

OUR COAST



North Carolina
Coastal Federation
Working Together for a Healthy Coast

MEET THE NEXT GENERATION
OF MARINE SCIENTISTS
&
UPDATES ON THE
RODANTHE HOUSES

EXECUTIVE DIRECTOR LETTER

Dear Friends and Supporters,



On the oyster front, the Federation recently worked with contractors and the NC Division of Marine Fisheries to build over 40 acres of oyster reef at Maw Point and Brant Island in Pamlico County. This project deployed 43,000 tons of crushed concrete,

granite, and marl to create oyster habitats and inch closer to our goal of creating 500 acres of oyster sanctuaries in the Pamlico Sound. This network of oyster sanctuaries supports over 350 million individual oysters that filter between 5 and 17 billion gallons of water each day, and generate oyster larvae that will seed new oyster beds across the sound.

Implementation of our large-scale restoration projects would not be possible without substantial investments from federal and state funding sources, including the EPA, National Oceanic and Atmospheric Association, and the North Carolina General Assembly, all of whom recognize the environmental and economic returns on their investments in our coast. We are proud to have leveraged competitive federal and state grants into large-scale restoration projects over the years, and we also take pride in

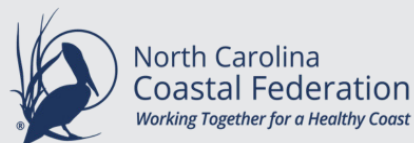
the fact that an average of 88% of the funds we've received over the past several years has gone directly toward the purchase of materials and supplies and to the local workforce to design, construct, and restore wetlands, salt marshes, oyster reefs, living shorelines, and more.

RTI International completed a study on four of the Federation's restoration projects back in 2015 and found that the \$8 million invested in those projects created 116 full-time jobs and nearly \$18 million in local business and household earnings.

Since most of the grant funds we receive go straight to local contractors and suppliers, your donations and membership dollars are incredibly important in supporting our staff and operations to make these big projects possible, while also supporting our education, advocacy and outreach efforts coastwide.

We are thrilled to be making a significant difference for the coastal environment, while also supporting the local economy and working with great people and partners!

Braxton Davis



PUBLISHED BY: North Carolina Coastal Federation

EDITOR: Lauren Colonair

DESIGN: Lauren Colonair

nccf@nccoast.org • www.nccoast.org

Headquarters: 3609 NC 24 (Ocean) Newport, NC 28570 | ph: 252-393-8185

Northeast Satellite Office: 637 Harbor Road P.O. Box 276 Wanchese, NC 27981 | ph: 252-473-1607

Southeast Satellite Office: 309 W. Salisbury St. Wrightsville Beach, NC 28480 | ph: 910-509-2838

CONTRIBUTING WRITERS AND STAFF: Coastal Federation staff contributed to the content of this edition of Our Coast.

CONTRIBUTING PHOTOGRAPHERS: Coastal Federation Staff

COVER PHOTO: Nick Green



A Plan for Conservation and Recreation along the Newport River

The Newport River estuary runs about twelve miles southeast through the Town of Newport flowing ultimately into Bogue Sound between Morehead City and the Town of Beaufort. It is one of the most economically valuable and environmentally endangered oyster-growing estuaries in North Carolina, it's also used by millions every year for activities like boating, swimming and fishing.

These uses depend on clean surface waters to thrive and are major economic drivers in the region, but the water quality of the Newport River has been declining for decades.

For the last few years, the Coastal Federation has been working with our partners to develop a plan to protect, restore and replicate the natural hydrology of the watershed to reduce polluted runoff from reaching the river.

Part of that plan includes acquiring and restoring thousands of acres of ditched and drained land along the river. Restoring the natural hydrology of the land with created wetlands will keep millions of gallons of stormwater runoff from reaching the river.

"The land totals nearly 1,400 acres, about 1,100 of those are timber and the rest is natural marsh along the water," explained water quality program director Bree Charron. "What we're hoping to do is take those ditches and close them up, we might fill them in or we might build a structure and we'll hold all of that runoff back on the land."

The NC Coastal Land Trust purchased the land from Weyerhaeuser Co. before handing it over to the Federation.

"This seemed like a project where we could share our expertise, us being with land acquisition and then turning lands over to the Coastal Federation to do restoration work," explained Janice Allen, Senior Land Advisor with the Coastal Land Trust.

Allen, who led the effort to acquire the land and transfer it to the Federation for restoration, said this is an exciting next step to conserving land in North Carolina.

"I can't think of more satisfying work than conserving land, there are just so many benefits to people and wildlife and our ecological systems," Allen said.

Now that the Federation officially owns this land, the real work begins.

