

# Watershed Restoration Plan for the Hiwassee 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 Hiwassee River Basin. It is the first update since the original Basinwide Wetlands and Riparian Restoration Plan for the Hiwassee 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 areas of most interest, the Targeted Local Watersheds. Local watersheds are targeted based on 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 Hiwassee River Basin restoration goals and basin-specific resource assessments are contained within this Restoration Plan.

In general, this document provides an overview of the Hiwassee River Basin, and describes each Targeted Local Watershed. In the overview of the basin (Section 2), is a map showing both Hiwassee River subbasins highlighting the five 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. This section begins with a description of the subbasin containing the Targeted Local Watersheds. This is followed by a description and maps of the Targeted Local Watersheds.

Section 5 contains contact information for various water quality initiatives taking place within the Hiwassee 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 Hiwassee 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 Hiwassee 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 Hiwassee 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 HIWASSEE RIVER BASIN**

The Hiwassee River Basin (Figure 1) is located in the southwestern corner of North Carolina's Blue Ridge Province of the Appalachian Mountains, west of the Eastern Continental Divide. The headwaters of the Hiwassee River originate in North Carolina and northern Georgia. The Hiwassee River is one of the major rivers flowing into the Tennessee River. The Tennessee River, in turn, flows into the Mississippi River and eventually into the Gulf of Mexico. The Tennessee Valley Authority (TVA) regulates the Hiwassee for the production of hydroelectric power. The largest rivers in the basin are the Hiwassee River and its tributaries, the Valley and Nottely Rivers. Many of the streams in the basin are located within the Nantahala National Forest. However, evidence of streambank erosion and sedimentation problems are prominent within this river basin.

### ***Habitat Information***

The Hiwassee River Basin is located in the Mountain physiographic province of the state. The basin contains examples of Southern Appalachian Bog and Swamp Forest—Bog Complex wetland communities. Examples of Floodplain Pool and Piedmont/Low Mountain Alluvial Forest community types can also be found in this river basin (Natural Heritage Program, 1999).

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

The Hiwassee River Basin contains 72 rare animal and plant species. There are 2 endangered mussels and one endangered snail in the river basin. Several other rare animals including Rafinesque's big-eared bat, cerulean warbler, seepage salamander, Hiwassee crayfish and olive darter (a fish) are facing federal listing as their populations become more threatened (Natural Heritage Program, 1999).

In addition, the Hiwassee River Basin has many rare plant species, including two species federally listed as threatened or endangered. Several of the rare plants in the Hiwassee Basin grow in the wet soils of bogs and are indirectly affected by water quality and quantity (Natural Heritage Program, 1999).

According to the N.C. Wildlife Resources Commission (WRC), the Hiwassee River Basin contains 62 fish species. Nineteen species are considered gamefish by WRC, 12 of which are from the family Centrachidae. Most frequently targeted species are brook, brown, and rainbow trout, largemouth and smallmouth bass, walleye, crappie, sunfish and catfish. Most anglers target Chatuge and Hiwassee reservoirs and designated trout streams. Some enthusiasts fish and boat in the mainstreams of the Nottely and the Hiwassee rivers below Chatuge Dam (Wildlife Resources Commission, 1998).

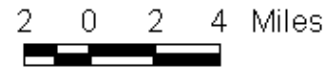
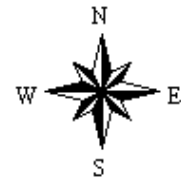
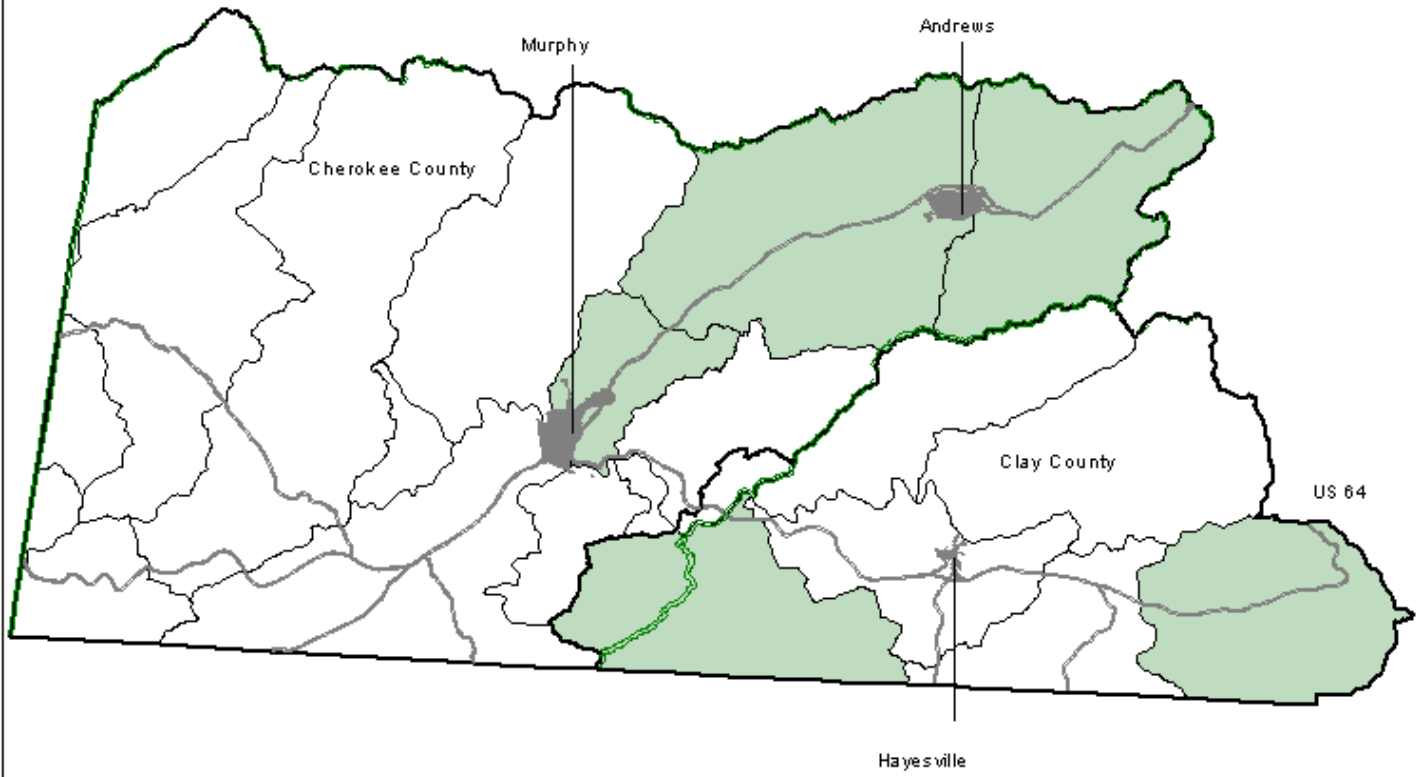


