Loggerhead

Each summer they lumber up the darkened beaches in a ritual programmed through 120 million years, unaware that benevolent eyes now seek their nesting sites and watch their hatchlings safely back to sea.

by Sally R. Hopkins

Midnight surf, edged white with foam, rolls methodically onto the beach of a South Carolina barrier island. The white line of water tracing the approach and departure of never-ending waves is suddenly broken by the emergence of a dark, boulder-like form — a female loggerhead sea turtle.

Moving slowly onto the beach, she frequently stops as if undecided of her destination until

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Sixty days after their mother has returned to the sea, loggerhead hatchlings emerge from their sand-covered nest in a race to the surf.

the warm dry sand at the base of a low dune is reached. Some undefined quality known only to her makes this the right spot for laying her eggs.

Shoving her 250-pound body from side to side, she slowly sinks partway into the sand and without pausing, begins to dig an egg chamber. Alternating scoops of her rear flippers bring up sand along each side of the hole and flick it over the giant turtle's back past her head. Sand clings to the tears running down her face. Often misunderstood as a sign of emotion, these tears eliminate excess salt from her body.

Watching a nesting sea turtle is exciting, and anyone who has worked with loggerheads always remembers their first sighting, but care has to be taken. Any disturbance may cause her to stop digging and return to the ocean creating consequences, as yet, not completely understood. Will she come up on another, perhaps less suitable beach? Will she drop this clutch in the ocean or hold it in her body for another two-week cycle? These questions remain unanswered.

Although she will tolerate some activity during egg-laying, it is incorrect to say she is not "disturbed." Researchers must weigh the value of their work against possible effects on the sea turtle.

As soon as the eighteen-inch, light bulb-shaped nest hole is completed, the loggerhead begins to deposit her eggs. Deep sighs hint at her effort, as the delicate bioluminescent twinkling of tiny sea creatures attached to her shell betray her presence on the dark beach. In twenty minutes, 115 leathery pingpong ball-sized eggs nearly fill the hole. With computerized-like movements, programmed through 120 million years of evolution, her hind flippers begin to sweep sand into the nearly-filled cavity. Thumps of her massive body stamp down the loose grains. Finally, giant sweeps of her front flippers throw sand over her back obscuring the nest site. Her part in this age-old phenomenon completed, she turns toward the surf and, leaving a double track to mark her journey, resumes life in the dark sea.

In sixty days her young will emerge and follow. Few will survive to return and sustain their kind.

On many beaches along the South Carolina coast, death comes before the struggle of life begins. Raccoons find the nest and devour the eggs. Wind-driven full moon tides inundate the nest and developing embryos suffocate. While little can be done to assist the loggerhead's survival in the sea, many eyes, other than those of hungry raccoons, watch the sea turtle on South Carolina beaches. When a female disappears beneath the waves, wildlife officials and involved citizens carefully note the nest's location.

A large wire screen is placed directly over the center of the nest and anchored at the corners with stakes. Emerging hatchlings can crawl through and make their way to the sea, but the front legs of hungry raccoons are too short to reach through the mesh to the eggs incubating in the warm sand below.

The wildlife department's Nongame and Endangered Species Section began working with the loggerhead turtle in 1977 to determine the problems the loggerhead faced. Of major concern was the fact that South Carolina's principal rookery beach, Cape Island, the densest loggerhead nesting beach north of Cape Canaveral, Florida, was losing ninety-seven percent of its nests to raccoons and beach erosion. Beach management to save nests was begun at Cape Romain by U.S. Fish and Wildlife personnel and at the Yawkey Wildlife Center by the state wildlife department.

Sonic and radio transmitters, monitored from wildlife research vessels of the Division of Marine Resources at Fort Johnson, provided nongame biologists some of the first information on turtles' habits and preferred habitats during the nesting period. Nesting habitat gain or loss and loggerhead population trends have been studied in aerial surveys.

Since 1982 state management activities and research for the loggerhead and other endangered species including the bald eagle, pelican, and alligator have been funded through Check for Wildlife donations on the South Carolina tax forms. These tax deductible contributions also fund nongame research and land protection for unique plants and habitats.

It is hoped that these efforts to improve loggerhead nesting success will increase the turtle population and, one day, enable this "threatened" species to be removed from the federal and state lists of endangered and threatened animals. Continued public support through Check for Wildlife funds and private citizen groups will be vital.

