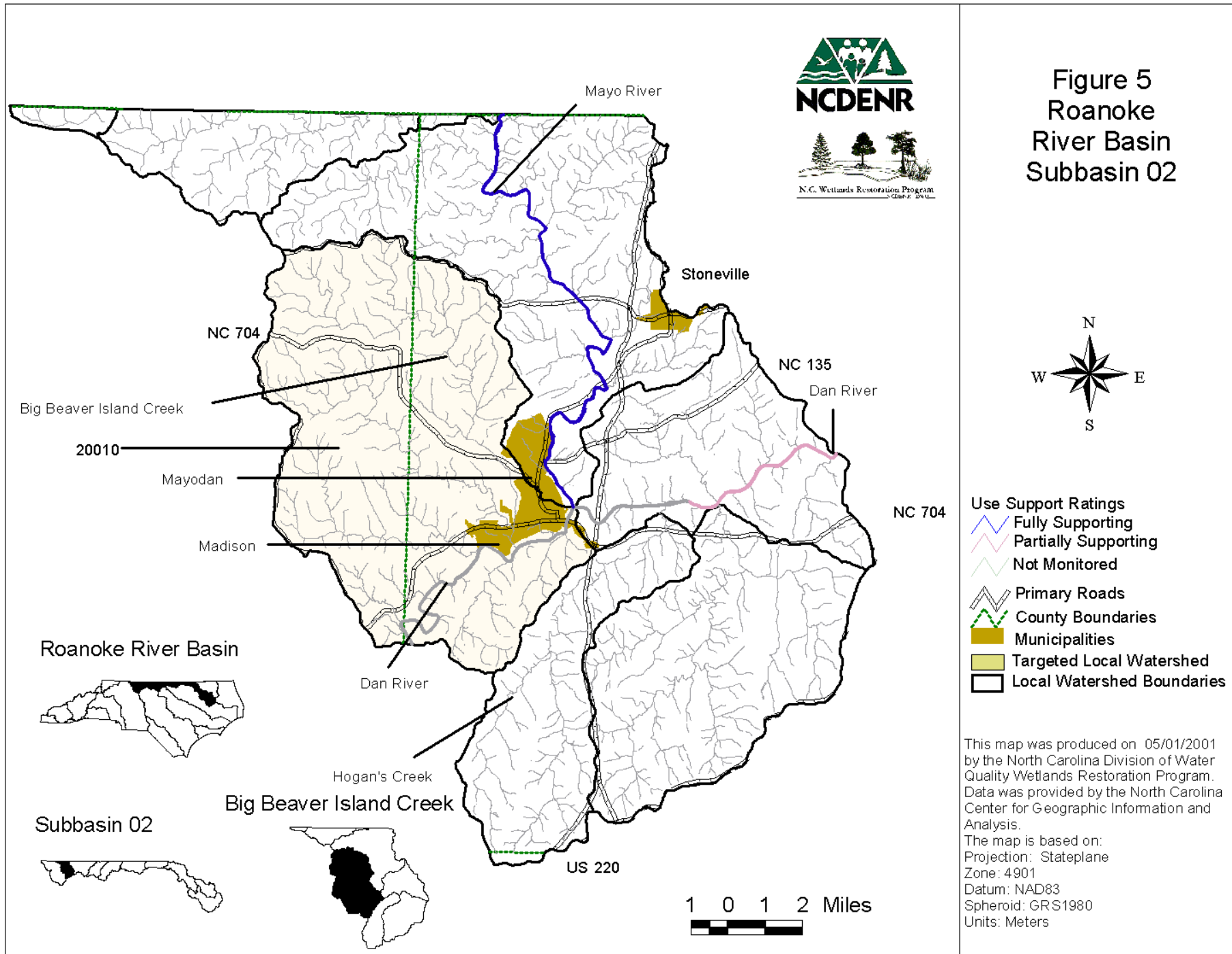
### **Subbasin 03-02-02 - Mayo River**

<b>Subbasin 03-02-02</b>	
<i>Area (square miles): 231</i>	
<i>1990 Population Estimate: 19,588</i>	
<i>Land Cover:</i>	
Forest/Wetland	76.1%
Surface Water	0.8%
Urban	1.3%
Cultivated Crop	3.6%
Pasture/managed herbaceous	18.2%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	85.5
• Partially Supporting	0
• Not Supporting	0
• Not Rated	45.8

This subbasin (Figure 5) contains a ten-mile segment of the Dan River and the Mayo River in Stokes and Rockingham counties. Other streams include Big and Little Beaver Island Creeks, Hogans Creek and Jacobs Creek. Most of the subbasin is forested (76%) but a large portion is also used as cultivated cropland and pasture (22%). Table 5 provides a statistical summary of the Targeted Local Watershed in this subbasin.

#### **Big Beaver Island Targeted Local Watershed 2010**

Big Beaver Island Creek (Figure 6) is not an impaired stream but is contributing large amounts of sediment to the Mayo and Dan Rivers. The downcutting on lower Big Beaver Island Creek is particularly damaging as it goes through the town of Madison. Riverbanks are as high as 25 feet above the stream below (visual assessment).



**Table 5:** Summary of information about the Targeted Local Watershed in Roanoke River Basin Subbasin 02.

Targeted Local Watershed	Big Beaver Island
County	Stokes/Rockingham
14-digit Hydrologic Unit #	03010103220010
Land Area (Square Miles):	67.37
Miles of Impaired Streams <sup>1</sup> :	0
Possible Causes of Degradation <sup>2</sup> :	NA
Possible Sources of Degradation <sup>2</sup> :	NA
Stream on NC 2000 303(d) List <sup>3</sup> ?	No
Cleared Land Cover:	22%
Developed Land Cover:	0%
Forested Land Cover:	76%
Within DWQ Water Supply Watershed <sup>5</sup>	No
DWQ Designated High Quality or Outstanding Resource Water <sup>5</sup>	No
Presence of Aquatic Natural Heritage Element <sup>7</sup>	Yes

1. Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more stream in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed. One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.



Roanoke River Basin



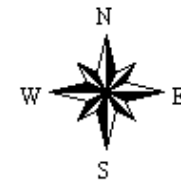
Subbasin 02



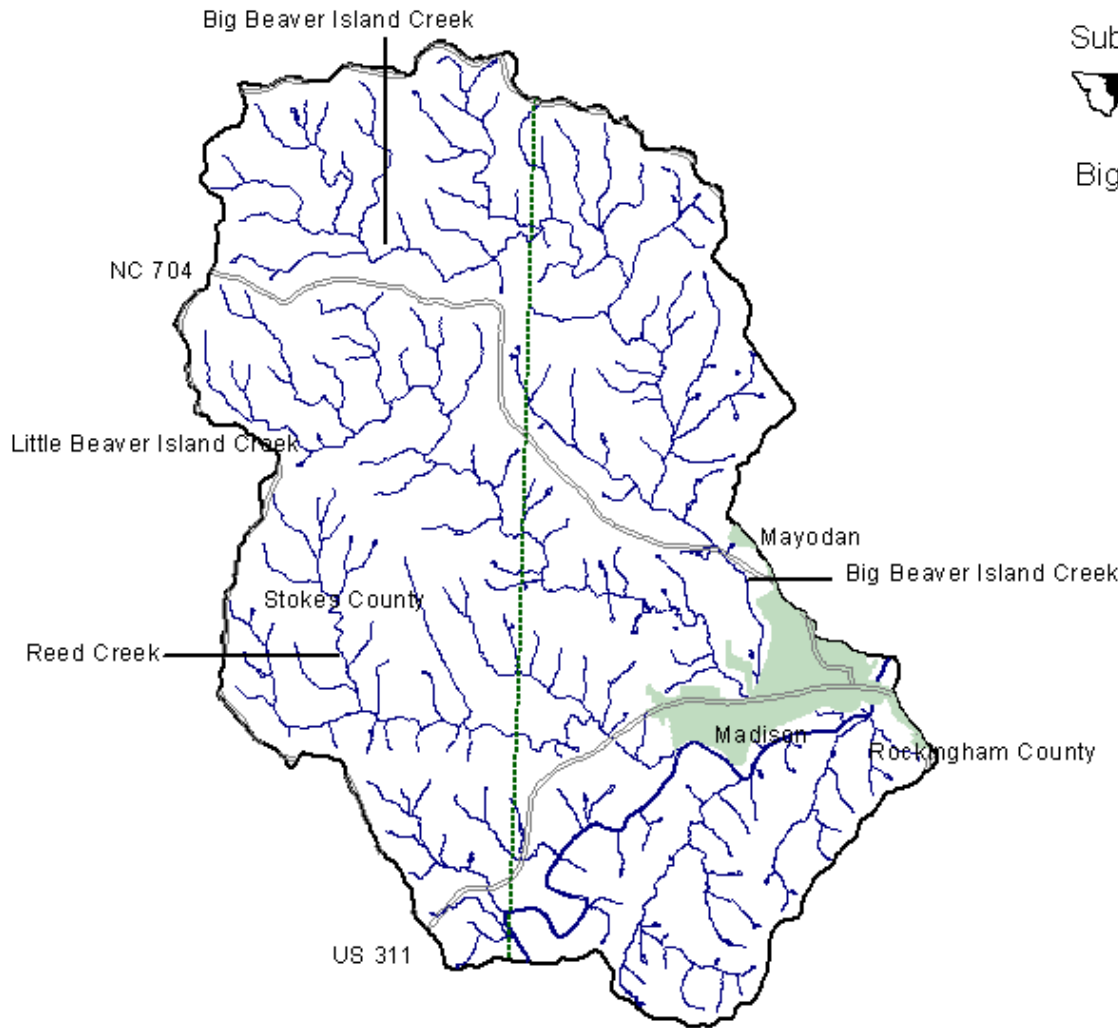
Big Beaver Island Creek



**Figure 6  
Roanoke  
River Basin  
Subbasin 02  
Targeted Local  
Watershed 20010  
Big Beaver  
Island Creek**



- Primary Roads
- County Boundaries
- Municipalities
- Hydrography
- Local Watershed Boundaries



This map was produced on 03/21/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS1980  
Units: Meters

**Subbasin 03-02-04 - Country Line Creek and the Dan River**

<b>Subbasin 03-02-04</b>	
<i>Area (square miles):</i> 239	
<i>1990 Population Estimate:</i> 27,208	
<i>Land Cover:</i>	
Forest/Wetland	75.9%
Surface Water	1.0%
Urban	0.5%
Cultivated Crop	2.3%
Pasture/managed herbaceous	20.4%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	112'
• Partially Supporting	0
• Not Supporting	0
• Not Rated	39.6

This subbasin (Figure 7) contains a short stretch of the Dan River (approximately 8 river miles) and three larger tributaries: Country Line, Moon and Rattlesnake Creeks. Land in this subbasin is mostly low rolling hills and forestry and agriculture dominate land use. Residential development is increasing. Yanceyville’s population has doubled in the past ten years and is expected to continue growing (DWQ, 2001). Table 6 provides a statistical summary of Targeted Local Watersheds in this subbasin.

A Caswell County Natural Resource Conservation Service Wetlands Restoration Program project on the border of subbasins 3 and 4 has restored an unnamed tributary to Hogan’s Creek that was straightened in the early fifties to increase drainage and to align fields for crops. The site was used for crop production until 1995.



Stream Restoration Project showing new meander

The restoration design restored a natural meandering pattern to the creek and has resulted in the creation of 26 acres of prime wildlife habitat. Engineers predicted that restoring the stream's channel would create a wide zone of soil saturation and surface water ponding across the fields. Recent observations have proven those predictions to be accurate. Today, heron tracks, crayfish chimneys, and wetland wild flowers can be found where the plow once passed.