Figure 1  
Hiwassee  
River Basin



- Subbasin Boundaries
- County Boundaries
- Municipal Boundaries
- Primary Roads
- Local Watershed Boundaries
- Targeted Local Watersheds

This map was produced on 06/22/2001 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

Hiwassee River Basin



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 Hiwassee River Basin can be found in the “Draft Fisheries Management Plan for the Hiwassee 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 in 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.

1.24 of a total of 1.54 acres of wetland loss in this five year period was due to the widening of NC 60 to 5 lanes in 1995 (Table 1 below). Most of the stream impacts (Table 2 ) occurred on the Brasstown Creek (Clay County) in Subbasin 04-05-01 and the Valley River (Cherokee County) in Subbasin 04-05-02.

**Table 1:** Permitted wetland impacts (acres) in the Hiwassee River Basin by subbasin from 1995-2000.

Division of Water Quality Subbasins	Counties in Subbasin	1995	1996	1997	1998	1999	2000	Subbasin Total
04-05-01	Clay	0.01	0.03	0	0	0	0	.04
04-05-02	Cherokee	1.24	0.25	0	0.01	0	0	1.5
<b>TOTAL ACRES</b>		<b>1.25</b>	<b>0.28</b>	<b>0</b>	<b>0.01</b>	<b>0</b>	<b>0</b>	<b>1.54</b>

**Table 2:** Permitted stream impacts (linear feet) in the Hiwassee River Basin by subbasin from 1995-2000.

Division of Water Quality Subbasins	Counties in Subbasin	1995	1996	1997	1998	1999	2000	Subbasin Totals
04-05-01	Clay	0	0	0	0	0	1487	1487
04-05-02	Cherokee	0	0	260	0	0	590	850
<b>TOTAL ACRES</b>		<b>0</b>	<b>0</b>	<b>260</b>	<b>0</b>	<b>0</b>	<b>2077</b>	<b>2337</b>

### ***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 Hiwassee River Basin has a total of 967.6 miles of freshwater streams. For the aquatic life category, 0% are rated as not supporting; 0% are rated as partially supporting; and 74 % are rated as fully supporting. The remaining 26% of freshwater streams in the Hiwassee River Basin were not rated.

For individuals wanting more detail about use support ratings, the Hiwassee River Basinwide Water Quality Plan can be downloaded from the Division of Water Quality website at <http://h2o.enr.state.nc.us/basinwide/> or is available from the Division of Water Quality at (919) 733-5083 ext. 583.

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

Based on an assessment of existing watershed characteristics and resource information, the NCWRP has developed four broad restoration goals for the Hiwassee 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 Hiwassee River Basin are listed below.

- 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 to reduce erosion and sedimentation;
- Restore and protect wildlife 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 five Targeted Local Watersheds in the Hiwassee 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. 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 a Resource Professionals Meeting on December 7, 2000 at the Hinton Rural Life Center in Hayesville, NC. The purpose of the meeting was threefold:

1. Explain the NCWRP to 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 (Asheville Regional Office), the US Fish and Wildlife Service, the North Carolina Wildlife Resources Commission, North Carolina Farm Service Agency, Tennessee Valley Authority, US Forest Service, NC Forest Service, the Hiwassee River Watershed Coalition and county and municipal governments within the Hiwassee River basin.