Turtle projects at Hilton Head, Pritchards, Fripp, Hunting, Kiawah, and Edisto islands have done much to protect turtle nests while providing conservation-minded individuals an opportunity to educate their neighbors and tourists to the loggerhead's plight. Since the beaches must

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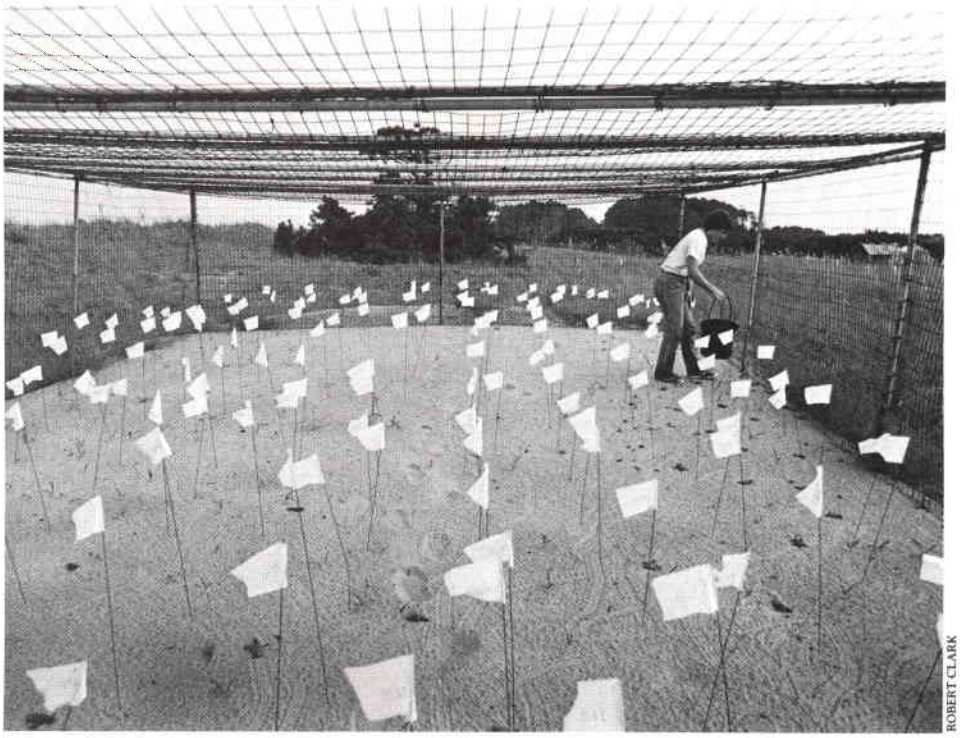

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be shared by loggerheads and humans, these residents are attempting to make sure that encounters between people and turtles will be beneficial for both.

Norine Smoak has been in charge of the Fripp Island project for several years, although her involvement with the loggerhead has been much longer. "It has been my privilege for seventeen years to have a front-row seat to wildlife activities on Fripp Island, an experience that is appreciated more each year," Smoak said.

She came to Fripp in 1961, when development of the island first began, and purchased lots. She recalls coming over to the island by boat in July and seeing dozens of turtle nests with rings of fresh egg shells — obvious signs of raccoon and feral hog damage.

"We became full-time residents in 1967, and the nesting cycle of the loggerhead became a consuming interest for me. Raccoon predation on the fresh nests took a heavy toll. We used screen wire, fence wire baskets, palm fronds, and anything else that might possibly deter the 'coons."

That fall, cement holding vats were used to keep approximately two thousand hatchlings over the winter. Disease, mink, raccoons, weather, and diet took a large number of the hatchlings, and in April when the forty remaining turtles were released, the workers realized that nature produced a better survival rate.

"Since then, our program on Fripp has been to monitor, move nests in danger of high tide flood, and inform the ever-growing summer visitors of the need for conservation methods if Fripp were to remain a successful loggerhead-nesting area," Smoak said.

"The loggerhead story has been told and retold hundreds of times to our summer visitors. Many who return year after year are most cooperative and feel very protective of any nests near their house. Telephone calls and letters have followed vacations — 'Did our nest hatch? How many babies were there?'

"Our program runs on a small budget. We have scrounged short salvage boards for nest stakes from building sites (contractors' generosity), husbands have painted the stakes. File cards, magic markers, and marker flags just about cover needed supplies. The developers have kindly done xeroxing for information to give the summer people. For the past two years, Fripp Island Audubon Club has helped with expenses. For a total of $40, twenty-seven volunteers, untold time and miles of walking, the loggerhead turtle who selects Fripp Island for her nesting site will have her nest protected and her hatchlings safely escorted to the ocean." Smoak spoke these last words with obvious pride in her group.

Debbie Mundell, project director for Edisto Island, has a larger budget, funded in part by the Charleston Natural History Society and the Center for Environmental Education. The Sea Turtle Rescue Fund made "Attention Beach Users" pamphlets available to approximately 25,000 campers. Over one hundred additional brochures, available at each of four island realty offices, were provided to renters on Edisto Beach.

