



These Coastal Islands ARE FOR THE BIRDS

The Commission-managed dredged-material islands are key habitats for nesting waterbirds that are at risk due to an increase in human visitors

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The sound is almost deafening, and the visuals are almost more than can be processed. Yet if a videographer were to incorporate scent, it would truly encapsulate the experience in 3D!

We've just arrived on one of the N.C. Wildlife Resources Commission's Waterbird Islands after a relatively short boat ride from Ocracoke Island. Having taken this route many times before and learned about the changes in shoals early in the season, we found the trip uneventful, and the arrival at the island entailed only a short walk through knee-high water.

We're here to check on nesting colonies of terns, egrets and pelicans. If we're lucky, we'll see a pair or two of American oystercatchers. This island is often favored by royal and sandwich terns, frequently nesting in the thousands, close together, protecting their nests made up of a shallow scrape in the sandy soil containing one egg each.

These crested terns feature feathers on the crown of their heads that stick straight up when startled. The '80s hairstyles of Johnny Rotten, Sting and Billy Idol seemed to mimic these terns; however, the terns pull it off superbly. Further, the exceptionally loud squawks and screams from the terns put the punk rockers to absolute shame.

The terns form a tight colony shortly after arriving in April when they confirm their pair bonds. They aren't the first to arrive, however. Brown pelicans arrive in March, and pairs of these awkward-looking birds build well-designed nests in patches of grasses or shrubs. They lay one to four eggs and begin incubating them in April. By May, there might be bare, vulnerable, dinosaur-looking chicks for the early-nesters to feed and defend. Pelicans may nest later too, with some chicks hatching in June or July.

Brown pelicans and other waterbirds nest and congregate on Big Foot Island near Ocracoke, one of several protected Wildlife Conservation Areas along the coast.

The activity of these birds reveals a true success story along the Atlantic Coast, as these man-made islands have become critical habitat for nesting waterbirds that would not have been possible without the dedication and foresight of many conservationists in North Carolina. Now it is up to us to keep these islands safe for the birds and protected from human activity.

