

OUR COAST

North Carolina Coastal Federation | NCCOAST.ORG | FALL 2017



North Carolina
Coastal Federation

35 years
working together for a healthy coast

**Take a closer look at the
economics of offshore drilling**

PROTECT OUR COAST:

Give the gift of coastal protection

Dear Friend of the Coast,

I recently represented Restore America's Estuaries (RAE) — a national alliance of groups dedicated to coastal conservation and advocacy — at a conference on coastal restoration in Townsville, Australia. The trip reaffirmed my belief that organizations like the Coastal Federation play a vital role in achieving effective stewardship of coastal resources.

Before landing in Australia, I assumed its environment would be pristine. Australia is about the same geographic size as the United States but has 300 million fewer people. But like many countries, its coasts are extremely fragile, and in too many places, very degraded. Sugarcane plantations and ranches ditch and drain soils with naturally high levels of sulfur, creating caustic runoff of sulfuric acid that damages fish habitat.

And just like in the U.S. and elsewhere, dense residential, commercial and industrial coastal development has damaged oyster reefs, marshes and water quality. This development is exposed to extreme weather, and floods are more frequent and costly.

Coastal restoration efforts are underway in Australia, and my hosts and their colleagues proudly showed off their coast and what they are doing to restore and protect it. They have developed watershed management plans and restored oyster reefs. Large wetland and stream recovery projects aim to restore or replicate natural hydrology while reducing toxic sulfur drainage into estuaries and the ocean.

They are working to decrease pollution in order to limit the vulnerability of coastal habitat to climate change. Marine scientists found that about 60 percent of the Great Barrier Reef is being bleached by warming ocean waters, and that this problem is worse where polluted runoff was already degrading the reef.

Innovative programs educate and engage communities in many of these restoration projects. Some are financed through “crowdfunding.” Public and private partnerships stimulate the involvement of a broad diversity of people.

No matter where you go in this world, the environmental threats and management solutions to our coasts are similar. Land uses have a direct bearing on the quality of our coastal water quality and fisheries. We must seek to understand and then protect or replicate natural hydrology in coastal watersheds if we want to have productive and resilient coastal resources.

The work underway in Australia also demonstrated once again that government officials and academics can't bring about effective coastal management by themselves. It takes an informed and engaged public to support management efforts and to insist that they are effective.

My trip ended just a few days before Hurricane Irma made landfall in



Florida. Once again, we were lucky to be spared from the massive destruction such a hurricane will cause.

But make no mistake about it. Luck is not an effective long-term coastal management strategy. We now know too much about our coasts to leave their futures to chance. Proven coastal management strategies are not rocket science, but mostly common sense.

Each day, the Coastal Federation engages more people to protect and restore our coast. Thank you. Your support enables us to do our work. Over the course of 35 years, we've protected and restored a significant measure of the North Carolina coast. However, our to-do list grows ever longer, and so the support you provide for our work is needed more than ever.

With best regards

—Todd Miller, Executive Director



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Gov. Cooper celebrates the Coastal Federation's 35th anniversary

On Aug. 5, the Coastal Federation celebrated its 35th anniversary at the 2017 Pelican Awards and Soundside Soiree in Morehead City. The sold-out crowd of nearly 500 people attended the event along with special guest Gov. Roy Cooper. Gov. Cooper thanked the Pelican Award winners and the Coastal Federation for their hard work in protecting, restoring and educating people about the coast. He also spoke about the importance of protecting the coastal environment and economy.

“Not only is our coastal area a crown jewel for our state, it is a national treasure,” Gov. Cooper said while addressing the crowd. He also called on the state to recommit to protecting the coast’s natural resources — and its economy.

“How can we have a strong economy if we don’t have clean water?” Gov. Cooper said.

Gov. Cooper also reiterated his opposition to oil drilling announced earlier this year — “Not off our coast.” The Coastal Federation thanks Gov. Cooper for being a part of our special 35th anniversary celebration. A video of his speech is available at nccoast.org/35years.



Welcoming our new AmeriCorps members

In September, two new AmeriCorps members started their positions with us — Reilly Kelly, who is serving in our Wanchese office, and Kristin Gibson, who is serving in our Ocean office. AmeriCorps member Kate Conery extended her term at the Wrightsville Beach office through June 2018. Read more at nccoast.org/ameriCorps.

