

CITIZENS WORKING TOGETHER FOR A HEALTHY COAST

Coastal Review

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PULL-OUT CALENDAR OF EVENTS INSIDE!

LEGISLATIVE PRIORITIES

BAN ON BEACH HARDENING UNDER ATTACK, AGAIN

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, N.C., between Swansboro and Morehead City. Our offices, nature library and shop are open Monday through Friday, 8:30 a.m. to 5 p.m.



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COVER PHOTO: Rachael Carlyle, NCCF

Power Shift in Raleigh Diminishes Clout of East

BY TODD MILLER, *Executive Director*

Republicans control the N.C. General Assembly for the first time in 100 years.

That big headline news overshadowed perhaps an even more important power shift that hasn't gotten nearly as much attention: Politicians from urban areas now firmly control the state legislature.

Last fall's election swept many long-time incumbents from rural areas out of power. Many held key leadership posts for decades. The shift may be permanent.

The rise of the cities' political influence mirrors the state's growing urbanization. More than 60 percent of the state's population now lives in cities or what the U.S. Census Bureau calls "urban clusters".

We're not likely to see a Marc Basnight again. The Dare County Democrat retired in January after 27 years in the N.C. Senate and 18 years as its top leader. During his tenure as one of the state's most powerful and enduring politicians, Basnight used his political clout to take care of eastern North Carolina.

With Basnight no longer providing leadership on coastal and rural issues, it's not clear who will fill the void he left. There could even be a strong backlash against past priorities that he and his fellow rural legislators made sure were funded.

Gov. Beverly Perdue is from New Bern and knows our coast well. She could yet become a champion for the coast by fighting to fund programs that safeguard and restore its resources, and by standing firm and vetoing any laws that allow terminal groins to degrade our ocean beaches.

Unless new political leaders who care about the coast emerge, budgets of programs that protect coastal water quality and fisheries habitat and promote good land use could be slashed. There's also talk of dismantling trust funds used to buy sensitive coastal lands, establish parks, restore wetlands and fisheries, manage stormwater and build infrastructure.

That's because the new legislative leaders face a \$3.7 billion budget shortfall and made a promise not to raise taxes. They must cut discretionary spending between 15 and 40 percent to balance the budget.

While the cuts on state funding for all environmental programs (that's money that comes directly from N.C. taxpayers and not from the federal budget) would come to only about 1 percent of the existing deficit, don't expect meager savings to spare environmental programs from big budget cuts unless strong political leadership emerges to protect them.

In the past, coastal residents could rely on the people they elected to effectively watch out for their interests. No longer. Now they must depend on the good will and generosity of the political leaders who represent the hundreds of thousands of "uplanders" who so often visit the coast.

So if you're from an inland area, it's more important than ever to let your legislators know that protecting and restoring our coast is a wise investment.

Astute politicians pay attention to what people really care about. In this new era of urban political leadership in Raleigh, it will take much more than "a village" to watch out for our coast. We need the entire state to speak up and not be shy about doing so.

Let your legislators know how you feel about protecting and restoring the coast. Find out who represents you by going to:

www.ncga.state.nc.us/GIS/RandRo7/Representation.html

Todd Miller

Coastal Cohorts Concert in Wilmington

The long-awaited Wilmington Coastal Cohorts Concert is set for Saturday, March 26, in the beautifully renovated Thalian Hall Center for the Performing Arts. The Cohorts have been celebrating their 25th Anniversary with a tour since early 2010, and the Wilmington concert marks the tour finale.



Cohorts Bland Simpson, Jim Wann & Don Dixon

The band's talented musicians are Jim Wann on guitar, Bland Simpson on piano and Don Dixon on bass. The Cohorts will perform songs and stories from their popular CD's *King Mackerel & The Blues Are Running* and *Wild Ponies*. Their original music celebrates life on the Carolina coast with a combination of ballads and upbeat tunes, flavored by humor and the poetry of the natural world.

"The Cohorts are thrilled to bring our music to coast lovers across North Carolina," said Simpson, who also serves on the federation's Board of Directors. "While we're all having a good time, we'll be helping out the Coastal Federation by raising funds and awareness about the need to conserve our beautiful rivers, sounds and seashore."

Tickets are available now through Thalian Hall at www.thalianhall.org or 910-632-2285 or 800-523-2820. Tickets are \$28 for Prime Seating; \$24 for Choice Seating; and \$20 for NCCF members, which offers members the best seating available. Discounted member tickets are available only by phone.

Sponsorships with complimentary tickets, reserved seating and other exclusive

benefits are available at \$100, \$250, \$500 and \$1,000 levels through the N.C. Coastal Federation. Sponsor forms are online at www.nccoast.org or call Development Director Sally Steele at 252-393-8185 ext.108 or email her at sallys@nccoast.org.



LAST CALL FOR 2011 PHOTO CONTEST

We've received some great photos for our 2011 Photo Contest, but there's still time to get your entry in. Send us your best photo of your favorite place along North Carolina's coast and maybe you'll be a winner. Emerald Isle Realty is sponsoring the contest with cash prizes totaling almost \$1,000. Entries will be accepted until April 15. Complete details can be found at www.nccoast.org.

WELCOME OUR NEWEST BUSINESS FRIENDS

Our list of business friends who offer members discounts and special offers continues to grow. Since the last newsletter, we've added three new businesses. Help us welcome them by visiting them when you can.



The Moss House extends the welcome mat to members.

- Moss House Bed and Breakfast, Washington
 - Kelly's Restaurant, Nags Head
 - Parrot Head Charters & Recreational Boating Services, Bolivia
- Visit www.nccoast.org for a full listing of Business Friends and their special offers for federation members.



Capt. Bert Felton is often seen on the Solomon T on the Cape Fear River.

FEDERATION TOPS 10,000 MEMBERS

On November 2, Captain Bert and Becky Felton of Southport joined the federation through our Web site to push the membership over the 10,000 mark.

With this honor comes a place in the federation's history and a prize package that includes tickets and V.I.P. seating at the March 26 Coastal Cohorts Concert.

As long-time coastal residents, the Feltons are avid birders, local historians and naturalists. Several years ago they put together their own small company that offers maritime heritage tours out of the old harbor at Southport. Congratulations to the Feltons.



Change in Raleigh Requires Change in Legislative Strategy

BY ROB LAMME, *Legislative Lobbyist*

When the 2011 N.C. General Assembly began its work in January, the political landscape in Raleigh could not have been more different than in previous years – or decades.

For the first time in more than a century, Republicans control both the state House of Representatives and the N.C. Senate. And Marc Basnight, long-time leader of the Senate Democrats, was at home in Manteo after retiring from the legislature in early January. Democrat Joe Hackney moved from Speaker of the House to the House Democrats' minority leader. And a bevy of new legislative leaders took over leadership positions on a variety of the committees that shape conservation and environmental policy in North Carolina.

For the N.C. Coastal Federation, the new order poses some significant challenges but also some new opportunities to do what it has done for almost 30 years – protect, preserve and restore the state's coastal resources. While the federation's priorities for the 2011 legislature are similar to those of past years, how we talk about our issues and whom we count on for support in the halls of the legislature will change with the times.

For example, one of our top goals for 2011

is to protect North Carolina beaches by retaining the state's current ban on jetties and other types of hardened structures on our beaches. Federation members will recall that we have been fighting a proposal for several years to allow small jetties that proponents call terminal groins to be built at inlets. Speaker Hackney had stopped this short-sighted and destructive measure.

The issue will come again in this session, but now Republicans control both chambers. While we will continue to emphasize the environmental cost of hardened structures, we will also point out the enormous financial burden groins place on local taxpayers – and the great likelihood that, if groins are approved, local governments that build them will eventually come back to the state and federal governments for the money to maintain and repair them. In tough economic times like these, we hope these fiscal arguments will help the new majorities reject the call to build expensive and environmentally damaging structures on our coast.

Our federal oyster project created almost 50 acres of oyster reefs while employing almost 200 people. We hope it's a model legislators can endorse.

We'll also look for new ways to improve the state's coastal waters. For example, this winter we met with legislators and representatives of Gov. Beverly Perdue's administration to discuss ideas about continuing funding to restore oyster reef sanctuaries. As the legislative session continues, we'll look for new funding to ensure that this vital work to enhance marine habitats.

Our approach to protecting funds for open space is another example of using a new strategy on a tried and true issue. On Feb. 23 in Raleigh, the federation will join with a coalition of other business and conservation groups to hold a summit called "Conservation Economics 2011: Keeping North Carolina in the Green" to highlight how investments in land conservation in North Carolina pay dividends in economic development and job creation. We're hopeful that the conference will help legislators understand what we have known for some time – that protecting the environment is good for the economy.