Charron said the restoration work will begin soon and involve filling in drainage ditches and restoring the network of streams and creeks that once wove their way across this property.

The Federation will also be working to create a recreation plan for the site.

"We'll also be working with some local stakeholders to develop a recreation plan for this site that allows public access with passive recreation similar to the Oyster Point Campground in the adjacent National Forest," Charron said.

Altogether this first 1,400 acres of land, once restored, will hold back 215 million gallons of stormwater runoff annually.

UNCW Completes Permeable Paving Project

The Federation teamed up with UNCW, the City of Wilmington Heal Our Waterways, Coastal Stormwater Services Inc., and DiMaio Concrete to install permeable paving at the University's Randall parking lot. The permeable pavement is helping soak in stormwater runoff before it can wash pollutants, like bacteria, into Bradley Creek.

The project was made possible with EPA 319 grant funding and is one of several stormwater reduction projects installed since the partnership was formed in 2019.

Read more about the Bradley-Hewletts Creek Watershed Restoration Plan here.





Empowering the Next Generation of Marine Scientists

With support from the National Oceanic and Atmospheric Administration and the NC General Assembly, the Federation is partnering on a multifaceted project to build oyster habitat, educate the community and engage with young scientists about oysters.

Over the past year, we have constructed over 40 acres of oyster sanctuary in the Pamlico Sound and worked with the North Carolina Aquarium at Roanoke Island to create an educational oyster display. Equally exciting is our new partnership to train the next generation of oyster scientists.

In an ongoing collaboration with NC State University's Center for Marine Sciences and Technology and NC Central University, through this project we will be training the next generation of marine scientists and restoration professionals. Specifically, eight graduate students will be sponsored thanks to this innovative partnership.

Through their involvement in the oyster sanctuary project, these

students will receive funding for graduate school tuition, room and board, stipends, and specialized training, including open water and scientific diving certifications.

But more importantly, this first-in-the-nation partnership between the Federation, a marine laboratory, and a Historically Black College and University (HBCU) can serve as a

model for other coastal programs around the country.

Each student has a specific research project they are working on, from fish utilization of oyster sanctuaries to habitat suitability models used to predict where oyster sanctuaries would be best in Pamlico Sound, to the concentration of heavy metals and PFAS in restored oyster reefs, among other important research topics.

NCCU grad student Tamarr Moore is focusing her research on understanding the presence of heavy metals in our environment. "I am loving the learning process and thoroughly enjoying the opportunity to contribute to these critical environmental efforts," Moore explained.

This partnership will allow students to dedicate their time and talent to promoting habitat restoration and coastal resilience.

Moore isn't the only student who has already felt the impacts of this work and their time in the field, NCCU graduate student Lauren Johnson said being in the field has opened her eyes to several new possible career

options. "I am extremely grateful for this opportunity as I have been introduced to so many people and have learned about different career paths. I am glad to be a part of this project and to grow my skills in research, fieldwork, and communication," Johnson said.

For many of the students this opportunity has also shed a light on the need for more students to have exposure to projects like this, "This experience highlights the importance of bringing such programs to HBCUs and the Piedmont region," Moore said.

It's with that in mind that Moore and Johnson will be making time through this program to meet and work with younger students, offering a critical opportunity for them to see diversity in coastal sciences and open their minds to various careers they could one day pursue.

This project also supports an economic analysis that is currently underway by RTI and the creation of an interactive oyster education display at the Aquarium on Roanoke Island. The exhibit is expected to open to the public soon.

Oyster Shell Recycling

This year the Federation is on track to reach our goal of recycling 6,000 bushels of oyster shells, that's twice as much as was recycled in 2023. We've also been able to bring on board a new Recycle for Reefs collection site at Earp's Seafood Market in the Raleigh area.

SALT MARSH

The Vital Role of Salt Marshes

If you spend time along the Coast of North Carolina it won't take long to see that picturesque salt marsh grass hugging the coastline. While beautiful to look at, these coastal wetlands have much deeper roots in their importance to the ecosystem and the economy.

Salt marshes support fisheries and wildlife, protect and provide socio-economic benefits to coastal communities, provide buffers for military facilities, and foster cultural values and traditions. Salt marshes also provide many ecosystem services, including essential fish habitats and water quality enhancements. They also provide critical community resilience benefits including buffering shorelines from erosion and flood protection for adjacent communities, and they help regulate climate change through the removal and sequestration of carbon from the atmosphere.

Carbon sequestration is when plants and soil absorb and trap carbon dioxide from the air, burying it underground. In salt marshes, the low-oxygen soils allow carbon to stay trapped in the sediment for a very long time, as long as the habitat is not disturbed.