As a follow up to the Resource Professionals Meetings, a letter was sent out to all invitees on July 3, 2001 informing them of the Draft Targeted Local Watersheds. The deadline for commenting on the Draft Targeted Local Watersheds was August 10, 2001

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

This section summarizes the condition of natural resources within each of the Targeted Local Watersheds in the Hiwassee River Basin. Information on Targeted Local Watersheds is organized by subbasin. This section also includes information about potential causes of resource degradation within these areas from the Division of Water Quality's Hiwassee 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 Natural Resource Conservation Service. The term "subbasin" is reserved solely to denote a subbasin of the larger Hiwassee River Basin, as defined by the Division of Water Quality.

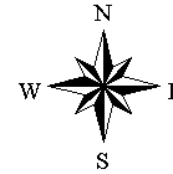
<b>Subbasin 04-05-01</b>	
<i>Area (square miles):</i>	195
<i>1990 Population Estimate:</i>	7445
<i>Land Cover:</i>	
Forest/Wetland	69%
Surface Water	14.8%
Urban	2.5%
Cultivated Crop	6.9%
Pasture/managed herbaceous	6.8%
<i>Use Support Summary (Aquatic Life) for Freshwater Streams (miles):</i>	
• Fully Supporting	216.1
• Partially Supporting	0
• Not Supporting	0
• Not Rated	97.7

### ***Subbasin 04-05-01 – Chatuge Lake- Tusquitee Creek:***

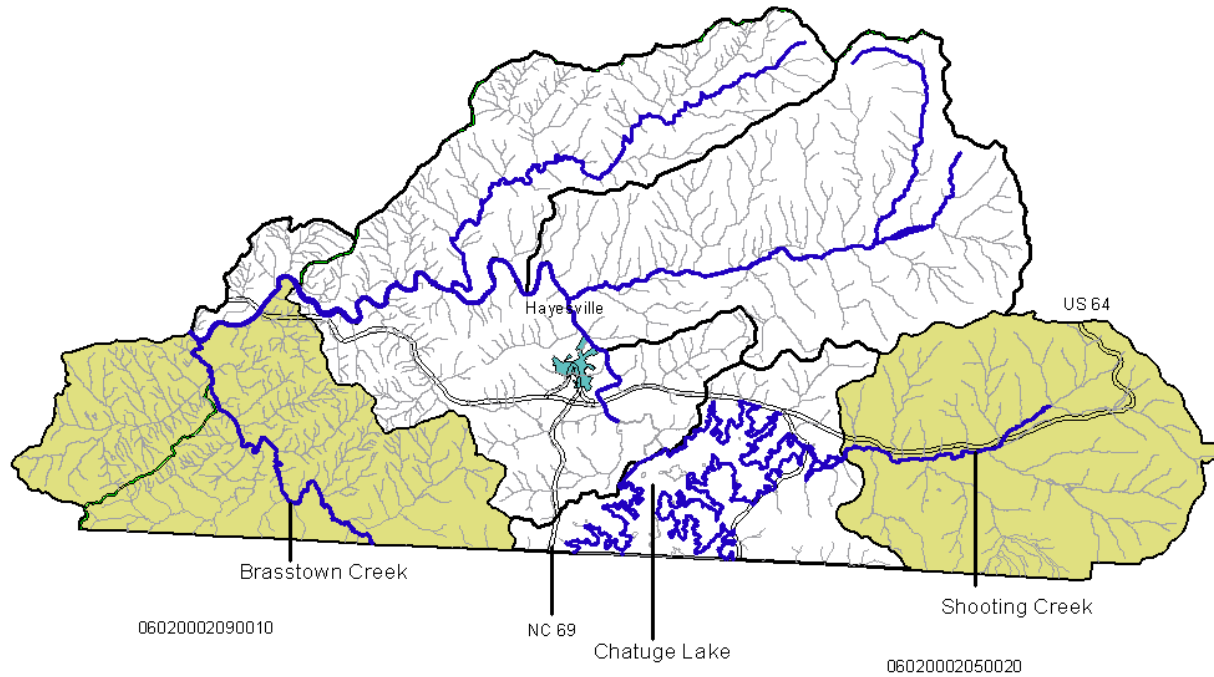
Hiwassee River Subbasin 04-05-01 contains the uppermost reaches of the Hiwassee River in North Carolina, although headwater reaches of the Hiwassee River are in Georgia (Figure 2). Major tributaries in North Carolina include Tusquitee, Fires (an Outstanding Resource Water), Shooting and Brasstown Creeks. (DWQ, Draft 2001). Table 4 provides a statistical summary of Targeted Local Watersheds in this subbasin.

### **Shooting Creek Targeted Local Watershed 50020**

Shooting Creek (Figure 3) is a large tributary to Chatuge Lake and US 64 borders it for most of its length. Sedimentation was noted in the 1997 basin plan, and though Shooting Creek received a "Good" bioclassification in 1999, the substrate of this stream showed evidence of sedimentation with pools filled in with sand and silt (DWQ 2000). The Shooting Creek arm of Chatuge Lake is almost completely full of sediment. Because of its proximity to Chatuge Lake and US 64 the watershed continues to experience residential development pressure. However, despite increasing residential development, land use in this watershed is still primarily agricultural (DWQ 2000).