The restoration will involve a couple of shallow pools to provide a marshy habitat. The pools will range in size from a quarter to a third of an acre. Once the stream restoration work is complete, NRCS plans to do some further wetland enhancement away from this channel. The enhancement will include installing additional ditch plugs and building some low dikes to get more water over some of the low-lying areas. The project includes the planting of both upland and lowland trees, with attention to site factors that promote the success of these food and cover species. Walnut and Bald Cypress trees were planted to give the site some diversity. Black Walnut, Willow Oak and Persimmon will be planted on the higher elevations. Cherry Bark Oak will be planted in the lower areas along with Swamp Chestnut Oak. Permanent habitat is provided for freshwater fish and shellfish, songbirds, waterfowl, amphibians, wild turkey, and white-tailed deer.

### **Country Line Creek**                      **Targeted Local Watersheds 32010 and 32030**

This stream (Figure 8) was not rated in DWQ's most recent sampling effort. However, Country Line Creek is experiencing a great deal of residential growth in its headwaters (32010) causing sediment loading into Farmer Lake, the water supply reservoir for Yanceyville. As part of a water supply ordinance, Caswell County has added some requirements to reduce sediment and nutrient loading and protect the upper portions of Country Line Creek, Hostler Branch and Farmer Lake from further water quality degradation. These measures include: 1) an increase in minimum lot size within the watershed's critical area from one acre to three acres; and 2) an 80-foot vegetated buffer as a condition for development along Country Line Creek and Hostler Branch. The state's minimum water supply watershed buffer is 30 feet (DWQ, 2001)



1 0 1 2 Miles

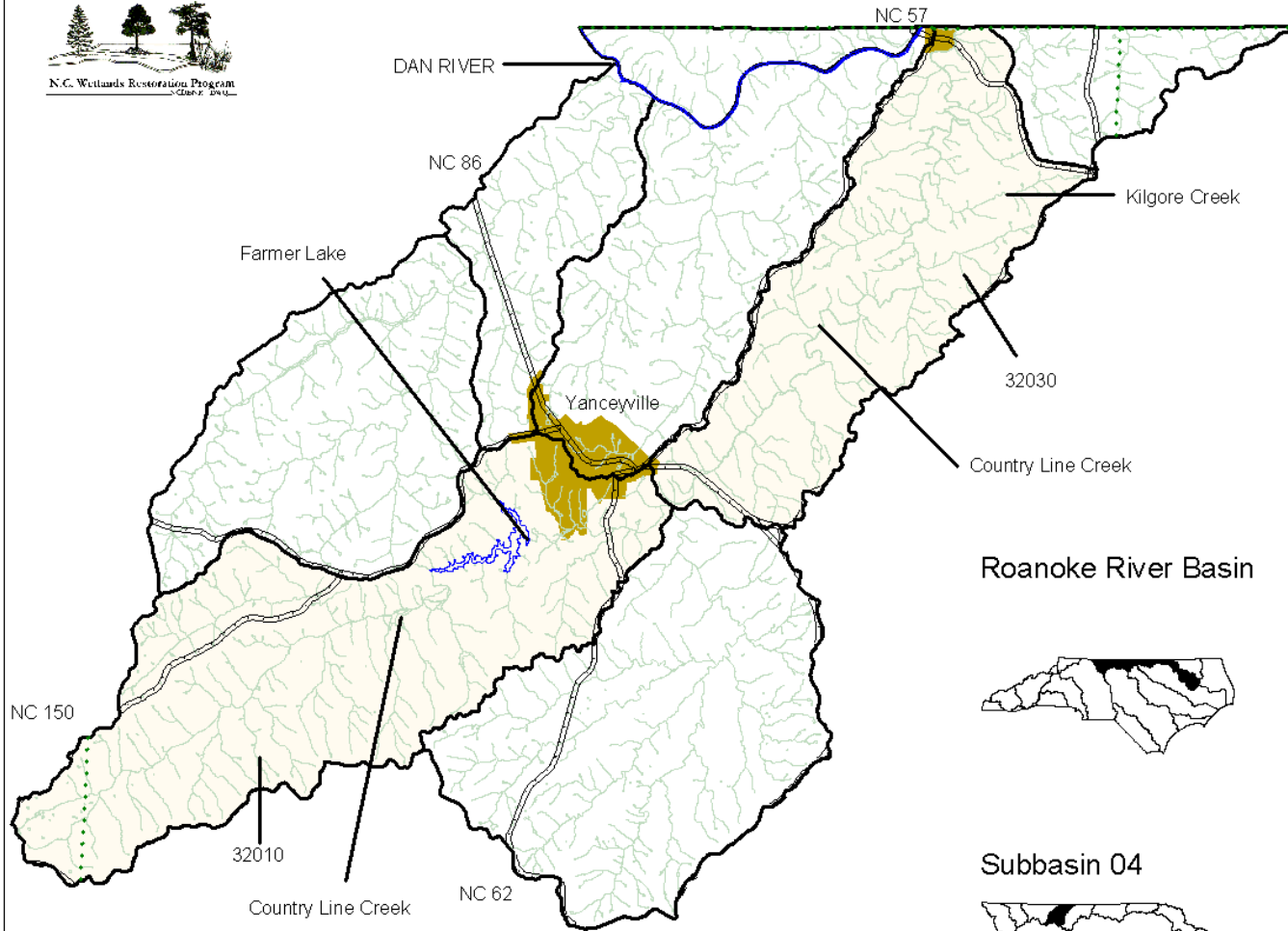
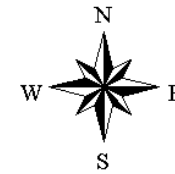


Figure 7  
Roanoke  
River Basin  
Subbasin 04



- Use Support Ratings**
- Fully Supporting
  - Partially Supporting
  - Not Monitored
  - Primary Roads
  - County Boundary
  - Municipalities
  - Targeted Local Watershed
  - Local Watershed Boundaries

Roanoke River Basin



Subbasin 04



This map was produced on 04/19/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS1980  
Units: Meters

**Table 6:** Summary of information about Targeted Local Watersheds in Roanoke River Basin Subbasin 04.

Targeted Local Watershed	Upper Country Line Creek	Lower Country Line Cree
County	Caswell	Caswell
14-digit Hydrologic Unit #	03010104032010	03010104032030
Land Area (Square Miles):	55.31	38.42
Miles of Impaired Streams <sup>1</sup> :	0	0
Possible Causes of Degradation <sup>2</sup> :	NA	NA
Possible Sources of Degradation <sup>2</sup> :	NA	NA
Stream on NC 2000 303(d) List <sup>3</sup> ?	No	No
Cleared Land Cover:	16%	22%
Developed Land Cover:	0%	82
Forested Land Cover:	82%	77%
Within DWQ Water Supply Watershed? <sup>5</sup>	Yes	No
DWQ Designated High Quality or Outstanding Resource Water? <sup>5</sup>	No	No
Presence of Aquatic Natural Heritage Element? <sup>7</sup>	Yes	Yes

1. Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

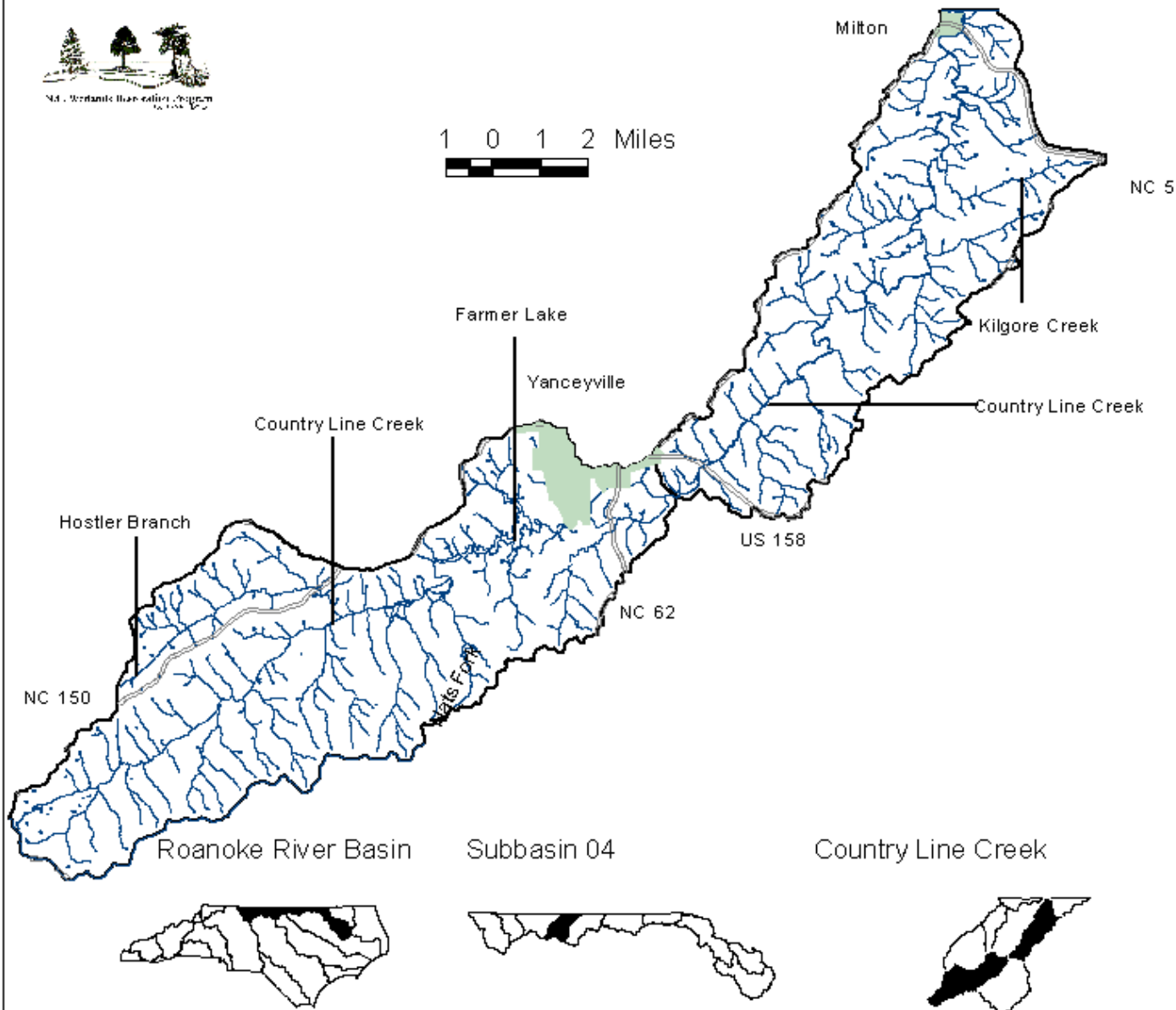
3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

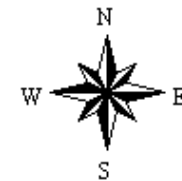
5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed. One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.



