

NCCOAST.ORG | *Working Together for a Healthy Coast* | FALL 2023

# OUR COAST



North Carolina  
Coastal Federation  
*Working Together for a Healthy Coast*

INVESTING IN THE NC COAST

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SEE HOLIDAY  
GIVING GUIDE ON BACK COVER

# LETTER FROM THE DIRECTOR

## Dear Friends and Supporters,

As we stand on the cusp of completing 41 years of work dedicated to the preservation and restoration of our coast, I find myself reflecting on the remarkable journey we've undertaken at the North Carolina Coastal Federation. Moreover, I contemplate the myriad of challenges that await us as we continue our mission to safeguard the invaluable wetlands gracing our magnificent and prolific coast.

North Carolina's coastal wetlands, comprising both salt marshes and freshwater wetlands, function as the vital "kidneys" of our coastal estuaries. They play a pivotal role in regulating salinity levels, maintaining water quality, and enhancing overall fishery productivity in our coastal waters. As our enduring bumper sticker succinctly states: "No Wetlands No Seafood."

Over the years, we've made substantial strides in the protection and restoration of wetlands. In 1982, relying on the Clean Water Act and public sentiment, we successfully thwarted plans to strip mine approximately 120,000 acres on the Albemarle-Pamlico peninsula. A significant portion of this property, along with the surrounding wetlands, was eventually safeguarded as two National Wildlife Refuges.

Since then, diverse stakeholders have united to rehabilitate previously degraded wetlands through expansive restoration initiatives, covering tens of thousands of acres of working lands. Simultaneously, regulations designed to protect wetlands grew more robust at both the federal and state levels. The federal farm bill, for instance, terminated commodity subsidies for any

cropland converted from wetlands in 1985.

For many years, attempts were made to either bolster or weaken federal and state wetland regulations, while enforcement of existing standards fluctuated unpredictably. This year, a dual setback dealt a severe blow to wetland safeguards. First, the U.S. Supreme Court excluded wetlands not directly connected via surface waters from federal protection. Subsequently, the N.C. General Assembly mandated that state agencies adopt this new federal definition. Consequently, more than half of the formerly protected wetlands along our coast now lack regulatory protection.

A glimmer of hope is that increased funds have become available for purchasing these unprotected wetlands, and grants and appropriations for land acquisition have risen. However, acquiring all the necessary wetlands is an unrealistic proposition. The grim reality is that as more wetlands vanish, our coastal waters will become increasingly polluted. The absence of wetlands translates to diminished fish populations, more shellfish harvest closures, heightened swimming advisories, more flooding, and a surge in public health concerns.

Considering these challenges, it is evident that we must reimagine our approach to wetland protection in North Carolina. We must embrace innovative strategies, cultivate robust and diverse partnerships, and champion policies that prioritize wetland conservation to protect our economy, way of life, and public health and safety.

Our efforts in the upcoming year will center on the following:

**1. Restoration and Resilience:** We will redouble our endeavors to restore and safeguard wetlands, rendering them more resilient in the face of climate change.

**2. Education and Outreach:** We firmly believe that raising awareness and educating the public are pivotal to our success. Therefore, we will persist in organizing field trips, workshops, seminars, and community events to engage and enlighten our fellow North Carolinians about the critical significance of wetland conservation.

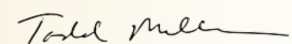
**3. Advocacy and Collaboration:** We will forge close alliances with policymakers, local governments, and an array of community organizations to advocate for policies that safeguard our wetlands. Collaboration is the linchpin in effectively addressing these multifaceted challenges.

**4. Volunteer and Donor Engagement:** We extend an invitation to all of you to join us in this vital mission. Whether you can contribute your time, expertise, or resources, your support is invaluable.

As we tackle the hurdles awaiting us, our efforts must transcend the mere protection of wetlands; they are about securing a sustainable and prosperous future for North Carolina. Together, we can effect transformative change.