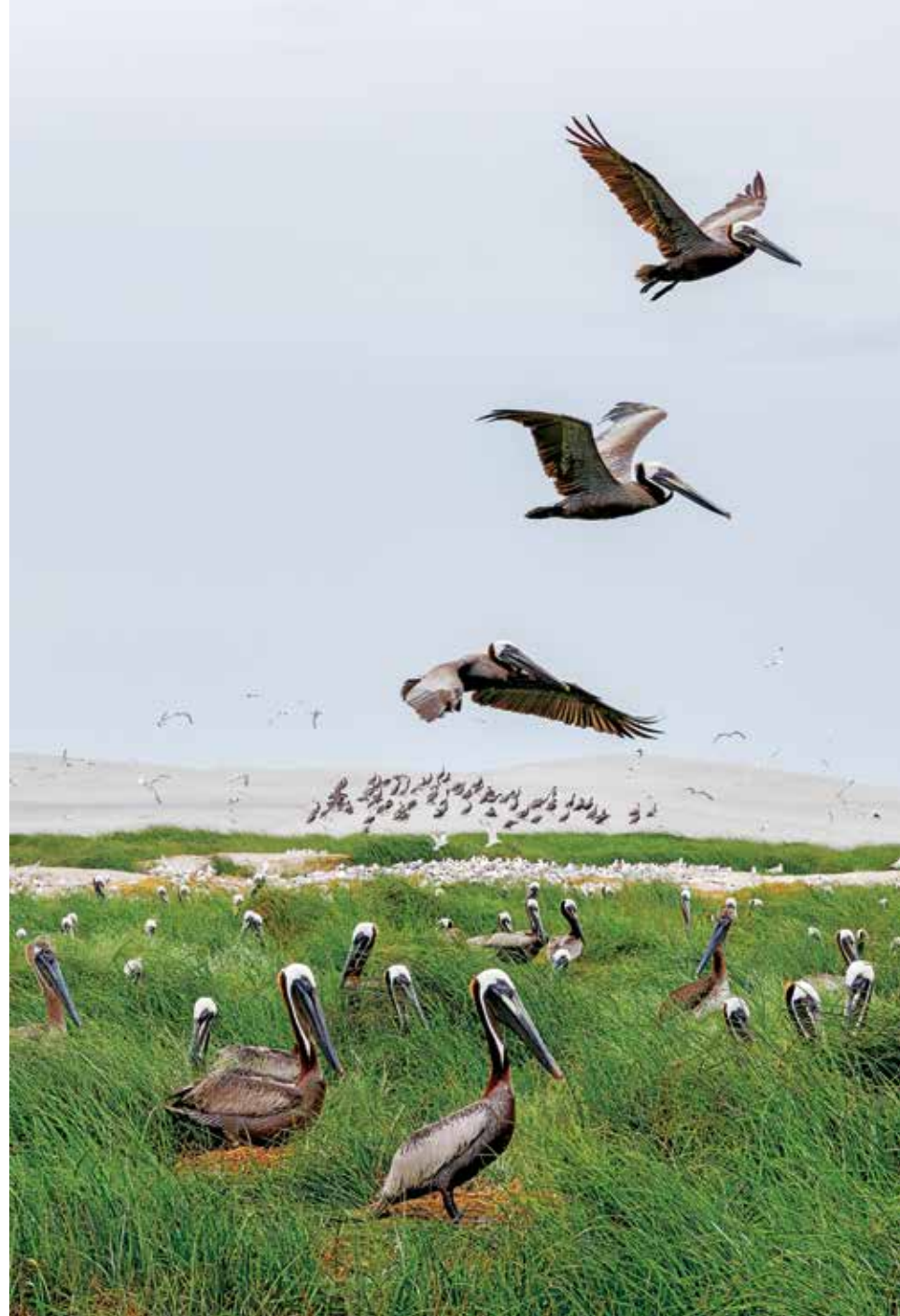
A CALL TO ACTION

University of North Carolina Wilmington professor Dr. James Parnell formed a partnership with Thomas Henson of the fledgling nongame program of the N.C. Wildlife Resources Commission in 1983 to study North Carolina's waterbird populations and take action to fulfill the species' needs. The North Carolina Colonial Waterbird Management Committee was formed, and a memorandum of understanding (MOU) was signed by 10 agencies and conservation organizations, which clarified their commitment to conserve North Carolina's waterbird populations and habitats.

A key partnership developed from this MOU between two seemingly unlikely allies—the Commission and the U.S. Army Corps of Engineers. The Corps is responsible for maintenance of federal channels for navigation. It uses large dredges that suck up sand, shells and silt from channel bottoms like giant, floating vacuums that pump the material through large pipes, spewing it out in a large plume.

By the 1970s, the Corps had been working on these channels for decades. It either sprayed the material across the water (side-casting) or pumped it into a location near a channel, forming an island. These dredged-material islands received sand and shell material whenever a channel needed maintenance throughout the year, and there are records noting placement of material on nests of birds that had begun to use the man-made islands as alternatives to rapidly developing barrier islands.

The selection of these man-made islands by migrating waterbirds did not go unnoticed by Parnell and Henson. The Commission contracted Parnell and his students to



develop a survey protocol that would record the species and numbers of birds using dredged-material and other islands along North Carolina's more than 300-mile-long coast. They created a naming and numbering system for all nesting sites and completed the first full survey of colonial waterbirds in North Carolina. Meanwhile, Henson worked with the Corps to define an "environmental window"—a time during which the islands would not be disturbed by dredging activity.

These man-made, dredged-material islands were defined as State of North Carolina lands by North Carolina General Statute 146-b. By the early 1990s, due largely to diligent work by Parnell and

Henson, the North Carolina State Property Office allocated 10 islands to the Commission. In the early 2000s, 10 more islands were allocated to the Commission, and a few others were purchased using grant funds. Further, these islands were designated as Wildlife Conservation Areas, were specifically named Waterbird Islands in North Carolina Administrative Code (15A NCAC 10J .0102) and were provided several protections.

Parnell and his students completed surveys in 1972 and 1975, and counted 30 and 47 brown pelican nests, respectively, at one island colony. Partners from the Colonial Waterbird Management Committee, led by Commission biologists, have continued these



Opposite: Brown pelicans nest in a colony on Big Foot Island. Left: A brown pelican shelters a hatchling. Below: Commission Waterbird Technician Doug Rouse traverses New Dump Island as brown pelicans fly overhead. Bottom: Carmen Johnson, left, and Sara Schweitzer walk the shore of New Dump Island while observing waterbirds.



