

Coastal Review

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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OFFICE ASSISTANTS Rose Rundell: roser@nccoast.org Emily Farmer: emilyf@nccoast.org DEVELOPMENT DIRECTOR Sally Steele: sallys@nccoast.org POLICY DIRECTOR Jim Stephenson: jims@nccoast.org

Northeast

CAPE HATTERAS COASTKEEPER Jan DeBlieu:

hatteraskeeper@nccoast.org

COASTAL OUTREACH SPECIALIST Sara Hallas: sarajh@nccoast.org

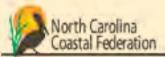
Central

COASTAL OUTREACH SPECIALIST Sarah Phillips: sarahp@nccoast.org CAPE LOOKOUT COASTKEEPER Frank Tursi: lookoutkeeper@nccoast.org COASTAL SCIENTIST Lexia Weaver: lexiaw@nccoast.org

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CAPE FEAR COASTKEEPER Mike Giles:

capefearcoastkeeper@nccoast.org SENIOR COASTAL SCIENTIST Tracy Skrabal: tracys@nccoast.org COASTAL OUTREACH SPECIALIST Ted Wilgis: tedw@nccoast.org



3609 Highway 24 (Ocean), Newport, NC 28570 Phone: 252-393-8185 • Fax: 252-393-7508 E-Mail: nccf@nccoast.org • www.nccoast.org

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

member: Earth Share

LAYOUT/DESIGN: by 8 Dot Graphics COVER PHOTO: Photo taken 10/19/08 near the setting of the film 'Nights in Rodanthe.' By Mike Halminski • photoblog.michaelhalminski.com

DIRECTOR'S LETTER

10 Steps Our New Governor Should Take to Protect the Coast

Here are the top ten things our new governor needs to do on behalf of the N.C. coast and its people:

- 1. Put an environmentalist in charge of protecting the coast. In speaking about his appointment of Bill Holman as secretary of the N.C. Department of the Environment and Natural Resources in 1999, former Gov. Jim Hunt says: "I picked the first real environmentalist to head the environmental department in the history of state government." The next governor should follow Hunt's example.
- 2. Appoint good commissioners who don't undercut environmental agencies. The litmus test for any appointments to regulatory commissions should be a pledge that they work on behalf of the public's interest and the state's environment, and never return political favors or promote private agendas.
- 3. Help coastal agencies do their jobs. The governor's annual budget requests to the N.C. General Assembly should be adequate so that coastal environmental agencies have a fighting chance to carry out their existing legislative mandates. The new administration should constantly shield agencies from political interference in their day-to-day decision-making.
- 4. Declare war on stormwater and stimulate the coastal economy. The Civilian Conservation Core, called Franklin Roosevelt's Tree Army, is credited with renewing the nation's decimated forests between 1933 and 1942. It also helped stimulate a depressed economy. The new governor should enlist an army of landowners and contractors to renew coastal water quality by getting legislators to provide financial incentives to install thousands of stormwater reduction measures all over the coast. Channeling significant funding through the established Community Conservation Assistance Program would be a great way to rekindle the coastal economy by putting the private sector to work cleaning up our coastal waters.
- 5. Promote Low Impact Development (LID). Encourage LID so that it becomes the normal approach to coastal development by promoting its merits and removing regulatory obstacles at the state and local government levels.
- **6.** Use trends in shellfish and swimming water quality as the environmental indicators to gauge

the effectiveness of coastal management programs. Put a laser focus on protecting and enhancing shellfish and swimming waters along our coast. Success of environmental programs should be measured by their ability to arrest further declines in water quality and to move water quality trends in positive directions.

- **7.** Put "energy" in the cabinet. Chart a clean, renewable and diversified energy future for the N.C. coast. The governor should seek to establish a cabinet-level "energy" position to coordinate and promote state energy policy in environmentally sustainable and climate-friendly ways.
- 8. Shore up beach management policies and regulations. Public oceanfront beaches should never be sacrificed to protect private oceanfront property. The governor should reaffirm this long-standing state policy by providing the leadership necessary to adopt forward-looking oceanfront management initiatives that will be effective in an era of rising sea levels and more intense storm activity.
- 9. Promote living shorelines. Maryland just passed a new law that mandates the use of living shorelines wherever they are feasible to deal with erosion along the estuarine shoreline. Meanwhile, North Carolina still allows for this prime fisheries habitat to be walled off with vertical bulkheads, even when more natural approaches to controlling erosion are practical. The governor should insist that North Carolina follow Maryland's lead and go on to become a regional leader in this practice.
- 10. Promote green and efficient infrastructure. Push for expanded trust fund budgets and disaster mitigation funds so that coastal lands and easements can be purchased to protect and restore water quality, provide for public access and shield development from dangerous storm surges and winds. Guide financial investments in new infrastructure (sewers, highways, etc.) into those communities that effectively promote land use patterns that are efficient to service and designed to protect sensitive environmental areas.

The N.C. Coastal Federation is ready to work with the new governor and administration in achieving this agenda.

Toole Mille

Turning the Tide - Friends of the Coast Campaign

Over the past 26 years the N.C. Coastal Federation has worked with thousands of citizens and hundreds of other environmental groups to bring about better management of coastal resources. But the Federation's current level of programming wasn't keeping pace with the increased demands for our work. The Federation Board of Directors recognized that if we expected to turn the tide on coastal degradation and protect our coastal environment, we must expand our programs and strengthen our organization.

For this reason, the board and staff devised a five-year plan to significantly strengthen the Federation to meet these challenges and initiated Turning the Tide: Friends of the Coast Campaign in 2007 to fund this plan.

Our Campaign goal is \$3 million - \$1 million for an endowment to ensure that our work continues; \$1 million for a reserve fund so we can take advantage of new initiatives or weather unplanned challenges; and \$1 million to expand programs coast-wide.