Coastal Federation adds new board member

Working with fellow directors and staff, the Coastal Federation's board of directors ensures effective and fiscally sound programs and operations by providing leadership, accountability, advice and direction. In August, the Coastal Federation elected Morty Gaskill to the board. For a complete list of board members visit nccoast.org/board.

MORTY GASKILL, OCRACOKE:

Morty is a commercial fisherman and a native of Ocracoke. He graduated from North Carolina State

University in 2017 with a degree in history. As a commercial fisherman and resident of one of North Carolina's most remote islands, he understands the importance of maintaining the pristine environment that people have historically enjoyed on the North Carolina coast.



Meet our new coastal advocate and coastal fellow

In September, the Coastal Federation welcomed Michael Flynn, coastal advocate in the Wanchese office, and Mackenzie Taggart, coastal fellow in the headquarters office. See our full staff at nccoast.org/staff.



MICHAEL FLYNN works in the northeast coastal region to increase public awareness of and engagement in coastal issues that relate to the Coastal Federation's mission to protect and restore our coast. He will help advance our goals and benchmarks, including those focused on oyster restoration, living shoreline implementation and watershed management planning. Michael is currently pursuing a doctoral degree in coastal resources management from East Carolina University, and he obtained a master's degree in environmental science and a bachelor's degree in biology from Stockton University in New Jersey.



MACKENZIE TAGGART joined the Coastal Federation staff after participating in the Coastal Policy and Restoration Internship this past summer. She works in the headquarters office and is currently conducting GIS mapping and researching background information for the development of a watershed restoration plan for Lake Mattamuskeet in Hyde County. Mackenzie graduated in 2016 with a bachelor of science in earth science and a minor in soil science from California Polytechnic State University. She is originally from the San Francisco Bay Area. Before joining the Coastal Federation she worked as a remote sensing analyst at NASA Ames Research Center collecting and processing aerial imagery.

NC DEQ secretary visits Core Sound

Michael Regan, secretary of the N.C. Department of Environmental Quality (DEQ), visited Carteret County for a tour of Core Sound on Oct. 10 alongside staff from DEQ, the National Oceanic and Atmospheric Administration and the N.C. Division of Marine Fisheries, as well as the Coastal Federation's Todd Miller, Mark Smith and Tom Looney. Part of the tour was spent visiting Millpoint Aquaculture, a shellfish hatchery and farm in Sea Level, where the group learned about the process of farming oysters and got an up-close look at oyster larvae, or spat. The group also took a boat trip out of Atlantic to see firsthand various fisheries habitats and to discuss their management, and visited the 6,000-acre wetland restoration and preservation project at North River Wetlands Preserve. The Coastal Federation thanks Secretary Regan for recognizing the environmental and economic benefits of oysters and for his ongoing support of oyster and wetland restoration work in North Carolina.

GIVE THE GIFT OF COASTAL STEWARDSHIP, AND LEAVE THE REST TO US!

When you give a gift membership this holiday season, you can introduce a friend to coastal conservation, while celebrating the beauty of our coast.

Your holiday gift membership recipient will receive:

- A gift package sent on your behalf with a personal message from you.
- An exclusive set of eight blank coastal greeting cards featuring four stunning coastal photographs by Sam Bland.
- A full year of membership benefits with the Coastal Federation, including event invitations, discounts, monthly e-newsletters and the quarterly *Our Coast* magazine.

Gift memberships are just \$35. To send one today, complete the form below, visit nccoast.org/giftmembership or call 252-393-8185. Order by Dec. 17.

(Greeting cards are 5.5" x 4") Photos © Sam Bland



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OFFSHORE DRILLING:

Grave consequences, limited economic benefits

Photo © NOAA Office of Response and Restoration

BY DANIELLE HERMAN

Most people are aware of the environmental threat an oil spill poses to the North Carolina coast — but what is often overlooked is just how small any economic benefits would be for the state.

Since April, the East Coast has again roiled with debate over offshore drilling for oil and gas. Many of the same arguments are cropping up, and proponents continue to push economic gains as a reason to pursue offshore drilling off the Atlantic Outer Continental Shelf (OCS). But because oil is a globally traded commodity and there's still uncertainty about where jobs would go, economists say the benefits are not as clear as proponents say.

