

# Chapter 15

## Water Quality Initiatives

---

### 15.1 The Importance of Local Initiatives

As the Basinwide Planning Program completes its third cycle of plan development, there are many efforts being undertaken at the local level to improve water quality. Information about local efforts particular to a watershed or subbasin is included in Chapters 1-5. DWQ encourages local agencies and organizations to learn about and become active in their watersheds.

An important benefit of local initiatives is that citizens make decisions that affect change in their own communities. There are a variety of limitations local initiatives can overcome including: state government budgets, staff resources, lack of regulations for nonpoint sources, the rulemaking process, and many others.

Local organizations and agencies are able to combine professional expertise in a watershed. This allows groups to holistically understand the challenges and opportunities of different water quality efforts. Involving a wide array of people in water quality projects also brings together a range of knowledge and interests, and encourages others to become involved and invested in these projects. By working in coordination across jurisdictions and agency lines, more funding opportunities become available, and it is easier to generate necessary matching or leveraging funds. This will potentially allow local entities to do more work and be involved in more activities because their funding sources are diversified. The most important aspect of these local endeavors is that the more localized the project, the better the chances for success.

The collaboration of these local efforts are key to water quality improvements. There are good examples of local agencies and groups using these cooperative strategies throughout the state. The following local organizations and agencies are highlighted to share their efforts towards water quality improvement. Additional projects are also described in the subbasin chapters.

DWQ applauds the foresight and proactive response to potential water quality problems. Federal and State government agencies are interested in assisting local governments and citizen groups in developing their water quality management programs. The distribution of several grantors is discussed.

#### 15.1.1 New River Foundation

The New River Foundation is dedicated to restoring and protecting the quality of the local public trust waters through education and stewardship. The original purpose of the organization was to improve water quality, educate the public, seek legal remedies for polluters, and give the New River a voice to be heard. Currently, the foundation serves as a key resource in improving water quality conditions by providing an environmental education program to local youth and promoting the recreational use of the New River and its tributaries. For more information see <http://newriverfoundation-onslow.org/>.

### 15.1.2 Onslow County Water Quality Project

The Onslow County Water Quality Study was initiated by the Onslow County Commissioners in 1999. A local committee comprised of researchers, Health Department personnel, environmental groups, and others selected the initial sampling sites. There are 25 active monitoring sites. Samples are being analyzed for temperature, salinity, dissolved oxygen, fecal coliform, nitrate-Nitrogen, ammonia-nitrogen, ortho-phosphate phosphorus, iron, and aluminum. These sites cover most of the New River and White Oak River subbasins to include a variety of land uses (e.g., agriculture, forestry, fishing/recreation, urban/residential). The objectives of the study include:

- Establish a 1-year water quality testing program in Onslow County to recognize the importance of improving all the waters in Onslow for the safety, health, and economic welfare of its citizens.
- Determine what shellfishing, fishing, and anadromous fish spawning areas are impacted by fecal coliform, copper, arsenic, ammonia, and other pollutants.
- Augment the efforts of NC Shellfish Sanitation and others to identify and possibly eliminate sources of pollution to County waters.
- Inform area fishermen and residents of the results, how it impacts them, and what can be done to correct situations.
- Develop specific recommendations for managing and maintaining the recreational and commercial uses of Onslow County waterways.

More information about the Onslow County Water Quality Study can be found at <http://www.ces.ncsu.edu/onslow/staff/drashash/enved/OnslowWQ.html>

### 15.1.3 Stewards of The White Oak River Basin

Stewards of The White Oak River Basin is dedicated to cleaning trash from the White Oak River as well as educating and recruiting citizens to help clean up and prevent further trashing. For more information about Stewards of The White Oak River Basin, contact: Executive Director Elmer B. Eddy 101 River Reach Drive West, Swansboro, North Carolina 28584  
Phone: 910- 325-0819 or 910- 389-4588, Email: [eeddy@ec.rr.com](mailto:eeddy@ec.rr.com) or see [www.whiteoakstewards.org](http://www.whiteoakstewards.org).

*Accomplishments/Projects:*

- In 2001 and 2002 led the clean-up of the White Oak River and all tributaries from the headwaters to the ocean of all man-made trash and litter. This project continues.

### 15.1.4 White Oak River Watershed Advisory Board (WECO)

The White Oak River Advisory Board, a citizen stakeholder-based organization, was convened and coordinated by the Watershed Education for Communities and Officials (WECO) of NC State University in response to citizens' concerns about the White Oak River. The board was convened to review technical water quality and policy information to develop consensus-based management strategies and policy options targeted at water quality problems in the river. The WORAB was active from 1997-2005.