Of course, with so many legislators in new positions of authority in Raleigh, educating them about our issues is an enormous task. That's why we are starting a renewed effort to mobilize our 10,000-strong membership to help. In January, we hosted a free reception for Triangle legislators to meet with some of the 2,500 or so federation members in the region. The reception was a great way to educate the legislators about their constituents' concerns about the coast – and for our Triangle members to get engaged in the legislative process.

As the legislative session continues, we'll be organizing more opportunities for our supporters to carry the message of coastal restoration and preservation to legislators all across North Carolina – because the federation's voice in Raleigh is only as strong as your efforts in your community.

Rob Lamme is the N.C. Coastal Federation's legislative lobbyist.

Groin Supporters Gave \$100k to Political Candidates

Supporters of terminal groins have given more than \$100,000 to candidates for state and local offices in their ongoing efforts to change state law to allow these small jetties to be built at inlets. Proponents claim they will control erosion and protect private property.

The Island Preservation Society, a political action committee, or PAC, has raised more than \$127,000 since it formed in 2004, according to records at the N.C. Board of Elections. The committee gave more than \$105,000 to political candidates or parties. Candidates running for the state legislature received most of the money.

David Kellam is listed as the PAC's treasurer. He is also the administrator of the Figure Eight Island Homeowners' Association. The group is made up of property owners on the exclusive private island north of Wilmington. It has led the lobbying effort to change state law to allow terminal groins on our beaches. Groins,

jetties, seawalls and other types of hard structures are currently illegal in North Carolina because their effects are unpredictable and they restrict public access to the beach.

The Figure Eight Homeowners' Association has been fighting to change the law in order to build a groin to protect seven to 10 beachfront houses that are threatened by erosion. Of the 177 identified donors to the PAC, at least 135 own property on the island.

Marc Basnight, the Manteo Democrat and long-time president of the N.C. Senate, received \$14,000 from the PAC since 2004, according to state campaign records. That was more than double the amount received

by any other individual candidate. A bill to allow groins passed a Basnight-led Senate in 2008, but has languished ever since in the N.C. House. Democrat R.C. Soles Jr., a senator at the time from Columbus County, introduced the groin bill. He received \$2,500 from the PAC. Basnight lost his Senate leadership position when Republicans seized control of the chamber in November. He retired in January. Soles didn't run for re-election last fall.

The PAC also gave \$12,000 to the state Democrat Party or to the party's committee to elect Democrats to the N.C. Senate. During the six years of its existence, the PAC gave about \$63,000 to 26 Democrat candidates.

Republicans got their share, though. The PAC gave about \$41,000 to 31 Republican candidates since 2004. Rep. Daniel McComas of New Hanover County received \$6,250, the most of any Republican. Pat McElraft, a Republican from Emerald Isle, received \$1,250 from

(continued on page 6)

ISLAND PRESERVATION SOCIETY TOP DONORS*

NAME	RESIDENCE	AMOUNT
Charles & Florence Winston	Raleigh	\$9,000
John Bratton Jr.	Knightdale	\$5,500
Jeffrey Matthews	Warsaw	\$5,000
Lewis S. Morris	Greensboro	\$5,000
Dennis R. Hendrix	Houston, TX	\$4,000
Frank D. Gorham III	Sugarland, TX	\$3,000
Aggregated Contributors**		\$2,750
Earl Johnson Jr.	Raleigh	\$2,500
William J. Armfield IV	Greensboro	\$2,000
Edward S. Barclay Jr.	Wilmington	\$2,000
Nat T. Harris	Whitsett	\$2,000
Thomas S. Kenan III	Chapel Hill	\$2,000
Dean Painter Jr.	Raleigh	\$2,000
Robert G. Wright	Raleigh	\$1,800
Frederick H. Anderson	Raleigh	\$1,500
Harry R. Culp	High Point	\$1,500
William T. Wilson	Winston-Salem	\$1,500
Michael Haley	Greensboro	\$1,250
Kenneth B. Howard	Raleigh	\$1,250
Dalton D. Ruffin	Winston-Salem	\$1,250
Julian White Rawl	Greenville	\$1,250
Charles B.C. Holt	Fayetteville	\$1,200
C. Edward Pleasants	Winston-Salem	\$1,150
Carol J. Farbolin	Atlanta, GA	\$1,100
Thomas D. Simmons Jr.	Houston, TX	\$1,100
James A. Abbott	Charlotte	\$1,000
Thomas E. Capps	Richmond, VA	\$1,000
George C. Denby	Washington, NC	\$1,000
Frank E. Genovese	Midlothian, VA	\$1,000
Ronald P. Gibson	Raleigh	\$1,000
Sandra D. Hargrove	Raleigh	\$1,000
Richard T. Howard	Wilmington	\$1,000
Rosemary P. Keller	High Point	\$1,000
Kim Y. Nettles	Washington, DC	\$1,000
Patrick H. Nettles	Wilmington	\$1,000
Munther E. Qubain	Raleigh	\$1,000
Ellen C. Schindler	Winston-Salem	\$1,000

*Years 2004-2010

**Total for contributors who gave less than the amount required by law to report the identity of individual donors.

ISLAND PRESERVATION SOCIETY POLITICAL CONTRIBUTIONS*

NAME	AMOUNT	NAME	AMOUNT
Thom Goolsby, R	\$1,000	Jim Leutze, D	\$1,000
Marc Basnight, D	\$14,000	Norman Sanderson, R	\$1,000
NC Democrats - Senate	\$8,000	Philip E. Berger, R	\$1,000
Daniel McComas, R	\$6,250	Tony Rand, D	\$1,000
Julia Boseman, D	\$6,000	Woody White, R	\$1,000
Citizens for Roseman	\$4,000	Bonner Stillier, R	\$750
Mike Easley, D	\$4,000	James Crawford Jr., D	\$750
NC State Democrat Party	\$4,000	Jimmy L. Love Sr., D	\$750
Bill Caster, R	\$3,250	Mitch Gillespie, R	\$750
James B. Black, D	\$2,500	Nancy Pritchett, R	\$750
Bill Owens, D	\$2,500	Robert Ted Davis	\$750
R.C. Soles Jr., D	\$2,500	Richard Stevens, R	\$500
Beverly Perdue, D	\$2,000	Beth Dawson, R	\$500
Rick Catlin, R	\$2,000	Margaret Dickson, D	\$500
Pryor A. Gibson, D	\$2,000	Thom Tillis, R	\$500
Richard Morgan, R	\$2,000	David Lewis, R	\$500
William Wainwright, D	\$2,000	Edward J. McMahon, D	\$500
Tom Apodaca, R	\$1,750	Fred Smith, R	\$500
Jean Preston, R	\$1,750	Fletcher L. Hartsell Jr., R	\$500
Clark Jenkins, D	\$1,750	Kay R. Hagan, D	\$500
David Rouzer, R	\$1,750	Lucy T. Allen, R	\$500
Linda Garrou, D	\$1,500	Neal Hunt, R	\$500
Harry Brown, R	\$1,500	Bill Rabon, R	\$500
Roy Cooper, D	\$1,500	Sid Causey, D	\$500
A.B. Swindell, D	\$1,500	Bobby J. Crumley, R	\$500
Bill Kopp, R	\$1,250	Thomas Wright, D	\$500
Bobby Greer, R	\$1,250	Tim Spear, D	\$500
Pat McElraft, R	\$1,250	TOTAL	\$105,250
Frank Iler, R	\$1,000		
Martin Nesbitt, D	\$1,000		
Pat McCrory, R	\$1,000		

*Years 2004-2010

D- Democrat; R- Republican

Federation Plans Energy Summit in New Bern

The N.C. Coastal Federation will host a summit on energy alternatives along the coast on Friday, June 24 at the New Bern Convention Center.

The day-long event will be open to the public and will feature findings of our 2011 *State of the Coast Report*. This year's report will explore energy alternatives such as wind, solar, biofuels, natural gas, tidal and lagoon conversion.

Participants of the summit will hear from scientists, regulators and other experts about green energy alternatives and their potential effects on our coastal environment and public health. Potential future policy options will also be discussed.

A complete agenda and registration information will be available on our Web site www.nccoast.org on April 15.

Bald Head Sues Corps Over Dredging

In what could end up being a landmark lawsuit, Bald Head Island sued the Army Corps of Engineers in December, claiming that the Corps' dredging of the ship channel in the Cape Fear River is worsening erosion on the island.