During the peak of nesting and hatching seasons, talks were presented at Edisto State Park and several night walks were conducted to let participants witness firsthand what they had just seen and heard in slide presentations. The Charleston Natural History Society, a local chapter of the National Audubon Society and co-sponsor of the Edisto Island Sea Turtle Project, also held several early morning field trips to one of the study areas and accompanied project investigators on their regular beach patrols.

Mundell has witnessed the benefits of educating the public to the loggerhead's needs.

"Each year during the course of nesting and hatching seasons on Edisto, certain events take place which assure us that the weekly slide shows, guided beach walks, distribution of brochures, conversations with beach users during morning patrols and other attempts to educate the public about loggerhead turtles have been successful. Most people need only to be made aware of the problems which sea turtles face or, better yet, to have some type of personal experience with these awe-inspiring creatures, and they become loyal 'friends' anxious to help in whatever way possible."

One morning early in the season, Mundell's group came upon a nest laid the previous night too close to the surf. As they prepared to move the eggs to a more suitable spot, the owner of a nearby cottage came out and demanded that they stop digging, as it is illegal to tamper with sea turtle nests.

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Workers at South Carolina's largest loggerhead hatchery on the Cape Romain National Wildlife Refuge near McClellanville transport eggs from the giant turtles' nests and bury them inside the hatchery's protective fencing. As they emerge, hatchlings are gathered in buckets for a free ride to the sea.

Permits issued Mundell by the wildlife department were carefully inspected before the cottage owner seemed satisfied that the diggers were "official" and promptly offered a bucket and shovel to help. Another beach resident called the 'Turtle Hotline' one evening to report that he had heard a loggerhead nesting directly beneath his window the night before. He noted that he had forfeited the opportunity of going out to watch this fascinating process for fear that his presence might disturb the turtle.

From mid-July to mid-October, the fruits of these sea island residents' labors come bursting forth from beneath the sand — hundreds of hatchlings scrambling from their nests.

A turtle hatching is quite a spectator event according to Smoak. "Comes hatching time, interest is electric. Summer people often schedule their vacations to coincide with this time. In the evenings, families stroll the beaches hoping to see the typical crowd at the water's edge. A sure sign that a nest is 'moving out.' News spreads incredibly fast and soon a hundred or more people — old, young, children, and babies in strollers — are watching. We use a rectangular line drawn in the sand to declare that space 'off limits' to watchers whose enthusiasm sometimes impedes the hatchlings' race to the ocean. Young barefooted recruits patrol to warn joggers to go around as the turtles *always* have the right of way."

A shared emotional bond exists among those who watch the groups of hatchlings make their way to the sea. The joy of watching hatchlings tumble over each other as they first come out of the nest and start the long trek to the sea turns to helpless anguish as each little bundle of energy pits itself against the surf. Tossed by the breakers back onto the sand, the hatchlings right themselves and persist again and again.

"One evening late in the season as we conducted a group of about fifty people on a night patrol, we came upon a nest which apparently had hatched the preceding night," Mundell recalled. "We began to excavate the nest to determine the number of hatchlings which had emerged and found another dozen or so baby turtles trapped in the nest. The crowd was thrilled."

The group became concerned, when several of the hatchlings turned away from the ocean and crawled toward the houses. The source of confusion for the baby turtles was traced to the bright flood light of a nearby house shining directly onto the beach. "Without the slightest hesitation, two men from among the group walked to the house, knocked on the door, and explained to the proprietors that the light absolutely *had* to go," Mundell said.

"On another occasion, we had two families camping at the state park, who were so fascinated by the description of the nesting and hatching process, that they asked the project assistant to identify a nest due to hatch during their stay. Adults, children, even babies trooped to the beach at dusk armed with blankets, flashlights, coffee, and cake. They sat quietly by the nest, and watched and waited, anticipating the once-in-a-lifetime event.

"Finally, at nine minutes before midnight, the ground erupted right before their eyes and baby turtles percolated from the sand. One young girl was so touched that she cried at the sight and was told by her mother that she would have to toughen up some if she really intended to be a marine biologist when she grew up," Mundell said.

Many a person watching a group of hatchlings has had to brush back tears as the tiny heads finally appear out beyond the surf. As they disappear from sight, many unanswered questions about sea turtles come to mind: Where do they go? How many will survive? How many years will pass before they will be old enough to return to nest? Where will they return? We don't know the answers to these questions, but one thing is sure. If they do come back to South Carolina, they will return to many friends.

"When one considers the millions of years the loggerhead has followed this same pattern, our time here is only a moment," Smoak said. "We have been blessed for each year spent watching this inscrutable creature for as surely as May comes, so comes the loggerhead, and the sight of that double track in the sand rekindles the thrill, over and over and over."

Sally R. Hopkins is a wildlife biologist in charge of the state's loggerhead sea turtle research project, a nongame and endangered species program primarily funded through South Carolina taxpayers' Check for Wildlife donations.