Wishing you a joyous holiday season and a New Year filled with hope and progress.

Sincerely,



North Carolina  
Coastal Federation  
*Working Together for a Healthy Coast*

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## Taking Action In the Newport

The Newport River is one of the most economically valuable and environmentally endangered oyster-growing estuaries in North Carolina. The river supports local commercial and recreational fishing, oyster aquaculture, swimming, and tourism. 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. Water quality sampling by the N.C. Division of Marine Fisheries and N.C. State University shows local shellfishing waters are impaired by bacterial pollution when it rains. It only takes approximately 1.6 inches of rainfall to close waters to shellfish harvest because of runoff.

The Coastal Federation is working with community stakeholders, state agencies, and local government staff to reverse this trend by developing and ultimately implementing a watershed restoration plan. Once complete, the plan will provide a framework for prioritized restoration projects and funding opportunities to support them. Similar plans have brought millions of dollars to neighboring coastal communities, their partnering businesses, and institutions.

This year part of the planning process includes a key effort to restore 1,400 acres along the river. The Federation was awarded \$1.6 million this summer by the North Carolina Land and Water Fund Flood Risk Reduction Program

to design and implement the restoration of ditched and drained timberland to wetlands within the Newport River watershed. The 1,400-acre tract that was recently purchased by the N.C. Coastal Land Trust is being transferred to the Federation. The tract includes 1,100 acres of timberland and 300 acres of high-quality wetland habitat. When complete,

the project is expected to retain at least 165 million gallons of runoff on the property during a large storm.

The key goal of watershed restoration planning is to prioritize and fund cost-effective stormwater retrofits to help “turn back the clock” on water pollution, reduce instances of flooding, match up capital improvements and stormwater retrofits, increase community awareness about the watershed, and position local governments with retrofit funding. The large-scale wetland restoration project is a welcome jump start to improve water quality in the Newport River.

## N.C. General Assembly Funds Pilot Stormwater Program

The Coastal Federation is set to receive a \$5 million appropriation to develop and carry out a pilot Stormwater Retrofit Cost Share Program. The program will provide cost-share and technical assistance to repair and install upgrades to stormwater systems and better track compliance.

Since 1988, the state has issued about 15,000 coastal stormwater permits to residential, commercial, and institutional development projects, but many of the systems are not operating properly and failing to protect coastal water quality. The failing systems are also contributing to localized flooding in coastal commu-

nities following average rainfalls which has resulted in the need for such a retrofit program.

With this major commitment of funds from the N.C. General Assembly, the Coastal Federation is stepping in to work with key partners to develop and test a cost-share strategy to help communities, businesses, and residents fix some of the plaguing stormwater problems by installing system upgrades.

The goal of the project, and ultimately the retrofit program, is to provide technical, legal, and financial assistance to assess, retrofit, monitor, and maintain the existing network of state-permitted stormwater control measures preferably with more nature-based solutions. In 2017, the state updated and approved design standards for individual stormwater control measures to provide stormwater credits for engineered techniques that promote stormwater infiltration, evapotranspiration, and post-filtration discharges. Some of the new standards are for infiltration devices, permeable pavement, disconnected impervious surfaces, and rainwater harvesting which are considered nature-based strategies.

The new program plans to promote and use many of these new standards that are more effective and efficient in managing stormwater. It is a key recommendation in the *Nature-based Stormwater Strategies Action Plan* that was developed by the Coastal Federation and the Pew Charitable Trusts in 2021.



# MARINE DEBRIS



## Ramping Up Marine Debris Removal and Prevention

Since Hurricane Florence in 2018, the Coastal Federation has been aggressively working to remove all forms of marine debris from our coastal waters. In partnership with the N.C. General Assembly as well as numerous federal, state, and local agencies, more than 3 million pounds of debris, over 300 abandoned and derelict boats, and thousands of lost pieces of fishing gear have been collected and removed from coastal waters and salt marshes.

