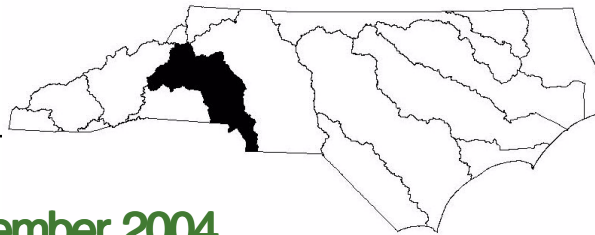




Catawba River Basin Watershed Restoration Plan



September 2004

Purpose and Background of the N.C. Ecosystem Enhancement Program

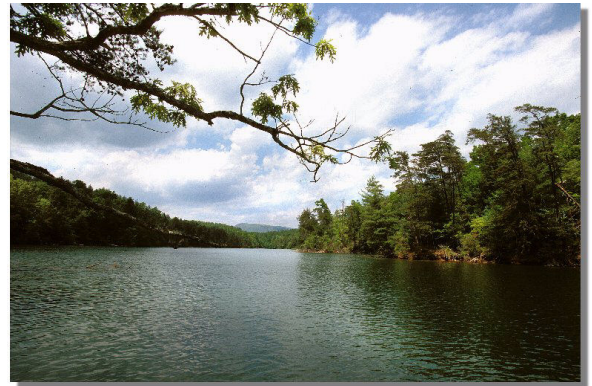
In July 2003, North Carolina committed its resources to an innovative program to restore, enhance and protect its wetlands and waterways. The N.C. Ecosystem Enhancement Program (EEP) combines existing wetlands-restoration initiatives of the N.C. Department of Environment and Natural Resources with ongoing efforts (formerly the Wetlands Restoration Program or NCWRP) by the N.C. Department of Transportation to offset unavoidable environmental impacts from transportation-infrastructure improvements. The U.S. Army Corps of Engineers joined as a sponsor in the historic agreement.

A Memorandum of Agreement between NCDENR, NCDOT and the U.S. Army Corps of Engineers stipulates that EEP mitigation projects will be:

- Provided in advance of the permitted NCDOT impacts,
- Designed to address functional replacement of stream, buffer and wetlands impacts and
- Identified and implemented within the context of a watershed approach based on multiple scales of planning.

Purpose of Watershed Restoration Plans

The EEP develops Watershed Restoration Plans to guide its restoration activities within each of the state's 17 major river basins. The Watershed Restoration Plans delineate specific watersheds that exhibit both the need and opportunity for wetland, stream and riparian buffer restoration. These watersheds are called Targeted Local Watersheds and receive priority for EEP planning and restoration project funds. In addition, the EEP encourages other groups and organizations to consider implementing restoration projects in Targeted Local Watersheds, because multiple restoration projects concentrated within a local watershed will result in greater benefits to water quality, aquatic habitat and other vital watershed functions.



Lake James State Park

This Watershed Restoration Plan complements two other documents: The Catawba River Basinwide Water Quality Plan [Division of Water Quality (DWQ) 2003], <http://h2o.enr.state.nc.us/basinwide/index.html>, and the Guide to the NCWRP's Watershed Restoration Planning Strategy (version 1) <http://h2o.enr.state.nc.us/wrp/pdf/restplans/Planning%20Guide.pdf>.

A new planning guide is being prepared to describe EEP's updated approach to watershed restoration planning at the basin-wide scale, GIS-based screening analyses of eight-digit cataloguing units (CUs) and local watershed planning initiatives applied to the scale of 14-digit hydrologic units (HUs) and component sub-watersheds.

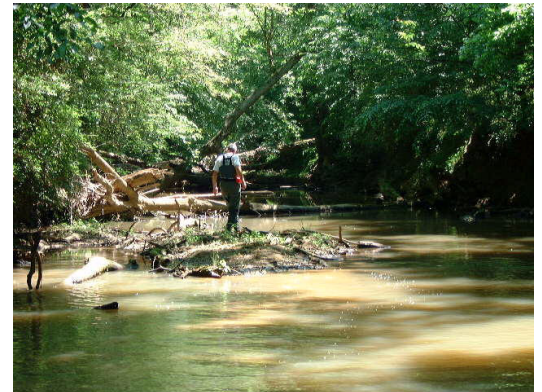
Integrated Catawba River Basinwide Water Quality Plan

Prior to July 2002, the NCWRP developed Watershed Restoration Plans (formerly called *Basinwide Wetlands and Riparian Restoration Plans*) as stand alone documents for each river basin in the state. Beginning with the Neuse River Basin in 2002, the NCWRP began incorporating its Targeted Local Watershed selections and restoration project information directly into the DWQ Basinwide Plans, which are available on-line at: <http://h2o.enr.state.nc.us/basinwide/index.html>

An abbreviated version of the NCWRP Watershed Restoration Plan is provided herein. The main goals of this plan are to protect and enhance water quality, flood prevention, wildlife habitat and recreational opportunities. The objectives of the plan are to identify *Targeted Local Watersheds* within the basin which have the need and opportunity for restoration, enhancement, and preservation of water and riparian resources.