# Figure 2 Hiwassee River Basin Subbasin 01

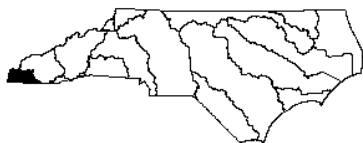


- Use Support Ratings
- Fully Supporting
  - Not Monitored
  - Primary Roads
  - County Boundaries
  - Municipalities
  - Local Watershed Boundaries
  - Targeted Local Watersheds
  - Local Watershed Boundaries

This map was produced on 11/7/01 by the 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

Hiwassee River Basin



Subbasin 01





Shooting Creek, east of Hayesville, showing bank instability next to a residence.



Brasstown Creek, showing bank instability and no buffer.

### **Brasstown Creek**

### **Targeted Local Watershed 90010**

Brasstown Creek flows north into North Carolina from Georgia. The creek received a Fair bioclassification in 1994 and was rated as Partially Supporting (DWQ, 1997). Water quality was being degraded from point sources in Georgia as well as nonpoint sources throughout the watershed. Brasstown Creek was again sampled in 1999 and although instream habitat was very sparse and there was significant sedimentation, the benthic macroinvertebrate community showed a marked improvement. Though parts of Brasstown Creek still have poor habitat and sedimentation issues, the stream is no longer rated as impaired (DWQ, 2000).

The Hiwassee River Watershed Coalition, a non-profit, grassroots organization made up of citizens and agencies from North Carolina, Georgia and Tennessee received a \$2.1 million Clean Water Management Trust Fund Grant in 1998 for restoration work in the Brasstown Creek Watershed.

**Table 3:** Summary of information about Targeted Local Watersheds in Hiwassee River Basin Subbasin 04-05-01.

Targeted Local Watershed	Shooting Creek	Brasstown Creek
County	Clay	Clay
14-digit Hydrologic Unit #	06020002050020	06020002090010
Land Area (Square Miles):	36.49	36.47
Miles of Impaired Streams <sup>1</sup> :	NA	NA
Possible Causes of Degradation <sup>2</sup> :	Habitat Degradation	Habitat Degradation
Possible Sources of Degradation <sup>2</sup> :	Agriculture, Land Development	Agriculture
Stream on NC 2000 303(d) List <sup>3</sup> ?	No	Yes
Cleared Land Cover:	8%	25%
Developed Land Cover:	1%	0%
Forested Land Cover:	91%	74%
Within DWQ Water Supply Watershed <sup>5</sup> ?	No	Yes
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.

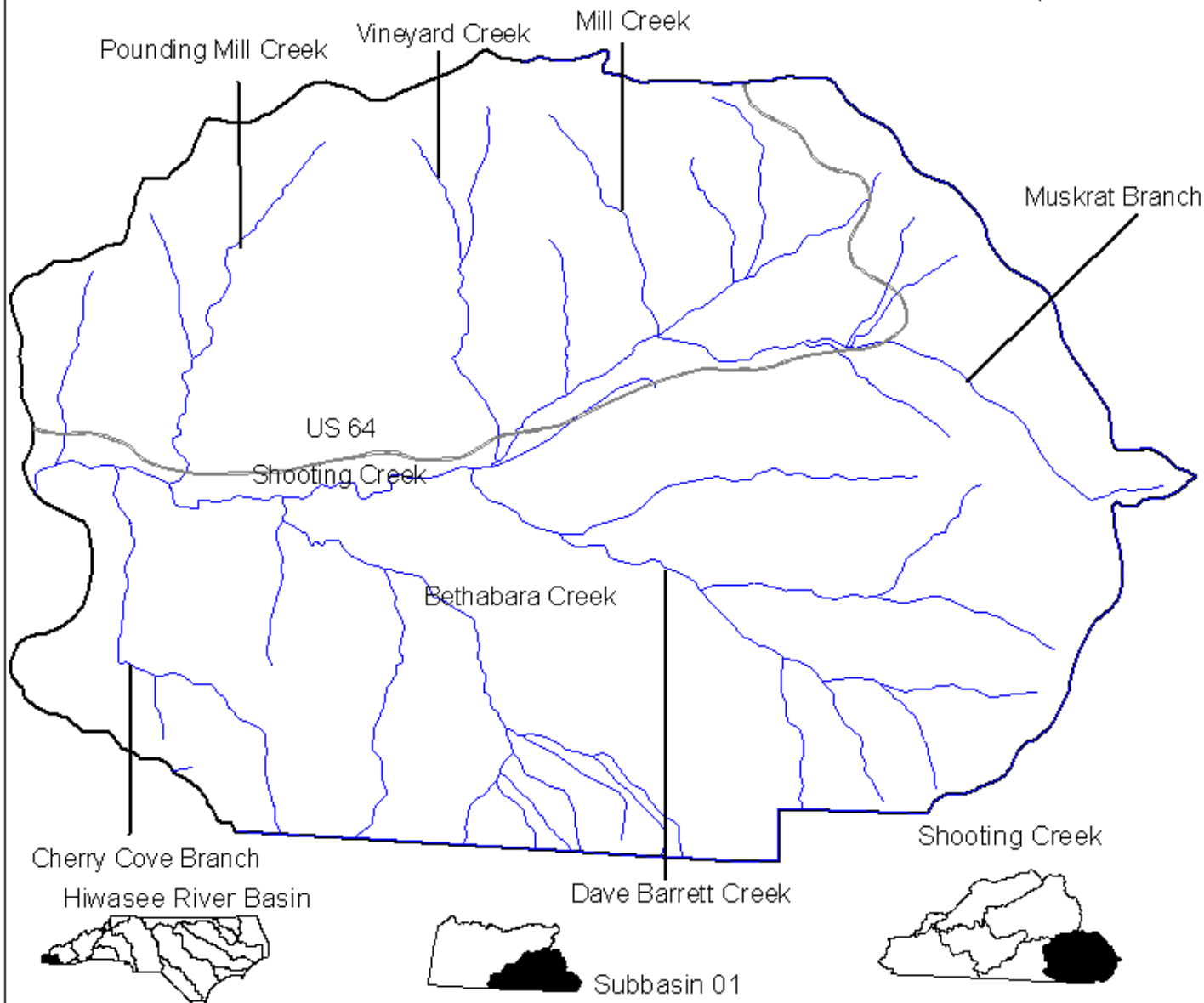
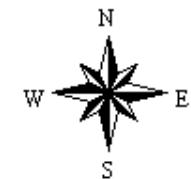