**Figure 8**  
**Roanoke**  
**River Basin**  
**Subbasin 04**  
**Targeted**  
**Local Watersheds**  
**32010 and 32030**  
**Country Line Creek**



- Primary Roads
- Municipalities
- Hydrography
- Local Watershed Boundaries

This map was produced on 03/29/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
 Projection: Stateplane  
 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters

**Subbasin 03-02-06 - Headwater Tributaries of John H. Kerr Reservoir:**

<b>Subbasin 03-02-06</b>	
<i>Area (square miles):</i> 329	
<i>1990 Population Estimate:</i> 21,604	
<i>Land Cover:</i>	
Forest/Wetland	75%
Surface Water	6.4%
Urban	1.1%
Cultivated Crop	8.6%
Pasture/managed herbaceous	9.0%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	184.6
• Partially Supporting	4.6
• Not Supporting	0
• Not Rated	53

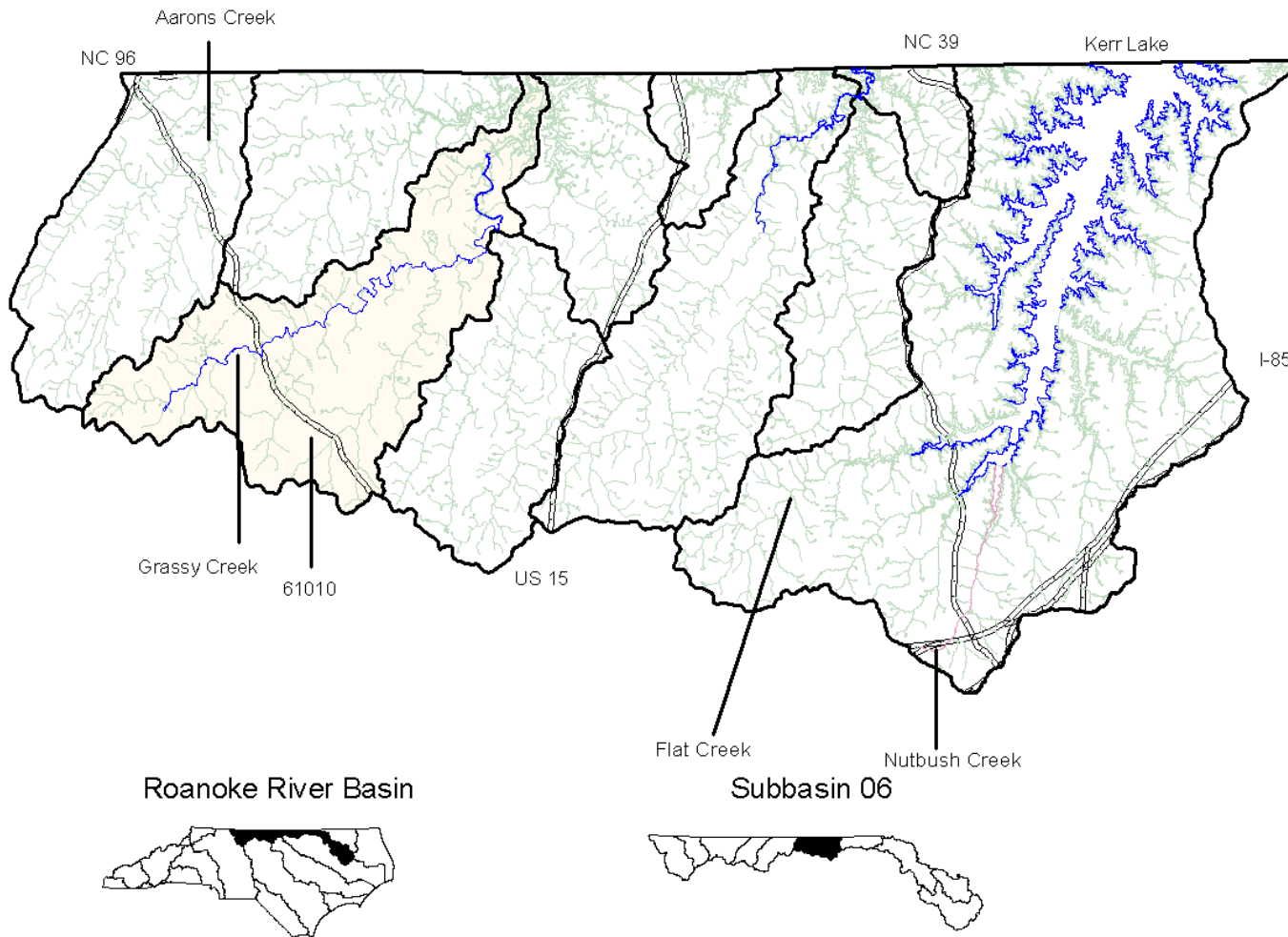
Roanoke River subbasin 06 (Figure 9) contains many small to medium-sized headwater tributaries of the John H. Kerr Reservoir. This is a piedmont ecoregion characterized by low, rolling hills and streams of moderate gradient. Most stream systems appear to carry heavy sediment loads and are very turbid after heavy rain events. Headwater reaches of many tributaries are forested, while downstream reaches appear to be farmed (DWQ 2001). Table 7 provides a statistical summary of the Targeted Local Watershed in this subbasin.

**Grassy Creek      Targeted Local Watershed 61010**

Grassy Creek, like the majority of streams in this subbasin, (Figure 10) is rated as fully supporting in the most recent sampling cycle. However data revealed some impacts to water quality. Although no action was required for this and most other streams in the subbasin, voluntary implementation of Best Management Practices is encouraged and continued monitoring is recommended (DWQ, 2001). This small, low flow stream has no point source discharge, so all impacts are due to nonpoint source pollution. Grassy Creek discharges into a popular arm of the Kerr Reservoir.



**Figure 9  
Roanoke  
River Basin  
Subbasin 06**



- Use Support Ratings**
- Fully Supporting
  - Partially Supporting
  - Not Monitored
  - Primary Roads
  - Municipalities
  - Targeted Local Watershed
  - Local Watershed Boundaries

This map was produced on 04/19/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
 Projection: Stateplane  
 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters

Roanoke River Basin



Subbasin 06



**Table 7:** Summary of information about the Targeted Local Watershed in Roanoke River Basin Subbasin 06.

Targeted Local Watershed	Grassy Creek
County	Granville
14-digit Hydrologic Unit #	03010102161010
Land Area (Square Miles):	42.92
Miles of Impaired Streams <sup>1</sup> :	0
Possible Causes of Degradation <sup>2</sup> :	NA
Possible Sources of Degradation <sup>2</sup> :	NA
Stream on NC 2000 303(d) List <sup>3</sup> ?	No
Cleared Land Cover:	18%
Developed Land Cover:	0%
Forested Land Cover:	81%
Within DWQ Water Supply Watershed <sup>5</sup>	No
DWQ Designated High Quality or Outstanding Resource Water <sup>5</sup>	No
Presence of Aquatic Natural Heritage Element <sup>7</sup>	Yes

1. Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed. One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.



1 0 1 Miles

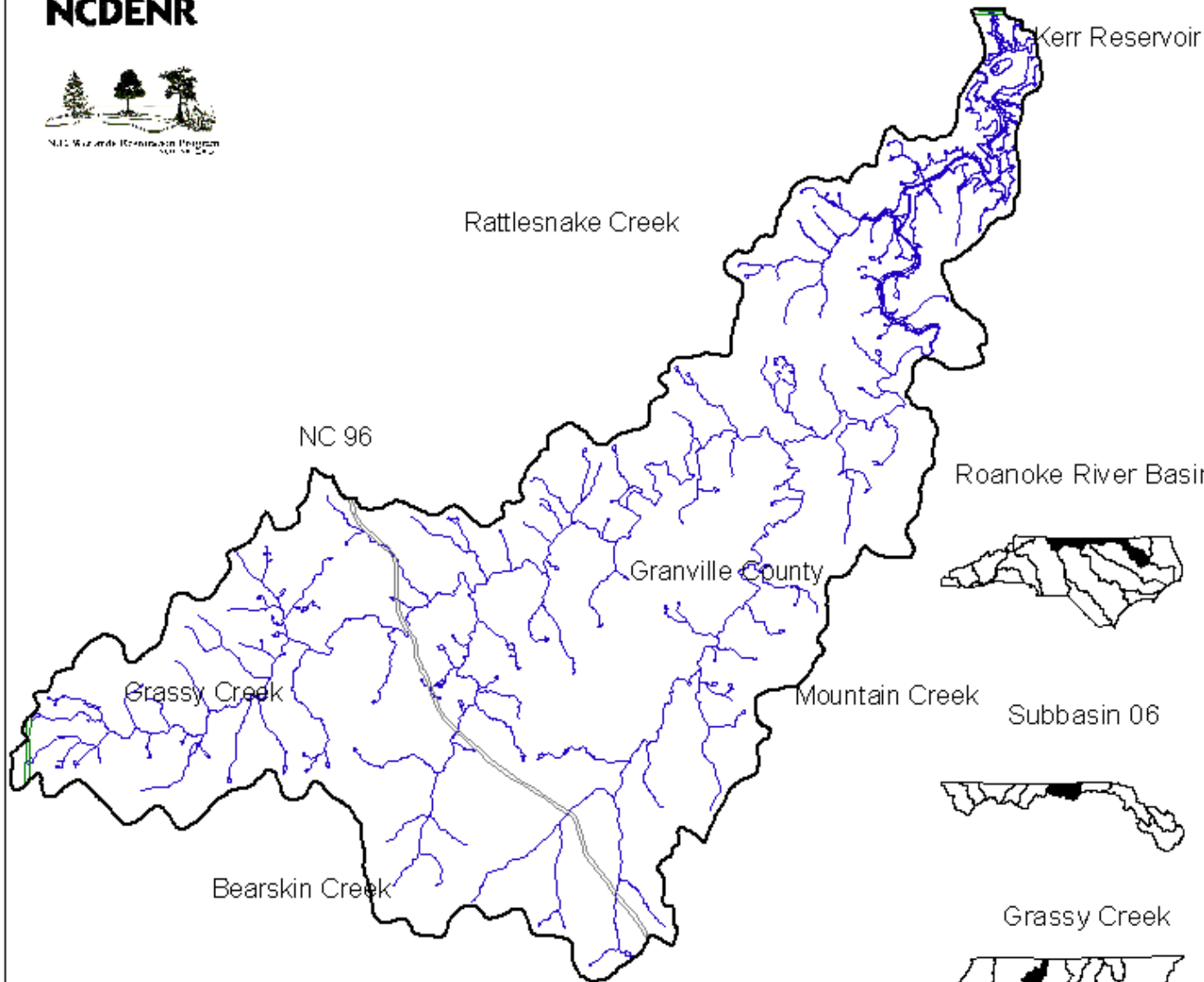
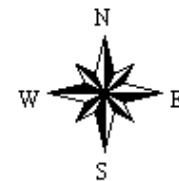


Figure 10  
Roanoke  
River Basin  
Subbasin 06  
Targeted  
Local Watershed  
61010  
Grassy Creek



- Local Watershed Boundaries
- Primary Roads
- County Boundaries
- Hydrography

This map was produced on 04/19/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS1980  
Units: Meters

### **Subbasin 03-02-07 - Lake Gaston and Tributaries**

<b>Subbasin 03-02-07</b>	
<i>Area (square miles):</i> 195	
<i>1990 Population Estimate:</i> 8,338	
<i>Land Cover:</i>	
Forest/Wetland	75.1%
Surface Water	10.9%
Urban	0.1%
Cultivated Crop	7.4%
Pasture/managed herbaceous	6.4%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	41.7
• Partially Supporting	10.4
• Not Supporting	0
• Not Rated	49.4