A WOEFUL SITUATION FOR WATERBIRDS

By the late 1960s to early 1970s, only about 30 pairs of brown pelicans nested on one island in North Carolina. Coastal barrier islands were being developed rapidly for vacationing families, and the carefree, widespread use of pesticides was commonplace as the U.S. bought into the chemical development boom post-World War II. Rachel Carson recognized the impacts these chemicals were having on natural systems and used her remarkable writing talents to awaken the public through her books, “The Sea Around Us” and “Silent Spring.”

Much research followed and the damage to birds’ reproductive physiology and egg development from DDT, DDE and PCBs, on top of habitat loss and alteration, reduced brown pelican and many other waterbird populations to significantly low numbers. In fact, the brown pelican was federally listed as Endangered on the first list of the Endangered Species Act in 1973.

surveys, and 5,227 pairs of brown pelicans were nesting on 10 dredged-material islands by 2023. What a successful accomplishment by these far-sighted conservationists! The prohibition of DDT, beneficial use of dredged material to create Waterbird Islands and protection from disturbance led to large, well-distributed nesting populations of brown pelicans in North Carolina.

In all, 23 dredged-material islands are designated as Wildlife Conservation Areas and are surveyed, managed and protected by Commission and Audubon North Carolina biologists. These islands have proven to be invaluable habitat for terns, black skimmers, pelicans, ibises, egrets and herons. Because they are man-made, they can be managed by placement of dredged material to build them up after erosive storms, burned to keep the vegetation at low, patchy densities, and contoured with heavy machinery to push sand into dunes and valleys. Hence, these islands may be the refuge needed as sea levels rise, marshes subside and intense

storms take away many natural islands in North Carolina’s sounds. Having the ability to manage and maintain island habitats for migratory waterbirds is a fortunate fallback option for North Carolina.

CONSERVATION CHALLENGES

The parking lot is empty and there’s no waiting at the boat ramp on this cold, breezy winter morning near Oregon Inlet. We get out on the water quickly in one of our nicknamed boats—Sound Science, Mighty Mouse, Big Bro or Sea Jay—depending on the job at hand. Today, it’s just the two of us using Mighty Mouse to look for wintering piping plovers, red knots and other shorebirds. In this area of the Pamlico Sound, the dredged-material islands are affectionately called the Alphabet Islands because they were given a letter name as they were developed.

Several islands have aged and formed into sandy domes, sloping down to intertidal habitat that sometimes includes small, shallow pools. Green algae may build up on muddy intertidal areas, and marsh grasses grow along other portions of the shorelines. We time our surveys as close to falling tide as possible to catch sight of shorebirds as they scurry to newly exposed moist habitat with easily accessible, juicy worms, slimy-yet-tasty algae, and small, scrambling crabs. We use spotting scopes and binoculars so we can stay a good distance away and not affect their behavior.

“I’ve got one!” Carmen declares quietly, yet with proud satisfaction, as she is the first to see a piping plover on this chilly day.

“Is it banded or is it naked?” Sara responds.

It is banded, and we take as much time as necessary to photograph the bird so we can read the colors and numbers on the bands. Later, we’ll submit the band information to a few of our partners who will give us the bird’s life history.

The dredged-material islands provide invaluable habitat to migratory waterbirds year-round. Many shorebirds, including the federally threatened piping plover and red knot, may stay in these areas through the winter, or they may just stop over to gain weight and energy for the rest of their



migration. Thousands of double-crested cormorants roost on the islands through the winter. By early spring, these birds are replaced by pelicans, terns, black skimmers, ibises, herons and egrets that nest on the variety of habitats provided by the dredged-material islands, from the bare sand and shells of newly deposited material to thick grasses, small shrubs and cedars on islands that have not received material for three or more years.

We try to thread the needle between wintering and nesting seasons and travel to each

Opposite top: A brown pelican feeds two chicks. **Opposite bottom:** A pair of black skimmers in flight. **Top:** A red knot flies above the sound near New Dump Island. **Bottom:** A pair of American oystercatchers walk along the shore.



island to post informative signs. As Wildlife Conservation Areas, Waterbird Islands are protected against trespass from March to mid-September to reduce disturbing nesting waterbirds. The “posting season” is rigorous but quite satisfying, knowing that each island will be protected and the birds will have as much peace as possible to build nests and raise young.