Because of the early success of the campaign, we've already added three new staff positions this year and have begun expanding programs. Today, a full-time staff of 12 professionals work from the federation's headquarters in Ocean, three full-time staff members work from rented offices in Wilmington and three staff members work from a recently purchased office in Manteo.

To better localize our efforts, our regional offices along the northeastern, central and southeastern coasts have been restructured to offer similar programs that combine restoration, education and outreach. The goal of each office is to engage people in issues close to home, to involve them in decision-making and to provide them with opportunities to learn about environmental issues and hands-on work to restore degraded habitats.

In the coming weeks members will receive a request to make a campaign donation. To-date, we have raised more than \$2,500,000. But we've not yet reached our goal. If you've made your gift, thank you. If not, please consider making one today. Please join these good friends who are helping the federation find the balance that will provide an environmental legacy for future generations.

DONORS

500,000

Anonymous

200,000 to 499,999

North Carolina GlaxoSmithKline Foundation Z. Smith Reynolds Foundation Anonymous

100,000 to 199,999

Cannon Foundation Anonymous (2)

50,000 to 99,999

Harold H. Bate Foundation **Boeckman Foundation Dickson Foundation** First Citizens Bank Olivia Holding Kathryn Howd Park Foundation David and Cary Paynter Wal-Mart

25,000 to 49,999

Mary Flagler Cary Charitable Trust Hillsdale Fund Ella Ann L. & Frank B. Holding Foundation Julian Price Family Foundation Raleigh Metro Magazine Anonymous (1)

10,000 to 24,999

Dick Bierly Charles Blanchard Blumenthal Foundation Laura Edwards Susan Edwards Ernie and Lynne Foster Pricey Harrison **RP** Holding Foundation Dot and Larry McGee Todd Miller and Julie Shambaugh John Runkle and Nancy Dole Ralph and Ginger Webster Anonymous (2)



Balancing growth with the environment is difficult.



...understanding why we have to is not.

5,000 to 9,999

The Coastal Cohorts (Don Dixon, Bland Simpson, Jim Wann) Irv and Nicki Hooper Jackie and Omar Mardan Ron and Diane McCord Billy Olive Jane Preyer Sally Steele Melanie Taylor John Wilson, Jr. Anonymous (9)

Total to-date \$2,522,619



Our Coastkeepers[©] are forever trying to explain to people what it is they do. Telling

someone you're a Coastkeeper@ is usually followed by quizzical nods, blanks stares or wrinkled brows. Or some combination of the three. Then, comes the question, usually politely posed and framed in various iterations, but always translated thusly: Huh?

Even after six years on the job as our Cape Lookout Coastkeeper©, Frank Tursi doesn't have an easy answer. "You would think that after all this time I would have the quick, two-sentence description at the ready," he says. "Unfortunately, it ain't that easy."

The boats also tend to fool people. Each of the three Coastkeepers® has one. People hear that and conjure up images of idyllic days cruising our state's coastal creeks and sounds. Even Mike Giles was fooled when he became the Cape Fear keeper in 2006. "I

Mike Giles leads a water tour of sandbags on Figure 8 Island.

envisioned days spent on sparkling blue waters and exploring out-of-the-way beaches and tidal creeks," he remembers. "That soon gave way to the stark truth – a lot of work and issues to address."

So here is the best summation of coastkeeping that our three practitioners can come up with: The job requires being part cop, part scientist, part lawyer, part PR specialist, part community organizer and part schmoozer. To be good at it means knowing how to negotiate the maze of environmental rules and work with state and federal agencies, local governments, community groups and, yes, developers and builders.

Taking stands at public meetings or in the media, blowing the whistle on violators and the other in-your-face aspects of the job also require something of a thick skin. Ted Wilgis, our first Coastkeeper© in 2000 and now one of our coastal outreach specialists, had this to say once about the keeper job: "I never got used to being called an" He referred to a part of the anatomy where it's said the sun

don't shine.

"We are advocates," says Jan DeBlieu, our Cape Hatteras Coastkeeper©. "We do what it takes to protect our coastal waters. But while whistleblowing and lawsuits are important tools, I think we're most effective when we form partnerships and work with people."

The illegal channel into Whalehead Harbor is clearly shown in this

aerial photo.

Coastkeeping with a Twist

The N.C. Coastal Federation received a trademark license in 2000 from the Waterkeepers' Alliance, a national umbrella group, for our Coastkeeper® program. We're the only group that has a license for a state's entire coastline. The truth is, back then, we didn't really know what our Coastkeepers@ would be doing. Even now, the job descriptions are fuzzy enough to allow each keeper to tailor the job to fit his or her personality and skills.

Clearly, though, we do things differently than other licensed groups. They tend to be smaller than the federation and focused on one water body. Most employ only one keeper who spends much of his time enforcing

permits. At the alliance's annual conference, the keepers gather and tend to compare notes about the violators they've sued or otherwise busted since the last conference. It's a bulldog image that most keepers cultivate and relish.

While they can snarl, our Coastkeepers® also have a less menacing side. They help build oyster reefs and rain gardens; they help buy land and restore habitat; they lobby legislators to push for better environmental policies; and they work with local governments, state agencies and community groups on a variety of projects intended to protect water quality.

"We probably do have a model that's not so narrowly focused on enforcement and lawsuits," said Todd Miller, the federation's executive director. "To be effective advocates. our Coastkeepers© have to do more than just react to individual violations. They have to be proactive. They have to work strategically in their communities looking for ways to bring people together to solve some of the very difficult water-quality problems we face. I think that's as important, if not more so, than filing a lawsuit."

The White Oak River is a good example of how the approach can lead to unforeseen dividends. While widening a highway in Carteret County, the N.C. Department of Transportation (DOT) built storm drains that sent polluted highway runoff into the river. Frank complained publically at the time that the runoff would pollute adjacent shellfish waters. Eighteen months later, the state closed those waters because of bacterial pollution. "We could have sued DOT," Frank said. "Instead, we asked them to join us in working towards a solution."

