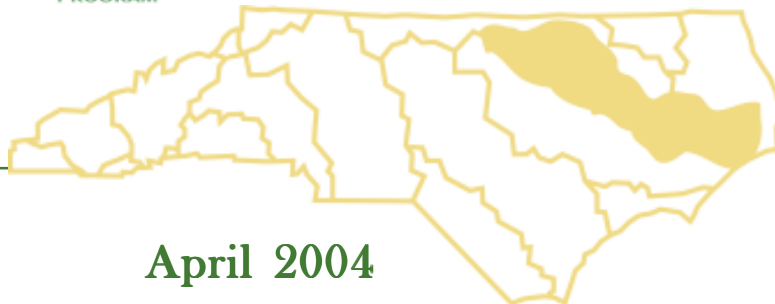




Tar-Pamlico River Basin Watershed Restoration Plan



April 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



Stoney Creek, Nash County

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.

This Watershed Restoration Plan complements two other documents: The *Tar-Pamlico River Basinwide Water Quality Plan* [Division of Water Quality (DWQ) 2004], <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 Tar-Pamlico 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/>.



Chicod Creek, Beaufort County

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 Tar-Pamlico 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.

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 Tar-Pamlico River Basin, including a checklist of the pertinent factors for selecting those watersheds, is presented in the table late 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.

Local Watershed Planning

In 2000, the NCWRP initiated a Local Watershed Planning Program to conduct detailed restoration planning in a limited number of Targeted Local Watersheds across the state. These locally-based plans include a comprehensive watershed assessment to identify causes and source of nonpoint source pollution. The plans also identify and prioritize wetland areas, stream reaches, riparian buffer areas and BMPs that will provide environmental benefits to the watershed. The EEP coordinates with local community groups, local governments and others to develop and implement these plans.

Tar-Pamlico Local Watershed Plan

The EEP initiated a Local Watershed Planning effort in August 2003 to evaluate current watershed conditions such as water quality, aquatic and terrestrial habitat and hydrology within a watershed area encompassing Hendricks Creek, Crisp Creek, Green Mill Run and Cow Swamp Creek. The Local Watershed Plan will yield wetland, stream and riparian buffer enhancement and restoration projects, BMP projects, as well as some policy and protection recommendations. Streams within this area are classified as Nutrient Sensitive Waters; and thus, restoration and functional rehabilitation efforts are likely to be focused on nutrient loading. The watershed characterization will be completed in 2004 and the Local Watershed Plan will be completed in 2005. For more information contact Bonnie Duncan at: bonnie.duncan@ncmail.net or (919) 733-5208