Erosion on Bald Head occurs every time the Corps dredges the shipping channel, which was relocated closer to the Brunswick County island a decade ago, the lawsuit alleges. It claims that the problem was exacerbated in 2009 when the dredged sand wasn't placed back on the island. Instead, it was pumped over to Caswell Beach as part of a sharing agreement, according to the lawsuit.

Some parts of the island lost several hundred feet of beach and dune, and by late last summer, several homes and at least one street were relying on sandbags to hold back the encroaching waves. Over-washing also was common during storms or higher-than-normal tides.

As an interesting aside to all this, Caswell Beach and Oak Island want to intervene in the lawsuit to ensure that their interests are protected. They fear, among other things, that a groin or jetty built to lessen erosion on

Bald Head would rob sand that now naturally nourishes their beaches, according to court briefs that the towns have filed.

Both towns have been leaders in the lobbying effort to change state law in order to allow small jetties, called terminal groins, to be built at inlets to control erosion. Such structures are currently illegal in North Carolina. Proponents have steadfastly claimed that groins don't harm adjacent beaches by interfering with the natural movement of sand.

Audubon Protects Portions of Lea Island

Audubon North Carolina has purchased for an undisclosed price nearly 36 acres on Lea Island, an undeveloped island in Pender County that has become joined with Hutaff Island – both of which are accessible only by boat – since Old Topsail Inlet closed in 1998.

The purchase was largely financed by a donation from Fred and Alice Stanback, who are active environmentalists and own a house on Figure Eight Island. The Stanbacks have been generous contributors to the federation as well.

The Lea-Hutaff island complex – squeezed between Figure Eight to the south and Topsail Island to the north – is a vital sanctuary for nesting shorebirds that have been driven out of other beach and dune areas because of human development or intrusion. The island is also popular with nesting sea turtles and is home to many other flora and fauna species, including the endangered seabeach amaranth.

State Officially Pulls Plug on Proposed Port

State officials made it official in December when they pulled the plug on a controversial proposal to build a \$3 billion international shipping terminal near Southport, five

months after the N.C. Ports Authority was forced to delay the project indefinitely.

The N.C. Department of Environmental and Natural Resources said that the state would not act as a financial sponsor of the proposed port. Agency Secretary Dee Freeman told the U.S. Army Corps of Engineers that instead of building a new port, the state is interested in improving access to the existing Port of Wilmington.

Opponents of the new port, though, say the issue isn't really dead while the state continues to own the 600-acre site. A newly formed group, Save the Cape, wants to buy the land to reserve the natural heritage of the lower Cape Fear River. It ultimately wants to turn that and adjoining tracts into a national park.

Groin Supporters Gave \$100k to Political Candidates *(continued from page 5)*

the PAC. She now heads the House Environment Policy Committee, which is expected to debate a groin bill this session. Rep. Frank Iler, a Republican from Brunswick County, is also on that committee. The PAC has given him \$1,000.

Charles and Florence Winston of Raleigh were the PAC's top donors at \$9,000. They own property on Figure Eight. Other large donors include:

- The late John S. Bratton Jr. of Knightdale, who founded Wake Stone near Raleigh.
- Jeffrey Matthews, who ran Carroll Foods. The company was started by his grandfather and was the second-largest pork producer in the country before being bought by Smithfield Foods.
- Lewis S. Morris, the former president and CEO of Cone Mills in Greensboro.
- Dennis Hendrix, a retired energy company executive from Houston.
- Earl Johnson, Jr., who served on the board of the Research Triangle Institute for 30 years and is in the Raleigh Hall of Fame.

What May Be World's Rarest Butterfly Is Hunkered Down for Winter

Along a 30-mile stretch of the central N.C. coastline, what may be the rarest butterfly in the world is hunkered down for the winter. To ward off the cold and wind, tiny green caterpillars have snuggled into the leaves of seaside little bluestem, a grass that grows in tufts amid the dunes of barrier islands.

The caterpillars are inactive and in a life stage called diapause, a state of dormancy in which all development is suspended. Unlike hibernation where development and metabolism still occur at a slower rate, during diapause all cellular growth stops.

As the days grow longer and warmer, the caterpillars will begin to feed on bluestem leaves before beginning the transformation into a type of butterfly called a skipper. By mid-April, a small fuzzy brown butterfly will emerge and begin looking for nectar.

Known scientifically as *Atrytonopsis* new species 1, this butterfly is being called the crystal skipper because of the crystal-like white shapes on its wings and because it is found nowhere in the world except the Crystal Coast. The butterfly lives along a thin stretch of beach from Bear Island in Hammocks Beach State Park in Onslow County to Fort Macon State Park at the eastern end of Bogue Banks in Carteret County, and on a few dredge spoil islands in between.

It was first documented in the late 1970s at Fort Macon. Since then biologists have debated whether the insect is a distinct species or closely related to other similar skippers. Some biologists think that it is a subspecies of the abundant dusted skipper. Other scientists say its wing markings are a bit different and it has two flight seasons a year. The dusted skipper only has one. Could it be a subspecies of the rare loammi skipper? But those skippers live in a completely different habitat and lay their eggs on a different plant.

To settle the issue, the Smithsonian Institution is analyzing the DNA of the various skippers. The early results indicate that the crystal skipper could indeed be a separate species.

While the biologists debate and try to come to a consensus, the crystal skipper continues

to hang out at the beach. As a skipper, the crystal skipper doesn't have the flair and colorful markings of other butterflies. Due to its muted colors and hairy body, this small brown insect with white shapes on its wings is often mistaken for a moth and overlooked.

When it takes to the air in April and May, this skipper can be found primarily amid the primary and secondary sand dunes along the beach. It's often found on the sound side of Bear Island where seaside little bluestem is abundant. They skip about in a fast and erratic flight pattern that at times makes them seem to disappear. They look for the sweet nectar of the southern dewberry or yellow thistle, which they will collect with their long proboscis.

Fortified with the energy-boosting nectar, the skippers go about the urgent business of looking for a mate. Since the adult butterfly lives for only a few days, there is little time for courting. After mating, the females lay eggs only on the blades of seaside little bluestem. Flying low to the ground, the females make quick pit stops on the outer blades laying only one white egg at a time.

As they mature, the eggs develop a reddish tint, and eventually a pale green caterpillar with a black head hatches out. The caterpillars take on a reddish-brownish-purple color as they grow. That allows them to blend in among the bluestem leaves and to avoid detection by predators. The caterpillars graze on the tender bluestem leaves and by late July this new generation will have transformed into butterflies that now search for morning glory as their nectar source.

The largest populations of this butterfly are found on Bear Island, where the dune fields full of seaside little bluestem are protected from development. There is also a large population at Fort Macon State Park. However, pockets of the crystal skipper are also found throughout the developed areas of Bogue Banks wherever



This diminutive skipper with the mouthful of a name, *Atrytonopsis* new species 1, is known to exist only on a thin, 30-mile swath along the central N.C. coast. PHOTO BY SAM BLAND

its habitat has not been destroyed.

Even though the skipper's habitat has been fragmented along Bogue Banks, there's enough bluestem scattered about to support populations of the insect. These smaller areas are needed to prevent the populations on Bear Island and at Fort Macon from becoming isolated, which would weaken the skipper's gene pool.

Though it has yet to be scientifically described and officially classified, the skipper is distinct enough for the U.S. Fish and Wildlife Service to consider it a federal "species of concern." This designation is an indication of how significantly the insect's habitat has been destroyed and fragmented, but it provides no legal protection.

Some efforts are being made by the N.C. Aquarium and the N.C. Division of Coastal Management to improve and increase the seaside little bluestem grassland habitat at the Rachel Carson National Estuarine Research Reserve near Fort Macon State Park. If successful, this could create critical habitat and potentially expand the range of the skipper.

It is obvious that this shy little butterfly is living a fragile existence since much of its small range is developed and continues to be developed. The larger populations in the protected state parks could take a devastating blow with one monster hurricane.

Habitat protection, dune restoration and native landscaping are vital for the conservation of this dainty insect that could turn out to be one of the rarest butterflies in the world.