"Negatives are immediate and potentially large, and the benefits are small, speculative and far down the road," said **Doug Wakeman** (pictured right), an emeritus professor of economics at Meredith College and a member of the Coastal Federation's board of directors. "I also don't think the particular issue of how much oil is out there and how much it might impact prices or our energy independence has gotten a lot of attention in a way that it gets to people. Mostly the opposition of drilling has focused on the huge harm that



could happen rather than the fact that the benefits would be small."



In a 2015 presentation at the Coastal Federation's Offshore Drilling in N.C. Forum, **Dr. Laura Taylor** (pictured left), director of the Center for

Environmental and Resource Economic Policy at N.C. State University and a professor in the Department of Agricultural and Resource Economics, explained there are three main economic reasons to drill: energy independence, jobs and lower energy prices.

Proponents of drilling argue these three things will benefit the U.S. and North Carolina, but both Taylor and Wakeman say there is too much uncertainty about where the jobs will go and too little oil and natural gas off the Atlantic OCS to guarantee any of these benefits.

Energy independence — or protection from global price shocks and insulation from certain trading partners — is not fully possible, Taylor said in her presentation and in an interview for this article. Petroleum is traded on a global market, and the U.S.'s top source of imports is Canada.

For natural gas, which is used primarily for electricity, the U.S. is already largely independent.

As for the idea that drilling would lower energy prices, Taylor said the impact would

be minimal. The estimated reserves off the Atlantic OCS are too small to change the price of gasoline.

"From the perspective of North Carolinians driving their cars around, if the only thing they care about is how much they're paying at the pump, offshore oil drilling in the Atlantic is not going to change that," she said.

In 2016, the U.S. consumed 27.49 trillion cubic feet of natural gas and 7.21 billion barrels of oil, according to the U.S. Energy Information Administration (EIA).

Off the Atlantic OCS, the Bureau of Ocean Energy Management estimates there is a mean of 4.59 billion barrels of oil and a mean of 38.17 trillion cubic feet of natural gas (Table 1). Even at the highest estimate of 9.19 billion barrels of oil, the Atlantic OCS contains only 0.5 percent of total global oil reserves. The EIA estimates the U.S. has 2,355 trillion cubic feet of technically recoverable natural gas, meaning that based on the mean estimate, the OCS contains 1.62 percent of the country's total reserves.

As for job creation, Taylor said that just like developing any new business, offshore drilling would create jobs. But how many would come to North Carolina depends on where the infrastructure goes. Many speculate it is more likely this infrastructure would be built in Virginia.

Proponents of offshore drilling attempted to estimate the amount of jobs created in a

December 2013 report — known as the Quest Report — that was prepared for the American Petroleum Institute. That report estimated that the industry would bring 55,000 jobs to North Carolina by 2035. Twenty thousand of these are directly related to the oil industry, while the other 35,000 would be indirect.

“No one can accurately estimate (the number of jobs) that would come to North Carolina without knowing how and where the industrial infrastructure would get developed,” Taylor said.



Dr. Harrison Fell (pictured left), an energy economist at N.C. State, said that the range in the recoverable reserve estimates (Table 1) also

makes it difficult to estimate the number of jobs. He noted that studies like the Quest Report generally rely on input-output models, which assume a multiplier effect associated with employment.

“For example, they might assume that every one job directly created by the oil extraction creates two other jobs to service that person,” he said. “These multiplier effects are highly uncertain.”

Many of these jobs would require that employees have specific training. And according to the 2016 North Carolina Annual Economic Report, published by the North Carolina Department of Commerce’s Labor and Economic Division, the state

already is adding plenty of jobs in many sectors. It added 99,000 jobs in that one year alone.

Additionally, the oil industry could cause other industries to lose jobs, especially if there’s a spill.

If drilling degraded the environment, it would make it less appealing to tourists and fishermen.

“Presumably some of those people would go elsewhere,” Fell said. “If the tourists and anglers leave, the jobs to service those people will also leave.”

Julia Wax, owner of Emerald Isle Realty, has lived in Emerald Isle since the early 1970s. Her aunt started the business in the 1960s, and now three generations of her family work there along with 100 year-round employees.

