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About Us

Program:

South Carolina is home to many coastal bird species, including seabirds and shorebirds. Our state plays a vital role in the lives of these species, providing nesting and feeding habitat, migration stopover and wintering grounds. The shorebird and seabird program monitors population trends, protects nesting and feeding areas, manages and enhances habitat, raises public awareness through outreach and stewardship, and conducts research to better understand coastal bird populations in South Carolina.

Staff:



Felicia Sanders



Janet Thibault



Mary-Catherine Martin



Camille Duquet

Year In Review *by Felicia Sanders*

This summer I attended the Western Hemisphere Shorebird Group meeting held on the Bay of Fundy, where the highest tides in the world (up to 53 feet) provide mudflats for thousands of migrating shorebirds. The meeting was attended by biologists from across the hemisphere, from Alaska to Argentina. The attendees spoke different languages, some used horseback to monitor their beaches, yet all had a similar goal of learning how to better protect and manage coastal birds. Many avian species cross state lines and even continents so collaborative conservation is the only strategy to help migrating birds!



Felicia with Manomet partners, Abby and Allie, at Bay of Fundy shorebird statue.

Tropical Storm Debby and Hurricane Helene not only flooded Charleston but caused erosion at some of South Carolina's most important beach nesting sites. To offset this increasing occurrence, the U.S. Army Corps of Engineers (USACE) collaborates to use dredge material to benefit coastal habitats. In 2024, the USACE added the equivalent of 4,000 dump trucks of sand to Bird Key-Stono Seabird Sanctuary to ensure the integrity of the island. As part of the Murrell's Inlet dredging, the USACE deposited material on the north end of Huntington Beach State Park to create a nesting area for shorebirds. Crab Bank Seabird Sanctuary was rebuilt by the USACE 3 years ago, and this year almost 400 Black Skimmers nested on the island! Tomkins Island Seabird Sanctuary, another island made by the USACE in 2005, hosted 6000 tern nests!



Black Skimmers nesting on Crab Bank Seabird Sanctuary.
Photo by Janet Thibault/ SCDNR.

Research guides our decisions on how to better manage coastal avian species. A collaborative project tracking Red Knots revealed important stopovers sites and even previously unknown Arctic nesting sites. To better understand movement of juvenile Black Skimmers, we banded 82 skimmer chicks at Crab Bank Seabird Sanctuary. Let us know if you see one that is color banded!

Our team annually counts seabird nests to monitor population trends. The number of nests during the last 20 years fluctuates, as expected, but is stable with Gull-billed Terns, Black Skimmers and Royal Terns decreasing slightly, Brown Pelicans and Least Terns increasing slightly and Sandwich Terns showing no change.

Outreach and partnerships continue to grow and thrive. We kicked the year off with the annual shorebird workshop held at the SCDNR facility at Fort Johnson. The second shorebird festival was a success with offerings across the South Carolina and Georgia coasts. Take a look at the [SC Shorebird Project's new web site](#), where you can find news, volunteer opportunities, resources and much more.

We look forward to seeing you in 2025!

Posting *sites*

From North to South:

Huntington Beach State Park

Marsh Island

Botany Bay Heritage Preserve

North Island

Capers Island

Interlude Beach

Sand Island

Deweese Island*

Eddingsville

South Island

Crab Bank Seabird Sanctuary

Edisto Beach State Park

Cedar Island

Morris Island

Edisto Town Beach

Murphy Island

Folly Beach- Lighthouse Inlet

Otter Island

North Cape Island

Bird Key-Stono Seabird Sanctuary

Harbor Island

South Cape Island

Kiawah Island*

Hunting Island State Park

Lighthouse Island

Seabrook Island

Little Capers Island- Bull Pt

White Banks

Deveaux Bank Seabird Sanctuary

Tomkins Island

Turtle Island



Every spring leading up to nesting season, the SCDNR Coastal Bird Program identifies nesting habitat and sets up temporary closures on beaches for shorebirds and seabirds to nest undisturbed. The staff provides posting materials and works with municipalities, agencies, non-profit organizations, state parks, and volunteers all along the coast to install signs and rope off potential nesting sites. These areas are monitored throughout the season for nesting activity and taken down once all birds have departed.