Figure 3  
Hiwassee  
River Basin  
Subbasin 01  
Targeted  
Local Watershed  
50020  
Shooting Creek

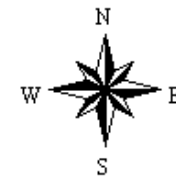
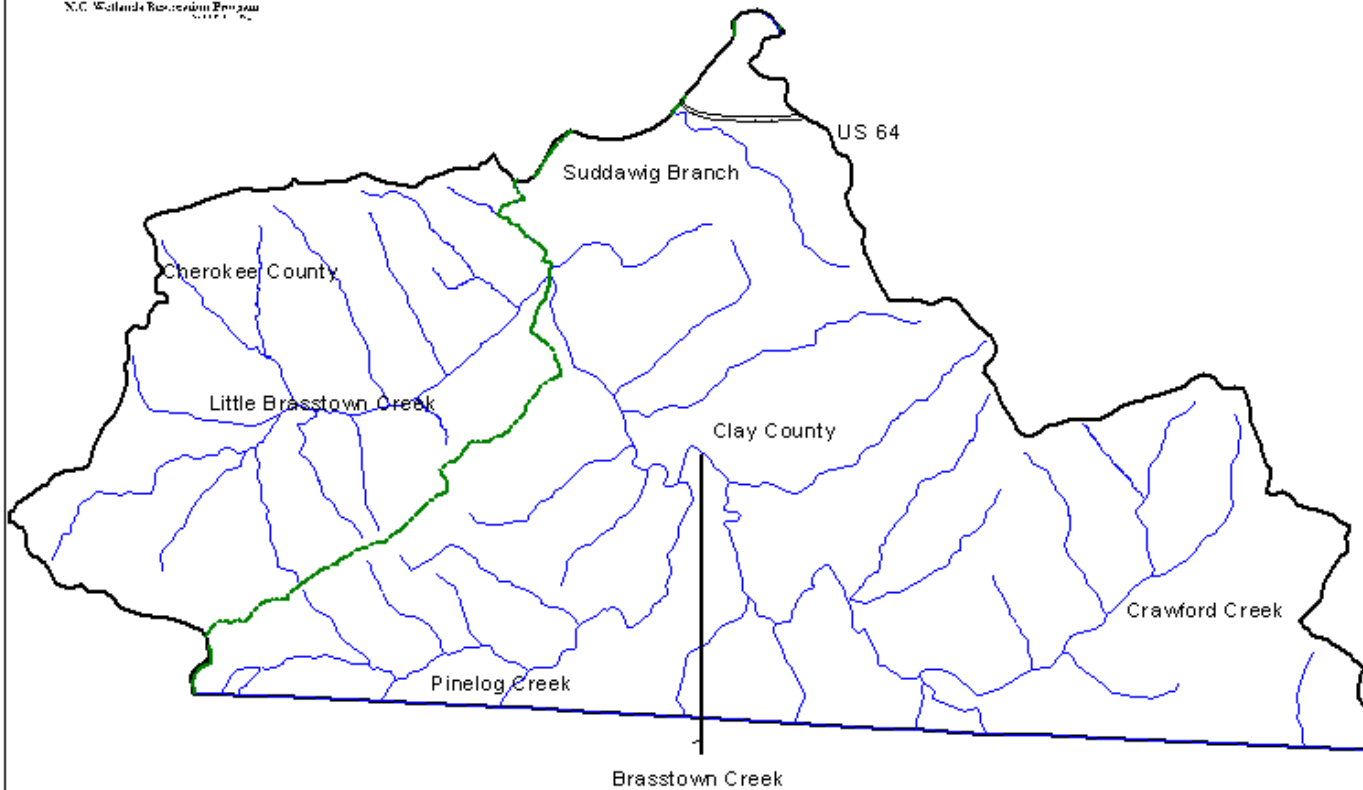


