

CITIZENS WORKING TOGETHER FOR A HEALTHY COAST

Coastal Review

Winter 2006 A Publication of the North Carolina Coastal Federation Vol 24 No 1

**NORTH RIVER WATERS
OPEN TO SHELLFISHING**

STORMWATER WOES

NEW MEMBERS ON BOARD

NCCF'S 2006 GOALS AND OBJECTIVES

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www.ScottTaylorPhoto.com

Stop Illegal Stormwater Permits

Dear Friend of the Coast,

It's no secret that stormwater runoff pollutes our coastal waters.

And now it's no secret that the state program adopted back in 1986 by the NC Environmental Management Commission (EMC) to stop stormwater pollution isn't working and is actually counterproductive in protecting water quality.

Tom Reeder, who heads up the coastal stormwater program in Raleigh, has prepared a remarkably candid evaluation of the effectiveness of his program.

This evaluation was ordered by Reeder's boss Alan Klemick, the head of the NC Division of Water Quality (DWQ). Klemick wanted to respond to concerns about the program raised by citizens at public hearings in December 2004.

Pollution has spread like cancer through coastal shellfish beds since the stormwater program was adopted in 1986. Many areas that were open to shellfishing when the program was adopted are now polluted. And since 1989, 1157 acres of coastal waters that were designated as Outstanding Resource Waters have even been contaminated. The culprit, DWQ found, is dirty runoff.

Most land development projects regulated by the coastal stormwater program end up being classified as "low density." That's because these rules redefine "low density" as up to four houses for each acre. At such densities, millions of gallons of stormwater runoff are generated.

To deal with this contaminated flush of water after it rains, the State routinely allows coastal developers to dig drainage ditches it calls swales. In addition to removing stormwater, these ditches lower groundwater levels and drain wetlands. The water collected by these ditches has high bacteria levels, and this polluted runoff then flows into coastal waters used for swimming, fishing and shellfishing.

DWQ's evaluation reports that these ditches or "swales" don't remove bacteria but actually add it to stormwater, making coastal rivers, creeks and sounds even more polluted.

It's alarming that there are no plans to fix this broken regulatory program. The State is

recommending a new voluntary program that can be adopted by local governments. This program would require engineered stormwater systems for all development projects. Rules have to be adopted, and the earliest this program might exist is sometime in 2007.

Before moving forward with this alternative program, however, the Commission should evaluate the actual success of the high-density stormwater systems it has also required to be built along our coast. Many of these high-density systems are never maintained, and they routinely discharge polluted stormwater once their capacity of 1½ inches of rainfall is exceeded. Approximately 20% of daily rain events on the coast exceed this amount of rainfall, and during wet times of the year like this past fall many of these systems constantly discharge polluted runoff.

No matter what happens with this voluntary program, the EMC can't ignore that it is required to protect and restore coastal water quality by federal and state laws. Issuing permits that result in the violation of water quality standards is blatantly illegal.

When the EMC determined back in 1984 that its existing program to protect coastal waters was inadequate to regulate polluted stormwater, it quickly adopted interim policy guidance for regulating new coastal development. For more than two years DWQ used these guidelines until permanent rules were adopted.

Now the commission faces a similar situation. It knows that many of the new stormwater permits DWQ issues violates the Clean Water Act. With this knowledge, it has no choice but to stop the issuing permits that are systematically destroying coastal water quality.

Both the EMC and DWQ have explicit legal authority to impose whatever water quality protection safeguards are necessary to protect coastal water quality standards. This authority is not discretionary; it's a binding legal obligation that can't be ignored.

The EMC and DWQ must act immediately and stop issuing permits that are little more than a license to kill NC's clean and productive coastal waters.

Sincerely,



Todd Miller
Executive Director

Coastal Review

Coastal Review is the quarterly newsletter of the North Carolina Coastal Federation (NCCF). NCCF is a non-profit, tax-exempt organization dedicated to involving citizens in decisions about managing coastal resources. Its aim is to share technical information and resources to better represent current and long-term economic, social and environmental interests of the North Carolina Coast.

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The North Carolina Coastal Federation is located on Highway 24 in Ocean, NC, between Swansboro and Morehead City. Our offices, nature library and shop are open Monday through Friday, 8:30 am to 5 pm.

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About the Cover:

Todd Miller and Sarah King inspect restored wetlands at North River Farms in Carteret County. Photo by Scott Taylor, www.ScottTaylorPhoto.com.

NCCF Goals and Objectives for 2006

THE NC COASTAL FEDERATION HAS grand plans for 2006. We hope to accomplish a great deal this year to restore and protect our state's coastal water and landscape. Here are just a few of the things we plan to do this year:

Strengthen Safeguards for Coastal Shellfishing and Swimming Waters

- Work with the US EPA and the NC Shellfish Sanitation Section to finish a three-year project to devise an innovative method to survey and map watersheds of shellfish growing waters. These surveys will find sources of pollution and report the problems to water quality and wetland protection agencies.
- Stop the State from allowing development that routinely discharges polluted stormwater that further degrades water quality.
- Work with Brunswick County and the state and federal governments to develop a comprehensive strategy to protect and restore water quality in the Lockwood Folly River watershed.
- Continue long-term monitoring of at least 15 storm outfalls for fecal coliform bacteria and display the results on the NCCF web page.
- Identify and monitor pollution sources in the lower White Oak River in Carteret County to determine the causes of water quality degradation and what can be done to reopen polluted shellfish waters to fishing.