*these sites are independently posted by site managers, municipalities and/or local organizations

Posting *efforts*

31
Sites

82
People



Charlotte Hope at Deveaux Bank Seabird Sanctuary



Sabrina Cobb, Janet Thibault, Cami Duquet, Charlotte Hope, Evelyn Stephens, and Felicia Sanders at Crab Bank Seabird Sanctuary



Jim Prince on Bull Point



Jenna Stephens at Lighthouse Inlet Heritage Preserve on Folly Beach



Brianna Goodwin, Erica Hardy, and the Sustainability Institute on Interlude Beach



Ron Steele, Cami Duquet, Laura Steele, Leah Schwartzentruber, and Lisa Cummings at Edisto Beach State Park

Nesting *2024 Seabird Census*



4285 Brown Pelicans



7354 Royal Terns



678 Black Skimmers



244 Gull-billed Terns



2325 Sandwich Terns



747 Least Terns



Aerial view of nesting Brown Pelicans on Deveaux Bank Seabird Sanctuary.
Photo by Janet Thibault/SCDNR.

Each year, a state seabird census is conducted to estimate the number of nesting colonial seabirds in South Carolina. Nests of different species are counted by analyzing aerial photographs taken during a flight operated by SCDNR Law Enforcement. This year, the flight was conducted on May 20th, with the exception of Tomkins Island which was photographed on May 28th by the GADNR. Due to their small size, Least Terns are counted from land using optics. These totals are a snapshot in time and contribute to long term trend estimates for seabirds in South Carolina.

Nesting *2024 Least Tern Alternative Sites*

12
active sites*



259
nests



*10 rooftops, 1 industrial ground site, 1 dredge spoil area



Just hatched Least Tern chick and egg on a pebble roof. Photos by Mary-Catherine Martin/SCDNR.

Featured Alternative Site: INEOS Cooper River Plant

Least Terns have gathered at the INEOS Cooper River Plant in Wando for over 30 years to nest on the gravel-covered dikes at the Wastewater Treatment area. After a few years of low nest counts, the Wastewater Treatment area staff adapted their work environment to support the nesting Least Terns. Led by Bubba West of General Plant Maintenance staff, 2 dikes were covered with new gravel and wood pallets were placed for shade and protection. The dikes were closed to vehicle traffic and obstructing vegetation was removed. In 2023, the first year after these improvements, the dikes hosted 17 Least Tern nests with 20 young successfully flying! This season was even better with 46 nests and over 42 flying Least Tern youngsters! The shorebird and seabird program is grateful for the efforts by INEOS for Least Tern conservation!

Research *Black Skimmers*

Over the last decade, an average of 940 breeding pairs of Black Skimmers have nested in South Carolina. These seabirds are dispersed among several colonies nesting on SCDNR seabird sanctuary islands and in Cape Romain National Wildlife Refuge. Over the last three years, the biggest and most successful colony has been on the renourished Crab Bank Seabird Sanctuary in Charleston Harbor. As chicks were successfully fledging, it left unanswered questions - where were the young birds going after they left Crab Bank, where were they spending their non-breeding years, when and where would they return to breed, and for how long?



Coincidentally, other researchers from across the Black Skimmer range in the Atlantic Flyway were also setting out to answer similar questions, while also gaining a better understanding of their diets through collection of fecal samples.

To contribute to growing interests for these declining birds, 82 pre-fledge Black Skimmers on Crab Bank were uniquely marked this year, sporting a black band with a white alpha-numeric code on their right leg. Having these banded individuals of a known age, helps researchers understand bird movement and survivorship, and contributes to monitoring the health of the population. Fecal samples from this group were also collected and sent for further genetic analysis that will give us a glimpse into their diets as youngsters!

Until recently, little information was known about the age, survival, and seasonal whereabouts of breeding Black Skimmers. Though many return to their natal colony to nest, a significant number seek new beaches and new colonies in which to breed. We are excited to track these Crab Bank natives and see what we can learn from them!

One particular individual that was banded on Crab Bank is Black 02U. This juvenile was banded on July 23, 2024 at about 27 days old. It was then seen on Dewees Island, on August 16th, and later observed at Huguenot Memorial Park in Florida on December 7th with 10 other banded skimmers from North Carolina, New Jersey and New York.