During this period, WORAB recommendations resulted in positive changes to an NCDOT Highway 24 Causeway widening project; inclusion of a recommendation for a US Army Corps

of Engineers study of the White Oak River's flow in Federal legislation (not yet funded or implemented); two EPA Clean Water Act 319 grants for improving stormwater management that were implemented by a partnership of WORAB, NC Cooperative Extension (NCSU Dept. of Biological and Agricultural Engineering and WECO, Carteret & Onslow CES), the Town of Swansboro, Onslow and Carteret County SWCDs, Duke University Marine Lab, and many other local partners (approximately \$500,000 with matching); and a NC Division of Water Resources grant to improve access of small recreational watercraft in the upper reaches of the watershed (\$140,000 with local matching). WECO's official coordination role of WORAB ended with the end of the USDA and EPA 319 grants that supported the work. The Board is currently inactive, although many of the individual members who comprised the Board still actively support protection and restoration of the White Oak River.

For more information on the accomplishments/projects of the White Oak River Watershed Advisory Board, contact: Program Manager Christy Perrin, Phone: (919) 515-4542, Email: [Christy\\_perrin@ncsu.edu](mailto:Christy_perrin@ncsu.edu) or see [www.ces.ncsu.edu/WECO/whiteoak](http://www.ces.ncsu.edu/WECO/whiteoak).

#### *WECO Accomplishments/Projects:*

- A public ribbon-cutting ceremony for the Swansboro BMPs was attended by Town of Swansboro Mayor and Commissioners, local State House Representative Jean Preston, NCSU Chancellor MaryAnne Fox, and local citizens.
- 65 citizens were educated at public workshops, with many more reached through several newspaper articles chronicling the project.
- Final post-workshop participant survey results showed that of the respondents:
  - 94 percent said Yes, when asked if they favor their community adopting policies that guide development in a way that protects water quality
  - 94 percent also believed that their individual actions could improve and protect water quality
  - 78 percent voluntarily committed to specific actions to protect and improve water quality, such as installing backyard rain gardens and picking up after pets.
- The Town of Cape Carteret is exploring potential changes to their ordinance and policies to improve stormwater management for protecting waterways.
- The 4-year project kept water quality issues of the White Oak River regularly in the news, increasing awareness of citizens of the issues, ostensibly creating a supportive environment for local policy changes to protect the White Oak River.

#### **15.1.5 North River Farms Restoration Project**

The North River and surrounding waters supports the largest annual seafood landings in the White Oak River Basin, over 10 million pounds with a value in excess of \$7,700,000. Shellfish harvesting in North River and surrounding Bogue and Core sounds is severely restricted because of degraded water quality and important fish and wildlife habitat. The NC Oyster Plan, the Central Region Oyster Workgroup, and the Onslow Bight Conservation Forum identified the North River Farm Restoration Project as a priority area for restoration. As part of The North River Farms Restoration Project, 6,000 acres of farmland on the northeast side of North River was purchased, funded in part by the CWMTF in conjunction with the NC Coastal Federation (NCCF). Restoration activities have involved land acquisition by NCCF (4200 ac.), 1809 Partnership (1400 ac.), and Restoration Systems (400 ac.). All of these areas are under conservation easement and will be restored over a ten-year time period. As of 2006, restoration was complete on 550 acres of North River Farms, with 230 additional acres scheduled to be

completed in 2007. Eventually approximately 5,000 acres of prior converted cropland will be restored to wetlands.

Restoration of the farm has taken place in a series of phases, listed below. For maps of project locations and updated information on project phase completion and accomplishments please see the **North Carolina Coastal Federation's** website <http://www.nccoast.org/>.

*Accomplishments/Projects:*

- Jarrett Bay Phase 1 (JB1)- Completed in 2003, this phase restored 89 acres of forested wetland and was funded by the National Fish and Wildlife Foundation.
- North River Phase 1 (NR1)- Completed in 2004, this project restored 250 acres of wetlands and was funded by the N.C. Wetland Restoration Program, the National Oceanic and Atmospheric Administration, and the Environmental Protection Agency. This project experimented with three different methods of restoration, and was designed and monitored by N.C. State University.
- North River Phase 2 (NR2)- This project began in 2005 and is scheduled for completion in early 2007. Phase 2 will restore 111 acres of forested, tidal, and freshwater wetlands, along with over 8,000 feet of tidal and freshwater stream. This is the first project at the farm to not only restore wetland but to draw water from agricultural ditches across the restored wetland area. This project is funded by the EPA, Fish-America Foundation, Smithfield Environmental Enhancement Grants, National Oceanic and Atmospheric Administration, Restore America's Estuaries, N.C. Ecosystem Enhancement Program, and the North American Wetlands Conservation Act.
- North River Phase 3 (NR3)- Completed in 2005, this project restored 206 acres of wetlands and forested wetlands. Nearly 30,000 wetland trees were planted here with the help of students from Vanderbilt University, who dedicated their spring break to this project. This phase was funded by U.S. Fish and Wildlife Service and the Environmental Protection Agency.
- Ward Creek Phase 1 (WC1)- This project will begin in late 2006, and will restore 116 acres of forested wetlands and a 3-acre wetland floodplain along the Ward Creek Farm Canal, which connects to Ward Creek. This project is funded by the National Oceanic and Atmospheric Administration, Restore America's Estuaries, and the North American Wetlands Conservation Act.
- Cypress Plantings- Three separate cypress wetland restoration projects have been completed at the farm, each totaling one acre. Two were completed in 2002 through a partnership with Clemson University and funded by the EPA, and one was completed in 2004 and funded by the National Fish and Wildlife Foundation.