The federation, DOT and Cedar Point, a small town that borders that portion of the river, received a federal grant to study all potential sources of bacteria in the lower White Oak. Frank headed the two-year project that will end early next year. (see Page 11 for more details). DOT has committed to cleaning up its storm drains, other sources of bacteria have been identified and solutions will be recommended. Mike is heading a similar study for the Lockwood Folly River in Brunswick County.

The White Oak study has had added benefits. Because of it, Frank forged a close relationship with town officials in Cedar Point. They now ask his advice on develop-



Frank Tursi, second from right, organized volunteers to clean up an island in Bogue Sound.

ment projects, and they wouldn't approve a site plan for a proposed Wal-mart until Frank worked with company engineers to improve the stormwater plan. The company agreed to control ten times more runoff than state rules would have required.

"If we had sued, we'd have spent tens of thousands of dollars and would probably still be in court and the outcome would be uncertain," Frank said. "Instead, we're working toward long-term solutions for fixing the problems ailing the river."

Coastkeepers Bite, Too

But like any good keeper, at times ours also bite. So approach cautiously. They answer hundreds of phone calls each year from people who are trying to fix a problem or want to report one. Jan received a call in 2004 from someone who told her a boat channel had mysteriously appeared at the old Whalehead Club in Corolla on the Currituck Banks. For years county officials had been trying to get dredging permits for a channel into Whalehead Harbor. Jan called federal officials, who launched an investigation that found that workers with the N.C. Division of Ferries had used a barge to illegally kick open the channel. Four division officials were convicted on federal charges.

Our keepers also review and comment on dozens of state or federal each year, usually trying to work with the agencies or the developers to fix problems. "But sometimes the regulatory process doesn't work and you have to legally challenge permits or sue," Frank said.

Jan and Frank challenged two stormwater permits last year. Jan won her challenge when the state's Environmental Management Commission revoked the permit for a subdivision on Hatteras Island. Frank negotiated a settlement with the developers that will lead to better stormwater controls.

Often the job requires just good, old-fashioned gumshoe detective work. Almost as soon as he put on his Coastkeeper© shirt in 2006, Mike was called out on a sewer spill on the Cape Fear River. A major sewer line had broken. A day on the river with the media quickly manifested into hours of desk-bound research that uncovered Wilmington's 20 years of neglect and poor management of its sewer infrastructure. The lines continued to break, and Mike fielded hundreds of phone calls and e-mails from irate citizens. That began a grassroots citizen action that galvanized the community, elected officials and state and federal agencies into action that was long overdue. The city agreed to fix its sewer lines

Let's get back, then, to the original question: What's a Coastkeeper©? Mike probably sums it up best: "All these issues are what make me arrive at work each day with a smile, keen curiosity, a deep satisfaction that I am making a difference and the knowledge that in the next instant I can be in the air taking photos or deep in a tidal creek investigating a citizen complaint. Every day is different and challenging, which is why I am a Coastkeeper©."

After Tough Fight, Better Coastal Stormwater Rules Become Law

After a hard fight in the N.C. General Assembly this summer, new rules to control polluted runoff along the coast finally took affect Oct. 1.

"For the first time in more than 20 years, there will be science-based standards in place for protecting shellfish waters and recreational fishing waters - a major achievement," said Jim Stephenson, the N.C. Coastal Federation's policy director and lobbyist.

The main features of the new rules require most new development to keep the stormwater it creates onsite and prevent new discharges of runoff to shellfish waters, the most sensitive waters in the state (see chart on page 7 for details). The law also prohibits new or expanded stormwater conveyances, including ditches, pipes and culverts, from discharging into shellfish waters.

Stormwater is rain that runs off from developed areas, such as roads, roofs, parking lots and driveways. The polluted runoff carries bacteria and assorted chemicals to our rivers and sounds and is now the primary cause of 90 percent of all contaminated shellfish beds. It can pollute our coastal water and trigger hazardous flash flooding. More than 100,000 acres of shellfishing waters along our coast are either permanently closed or close after moderate rains.

The new coastal stormwater program law is similar to the Phase 2 program that the General Assembly passed in 2006. That law set stringent standards in rapidly growing cities and surrounding counties, including Brunswick, New Hanover and

Onslow. The new coastal stormwater law applies these standards and more to all 20 coastal counties.

The new law contains several enhancements that go beyond the Phase 2



New rules are designed to prevent further closures of the state's shellfish waters.

law, including a 50-foot vegetated buffer from mean high water, new permits for development with more than 10,000 square feet of impervious surface (about 1/4 of acre) and exclusion of "coastal wetlands" from the built-upon area calculation. (See chart on opposite page)

Developers will have more stormwater management options under the new law. Wet detention ponds will be allowed within a half-mile of shellfish waters. Ponds were previously prohibited because they collect stormwater and discharge through a pipe or culvert when full. The new law requires a secondary stormwater device to be used with a pond to treat the inevitable discharge.

HOW A RULE BECAME A LAW

The state has had rules to control stormwater along the coast since the 1980s. The N.C. Division of Water Quality (DWQ) reviewed them in 2005 and concluded that they have failed to protect the quality of our water. In response, the N.C. Environmental Management Commission (EMC) approved science-

> based rules in January 2008 that were the subject of four wellattended public hearings along the coast last year.

Some developers and coastal counties sought to overturn the rules by appealing to the General Assembly. Bills to disapprove the rules were introduced in the state House and Senate. And several counties hired lobbyists to help make their case.

To support the new rules, the federation held a lobby day in

Raleigh on June 4 that attracted more than 300 people. Busloads of citizens came from Wilmington, Morehead City and Manteo to lobby their legislators. We also dedicated our 2008 State of the Coast Report to polluted stormwater and the devastating ecological impact it has on creeks and sounds.

A few weeks before the legislative session began in May, the General Assembly formed a working group to hammer out a compromise. The group included environmental groups, local governments, developers, DWQ and anyone else who wanted to participate. Over the course of eight meetings, the group fashioned an agreeable compromise.