Watersheds are identified through analysis of water quality and habitat data and geographic information (GIS), and a review process designed to integrate the advice and input from those resource professionals and citizens who live within the river basin.

Targeted Local Watersheds in the Catawba River Basin can be viewed at <http://h2o.enr.state.nc.us/wrp/plans/maps/riverbasinmap5.htm>. A description of the factors that were considered in selecting these watersheds follow.



Turbidity seen in Twelvemile Creek at NC 16, Union County

Targeted Local Watersheds

The EEP evaluates a variety of data and information on water quality and habitat conditions in each river basin to select *Targeted Local Watersheds*. However, public comment and the professional judgment of local resource agency staff play a critical role in targeting local watersheds. A summary of the Targeted Local Watersheds selected for the Catawba River Basin, including a checklist of the pertinent factors for selecting those watersheds, is presented in the table later in this document. A description of the process for Local Watershed targeting is provided in the *Guide to NCWRP Watershed Restoration Strategy* available on-line at: <http://h2o.enr.state.nc.us/wrp/pdf/restplans/Planning%20Guide.pdf>. A brief description of the factors EEP considers in watershed selection follows:

Water Quality Problems: The EEP targets watersheds with existing and potential water quality problems resulting from nonpoint source pollution. To make this determination, the EEP evaluates DWQ use support ratings, the 303(d) List and DWQ Basinwide Assessment reports: <http://www.esb.enr.state.nc.us/bar.html>. EEP also uses land cover data to evaluate riparian buffer condition. The EEP believes that riparian buffers provide many water quality benefits, and streams that lack a well-vegetated riparian buffer are at greater risk for water quality degradation.

Cumulative wetland and stream impacts: The cumulative effects of many small scale wetland and stream impacts due to farming, development and road building can have a detrimental effect on water quality. The EEP is responsible for addressing these cumulative impacts and uses data from the 401 Wetlands Program database to locate those watersheds facing the greatest water quality threats due to unmitigated wetland and stream impacts.

Resource Values: The EEP recognizes that resource values beyond water quality should be considered in evaluating the restoration need and opportunity of a watershed. The resource values that the EEP considers in targeting local watersheds include public water supply, shellfish areas, outstanding or high quality resource waters, aquatic natural heritage elements and regulated trout waters.

Watershed Approach: The EEP watershed approach advocates concentrating multiple water quality projects in one relatively small watershed to yield a greater cumulative benefit to water quality. The EEP wants to tie wetland and stream restoration projects with other efforts such as agricultural best management practices (BMPs), stormwater controls, and riparian buffer preservation to restore or improve entire watershed functions, not just streams and wetlands. For this reason, the EEP targets areas with existing watershed planning or protection initiatives already underway.

Partnership Opportunities: To assess the potential for partnership opportunities at the local watershed scale, the EEP reviews existing or planned Clean Water Management Trust Fund and Section 319 projects, and also considers if a municipality is located in the watershed. Municipal governments often own good sites for water quality improvement projects, but may lack the technical expertise and the resources to implement the projects. For these reasons, the EEP views municipalities as good potential partners for restoration projects. In addition, many cities are subject to Phase I or Phase II Stormwater Regulations and gather monitoring information that is useful in designing and measuring the long term benefits of restoration efforts.

Land Cover: Water quality studies suggest that heavily forested watersheds regulate stormwater runoff, thereby reducing the likelihood for severe streambank erosion, nutrient runoff and sediment pollution. For this reason, the EEP uses the percentage of cleared land in a watershed as an indicator of restoration need and opportunity.