N.C. COASTAL FEDERATION 2011 Calendar of Events

MARCH

- 5** Hoop Pole Creek Clean-Up, Atlantic Beach*
- 5** Oyster Shell Bagging, Nags Head*
- 7** Oyster Shell Bagging, Morris Landing*
- 26** Coastal Cohorts Concert, Wilmington



MAY

- 3** Community Planting, Carteret Community College
- 13** Shoreline Planting, Carteret County*
- 18** Marsh Cruise, Hammocks Beach State Park
- 21** Kayak/Yoga trip, Jones Island
- 25** Marsh Cruise, Hammocks Beach State Park

APRIL

- 6** Rain Garden Planting at Western Park, Cape Carteret
- 7** Can Golf Be Green? UNCW
- 15** Photo Contest ends
- 15** Native Plant Festival, Members Preview, Ocean*
- 16** Native Plant Festival, Ocean*
- 16** Rain Garden and Wetland Planting, Wilmington*
- 20** Marsh Cruise, Hammocks Beach State Park
- 23** Crystal Coast Earth Day Festival, Fort Macon State Park (NCCF will be there)
- 26, 27, 28, 29** Shoreline Plantings, Ocracoke*
- 30** Lower Cape Fear Earth Day, Wilmington*
- 30** Earth Day, Poplar Grove Plantation*



JUNE

- 14** Jones Island Workday, Hammocks Beach State Park*
- 15, 16** Education Programs, Hammocks Beach State Park
- 17** Marsh Cruise, Hammocks Beach State Park
- 21** Jones Island Workday, Hammocks Beach State Park*
- 23** Education Programs, Hammocks Beach State Park
- 24** *State of the Coast Report* Release and Energy Summit, New Bern
- 24** Marsh Cruise, Hammocks Beach State Park
- 28** Jones Island Workday, Hammocks Beach State Park*
- 29** Summer Day Camp at Jones Island
- 29, 30** Education Programs, Hammocks Beach State Park

**Volunteers Needed*

FOR DETAILS ON ANY OF THESE ACTIVITIES, PLEASE VISIT WWW.NCCOAST.ORG OR CALL

JOIN US THIS YEAR FOR A UNIQUE ADVENTURE, LEARNING EXPERIENCE OR JUST PLAIN FUN.

JULY

5 Jones Island Workday, Hammocks Beach State Park*

6,7 Education Programs, Hammocks Beach State Park

12 Jones Island Workday, Hammocks Beach State Park*

13,14 Education Programs, Hammocks Beach State Park

15 Marsh Cruise, Hammocks Beach State Park

19 Jones Island Workday, Hammocks Beach State Park*

20,21 Education Programs, Hammocks Beach State Park

22 Marsh Cruise, Hammocks Beach State Park

26 Jones Island Workday, Hammocks Beach State Park*

27 Summer Day Camp, Jones Island

27,28 Education Programs, Hammocks Beach State Park



AUGUST

2 Jones Island Workday, Hammocks Beach State Park*

3-4 Education Programs, Hammocks Beach State Park

9 Jones Island Workday, Hammocks Beach State Park*

10-11 Education Programs, Hammocks Beach State Park

12 Marsh Cruise, Hammocks Beach State Park

13-14 Shrimp Festival, Sneads Ferry*

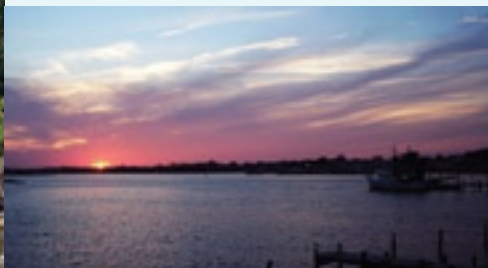
19 Marsh Cruise, Hammocks Beach State Park

OCTOBER

1-2 NC Seafood Festival, Morehead City*

15-16 Oyster Festival, Ocean Isle*

29 Volunteer Event, Lockwood Folly

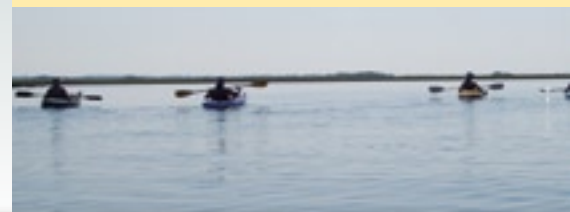


NOVEMBER

17 APNEP State of the Sounds Conference, New Bern

DECEMBER

2 Volunteer Appreciation Event, Ocean



SEPTEMBER

17 Cycling for the Coast, Carteret County

24 National Estuaries Day, Ocean & Wilmington*

252-393-8185. VISIT OUR WEBSITE OFTEN, WE'RE ALWAYS ADDING MORE.



DRAINAGE PLAN AT MANTEO AIRPORT PROTECTS POPULAR SWIMMING HOLE

Low Impact Development

Unusually heavy rains in late winter and spring 2010 flooded much of the Outer Banks. But nowhere was the inundation worse than the Scarborough Square trailer park near the Dare County Regional Airport on Roanoke Island.

The Airport Authority purchased the trailer park last year, along with an adjacent cemetery, to control air space over the approach to a major runway. Dozens of trees were cut, reducing turbulence in the air—but whipping it up on the ground. Residents with family members in the cemetery decried the logging, which left the cemetery barren.

Shortly thereafter the rains began. With water pooling up to four feet in the trailer park, residents demanded that the Airport Authority get rid of the flooding.

In response, the airport's engineer designed a drainage swale that would have

dumped stormwater through existing pipes into Croatan Sound. The extra runoff would likely have polluted shellfish waters and potentially caused public health advisories to be posted at the Old Swimming Hole, a popular park nearby.

Instead, Jan DeBlieu, the federation's coastal advocate in the northeast region, and Erin Fleckenstein, our regional coastal scientist, worked with George Wood of the Airport Authority to find suitable sites for two dry infiltration basins and a constructed wetland, all of which would slow the stormwater and allow it to infiltrate. Such practices are commonly considered low-impact development (LID).

There was just one problem: The Federal Aviation Administration wouldn't fund them. Officials at the state branch of the FAA said the design wasn't consistent with their guidelines. They also feared that the structures would attract wildlife and birds,

In the autumn of 2006, the northeast region staff and several partner organizations built two large rain gardens at Manteo Middle School. The gardens have since become a beloved school feature, frequently used by science and art classes. Last summer a boardwalk was constructed across the largest garden, using a grant provided by the U.S. Fish & Wildlife Service's Partners for Fish and Wildlife program. The grant also provided money to replant areas of the gardens. The new plantings were designed by Katherine Mitchell, horticulturist at the N.C. Aquarium on Roanoke Island, and installed with the help of students and adult volunteers.

which could cause safety hazards for pilots using the airport.

To solve the problem, the engineer widened the swale along its entire length—effectively providing an even larger area for stormwater to soak into the ground. The swale was installed last fall. Federation staff members are working with Wood to find funding for the constructed wetland.

It was the kind of outcome that leaves everyone smiling.

"What I love about this project," DeBlieu said, "is that we figured out how to protect residents from flooding without causing more problems downstream."

Restoration/Education

STAFF TO PROVIDE STORMWATER PLAN FOR THREE SCHOOLS

The Dare County school district has received a grant from the N.C. Department of Environment and Natural Resources and the Environmental Protection Agency's 319 pollution control program to reduce runoff from the First Flight elementary, middle, and high schools in Kill Devil Hills. And the district has hired the federation's northeast region staff to help.

Over the next several months staff members will be looking for potential stormwater-treatment sites at the three campuses, which are underlain with pipes and ditches that drain to the ocean and Roanoke Sound. When the sites for rain gardens, wetlands, cisterns and other techniques are identified, the district's engineer will help determine how much water each feature could hold. The suggested methods will then be ranked according to their effectiveness, cost and the ease with which they can be installed.

Robert McClendon, a landscape architect with the University of North Carolina's Coastal Studies Institute, will also help develop the plan.

The project is a perfect fit for the federation, since staff members are already working with teachers at the middle school on a planned rain garden, funded through the EPA's Five Star Restoration Program. A second rain garden, funded by Wal-Mart, will also be built this spring at a Dare County school, most likely First Flight High.

"The stormwater master plan will help us decide which practices should be built first," said Sara Hallas, the federation's regional education coordinator. "We're also hoping that having a careful plan in place will help us attract more funding so we can get these BMPs in the ground."

As with all federation restoration projects, installation of the stormwater-control measures will have a strong education component. They will be planted by students, and Hallas will give classroom lessons on the need to reduce runoff to protect nearby waterways.



The embattled N.C. 12 through Pea Island National Wildlife Refuge.

Road Access to Hatteras Still Threatened as Bonner Bridge Replacement Moves Forward

A few years ago, the N.C. Ferry Division constructed an improved ferry terminal and channel at Stumpy Point. It sits ready to be put into service when bridge and highway access to Hatteras Island is disrupted.