#### **15.1.6 Onslow Bight Conservation Forum**

The Onslow Bight Landscape area of eastern North Carolina is a unique landform of barrier islands, marshes, riverine wetlands, pocosins, longleaf pine savannas and many other coastal ecosystems. In response to rapid development in the Onslow Bight landscape that threatens to destroy or fragment critical natural habitat, several governmental agencies and private conservation groups with land holdings in the landscape as well as other interested agencies and groups found common ground in the need to maintain and enhance conservation. Encroaching development is also beginning to impact military-related activities at Marine Corps Base Camp Lejeune and Marine Corps Air Station Cherry Point. As a result of these concerns twelve

agencies and organizations, in 2002, signed a Memorandum of Understanding to establish the North Carolina Onslow Bight Conservation Forum (NCOBCF), for the purpose of enhancing cooperation and communication regarding regional conservation issues within the Onslow Bight landscape. NCOBCF has completed a terrestrial conservation plan to prioritize conservation of vital habitats. An estuarine conservation plan is being developed; the estuarine waters of Carteret County have been identified as potential priority sites in the White Oak Basin.

### **15.1.7 Invasive Aquatic Vegetation Removal**

Invasive aquatic plants pose as a problem in our waterways. They may choke out native SAVs, impede recreational activities and water flow, provide breeding grounds for mosquitoes, and divert water flows causing erosion and flooding. The waterways of Onslow County have had infestations of Giant Salvinia (eradicated), and currently have infestations of Phragmites and Alligatorweed. Onslow County, the City of Jacksonville and Camp Lejeune have sought funding and have covered approximately 30 stream miles for alligatorweed control in 2006. Jacksonville and Onslow both had cost share agreements with DENR Aquatic Weed Control Program for herbicide spraying of alligatorweed. The Marine Corps bases used alligatorweed flea beetles on Southwest Creek and herbicides on recreational ponds aboard the bases. Onslow Cooperative Extension had an Integrated Pest Management (IPM) grant that provided alligatorweed flea beetles and herbicides. Cooperative Extension also had 90+ hours of volunteer help in monitoring waterways and weed treatment. More information on managing invasive aquatic plants can be found at

[http://www.ncwater.org/Education\\_and\\_Technical\\_Assistance/Aquatic\\_Weed\\_Control/](http://www.ncwater.org/Education_and_Technical_Assistance/Aquatic_Weed_Control/).

Areas surveyed for aquatic invasive and are currently being removed include Southwest Creek from Hwy 53 to New River, Little Northeast Creek from Piney Green Rd to Northeast Creek, Northeast Creek from Little NE Creek to NE Creek Park, Half Moon Creek from Gumbranch Rd to New River, New River from Half Moon to Jacksonville, Mill Creek, Chaney Creek, and Wilson Bay.

## **15.2 Federal and State Initiatives**

### **15.2.1 Federal Clean Water Act – Section 319 Program**

Section 319 of the Clean Water Act provides grant money for nonpoint source demonstration and restoration projects (Table 55). Through annual base funding, there is approximately \$1 million available for demonstration and education projects across the state. An additional \$2 million is available annually through incremental funds for restoration projects. All projects must provide nonfederal matching funds of at least 40 percent of the project's total costs. Project proposals are reviewed and selected by the North Carolina Nonpoint Source Workgroup made up of state and federal agencies involved in regulation or research associated with nonpoint source pollution (NPS). Information on the North Carolina Section 319 Grant Program application process is available online at [http://h2o.enr.state.nc.us/nps/application\\_process.htm](http://h2o.enr.state.nc.us/nps/application_process.htm). Descriptions of projects and general Section 319 Program information are available at [http://h2o.enr.state.nc.us/nps/Section\\_319\\_Grant\\_Program.htm](http://h2o.enr.state.nc.us/nps/Section_319_Grant_Program.htm).

Many 319 projects are demonstration projects and educational programs that allow for the dissemination of information to the public through established programs at NC State University

(NCSU) and the NC Cooperative Extension Service. Other projects fund stream restoration activities that improve water quality.