Acre Swamp, Beaufort County

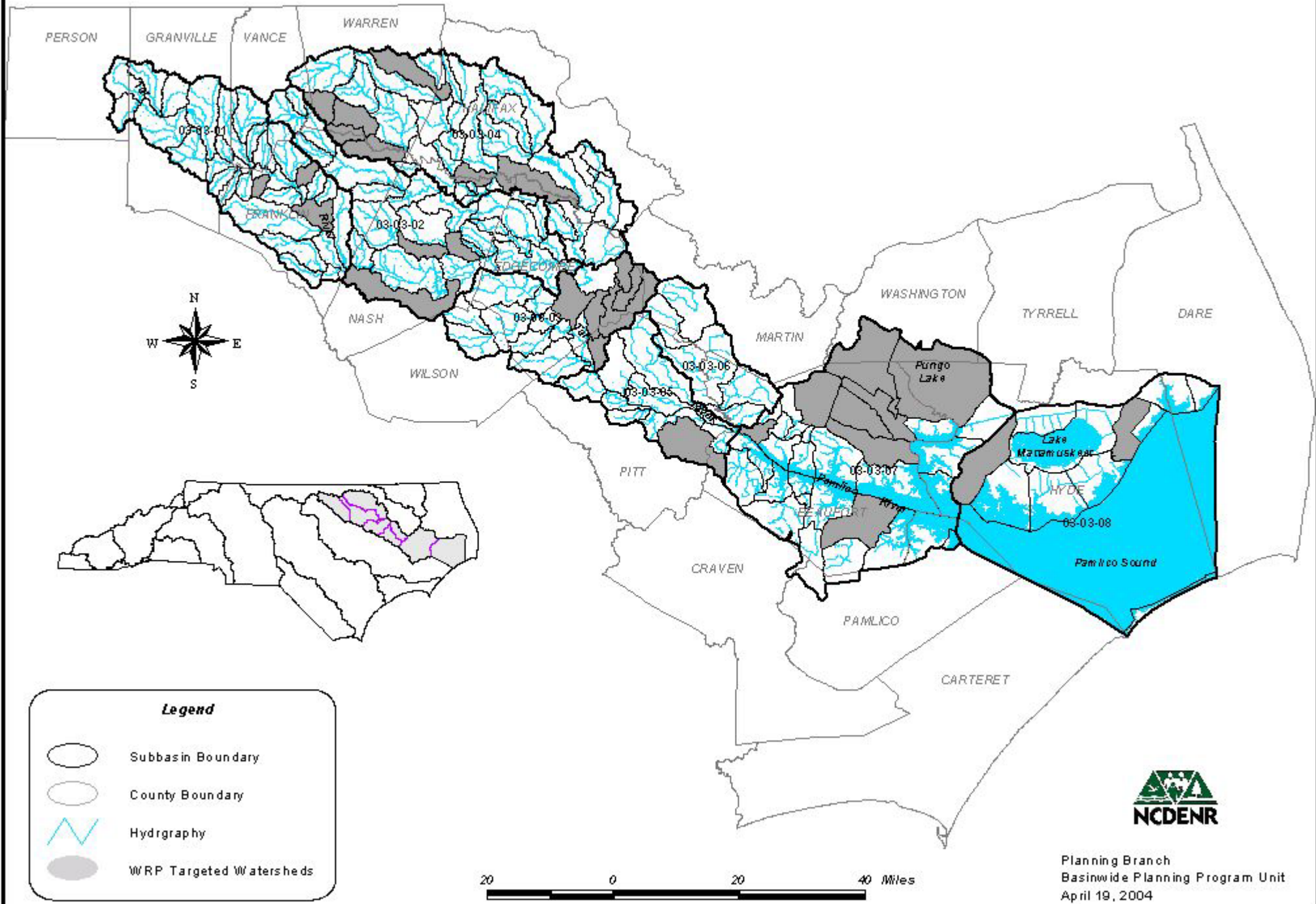


Shocco Creek, Warren County

Streams, Wetland and Riparian Buffer Restoration Project

The EEP has initiated five stream and two wetland restoration projects in the Tar-Pamlico River Basin. Over the next three years, EEP projects will restore more than 14,000 linear feet of stream and 20.5 acres of wetlands, and enhance approximately 11.8 acres of riparian buffer in the Basin.

EEP Targeted Watersheds Map of the Tar-Pamlico River Basin



Subbasin	Local Watershed Name and HU code	Impaired Stream(s) ¹	Downward Trend in Water Quality ²	Public Water Supply ³	SA Waters ⁴	ORW or HQW ⁵	Aquatic NHP Elements ⁶	Existing or Planned Projects ⁷	Municipality(ies); and Phase I or II Requirements ⁸	Local Resource Professional Recommendation ⁹
7	3020104020020 Kennedy Creek	Yes							Washington	
7	3020104060020 South Creek	Yes			Yes		Yes			
7	3020104110010 Upper Pungo Creek									
7	3020104110020 Lower Pungo Creek	Yes			Yes					
7	3020104000010 Upper Pantego Creek	Yes			Yes		Yes			
7	3020104000020 Lower Pantego Creek	Yes			Yes					
7	3020104080010 Pungo River									
7	3020104090010 Pungo River									
8	3020105070010 Waupopin Canal	Yes			Yes	Yes	Yes	CWMTF		
8	3020105030010 Germantown Bay	Yes			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 **SA Waters** = shellfishing waters in estuarine areas

⁵ **ORW** = outstanding resource waters. **HQW** = high-quality waters, which include critical habitat areas or primary nursery areas.

⁶ **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.

⁷ **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

⁸ 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.

⁹ **Local Resource Professional Recommendation**, as determined during the outreach process of updating the NCWRP Watershed Restoration Plan.



Additional Information

EEP Tar-Pamlico River Basin Watershed Res- toration Plan

For additional information regarding the EEP Tar-Pamlico River Basin Watershed Restoration Plan please contact:

- Jocelyn Elliott: (919) 716-1921 or jocelyn.elliott@ncmail.net
- George Norris: (919) 733-5312 or george.norris@ncmail.net

And visit the program website at www.nceep.net

DWQ Tar-Pamlico River Basinwide Water Quality Plan

For additional information regarding the DWQ Tar-Pamlico River Basinwide Water Quality Plan please contact:

- Cam McNutt: (919) 733-5083 ext. 575 or cam.mcnutt@ncmail.net

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