That's because even after decades of debate, there's little chance that the obsolete bridge over Oregon Inlet, and the crumbling highway that runs to it, will be replaced in time to prevent significant traffic disruptions from occurring.

Such is life on the Outer Banks. Access is easily disrupted when the wind blows and the tide rises.

Just recently, a design was selected for a span to replace the Herbert C. Bonner Bridge—but the decision is likely to be challenged in court.

No one was surprised when the federal Record of Decision named the so-called short bridge, which will parallel the current structure, as the alternative to be built. State legislators and Dare County officials had fought selection of a second alternative, a 17-mile bridge through Pamlico Sound that would have landed in the Hatteras Island village of Rodanthe. The Pamlico Sound bridge would have bypassed the 13-mile-long

A huge thanks to our dedicated Jones Island volunteers.

Pea Island National Wildlife Refuge, no longer allowing easy access to refuge beaches.

The state has a long-standing road easement through the refuge that the Fish & Wildlife Service has said cannot be moved back from the ocean. Pea Island suffers from extreme erosion—in places up to 14 feet a year—and the highway is frequently closed by ocean flooding. Maintaining the highway leading to the bridge in its current location will require extreme measures, including sand bagging and beach nourishment. Protecting the highway will become increasingly difficult and expensive as sea level rises and storms strike.

The Record of Decision calls for building the bridge and worrying about how to replace N.C. 12 "as warranted" later. The N.C. Department of Transportation (DOT) has agreed to fund studies and undertake an extensive monitoring program on Pea Island.

But the road already is in danger. In places, the ocean is less than 230 feet from



the roadbed at high tide. Low, unvegetated sand dunes are the road's only protection for long stretches. So it's no surprise that DOT is spending more on storm-related maintenance. The agency routinely stations a large cadre of earth-moving equipment on Hatteras Island to keep the highway open. Road washouts have dampened the island's economy.

In letters to DOT over the course of the project, the Southern Environmental Law Center, Defenders of Wildlife, North Carolina Audubon, the Environmental Defense Fund, and others have complained that N.C. 12 won't survive intact after the short bridge is completed. They favor building the Pamlico Sound bridge, which would have a life expectancy of 100 years. They also say it's folly to delay dealing with the issues that plague the road.

The federation is not satisfied with either alternative.

Jan DeBlieu, Coastal Advocate in our northeast office, agrees that Hatteras will likely be cut off from road travel when predictions by geologists about the future instability of Hatteras Island prove true. The current situation with the roadway is a constant reminder that life on a low-lying, highly dynamic barrier island is frequently affected by the weather. We suggested an alternative that would move the road to the west side of Pea Island and include new

public access points to the refuge.

In the federation's comments on the project, DeBlieu proposed using an unusual method called top-down construction that would not require the digging of canals or the hauling of heavy equipment through sensitive habitats. This method of construction was successfully used to build the new Highway 17 bypass around Washington, N.C. In top-down construction, pilings are sunk and platforms built one at a time. Each platform serves as a staging ground for the next, and the bridge leapfrogs out incrementally. The only damage to the environment is from the sinking of the pilings.

The Pea Island Refuge is not a natural ecosystem. It consists of a series constructed impoundments designed to attract waterfowl. "There would be some wetlands loss with our proposal," DeBlieu said. "But in such a dynamic highly engineered system the tides would quickly repair the damage from construction. And the island would be able to migrate the way it's supposed to. It would be more of a natural system than it is now."

"We're not construction engineers. We can't say exactly what route a bridge down the back of Pea Island should take or how it should be built," she said. "The point was to try to get the two sides working on a compromise."

"The Pamlico Sound bridge is not politically viable," she added. "It's not going to get built, because there's no support for it

A new bridge would be built parallel to the existing Herbert C. Bonner Bridge, which spans the shifting sands of Oregon Inlet.

locally. Pea Island is the only long stretch in Dare County where there's no oceanfront development and no driving on the beach. Locals will fight hard to keep from losing access to Pea Island."

DeBlieu warns that unless a compromise is reached, and quickly, the question will likely be decided in the courts. Some environmental groups are mulling over whether to sue DOT and the Federal Highway Safety Administration, on the grounds that it's illegal to segment construction of a cohesive transportation corridor. The federation would not be a party to the suit.

If a legal action is filed, it's impossible to say how soon the issue might be resolved. Meanwhile, Mother Nature may take care of things herself. If a major storm washes out N.C. 12 and erodes Pea Island so badly that the highway can't be put back in its current right-of-way, a state of emergency could be declared—clearing the way for a federal court to order that the road be moved back from the ocean.

"We'd hate to see that happen," DeBlieu said, "because it could take traffic into the most remote parts of the refuge."

CEDAR POINT INSTALLS CISTERNS TO HELP THE WHITE OAK RIVER

Advocacy

To demonstrate simple and effective ways to reduce the amount of stormwater flowing into the White Oak River, the N.C. Coastal Federation worked with the town of Cedar Point, a fire department and a local business to install in December three large cisterns at different locations in the town in western Carteret County. The water will then be used for landscaping and other purposes.

A 3,000-gallon cistern was installed at the Western Carteret Fire Department. The cistern, installed next to the building, connects to a gutter system to capture rainwater from the roof. An overflow pipe from the cistern connects to an existing stormwater pond in the event heavy rains exceed the capacity of the cistern. The fire department intends to use the captured rainwater to wash vehicles.

Carteret Heating & Cooling Inc. installed a 1,500-gallon cistern to reduce stormwater that was flowing directly into the White Oak. The building is just a few feet from the river. The cistern was installed behind the building to capture stormwater from the roof. The water will be used to wash vehicles, irrigate the grounds and to control dust on the business' gravel parking lot.

Another 3,000-gallon cistern was placed at the Cedar Point Town Hall to capture runoff from the building's rooftop. The rainwater will be used for irrigation and the overflow will be directed to a large rain garden that will be built in the spring. We'll be recruiting volunteers to help plant this rain garden. For more details on this springtime planting, please visit us at www.nccoast.org.

Grants for the cisterns came from the Community Conservation Assistance Program of the state Division of Soil and



The cistern at Western Carteret Fire Department

Water Conservation and the U.S. Environmental Protection Agency. Environmental Rainwater Solutions installed the cisterns.

The projects are among the recommendations in a plan to restore water quality in the lower White Oak. The federation worked with Cedar Point and



A student at Arthur Edwards Elementary School in Havelock surrounds the plants with mulch.

other partners to devise the plan two years ago after determining that stormwater runoff was polluting shellfish beds in the lower river with bacteria. Cedar Point then received a grant from the U.S. Environmental Protection Agency to follow up on some of the clean-up recommendations.

Other steps to control stormwater that the town and its partners will take this year include building a wetland and three rain gardens at Western Park, a county-owned park near Cedar Point. Three stations to dispose of dog waste will also be placed in the park. Measures to control runoff will also be installed at a boat ramp in the Cedar

Point Recreation Area in the Croatan National Forest.

Education/Restoration

SWANSBORO SCHOOL PLANTS RAIN GARDEN

Teachers from Queens Creek Elementary School in Swansboro were enjoying an educational boat trip on the White Oak River when Brandon Beard hatched an idea. The teachers had asked federation staff to meet and discuss clean-water projects and how best to teach their young students about environmental stewardship. Brandon wanted his third-graders to understand why water quality and the coastal environment are so important, specifically in their day-to-day lives. Having his students do something to help their school and their environment could be the key to reaching them.

Brandon and other teachers began talking to the federation and to the state's Community Conservation Assistance Program, which provides money for projects to control stormwater, about available options. Rain gardens seemed to be a perfect fit; they are hands-on projects that help with water quality and involve students throughout the school year.

The school decided to put in two rain gardens, with Brandon as the project leader, and in December 2010, the project was completed. Students will be planting more perennials and shrubs this March.

RAIN GARDEN RUNDOWN

The federation has been installing rain gardens since 2008 in each of our three

(continued on page 14)

MAKE A DATE AT THE PARK

Make plans to come on out to Western Park near Cedar Point in Carteret County this spring to help protect the White Oak River. We'll need volunteers to plant rain gardens at the park. The gardens will control polluted runoff that has plagued the river. We're still trying to settle on a date, but check our Web site at www.nccoast.org. We're planning to serve up hot dogs and have events for the kids.

BRAD TESH

SERENDIPITOUS: occurring or discovered by chance in a happy or beneficial way.

