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Restoration Review

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Issue 4

Wilson Bay/Sturgeon City Wetland Restoration Project Restores Marshlands

The Sturgeon City marsh restoration project is located adjacent to Wilson Bay at the former site of the Jacksonville Wastewater Treatment facility. The restoration project addressed concerns of degraded water quality issues in Wilson Bay by providing wetland buffers to filter the runoff into the bay. Plans for the facility include developing an environmental learning center.

In May 2000, the city of Jacksonville donated the land for the proposed restoration site through a permanent conservation easement to the state.

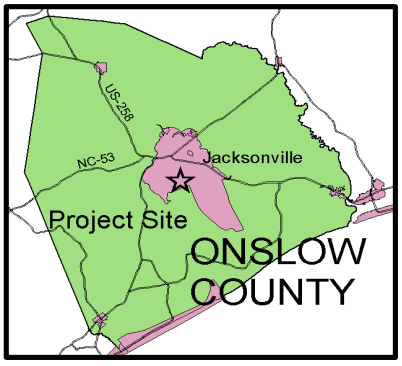
The goals of the project are:

- Increase the buffer width along Wilson Bay
- Reduce nutrient loading and pollutants from stormwater runoff
- Prevent shoreline erosion
- Increase wildlife habitat, and
- Provide educational and recreational opportunities to the area.

Design for the site occurred throughout the remainder of 2000, and grading and planting were completed in April 2001. During site preparation, 190,000 cubic feet of fill and debris were removed from the 2.6 acres of the marsh restoration site. Restored wetland types will include brackish marsh, estuarine shrub scrub, gum-cypress community and a bay forest. The restored wetlands will provide a buffer from runoff entering the bay and habitat for both aquatic and terrestrial life. The restored wetlands will filter 2.8 million cubic feet of stormwater runoff before entering Wilson Bay. The marsh will also provide filtration for up to 21.5 million cubic feet of river water daily. Hydrology, vegetation and stability of the site will be monitored for a minimum of five years to ensure restoration success. The project cost was $230,000.

The restoration project on Wilson Bay serves as the cornerstone for the environmental learning center planned for the site. The design of the facility is integrated to maximize the use of restored wetlands for water quality, habitat and educational purposes. A second phase for restoration is in design with construction expected to begin in 2002. Phase II provides an additional 2.5 acres of wetlands to the site, including the restoration of two tidal creeks. With the completion of Phase II, the NCWRP will have restored 5.5 acres of wetlands at Sturgeon City.

Annually, NCWRP staff have participated in the environmental field day held on site as part of the Student Leadership Institute started by the city of Jacksonville for 100 area students. Here students are taught the importance of wetlands, plant identification and restoration techniques. In addition, the program's wetland restoration project supports and complements other funding for the improvement of the water quality of Wilson Bay from the 319 program and the Clean Water Management Trust Fund.



Pre-construction - September 2000

Tidal creek planted with Spartina - May 2001

Newly Constructed Tidal Creek - March 2001

Example of establishment and growth of brackish marsh vegetation - August 2001

NC WRP Partners with the NC Division of Coastal Management to restore Atlantic White Cedar.

Atlantic White Cedar was once a common denizen of North Carolina's coastal wetlands. The tree was commercially important and an integral part of our state's boat building past. Unfortunately, Atlantic White Cedar was a victim of its own popularity – because of past logging practices there are presently less than 10,000 acres of the tree left in the state.

One place the trees still remain is the Emily and Richardson Preyer Buckridge Coastal Reserve. The reserve still contains almost 4,000 acres of the rare trees – the largest stand left in the state. In 1998, the Division of Coastal Management purchased the land for an estuarine reserve with funding from the NC Clean Water Management Trust Fund, Natural Heritage Trust Fund, and US Fish & Wildlife Service. Buckridge is the largest of North Carolina's nine coastal reserves. Its 18,000-plus acres contain habitat suited to several rare, threatened or endangered species, including the red wolf, bald eagle, red-cockaded woodpecker and American alligator.