The bill containing that compromise passed the Senate (48-0) and House (105-4) with no amendments.

Quick Reference Comparison Chart · Changes to the Coastal Stormwater Rules SESSION LAW 2008-211 · SENATE BILL 1967 · EFFECTIVE OCT. 1, 2008

Includes ALL Areas within the 20 Coastal Counties

	EXISTING REQUIREMENTS	REQUIREMENTS AS OF OCT. 1, 2008
Threshold for Permit Coverage for Any and All Development	Activities that require a CAMA major permit or an Erosion & Sedimentation Control Plan (sites that disturb one acre or greater)	Activities that require a CAMA major permit or an Erosion & Sedimentation Control Plan (sites that disturb one acre or greater)
Threshold for Permit Coverage for Non-Residential Development	Same coverage requirements as above.	In addition to the coverage requirements above, activities that add more than 10,000 square feet of built upon area.
Vegetative Setback Requirement – Re-development	30 feet from surface waters (for Low Density projects only)	30 feet from surface waters for redevelopment projects (for both Low and High Density projects)
Vegetative Setback Requirement — New development	30 feet from surface waters (for Low Density projects only)	50 feet from surface waters for new development projects (for both Low and High Density projects)
Wetlands & Impervious Calculations	Portions of wetlands may be included in the calculations to determine the built upon area percentage per DWQ Policy (Oct. 5, 2006)	No CAMA-jurisdictional wetlands areas may be included in the calculations to determine the built upon area percentage. All other wetlands can be included in the calculations.

Within the 20 Coastal Counties and within ½ Mile of Shellfishina Waters (SA waters) & within 575 ft. of ORW

<u> </u>			
	EXISTING REQUIREMENTS	NEW REQUIREMENTS	
Low Density Threshold *	Built upon area of 25% or less	Built upon area of 12% or less (Maximum built upon area of 25% for ORW)	
Stormwater Control Requirement for High Density Projects	Control and treat the runoff from the first 1.5 inches of rainfall.	Control and treat runoff generated by 1.5 inches of rainfall –OR– the difference in runoff from the pre and post development conditions for the 1-year, 24-hour storm (whichever is greater*)	
Discharge Requirements	No discharge for the first 1.5 inches of rainfall	No new points of discharge for the design storm (see above)	
Types of Stormwater Controls	Infiltration is the only control allowed	All types of stormwater controls are allowed, with some restrictions	

Within the 20 Coastal Counties and NOT within $\frac{1}{2}$ Mile of Shellfishing Waters (non-SA waters)

	EXISTING REQUIREMENTS	NEW REQUIREMENTS
Low Density Threshold *	Built upon area of 30% or less	Built upon area of 24% or less
Stormwater Control Requirement for High Density Projects	Control the runoff generated by 1.0 inches of rainfall	Store, control and treat runoff generated by 1.5 inches of rainfall

Provisions for Limited Residential Development ONLY:

- Residential development activities that (1) disturb less than one acre of land; (2) are located within ½ mile of and draining to shellfishing waters; (3) have a built upon area ater than 12%; and (4) will add more than 10,000 uare feet of built area, must obtain a one-time nonrenewable stormwater management permit. Stormwater runoff shall be managed using any one of the following:
 - Install rain cisterns to collect and use rooftop runoff (from 1.5 inches of rainfall) and permeable pavement.
 - Install a rain garden for rooftop runoff (from 1.5 inches of rainfall) and permeable pavement.
 - Install any other type of stormwater BMP (ex. infiltration in sandy soils) to control and treat runoff (from 1.5 inches of rainfall).

^{*} PLEASE NOTE: The new low density thresholds and control requirements for high density projects are the same as those that are now in place in Brunswick, New Hanover and Onslow counties as a result of the Phase 2 Session Law.

OFFSHORE DRILLING MORATORIUM EXPIRES, FOR NOW

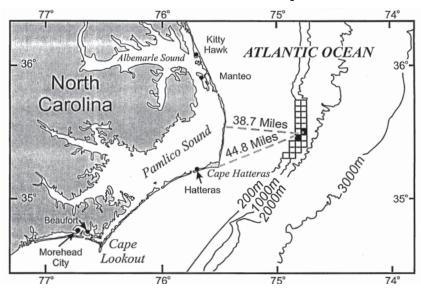
Bowing to consumer frenzy about skyrocketing summer gas prices, the U.S. Congress ended the moratorium on the sale of offshore drilling for oil and natural gas. Congress passed a stopgap government spending bill without the moratorium that has been a staple provision of the annual appropriations bills since 1981. North Carolina was not added to the congressional moratorium until a decade later.

Before throwing in the towel, the U.S. House of Representatives passed a measure to allow drilling on the outer continental shelf 100 miles from shore. The bill included a 50-mile buffer or no-drill zone, but allowed drilling between 50 and 100 miles if a state passed a law to allow it. The House bill also eliminated tax subsidies to oil companies and used the proceeds to develop renewable energy. The U.S. Senate did not take up the legislation due to the financial meltdown on Wall Street.

Congressional lawmakers decided to wait until after the November election before revisiting the issue of offshore drilling. As it stands now, drilling could be allowed as close as three miles from the Atlantic and Pacific shorelines.

An Elon University poll showed that 69 percent of North Carolina adults favor offshore drilling. The same poll found that 14 percent of those surveyed think offshore drilling would result in lower gas pricing within the next year. An additional 54 percent expected lower gas prices within one to 10 years.

The U.S. Energy Information Administration forecasts that opening up new areas of the Outer Continental Shelf to drilling would not affect crude oil and natural gas production or prices until 2030. Hunter Bacot, the director of Elon University Poll, told the Associated Press, "It's being made into an issue and it's not completely understood [by the public]. It sounds wonderful, but when you get down to it, there's a big



As it stands now, drilling could be allowed as close as three miles from the Atlantic and Pacific shorelines.

disjoint between perception and reality."