Protect and Restore Critical Coastal Habitats

- Refine and implement the action plan for coastal North Carolina to focus efforts to protect and restore vital oyster habitat.
- Restore five acres of oyster reef habitat in Stump Sound and Chadwick Bay areas in Onslow County.
- Restore 230 acres of wetlands in the headwaters of North River in Carteret County and Stump Sound in Onslow County.
- Retrofit two stormwater discharge systems to reduce pollution at Hoop Pole Creek and Hammocks Beach State Park in Onslow County.
- Complete living shoreline restoration project at Carteret Community College.
- Work with Currituck County, the Clean Water Management Trust Fund, and NC Coastal Land Trust to identify land in the county for potential conservation acquisition.
- Develop a living shoreline project for 500 feet of eroding shoreline along Jones Island in Onslow County.

Keep our Beaches Natural and Public

- Advocate for the Coastal Resources Commission to adopt effective sand compatibility rules for beach re-nourishment projects.
- Initiate beach public access rules that maximize beach access parking.

Develop, Promote and Achieve Environmental Law and Order

- Work with citizens and state agencies to document and report notices of violation and ensure follow up enforcement.

- Complete three investigative research projects to illustrate the systemic failures of environmental regulations.

Develop Effective Regulations that Preserve and Restore Our Coastal Environment

- Refine and achieve a 10-Point Legislative Strategy that results in state lawmakers' support for coastal water-quality protection and habitat-restoration bills.
- Revise state and federal rules to promote living shoreline projects, including documenting success of completed projects.

Educate and Engage More People in Protecting and Restoring the Coast

- Educate 15,000 citizens through NCCF programs, festivals, presentations, native plant sale and through nature trails.
- Engage 1,000 citizens in hands-on educational/restoration activities.
- Inform one million citizens about NCCF's work through media coverage and public outreach.
- Write and distribute 100,000 copies of the annual *State of the Coast Report* and 10,000 copies of each quarterly *Coastal Review*.
- Train 75 contractors, permit staff, and consultants about living shorelines.
- Create a training program for journalists who cover coastal issues.

NC Coast Could Become Dumping Ground for Eastern US

BY JIM STEPHENSON
Policy Analyst

FROM THE VIRGINIA BORDER TO THE South Carolina line, the coast of North Carolina could become the dumping ground for garbage and debris from East Coast states. Plans are afoot to bring in trash by truck, rail and barge, and pile it up high on low-lying farmland and swamps.

Coastal North Carolina is an attractive destination for trash because of cheap rural land, the lack of a statewide “tipping fee” and the state’s central location on the east coast.

Four major proposals are in the works for mega-dumps in Camden, Hyde, Brunswick, and Columbus counties. Camden and Columbus counties could become Mecca for municipal garbage, handling as much as three million tons annually. Navassa in Brunswick Co. wants to be the destination of choice for cars and appliances. Hyde County has extended the welcome mat to 900,000 tons of construction and demolition debris a year.

If the projects planned for Camden and Columbus counties, along with a 1.4 million ton per year landfill in Richmond Co., are approved by the state, North Carolina could become the fourth-largest importer of trash in the nation. North Carolina has long been a net exporter of trash, sending one million tons per year to other states.

By far the biggest landfill project is planned for Camden County, adjacent to the Great Dismal Swamp. The Black Bear landfill would be 28 stories high (270 feet), covering 480 acres by the end of its 30-year site life. The cash-strapped county could collect up to \$4 million a year in fees from the landfill operator.

Chesapeake, VA, and the Camden Citizens Action League filed suit against the Camden County commissioners and Black Bear’s parent company, Waste Industries

Inc., last year. The suit challenges the franchise agreement and the process used to notify the public.

The Sims Corp. (formerly Hugo Neu) plans to pile shredded automobiles 350 feet high near Narvassa in Brunswick County. That’s taller than the Cape Hatteras Lighthouse, which is 193 feet tall.

Hyde County commissioners granted a franchise to Alligator River Recycling to recycle and stockpile construction and demolition debris. A barge terminal is planned for the Atlantic Intracoastal Waterway to accept debris from East Coast states.

The Reigel Ridge landfill in Columbus County plans to pile municipal waste 280 feet high on an area bordering the Green Swamp. The landfill would serve 40 counties in North Carolina and South Carolina.

The Environmental Review Commission (ERC) held a hearing in January to learn more about the proposed landfills and recycling effort in the state. At the hearing, Paul Crissman, head of the solid waste management in North Carolina, told the commission that the proposed landfills are “not going to be a significant player in getting rid of waste from the rest of the state.” Prior to the start of the legislative session on May 9, the ERC may develop legislation to curtail the rapid expansion of landfills.

DWQ Finds Coastal Stormwater Controls Ineffective

A state review of rules intended to reduce stormwater pollution along the coast found that the program is failing to protect state water quality. The NC Division of Water Quality (DWQ) presented its findings to the Environmental Management

Commission in November and to the Coastal Resources Commission in January.