Brad Tesh came into our office in Ocean one day last fall. He wanted to talk to Frank Tursi about kayaking. He and his wife, Suzanne, are members and had just moved full-time to their condo in Swansboro after Brad retired from his job in Washington. He was taking up kayaking and wanted some pointers from Frank, who's been known to use his kayak to entice puppy drum, flounder and speckled trout out of the White Oak River. Frank had not met Brad before.

We should note that when he's not fishing, Frank manages our Web site, Facebook page and our email service and is sort of our untrained IT guy, among his other duties. He got the job because he likes gadgets and gizmos and builds computers in his spare time. That's good enough for us.



Brad could not have picked a worse day for his visit. Email was down, and Frank had spent much of the morning on internet chats with real IT guys at the company that runs the email server. They were convinced that the problem was on our end.

While Brad and Frank talked about good places to kayak along the river, a staff person poked her head in the door to note that the emails still weren't getting through. What's the problem? Brad asked. Frank tried to explain it without getting too technical for the novice. You know something about this stuff? he asked.

That job Brad had in Washington? Turns

out he was the main computer specialist for the Smithsonian Institution. That's right. The Smithsonian. In fact, he set up its first computer personal network 25 years ago. He decided to visit the office to talk kayaking on the only day the email system has ever crashed. What's the chance of that? There is a computer god, Frank thought.

He quickly put Brad to work. Brad got on the internet, traced the email signal and diagnosed the problem in short order.

"The problem isn't on this end," he typed emphatically to those real IT guys. "It's on your end. Fix it."

They did.

As a good fisherman, Frank knows when he's landed a whopper. He told Brad we need a real IT guy of our own, but can't afford the \$100 an hour such guys normally charge. Would he consider volunteering as our IT consultant? He would, readily.

Brad's been coming to the office every Tuesday ever since. He's mapping our computer network so that we'll be able to rebuild it after The Big One hits. He's also building a server for our Wilmington office, taking parts from old computers we have lying about. He also plans to evaluate all our computing equipment and recommend what we need to upgrade or scrap. And he'll be on hand the next time Frank needs a real IT guy.

As for the personal stuff, Brad grew up in Onslow County, leaving to attend the University of Nevada at Reno. Then, it was on to George Washington University in Washington where he got a master's degree in anthropology. That led to an internship at the Smithsonian and a full-time job when the kid trained to study ancient societies proved his handiness with this new-fangled computer technology. Now, that's real irony.

"When I built that first computer network, there may have been three books on the subject," he said. "I read a few pages in each and became an instant expert."

Though retired, he still works for the Smithsonian as a consultant and will be traveling to Panama this year to work on the Smithsonian computer systems there.

His wife, by the way, is a Radcliff-Harvard graduate and a retired economist for the World Bank. We'll have to figure out a way to put her to work, too.

Brad seems to enjoy his time here. "You guys do cool things," he says. "You're unique. The Smithsonian set the standard for world-class museums. NCCF sets the standard for stewards of the coast."



Students at Chocowinity Middle School realize that planting can be fun.

(continued from page 13)

regions. Much of the funding for the schoolyard rain gardens came from Wal-Mart, the state Community Conservation Assistance Program, the Bate Foundation and the National Fish and Wildlife Foundation's Five Star Restoration Program.

Central region schoolyard rain gardens:

- Annunciation Catholic School, Havelock, 2009
- Arthur W. Edwards Elementary School, Havelock, 2009
- Chocowinity Middle School, Chocowinity, 2008
- Queens Creek Elementary School, Swansboro, 2010
- Smyrna Elementary School, Smyrna, 2009
- Swansboro Elementary School, Swansboro, 2010
- White Oak Elementary School, Cape Carteret, 2009

The federation staff in the central region this year will be working with Camp Albemarle, Tiller School and other area homeowners to educate them and help construct rain gardens on their properties.

If you are interested in learning more about rain gardens or what you can do to help slow or stop stormwater runoff, please visit our Web site at www.nccoast.org.

Come Spend Some Time Restoring an Island

This will be another exciting year to help restore habitat on Jones Island in the White Oak River near Swansboro.

N.C. Coastal Federation staff will be working with Hammocks Beach State Park to continue our project to restore oyster beds and the shoreline. There will be plenty of opportunities to get your feet muddy planting saltmarsh cordgrass, bagging oyster shells and transporting the filled shell bags this winter and spring. From June to August, volunteers will build oyster reefs around the island and continue to monitor previously built reefs.

Environmental education programs on the island will be expanded this year to allow people to learn about the saltmarsh ecosystem, barrier island ecology, water quality and cultural history.

- This spring and summer, federation educators and Hammocks Beach park rangers will offer a series of nine marsh cruise programs that will explore the fascinating local estuary.
- Throughout much of the summer, federation educators will be conducting programs on barrier island ecology for park visitors on Bear Island and at the Hammocks Beach State Park visitor center. A "touch table" for children will also be available.
- Two Jones Island day camps are planned for school children in grades 3-5, one in June and one in July.
- Also, park rangers and federation staff will guide a couple of 2½ hour kayak trips in the marsh behind Bear Island, one in May and one in September.

Please visit our Web site, www.nccoast.org, for dates, more details and registration information.

The federation bought much of the uninhabited island in 2005 and donated it to Hammocks Beach State Park. We began restoring degraded shorelines on the

island two years later with the planting of 4,500 saltmarsh plants to help stabilize the eroding shoreline.

Since then, volunteers have planted close to 43,000 marsh plants -- smooth cordgrass, salt meadow hay and black needlerush -- and created 700 feet of oyster shell bag sills. More than 10,000 bushels of loose oyster shells were also placed in shallow water off the island, creating about two acres of oyster reefs. We're monitoring these restoration sites to document how well they attract young oysters, called spat.

More than 1,700 volunteers did much of the work, contributing 10,350 hours during 89 workdays. They planted grasses, filled mesh bags with stinky oyster shells and built the oyster sills. Cheerfully working in all types of weather while fending off hungry mosquitoes -- there were a few beautiful days along the way -- this hardy group was made up of people of all ages, including students and representatives from over 15 different groups.

While working, volunteers learned about water quality, estuarine sea life and habitat restoration.

The federation also partnered with the park to provide coastal ecology programs through talks, hikes and marsh cruises.

The work on Jones Island has attracted scientists and students from the universities of North Carolina at Chapel Hill, Wilmington and Charlotte, who now conduct research on oysters, habitat and water quality.

The following groups or agencies have provided the bulk of the grant money for the Jones Island projects: the National Oceanic and Atmospheric Administration Restoration Center, Restore America's Estuaries and the Community Conservation Assistance Program of the NC Division of Soil & Water Conservation.

Can Restoring Marshes at North River Farms Lessen Climate Change?

Can restoring salt marshes help lessen the effects of global warming? We aim to find out.

The N.C. Coastal Federation is partnering with the U.S. Geological Survey (USGS), and scientists at N.C. State and Duke universities to measure how much carbon from greenhouse gas emissions is being taken up by the plants in our restored salt marshes at North River Farms in Carteret County. The study will also measure the amount of greenhouse gases (carbon dioxide, methane and nitrous oxide) being released from the soils at the site. It will be the first attempt to measure what effects the restoration of wetlands at the farm might have on climate change.

Salt marsh plants, like all plants, take up or "sequester" carbon dioxide from the atmosphere during photosynthesis, converting it to sugar and oxygen. According to the United Nations' *Blue Carbon Report*, salt marshes, along with seagrasses and mangroves, are one of the most significant carbon "sinks" on Earth, capturing and storing carbon emissions equal to about half of the carbon



Scientists from the U.S. Geological Survey take preliminary soil samples at the North River Farms wetland restoration site.

dioxide emitted each year by global transportation sources.

Carbon dioxide from the burning of fossil fuels is one of the primary gases responsible for a warming planet. Reducing such emissions and keeping them from reaching the upper atmosphere are central to any strategy for minimizing the effects of climate change.

This new research and partnership will measure greenhouse gases released from the soils at the restored North River Farms site and will relate these measurements to salinity, vegetation type and to the global carbon budget. This work will provide data on carbon sequestration in restored salt marshes that have previously been omitted from national evaluations of carbon sequestration and greenhouse gas emissions.

The wetland restoration site at North River Farms provides an ideal location for measuring the gases in different types of restored habitats, including salt marsh and bottomland hardwood forests. The site is also near natural marshes and forests that can be used for comparing gas emissions between restored and natural areas.