To allow these programs to continue, this summer the Federation secured a substantial \$4.5 million in funding spanning four years through the Bipartisan Infrastructure Law, courtesy of the National Oceanic and Atmospheric Administration, or NOAA. In addition, state lawmakers also appropriated \$500,000 to facilitate collaborative work with agencies and local governments to establish a sustainable program to prevent and remove abandoned and derelict vessels, or ADVs, and to bolster efforts to remove debris

and derelict fishing gear.

These financial injections serve as a vital catalyst for our ongoing Marine Debris Program initiatives. This funding enables the Federation to clean coastal waterways by contracting with field crews that are walking and wading along our shorelines, marshes, and islands picking up tons of marine debris. In addition, resources help advance public awareness and participation in not only cleaning our coast but also in preventing this litter in the first place. This ongoing work has already convinced state lawmakers to enhance building standards for docks and piers to bolster their resilience

against future storms.

Marine Debris Program Director Ted Wilgis underscores the critical importance of public awareness and action in minimizing debris ingress into our waterways.

"This funding empowers us and our partners to expand outreach endeavors, covering storm-resistant dock construction and maintenance, storm preparedness for properties, and the

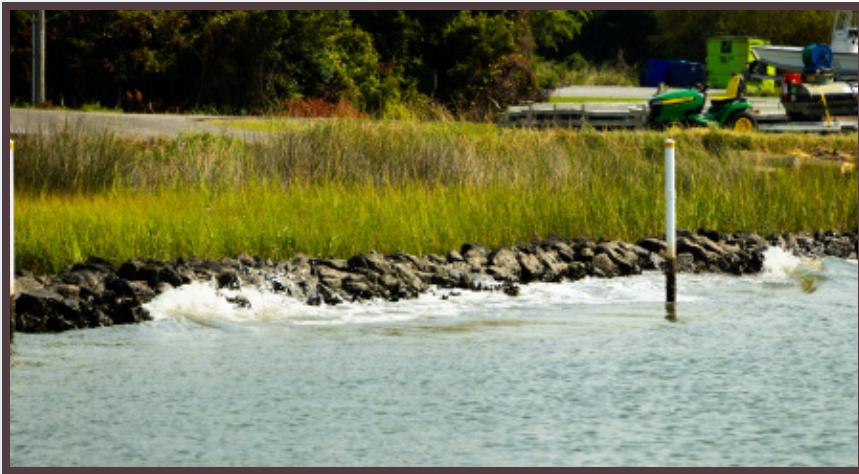
reduction of litter originating from boating, fishing, or beach visits," he said.

Additionally, the NOAA funding places significant emphasis on the continued removal of ADVs. Since 2020, a remarkable joint effort by agencies, local governments, and the Federation has extracted over 300 vessels from the water. The Federation, with the aid of NOAA funding, is set to remove an additional 50 vessels.

Since 2019, our marine debris removal teams have diligently removed more than 1,500 tons of debris from coastal waterways. Regrettably, this represents only a fraction of the debris present in our coastal ecosystems. The supplemental funding presents an opportunity for the Federation to continue engaging local commercial fishing crews in the crucial task of debris removal. Moreover, it empowers these crews to venture inland, assisting additional vulnerable and underserved communities.

Wilgis emphasized the significance of this funding extension, as it enables crews to reach previously untouched areas in dire need of cleanup. He affirmed, "The ability to sustain these crews in their debris removal efforts and extend their reach to more regions, especially communities with limited resources, is making a monumental difference along our coast and in our communities."





## Expanding Biodiversity of Living Shorelines

Living shorelines have endured rigorous testing for over two decades here along the North Carolina coast and have proven themselves as a dependable, eco-friendly solution for stabilizing eroding shorelines and rejuvenating estuarine ecosystems.