“My employees, if something devastating were to happen, would lose their jobs, so I think it’s poor economic math to only consider the jobs gaining and not to consider the jobs that we would be losing,” she said.

The tourism industry in North Carolina already employs more than 218,000 people, and in 2016, it generated \$22.9 billion in visitor spending.

Wax said that her family business hosts more than 10,000 families each year.

“It would be heartbreaking to them that a place they’ve been coming to for 40 years, 50 years for some of them, that their favorite beach was devastated,” she said. “So there’s that human side of all this too.”

Wakeman also thinks that people underestimate how lingering and widespread the impacts of a spill could be. He cited the Deepwater Horizon oil spill and said that even though not a single drop of oil washed up on Florida’s Gulf Coast, tourism suffered that year.

“So if there were a spill off Cape Hatteras, that could impact a huge area of tourism, especially if it happened in spring and summer,” Wakeman said. “People would be canceling trips against just the mere possibility of oil on the beach.”

Region Planning Area	Undiscovered Technically Recoverable Oil and Gas Resources (UTRR)								
	Oil (Bbo)			Gas (Tcfg)			BOE (Bbo)		
	95%	Mean	5%	95%	Mean	5%	95%	Mean	5%
Atlantic OCS	1.15	4.59	9.19	12.80	38.17	68.71	3.43	11.39	21.41
North Atlantic	0.06	1.77	5.11	1.08	11.76	32.74	0.25	3.86	10.94
Mid-Atlantic	0.10	2.41	5.54	2.13	24.63	50.03	0.48	6.79	14.44
South Atlantic	0.00	0.41	0.90	0.00	1.78	5.00	0.00	0.73	1.79

Table 1: Undiscovered Technically Recoverable Resources of Atlantic OCS Planning Areas for 2014. Resource values are in billion barrels of oil (Bbo), and trillion standard cubic of gas (Tcfg). 95% indicates a 95 percent chance of at least the amount listed, 5% indicates a 5 percent chance of at least the amount listed. Only mean values are additive. Some total mean values may not equal the sum of the component values due to independent rounding. **SOURCE: BOEM’s Inventory of Technically and Economically Recoverable Hydrocarbon Resources of the Atlantic Outer Continental Shelf as of January 1, 2014; Published November 2016**

WHAT’S HAPPENING NOW

The Bureau of Ocean Energy Management (BOEM) accepted public comments on a new offshore oil and gas leasing plan for 2019-24. The Coastal Federation submitted official comments opposing offshore oil, as did many of its members and other organizations. Now that BOEM has those comments, it will soon be releasing a draft proposed program and a notice of information for its programmatic environmental impact statement. These documents will be published on BOEM’s website, and the public will have 60 days to submit comments. The Coastal Federation will again submit comments, and it encourages its supporters to do the same.

Talking points and more information are available at nccoast.org/oil and dontdrillnc.org.

You can also show your support in your yards. Blue “Don’t Drill NC” signs and stickers remain available for free at all three offices.

Questions about the issue?

Contact coastal advocates Mike Giles at mikeg@nccoast.org or Michael Flynn at michaelf@nccoast.org. You can also reach them by phone at 252-393-8185.



THANK YOU TO OUR INCREDIBLE VOLUNTEERS.

As the year comes to a close, we want to thank our volunteers, who are some of the most wonderful people we get to work with. You make our work possible and brighten our days in the process. Thank you to all of those who have come out to shovel oyster shells, plant marsh grass, carry oyster bags, pick up marine debris, help out around our offices and more.

Visit nccoast.org/events to learn about upcoming volunteer opportunities. If you would like to learn more about becoming a volunteer, visit nccoast.org/volunteer.

ADVOCACY UPDATES

The Coastal Federation advocates at the state, local and federal levels for a clean, healthy coast. We promote the adoption and enforcement of policies that protect and benefit natural resources, coastal communities and the state economy.

Working together to combat *Phragmites* in coastal marshes

This summer, a group of coastal experts joined together for a working meeting to discuss invasion of the non-native *Phragmites australis*, or common reed, in North Carolina's coastal marshes. The workshop, organized by the Coastal Federation, was held in partnership with the N.C. Coastal Reserve & National Estuarine Research Reserve and the Albemarle-Pamlico National Estuary Partnership. The goal was to evaluate what is known about the science and management of *Phragmites* and to discuss the potential development of a coastwide management plan.