Table 55 319 Grant Funded Projects in the White Oak Basin

<b>Fiscal Year</b>	<b>Name</b>	<b>Description</b>	<b>Agency</b>	<b>Amount</b>
1999	Jumping Run Creek BST - Phase I	TMDL Development	NCSU	331,346
2000	Jumping Run Creek Urban Planning and BMP Demonstration Project	BMP Implementation	NCSU	101,948
2000	Stormwater Management in Pettiford Creek - Phase II	Education & BMP Installation	NCSU	44,054
2000	Jumping Run Creek	BMP Implementation	NCSU	**
2000	Urban Stormwater BMP Siting, Selection, and Implementation in Closed Shellfish Waters	Education & BMP Installation	NCSU	100,171
2001	Carteret County On-site Inspection and Tracking Program	Database Development	Carteret County Health Dept.	60,000
2001-02	Bioretention Design	BMP Implementation	NCSU	8,118
2001-02	Carteret Community Bioretention Design	Education & BMP Installation	Carteret Community	15,575
2001-02	Crystal Coast Environment Center	Education & BMP Installation	NC Coastal Federation	30,000
2003-04	Watershed Characterization Study	TMDL Development	Duke University	24,981
2005	Southeast White Oak River Shellfish Restoration Project	TMDL Development	NC Coastal Federation	163,655
2005	Hoop Pole Creek Stormwater Demonstration Project	Stream Restoration	NC Coastal Federation	112,283
2005	Restoration Initiatives in Areas Adjacent to Shellfish Harvesting and Recreational Waters in Coastal NC: Tracking Microbial Indicator & Pathogen Transport to Resource Waters Through Conventional On-site Wastewater Systems	Innovative BMP Demonstration	UNC Chapel Hill	231,168
2005	Bacteria Source Tracking/White Oak River Basin Shellfish	N/A	RFP	65,000
2006	The goal is developing TMDLs for Dubling Creek, Boathouse Creek, an embayment South of Boathouse Creek, and the White Oak River near the NC24 bridge.	TMDL Development	NCCF, NC DOT, NC DWQ and Cedar Point	163,655
			<b>Total Funding</b>	<b>1,451,954</b>

### 15.2.2 NC Coastal Nonpoint Source Program

The NC Coastal NPS Program (CNPSP), previously described in Chapter 10 Section 4, has implemented projects in the White Oak River Basin or applicable coastwide. Projects undertaken since 2001 include:

- Bioretention Design and Installation at Carteret Community College,
- Outreach on Coastal Microbial Pollution,
- Crystal Coast Visitor Center Stormwater Treatment Practice Design,

- Erosion and Sedimentation Control Compliance Workshops,
- Funding of a Water Quality Planning Specialist at NCSU,
- Coastal Habitat Protection Plan Outreach and Involvement Campaign,
- Impervious Surface Calculations for a portion of the White Oak River,
- Wetland Training for Division of Coastal Management staff,
- Watershed Characterization study to support fecal coliform TMDL development,
- Supporting the NC Clean Marina Program,
- Improving Compliance in the Urban Runoff Permit Program, and
- Local Land Use Planning Conference.

Additional projects that will be supported through the CNPSP for the 2006-2007 funding cycle in the White Oak River Basin include:

**Town of Newport**

Objective: To develop a comprehensive Stormwater Management Program consistent with the EPA Phase II Stormwater requirements. The work will include drafting a stormwater management ordinance; developing a technical design manual for the proper design and maintenance of privately and publicly owned stormwater detention/retention systems and conveyance devices; and developing a stormwater utility ordinance and fee structure.

Funding source: \$17,500 CNPSP and \$17,500 from the town.

**Town of Beaufort**

Objective: To refine its current draft stormwater ordinance; develop land use regulations to reduce nonpoint source pollution that they will endeavor to incorporate into subdivision and zoning codes; and to identify possible regional stormwater treatment facilities and retrofit opportunities in their jurisdiction. This project will complement the town's efforts to comprehensively map their stormwater systems.

Funding source: \$10,000 CNPSP and \$10,000 from the town.

**Town of Swansboro**

Objective: To develop base maps of stormwater outfalls and conveyance systems within the Hawkins Creek watershed; identify 5 sites for BMP installation in the watershed; conduct preliminary engineering work for the BMPs; develop a "green buffer" plan for the watershed to promote protection and restoration of vegetated buffers along tributaries; and devise a stormwater impact fee structure to assist with stormwater utility activities and operations.

Funding source: \$40,000 CNPSP, \$10,000 from the town, and \$30,000 from the Clean Water Management Trust Fund.