The Coastal Federation has embarked on a collaborative research project with N.C. State University and Duke University to delve into the rich tapestry of plants and animals that inhabit these shorelines, collectively known as biodiversity. Their goal is to explore the potential for enhancing the growth and diversity of life on and around these shores.

Dr. Stacy Zhang, an associate professor at N.C. State University and a key researcher in this project, highlights the numerous advantages of augmenting biodiversity within living shorelines. These advantages encompass increased resilience to extreme heat, drought, and the punishing forces of severe storms. Furthermore, a more diverse habitat can encourage crabs, fish, and shrimp to thrive.

Dr. Zhang and her team believe that even slight modifications to the construction of living shorelines can yield substantial impacts. Simple measures like introducing marsh grasses within the shoreline structure or adding mussels to the oyster beds can significantly enhance the habitat's ability to endure

drought and heat conditions.

“Take inspiration from nature and think about how animals are working with each other and how we can utilize these positive partnerships and cooperation essentially between organisms to increase resilience and growth of these habitats,” explained Dr. Zhang.

Currently, Dr. Zhang's research which will take place over the next three years involves surveying existing living shorelines to identify the types of marsh grasses and animals already inhabiting these areas. Subsequently, the following year they will assess how introducing or altering specific features affects the populations. Finally, as part of the third year of research they will take insights gained, and build a new living shoreline from scratch, this will contribute valuable data to the Federation's ongoing efforts to construct living shorelines that protect against erosion and rejuvenate coastal ecosystems.

## State Lawmakers Support Living Shorelines

In response to the increasing demand for natural estuarine shoreline management systems using marsh grasses and sills to combat erosion, the 2024 state budget just approved by the

state General Assembly allocates \$2 million to help encourage the use of living shorelines by public and private property owners.

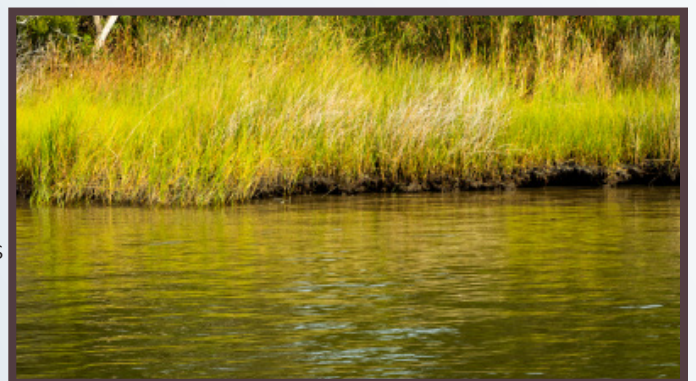
Dr. Lexia Weaver, the Living Shoreline Program Director for the Federation, underscores the surging interest in living shorelines along the coast. “This funding will help match private and public funds and protect more of our coastline salt marshes and adjacent built properties from boat wakes, sea level rise, and severe storms,” she said.

## Jockey's Ridge Living Shorelines Complete

The Coastal Federation worked with Jockey's Ridge State Park, Quible and Associates, and Total Marine Services to build a granite rock living shoreline sill. Numerous volunteers joined us to plant marsh grasses.

The ramped-up living shoreline will better stabilize the area and protect the habitat and natural resources of this historic site. Now nearly an acre and a half of restored coastal marsh will help reduce the impact of wind and waves on the once eroding shoreline.

This project was supported by the Camp-Younts Foundation, Dare County Tourism Impact Grant, Fish America Foundation, Grady-White Boats, North Carolina Land and Water Fund, the Webster-Lyerly Endowment for Coastal Resource Protection as well as private donations.



# OYSTERS



## Cedar Island Oyster Sanctuary Complete

Oysters are considered one of the most important species in our estuaries, providing essential benefits to the ecosystem and the coastal economy. The habitat of the small but mighty oyster has been on the decline for decades. That's why the Coastal Federation is collaborating with the N.C. Division of Marine Fisheries and other partners to reverse this trend by restoring their habitat so wild oysters can thrive once again. This summer, the Federation and Division completed the Cedar Island Oyster Sanctuary, which now covers 56 acres of developed habitat and will soon be home to more than 56 million oysters.