To contribute to this exciting new research, be on the lookout for banded Black Skimmers and report bands, including date and location to bandedbirds.gov or Janet Thibault at thibaultj@dnr.sc.gov.



Photo by Claudia P de Mayo

Research *Red Knots*

Federally threatened Red Knots rely on South Carolina's coast in significant numbers during spring migration. Due to banding and tracking efforts, South Carolina has been identified as a last, or terminal, stop for some knots before reaching Arctic habitat. Between February and May, South Carolina hosts 27% of the estimated Rufa Red Knot population on Kiawah and Seabrook Islands.

- **Kiawah and Seabrook islands are a critical site for the rufa Red Knot**
- **Spring migration patterns of red knots in the Southeast United States disentangled using automated telemetry**

This past spring, in partnership with the Georgia Department of Natural Resources, Manomet, and the US Fish and Wildlife Service, 19 Red Knots were captured on Williamson Bar, GA on May 11th. Each Red Knot was weighed, measured, and banded with a uniquely marked flag. Thirteen were outfitted with a "Sunbird" solar-powered satellite transmitter. These lightweight tags use new technology that enables location data to be viewed daily. This was the second-year we deployed satellite transmitters on Red Knots with the goal of better understanding Red Knots in the southeast U.S. All 13 satellite tagged Red Knots were recorded on nesting grounds above the Arctic Circle, including some partial southward migration post-breeding.

Photo by Fletcher Smith/GADNR

One bird, marked with light green flag *H7 made an impressive migration. After breeding on Victoria Island in Canada, this bird recorded a 5-day nonstop flight on its southward migration. The knot left the west side of James Bay on August 14th, flew over the Atlantic Ocean, and finally landed on the coast of Guyana 5 days later. This section of its journey was approximately 3,750 miles and is even more impressive as it faced hurricane Ernesto while over the Atlantic Ocean near Bermuda; however tail winds from the storm allowed the bird to keep flying south.

We continue to partner with Georgia DNR, Manomet and groups on Kiawah and Seabrook Islands to resight individually marked Red Knots in the spring. The observations were collected in a standardized way to add to international studies of population trends and movement. Resighting of knots also added to our knowledge of local population estimates and the amount of time birds spend in South Carolina. Banded knots were observed from projects in South Carolina and many other Atlantic U.S. states, as well as South American countries.



Map by Megan James/SCDNR

Research *Whimbrels*



The recent discovery that almost 20,000 Whimbrels spend the night on Deveaux Bank Seabird Sanctuary during their springtime migration made international headlines. This is the largest known Whimbrel nocturnal roost in the world, accounting for half of the estimated Atlantic flyway population of this declining species!