Concerns about offshore drilling are not new to North Carolina. In 1981 oil companies began purchasing leases in an area about 45 miles off Cape Hatteras, known as the Manteo Exploration Unit, and planned to sink a test well. A citizens group known as LegaSea formed to fight the project. Jan DeBlieu, now the federation's Cape Hatteras Coastkeeper®, was active in that fight. Faced with growing public and political opposition, the companies gave up the idea of the test well and eventually allowed the leases to lapse.

The N.C. Coastal Federation has historically been opposed to drilling offshore. We haven't changed our mind. Though the direct effects of drilling - spills, toxic waste, hurricane damage - are real, we agree with proponents that they can probably be minimized. Our greatest fear has always been what happens here on land. Any oil or natural gas found on the continental shelf has to come ashore. It has to refined, stored, shipped. That requires a massive industrial complex of pipelines, refineries, storage

Mobil and Chevron leased an area on the edge of the continental shelf in the late 1980s in hopes of drilling an exploratory well.

tanks and shipping terminals that will inevitably change the land, pollute the water and transform our lifestyles.

Some of us here have been to Baton Rouge, Louisiana and Galveston, Texas. You can't visit those oil capitals without concluding that oil production is a smelly, dirty, ugly business. Texas health officials, for instance, recently issued a warning about eating speckled trout caught in Galveston Bay, which is ringed with refineries and storage tanks. The fish are loaded with PCBs. Do we want that happening here?

We understand, though, that merely being opposed to offshore drilling is not enough. Energy and our increasing dependence on foreign oil are major issues America faces. So is global warming. The continued burning of fossil fuels will only worsen the devastating effects we face here on the N.C. coast.

"It's irresponsible to oppose drilling without offering alternatives," explains Dick Bierly, the federation's vice president. Dick has taken it upon himself to fashion a holistic energy policy for the federation that will include policy recommendations to support alternative sources. We're not there yet, but hope soon to be.

Stormwater, Oysters, Global Warming Subjects of New State Laws

The following is a brief description of environmental laws significant to the coast that were passed by the N.C. General Assembly in 2008.

Stormwater Management

- Improve Coastal Stormwater Management (SB 1967) – Overhauls the coastal stormwater program to better protect water quality (for more information, see article on pages 6-7).
- Temporary Limitation on Additional Rule Making (SB 845) - Prohibits the Environmental Management Commission from starting new rulemaking on coastal stormwater in shellfish (SA) and outstanding resource waters (ORW) for three years.
- Permitless Stormwater Study (HB 2431) -Directs the legislative Environmental Review Commission to study the feasibility of implementing a stormwater management program without requiring the issuance of a state permit before construction.
- Stormwater Runoff from Bridges (HB 2436) – Directs the N.C. Department of Transportation to conduct a pilot study on 50 bridges throughout the state for the installation of various types of stormwater detention, collection and filtering systems during new bridge construction over waterways.

Oyster Restoration

- Oyster Sanctuaries (HB 2436) Provides \$2 million to establish six staff positions for the Oyster Sanctuary Program in the N.C. Division of Marine Fisheries (DMF). Also provides money for the equipment, operations and materials needed to run the program.
- Oyster Research Hatchery (HB 2436) Authorizes \$4.3 million in borrowing for a research-scale oyster hatchery in the Division of Marine Fisheries. The hatchery will be at the Center for Marine Science at UNC Wilmington.



• Blue Crab and Shellfish Research Program (SB 845) – Expands and renames the Blue Crab Research Program, administered by the North Carolina Sea Grant Program. Money appropriated may be used for research on blue crabs, oysters, scallops, clams and other shellfish.

Climate Change

- Extend Climate Change Commission (HB 2529) - Extends the Legislative Commission on Global Climate Change and requires a final report by Oct. 1, 2009.
- Wind Turbines in the Sounds Study (HB 2436) – Directs the University of North Carolina to study the feasibility of establishing wind turbines in the Pamlico and Albemarle sounds, including the feasibility and potential benefits of building wind turbines with artificial oyster reefs.
- Clean Cars Study (HB 2431) Directs the legislative N.C. Environmental Review Commission to study the costs and benefits of adopting California's motor vehicle emissions standards in North Carolina.

Coastal Hazards

• Study Solvency of the Beach Plan (HB 2431) - Creates a study committee to evaluate the ability of the N.C. Insurance Underwriting Association (Beach Plan) to respond financially to a significant hurricane in the state.

• Study Hazard Disclosures in Coastal Real Estate Transactions (HB 2431) - Directs the legislative Environmental Review Commission to study issues related to hazard disclosures in coastal real estate transactions.

Land Conservation/Restoration Legislation

- Wildlife Land Property Tax Changes (HB 1889) - Establishes that tracts managed for wildlife conservation of more than 20 acres be eligible for the lower present-use value tax rate that agricultural, horticultural and forestry land currently enjoy.
- Promote Private Compensatory Mitigation (SB 1885) - Requires developers to use private wetlands mitigation banks where available instead of the state's Ecosystem Enhancement Program when performing required wetlands mitigation.
- · Land for Tomorrow and Land Conservation (HB 2436) - Authorizes borrowing \$50 million to buy state park lands and conservation areas.

Additional Legislation

- · Improve Drought Preparedness and Response (HB 2499) – Includes better reporting of agricultural water use of 10,000 gallons a day or more; weekly reporting by water systems of water use during extreme or exceptional drought; a streamlined process for emergency drought response; conditions on state grant and loan funding to promote conservation and efficiency; and rulemaking to promote water reuse and gray water use during droughts.
- Study Consolidation of Environmental Regulatory Programs (HB 2431) - Directs the legislative Environmental Review Commission to study the desirability of abolishing existing environmental regulatory programs and replacing them with a new, full-time Environmental Management Commission modeled on the N.C. Utilities Commission.