"It is very gratifying to see the completion of another sanctuary in partnership with the Division," said Erin Fleckenstein, the Federation's oyster program director. "This is the fourth sanctuary we've partnered to build. We're encouraged by the success of this work, and we're looking forward to continuing these efforts moving forward."

The Cedar Island Sanctuary is part of a larger system of oyster sanctuaries called the Senator Jean Preston Oyster Sanctuary Network, which covers 395 acres in the Pamlico Sound. The goal for the sanctuary network is to cover 500 acres by 2025.

The oysters in these sanctuaries act as an insurance policy for the state's oyster population. They are protected from harvest, but the baby oysters they produce float to other areas in the sound to supply harvestable oysters. They also serve as fish habitats for many commercially and recreationally important species like snapper, grouper, blue crabs, and shrimp. In addition, the 56 million oysters in the Cedar Island Sanctuary will be able to filter 2.8 billion gallons of water each day, helping to improve the water quality of the region.

Through recent funding from the National Oceanic and Atmospheric Administration, the Federation and its partners will soon build another 120 acres of sanctuaries. The funds will also support the next generation

of scientists and researchers through a partnership with N.C. Central University and N.C. State University. This partnership will create a program that offers hands-on opportunities for underrepresented graduate and undergraduate students studying marine sciences. The funds will also allow for a new educational display to be built at the North Carolina Aquarium at Roanoke Island that will help educate the public about the importance of oysters for our coastal ecosystems.

## Carteret County Aquaculture Hub Gains Support

The General Assembly recently passed the 2024 state budget, which will benefit oyster farmers through an \$800,000 appropriation to help develop and equip an aquaculture hub in Carteret County. The hub will include a dock and utility building with refrigerated storage to provide a place to safely store oysters before they are sold. The Building will allow oyster farmers to store equipment that can be large and cumbersome to take in and out of the water each time they visit their lease. The General Assembly set a goal of increasing oyster farm production and its economic benefits to the state from \$6 million in 2018 to \$100 million by 2030. The hub will help provide critical infrastructure to support oyster growers and North Carolina's booming aquaculture industry, which needs such facilities to get shellfish from farm to table.



# EDUCATION

Engaging diverse groups, providing hands-on experiences to inspire understanding and appreciation for our coast, and creating new coastal stewards are some of the most important aspects of our work. This year the Federation's three educators built lasting relationships with groups all centered around the coast.

For Sara Hallas, working to build upon the long-standing partnership with River City YouthBuild has been a rewarding experience.

This summer, the YouthBuild students participated in a unique project building oyster reefs in the Pamlico Sound. Helping to deploy recycled oyster shells to create a new oyster reef gave the students a chance to get their feet wet, explore the coast, and learn about coastal environmental careers.

These experiences are valuable for the students in so many ways, explained Hallas.

"While we were exploring with nets, one of the young adult students shared



that this was her first time swimming. She floated on her stomach and felt a moment of buoyancy for the first time. This moment was more meaningful than I can put into words," she said.

Rachel Bisesi coordinated the first-ever Coastal STEM Career Fair in partnership with the Boys & Girls Clubs of the Coastal Plain. The event brought nearly 100 middle and high school students from Clubs in Craven and Carteret Counties. This event was a huge success because of our many participating partners.

Bisesi said this event exemplified the Federation's tagline of "working together for a healthy coast"

as many of our partner organizations participated.

"We hope this event will help inspire the next generation of STEM leaders and coastal stewards."

For Bonnie Mitchell, this past year brought the creation of a new program called Creating Coastal Stewards. Initiatives like this are instrumental in cultivating environmental awareness and fostering a profound connection to nature.