Scientists will install 35 measuring devices in restored and natural salt marshes and bottomland hardwood forest areas at North River Farms. The gas samples will be collected every 45 minutes and will be analyzed for carbon dioxide and other greenhouse gases.

The USGS Ecosystems Program is paying for the study.

BRUNSWICK PROJECT TO STUDY LID FOR STATE HIGHWAYS, ROADS

Low-Impact Development

The N.C. Coastal Federation, the N.C. Department of Transportation and Brunswick County will collaborate on ways to incorporate low-impact development (LID) practices into state highway projects in an effort to reduce polluted stormwater runoff and help clean up local waters.

The federation received a \$72,068 grant from the N.C. Clean Water Management Trust Fund to start a cooperative LID planning process that will identify which LID practices are best-suited for roads and highways and compare the costs and effects of those approaches to those of current conventional stormwater treatments.

Conventional approaches, such as stormwater ponds, collect runoff and discharge it into waterways. LID practices, such as rains gardens, mimic a natural landscape by allowing runoff to soak into the ground close to its source.

As part of this project, state highway officials will learn about efforts to implement LID in highway projects from experts and stormwater engineers in other states. Though the discussion will focus on road projects in Brunswick County, the resulting strategies should be applicable statewide.

For more information on this project or other low-impact development efforts, contact Lauren Kolodij at laurenk@nccoast.org.

Education/Restoration

COASTAL HABITATS CREATE OUTDOOR CLASSROOMS

How can learning about our amazing coastal environment compete with all the daily distractions confronting students? By engaging some of the best teachers and tools at our disposal: oysters, marsh grasses and seine nets, to name a few. By incorporating oysters in the classroom or a saltmarsh restoration field trip in the curriculum, the federation's Southeast Region Student Habitat Education Program continues to build and strengthen the link between



(above) Students at Dixon High School in Onslow County dissect oysters in the classroom. (left) Dixon High School students bag oyster shells at Morris Landing on Stump Sound.

students to apply their classroom skills, interact with a variety of professionals and gain the knowledge and drive to become active coastal stewards.

The Oysters in the Classroom initiative is one component of the federation's Student Habitat Education Program, which also includes the Wetland Nurseries Program for middle schools and the Schoolyard Rain Garden Program for elementary schools. The federation began these outdoor education programs in 2008 through the generous support from the North Carolina GlaxoSmithKline Foundation. This foundation awards grants to nonprofit community organizations, universities and other partners for programs that promote the sciences, health and education.

Since the program's inception, the federation has worked with over 2,500 students and teachers from Brunswick, New Hanover, Pender and Onslow counties.

STORMWATER PROJECTS AT SCHOOL EXPAND

The fourth stormwater reduction project at Bradley Creek Elementary School in Wilmington will be installed this spring. The large bioretention area will help to collect

students and their coastal environment.

Students from Wilmington's Eugene H. Ashley and John T. Hoggard high schools and from Onslow County's Dixon High are using oysters in the classroom and field to enhance their marine and earth sciences, biology and oceanography curricula. Classroom lessons that focus on oyster ecology and biology give students a better understanding of the coastal environment through hands-on learning.

While dissecting oysters, students frequently ask if they can eat theirs or wonder how anyone could eat the slimy bivalve. But they get a unique learning opportunity that teachers can incorporate into their curriculum.

Linking the classroom experience to coastal stewardship and local ecology is a critical component of the program. Students work with federation staff to build and monitor oyster reefs. The field work allows



Students at Bradley Creek Elementary School and their teacher plant a stormwater wetland at the school.

and treat runoff from the 19-acre school property, which is in the headwaters of Hewletts Creek. Support for the project comes from the Cape Fear Garden Club, Landfall Foundation, Wal-Mart, N.C. Attorney General's Environmental Enhancement Grant Program, Wilmington's Stormwater Services, N.C. Division of Soil and Water Conservation and the National Fish and Wildlife Foundation's Five Star Restoration Program.

VOLUNTEER TO HELP OUR COAST

Volunteers and members enjoyed a beautiful fall day and a delicious low country boil at Airlie Gardens as the federation and the Benthic Ecology Lab at the University of North Carolina-Wilmington thanked them for all their hard work in 2010.

The region's registered volunteer base grew to 160 with the addition of 62 new and active volunteers. Almost 400 volunteers participated in 25 events last year, contributing over 2,200 hours towards restoration and outreach projects in the region. The events offered a wide range of activities from plantings, bagging oyster shells, festivals, public education, office help and community clean water days. Corporate groups including Wal-Mart and General Electric participated, as did members of the armed services. The volunteers' energy, dedication and hard work enabled the federation to have an incredibly productive year.

We will need volunteers for even more projects this year. Some of the projects are listed below, but please visit www.nccoast.org to check the updated events calendar and sign up to be a volunteer. Volunteer opportunities in 2011 include:

- Planting and maintaining rain gardens in New Hanover and Brunswick counties

- Making oyster shell bags and building an oyster reef restoration project at Morris Landing in Stump Sound
- Staffing the federation's educational displays at various festivals
- Researching coastal environmental issues and helping with efforts in the campaign against Titan Cement

For more information or to participate in any of these initiatives please contact Ted Wilgis at Tedw@nccoast.org. We hope to see you outside soon.

Volunteers and members enjoy the day at a Volunteer Appreciation event at Airlie Gardens in Wilmington.



Titan Opposition Gains New Partners in Fight

The Educational Foundation of America awarded the N.C. Coastal Federation, along with our seven partner organizations in the Stop Titan Action Network (STAN), a \$1.2 million dollar grant to continue our fight against a proposed cement plant and limestone strip mine on the Northeast Cape Fear River near Wilmington.

The grant will allow the coalition to more effectively engage the public and elected officials on the detrimental effects this project will have on the region. The money will also help pay for technical experts.

Started in 1959, the foundation has supported a variety of progressive causes, including environmental protection and conservation.

The grant allowed the groups to hire Sarah Gilliam as the STAN Coordinator. With a master's degree in international environmental policy and a bachelor's degree in journalism, Sarah will coordinate multiple efforts among the STAN partners and has already had a positive effect on the

coalition's ability to engage the public and improve the outreach and education.

STAN held a public rally at the University of North Carolina-Wilmington in October, which was attended by over 250 people. The rally highlighted three special guests from Hudson Valley, N.Y., who shared their story on how they defeated a similar project in their community following a six-year battle.

Titan America, a foreign-owned conglomerate, wants to build one of the largest cement plants in the United States which, as proposed, will pollute our air and water, affect human health and damage our economy in the southeast region.

The plant would be the largest industrial source of pollution in our area for the next fifty years. It would emit mercury, benzene, lead and other toxic pollutants and choke our air with tons of particulate matter each year, contributing to increased risks of premature deaths, strokes, asthma and cancer. Over 8,000 children attend school within five miles of the proposed site. Children are at higher risk for many of

the health effects associated with Titan's emissions.

Titan claims that the plant will not harm the environment or be a risk to human health, but it wants to avoid a thorough review of its potential effects. A Superior Court judge ruled last year that the \$4.5 million in incentive money that the company received from state and local governments meant that it had to adhere to a state law that requires projects that take public money first undergo a comprehensive environmental review. Rather than submit to such a review, Titan instead decided to forego the incentives. The N.C. General Assembly later amended the law to exempt future projects that receive public incentives from undergoing environmental review.

For more information on how to get informed and educated on the effects of this polluting industry on you, your family and our coast, contact Mike Giles, our regional coastal advocate, at mikeg@nccoast.org, or Sarah Gilliam, our STAN coordinator, at sarah@stoptitan.org. Visit our Web site, www.nccoast.org, for more information about Titan.

Lockwoods Folly Plan Offers Fix For Ailing River

People who live along the Lockwoods Folly River in Brunswick County have donned boots and gloves, picked up shovels and taken the first steps toward making the river right again.

Residents from the Winding River and River Run subdivisions late last year teamed up with the N.C. Coastal Federation and the Brunswick County Soil and Water Conservation District to build community rain gardens and other types of natural areas to capture runoff from neighborhood marinas and boat ramps before it enters adjacent river. Thirty-five volunteers contributed over 200 hours to complete the projects, demonstrating that getting a little muddy can be great fun and could make a big difference in keeping our waters clean.

Fixing the Lockwoods Folly River will probably require hundreds of those types of small-scale, low-cost projects strategically placed in backyards, common areas and commercial settings. A study done by the federation, Brunswick County and state and federal agencies found that more than 55 percent of the river is now closed permanently or temporarily to shellfishing because of high bacteria levels. That's a three-fold increase since 1980. Polluted runoff is the culprit, according to our study. It found that bacteria entering the river with each rain must be reduced as much as 84 percent if the river is to once again meet state water standards for shellfishing.