It's the versatility of what salt marshes do in the environment that drew in the Federation's Salt Marsh Program Director Jacob Boyd. "For me, this is what makes them so critical to protect and restore because they provide the whole package of enhancing ecosystem and community resilience," Boyd said.

But what exactly is salt marsh and why should you care that they are disappearing? Salt marshes are a specialized type of coastal wetlands that are well-adapted



to tidal flooding and salt water. Made up of about 10 primary plant genuses, salt marsh plants tend to fill very specialized roles and are highly sensitive to slight changes in elevation.

Covering about 220,000 acres, North Carolina is part of one of the country's largest remaining expanses of salt marsh that helps make up about 1 million total acres from the South Atlantic Coast in NC down to the Atlantic coast of Northern Florida.

Like many other coastal habitats, salt marshes are in trouble, and it's why the Federation has put forth an effort to not only protect them but also restore what's being lost.

We have lost approximately 46% of historical salt marshes worldwide. The threats to salt marshes include degradation from land and water uses, increased stormwater runoff and pollution, and effects of climate change such as sea level rise, storms, and temperature changes.

Unfortunately, the threats to salt marshes pose even greater impacts on socially vulnerable communities. Along the southeastern US coast, sea-level rise is and will continue to have disproportionate impacts

on residents in socially vulnerable coastal communities.

Coastal property owners can help protect salt marsh by installing living shorelines. These are more natural shoreline protection methods that provide erosion control and numerous benefits to fish habitat, salt marsh restoration, and coastal resilience. Living shorelines are one of many strategies outlined in the North Carolina Salt Marsh Action Plan (NC SMAP) that, through the support of numerous partner organizations and regional collaborators,

was developed by the Federation in May 2024 to protect, restore, and allow for the migration of salt marshes in coastal North Carolina. The plan also includes strategies and recommendations to increase carbon sequestration and resilience of coastal habitats and communities.



Cleaning Up Coastal Waters

North Carolina is known far and wide for its stunning coastal waterways but, scattered behind the beautiful salt marsh grasses and tucked up on the many islands that dot the coastline is a hidden problem: marine debris. And a lot of it.

Since 2019, the Coastal Federation has removed more than 3 million pounds of trash, lumber, vessels, and much more from our coastal habitats.

The Federation certainly hasn't done this work all by itself. We've had vital funding support from federal agencies, the NC General Assembly, donors, and a number of federal, state and local partner organizations. And we've relied heavily on the maritime expertise of commercial fishing crews to help us. Crews like Capt. Steve Nash and his mate Josh Roberson.

Nash and Roberson first came aboard with the Federation in 2017 to help with the Lost Fishing Gear Recovery Program, which takes place during the closure of the

blue crab fishery in the winter.

Being in the commercial fishing industry for 25 years, you would think Nash has seen just about everything the coastal waters have to offer. But since he started helping with the Federation's large-scale marine debris efforts in 2023, he says he finds something surprising every day.

"Sometimes commercial fishing can get really repetitive and I

like covering the shorelines of the Pasquotank River and North River because it's fun, like treasure hunting! You never know what they're going to find next," Nash explained.

Nash said he didn't realize just how many plastic water bottles, pieces of treated lumber, and other trash he and the crew would find each day.

"We have found life jackets, boat pieces, countless crab pot buoys, an oyster cage, and even part of a fireproof lock safe that seemed someone had broken into - which surprisingly was floating due to the insulation it's made with," Nash said.

For Nash and his crew, being able to ensure the waters they rely on for their livelihood are clean is something that has been a driving factor for them to get out there every day to collect thousands of pounds of trash by hand.

The work Nash and the other crews are doing up and down the coast is invaluable in keeping harmful marine debris out of the water, but it's not the only work

being done.

The Federation is partnering with law enforcement, local governments, state legislators, and others to try and prevent this debris from even entering waterways and coastal habitats. Through all these partnerships we hope to one day see our coast free of marine debris.

Renewing the NC Marine Debris Action Plan

This fall the Federation and partners are reflecting on actions over the past five years to carry out the NC Marine Debris Action Plan, which was developed in 2020 as a framework for preventing and removing marine debris along the coast. This group is again working together to map out a plan for the next five years to continue helping keep North Carolina debris-free.

EDUCATION

Empowering Coastal Communities: A Journey of Education and Restoration

The Coastal Federation's education team shoulders the responsibility of spreading not only knowledge about but also appreciation of the NC coast and all of its vital ecosystems. Through the engagement of pre-K students to rotary clubs, their efforts lay the groundwork that ensures the success of our core programs.

The task of protecting and restoring an entire coastline is something that can only be done with the input and participation of every coastal community. That is why it is so important to us to make our educational events and activities accessible to all!