Local Resource Professional (RP) Comments/Recommendations: The comments and recommendations of local resource agency professionals — including staff with Soil & Water Conservation districts, the Natural Resources Conservation Service (NRCS), municipal planning and stormwater departments, NCDENR regional staff (e.g., Wildlife Resources Commission), and local/regional Land Trusts — are considered heavily in the selection of Targeted Local Watersheds. Local resource professionals often have specific and up-to-date information regarding the condition of local streams, wetlands and riparian buffers. Furthermore, local RPs may be involved in local water resource protection initiatives (and the acquisition of funding for such projects) that provide good partnership opportunities for EEP restoration projects and/or Local Watershed Planning initiatives.

Charlotte Area Local Watershed Planning

In 2002, the EEP initiated the Charlotte Area Local Watershed Plan in conjunction with Charlotte Storm Water Services, Mecklenburg Storm Water Services, Charlotte-Mecklenburg Utilities Department and Mecklenburg Department of Environmental Protection. The 251 sq. mile planning area included Little Sugar, Long, McDowell, Irwin, Sugar and McAlpine Creeks all listed on North Carolina's 2002 303(d) impaired stream list.



Typical shallow sandy areas in Muddy Fork at SR 1438, Alexander County

The primary purpose of this study was to identify stream and wetland restoration opportunities as well as potential stormwater and nonpoint-source pollution Best Management Practices (BMPs) that could be implemented in the study area to address water quality problems and habitat degradation. The EEP contracted with CH2MHill to conduct a detailed watershed assessment that involved compiling existing water quality, habitat and land use data and using this information to assess the health of 318 individual catchments (<1 square mile) across the study area. CH2MHill also developed a calibrated water quality model for the study area to predict Total Suspended Solids, Phosphorus and Zinc concentrations and loadings under alternative management scenarios.

Based on the assessment data, the stakeholders selected five small focus areas or grouping of catchments (0.5 to 7 square miles) for detailed field assessment. The focus areas represented various land use patterns found across the study area from urban built-out areas to suburban areas under development. The field assessments evaluated restoration project opportunities including stream and wetland restoration as well as stormwater and water quality BMPs.

The Local Watershed Plan provides detailed information about the recommended projects including cost and pollutant removal at the project and watershed scale. The plan was completed in August 2003. EEP is currently focusing project implementation in the McDowell Creek and Long Creek focus areas. For more information about this project contact Kristin Cozza at (704) 572-0955 or to view the technical reports and watershed plan visit <http://h2o.enr.state.nc.us/wrp/plans/charlotte.htm>.

Lower Creek Local Watershed Plan

In 2003, the NCWRP initiated a Local Watershed Plan for the Lower Creek Watershed in Burke and Caldwell Counties. The Lower Creek watershed (90 sq. miles) drains the municipalities of Lenoir and Gamewell and includes Zacks Fork, Spainhour Creek, Bristol Creek and Greasy Creek all on North Carolina's 2002 303 (d) list of impaired streams. EEP will use the plan to identify and prioritize wetland and stream restoration project as well as best management practices to provide water quality and aquatic habitat improvements to the watershed. The watershed characterization, or compilation of existing data about watershed conditions, was completed in December 2003.