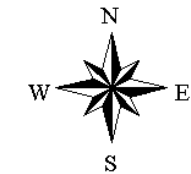
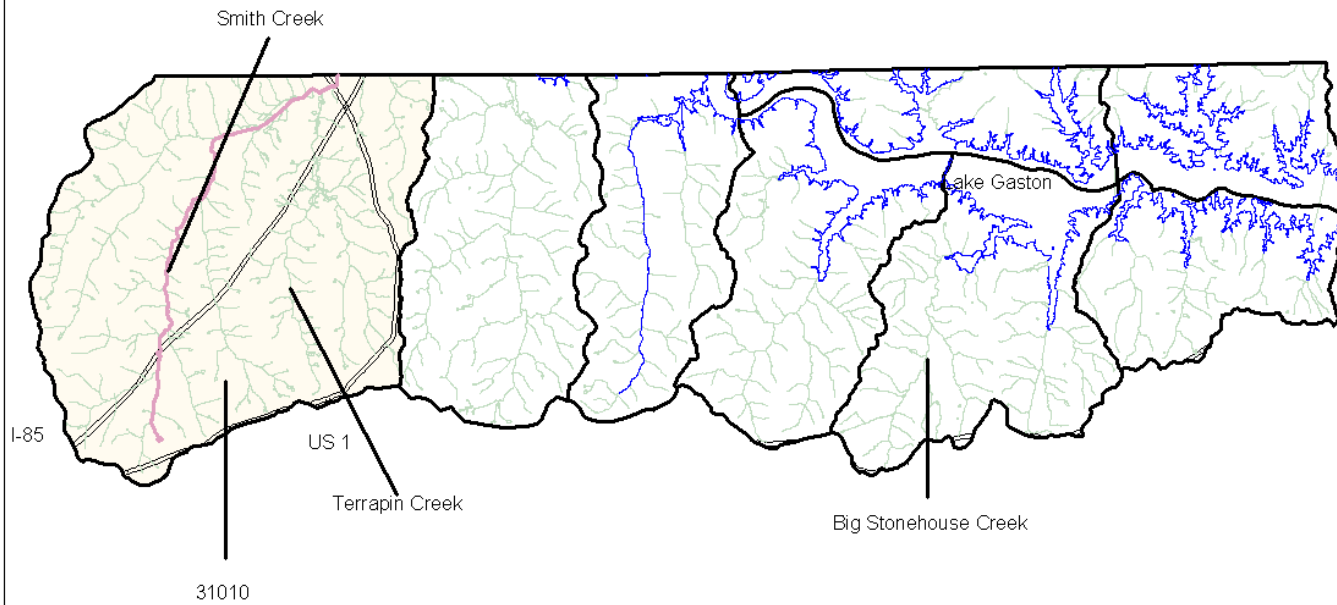
This subbasin (Figure 11) is composed of Lake Gaston and its tributaries. Most streams flow northward into Lake Gaston or Virginia. 75% of the land is forested and land use is a combination of agricultural activities, primarily in the western portion of the subbasin, and residential development around the lake in the eastern portion. Many streams in this subbasin have low flows and may stop flowing during dry summers (DWQ 2001). Such seasonally intermittent flow may limit the diversity of the fish and macroinvertebrate populations. Table 8 provides a statistical summary of the Targeted Local Watershed in this subbasin.

#### **Smith Creek      Targeted Local Watershed 31010**

Although water quality in Smith Creek (Figure 12) has improved since 1997, it is currently only partially supporting aquatic life. The stream exhibits indicators of stream scouring during high flows and its dissolved oxygen concentrations fell below standard in one quarter of samples taken. There has been a steady increase in conductivity within the stream over the past ten years. Smith Creek is very turbid and its streambed is composed almost entirely of sand. Additionally, 86% of samples exceeded the iron standard (DWQ 2001). There are no NPDES discharges to Smith Creek so all pollution is nonpoint. The stream needs more Best Management Practices on agricultural land to protect water quality (DWQ 2001).



Figure 11  
Roanoke  
River Basin  
Subbasin 07



- Use Support Ratings
- Fully Supporting
  - Partially Supporting
  - Not Monitored
  - Primary Roads
  - County Boundary
  - Municipalities
  - Targeted Local Watershed
  - Local Watershed Boundaries

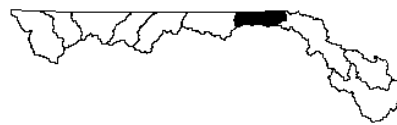
This map was produced on 04/20/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS1980  
Units: Meters

Roanoke River Basin



Subbasin 07



**Table 8:** Summary of information about Targeted Local Watershed in Roanoke River Basin Subbasin 07.

Targeted Local Watershed	Smith Creek
County	Warren
14-digit Hydrologic Unit #	03010103120010
Land Area (Square Miles):	55.5
Miles of Impaired Streams <sup>1</sup> :	10.4
Possible Causes of Degradation <sup>2</sup> :	Sedimentation
Possible Sources of Degradation <sup>2</sup> :	Habitat Degradation, Agriculture
Stream on NC 2000 303(d) List <sup>3</sup> ?	No
Cleared Land Cover:	29%
Developed Land Cover:	0%
Forested Land Cover:	70%
Within DWQ Water Supply Watershed <sup>5</sup>	No
DWQ Designated High Quality or Outstanding Resource Water <sup>5</sup>	No
Presence of Aquatic Natural Heritage Element <sup>7</sup>	No

1. Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed. One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

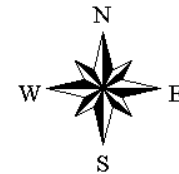


Newmans Creek (Little Deep Creek)

1 0 1 2 Miles



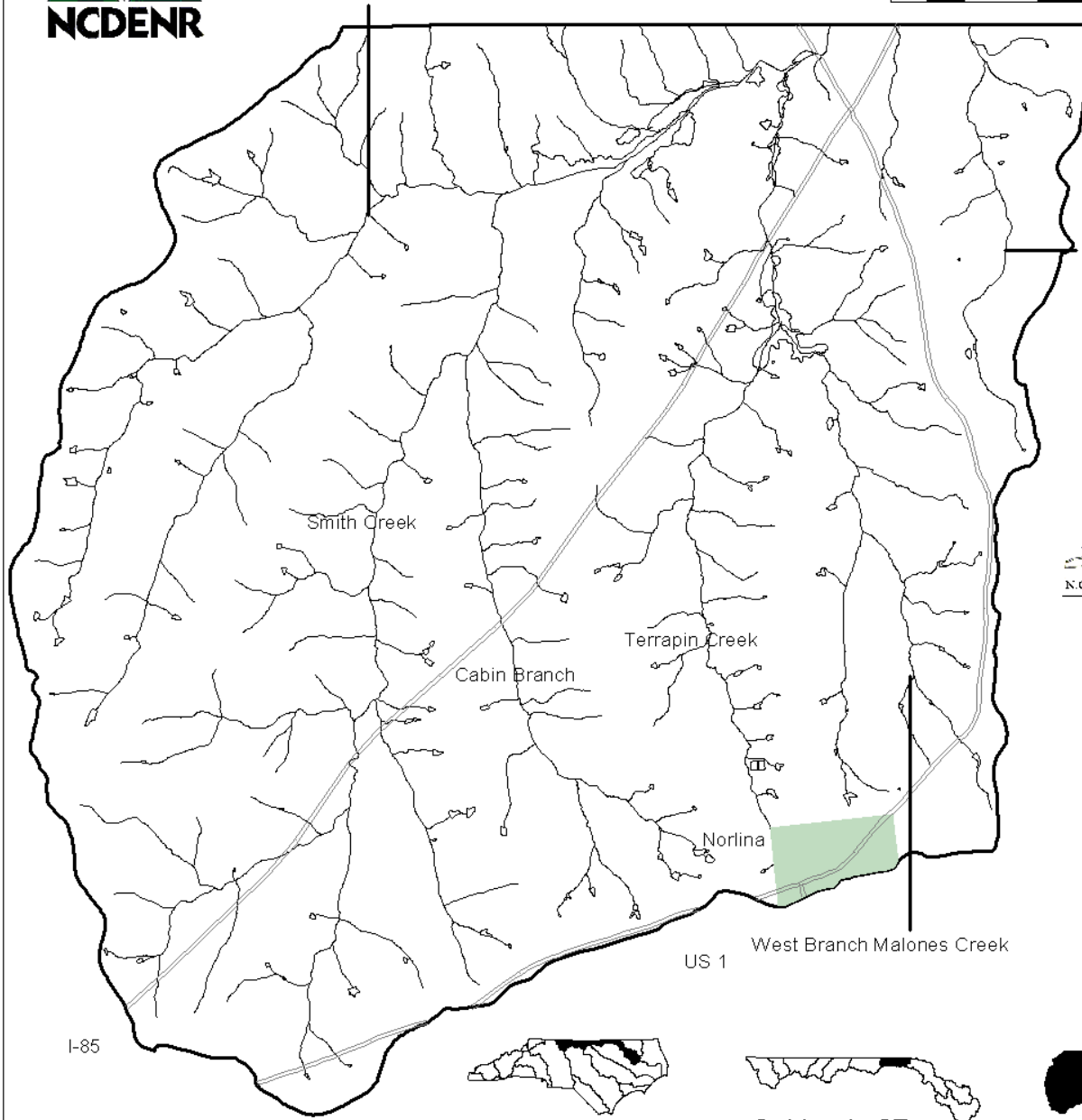
Figure 12  
Roanoke  
River Basin  
Subbasin 07  
Targeted  
Local Watershed  
31010  
Smith Creek



- Primary Roads
- Municipalities
- Hydrography
- Local Watershed Boundaries

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 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters



Roanoke River Basin

Subbasin 07

Smith Creek

**Subbasin 03-02-08 - Roanoke Rapids Lake and the Roanoke River**

<b>Subbasin 03-02-08</b>	
<i>Area (square miles):</i> 513	
<i>1990 Population Estimate:</i> 43,392	
<i>Land Cover:</i>	
Forest/Wetland	65.2%
Surface Water	2.8%
Urban	1.5%
Cultivated Crop	28.4%
Pasture/managed herbaceous	2.0%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	167.9
• Partially Supporting	3.4
• Not Supporting	0
• Not Rated	180.6

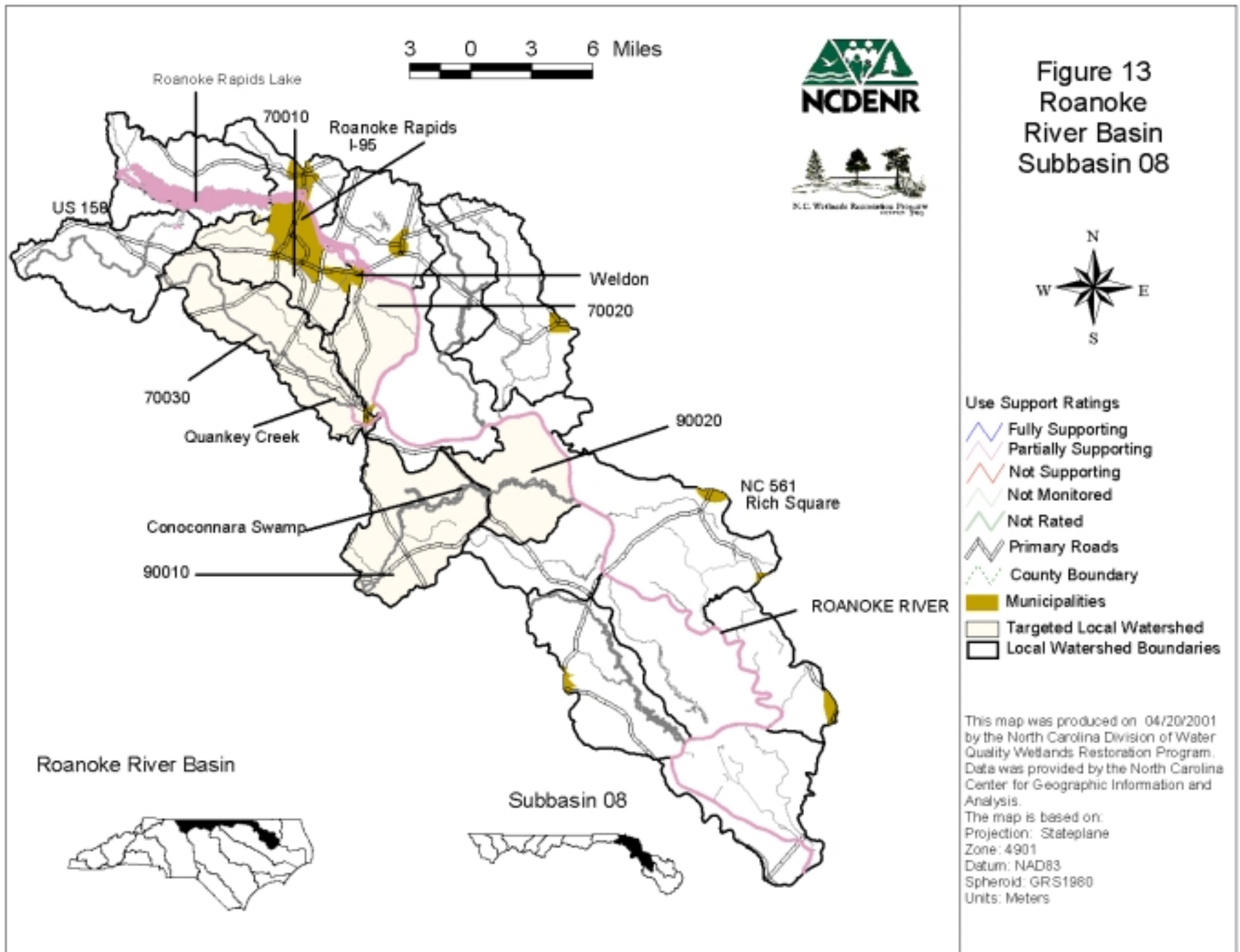
The upper portion of this subbasin (Figure 13), including Roanoke Rapids Lake, lies within the piedmont region, while the middle and lower sections are in the coastal plain. With the exception of the Gaston, Roanoke Rapids and Weldon urban areas, most of the land in the subbasin is forested (65%) or in agriculture (30%). Most agricultural land is cultivated cropland planted in cotton, peanuts, tobacco and soybeans (DWQ 2001). Table 9 provides a statistical summary of Targeted Local Watersheds in this subbasin.