- Primary Roads
- Hydrography
- Local Watershed Boundaries

This map was produced on 05/02/2001  
 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



Figure 4  
Hiwassee  
River Basin  
Subbasin 01  
Targeted  
Local watershed  
90010  
Brasstown Creek



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

This map was produced on 05/02/2001 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

Hiwassee River Basin



Subbasin 01



Brasstown Creek



**Subbasin 04-05-02 – Hiwassee Lake and Tributaries**

<b>Subbasin 04-05-02</b>	
Area (square miles):	231 431
1990 Population Estimate:	19,278
<b>Land Cover:</b>	
Forest/Wetland	69.4%
Surface Water	6.4%
Urban	2.0%
Cultivated Crop	4.4%
Pasture/managed herbaceous	17.8%
<b>Use Support Summary (Aquatic Life) for Freshwater Streams (miles):</b>	
• Fully Supporting	497.9
• Partially Supporting	0
• Not Supporting	0
• Not Rated	155.9

This subbasin lies entirely within Cherokee County (Figure 5). The Hiwassee River runs into Hiwassee and Apalachia Lakes before it flows west into Tennessee. The Valley River, the largest tributary in this subbasin, flows southwest through Andrews and converges with the Hiwassee River near Murphy.

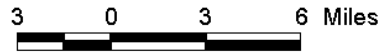
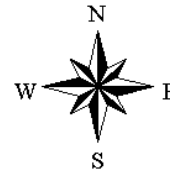
Overall, water quality is very good in this subbasin. Many headwaters originate on national forest lands and almost 70% of the subbasin is forested (DWQ 2001). Table 5 provides a statistical summary of the Targeted Local Watersheds in this subbasin.

**Valley River**  
**Targeted Local Watersheds 10010, 10020 and 10030**

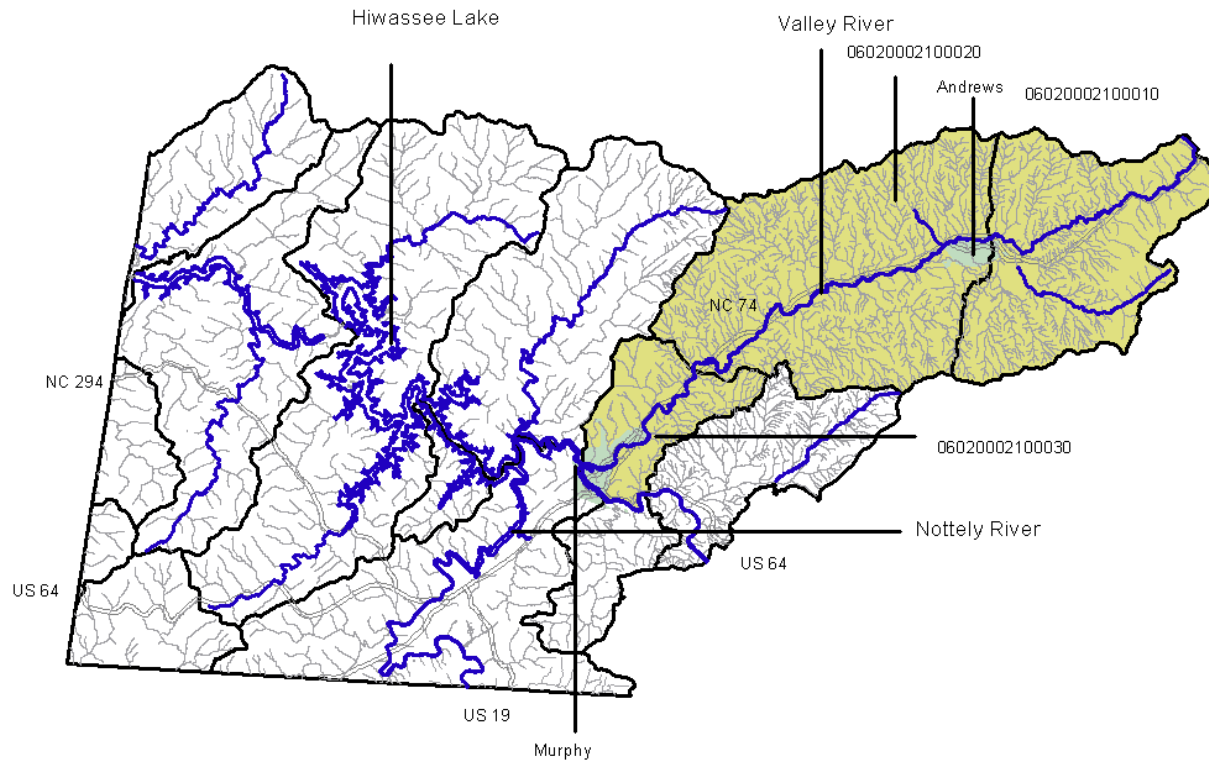
The Valley River (Figure 6) is not currently impaired but was considered impaired in the 1997 Hiwassee River Basinwide Water Quality Plan (DWQ 1997). The Valley River still exhibits significant habitat degradation due to stormwater impacts from Andrews. The majority of the pastureland within the subbasin is in the Valley River valley. The Valley River exceeded state fecal coliform levels (200 colonies per liter) in 12% of monthly samples from 1995-1999) DWQ, Draft 2001).