Residents of River Run Plantation near Sunset Harbor, master gardeners and other volunteers planted two bioretention areas to reduce the flow of polluted runoff that enters the river.



Keeping as much rain as possible on the land where it falls is the secret to protecting and restoring water quality in the river. That's the conclusion of a plan to restore polluted shellfish beds in the Lockwoods Folly River. After studying the pollution problems in the river for two years, the N.C. Coastal Federation again joined with Brunswick County to devise a restoration plan, which was released in December and is available on the federation Web site, www.nccoast.org.

The plan advocates using simple, inexpensive methods like rain gardens or cisterns to capture stormwater throughout the watershed. Rain gardens, for instance, are shallow, concave landscaped areas that soak up rain, attract wildlife and can be landscaping amenities. Installing a simple, small rain garden in a backyard to capture runoff can have significant benefits. So could cisterns and rain barrels. Connecting downspouts to a container can slow the flow

of runoff. Using that water later during dry weather can also save money. Forty percent of the water used by the average household in the summer is for watering lawns and gardens.

The restoration plan is the culmination of a long process that actually began in the 1980s when the county's population more than tripled and the river started showing signs of deterioration.

Worried about the river's health, the Brunswick County Board of Commissioners teamed up with the federation, the U.S. Environmental

Protection Agency and the state Ecosystem Enhancement Program to establish the Lockwoods Folly Watershed Roundtable. The eight-member group developed nine strategies that balanced development needs and the environment.

The Brunswick commissioners in 2007 appointed an implementation committee to ensure continued momentum. The federation also received \$309,000 in grants from N. C. Division of Water Quality to determine bacteria sources and levels in the river and to develop an action plan for the restoration of Lockwoods Folly's shellfish beds. That study is also available on our Web site.

Water sampling, which began in November 2007, confirmed that polluted stormwater runoff is responsible for bacterial pollution of the river. The study also found much of the bacteria comes from wildlife. While animals have always been present in the watershed, changes in the now-developed landscape — a maze of drainage ditches and pipes, replacing forests and wetlands with paved or other hard constructed surfaces — allow that bacteria to drain quickly to the river with each rain.



Federation board member Rich Peruggi, second from left, joins neighbors during the planting of the community rain garden at the Winding River boat ramp.

Volunteers Donate Two Years of Time to Federation in 2010

More than 6,000 volunteers, students and interns last year gave the federation more than two years of their collective time.

In that nearly 19,000 hours, they helped restore three acres of living shoreline at three project sites -- the N.C. Center for the Advancement of Teaching in Ocracoke, Jockey's Ridge State Park in Nags Head and Jones Island at Hammocks Beach State Park near Swansboro. They also created 600 feet of sills made from recycled oyster shells, planted over 50,000 marsh grass plants and restored 725 feet of waterfront buffer.

Volunteers planted thousands of native plants in 17 rain gardens or projects to control stormwater. They also helped staff in a multitude of other ways, including clean-ups at Hoop Pole Creek in Atlantic Beach and Morris Landing Preserve on Stump Sound in Onslow County and seagrass restoration in Beaufort. Volunteers also help us with mailings, newsletter deliveries and numerous outreach events.

While we appreciate all that work done by all those people, we want to particularly recognize the work of several people (federation board members in italics):

OVER 200 HOURS OF TIME

Beth Moulton (*central*)

OVER 100 HOURS

Dick Bierly (central)

Randy Mason (central)

Joseph Ramus (central)

Donna Snead (central)

Ginger Webster (northeast)

OVER 50 HOURS

Paula, Paige, Davis & Jackson Blivin (*central*)

Liz Brinker (northeast)

Jack Cleaves (*central*)

James Barrie Gaskill (northeast)

Bob Hixson (*central*)

Midge Ogletree (northeast)

David Paynter (xoutheas)

Rich Peruggi (southeast)

Dot Reist (*central*)

John Runkle (triangle)

Allie Sheffiled (southeast)

Doug Wakeman (triangle)

Ann White (*central*)

FEDERATION BOARD WELCOMES TWO NEW MEMBERS

Dr. Eyualem Abebe and Mr. Leonard Jenkins have been elected to the N.C. Coastal Federation's Board of Directors.



Eyualem moved to Elizabeth City in 2006 to join the faculty in the biology department at Elizabeth City State University. His research interest is primarily aquatic ecology in freshwater, estuarine and marine habitats.

Before joining the university, he worked on a comparative study of invasive species in lakes in

New Hampshire, Wisconsin and Michigan. Eyualem has also investigated the environmental effects of aquaculture in the open ocean. He has a passion for aquatic habitats and has a number of active research projects in the region.

Eyualem says that he is humbled and honored to have been invited to join the federation board, and we are very pleased that he joins our team.

Leonard is the past president and chairman of Brunswick Citizens for a Safe Environment, a grassroots group that fought and ultimately won a battle to stop the Hugo Neu landfill in Navassa in 2008.

He has also been a volunteer for the federation in the southeast region, working with others to represent us at special events.

Leonard is the technology director for Brunswick County Schools. His wife, Tammy, is a teacher with the school system. Leonard is retired from the Air Force and received a Bachelor of Science degree in technology from Peru State College in Nebraska. We warmly welcome Leonard to the board.



FEDERATION HIRES FIRST 'COASTAL FELLOW'



The N.C. Coastal Federation has hired its first Coastal Fellow, Ana Zivanovic-Nenadovic. This newly created year-long position is designed to provide a broad array of experiences in coastal management and the work of nonprofit organizations to young professionals.

Ana will conduct short- and long-term strategic research and analysis projects in relation to the coastal environment, and will assist the federation's Executive Director, Todd Miller, in day-to-day policy and management issues.

Ana has a master's of business administration degree in sustainable business from the University of Maine, where she was recognized as the most outstanding student of her class. She received her undergraduate degree in hotel business and management from Universidad Rey Juan Carlos in Madrid, Spain. Ana also attended the University of Belgrade in her native Serbia majoring in Hispanic philology before completing her undergraduate work in Spain.

Before joining the federation, Ana held research positions at the University of Maine, including research about business-community relationships on building sustainable solutions to watershed management and on community attitudes toward fuel substitutes generated from forest biomass. She has also been a leader and an advocate of the creation of the sustainable business track in the university's MBA program. Before coming to the United States, she held various positions at a major hotel chain in Spain.

Ana is fluent in Serbian, English and Spanish and has conversational skills in several other languages.

She lives in Beaufort with her husband. In her leisure time, she enjoys outdoor activities, cooking, gardening and playing classical guitar. Ana belongs to the International Association of Business and Society, Beta Gamma Sigma Honors Society, Phi Kappa Phi Honors Society, Maine Business School Sustainability Group and the Graduate Business Association at the University of Maine.

WETLAND ADVOCATE MARK BRINSON DIES

A longtime friend of the N.C. Coastal Federation and a strong advocate for protecting our wetlands, Dr. Mark M. Brinson, died in January. He was 67.

Brinson, a professor at East Carolina University since 1973, taught numerous courses in ecology and biology and authored or co-authored many publications about his research. He also served as a technical consultant to numerous state and federal agencies and served as president of the Society of Wetland Scientists.



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Native Plant Festival

PRESENTED BY THE NORTH CAROLINA COASTAL FEDERATION

FREE & OPEN TO THE PUBLIC

Friday, April 15, 2011 • 3PM-7PM • Member Preview
Saturday, April 16, 2011 • 8AM-4PM • Public Sale

WHY NATIVE PLANTS

Native plants preserve our natural heritage while reducing pollution and saving money. Native plants are low maintenance, require less water, fertilizer and pesticides, and are more adaptable to your living space.

FESTIVAL-GOERS WILL ENJOY

Thousands of Native Plants for Sale
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Local Artists and Craftsmen • Refreshments

ENTERTAINMENT BY

Kudubai • 4EverAll • Frank Gaines • and more TBA

LOCATION

NC Coastal Federation • 3609 Highway 24 • Ocean, NC
Located about halfway between Morehead City and Swansboro

ARTISTS' INFORMATION

If you are a coastal artist or craftsman and are interested in selling your art, crafts or wares at the Native Plant Festival, contact Rose Rundell for more information at 252.393.8185 or roserr@nccoast.org

FOR MORE INFORMATION

Rose Rundell • 252.393.8185 • roserr@nccoast.org • www.nccoast.org