LIVING SHORELINE PLANNED AT JOCKEY'S RIDGE

Coastal Scientist Erin Fleckenstein. local students and volunteers will be busy working at Jockey's Ridge State Park, where the federation and its partners plan to build a living shoreline on the Roanoke Sound. Roughly an acre of salt marsh cordgrass will be restored along 300 feet of shoreline. This planted marsh will enhance existing beds of sea grasses, adjacent salt marshes and upland shrub thickets and maritime forests. In turn, the upland vegetation will protect the new wetland grasses from blowing sand. Created shell mounds will buffer the marsh from waves. Pieces of the natural system will work together to support finfish, crabs and other estuarine creatures. Staff from The Nature Conservancy and the park are partners on the project.

The restoration site at Jockey's Ridge will also serve as an outdoor classroom for local schools. Coastal Outreach Specialist Sara Hallas is working with eighth-grade classes at First Flight Middle School in Kill Devil Hills as part of the federation's student wetland nursery program. Students will grow wetland grasses in their classrooms from

locally harvested seeds. In the spring they'll plant the grasses they've grown, supplemented by several thousand other sprigs, at the site and help build the new oyster reef. Education programs at the park will be expanded to describe how to protect and restore fisheries habitats.

This project is the first of several planned for the park. Money is provided by the Southeast Aquatic Resources Partnership and the U.S. Fish and Wildlife Service.

GRANTS WILL SUPPORT HYDE PROJECT TO RESTORE HYDROLOGY

A large-scale project on the Albemarle-Pamlico peninsula that's been in the works for years moved closer to reality recently with the award of two grants to help with hydrological restoration on private farm land.

The N.C. Clean Water Management Trust

Roughly an acre of salt marsh cordgrass will be restored along 300 feet of shoreline at Jockey's Ridge State Park. This planted marsh will enhance existing beds of sea grasses, adjacent salt marshes and upland shrub thickets and maritime forests.

Fund in September made money available to study the effects of redirecting stormwater, which is currently pumped into Pamlico Sound, back into its natural drainage pattern, which flows north to the Alligator River. The existing drainage system is a vestige of the 1970s and '80s, when ditches were built across the peninsula to achieve a uniform water table and make land suitable for crops. Now farmers would like to hold some water for irrigation in less productive fields. Their interest opened a door for the possibility of restoring the natural hydrology in the county's northeast corner. Diverting the stormwater from Pamlico Sound would also improve oyster habitat just off the Hyde County.

Using the state grant, engineers from N.C. State University will develop a model to see if it's possible to send drainage from farm fields back into its original watershed without overwhelming the swamp forests and marshes in the Alligator River National Wildlife Refuge or causing other problems.

The federation has also received a grant from the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program to conduct restoration work on private land on



This will be the site of a living shoreline project at Jockey's Ridge State Park in Dare County.

the Albemarle-Pamlico peninsula. The money will be used for hydrologic restoration in Hyde, following the recommendations of the engineering study.

LOW IMPACT DEVELOPMENT

Federation, Manteo Work on LID Atlas, Spreadsheet

On the other side of Roanoke Sound, the federation's northeast regional staff has worked with Manteo staff and local landowners to develop an atlas detailing the type, size and estimated cost of methods and devices to control stormwater. Fleckenstein and town planners are now working to implement the retrofits with the help of the state Coastal Conservation Assistance Program (CCAP), locally administered by the Dare County Soil and Water Conservation District. The program makes grants available for the installation of retrofit low impact development (LID) features on public and private properties.

Another way to encourage the use of LID features is by simplifying the work necessary to design and obtain permits for them. A



MORE THAN 100 ATTEND OPEN HOUSE FOR MANTEO OFFICE

More than 100 people celebrated the completion of NCCF's Manteo Field Office September 15 at an open house that featured a tour of the building and grounds and a Chamber of Commerce ribbon cutting. The remodeled building is on Grenville Street just off U.S. 64, next to town property where a wetlands park will be built to treat stormwater.

The 7,500-square-foot lot has been outfitted with pervious pavement for parking, a rain barrel and two rain gardens. A cistern will soon be

Federation staff, volunteers and members cut the ribbon for the new Northeast Region office in Manteo.

installed. These low impact development (LID) features have neatly captured all runoff from heavy rains in August and September, including the downpours from Tropical Storm Hannah.

The grounds have signs explaining the LID features. Brochures about the federation's programs and building techniques for controlling stormwater are available in the office, which is open on weekdays from 8:30 a.m. to 5 p.m.

spreadsheet model, called LID-EZ, has been designed by Withers & Ravenel, an engineering firm in Raleigh, and engineers from N.C. State University's Department of Biological and Agricultural Engineering. This tool can be used to locate, permit and build stormwater infiltration features. The spreadsheet model was demonstrated for local planners, developers, engineers and architects at a workshop in Manteo in July. Similar models have been developed for Wilmington, Cary and New Hanover and Brunswick counties.

Manteo paid for the spreadsheet workshop and the development of the stormwater atlas with a grant from the N.C. Clean Water Management Trust Fund.

COASTKEEPER

When North Carolinians debate whether to drill offshore for oil and natural gas, their attention focuses on one area in particular - a treacherous region of ocean bottom 40 miles east of Hatteras Island that fishermen call The Point. (See related story, page 8.) That's where Mobil and Chevron Oil tried to drill in the 1980s and 1990s, hoping to find a reservoir of natural gas.

Back then The N.C. Coastal Federation's small staff worked to lend support to LegaSea, the Outer Banks-grown citizens group that spearheaded efforts to hold off the drill rigs. As the debate heats up again, Cape Hatteras Coastkeeper Jan DeBlieu is working in the region to raise questions about the consequences drilling would have for our coast, both on land and in the ocean. She's assisted this fall by Jennifer Bellis, an intern from the University of North Carolina, who's compiling facts about the ecological dangers of drilling and how much oil and gas might be saved through simple conservation measures.