Meeting participants generally agreed that more effort is needed to develop an effective management strategy. Future needs were identified, including a solid mapping effort, more North Carolina-specific scientific studies, methods to educate property owners on early identification and treatments and the effects of the current management approaches on ecology and human health. Next steps include identifying partners for a working group, securing additional funding sources and creating a pilot management program.

To stay updated on these efforts, visit nccoast.org/invasive.

Coastal Federation helping to lead multi-stakeholder group working on state mariculture plan

Last year the North Carolina General Assembly provided funding to the North Carolina Policy Collaboratory to create a plan detailing methods and resources needed to advance the shellfish mariculture industry along the coast. The Coastal Federation is facilitating development of the mariculture plan along with the Collaboratory and multiple partners.

Due to the General Assembly in December 2018, the plan will include suggested policy on mariculture siting, permitting, water quality, promotion and other key topics for setting a state strategy to help build the mariculture industry. The state mariculture plan is a key step in implementing the mariculture goal of the Oyster Restoration and Protection Plan for North Carolina that includes seven major goals related to oyster restoration and mariculture.

The Collaboratory is based at the University of North Carolina at Chapel Hill. The General Assembly established it in 2016 to facilitate and disseminate policy and research. Learn more at collaboratory.web.unc.edu. Stay up-to-date on all news related to North Carolina oysters at ncoysters.org.

Coastal Federation weighs in on GenX

When reports revealed the presence of chemical GenX in the Cape Fear River and drinking water system that serves the Cape Fear region earlier this year, they also revealed that the chemical had gone undetected for years. GenX, which is a key ingredient in Teflon and is linked to cancer and other ailments, has led to recent debates on drinking water safety.

On Sept. 28, the House Select Committee on North Carolina River Quality held its first meeting on GenX. The committee is chaired by Rep. Ted Davis, R-New Hanover, who asked the Coastal Federation to present its recommendations for legislative response to GenX.

Tracy Skrabal, coastal scientist in the Wrightsville Beach office, outlined the Coastal Federation's recommendations, which include: development of a permanent water monitoring program that allows for early detection of emerging contaminants; creation of an accessible, transparent system that provides stakeholders and the public access to information about drinking water safety; development of a transparent process for making policy decisions and choices necessary to protect public drinking water; vigorous enforcement of the Clean Water Act; and a review of current industrial discharge permits to ensure their limits are sufficient to protect drinking water supplies from emerging contaminants.

Dr. Lee Ferguson, engineering professor at Duke University, outlined challenges and recommendations. Ferguson has made a career of developing monitoring methods to detect emerging contaminants like GenX.

For a full overview of Ferguson's presentation and to read the Coastal Federation's comments to the House committee, visit nccoast.org/raleighreport.

EDUCATION UPDATES

Staff at the Coastal Federation strive to educate beyond the walls of a classroom. Among the widespread scope of education efforts this fall, they've trained a strong group of volunteers who educate the public on the Coastal Federation's work and continue to work with kids in both schools and community organizations.

Environmental education focuses on water quality, marine debris

This fall, staff have been busy with stormwater, marine debris and rain garden education programs at local schools and with several groups. Sara Hallas, coastal education coordinator in the Wanchese office, and Reilly Kelly, AmeriCorps member at that office, have been working on rain gardens with River City YouthBuild students. They have also visited local middle and elementary schools to talk about water quality.

"I hope the middle school students can



learn and understand more about water quality in their watershed. And that their actions can make a difference," Hallas said. "Often the students are quick to blame a

major industry for being the only cause of pollution in a watershed, so having them understand that everyone plays a role is really important."

Ocean office staff have partnered with the Boys & Girls Clubs of Coastal Carolina. Kristin Gibson, the AmeriCorps member at that office, planned the lessons and projects, and she has also been working with several Title I schools on environmental education programs. Wrightsville Beach office staff have continued lessons with underserved area students through the Blue Ribbon Commission on the Prevention of Youth Violence.