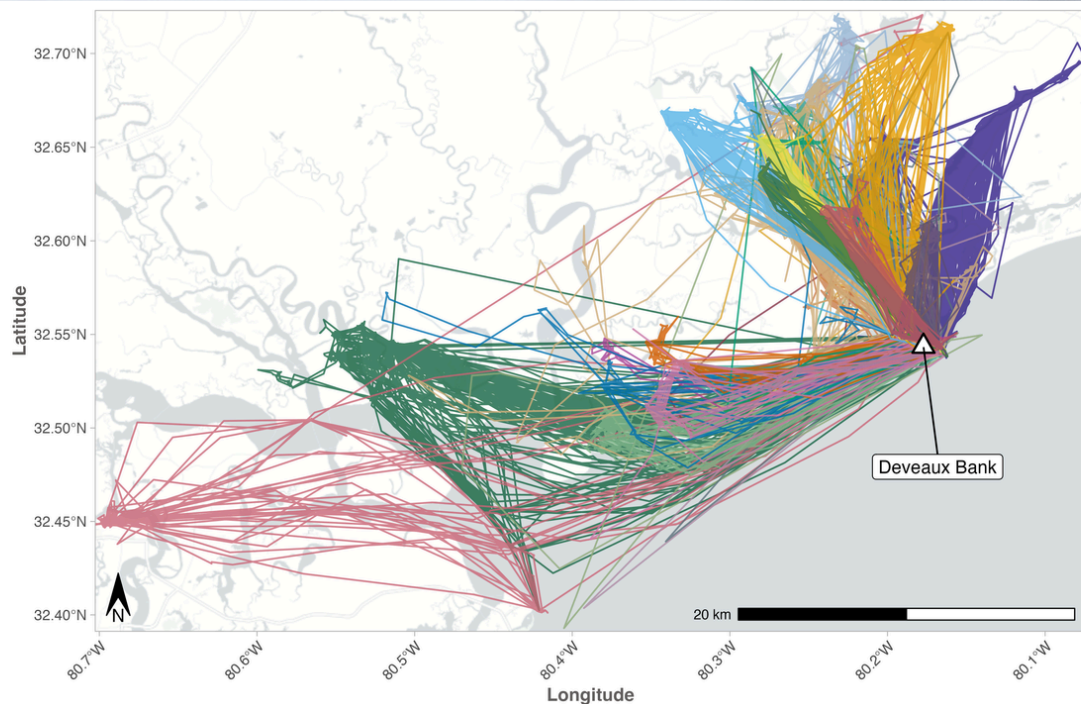


Photo by Kaitlyn Hackathorn/SCDNR

For the 4th year in a row, a temporary radio tower was constructed on Deveaux Bank Seabird Sanctuary to download data from GPS transmitters that were deployed on Whimbrels. Led by PhD candidate Maina Handmaker from the Senner Lab at the University of Massachusetts Amherst, 30 tags have been deployed on Whimbrels since 2020 in an effort to learn about their movements while in South Carolina during their migratory stopover. When these tagged individuals come to roost near the tower at night, a computer connected to the tower downloads highly accurate locations that reveal each bird's movements through the salt marshes, giving an exciting glimpse into their usually cryptic lives.

Together at night, apart during the day

Sixteen of the tagged Whimbrel have since been picked up by the tower, including 7 in 2024. This research shows that while in South Carolina, individuals not only return to Deveaux Bank every night but also return to the same feeding areas every day and each season! Although individuals come together at night, individual diurnal feeding territories do not overlap with each other.



Movement tracks of individual Whimbrel (indicated by different colors) during their stopover in South Carolina. Handmaker et al., *Ornithology* 2024.

These findings can be explored in greater detail in the published manuscript [Individual foraging site fidelity persists within and across stopover seasons in a migratory shorebird](#), published in the journal *Ornithology* in October 2024.

Sites *SCDNR Seabird Sanctuaries*

Bird Key-Stono

In partnership with the Army Corps of Engineers, Bird Key-Stono was renourished in March 2024 using dredge material from the Folly River. Approximately 40,000 cubic yards of sand was pumped onto the west part of the Seabird Sanctuary facing the east end of Kiawah Island. A colony of Least Terns nested on the renourished area as well as three pairs of American Oystercatchers and a Wilson's Plover pair. The vegetated dunes of the island remained quiet, as Brown Pelicans have not yet returned after predator pressure in 2023. During the non-breeding season, Bird Key-Stono continues to host a multitude of migratory and wintering shorebirds. This past year 17 species were recorded on the sanctuary during International Shorebird Surveys.

Deveaux Bank

Due to recent habitat loss from Hurricane Idalia in September 2023, Deveaux Bank Seabird Sanctuary was closed to all landing for the first time this 2024 breeding season. The west side of the island has suffered major erosional change and no longer supports vegetated dunes where Brown Pelicans, terns and other waterbirds nested in the past. Despite this, Deveaux Bank hosted the largest Brown Pelican colony in the state, with over 2000 nests on the eastern side of the sanctuary closest to Seabrook Island. Deveaux Bank's extensive sand and mud flats continue to provide valuable foraging and roosting grounds for over 20 species of migrating shorebirds. This year, Deveaux Bank Seabird Sanctuary received designation as the 50th Western Hemisphere Shorebird Reserve Network site in the United States, recognizing its international importance for shorebirds, notably for migrating Whimbrels and Red Knots.