It is difficult, however, to convince some curious boaters not to land on the islands and walk around looking for shells and driftwood, and at the birds. If we come across such inquisitive people, we talk with them about the need to give the birds as much space as possible. Tern and skimmer chicks, especially, are vulnerable to being stepped on as they hide amongst shells and driftwood on the shoreline. Adult pelicans and egrets are easily frightened off their nests and won't come back until the disturbance is gone, often exposing young, featherless chicks to extreme heat. Mostly, once people are aware of these concerns, they leave to observe from farther away or to land at a site with no nesting birds.

DREADFUL DEBRIS

“You're stronger than you think!” a fellow staffer yells at Sara as she struggles and nearly gives up on pulling a huge, saturated net from the sandy shoreline of a Waterbird Island. With his help, she pulls it out of the sand and adds it to a large pile of debris in our mud-coated boat. The annual, exhausting cleaning of the islands is underway.

In fall, after the nesting birds have raised their young and before the migrants and wintering waterbirds arrive, we clean as many of the islands as we can. Many loyal, hardy

volunteers join us on these trips and help us with this seemingly thankless chore. We find baby dolls, chairs, discarded fishing line, crab traps, rope, nets, waterfowl decoys (finders keepers for these!) and many other types of trash. For a few years, we recorded every item taken off islands and contributed data to the Ocean Conservancy's Trash Information and Data for Education and Solutions (TIDES) project. Annika Andersson, a former agency wildlife technician, was instrumental in starting this program and partnership.

In the first four years of the TIDES project, we removed over 1,700 pounds of trash from islands in Pamlico Sound, filling 117 industrial strength trash bags. We also removed large items, including a roll-top desk we dug out of the sand, dreaming that



Right: A royal tern and its chick. Top: Dozens of royal tern chicks move together. Opposite: A royal tern looks for a place to land.

HOW TO HELP WATERBIRDS

- Remain outside of areas posted as nesting habitat.
- Walk around flocks of birds instead of flushing them.
- Follow beach driving laws.
- Follow beach laws about pets on the beach. If pets are allowed, keep them on a leash.
- Keep cats indoors.
- Take beach chairs, umbrellas, toys and trash with you when you leave the beach to prevent them from becoming marine debris.
- Place leftover food in a secure trash can to avoid attracting predators.
- Dispose of fishing line in a monofilament recycling bin or cut the line into small pieces (under 6 inches long) and place it in a trash can.



it was the top of Blackbeard's treasure chest. The numbers add up quickly: 861 plastic bags and bottles, 806 pieces of foam and plastic packaging, 223 shotgun shells, 149 crab pots, buoys and line, 54 balloons and 96 balloon ribbons. Each item removed makes the islands a safer place for birds to nest, roost and forage. The discarded fishing line, plastic bags and balloons are especially harmful, often resulting in a slow, awful death for entangled waterbirds and sea turtles that consume plastic, mistaking it for prey, such as jellyfish.

FOR THE BIRDS

Initiated by forward-thinking, intrepid biologists, the protection and management of dredged-material Waterbird Islands continue to be a labor of love. Love for North Carolina's sounds, the frequently unpredictable winds and waters, and of course, the birds.

Soaring pelicans, full-throated screams of crested terns, awkward squawks of black skimmers and chittering of shorebirds. Loud flapping of great egrets' large white wings, pulling themselves into a graceful soar. The indigo blue of a glossy ibis egg. Nothing can top these experiences. Losing them would take the soul out of North Carolinians.

For these and many other reasons, Commission biologists, their many partners and a hearty, loyal crew of volunteers work tirelessly to protect and conserve these coastal resources. Please do your part to help keep these islands for the birds. ♡

Dr. Sara Schweitzer is an assistant chief of the Commission's Wildlife Management Division who oversees the Wildlife Diversity Program. Carmen Johnson is the Commission's shorebird and seabird biologist who can frequently be found traveling North Carolina's coast managing islands and counting birds.

Opposite, clockwise from top: A royal tern prepares to eat a shrimp it caught in the sound. A pair of American oystercatchers walk the shore, including one that has been banded by biologists. A least sandpiper walks the shore with its reflection in the water on Big Foot Island. Above, left to right: Schweitzer, Johnson, National Park Service Technician Patrick Carr, Rouse and Commission Waterbird Technician Austen Smith observe waterbirds on New Dump Island.