**15.2.3 North Carolina Ecosystem Enhancement Program (NCEEP)**

The NC Ecosystem Enhancement Program (NCEEP) combines an existing wetlands-restoration initiative by the NC DENR with ongoing efforts by the NC Department of Transportation (DOT) to offset unavoidable environmental impacts from transportation-infrastructure improvements. The U.S. Army Corps of Engineers joined as a sponsor in the historic agreement, which is committed to restoring, enhancing and protecting the wetlands and waterways across the State of North Carolina. NCEEP can provide:

- High-quality, cost-effective projects for watershed improvement and protection;
- Compensation for unavoidable environmental impacts associated with transportation-infrastructure and economic development; and

- Detailed watershed-planning and project-implementation efforts within North Carolina's threatened or degraded watersheds.

NCEEP can perform restoration projects cooperatively with other state or federal programs or environmental groups. For example NCEEP efforts can complement projects funded through the Section 319 Program. Integrating wetlands or riparian area restoration components with Section 319 funded or proposed projects will often improve the overall water quality and habitat benefits of the project. The NCEEP actively seeks landowners throughout the state that have restorable wetland, riparian, and stream restoration sites. For more information about NCEEP, visit <http://www.nceep.net/> or call (919) 715-7452.

#### 15.2.4 Coastal and Estuarine Land Conservation Program

The Coastal and Estuarine Land Conservation Program (CELCP) was established by Congress “for the purpose of protecting important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural or recreational state to other uses.” The program provides funding for projects that ensure conservation of these areas for the benefit of future generations, giving priority lands which can be effectively managed and protected, and that have significant ecological value. The Division of Coastal Management administers the CELCP program in North Carolina. For more information on funding opportunities and guidelines see <http://www.nccoastalmanagement.net/Facts/CELCP.htm>.

#### 15.2.5 Clean Water Management Trust Fund

The CWMTF offers approximately \$40 million annually in grants for projects within the broadly focused areas of restoring and protecting state surface waters and establishing a network of riparian buffers and greenways. In the White Oak River basin, -- projects have been funded for a total of \$27,814,098 (Table 56). For more information on the CWMTF or these grants, call (252) 830-3222 or visit the website at [www.cwmtf.net](http://www.cwmtf.net).

Table 56 Projects in the White Oak River Basin Funded by the Clean Water Management Trust Fund (November 2006)

Project Number	Application Name	Proposed Project Description	Amount Funded
1999B-405	NC Coastal Federation - Acquisition and Mapping of the North River	Acquire through fee simple purchase 2,283 acres along the North River. Funds are also available to conduct planning and permitting of future wetland restoration on the site.	\$1,250,000
1999B-514	Maysville - Backup generation	Purchase and install one 60 KW and one 40 KW 3-phase generators to support WWTP and pump stations and to prevent sewer overflows and bypasses during power outages.	\$71,280
2000A-008	NC Coastal Federation - Acquisition- White Oak River	Acquire through fee simple purchase 776 acres along the White Oak River. Includes a restrictive CE on the riparian portion, modest development plan and sale of the remainder of the tract, and reinvestment of revenues in additional buffers on the river.	\$2,134,818
2000B-510	Maysville - WW Collection System I&I Study	Survey infiltration and inflow problems in the sewer system. Develop plans and specifications to stop I/I problems.	\$60,000