"The Creating Coastal Stewards program has been a catalyst for engaging and educating individuals of all age groups, ranging from the youngest members of our community to retirees," Mitchell said. "We have achieved this through a diverse range of events, including Shark and Ray Awareness Day, and numerous volunteer opportunities, such as our dedicated efforts to maintain rain gardens at DREAMS Center for Arts Education."

## COASTAL MANAGEMENT



### Big Win for Marine Debris Prevention

Ensuring the implementation of effective coastal man-

agement practices in North Carolina stands as a fundamental pillar of the Federation's mission. Our coastal management team works closely with legislators, state agencies, and local authorities to establish protective measures that safeguard the North Carolina coastline.

Over the past year, Coastal Advocate Kerri Allen has diligently worked alongside legislators to advocate for two legislative actions that would help to reduce marine debris.

One focus of her work was to prohibit unencapsulated polystyrene, a material commonly used in the construction of

floating docks. We are pleased to report that the state General Assembly enacted a pioneering ban on this material that's unparalleled by any other state in the nation. This ban now necessitates the encapsulation of polystyrene within coastal counties.

Unencapsulated polystyrene is inherently fragile, rendering it susceptible to damage even during minor storm events. When these materials break apart, they release numerous tiny foam beads into our coastal ecosystems, where their removal becomes a nearly insurmountable challenge.

With the General Assembly's action our entire coast is now protected from this avoidable marine debris. Already, four local governments on the southeastern coast have taken measures to prohibit the use of this material in dock construction. However, this ban goes a step further, banning the sale of unencapsulated polystyrene from being used in the construction of floating docks.

The second major achievement was the decision by the state General Assembly to cover residential docks built along our coast under the state's building code. This will help make sure that docks are built in a way that will make them more resilient to damage during extreme storms. Damaged docks littered our coastal shorelines after Hurricane Florence in 2018 and cost property owners and taxpayers millions of dollars to clean up and replace.

"After Hurricane Florence, we saw hundreds of docks that were destroyed by flood waters," said Federation Executive Director Todd Miller. "These destroyed docks created navigation hazards and littered our coastal shores and marshes with chemically treated wood that became toxic waste." He noted that many docks built in a manner consistent with the state building code survived the storm unscathed.

## Holiday Giving Guide

*Gifts with purpose for everyone on your list!*

*Don't forget to visit our gift shop for new seasonal items!*

*Order by Dec. 17*

### Gift Memberships



Send a Gift Membership this year and not only can you support the coast but you'll also be able to give someone something meaningful to unwrap. This year your gift would include this beautiful felt oyster coaster.

[nccoast.org/giftmember](http://nccoast.org/giftmember)

### Adopt an Oyster



Give oysters a bright future in North Carolina waters! When you adopt a dozen oysters or more you'll receive this special oyster knife which is perfect for the seafood lovers in your life.

[nccoast.org/myoyster](http://nccoast.org/myoyster)

### Become a Sustaining Member

The end of the year is a great time to upgrade your membership to become a sustaining member of the Coastal Federation. As a thank you for providing support we can count on, you will receive an exclusive sample of two NC sea salts.

[nccoast.org/sustainer](http://nccoast.org/sustainer)



### Give with Confidence

We're proud to once again share that the Coastal Federation has the highest ratings from both national nonprofit rating agencies for outstanding fiscal accountability and transparency. We value your support and are good stewards of your gifts.



Score: 100%



### Coastal Federation Welcomes New Staff

Nicholas Green joined the Coastal Federation in August 2023 as a project manager. He has a bachelor's degree in Crop and Soil Science with a concentration in Soil Science from North Carolina State University. He will be working on marine debris removal projects, oyster shell recycling efforts, and water quality issues. Nick is a Carteret County native who enjoys surfing, fishing, and photography.

Don't forget: You can also support the coast this holiday season with charitable gifts from an IRA or gifts of stock! Please contact Sarah King at [sarahk@nccoast.org](mailto:sarahk@nccoast.org) for updated gift instructions.