Valley River, northwest of Andrews



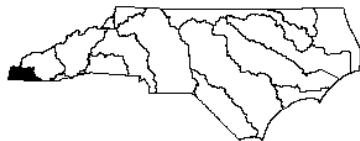
# Figure 5 Hiwassee River Basin Subbasin 02



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

This map was produced on 11/7/01 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  
NAD83  
Spheroid: GRS1980  
Units: Meters

Hiwassee River Basin



Subbasin 02



**Table 4:** Summary of information about the Targeted Local Watersheds in Hiwassee River Basin Subbasin 02.

Targeted Local Watershed	Valley River	Valley River	Valley River
County	Cherokee	Cherokee	Cherokee
14-digit Hydrologic Unit #	06020002100010	06020002100020	06020002100030
Land Area (Square Miles):	41.69	61.71	15.87
Miles of Impaired Streams <sup>1</sup> :	NA	NA	NA
Possible Causes of Degradation <sup>2</sup> :	Habitat Degradation	Habitat Degradation, Fecal coliform	Habitat Degradation
Possible Sources of Degradation <sup>2</sup> :	Agriculture, Highway Runoff	Agriculture, Highway Runoff	Agriculture, Highway Runoff
Stream on NC 2000 303(d) List <sup>3</sup> ?	Yes	Yes	No
Cleared Land Cover:	7%	13%	12%
Developed Land Cover:	0%	2%	6%
Forested Land Cover:	93%	85%	81%
Within DWQ Water Supply Watershed <sup>5</sup>	No	Yes	Yes
DWQ Designated High Quality or Outstanding Resource Water <sup>5</sup>	Yes	Yes	No
Presence of Aquatic Natural Heritage Element <sup>7</sup>	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 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.



1 0 1 2 Miles

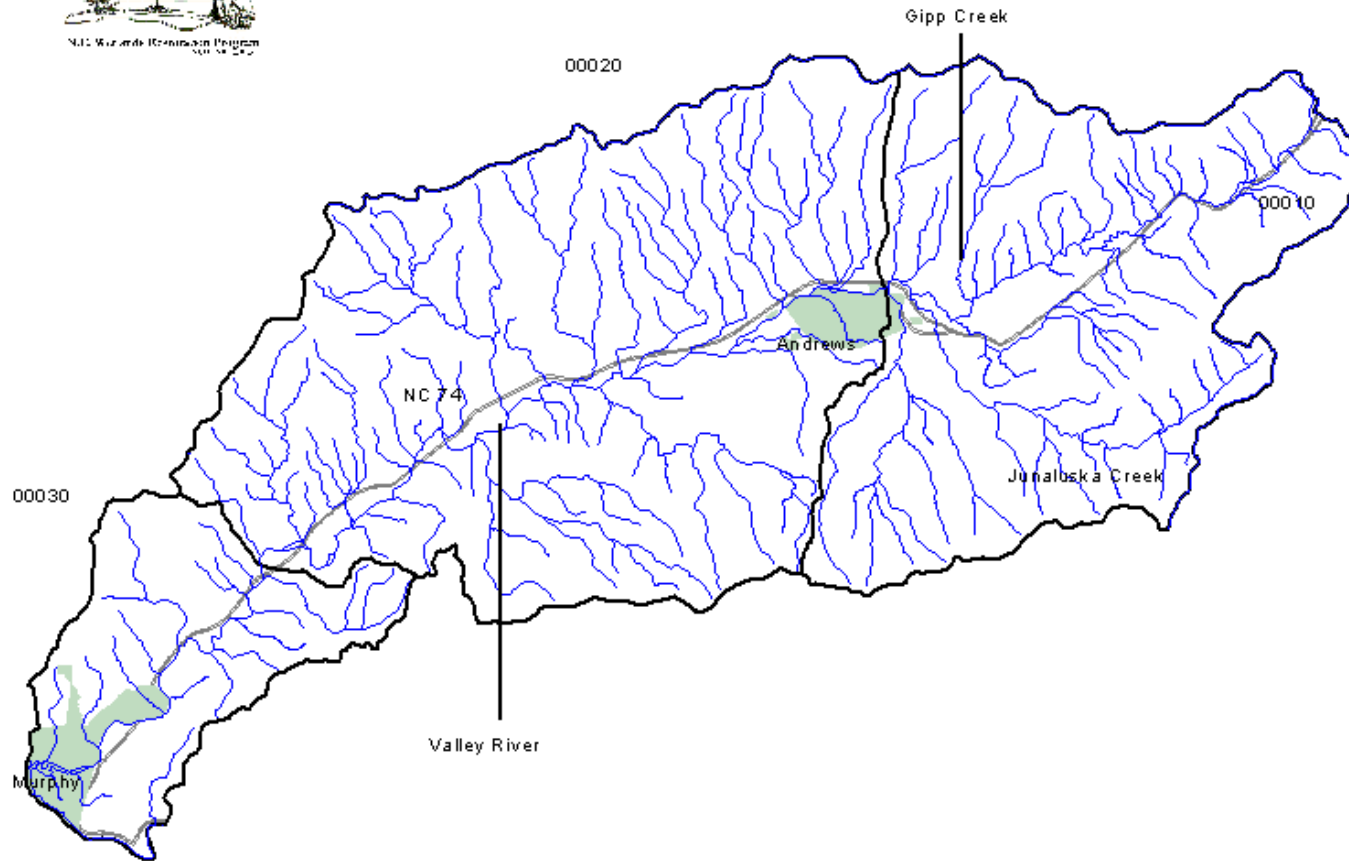
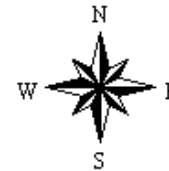