2000B-703	Emerald Isle & NC Coastal Federation- Stormwater Wetlands	Acquire a 41-ac “Bogue Landing” tract. CWMTF \$ for land acquisition costs only (50 percent of total). Design, construct, operate, & maintain constructed wetlands & sand filter system to treat 1.2 million cubic feet of storm water runoff for 15 years. Monitor results.	\$2,400,000
2001A-012	Morehead City & NC Coastal Federation-Sugarloaf Island Acquisition	Acquire through fee simple purchase 29 acres along Bogue Sound. CWMTF funds to purchase 22.5 acres above the high water line.	\$500,000
2001A-801	Carteret Community College-Planning/Stormwater & Shoreline	Plan and design for managing stormwater runoff and shoreline erosion on campus.	\$60,000
2001B-024	NC Coastal Federation - Acquisition/ North River Farms and Tributaries	Acquire through fee simple purchase 2,163 acres and protect through a donated conservation easement another 1,435 acres along the North River and tributaries. A total of 3,598 acres will be protected. Wetland restoration to follow acquisition.	\$3,034,000
2001B-027	NC Coastal Land Trust - Acquisition/ W.B. McLean Tract/ Pettiford Creek	Acquire through fee simple purchase 374 acres along Pettiford Creek. Project includes another donated tract of 466 acres.	\$2,167,000
2001B-036	NC Wildlife Resources Commission -Acquisition/ Beck Tract/ Stones Ck & New River	Acquire through fee simple purchase 2,500 acres along Stones Creek and the New River in the White Oak River Basin.	\$2,146,000
2001B-504	Maysville - Sewer System Rehabilitation- Phase III/ White Oak River	Rehabilitate 34,480 linear feet of sewer line and replace 111 manholes.	\$2,383,000
2002A-007	Ducks Unlimited - Acquisition/ Salt Works	Acquire 444 acres through fee simple purchase along Oyster & Core Creeks & the Newport River. An additional 1054 acres will be protected through permanent conservation easements (Pamlico Co- 354 ac and Tyrrell Co-700 ac). Protect a total of 1498 ac.	\$860,000
2002A-021	NC Coastal Land Trust - Acquisition/ New River	Acquire 253 riparian acres through fee simple purchase along the New River and Blue Creek. CWMTF would fund purchase of 52 percent of the tract.	\$503,000
2002B-013	NC Coastal Land Trust - Acquisition./Pettiford Creek II	Acquire through fee simple purchase 466 acres along the Pettiford Creek.	\$603,000
2003A-701	Carteret Community College-Storm./ Bogue Sound Constructed Wetland	Construct stormwater wetland to treat runoff from 640 acres (50 percent impervious) draining to Bogue Sound. Restore 1,000 ft of estuarine shoreline by using gapped stone breakwaters, stone sills, and shoreline saltmarsh restoration. Monitor stormwater wetland.	\$470,000
2003A-807	NC Div Coastal Management - Plan./ Pivers Island Stormwater Management	Design a stormwater system to treat runoff from Pivers Island that flows to Gallants Channel and Taylor Creek. The plan will also assess the low impact aquaculture discharge from laboratory aquariums.	\$40,000
2003M-006	Atlantic Beach, Town of- Minigrant - Money Island	Minigrant to pay for transactional costs for the fee simple purchase of Money Island, a 4.5 acre island across from Atlantic Beach.	\$25,000
2004A-011	NC Coastal Federation - Acquisition./ Quaternary Tract, White Oak River	Acquire through fee simple purchase approx 1,443 acres along the White Oak River, Mulberry and Starkeys Creeks. CWMTF funds to be used to acquire an easement on the 723 riparian acres between the 20-foot contour elevation and surface waters.	\$1,038,000
2004A-016	NC Wildlife Resources Commission - Acquisition./ H&M Farms Tract, White Oak River	Acquire through fee simple purchase 250 riparian acres along Stones Creek. The US Department of Defense will contribute 50 percent of the land value as match.	\$637,000

2004A-018	NC Wildlife Resources Commission - Acquisition./ Lanier Tract, White Oak River	Acquire through fee simple purchase 500 riparian acres along Hick's Run. The US Department of Defense will contribute 50 percent of the land value as match.	\$1,182,000
2004M-002	NC Coastal Federation - Minigrant/Quaternary Tract, White Oak	Minigrant to pay for pre-acquisition costs associated with the fee simple purchase of 1,443 acres along the White Oak River, Mulberry and Starks Creeks.	\$25,000
2005M-002	NC Coastal Federation - Mini/Weyerhaeuser Tract, Newport River	Minigrant to pay for pre-acquisition costs associated with the fee simple purchase and purchase of a conservation easement of 7,000 acres of a Weyerhaeuser Corporation tract along the Newport River.	\$25,000
2005A-703	NC Coastal Federation - Storm/Old Hammocks Beach Ferry Terminal, ICW	Reduce stormwater runoff from the Hammocks Beach State Park's Ferry Terminal parking lot through the design and installation of pervious pavement, bioretention areas, swales and diversion of rooftop drainage. Reduces runoff into the Intracoastal Waterway.	\$155,000
2005B-808	Swansboro, Town of - Plan/Acq/Watershed Protection Planning, Hawkins Creek	Develop a stormwater plan to address protection and water quality restoration of Hawkins Creek and the Intracoastal Waterway. Project is in a sensitive shellfish area with extensive conservation and Natural Heritage Area sites.	\$30,000
2005B-514	Swansboro, Town of - WW/Wastewater Treatment Upgrades, Intracoastal Waterway	Upgrade existing WWTP to a land application system to eliminate the Town's discharge to shellfish waters along the Intracoastal Waterway. The sprayfield was purchased with a previous grant. Waste will receive tertiary treatment and meet reuse standards.	\$3,000,000
2005B-025	NC Coastal Federation - Acq/Jones Island, White Oak River	Protect through fee simple purchase 16.8 acres of Jones Island in the White Oak River estuary. Acreage may be donated to the Hammocks Beach State Park. CWMTF funds to purchase 6.56 acres in three tracts on the island and applicant to donate 10.24 acres.	\$550,000
2006S-001	Morehead City - Stormwater Minigrant/ Calico Creek	Stormwater minigrant to fund a small drainage basin study in the City. Includes hydrologic analysis, id of pollutant sources, potential BMP retrofit locations, regional BMP locations, waters of special interest to protect or improve.	\$50,000
2006A-801	Beaufort, Town of- Plan/Storm/Stormwater Planning, Town and Taylor Creeks	Prepare stormwater management plan for the Town. Includes a GPS inventory of the stormwater system and prioritization of stormwater management needs. Compliments Town's efforts to develop stormwater ordinances.	\$50,000
2006B-402	NC Coastal Federation - Rest/North River Farms Restoration, Ward Creek	Fund completion of a partially completed restoration project in progress at North River Farms. Remove acreage from agricultural production & restore bottomland hardwood forests, tidal saltmarsh, freshwater riparian wetlands and 8,595 lf of stream.	\$532,000
2006B-015	NC Coastal Land Trust - Acq/Allen Tract, Everett Creek	Protect through fee simple purchase 168.5 acres, including 140 riparian acres, along Everetts Creek. Project will protect rare aquatic species and exceptional wetland. Tract is adjacent to Camp Lejeune and the state's new Stones Bay Game Lands	\$1,833,000
<b>Total Funded</b>			<b>\$27,814,098</b>