Recently, we took the kids of the Boys and Girls Clubs of the Coastal Plains behind the scenes with our Coastal STEM Career Fair. Thanks to the help of our partner organizations and the Bosch Community Fund, we were able to introduce 90 teens from 6 different clubs to a vast array of potential jobs and career paths that exist right in their backyard. Teaching people why these careers

are needed and what problems we are trying to solve is also a key part of our educational mission. For our educators, being able to participate in the Waccamaw Siouan STEM Day was an honor and the perfect opportunity for us to educate about the importance of clean coastal waters. With the help of Duke’s Superfund, the Cape Fear River Watch, NC State, and funding from the Landfall Foundation, we spent the day promoting the “Stop, Check, and Enjoy!” Program through interactive activities that taught participants about the impacts poor water quality has on essential food sources such as fish and what we can do to make a difference. Finding ways to get individuals

involved with our work is another one of our favorite ways to connect people to coastal issues. We could not be more thankful for the dedication the students from River City YouthBuild showed during their visit to our living shoreline in Jockey’s Ridge. While they explored the estuary and learned about the ecosystem and its inhabitants, they also planted 500 salt marsh grass plugs, significantly contributing to our restoration efforts.

Whether through events or exploration in the field, our education team is always hard at work bringing our coastal communities together to help ensure a bright future for the coast and its people alike.

COASTAL MANAGEMENT



Outer Banks Faces Coastal Challenges

North Carolina’s Outer Banks is a destination for millions each year with its miles of beautiful coastline and many outdoor activities. But not all of the beaches are in pristine condition.

For years Rodanthe has been plagued with the many problems that come with rising sea levels and eroding coastlines, mainly in the form of the threatened oceanfront structures. In the last four years, 10 houses have been taken down by the churning ocean. Each one leaves a debris field that is miles long, and officials have been at a loss over exactly how to tackle the complex issues

surrounding each home that is threatened or lost.

In September, four houses collapsed within four days, the latest having been slated for demolition before it fell. From a distance this might sound like an easy fix - simply move the homes or tear them down - but there are a number of regulatory, financial, legal, and insurance issues that make the situation complex and unpredictable for property owners and coastal managers.

So where do we go from here? This summer the NC Division of Coastal Management and the National Park Service’s Cape Hatteras National Seashore released a report with ideas on several possible long and short-term solutions in a report titled “Managing Threatened Oceanfront Structures: Ideas from Interagency Work Group,” which includes an executive summary with eleven ideas for dealing with threatened structures. This includes identifying financial assistance opportunities for relocation or demolition of threatened homes, determining

appropriate strategies and legal authorities for enforcement along an ambulatory boundary, and advocating for proactive public and private insurance strategies to address threatened structures before collapse.

The Federation’s coastal advocate served as a panelist on the public workgroup meetings to help inform the development of strategies outlined in the report.

Further down the coast in Buxton, the beach has been facing its own troubles. Since last year, the beach access in Buxton has been closed due to a public health advisory that was issued when a petroleum odor and sheen were detected in the ocean. The source of the contamination is petroleum-contaminated soils originating from a former military site.

Remediation efforts are currently underway at the site. The Army Corps of Engineers has begun identifying the specific source of contamination and removing petroleum-saturated soil.



www.nccoast.org

© 2024 North Carolina Coastal Federation Printed with soy inks on 100% PCW recycled paper at Barefoot Press, Raleigh, NC. Please recycle this newsletter.

Holiday Gift Giving Guide

Give with a purpose for everyone on your list!
*Don't forget to visit our gift shop for new seasonal items!
Order by Dec. 17th*


Gift Membership



When you give a gift membership, you can introduce a friend to coastal conservation and send something meaningful to unwrap.

nccoast.org/giftmember

Adopt an Oyster



Give oysters a bright future in North Carolina waters! When you adopt an oyster you'll receive an oyster knife that is perfect for all the seafood lovers in your life.

nccoast.org/myoyster



Give with Confidence

Become a Sustaining Member



Consider upgrading your membership to become a sustaining member of the Federation. As a thank you for providing the support we count on, you will receive an exclusive sample of NC sea salts.

nccoast.org/sustainer

Shop our Holiday Collection with Recover Brands!



This eco-friendly company is printing exclusive sweatshirts and t-shirts for the Federation this holiday season.

Get yours today!



The Coastal Federation has the highest ratings for outstanding fiscal accountability and transparency. We value your support and are good stewards of your gift.




Don't forget: You can also support the coast during the holidays with charitable gifts from an IRA or gifts of stock! Please contact Sarah King at sarahk@nccoast.org for updated gift instructions.