The coastal stormwater program, started in 1989, operates in all 20 coastal counties. Under the program, DWQ requires engineered stormwater systems when development covers more than 25 percent of a lot. Built-upon areas of 25 percent or less are considered low-density and use swales and a 30-foot buffer to control polluted stormwater.

DWQ examined existing scientific studies on the relationship between impervious surfaces and the water quality degradation. Studies have shown that uncontrolled and untreated stormwater from development with greater than 10 percent impervious cover result in degradation and impairment of estuaries.

DWQ plotted changes in impervious surfaces and trends in shellfish closures in four New Hanover County watersheds. The review found that shellfish closures increased in all creeks after development had occurred. Stormwater permits didn’t prevent polluted stormwater from discharging to shellfish waters. Today, the tidal creeks (Hewletts to Futch) are almost entirely closed to shellfishing.

The review also identified that low-density projects that use swales to control stormwater accounted for 60% of the development projects and 72% of the impervious surface in the four watersheds. Swales have a bacteria removal rate of negative 25 percent, meaning they actually contribute bacterial pollutants to streams.

The state Environmental Management Commission now has the job of fixing a broken program. DWQ is expected to make its recommendations to the EMC in March or May.

RRC Gives Approval to EMC Stormwater Rules

The state Rules Review Commission (RRC) finally approved in November the Environmental Management Commission's stormwater rules. The rules carry out the federal Phase II Stormwater Program and establish a companion state stormwater program to control polluted runoff in rapidly growing areas. The effective date for the rules is August 1.

The RRC illegally invalidated two sets of stormwater rules in January 2004, which prompted the EMC and the NC Coastal Federation to file separate lawsuits. The court ruled in favor of the EMC last summer and ordered the RRC to revisit the rules.

The delay prompted the NC General Assembly to enact a watered-down stormwater program to meet a deadline set by the US Environmental Protection Agency. The state law establishes weak development standards that have been proven to cause the degradation of shellfish waters in violation of the federal Clean Water Act.



Riggs to Speak on "Coasts in Crisis"

Stan Riggs, a distinguished research professor of geology at East Carolina University, is well known for his dynamic presentations that

explain global warming, barrier-island movement and coastal geology in layman's terms. As a prelude to his coming book *Coasts in Crisis*, Riggs will give two talks on how people can significantly affect the way coastal ecosystems evolve:

March 9, Orringer Auditorium at Craven Community College in New Bern; and March 13, Unitarian Universalist Congregation, 131 Oakmont Drive (off NC 43) in Greenville.

Both talks start at 7:30 pm and are free and open to the public.

Sierra Club's Cypress Group, the Neuse River Foundation, the Pamlico-Tar River Foundation and the NC Coastal Federation are co-sponsoring the presentations.

State Global Warming Commission Meets

The Legislative Commission on Global Climate Change is holding its first meeting on Feb. 3. Rep. Joe Hackney, D-Chatham, the House Majority Leader and longtime environmental champion, will co-chair the commission with John Garrou, a former managing partner of Womble Carlyle law firm. Rep. Pricey Harrison, D-Guilford, Rep. Alice Underhill, D-Craven, Sen. Janet Cowell, D-Wake and NCCF policy staffer Jim Stephenson are among the 34 legislators, industrialists, scientists, environmentalists and citizens on the commission.

Offshore Drilling Scheme Fails in Congress

A plan by the chairman of the US House Resources Committee to permit states to opt out of the moratoria on the exploration for oil and natural gas on the Outer Continental Shelf failed on the House floor in November. Richard Pombo, R-CA, proposed a scheme to share half of royalties paid by energy companies with states and coastal communities as incentive. Rep. Walter Jones, R-NC, voted for the provision in committee.

Pombo succeeded in attaching the Ocean States Option Act to the House Budget Committee's version of the Budget Reconciliation Bill. A group of two-dozen moderate House Republicans, known as the Republican Main Street Partnership, successfully stripped the coastal drilling plan and a provision to open up the Artic National Wildlife Refuge to oil drilling from the bill before it reached the House floor.

North Carolina's senators, Republicans Elizabeth Dole and Richard Burr, have steadfastly opposed efforts to lift or weaken the moratoria.

The moratoria have been in place since 1982 through a provision in the annual federal appropriations bill and continue through 2012 via executive directives by presidents George H.W. Bush and Bill Clinton.

DENR Hires CHPP Coordinator

The Coastal Habitat Protection Plan (CHPP) won't be sitting on the shelf collecting dust. Not if Jimmy Johnson has anything to do with it. The NC Department of Environment and Natural Resources (DENR) hired Johnson as its eastern regional field officer responsible for CHPP coordination and implementation. Johnson is uniquely qualified having spent 19 years in the crab-processing business and eight years as chair of the NC Marine Fisheries Commission.

He will be charged with working with the CHPP Steering Committee to coordinate implementation of the plan. The steering committee consists of Pete Peterson and Tom Ellis with the Environmental Management Commission, Barbara Garrity-Blake and B.J. Copeland with the Marine Fisheries Commission, and Courtney Hackney and Bob Emory with the Coastal Resources Commission.