Notes:

- (1) The entire White Oak Basin is in CWMTF's Northern Coastal Plain region.
- (2) The total funded amount excludes funded projects that were subsequently withdrawn by the applicant.
- (3) Several regionally and statewide projects were funded in areas that include the White Oak River basin. These projects include the oyster restoration and protection planning project, a shoreline incentives program, and the swine conservation easement buyout program.

## 15.2.6 Clean Water Bonds – NC Rural Center

Outdated wastewater collection systems, some more than 70 years old, allow millions of gallons of untreated or partially treated wastewater to spill into the state’s rivers and streams. The NC Rural Economic Development Center, Inc. (Rural Center) has taken the lead role in designing public policy initiatives to assist rural communities in developing and expanding local water and sewer infrastructure. The Rural Center is a private, nonprofit organization. The Rural Center’s mission is to develop sound, economic strategies that improve the quality of life in North Carolina, while focusing on people with low to moderate incomes and communities with limited resources.

To support local economic growth and ensure a reliable supply of clean water, the Rural Center administers three Water and Sewer Grant Programs to help rural communities develop water and sewer systems. See Table 57 for more information on the current grants programs. For each grant program, priority is given to projects from economically distressed counties of the state as determined by the NC Department of Commerce ([www.nccommerce.com](http://www.nccommerce.com)).

The water and sewer grant programs are made possible through appropriations from the NC General Assembly and through proceeds from the Clean Water Bonds. In 1998, North Carolina voters approved an \$800 million clean water bond referendum that provided \$330 million to state grants to help local governments repair and improve water supply systems and wastewater collection and treatment. The grants also address water conservation and water reuse projects. Another \$300 million was made available as clean water loans.

Since the program’s beginning, the Rural Center has awarded nearly 500 communities and counties more than \$64 million to plan, install, expand, and improve their water and sewer systems. As a result, these communities have served new residential and business customers, created and preserved thousands of jobs, and leveraged millions of dollars in other water and sewer funds. Table 57 lists the grants that were awarded in the White Oak River basin between 1999 and 2005. For more information on the Water and Sewer Grants administered by the Rural Center visit [www.ncruralcenter.org/grants/water.htm](http://www.ncruralcenter.org/grants/water.htm).

Table 57 Clean Water Bonds for the White Oak River Basin

Clean Water Bonds for the White Oak River Basin					
	River Basin	County	Recipient	Amount Funded	Type of Grant
<b>Feb-04</b>	White Oak	Onslow	Town of Richlands	\$40,000	Capacity
<b>Aug-02</b>	White Oak	Jones	Town of Maysville	\$400,000	Supplemental
<b>Mar-02</b>	White Oak	Onslow	Town of Swansboro	\$400,000	Supplemental
	White Oak	Onslow	Town of Richlands	\$356,900	Supplemental
<b>Aug-01</b>	White Oak	Onslow	City of Jacksonville	\$300,000	Supplemental
<b>Feb-01</b>	White Oak	Carteret	Town of Atlantic Beach	\$30,000	Capacity
	White Oak	Jones	Town of Maysville	\$40,000	Capacity
<b>Dec-99</b>	Neuse/White Oak	Jones	Jones County	\$180,198	Supplemental
	Neuse/White Oak	Jones	Jones County	\$36,000	Capacity

**Clean Water Bonds as administered by the NC Rural Economic Development Center, Inc.**

**Supplemental Grants Program** - Enables local governments and qualified non-profit corporations to improve local water and sewer systems. Projects may address public health, environmental and/or economic development critical needs. The maximum grant amount for this program is \$400,000. Rural Center funds must be used to match other project funds.

**Capacity Building Grants Program** - Provides funding for local governments to undertake planning efforts that support strategic investments in water and sewer facilities. Funds typically are used to prepare preliminary engineering reports, master water/sewer plans, capital investment plans, water/sewer feasibility studies, rate studies and grant applications. The maximum amount for this program is generally \$40,000.