Photo © Sam Bland

Visit the North River Wetlands Preserve

There's a lot to see and learn at the North River Wetlands Preserve in eastern Carteret County. The Coastal Federation and many partners have worked to restore this 6,000-acre preserve since 1999. It is on the Outer Banks Scenic Byway and eight miles of the preserve recently joined the North Carolina Mountains-to-Sea Trail. The preserve is open for pedestrian-only access year-round and guided group tours are available upon request. Access is free for members and \$5 for non-members. Visitors must park at the gate and register online at nccoast.org/northriver or at the on-site kiosk.

Coastal Ambassador program taking off at Wrightsville Beach office

The Southeast Coastal Ambassadors are a special group of volunteers that receives in-depth training on the Coastal Federation's advocacy, education and restoration work. These volunteers are able to represent the organization at outreach events after attending a certain number of training

sessions. Jessica Gray, coastal outreach associate at the Wrightsville Beach office, has successfully organized six training sessions since its inception in March 2017. Coastal Ambassadors have learned about watershed plans, helped collect organisms for a touch tank program, learned about the natural processes of inlets and more.



RESTORATION UPDATES

Our restoration projects are moving along well thanks to collaboration among state agencies, private contractors, community volunteers and others. Check out these updates on our 50 Million Oyster Initiative, stormwater projects and living shoreline work.

More stormwater retrofits to be built in New Hanover County

The Coastal Federation is ramping up efforts to reduce the amount of polluted runoff flowing into Bradley and Hewletts creeks. A \$107,000 grant from the Environmental Protection Agency Section 319 grant program is going toward the design and construction of stormwater retrofits in the watershed. In 2007, the Coastal Federation worked with community partners and state and federal agency representatives to develop a watershed restoration plan for the creeks. The goal is to reduce the volume of stormwater runoff, thus restoring shellfishing and swimming waters. This fall, project partners will complete field audits to determine retrofit sites. Construction is set to begin in spring 2018.

The Coastal Federation and partners have already completed successful projects in Wrightsville Beach and Wilmington, including ones along the John Nesbitt Loop. Learn more at walktheloop.org.

The Coastal Federation also received 319 funding for projects in the town of Swansboro and Wilmington's Shandy Point neighborhood. Stay updated at nccoast.org/stormwater.



Photo © Todd Miller

Second year of funding secured for large-scale restoration work

The Coastal Federation received a second year of funding from the National Oceanic and Atmospheric Administration's (NOAA) Community-based Restoration Program to restore oyster habitat throughout the coast. This \$1.088 million grant, when combined with funding from the General Assembly, will allow the Coastal Federation, the N.C. Division of Marine Fisheries and partners to continue building the Swan Island Oyster Sanctuary near South River and to create cultch planting sites throughout the coast. This work contributes to the 50 Million Oyster Initiative goal and to the Senator Jean Preston Oyster Sanctuary Network. Be sure to check out the video on the project at nccoast.org/oysters.

NOAA funding leads to more private, public living shorelines

It has been an exciting year for living shorelines, a more natural erosion control method that uses salt marsh plants and sometimes oysters or rock. Thanks to funding from the NOAA Coastal Ecosystem Resiliency Grant that was awarded in 2015, Coastal Federation staff and volunteers have built various public living shorelines, including a 500 linear-foot oyster reef at Trinity Center on Bogue Sound. Close to 10,000 plugs of salt marsh grass were planted at Trinity Center, Morris Landing Clean Water Preserve in Holly Ridge and Carolina Beach State Park combined.

Staff have focused much of their living shoreline efforts this year on private living shorelines. Through the cost share program that is funded by the same NOAA grant, staff members have designed, permitted and built 1,700 linear feet of living shorelines, including the planting of more than 4,000 plugs of salt marsh grass and the installation of oyster reefs at 11 private properties on the White Oak and Neuse rivers, Bogue Sound and Hawkins Creek. Additional

projects are planned for Edenton, Oriental, Duck, Kitty Hawk and the Newport and White Oak rivers.

Stay updated on the Coastal Federation's living shoreline work at nccoast.org/livingshorelines.





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Your membership in the Coastal Federation helps protect, restore and wisely manage our coastal rivers, sounds and beaches.

Questions? Call us at 252-393-8185 or email us at nccf@nccoast.org.



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OUR COAST SURVEY

Let us know what you think about *Our Coast* magazine at nccoast.org/survey.

Those who complete surveys by Dec. 17 will be entered in a drawing to win a long-sleeved Coastal Federation T-shirt.



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