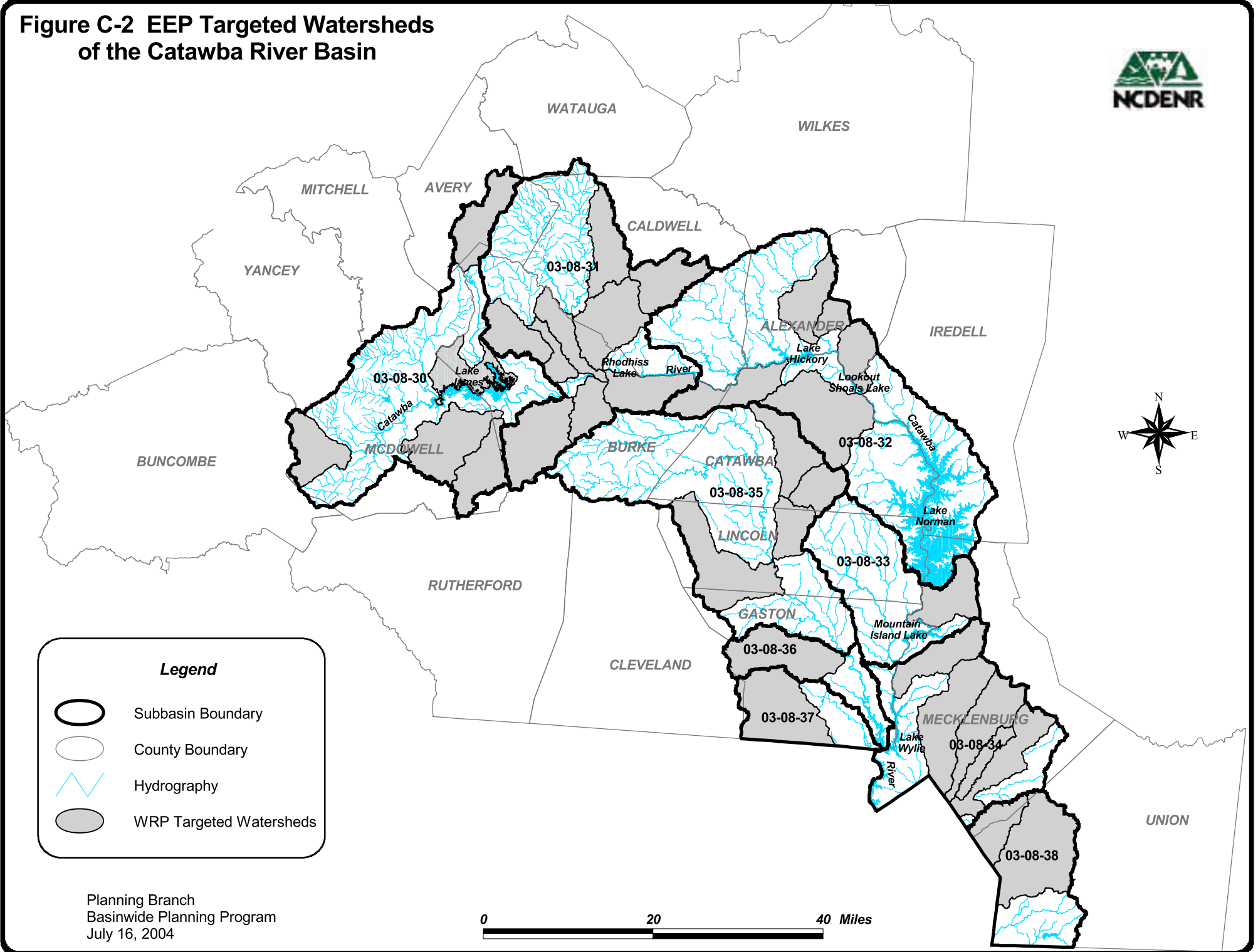
The detailed watershed assessment including water quality monitoring and field assessment and restoration plan are scheduled for completion by June 2005.

EEP will coordinate with local community groups, local governments and others to develop and implement the restoration plan. For more information about the Lower Creek Local Watershed Plan, contact Andrea Leslie at (828) 296-4655.

Streams, Wetland and Riparian Buffer Restoration Project

The EEP has initiated seven stream and two wetland restoration projects in the Catawba River Basin. Over the next three years, EEP projects will restore more than 36,000 linear feet of stream and 2 acres of wetlands, and enhance approximately 11.6 acres of riparian buffer in the Basin.

Figure C-2 EEP Targeted Watersheds of the Catawba River Basin



Legend

- Subbasin Boundary
- County Boundary
- Hydrography
- WRP Targeted Watersheds

Planning Branch
 Basinwide Planning Program
 July 16, 2004



Subbasin	Local Watershed Name and HU code	Impaired Stream(s) ¹	Downward Trend in W. Quality ²	Public Water Supply ³	ORW or HQW ⁴	Aquatic NHP Element ⁵	Existing, Planned Projects ⁶	Municipality (ies); Phase I or II ⁷	Local Resource Professional Recommendation ⁸
30	West Fork Catawba 03050101010010				Yes	Yes			
30	Upper Linville River 03050101030010			Yes		Yes			Yes
30	Paddy Creek 03050101030030			Yes					
30	North Muddy Creek 03050101040010	Yes	Yes			Yes	SWCD	Marion Phase II	Yes
30	South Muddy Creek 03050101040020						SWCD		Yes
31	Silver Creek 03050101050050			Yes	Yes			Morganton Phase II	
31	Lower Johns River 03050101070040		No 1997 data	Yes	Yes	Yes			Yes
31	Warrior Fork 03050101060020		Yes	Yes	Yes	Yes			Yes
31	Upper Lower Creek 03050101080010	Yes		Yes			LWP	Lenoir Phase II	
31	Lower Lower Creek 03050101080020	Yes		Yes		Yes	LWP	Gamewell Phase II	
31	Irish Creek 03050101060030	Yes	Yes	Yes					
31	Hunting Creek 03050101060050	Yes	No 1997 Data	Yes		Yes		Morganton Phase II	
31	Brown Branch 03050101070020		No Data		Yes	Yes	EEP		
31	McGalliard Creek 03050101090010	Yes	Yes	Yes				Valdese Phase II	
32	Muddy Fork Creek 03050101120030		Yes	Yes					
32	Elk Shoal Creek 03050101130010			Yes					
32	Horseford Creek 03050101090020		No data					Hickory Phase II	
32	Jumping Run Creek 03050101120040		No Data	Yes			EEP		
32	Lyle Creek 03050101140010		No Data	Yes		Yes	EEP		