**Unsewered Communities Grants Program** - Provides funding for the planning and construction of new central, publicly-owned sewer systems. Qualified communities must be unserved by wastewater collection or treatment systems. Unsewered communities grants are designed to cover 90 percent of the total cost of a project but will not exceed \$3 million.

### **15.2.7 State Funded Oyster Hatcheries**

North Carolina Aquariums, in conjunction with The Department of Marine Fisheries (DMF), are working together to establish additional oyster hatcheries in proximity to the three state aquariums to support oyster gardening efforts and public education programs. An additional commercial-sized hatchery would be constructed to support the goals of the DMF and will have a production capacity of a billion larvae and include a nursery area for setting. The General Assembly appropriated \$600,000 to the state aquariums to facilitate the hatchery program. The committee is also working to establish an education program that could potentially lead to a certification in constructing and maintaining oyster hatcheries in North Carolina (New Bern Sun Journal, 2005).

### **15.2.8 Oyster Shell Recycling**

The North Carolina Oyster Shell Recycling Partnership is encouraging restaurants, seafood dealers, community organizations and individuals to participate in the effort to collect oyster shells and use them to build oyster reefs in protected oyster sanctuaries. More information about this recycling effort can be found at <http://www.ncfisheries.net/shellfish/recycle1.htm>. Oyster recycling sites within the White Oak River Basin include

**Carteret County:**

Beaufort: Gaskill's Hardware (901 Mulberry St.)

Morehead City: NCDMF office (3441 Arendell St.)

GDS Solid Waste and Recycling Locations:

Atlantic (Hwy 70), Beaufort (Hwy 101), Cape Carteret (Fire Tower Rd. off Hwy 58), Davis (Hwy 70), Otway (Harker's Island Rd.), Mill Creek (Mill Creek Rd.), Morehead City (Vashti Dr., West Carteret High School), Newport (Hibbs Rd. & Tom Mann Rd.), Ocean (Pringle Rd. off Hwy 24), and South River (South River Rd.).

**Onslow County:**Swansboro: Hammock’s Beach State Park (1572 Hammock Beach Rd.)Jacksonville: Sturgeon City Education Center (Court St.)Holly Ridge: Morris Landing Clean Water Preserve (Morris Landing Rd.)**15.2.9 Clean Marina Program**

The Clean Marina is a voluntary program that began in the summer of 2000. The program is designed to show that marina operators can help safeguard the environment by using management and operations techniques that go above and beyond regulatory requirements. This is a nationwide program developed by the National Marine Environmental Education Foundation, a nonprofit organization that works to clean up waterways for better recreational boating. The foundation encourages states to adapt Clean Marina principles to fit their own needs. North Carolina joins South Carolina, Florida and Maryland as states with Clean Marina programs in place.

Marina operators who choose to participate must complete an evaluation form about their use of specific best management practices. If a marina meets criteria developed by N.C. Marine Trades Services and the Division of Coastal Management, it will be designated as a Clean Marina. Such marinas will be eligible to fly the Clean Marina flag and use the logo in their advertising. The flags will signal to boaters that a marina cares about the cleanliness of area waterways. Marinas that do not meet the standards will be able to learn about improvements needed for Clean Marina designation. Marina owners can reapply after making the necessary changes.

For more information about the program, see <http://dcm2.enr.state.nc.us/Marinas/clean.htm> or <http://www.nccoastalmanagement.net/Marinas/marinas.htm>, or contact N.C. Coastal Reserve Education at 252-728-2170 or Coastal Management at 919-733-2293.

In the White Oak River basin, DEH reports 121 acres of closed shellfishing waters because of marina slips between growing areas C-1 to F-4. There are four Clean Marinas and seven marinas with pump-out facilities in the White Oak River Basin, as listed below:

<b>Clean Marinas</b>	<b>Marina’s with Pump-Out Facilities</b>
Coral Bay Marina 4531 Arendell St. (Hwy. 70) Morehead City, NC 28557 Phone: 252-247-6900	Town Creek Marina Beaufort, Town Creek (Gallant Channel) Phone: 919-728-6111  Discovery Diving Co. Beaufort, Town Creek Phone: 919-728-2265
Casper's Marina 301 Water St. P.O.Box 749 Swansboro, NC 28584 Phone: 910-326-4462	Beaufort Town Docks Beaufort, Taylor's Creek Phone: 919-728-2503  Beaufort Marine Services Beaufort-Morehead Area (Mobile pumpout) Phone: 919-728-5088
Town Creek Marina 232 W. Beaufort Road Beaufort, NC 28516 Phone: 252-728-6111	Morehead City Yacht Basin Morehead City, Calico Creek Phone: 919-726-6862  Mariner's Point Condominium Marina Atlantic Beach, Bogue Sound, Phone: 919-247-4340
Duke University Marine Laboratory Marina Beaufort, NC 28516	Emerald Isle, Bogue Sound, Phone: 919-354-3106