Bate Grant Expands School-Based Education Programs

RESTORATION/EDUCATION

Many students returning to classrooms in Craven, Pamlico and Jones counties have something exciting in store for them. Throughout the school year, over 225 students will have opportunities to improve habitat and water quality in their communities, thanks to the Harold H. Bate Foundation.

The Bate Foundation, based in New Bern. has given the N.C. Coastal Federation a \$50,000 grant to develop environmental education programs in the three counties that are the focus of the foundation's philanthropy. The federation will work with six schools to build wetland nurseries and rain gardens on school grounds and to create oyster habitat in surrounding estuaries.

Through the federation's Wetland Nursery Program, students will learn about the importance of wetlands while in the classroom and on field trips. Students from Arapahoe Charter School and Pamlico County High School will build nurseries at their schools and raise wetland grasses. When the grasses mature, students will plant them at a chosen site, creating new habitat and helping to improve water quality.

Student at Jones Middle School and Jones Senior High School will learn about native oysters and how they contribute to the health of coastal waters. Following classroom instruction, students will participate in field activities to create new oyster habitat, including bagging oyster shell, transporting bags to a restoration site and helping monitor projects.

Rain gardens will be built at Arthur W. Edwards Elementary and Havelock Annunciation Catholic School. Fifth-grade students will learn about stormwater and native plants in the classroom and work with community volunteers to design, build and plant the rain gardens on school property. Educational signs on-site will highlight the project goals and encourage similar community projects.

"[The federation] offers programs that connect students to local water quality by teaching them about habitat and ecosystems, and then helping students to actually work on

projects that improve ecosystems," explained Joyce Hendricks, director of operations for the Bate Foundation. "It's a valuable lesson for students to learn that they can make a difference in their communities at any age."



above: Oyster shells that the federation puts in bags to create reefs are at a premium. right: The federation installed this cistern behind our Learning Center to capture rooftop runoff.

These restoration activities will not only help to stabilize the eroding shoreline of Jones Island but will also provide habitat for wildlife, finfish and shellfish.

About 13,500 bushels of oyster shell are needed for this project. Because of high demand and minimal supply of oyster shell, the federation is looking into the possibility of obtaining fossilized oyster shell being mined throughout Florida. Trucking the shells from Florida will be extremely expensive, but shipping them by rail or barge may be an option. We are working with the N. C. Division of Marine Fisheries to investigate the feasibility of combining orders for shell so that it can be supplied for its reef restoration needs as well.

LOW IMPACT DEVELOPMENT

NCCF Controls Stormwater Runoff at its Headquarters Office

The federation continues to reduce stormwater runoff at its headquarters office in Ocean. We installed a 1,500-gallon cistern to collect runoff from the roof of our education building. The rainwater is being used to irrigate plants in the greenhouse and outdoor nurseries. The N.C. Division of Soil and Water Conservation's Community Conservation Assistance Program partially paid for the cistern.

This is the second low impact development treatment installed at the office that is being used for public demonstration of simple and efficient ways to reduce stormwater runoff. A rain garden was previously installed in spring 2007 to collect stormwater runoff from the gravel road and parking area.

FEDERATION LOOKS TO FLORIDA FOR OYSTER SHELLS

Large quantities of oyster shell are needed for rebuilding oyster reefs in North Carolina. Despite the program to recycle oyster shells started by N.C. Division of Marine Fisheries', there seems to be a severe shortage of "fresh" oyster shell for many oyster restoration projects, such as the federation's project on Jones Island in the White Oak River.

This project, paid for by the National Oceanic and Atmospheric Administration and Restore America's Estuaries, consists of planting marsh grass and creating a large oyster reef and two oyster shell bag sills along the shoreline of the island. Hammocks Beach State Park, the N.C. Division of Marine Fisheries, teachers, students and community volunteers are assisting with the project.

WHITE OAK PLAN **COULD BE MODEL** FOR OTHERS

The White Oak River is in trouble, and the fix could be something called a TMDL.

A TMD... what?

Total Maximum Daily Load. It's one of those mouthfuls that only bureaucrats could come up with. They thought so highly of it, in fact, that they put it right there in Section 303 of the federal Clean Water Act. That part of the law says that any time a river like the White Oak is too polluted to meet its highest and best usage, the state must do something to put it right. The law usually requires devising a TMDL, which essentially is a computer calculation of the amount of pollutants that can be dumped into the water without violating water-quality standards and then assigning a portion of that amount to the various sources.

It's as complicated as it sounds, as Frank Tursi and Todd Miller have learned during the last few months. Frank is the federation's Cape Lookout Coastkeeper© and Todd is our executive director. Both have been deeply involved in a project to calculate TMDLs for three polluted watersheds in the lower White Oak. All are closed to shellfishing – their best and highest use – because of bacterial pollution and all require fixes.

The N.C. Coastal Federation teamed up two years with Cedar Point, a small town in western Carteret County that borders the watersheds, and two state agencies – the N.C. Department of Transportation and the N.C. Division of Water Quality. We received an EPA grant to determine the sources of the bacteria and then to devise TMDLs for each of the watersheds and plans that recommend ways to meet the targets.

Much of the last two years has been spent taking more than 200 water samples at almost 60 scattered locations in the watersheds. We sampled bays, creeks, storm drains, roadside ditches and mosquito canals. We found exceedingly high levels of bacteria at almost all the sample sites. After moderate rains, the levels skyrocket to thousands of times the bacteria standard for shellfish waters.



The yellow dots on the map show the initial sites used to sample for bacteria in the lower White Oak River.

What we didn't find were many obvious pollution sources. There are no sewer plants dumping into the watersheds, no industrial discharges. We didn't find illicit pipes, dog pens at the water's edge or failing septic tanks. Instead, we found a severely altered landscape – forests that have been cut down and replaced with parking lots, roads that have been widened and farm fields that have been replaced with rooftops and driveways. A maze of ditches, pipes, culverts and swales crisscrosses this damaged land. They are designed to do one thing – quickly move runoff to the nearby creeks.