A report, *Implementing the North Carolina Coastal Habitat Protection Plan 2005*, details actions that are being taken by the three commissions to implement the CHPP recommendations. The report is available on the web at www.ncdmf.net/habitat/chpp28.html.



Improving Water Quality Opens Portions of North River

BY FRANK TURSI
Cape Lookout COASTKEEPER®

OUR WORK ALONG NORTH RIVER IN eastern Carteret County may be paying early dividends as the state prepares to open portions of the upper reaches of the river that have been normally closed to shellfishing for decades.

Officials with the state's Shellfish Sanitation Section are prepared to recommend that 124 acres of North River that has been closed except during abnormally dry times be reclassified like the rest of the river. The "conditionally approved open" status would mean that oysters and clams could be harvested from the area except after heavy rain. Shellfish Sanitation will also recommend that 20 acres at the mouth of Thomas Creek on the west side of the river and 65 acres of Ward Creek south of the US 70 bridge be similarly reclassified.

Section officials will pass on the recommendations to the NC Division of Marine Fisheries (DMF), which has the authority to reclassify the areas.

"We never like to see areas closed," said Patricia K. Fowler, an environmental health supervisor with the section. "Any time we can recommend that areas be moved up in classification is a good thing."

Inspectors with Shellfish Sanitation, part of the state's Division of Environmental Health, routinely monitor shellfish waters for bacteria contamination. Stormwater runoff is now the main source of the contamination. Bacteria levels increase the more intensively the land is developed or, as is the case at North River, the more wetlands are destroyed or ditched and turned into farmland.

Oyster and clams filter water as they feed. If bacteria concentrations in the water are high, the shellfish can be unsafe to eat. For that reason, the state is a stickler about this. It permanently closes water bodies with

consistently high bacteria levels. Those with intermittent problems are temporarily closed after heavy rains. Other water bodies, like those being reclassified in North River and Ward Creek, are usually closed but can open temporarily during abnormally dry times. Permanent and temporary closures have increased as the state's coastline has developed.

But bacteria levels have been steadily declining in the areas that will be reclassified, Fowler noted. Her inspectors completed an intensive survey of North River and Ward Creek last year. They walked the shoreline looking for potential sources of bacteria, such as dog lots and failing septic tanks, and analyzed water-quality data. The bacteria levels in the reclassified areas were below the state standard and there were no obvious onshore



sources of contamination. Based on all that, Fowler said her agency would recommend that the areas be reclassified.

It's hard, she said, to pinpoint a reason for the improving water quality. "It could be land-use changes, enforcement actions, or dry weather," she said. "I never like to use the word permanent with any of our closure lines. It's an ongoing thing. Rainy weather could close it again."

We'll take some of the credit anyway, thank you. NCCF has been hard at work restoring wetlands in the headwaters of North River. Starting in 1999, we've bought about 4,000 acres of North River Farm on the east side of the river, and we've been restoring the cropland back to wetlands ever since. We've restored about 550 acres so far and are currently creating a 53-acre floodplain forest in the heart of the restoration. The new forest will filter the water, remove pollutants from the air and provide wildlife habitat.

North River is the largest wetland-restoration project attempted in North Carolina and one of the largest in the nation. When we're done, we and our partners will restore more than 5,000 acres of wetlands. Our goal is to bring North River and its tidal creeks back to health again.

We think we had something to do with the improving water quality, but as the river's health improves our state's regulatory agencies now are faced with some tough management choices. When the water in the upper North River was too polluted to harvest oysters and clams, the only choice was simple: bar people from shellfishing there to keep them from getting sick. Normally in such cases, the water would continue to degrade until the clams and oysters disappeared. But with water quality in the upper reaches improving and a healthy fishery downstream, the state now has to decide how to best manage the 124 acres of North River that will be reclassified. Instead of dealing with a dying habitat, they are faced with managing an improving one. That's a good thing.

The area that will be reclassified is home to some big oysters that are contributing to the improved water quality by filtering hundreds of gallons of water a day. They are also producing baby oysters, or spat, that colonize the rest of the river downstream, where commercial fishermen have had booming oyster seasons the last two years.

So what's DMF to do? If it accepts the recommendation from Shellfish Sanitation

and reclassifies the area, the agency would usually also open it to shellfishing. Those big oysters wouldn't last long. With them goes the hatchery.

Something far more valuable might also be at stake. Big oysters are rare in North Carolina these days. Before reaching the size of those found in upper North River, they are usually infected with Dermo, a waterborne parasite that begins attacking oysters older than a year. The infection, which doesn't harm humans, either kills the oyster or severely retards its growth and reproduction rate. Oysters that grow abnormally large may mean they are immune to Dermo. That would make them truly valuable oysters because their offspring may also be immune.

Mike Marshall at the Division of Marine Fisheries understands the consequences. The division, he said, hasn't decided how it will manage the reclassified area. It could reopen it to shellfishing like the rest of river, reopen it but reduce the number of bushels harvested from there each day or place it off limits as an oyster sanctuary.