Unfortunately, when the Division of Coastal Management purchased the property, a significant portion of the Atlantic White Cedar was suffering high mortality rates from unknown causes. The North Carolina Wetlands Restoration Program (NCWRP) partnered with the Division of Coastal Management to discover why and to plan for the long-term management of this state resource. The NCWRP provided funding to the Division of Coastal Management to hire a NOAA Coastal Management Fellow. The Fellow, David Fuss, was charged with developing a detailed Atlantic White Cedar Restoration Plan, an Advisory Team, a fire plan, and an overall reserve management plan.

Kelly Williams of DCM and Jim Stanfill of NCWRP

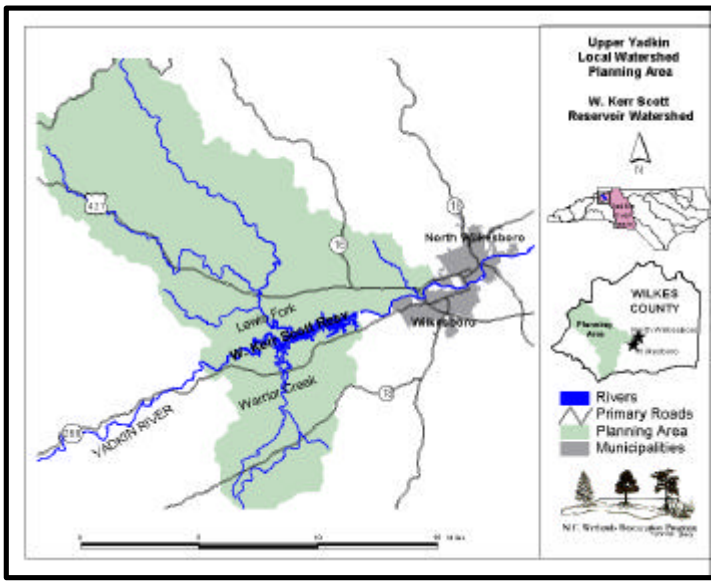
Between 1999 and 2001, the extent and causes of mortality were discovered. The culprits – Hurricanes Bertha and Bonnie had deposited large amounts of salt spray and floodwaters to the salt intolerant species. Fortunately, the extent of the damage was more limited than expected. Today, the detailed Atlantic White Cedar management plan has been developed and some restoration activities have begun. Earlier this spring, 5,000 bald-cypress seedlings were planted in a swamp area of the reserve where timber was formerly harvested. Atlantic White Cedar plantings are being planned for next year. Thanks to the partnership of several agencies and a lot of hard work, there will be more Atlantic White Cedars reclaiming their traditional home.

For more information contact Jim Stanfill of the Wetlands Restoration Program (jim.stanfill@ncmail.net)or Kelly Williams at the Division of Coastal Management (kelly.williams@ncmail.net).

Members of the Advisory Team examining Atlantic White Cedar Stands

Local Watershed Plan started for W.K Scott Reservoir

The town of Wilkesboro's Water Filtration Plan, located one-half mile downstream from the W. K. Scott Reservoir, struggles with an extreme filtration problem tied to turbidity, algae and a high count of total coliform bacteria. Long term animal agriculture, including poultry and beef cattle, and its associated land application of waste is a potential nonpoint source of nutrient and metal pollution to the reservoir and feeder streams.



The NCWRP is committed to working with the Wilkes County NRCS and other local stakeholders to reduce nutrient, sediment and bacterial pollution loads to the Kerr Scott Reservoir and Yadkin River to ensure long-term protection of these resources for public water supply, recreation, and aquatic life.

On November 7, 2001, the NCWRP met with local resource agencies and stakeholders to provide an overview of the local watershed planning process and to identify key water quality problems. In January 2002, the NCWRP contracted with TetraTech and Soil and Environmental Consultants to conduct a technical watershed assessment to identify potential sources of nonpoint source pollution and to identify restoration projects that NCWRP could implement to address these problems. The NCWRP is also working with landowners along

Warrior Creek (pictured below left) to fix eroding streambank, restore riparian buffers and exclude cattle from the stream.