The US Fish and Wildlife Service, Partners for Fish and Wildlife Program and The Roanoke River Basin Regional Council (a regional effort of the Albemarle-Pamlico National Estuary Program) have partnered on a project to enhance 36 acres of wetland and riparian habitat along the main stem of the

Roanoke River, northeast of Norfleet. The \$41,000 project (\$16,000 from the USFWS and \$25,000 from the Roanoke River Basin Council) is improving water quality by: 1) fencing cattle out of the river, 2) planting hardwoods within a one-mile 150-ft buffer, and a half-mile 75-foot buffer on a Roanoke River tributary 3) providing the cattle with an alternative watering system, and 4) providing a cattle crossing to allow for a pasture rotation system. This project will reduce sedimentation and erosion as well as benefit anadromous fish and many migratory birds.



Site before work began: an unvegetated riparian buffer



**Chocoyette Creek****Targeted Local Watersheds 70010 and 70020**

These watersheds (Figure 14) contain Chocoyette Creek, which drains portions of Roanoke Rapids and Weldon. Roanoke Rapids may have to comply with EPA Phase II stormwater rules (see other initiatives beginning on page 48). Chocoyette Creek is impacted by sewer collection overflows in Roanoke Rapids as well as stormwater runoff from Roanoke Rapids and Weldon. Roanoke Rapids is working towards replacing their collection system in the next 5 years (DWQ, 2001) but stormwater runoff could continue to be an issue.

**Quankey Creek****Targeted Local Watershed 70030**

Quankey Creek (Figure 14) is a stream that is 303(d) listed and impaired. Some of this impairment is due to Halifax's Wastewater Treatment Plant as well as stormwater runoff from Halifax. These impacts influence the lower portion of the creek. The headwaters of Quankey Creek appear to be in much better shape than its downstream reaches. Upstream sampling sites showed healthy macroinvertebrate populations and there was no indication of water quality impacts (DWQ, 2001).

**Conoconnora Swamp****Targeted Local Watersheds 90010 and 90020**

This stream (Figure 15) was rated as partially supporting in the last basin planning cycle and has received more attention in the recent past. In 2000, the NC Wildlife Resources Commission received a \$ 1.65 million grant from the Clean Water Management Trust Fund to acquire 2,400 acres along the Roanoke River. This area is immediately downstream from the Department of Corrections Caledonia prison farm, where cattle have access to the riverbank for several hundred feet. The Division of Soil and Water Conservation has been working with the NC Department of Corrections to select and implement Best Management Practices at this facility, including cattle exclusion and streambank stabilization. (DWQ, 2001). Problems at this facility were noted at several citizen meetings in the lower Roanoke area.

**Table 9:** Summary of information about Targeted Local Watersheds in Roanoke River Basin Subbasin 08.

Targeted Local Watershed	Chocoyette Creek	Chocoyette Creek	Quankey Creek	Conoconnara Swamp	Conoconnara Swamp
<b>County</b>	Halifax County	Halifax County	Halifax County	Halifax County	Halifax County
<b>14-digit Hydrologic Unit #</b>	03010107070010	03010107070020	03010107070030	03010107090010	03010107090020
<b>Land Area (Square Miles):</b>	43.77	37.57	62.83	71.42	71.42
<b>Miles of Impaired Streams<sup>1</sup>:</b>	0	0	3.4	0	0
<b>Possible Causes of Degradation<sup>2</sup>:</b>	NA	NA	Biological Impairment	NA	NA
<b>Possible Sources of Degradation<sup>2</sup>:</b>	NA	NA	WWTP, Stormwater Runoff	NA	NA
<b>Stream on NC 2000 303(d) List<sup>3</sup>?</b>	No	No	No	NA	NA
<b>Cleared Land Cover:</b>	25%	38%	38%	32%	66%
<b>Developed Land Cover:</b>	15%	2%	1%	0%	0%
<b>Forested Land Cover:</b>	59%	58%	61%	68%	32%
<b>Within DWQ Water Supply Watershed<sup>5</sup></b>	No	Yes	No	No	No
<b>DWQ Designated High Quality or Outstanding Resource Water<sup>5</sup></b>	No	No	No	No	No
<b>Presence of Aquatic Natural Heritage Element<sup>7</sup></b>	Yes	Yes	No	No	No

1 Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

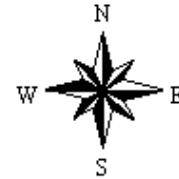
7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed.



1 0 1 Miles



**Figure 14**  
**Roanoke**  
**River Basin**  
**Subbasin 08**  
**Chockoyette and**  
**Quankey Creeks**  
**Targeted Local**  
**Watersheds**  
**70010, 70020,**  
**and 70030**



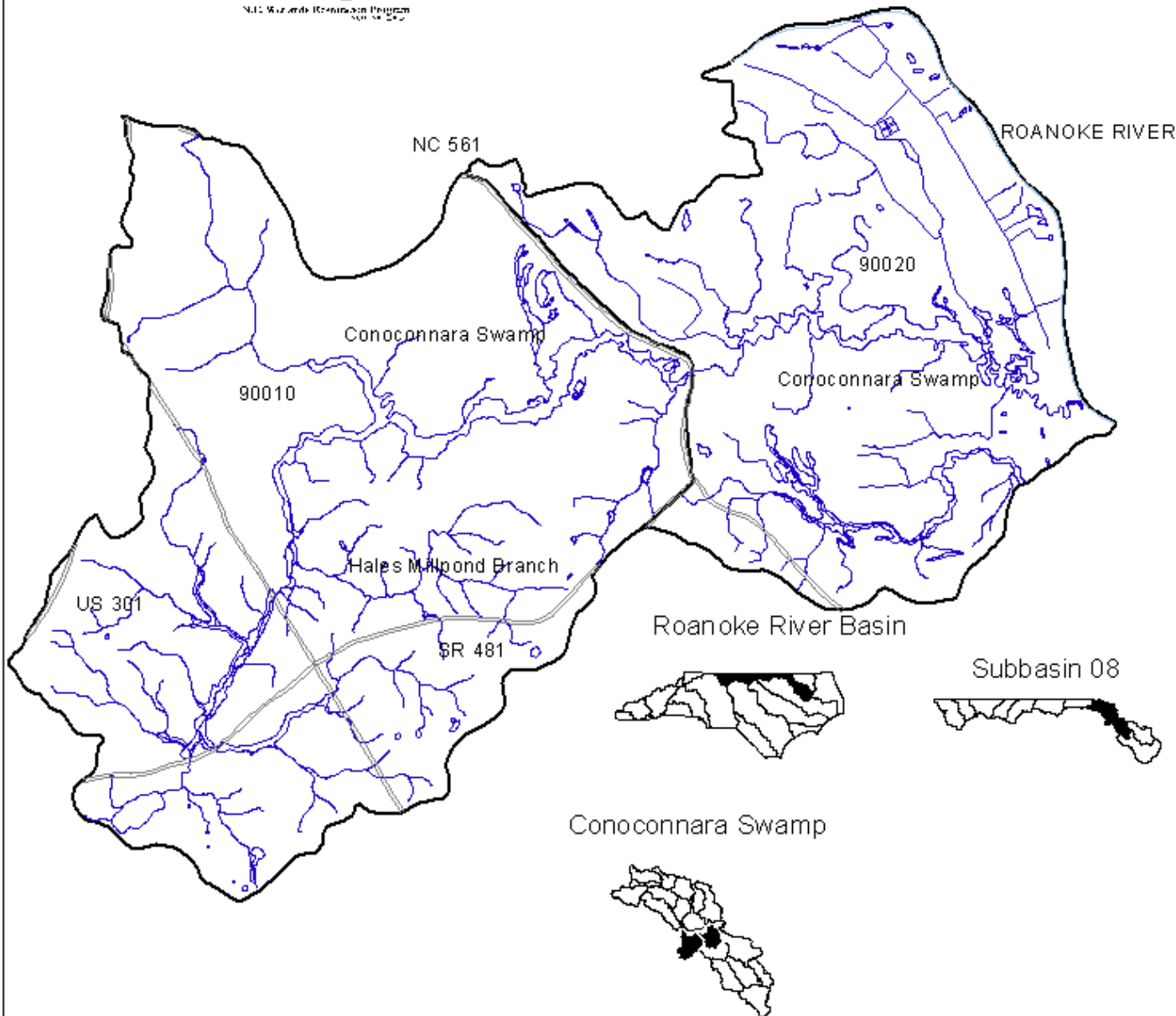
- Primary Roads
- Hydrography
- Local Watershed Boundaries
- Municipalities

This map was produced on 04/20/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

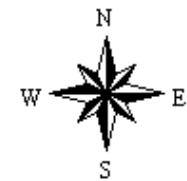
The map is based on:  
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 Spheroid: GRS1980  
 Units: Meters



1 0 1 Miles



**Figure 15**  
**Roanoke**  
**River Basin**  
**Subbasin 08**  
**Targeted**  
**Local Watersheds**  
**90010 and 90020**  
**Conocoannara Swamp**



- Primary Roads
- Hydrography
- Fully Supporting
- Partially Supporting
- Not Supporting
- Not Rated
- Local Watershed Boundaries

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 Units: Meters

### **Subbasin 03-02-09 - Lower Roanoke River**

<b>Subbasin 03-02-09</b>	
<i>Area (square miles): 559</i>	
<i>1990 Population Estimate: 58,886</i>	
<i>Land Cover:</i>	
Forest/Wetland	71.5%
Surface Water	2.4%
Urban	0.6%
Cultivated Crop	24.8%
Pasture/managed herbaceous	0.8%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	72.8
• Partially Supporting	0
• Not Supporting	0
• Not Rated	198.3