DMF has seven existing sanctuaries and two more planned. All are in Pamlico Sound or the Neuse River. "We talked generally about a sanctuary in the southern region," Marshall said. "Due to all the closed areas we have here, it's been a very unpopular topic. There are many fishermen who see the area where they can work shrinking."

Marshall also doubts that the oysters are Dermo resistant, though he admits that not a lot of research has been done on the subject. He suspects that the low-salinity in the upper reaches of North River is the reason why the oysters there have gotten so large. Dermo doesn't do well in that kind of environment. "But without doing the tests, that's just a guess," Marshall said.

To determine if they are resistant, adult oysters would have to be exposed to the infection in a controlled environment and examined. It wouldn't take long to know, Marshall said. To err on the side of caution, DMF could delay a decision until the end of the oyster season in mid-March. That would give its scientists eight months – until the opening of the new season in November – to conduct the tests and decide on a management strategy.

Meanwhile, we'll keep plugging away at North River and, hopefully, give state officials more good choices to make.

Classification of Shellfish-Growing Waters

The NC Division of Marine Fisheries maintains several types of classifications for waters where oysters and clams can be harvested. The classifications are based on a federal protocol that coastal states that export shellfish must follow. How shellfish-growing waters are classified depends on concentrations of fecal coliform bacteria, which are determined by rainfall and the development density of the surrounding land. The division decides when to open or close waters or change classifications based on a recommendation from the Shellfish Sanitation & Recreational Water Quality Section of the NC Division of Environmental Health.

- **Approved:** These are among the cleanest waters in the state. Shellfish may be harvested for direct marketing regardless of rainfall amounts.
- **Conditionally Approved Open:** These waters are open to harvest most of the time but are automatically closed temporarily after heavy rain. The amount of rain that triggers a closure usually 1 or 1.5 inches is determined by a management plan.
- **Conditionally Approved Closed:** High bacteria concentrations keep these waters closed to harvesting most of the time. They can be opened temporarily when sampling shows that bacteria counts fall below the standard, usually during times of drought.
- **Prohibited:** Shellfish can't be harvested from these waters regardless of weather conditions because of consistently high bacteria concentrations.
- **Restricted:** Shellfish may be taken by permit only and moved to approved waters where they can cleanse themselves before harvesting.

Carteret Development Issues Draw Crowd

BY FRANK TURSI
Cape Lookout COASTKEEPER®

Carteret County Commissioner Jonathan Robinson speaks to a full house in Smyrna about development issues in the eastern end of the county.

CENTRAL COAST

More than 700 people crowded into two community meetings in late January to hear about growth issues and development projects in eastern Carteret County. The meetings were part of a three-part series that the county's Planning Commission sponsored about growth Down East, the local name for the part of the county east of North River.

A grassroots citizens group called Down East Tomorrow persuaded Jonathan Robinson, a Carteret County commissioner representing the region, to call the meetings. Frank Tursi, the Cape Lookout COASTKEEPER®, helped the group organize by providing strategic advice and expertise on state and county regulations.

Down East is currently unzoned and unincorporated. The citizens group hopes to eventually convince county commissioners that better growth controls are needed in the region.

NORTHERN COAST

Currituck Residents Plan Land Buys

NCCF and the North Carolina Coastal Land Trust received \$40,000 from the Clean Water Management Trust Fund last fall to lay a strategy for protecting water quality in Currituck County.

Jan and Lee Leidy, the northern representative from the Land Trust, have convened a steering committee of Currituck residents, including builders and real estate agents, a banker, a commercial crabber, and NCCF board member Ginger Webster, representing the group Corolla Concerned Citizens. The committee's goal is to take an inventory of available land in the county and rank it according to its conservation value. Then they'll begin laying a strategy for preserving the most important pieces.

By the fall of 2007, the committee intends to complete the inventory and put together at least one grant application that

can be submitted to the trust fund for buying a key parcel of land. They hope to have in place some clear proposals for funding the purchase of other parcels and conservation easements, too.

SOUTHERN COAST

Figure 8 Island Dredging

Ted Wilgis, the Cape Fear COASTKEEPER®, stays busy on the southeast coast each fall, which has become the season for dredging and beach nourishment. Communities in Ted's regions are busy bulldozing, scraping, filling and armoring the beaches with sandbags.

A perennial favorite, Mason Inlet and Banks Channel behind Figure Eight Island, is active again. The Figure Eight Beach Homeowners Association wants to widen and deepen Banks Channel behind the island. Many people have pointed out that a similar project in 1985 was partly to blame for the increased instability of Mason Inlet.

Ted has submitted several rounds of comments on the permit request. The whole project would generate about 230,000 cubic yards of dredge material that will be deposited on 10,000 feet of ocean beach on Figure Eight Island.

Ted noted in his comments that this project is no longer "maintenance" dredging. Due to the scope of the project, new dredge areas and cumulative and secondary impacts, an environmental assessment should be prepared and submitted.

COASTKEEPER® LOG

Volunteer Tip Leads to Indictments of DOT Employees

If you've ever wondered whether our volunteers make a difference, then here's a story for you:

On a sunny day in June 2004, Jan Deblieu, our Cape Hatteras COASTKEEPER®, received a call from one

of her volunteers in Currituck County telling her about a state barge in Whalehead Harbor that had kicked up a lot of sediment with its prop, effectively cutting a 30-foot-wide channel in the very spot where county and state officials had been trying for years to obtain a dredging permit for a pedestrian ferry to the mainland.