Subbasin	Local Watershed Name and HU code	Impaired Stream(s) ¹	Downward Trend in W. Quality ²	Public Water Supply ³	ORW or HQW ⁴	Aquatic NHP Element ⁵	Existing, Planned Projects ⁶	Municipality (ies); Phase I or II ⁷	Local Resource Professional Recommendation ⁸
33	McDowell Creek 03050101170010	Yes	Yes	Yes			LWP	Huntersville Phase II	Yes
34	Long Creek 03050101170020	Yes		Yes		Yes	LWP	Charlotte Phase I	Yes
34	Irwin & Sugar Creeks 03050103020020	Yes	Yes				LWP	Charlotte Phase I	Yes
34	Little Sugar Creek 03050103020030	Yes	Yes				LWP	Charlotte Phase I	Yes
34	McMullen Creek 03050103020040						LWP	Charlotte Phase I	Yes
34	McAlpine Creek 03050103020050	Yes					LWP DWQ TMDL	Charlotte Phase I	Yes
35	Clark Creek 03050102030010	Yes	Yes			Yes	DWQ WARP study	Hickory Phase II	Yes
35	Clark Creek 03050102030020	Yes	Yes	Yes					Yes
35	Maiden Creek 03050102030030	Yes	No Data	Yes		Yes		Maiden Phase II	Yes
35	Indian Creek 03050102050010	Yes	Yes	Yes	Yes				Yes
36	Long Creek 03050102070020			Yes		Yes		Gastonia Phase II	Yes
37	Crowders Creek 03050101180010	Yes						Gastonia Phase II	Yes
38	Sixmile Creek 03050101030010	Yes				Yes		Charlotte Phase I	Yes
38	Twelvemile Creek 03050101030020		Yes			Yes			

¹ Stream segments (or entire streams) that do not support their designated uses and are therefore considered **impaired** based on declining biological ratings [e.g., due to degraded aquatic habitat] and/or failure to meet NC DWQ water quality standards. As identified in 2003 Draft Basinwide Water Quality Plan (DWQ, 2003).

² **Downward Trend in Water Quality** as indicated in the in 2003 Draft Basinwide Assessment Report (DWQ, 2003).

³ **Water Supply (WS)** = waters used as water supply sources for drinking, culinary, or food processing purposes.

⁴ **ORW** = outstanding resource waters. **HQW** = high-quality waters, which include critical habitat areas or primary nursery areas.

⁵ **Aquatic Natural Heritage elements** are special species, habitats, or community types identified by the NC Natural Heritage Program and that occur, or spend some portion of their life cycle, in wetlands, streams, riparian areas or estuarine waters.

⁶ **Existing or planned projects** in the following programs: EEP = Ecosystem Enhancement Program; LWP = EEP Local Watershed Plan CWMTF=Clean Water Management Trust Fund; CES=North Carolina Cooperative Extension Service; 319= North Carolina Division of Water Quality Section 319 Program; WARP=North Carolina Division of Water Quality Watershed Assessment and Restoration Program

⁷ **Associated towns or cities and applicability of NPDES Phase II** stormwater rules, or that are otherwise likely to have significant current or future urban stormwater management issues.

⁸ **Local Resource Professional Recommendation**, as determined during the outreach process of updating the NCWRP Watershed Restoration Plan.



Additional Information

EEP Catawba River Basin Watershed Res- toration Plan

For additional information regarding the EEP Catawba River Basin Watershed Restoration Plan please contact:

- George Norris: (919) 733-5312 or george.norris@ncmail.net

And visit the program website at www.nceep.net

DWQ Catawba River Basinwide Water Quality Plan

For additional information regarding the DWQ Catawba River Basinwide Water Quality Plan please contact:

- Dave Toms: (919) 733-5083 ext. 577 or dave.toms@ncmail.net

And visit the program website at <http://h2o.enr.state.nc.us/basinwide/index.html>