Figure 6  
Hiwassee  
River Basin  
Subbasin 02  
Targeted Local  
Watersheds  
00010, 00020,  
and 00030  
Valley River



- Hydrography
- Local Watershed Boundaries
- Municipalities
- Primary Roads

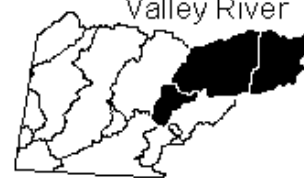
This map was produced on 05/01/2001 by the North Carolina Division of Water Quality Wetlands Restoration Program. Data was provided by the North Carolina Center for Geographic Information and Analysis.

The map is based on:  
Projection: Stateplane  
Zone: 4901  
Datum: NAD83  
Spheroid: GRS 1980  
Units: Meters

Hiwassee River Basin

Subbasin 02

Valley River



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

The NCWRP can implement restoration projects cooperatively with other state and federal programs as well as 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 Hiwassee River Basinwide Water Quality Plan provides a comprehensive overview of current and future water quality initiatives and projects throughout the Hiwassee 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 Hiwassee River Basin that are potential building blocks for current and future NCWRP project efforts.

**Table 5:** Contacts for Federal water quality programs and initiatives in the Hiwassee River Basin.

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
<i>Environmental Protection Agency Wetland Section</i>	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>
<i>Natural Resource Conservation Service</i>				<a href="http://www.nc.nrcs.usda.gov">www.nc.nrcs.usda.gov</a>
Clay County	John Curtis	PO Box 57 Community Services Bldg. Hayesville, NC 28904	(828) 389-9695	
Cherokee County	John Curtis	225 Valley River Avenue Suite J Murphy, NC 28906	(828) 837-6417	
<i>Tennessee Valley Authority</i>	Rebecca Hayden	1101 Market Street CST 17D Chatanooga, TN 37402-2801	(423) 751-4266	Rlhayden@tva.com
<i>Southwestern RC &amp;D</i>	Timothy Garrett	PO Box 1230 Waynesville, NC 28786	(828) 452-2519	Swrcd@dnet.net

**Table 6:** Contacts for Statewide water quality programs and initiatives in the Hiwassee River Basin.

ORGANIZATION	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
<b>Clean Water Management Trust Fund</b>	Tom Massey Western Field Representative	P.O. Box 595 Sylva, NC 28779	(828) 586-4133	tom.massie@ncmail.net
<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>
Clay County	Josh Billock	PO Box 57 Hayesville, NC 28904	(828) 389-9764	
Cherokee County	Michael Stiles	409 Valley River Avenue Suite J, Murphy, NC 28906	(828) 837-6928	Michael.stiles@nc.usda.gov
<b>Division of Water Quality</b>				<a href="http://www.h2o.enr.state.nc.us">www.h2o.enr.state.nc.us</a>
Asheville Regional Office	Laurie Moorehead	59 Woodfin Place, Asheville, NC 28801	(828)-251-6208	
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	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>

**Table 7:** Contacts for Local Water Quality Programs and Initiatives in the Hiwassee River Basin.

ORGANIZATIONS AND PROJECTS	CONTACT	ADDRESS	PHONE	E-MAIL / WEB SITE
<i>Hiwassee River Watershed Coalition</i>	Lucy Cole Gratton	1467 Mining Gap Trail, Young Harris, GA 30582	(704) 896-8091	

## **References Cited**

- North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality. “Draft Hiwassee River Basinwide Water Quality Management Plan.” July, 2001.
- North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality. “Basin Assessment Report – Hiwassee River Basin” April, 2000
- North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality. “Hiwassee River Basinwide Water Quality Management Plan.” May, 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 Hiwassee River. June, 1998.

## APPENDIX 1

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

The following is a comprehensive list of local watersheds targeted by the NCWRP in the Hiwassee 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).

DWQ Subbasin	Watershed Name	14 Digit Hydrologic Unit
01	Shooting Creek	06020002050020
01	Brasstown Creek	06020002090010
02	Valley River	06020002100010
02	Valley River	06020002100020
02	Valley River	06020002100030