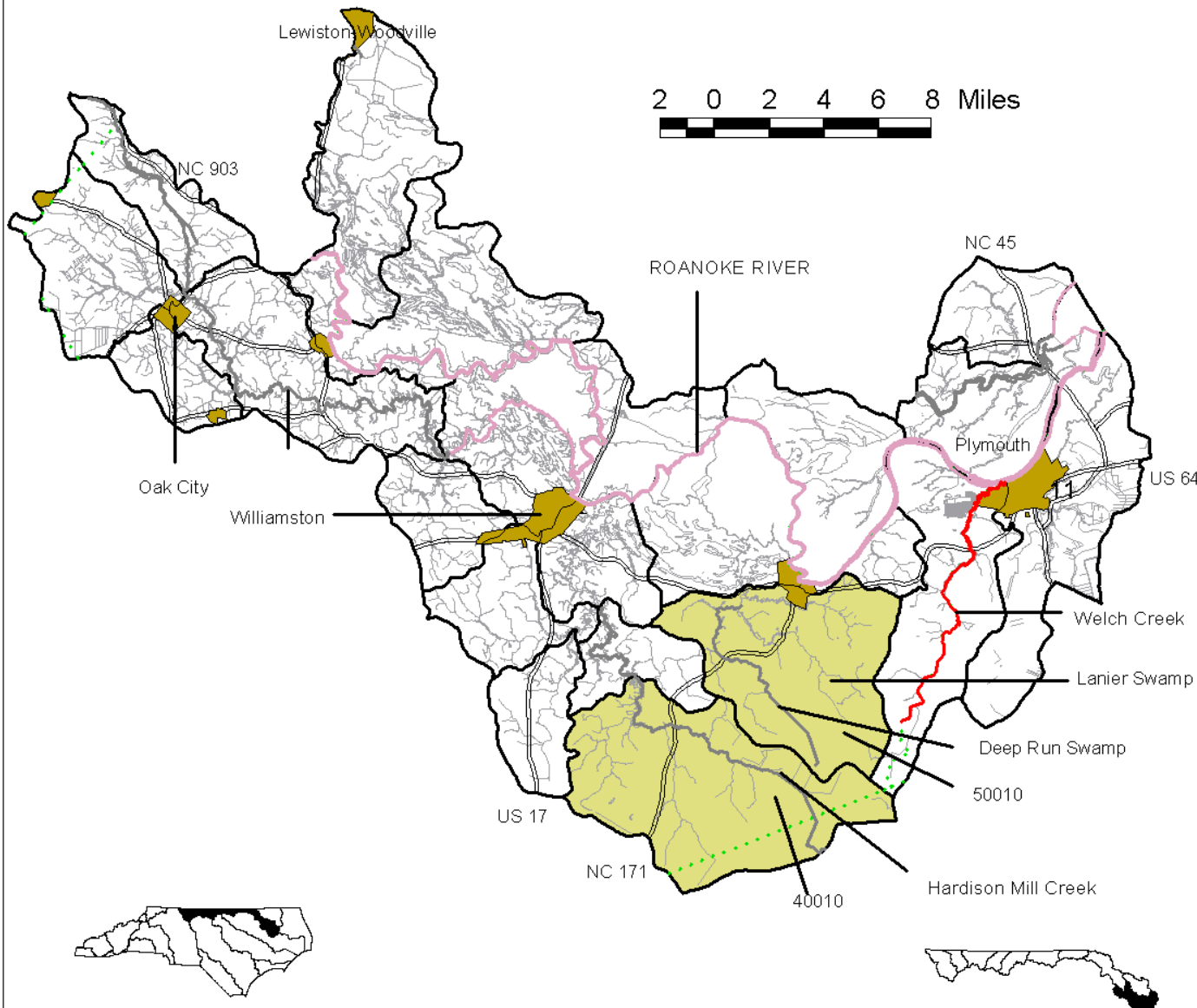
This subbasin (Figure 16) contains the lower 83 miles of the Roanoke River and its tributaries. 71% of the land is forested and 25 % of the land is used for agriculture. Extensive floodplain forests border the lower Roanoke which possesses one of the healthiest, most biologically diverse bottomland hardwood forests in the southeastern United States. The area is one of seven priority targets for The Nature Conservancy within North Carolina. Through the collected efforts of The Nature Conservancy, The US Fish and Wildlife Service, and the North Carolina Wildlife Resources Commission, more than 34,000 acres have been brought into public ownership. With the addition of 21,000 acres of Georgia-Pacific timberland under conservation management, an almost continuous corridor reaching from Hamilton to the Albemarle Sound has been preserved (DWQ, 2001). Table 10 provides a statistical summary of the Targeted Local Watershed in this subbasin.

### **Hardison Mill Creek and Deep Run Swamp Targeted Local Watersheds 40010 and 50010**

The benthic macroinvertebrate communities of these two streams (Figure 17) were sampled, but not rated by DWQ in 1999 because of their swampy nature. However, extensive impacts to water quality were observed in these streams. Hardison Mill Creek has a relatively open canopy (50% shaded) which provided enough light to allow prolific algal growth. Both of these streams have channelized headwaters leading to severe habitat degradation in several miles of stream in these watersheds (DWQ, 2001).



Figure 16  
Roanoke  
River Basin  
Subbasin 09



- Use Support Ratings**
- Fully Supporting
  - Partially Supporting
  - Not Supporting
  - Not Monitored
  - Not Rated
  - Primary Roads
  - County Boundary
  - Municipalities
  - Targeted Local Watershed
  - Local Watershed Boundaries

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 Projection: Stateplane  
 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters



Roanoke River Basin



Subbasin 09

**Table 10:** Summary of information about Targeted Local Watersheds in Roanoke River Basin Subbasin 09.

Targeted Local Watershed	Hardison Mill Creek	Deep Run Swamp
County	Martin	Martin
14-digit Hydrologic Unit #	03010107140010	03010107150010
Land Area (Square Miles):	53.22	42.2
Miles of Impaired Streams <sup>1</sup> :	0	0
Possible Causes of Degradation <sup>2</sup> :	NA	NA
Possible Sources of Degradation <sup>2</sup> :	NA	NA
Stream on NC 2000 303(d) List <sup>3</sup> ?	No	No
Cleared Land Cover:	12%	19%
Developed Land Cover:	0%	0%
Forested Land Cover:	88%	80%
Within DWQ Water Supply Watershed? <sup>5</sup>	No	No
DWQ Designated High Quality or Outstanding Resource Water? <sup>5</sup>	No	No
Presence of Aquatic Natural Heritage Element? <sup>7</sup>	No	No

1. Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

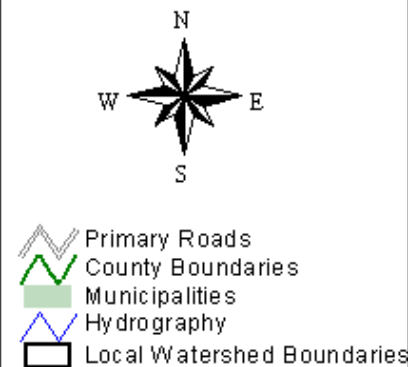
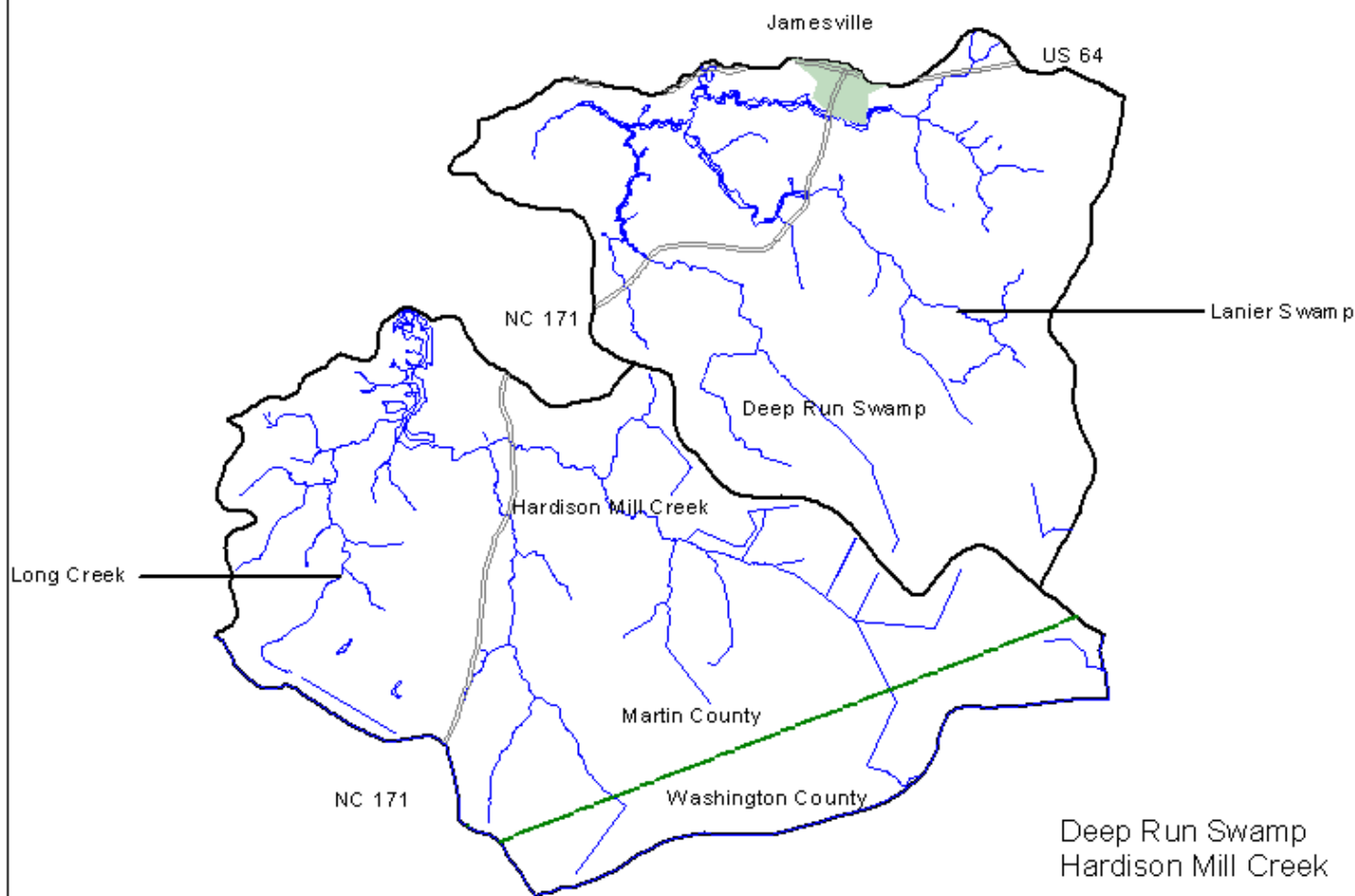
5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed. One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.