Jan immediately called the US Army Corps of Engineers and the state Division of Coastal Management (DCM). Officials with state Department of Transportation (DOT), which owned the barge, said it was all a mistake, that the boat had run aground and had kicked open the channel when trying to get out.

Jan's anonymous sources in DOT relayed information that implied something else entirely. A year-long federal investigation ensued. It included FBI raids of DOT offices and grand jury testimony. The results have so far been stunning. Five DOT employees have been indicted, including the head of the agency's Ferry Division, for conspiring to illegally dredge the channel. Four have already pleaded guilty.

"I'm sure someone in the regulatory agencies would have spotted the channel at some point," Jan said. "But getting that tip certainly jump-started the investigation."

Volunteers Out Collecting Stormwater

The COASTKEEPERS® have started to monitor stormwater discharges for fecal coliform bacteria and will begin posting the results on a stormwater website and publishing them in future newsletters.

Trained volunteers are collecting monthly samples from 15 pipes or ditches that dump stormwater into shellfish waters. The purpose is to call attention to the last largely unregulated source of pollution along the coast.

The website should be up and running this spring, and the first results will be published in the spring newsletter.

Carteret Community College Site of Next Shoreline Project

BY SARAH KING
Restoration Specialist

CARTERET COUNTY COMMUNITY College in Morehead City will be the site of NCCF's next Living Shoreline project. Work will begin this spring on a variety of techniques to stabilize shoreline and control stormwater along 1,200 feet of shoreline on Bogue Sound. Researchers from the National Oceanic and Atmospheric Administration, NC State University's Center for Marine Sciences and Technology, Duke University's Marine Laboratory, and UNC-Chapel Hill's Institute for Marine Sciences will monitor shoreline stability and erosion control and water quality changes. They also will monitor biologic activity, including fish, macro invertebrates, and plant health.

The project will include stone sills, breakwaters, marsh grass plantings, oyster habitat enhancement, transplanting submerged grasses or enhance existing grass beds, and creation of freshwater wetlands for pre-treatment of stormwater runoff.

NCCF's Living Shorelines program has now completed nearly 20 projects along the coast. They combine stone with a wetland buffer to stabilize the shoreline, provide habitat area and a stormwater buffer, and are intended to offer alternatives to wooden bulkheads or stone riprap walls. With increasing losses of wetlands every year and increasing threats to water quality, wetland restoration and buffer zones become very important.

Morris Landing

Morris Landing, the site of one of last year's living shoreline projects, is developing into a site for public education and recreation. In addition to the shoreline restoration project, a publicly accessible environmental education walkway, platform and pier have been completed. These public structures provide spectacular views of Stump Sound and will include educational displays about coastal plant and animal life

and about the wise use and conservation of the natural resources of this area. Eventually Morris Landing will also boast an oyster-shell recycling station and oyster-shell stockpile area for the NC Division of Marine Fisheries. Holly Ridge has annexed the site to ensure appropriate use of this beautiful site.

North River Farms

The restoration efforts at North River Farms in eastern Carteret County are making significant progress. Almost 550 acres of the farm have been restored to wetlands, and we're planning to restore 230 more acres this year. The current project at North River Farms includes tidal and freshwater wetland floodplains, forested wetlands, and more than 8,000 feet of a new stream.

You'll be able to tour the farm and help with planting this spring and fall, so watch the calendar for these events.

Once these projects are completed, NCCF will have met our restoration goals for half of the farm.

Kids Say Growing Marsh Grass Is Fun

Marsh grass is boring, right? More than 250 students in Carteret, Pitt, New Hanover, and Halifax counties might tell you differently.

These students, representing nine middle and high schools, are learning why smooth cordgrass is actually pretty exciting. The students learned last fall about the ecology of healthy wetlands – their importance to the coast and what we can do to protect them. They are putting that knowledge to use this winter.

The students are conducting experiments using smooth cordgrass, or *Spartina alterniflora*, seeds collected from two coastal sites. The experiments began in January when students planted their seeds. Experimental design will differ depending

on what each classroom chose to study. Different soil types, watering systems, and daily light amounts may affect final data. Students measure and record daily growth rate and plant health, and take care of the seedlings by giving them water and fertilizer.

In March students will move the experimental plants to outdoor nurseries built last fall. They'll also take care of 2,000 more cordgrass plants, delivered by NCCF and funded by the Albemarle-Pamlico National Estuary Program and the National Fish and Wildlife Foundation.

Students this spring will help protect the wetlands they have learned so much about by transplanting their plants from the nursery to a restored wetland site. By helping to create a living shoreline, they will learn that one person is able to make a difference.

NCCF Plans Variety of Projects

The Restoration and Education Team will be working on an array of projects this year. Projects include an oyster restoration project in Stump Sound in Onslow County; two wetland restoration projects at North River Farms in Carteret County and one at Permuda Causeway in Onslow; wetland nursery projects at nine middle and high schools in Carteret, Halifax, New Hanover and Pitt counties; stormwater projects at Hoop Pole Creek in Carteret and at Hammocks Beach State Park in Onslow; and a Living Shoreline project at Carteret Community College in Morehead City.