Warrior Creek

Troublesome Creek tributary

Troublesome and Little Troublesome Creeks Local Watershed Planning Initiative

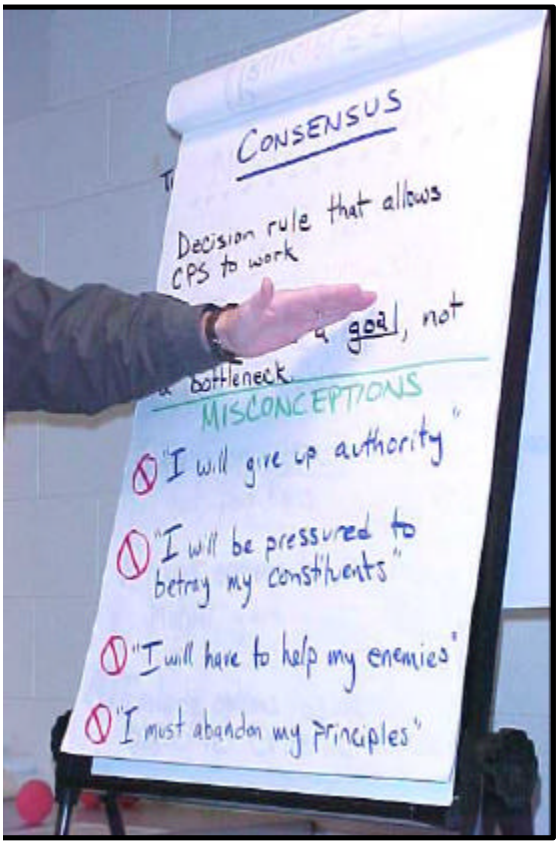
At just under 70 square miles, this Local Watershed Planning (LWP) area includes the watersheds of Troublesome and Little Troublesome Creek [HU #s 03030002010010 and 010030]. Little Troublesome Creek flows out of the urban Reidsville area and is located entirely within Rockingham County. Troublesome Creek's headwaters are in northern Guilford County, flowing out of the Stokesdale area, but the vast majority of its watershed drains rural portions of southern Rockingham County.

These watersheds were selected by the NCWRP as a focus of Local Watershed Planning primarily because of three factors: (1) stream impairment issues documented by the Division of Water Quality [both streams have reaches that are 303(d)-listed]; (2) proximity of the watersheds to DOT roadway projects planned for the Greensboro and Reidsville areas; and (3) good cooperative relationships with the local Soil & Water District (and NRCS) staff, as well as with Rockingham County commissioners and Reidsville city council members. Furthermore, Little Troublesome Creek has been the focus of recent DWQ studies regarding fecal coliform and habitat degradation as sources of stream impairment.

The watershed characterization and modeling work in this LWP area is being conducted by TetraTech. The company has just completed Major Task 1, preliminary data collection/evaluation and the scoping of watershed assessment indicators and tools, and also conducted a GIS-based screening task in order to identify potential candidate sites for NCWRP wetland restoration projects.

TetraTech has identified several key indicators of local watershed integrity that will be further characterized in the months to follow. These indicators include: percent impervious cover (current and future); riparian buffer disturbance; chlorophyll a levels in Lake Reidsville (water supply); fish community and benthic macroinvertebrate ratings for selected stream sites; potential for fecal coliform delivery; bank erosion potential; extent of stream channel modification; and hydric soil inclusions. Many of these watershed factors will be used to model future stream conditions and to classify sub-watersheds based on their risk of water quality impairment and habitat degradation. The identification of major watershed issues, restoration/protection sites, and high-priority sub-watershed areas will be conducted in conjunction with periodic input from the Local Stakeholder Team assembled for this watershed. The stakeholder process is being managed by Watershed Education for Community & Local Officials (WECO), NC State University. Major watershed issues identified by the stakeholder team fall into several broad categories, including land use planning/zoning, stream water quality,

Christy Perrin, of Watershed Education for Community and Local Officials (WECO)



Defining Consensus

water supply reservoir protection, restoration/preservation of riparian tracts, planning for greenways & trails, aquatic habitat issues, and the need for local education & outreach programs.

The ultimate product arising from this initiative should be a consensus-based Watershed Management Plan that includes a mix of watershed protection tools and projects that can be implemented over the months and years to follow. The NCWRP is greatly appreciative of the cooperation and support provided by the Rockingham NRCS and Soil & Water District staff in making landowner contacts and arranging access to wetland and stream sites. For additional information, please call Hal Bryson at: (919) 715-7452.