**Figure 17**  
**Roanoke**  
**River Basin**  
**Subbasin 09**  
**Targeted**  
**Local Watersheds**  
**40010 and 50010**  
**Deep Run Swamp**  
**and**  
**Hardison Mill Creek**



Roanoke River Basin



Subbasin 09



Deep Run Swamp  
 Hardison Mill Creek



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 Zone: 4901  
 Datum: NAD83  
 Spheroid: GRS1980  
 Units: Meters

**Subbasin 03-02-10 - Cashie River**

<b>Subbasin 03-02-10</b>	
<i>Area (square miles): 307</i>	
<i>1990 Population Estimate: 17,300</i>	
<i>Land Cover:</i>	
Forest/Wetland	79.2%
Surface Water	0.6%
Urban	0.3%
Cultivated Crop	19.4%
Pasture/managed herbaceous	0.6%
<i>Use Support Summary for Freshwater Streams (miles):</i>	
• Fully Supporting	0
• Partially Supporting	0
• Not Supporting	0
• Not Rated	149.1

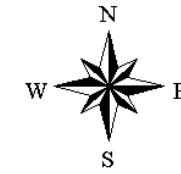
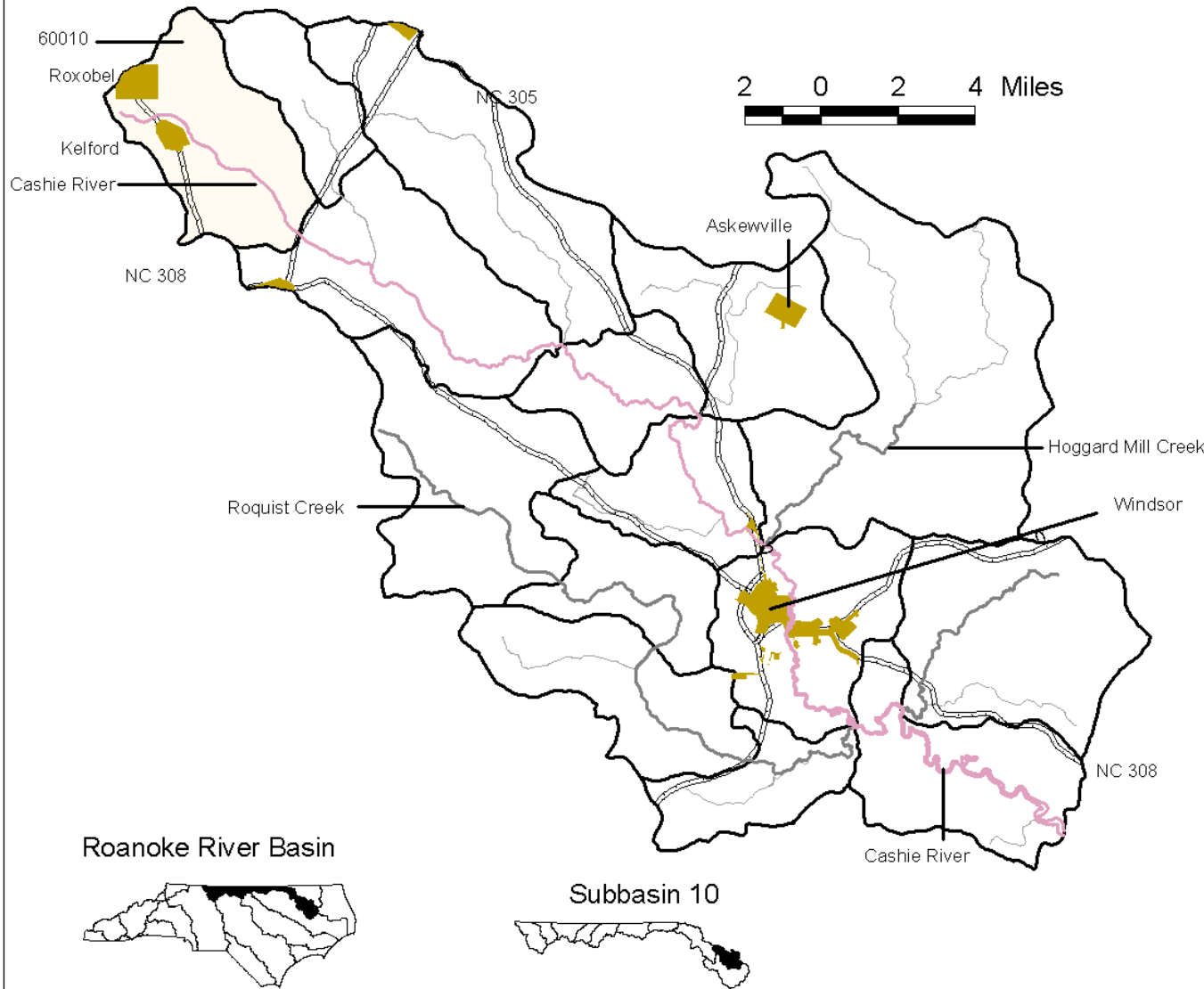
The Cashie River and its tributaries (Figure 18) including Roquist, Hoggard Mill and Wading Place Creeks make up this coastal plain subbasin. All streams including the Cashie itself are slow moving and swampy (DWQ, 2001). Land use in the area is primarily timberland with a mixture of agricultural activities. Several animal operations are located in the upper section of the Cashie River Watershed (DWQ 2001). Table 11 provides a statistical summary of Targeted Local Watersheds in this subbasin.

**Cashie Headwaters**  
**Targeted Local Watershed 60010**

The 1997 Roanoke Basin Plan listed the Cashie River (Figure 19) as partially supporting, however, since benthos data is not currently used to determine impairment in swamp streams, the Cashie is currently not rated. In the past plan a recommended strategy was to evaluate the contribution of agricultural runoff in the upper portion of the watershed and implement Best Management Practices as needed (DWQ, 2001). Accordingly, the NCWRP is targeting the Cashie headwaters.



Figure 18  
Roanoke  
River Basin  
Subbasin 10



Use Support Ratings

- Fully Supporting
- Partially Supporting
- Not Supporting
- Not Monitored
- Not Rated
- Primary Roads
- County Boundary
- Municipalities
- Targeted Local Watershed
- Local Watershed Boundaries

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The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS1980  
Units: Meters

**Table 11:** Summary of information about the Targeted Local Watershed in Roanoke River Basin Subbasin 10.

Targeted Local Watershed	Cashie Headwaters
County	Bertie
14-digit Hydrologic Unit #	03010107160010
Land Area (Square Miles):	19.10
Miles of Impaired Streams <sup>1</sup> :	0
Possible Causes of Degradation <sup>2</sup> :	NA
Possible Sources of Degradation <sup>2</sup> :	NA
Stream on NC 2000 303(d) List <sup>3</sup> ?	No
Cleared Land Cover:	44%
Developed Land Cover:	0%
Forested Land Cover:	54%
Within DWQ Water Supply Watershed? <sup>5</sup>	No
DWQ Designated High Quality or Outstanding Resource Water? <sup>5</sup>	No
Presence of Aquatic Natural Heritage Element? <sup>7</sup>	No

1. Miles of impaired streams indicates the approximate number of stream miles within the local watershed that are rated as either partially supporting (PS) or not supporting (NS).

2 Possible causes and sources of degradation indicates either point or nonpoint source pollution. Causes and sources include: 1) Habitat degradation (a notable reduction in habitat diversity or change in habitat quality--includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and stream bed scour.) 2) Agriculture (row crops and animal operations-- where cattle is noted, cattle were observed on site at the time of sampling or the watershed hosts many cattle farms) 3) Non-urban development (residential and /or commercial development outside urban areas).

3 Stream on 303(d) List indicates whether the Targeted Local Watershed contains waters which are on the North Carolina's 2000 303(d) List (not yet approved by the US EPA).

4 All or part of the watershed is designated by the DWQ as a Water Supply Watershed and is subject to management strategies designed to protect surface water supply.

5 One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

6 DWQ has assigned one or more streams in the watershed as trout waters. Trout waters are protected for natural trout propagation and survival of stocked trout.

7 The Natural Heritage Program has identified one or more unique aquatic species or habitat in this watershed. One or more streams in the watershed is designated by the DWQ as possessing special qualities including excellent water quality, native trout, critical habitat areas, or water supplies.

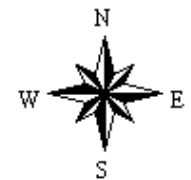


0 1 Miles

Roanoke River Basin

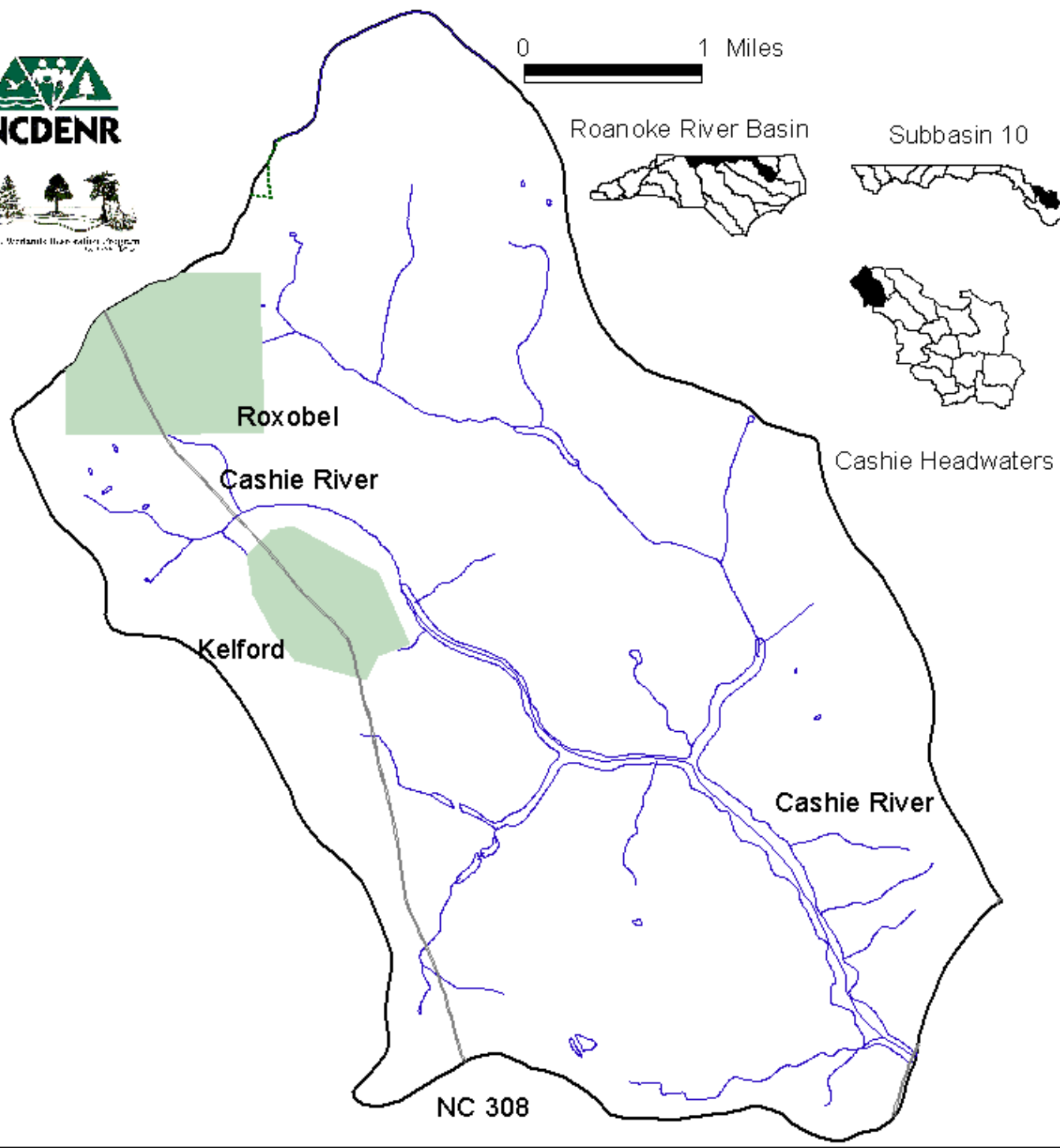
Subbasin 10

**Figure 19  
Roanoke  
River Basin  
Subbasin 10  
Targeted  
Local Watershed  
60010  
Cashie Headwaters**



- Primary Roads
- County Boundaries
- Municipalities
- Hydrography
- Local Watershed Boundaries

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The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS1980  
Units: Meters



## **SECTION 5: CONTACT INFORMATION FOR THE ROANOKE RIVER BASIN**

The NCWRP can implement restoration projects cooperatively with other state or federal programs or environmental groups. The NCWRP believes that integrating wetland or stream restoration with other projects such as livestock exclusion or stormwater management will often increase the overall water quality benefits of the project. In selecting Targeted Local Watersheds, the NCWRP considers completed and ongoing restoration efforts in the watershed to determine if there are opportunities to link NCWRP projects with these efforts through the watershed approach. Section C of the Roanoke River Basinwide Water Quality Plan provides a comprehensive overview of current and future water quality initiatives and projects thorough the Roanoke River Basin. To avoid duplication of this information, this document highlights projects and initiative underway in NCWRP Targeted Local Watersheds in Section 4 of this document. The purpose of this section is to provide contact information for the projects and programs discussed in Section 4 of this document and for programs or initiatives underway in the Roanoke River Basin that are potential building blocks for current and future NCWRP project efforts.