Students from The Friends School in Wilmington show off wetland plants that they grew at school with help from NCCF.

An All-Star Year for Volunteers

BY RACHAEL CARLYLE
Volunteer Coordinator

MORE THAN 600 VOLUNTEERS

provided more than 11,000 hours of service to the NC Coastal Federation last year. They planted 37,550 trees and wetland plants to restore more than 200 acres. They also used three million oyster larvae and 11,000 bushels of oyster shell to create 1,106 oyster bags to restore over four acres of oyster reef. Finally, volunteers collected almost two tons of trash in six separate clean-up events.

Congratulations to all. We couldn't do what we do without you.

We want to thank the many hard-working and dedicated volunteers who have helped with restoration projects, lobbying, festivals, trails and property stewardship, mailings, maintenance, newsletter delivery, clean-ups, oyster shell recycling, education, the native plant sale, the **COASTKEEPER**® program, in the library and at the reception desk in 2005.

A few volunteers deserve special mention because of their outstanding dedication and hard work. They make up the 2005 Coastal Federation All-Star Team:

- **Over 150 hours:** Beth Moulton and NCCF board member Donna Snead.
- **Over 100 hours:** Dot Reist, Ann White and NCCF board member Jack Spruill.
- **Over 50 hours:** Lynn Lewis and Judi Tyminski
- **Over 25 hours:** Jack Cleaves, NCCF board member Sarah Hamilton, Joe Hardesty, Jim Hardin, Marg Husni, Tim Jones, Mary Lockhart, NCCF board member Lewis Piner, Karen Rooney, and NCCF board member Doug Wakeman.

Busy Winter for Volunteers

The Waterfowl Weekend festival on Harkers Island kicked off the winter volunteer activities the first weekend in December. Ten enthusiastic volunteers

helped at the NCCF booth throughout the weekend, giving stormwater presentations, talking to visitors about oyster restoration and other NCCF projects, handing out educational literature and selling merchandise from our nature shop.

In addition, the first round of plants for the 2006 Native Plant Sale arrived in mid-December from the NC Division of Forest Resources. Thirteen volunteers worked in the cold temperatures and wind to help pot 800 bare root trees.

To wrap up the month, volunteers have been actively maintaining the Patsy Pond trail. Missing interpretive signs and destroyed directional signs have been replaced, and trash and debris have been removed from the visible trail area.

Volunteer Luncheon

Fifty-four volunteers joined five board members and 10 staff for the volunteer appreciation luncheon on Dec. 9. Todd Miller, our executive director, cooked up local oysters and sported his red Santa hat, and Carson Kolodij-Jones, Lauren's new baby, made his volunteer event debut.

Everyone enjoyed a wonderful catered lunch and had plenty of time to mingle and meet other volunteers. Each volunteer received a potted river birch as a small token of our appreciation.



From right: Beth, Mike Jenkins, husband Rick Barreuther, and Richard Naldi help maintain the nature trail at Hoop Pole Creek in Atlantic Beach.

MEET OUR VOLUNTEERS Beth "Bubbles" Moulton

Beth Moulton walked into the Coastal Federation headquarters office four years ago to sign up to participate in a canoe trip. She walked out a volunteer. Long-time Coastal Federation volunteer and friend, Harry Wigmore, convinced Beth that day to be a part of the organization and help as a reception volunteer. She's been volunteering every Thursday afternoon ever since.

When offered an early retirement package from the phone company in Connecticut, both Beth and husband, Rick, didn't hesitate to pack up their belongings and move to North Carolina. They started in Manteo and traveled south along the coast, looking for the perfect place to retire. They found what they were looking for in Carteret County.

Although retired, they find plenty to do to keep them busy. Fishing, clamming, beachcombing and kayaking are just a few of their favorite activities. You can also find Beth working out at the fitness center or volunteering with Meals on Wheels. In addition to helping regularly at the NCCF headquarters office, Beth and Rick have helped with various clean-up events and trail maintenance at Hoop Pole Creek in Atlantic Beach and Huggins Island in Bogue Sound.

Before moving to coastal North Carolina, Beth never really had time to volunteer, but now she's hooked. She said that she feels more of an obligation to fulfill her commitments as a volunteer than any work commitments she's ever had. She feels a need to help preserve the very things that drew her to the area and volunteering at the Coastal Federation has given her those opportunities.