Crab Bank

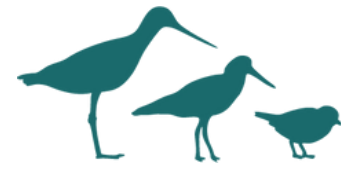
On its third year since its renourishment, Crab Bank continues to fare well against storm and tide events. For the last three years, it hosted the largest Black Skimmer colony in the state. As part of a flyway-wide initiative to better understand where these young-of-the year migrate to, over 80 Black Skimmer chicks were banded on Crab Bank this year. American Oystercatchers were also closely monitored, with several adults and chicks outfitted with uniquely marked bands to be able to recognize individuals. A research group with Clemson University and University of Rhode Island further investigated movements of oystercatchers in and around the Charleston Harbor by outfitting solar powered satellite tags on adults nesting on Crab Bank to find out the location of foraging areas and consequently determine levels of PFAS contaminants in their system. Furthermore, the annual botany inventory was conducted on the island in partnership with SCDNR botanists to record plant species present and any changes occurring over time.

Tomkins Island

After two years of being inactive due to predator presence, Tomkins Island made a remarkable comeback with the biggest colony in the state of Royal and Sandwich terns. The island was treated and regraded prior to the nesting season, in a cooperative agreement between SCDNR and the Army Corps of Engineers-Savannah District. Due to its elevation, the colonies were safe from high tide events and overwash. The sanctuary also supported hundreds of Arctic nesting shorebirds during migration and winter months, including Ruddy Turnstones, Sanderlings, and Black-bellied Plovers.

Outreach

South Carolina Shorebird Project



The South Carolina Shorebird Project started in 2007 when a group of governmental agencies and NGOs partnered together to further shorebird conservation through surveys, outreach, and education.

Today, partnerships to protect South Carolina's shorebirds and seabirds are happening all along the coast, with different initiatives and priorities based on the needs of communities and bird activity at each site.

The South Carolina Shorebird Project (SCSP) strives to continue promoting partnerships, resource and information sharing, and raise public awareness of coastal birds with the ultimate goal of furthering conservation for these vulnerable birds.

This year, SCSP gained online presence through the launch of a new website:

www.scshorebirdproject.com

Who We Are

The South Carolina Shorebird Project (SCSP) unites organizations, entities, and people supporting shorebirds and seabirds populations in the Palmetto state. Through volunteerism, research, advocacy, education, and conservation, SCSP is a collaborative partnership that strives to make South Carolina a safe place for all of our coastal birds.

Stay in the know

Stay up to date with the latest news and updates from the South Carolina Shorebird Project by subscribing to our quarterly e-newsletter.

Subscribe to our newsletter

First Name:

Last name:

Email #:

Zip Code:

Meet the Partners

The South Carolina Shorebird Project is a collaboration amongst government agencies, non-profit organizations, and private citizens. Meet the players of the SCSP by clicking below.

- Interactive Map
- Resource Library
- Volunteer Opportunities
- Newsletter
- Photo Submission
- Events

SCDNR and the Charleston County Parks and Recreation Commission partnered together to revamp, design, and install new interpretive signs at Beachwalker County Park on Kiawah Island and Lighthouse Inlet Heritage Preserve on Folly Beach. These two locations have high public use as well as sensitive habitat, critical for shorebirds and seabirds to nest, rest, and feed. The signs feature fun and educational facts about feathered friends as well as easy to follow rules of conduct for beachgoers to have minimal impacts to these vulnerable birds.



Partnership

Clemson University Contaminant Study

by Amber Litterer

This summer, researchers from Clemson University, South Carolina Cooperative Fish and Wildlife Research Unit, University of Rhode Island, and The Nature Conservancy deployed GPS tags and collected samples of American Oystercatchers and Brown Pelicans nesting in Charleston Harbor.

This is part of a study on the presence of bioaccumulation and biomagnification of a wide range of PFAS (per- and polyfluoroalkyl substances) in coastal birds that rely on environments and food webs within and adjacent to Charleston Harbor. Charleston Harbor is an area with known elevated PFAS contamination from a variety of sources including aqueous film-forming foams. To investigate whether PFAS are accumulating in food webs of coastal birds and to understand how individual differences in movement patterns affect total body burdens, researchers deployed 25 GPS tags on Brown Pelican and American Oystercatcher adults during incubation. Biological samples were collected from each adult and regurgitated fish were additionally collected from Brown Pelicans. Additionally, multiple environmental samples and prey species were sampled within the tidally influenced portion of the Ashley River adjacent to Joint Base Charleston, as well as within Charleston Harbor, the Cooper and Wando rivers, and the Atlantic Intracoastal Waterway north of Charleston Harbor.