As it moves across toward the creeks. stormwater runoff picks up a host of pollutants, including bacteria. UNC's Institute of Marine Sciences in Morehead City did some limited genetic testing on the bacteria we are finding. Those tests confirmed our suspicions. The bacteria probably come from animals, not humans. They were always there. On a natural landscape, the bacteria probably soaked into the ground with each rain. Now, though, they quickly wash through the pipes, down the ditches and into the creeks.

If we're right about this, then the issue isn't where the bacteria are coming from, but how they're getting into the water. "It's all about flow, not sources." Tursi said. "Reduce the flow of runoff and you reduce the problem."

Unfortunately, the TMDL calculations and the computer programs used to make them are aimed at reducing sources. The first model runs suggested source reductions of as much as 99 percent.

"That's just not realistic," Miller noted. "We got involved in this project because we were interested in coming up with workable recommendations that could be used in similarly impaired watersheds along the coast."

We haven't given up on that goal. We've been talking with state and federal officials about ways to achieve realistic strategies that reduce stormwater flow, meet the requirements of the law and have reasonable chances of improving water quality. The project was to end this fall, but we've gotten an extension until next spring to work it all out.

"This is only the second TMDL done on shellfish waters in North Carolina," Tursi explained. "The first one didn't provide the clear direction needed to restore shellfish waters. Everyone involved wants more out of this one. We want it to be a model that can be used to finally begin cleaning up the thousands of acres of closed shellfish waters in the state."



Coastal Habitats Get Boost from Work at Morris Landing

EDUCATION/RESTORATION

The N.C. Coastal Federation's Morris Landing Clean Water Preserve is the site of two major projects aimed at restoring coastal habitats. Construction is almost finished on the 100-foot pier for loading oyster shells, and volunteers helped complete a 200-foot living shoreline restoration project.

The pier, funded by the N.C. Attorney General's Environmental Enhancement Grant Program (EEG), will enable the N.C. Division of Marine Fisheries (DMF) to load shell onto its barges from the shell stockpile area at Morris Landing in Onslow County. The site serves as the only permanent shell loading and stockpile area for DMF in the southeast region, where the majority of the

state's oyster harvest occurs. The pier will serve as a critical component for oyster enhancement and restoration. Construction on the pier will be complete in November.

Next to the pier, federation volunteers filled more than 1,800 bags with shells and planted 2,000 salt marsh plants in Stump Sound to complete the living shoreline project. The project, funded by EEG and the



left and above: Volunteers form a line to build an oyster sill at Morris Landing in Onslow County and then plant marsh grasses to stabilize the shoreline.

right: Federation volunteers pass out information at a forum on Titan America's plan to build a cement plant in New Hanover County.

Onslow County Soil and Water Conservation District's Community Conservation Assistance Program, provides protection for the shoreline and restoration of coastal habitats. More than 130 students and volunteers from the G.E. Hitachi Nuclear Facility in Wilmington, Progress Energy, Wal-Mart, Coastal Carolina College and Cape Fear Community College contributed 1,100 hours to the project.

VOLUNTEER APPRECIATION EVENT

The federation invites all of our regional volunteers to a food and fun celebration at Halyburton Park in New Hanover County on Sunday, Nov. 2 from 1 to 4 p.m. Naturalist Andy Wood will lead an entertaining walk through the park from 2 to 3:30 p.m. An educational talk about N.C. oysters will follow in the Halyburton Education Building.

LOW IMPACT DEVELOPMENT

Planning Grant Approved for LID **Practices**

The N.C. Clean Water Management Trust Fund gave the federation a \$75,650 grant to start a planning process with Brunswick County and the N.C. Department of Transportation (DOT) that will help protect the watershed from polluted stormwater runoff. This project will identify low impact development (LID) design options for road and highway projects within the Lockwood Folly watershed. The project will bring together county officials, state agency regulators, environmental groups, DOT engineers, developers and project designers, and will provide training on how LID projects can protect and restore water quality in the Lockwood Folly River watershed.



Volunteer Spotlight

Federation volunteer Dr. Glenn Blackburn and his wife, Jere, have enjoyed their second home on Holden Beach for three decades. Glenn taught history at the University of Virginia's College at Wise for 30 years and has written three history books. The Blackburns joined the federation in 2001 after seeing an issue of the State of the Coast Report, and they have been active members ever since.

Most recently, Glenn has helped to arrange for the federation's voluminous collection of papers to be archived as a special collection of the Randall Library at UNC-Wilmington. Making this collection available will enable students, professors and the general public to do research on the federation and a variety of coastal issues. It will ensure preservation of the federation's rich history and accomplishments.

Glenn also hopes to write a book about the history of the federation, drawn from interviews with many of the people who have worked with and supported us over the years.



CALENDAR

Call or e-mail for more information 252-393-8185 or nccf@nccoast.org

NOVEMBER

SE Volunteer Celebration Lunch & Walk with Andy Wood Nov. 2, 1–4 pm

New River Oyster Monitoring Nov. 5, 10am – 3 pm

Myrtle Grove Sound Oyster Monitoring Nov. 8, 9am – 1 pm

Coastal Resources Commission, Morehead City Nov. 20-21

DECEMBER

Center Volunteer appreciation luncheon, Headquarters Dec. 5

Core Sound Waterfowl Weekend, Harkers Island Dec. 6-7

COMING NEXT ISSUE:

Coastal Photo Contest

We want your best photo of the coastal area you most want to see protected. Winners may have their photo featured in the 2009 *State of the Coast Report*. Full details in the winter newsletter and online after December 1, 2008.

FUEL-EFFICIENT VEHICLE WANTED

NCCF is looking for the donation of a fuel-efficient vehicle to use for our program work. If you have a reliable vehicle you're interested in donating, please call 252-393-8185.

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