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NCCF Calendar

March 4

NCCF Annual Hoop Pole Creek Clean-Up

Atlantic Beach

Call to Volunteer 252-393-8185

March 23-24

Coastal Resources Commission

Northern Coastal Area

Call to learn more 888-472-6278

March 25

Amazing Oyster Outings

NC Aquarium at Fort Fisher, NC Aquarium at Roanoke Island, Duke University Marine Lab

Call to learn more 252-393-8185

April 20

Members Plant Sale Preview

NCCF headquarters (4pm - 6pm)
Call to learn more 252-393-8185

April 21-22

Native Plant Sale

NCCF headquarters

Call to learn more 252-393-8185

April 21-23

Crystal Coast Earth Day Weekend

Carteret County

Call to learn more 252-393-8185

June 1

"State of the Coast Report" Release

June

Barrier Island Ecology Program

Cape Lookout National Seashore
June 1, 6, 8, 13, 15, 20, 27, 29

Call to learn more 252-393-8185

June 22-23

Coastal Resources Commission

Inland Coastal Area

Call to learn more 888-472-6278

July

Barrier Island Ecology Program

Cape Lookout National Seashore
July 4, 6, 11, 13, 18, 20, 25, 27

Call to learn more 252-393-8185

Encore for Oysters: Bringing Back A Natural Resource

PUBLIC FORUMS SET FOR MARCH 25

What's being done to improve water quality in North Carolina? What is the state's plan for building oyster hatcheries? How you can grow oysters under your dock? To find out answers to these and other questions about oysters, join the NC Coastal Federation and other partner organizations for three regional public forums celebrating the oyster. Through poster displays, field trips, and presentations, participants will learn about some exciting oyster projects taking place along the NC coast.

Oysters are a vital part of North Carolina's coastal ecosystems: they provide food and valuable marine habitat, and they filter pollutants from our coastal waters. Because of their role as a keystone species in the estuary environment, the health of the oyster population can be considered a reflection of the health of the ecosystem.

The public forums will celebrate these values of the amazing oyster and feature ongoing regional projects working to bring the Eastern Oyster back. The forums will take place simultaneously on Saturday, March 25, at the NC Aquariums at Fort Fisher and Roanoke Island, and at the Duke University Marine Lab in Beaufort. The events will start with morning presentations, include lunchtime displays, and will feature a choice of afternoon field trips.

Participants will learn about a variety of initiatives and projects focused on water quality and oysters, including wetland restoration projects, stormwater control initiatives, oyster reef restoration projects, and updates on shell recycling and oyster gardening just to name a few. Depending on the region, field trips can include visiting a living shoreline, oyster and wetland restoration projects, stormwater mediation projects, and a local oyster hatchery.

The three forums are open to the public. Space is limited and pre-registration is required. For a detailed agenda, field trip descriptions, and registration information go to www.nccoast.org or call 252-393 8185.

North Carolina Sea Grant provided funding for the forums. Other groups and agencies that helped to organize them include: the North Carolina Aquariums, NC National Estuarine Research Reserve, NC Department of Environment and Natural Resources, NC Clean Water Management Trust Fund, Albemarle-Pamlico National Estuarine Program, Environmental Defense, The Nature Conservancy, Duke Marine Lab and UNC Wilmington.

Thank You!

The North Carolina Coastal Federation is grateful to all its donors. The following have donated at the recognition level since the last newsletter:

John L. and Christine D. Almeida, Arrow Electrics, Mr. and Mrs. Bill Blount, Scott Bradley, Mary Ann Bush, Robert Cardini, Carlson Family Foundation, Joel and Rachael Carlyle, Russell Clayton, Connecting Point Computer Center, Margaret Couch and Tod Serfass, Susan and Robert Crenshaw, Ronald and Christina Cronogue, ECR Incorporated, Darrin Ficke, Dr. and Mrs. Charlie Godwin, John C. Gudger, MD, William C. Hall, The Ella Ann L. and Frank B. Holding Foundation, Olivia Britton Holding, Kathryn B. Howd, Margaret Husni, Dr. and Mrs. William Kelly, Mr. and Mrs. Edward E. Lea, Jr., Mr. and Mrs. James S. Long, Susan Lupton and Bob Schall, Dr. and Mrs. Charles Lynch, Jr., Jackie and Omar Mardan, Dot and Larry McGee, Dr. Bob Parr, Mr. and Mrs. James L.

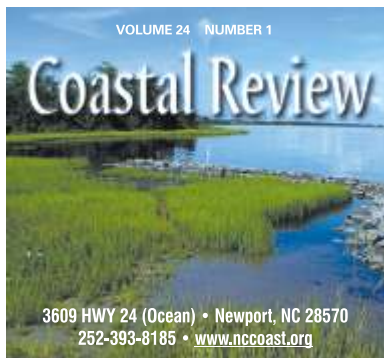
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In Honor of:

Bill Maguire: Cheranne Bennett; **Calvin Sawyer:** Mr. and Mrs. George Sawyer; **Lewis Piner and Family:** Carol Barbour; **Mr. and Mrs. Terry Hutchens:** Cindy and Robert Pike; **Mrs. Bernice Rice:** Chris and Jim Rice; **Ms. Lydia Newman:** Fran Harris; **Robert and Elaine Ballie:** David and Heather Ballie; **Robert and Carol Crawford:** Terrence Crawford; Ruffin Slater: Allison Murphy; **Tom and Pam Vogler:** Scott Sellers and Erin Ritch; **Trish Marsik:** Michael Marsik.

In Memory of:

Dr. David Marcott: Donald and Lalla Harley; **Dr. William Meyer:** Pediatric Dept. Dean Riverview Clinic, Linda and Jim Abramson, Cecilia Groves and Rob Russell, Col. and Mrs. K.E. Roth, UNC-W Student Health Center Staff.



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