These samples included water, air, Eastern oysters, several fish species, marsh vegetation, sediment, and plankton. Environmental samples are intended to yield a comprehensive sample set representing biotic and abiotic matrices supporting regional piscivorous and invertivore seabirds and shorebirds during their breeding phase. So far, the research team has collected over 600,000 GPS locations from Brown Pelicans and over 400,000 GPS locations from American Oystercatchers. Additionally, the research team has begun analyzing water and fish samples for 54 targeted PFAS compounds.

The research team will be investigating movement patterns and identifying foraging areas from the data collected and will publish results in the near future.



Partnership

Cape Romain NWR

Cape Romain National Wildlife Refuge (CRNWR) is highly valuable to seabird nesting in South Carolina, with the Refuge annually hosting 30% of South Carolina's total nesting seabirds. It is the only place Brown Pelicans have continuously nested for 55 years since records began. It is also the only place in the state where Common Terns and Forster's Terns nest. CRNWR staff and SCDNR Coastal Bird Program staff partner to manage nesting seabirds by identifying and posting nesting areas, determining temporary "no landing" closures at seabird colony nest sites, and conducting annual counts of nests. Since 2020, CRNWR and SCDNR have partnered to provide stewarding, especially at the most popular public visitation site of south Lighthouse Island. Each summer weekend, during the busy Memorial Day weekend and the July 4th holiday, stewards are present on south Lighthouse Island to educate the public about seabirds and shorebirds and encourage compliance with temporary closures to protect nesting birds.