**Table 12:** Contacts for Federal water quality programs and initiatives in the Roanoke River Basin.

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
<b>Environmental Protection Agency Wetland Section</b>	Becky Fox	1349 Firefly Road Whittier NC 28789	828) 497-3531	<a href="mailto:fox.rebecca@epa.gov">fox.rebecca@epa.gov</a> <a href="http://www.epa.gov">www.epa.gov</a>
<b>Natural Resource Conservation Service</b>				<a href="http://www.nc.nrcs.usda.gov">www.nc.nrcs.usda.gov</a>
Surry County	Dick Everhart District Conservationist	PO Box 218 Agriculture Bldg. North Main St. Dobson, NC 27017	(336) 386-8751	<a href="mailto:deverhart@nc.nrcs.usda.gov">deverhart@nc.nrcs.usda.gov</a>
Stokes County	Reginald Liddell	PO Box 98 Old Courthouse Bldg., Hwy 89 Danbury, NC 27016	(336) 593-2846	<a href="mailto:rliddell@nc.nrcs.usda.gov">rliddell@nc.nrcs.usda.gov</a>
Rockingham County	John Timmons	PO Box 201 Wentworth, NC 27375-0201	(336) 342-8225	<a href="mailto:jtimmons@nc.nrcs.usda.gov">jtimmons@nc.nrcs.usda.gov</a>
Caswell County	Warren Mincey	PO Box 96 Agriculture Bldg. Main Street, Yanceyville, NC, 27379	(336) 694-4581	<a href="mailto:wmincey@nc.nrcs.usda.gov">wmincey@nc.nrcs.usda.gov</a>
Person County	James M Huey	Person County Office Bldg., Room 126 304 South Morgan Street, Roxboro, NC 27573	(336) 597-2973	<a href="mailto:jhuey@nc.nrcs.usda.gov">jhuey@nc.nrcs.usda.gov</a>

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
Granville County	Diana Lewis	PO Box 10 Federal Bldg. Room 108 146 Main Street, Oxford, NC 27565	(919) 693-4603	<a href="mailto:dlewis@nc.nrcs.usda.gov">dlewis@nc.nrcs.usda.gov</a>
Vance County	Brent Bogue	County Office Bldg. Room 1 305 Young Street Henderson, NC 27536	(919) 438-5727	<a href="mailto:bbogue@nc.nrcs.usda.gov">bbogue@nc.nrcs.usda.gov</a>
Warren County	Dallas Shackelford	133 South Main Street Warrenton, NC 27589	(252) 257-3836	<a href="mailto:dshackelford@nc.nrcs.usda.gov">dshackelford@nc.nrcs.usda.gov</a> v
Halifax County	J.Wayne Short	PO Box 8 Halifax County Ag Center Hwy 301 Halifax, NC 27839-0008	(252) 583-3481	<a href="mailto:wshort@nc.nrcs.usda.gov">wshort@nc.nrcs.usda.gov</a>
Northampton County	Tony Short	PO Box 218 Northampton Co. Admin. Bldg. Hwy 305 Jackson, NC 27845	(252) 534- 2591	<a href="mailto:tshort@nc.nrcs.usda.gov">tshort@nc.nrcs.usda.gov</a>
Bertie County	Paula Ashley	PO Box 566 Bertie Co. Office Bldg. 106 Dundee Street, Room 211 Windsor, NC 27893-0566	(252) 794-5305	<a href="mailto:pashley@nc.nrcs.usda.gov">pashley@nc.nrcs.usda.gov</a>
Martin County	Rupert Hasty	104 Kehukee Park Road Williamston, NC 27892	(252) 792-4350	<a href="mailto:rhasty@nc.nrcs.usda.gov">rhasty@nc.nrcs.usda.gov</a>

**Table 13:** Contacts for Statewide water quality programs and initiatives in the Roanoke River Basin.

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
<b>Clean Water Management Trust Fund</b>	Damon Tatum Eastern Field Representative	505 Copley Drive Kill Devil Hills, NC 27948	(252) 441-6672	<a href="mailto:Damon@cwmtf.net">Damon@cwmtf.net</a>
	Bern Schumack Central Field Representative	6519 Haystack Road Dobson, NC 27017	(336) 366-3801	bern@cwmtf.net
<b>The North Carolina Chapter of the Nature Conservancy</b>		<b>Suite 201, 4011 University Drive Durham, NC 27707</b>	<b>(919) 403-8558</b>	<a href="http://nature.org/states/northcarolina/getit.htm">http://nature.org/states/northcarolina/getit.htm</a>
<b>Division of Soil and Water Conservation - District Offices</b> NC 27017				<a href="http://www.enr.state.nc.us/DSWC/">www.enr.state.nc.us/DSWC/</a>
Surry County		SWCD PO Box 218 Dobson, NC 27017	(336) 386-8109	
Stokes County		SWCD PO Box 98 Danbury, NC 27016	(336) 593-2847	
Rockingham County		SWCD PO Box 201 Wentworth, NC 27375-0201	336-342-8225	
Caswell County		PO Box 96 Agriculture Bldg. Main Street, Yanceyville, NC, 27379	(336) 694-4581	

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
Person County		SWCD Person County Office Bldg., Room 126 304 South Morgan Street, Roxboro, NC 27573	(336) 597-2973	
Granville County		SWCD Office PO Box 10 Oxford, NC, 27565	(919) 693-4603	
Vance County		SWCD County Office Bldg. 305 Young Street Henderson, NC 27536	(252) 438-5727	
Warren County		SWCD 133 South Main Street Warrenton, NC 27589	(252) 257-3836	
Halifax County		SWCD PO Box 8 Halifax County Ag Center Hwy 301 Halifax , NC 27839-0008	(252) 583-3481	
Northampton County		SWCD PO Box 218 Northampton Co. Admin. Bldg. Hwy 305 Jackson, NC 27845	(252) 534-2591	
Bertie County		SWCD PO Box 566 Bertie Co. Office Bldg. 106 Dundee Street, Room 211 Windsor, NC 27893-0566	(252) 794-5305	
Martin County		SWCD PO Box 483 Williamston, NC 27892	(252) 792-4350	

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
<b>Division of Water Quality</b>				<a href="http://www.h2o.enr.state.nc.us">www.h2o.enr.state.nc.us</a>
Winston-Salem Regional Office (Surry, Stokes, Rockingham, and Caswell)		585 Waughtown Street Winston-Salem, NC 27107	(336) 771-4600	
Raleigh Regional Office (Person, Granville, Vance, Warren, Halifax, and Northapton)		3800 Barrett Drive Raleigh, NC 27609	(919) 571-4700	
Washington Regional Office (Bertie and Martin)		943 Washington Square Mall Washington, NC 27889	(252) 946-6481	
Basinwide Planning Program	Callie Dobson	1617 Mail Service Center Raleigh, NC 27699-1617	(919) 733-5083 ext. 583	<a href="mailto:Callie.Dobson@ncmail.net">Callie.Dobson@ncmail.net</a>
Section 319 Grant Program	Sean Groom	1617 Mail Service Center Raleigh, NC 27699-1617	(919) 733-5083 ext. 582	<a href="mailto:Sean.Groom@ncmail.net">Sean.Groom@ncmail.net</a> <a href="http://h2o.enr.state.nc.us/nps/319.htm">h2o.enr.state.nc.us/nps/319.htm</a>
Wetlands Restoration Program	George Norris Watershed Planner Project Implementation	1619 Mail Service Center Raleigh, NC 27699-1619	(919) 733-5312	<a href="mailto:George.Norris@ncmail.net">George.Norris@ncmail.net</a> <a href="http://h2o.enr.state.nc.us/wrp/index.htm">h2o.enr.state.nc.us/wrp/index.htm</a>
The Albemarle Pamlico National Estuarine program	Guy Stefanski, Program Director	1617 Mail Service Center Raleigh, NC 27699-1617	(919) 733-5083 ext. 585	<a href="mailto:Guy.Stefanski@ncmail.net">Guy.Stefanski@ncmail.net</a>

**Table 14:** Contacts for Local Water Quality Programs and Initiatives in the Roanoke River Basin.

<b>ORGANIZATIONS AND PROJECTS</b>	<b>CONTACT</b>	<b>ADDRESS</b>	<b>PHONE</b>	<b>E-MAIL / WEB SITE</b>
<i>Roanoke River Basin Association</i>	Tom Brawner		(252) 537-5766	<a href="mailto:Info@rrba.com">Info@rrba.com</a>
<i>Roanoke River Partners</i>	Huntley Allen		(252) 794-2793	
<i>Rockingham County Watershed Preservation Coalition, Inc.</i>				<a href="mailto:RCWPC@vnet.net">RCWPC@vnet.net</a>
<i>Roanoke River Regional Council</i>				<a href="http://h2o.enr.state.nc.us/nep/roanoke_regional_council.htm">http://h2o.enr.state.nc.us/nep/roanoke_regional_council.htm</a>
<i>Piedmont Land Conservancy</i>	Palmer McIntyre	PO Box 4025 Greensboro, NC 27404-4025	(336) 691-0088	<a href="mailto:Info@piedmontland.org">Info@piedmontland.org</a>

### **References Cited**

North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality. "Roanoke River Basinwide Water Quality Management Plan." July, 2001.

North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality. "Roanoke River Basinwide Water Quality Management Plan." September, 1997.

North Carolina Natural Heritage Program, DENR, Division of Parks and Recreation. "Natural Heritage Program List of the Rare Animal Species of North Carolina." 1999.

North Carolina Natural Heritage Program, DENR, Division of Parks and Recreation. "Natural Heritage Program List of the Rare Plant Species of North Carolina." 1999.

North Carolina Wildlife Resources Commission, Division of Inland Fisheries. Draft Fisheries Management Plan for the Roanoke River. June, 1998.

## APPENDIX 1

### COMPREHENSIVE LIST OF TARGETED LOCAL WATERSHEDS IN THE ROANOKE RIVER BASIN

The following is a comprehensive list of local watersheds targeted by the NCWRP in the Roanoke River Basin. Other agencies, individuals and private groups are encouraged to target their search for restoration sites within these local watersheds. The watershed codes are the fourteen-digit code for each local watershed in the state that has been designated by the USDA Natural Resources Conservation Service (NRCS).

<b>DWQ Subbasin</b>	<b>Watershed Name</b>	<b>14 Digit Hydrologic Unit</b>
01	Snowy Creek	030101031 <b>80010</b>
01	Belews Creek	030101031 <b>80040</b>
01	Town Fork Creek	030101031 <b>90010</b>
01	Town Fork Creek	030101031 <b>90020</b>
02	Big Beaver Island Creek	030101032 <b>20010</b>
04	Country Line Creek	030101040 <b>32010</b>
04	Country Line Creek	030101040 <b>32030</b>
06	Grassy Creek	030101021 <b>61010</b>
07	Smith Creek	030101060 <b>31010</b>
08	Chockoyette Creek	030101070 <b>70010</b>
08	Chockoyette Creek	030101070 <b>70020</b>
08	Quankey Creek	030101070 <b>70030</b>
08	Conoconnara Swamp	030101070 <b>90010</b>
08	Conoconnara Swamp	030101070 <b>90020</b>
09	Hardison Mill Creek	030101071 <b>40010</b>
09	Deep Run Swamp	030101071 <b>50010</b>
10	Cashie Headwaters	030101071 <b>60010</b>