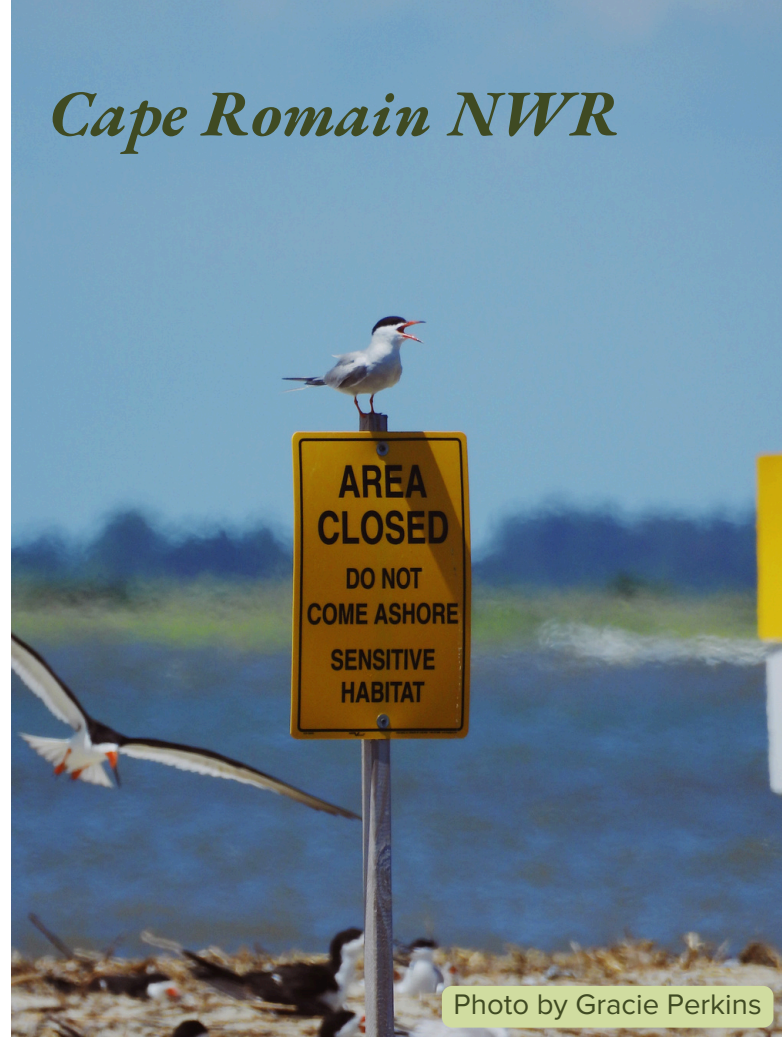
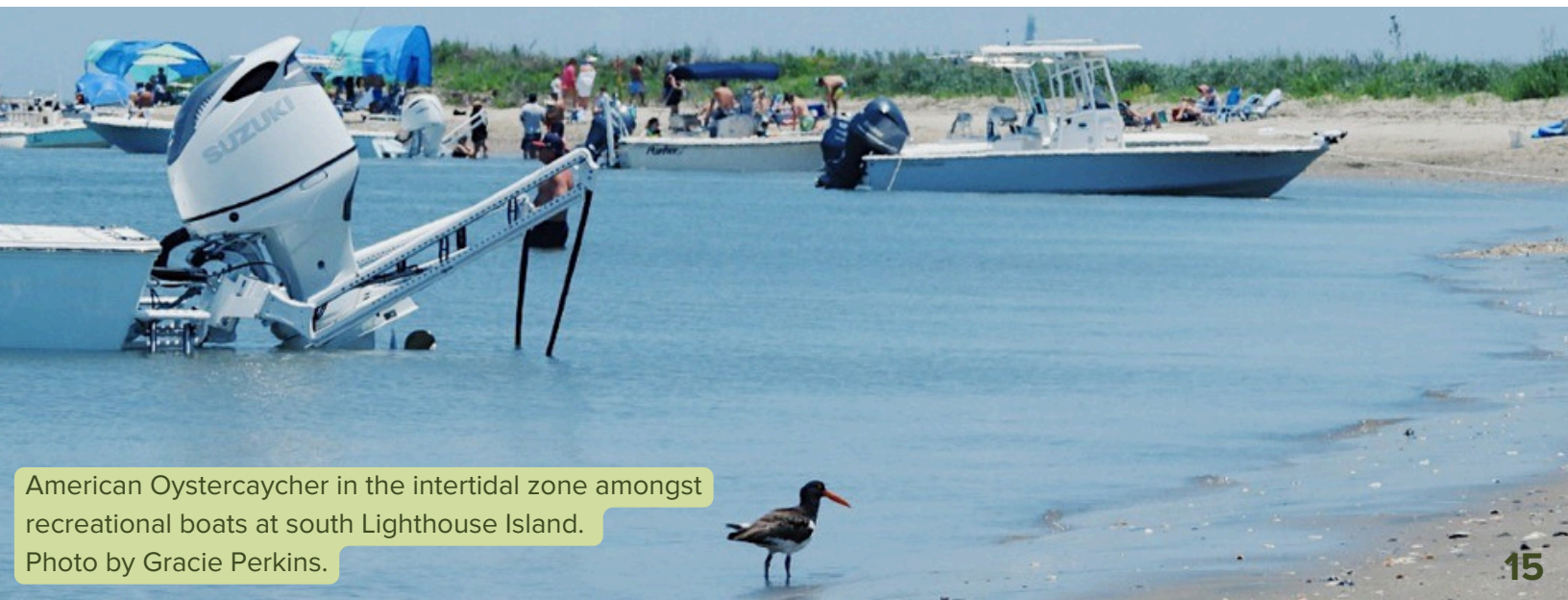


Photo by Gracie Perkins

This highly successful program received a major boost in 2024 when the Coastal Expeditions Foundation funded the stewarding position. Gracie Perkins, trained by SCDNR coastal bird biologists, served as this year's shorebird steward. Gracie was present on Lighthouse Island during major holidays and on busy weekends to provide education and outreach to the refuge's visitors. Lighthouse Island is a popular destination within Cape Romain National Wildlife Refuge, with up to 200 visitors in a single day. In addition, over 150,000 people visit the refuge annually. Stewards and volunteers work to ensure threats like dogs, fireworks, and items such as drones and kites are kept away from nesting areas. By managing visitor access and providing educational materials, stewarding efforts created a working relationship with the public to protect shorebirds and seabirds nesting on the islands.



American Oystercaycher in the intertidal zone amongst recreational boats at south Lighthouse Island.
Photo by Gracie Perkins.

