

Brunswick Turtle Watch Shifts Into High Gear

BY DOUG RUTTER

Brunswick County Turtle Watch volunteers are burning the candle at both ends these days. They'll continue to work late into the night and rise early each morning for the next few weeks as the sea turtle nesting season draws to close and the hatching season starts gathering steam.

"It's crazy this time of year," said Judy Bryan, turtle watch coordinator at Holden Beach. "You're looking for nests all morning and sitting with the nests all night. It's exhausting, but it's worth it to get those babies in the water."

Sponsored by the Brunswick County Parks and Recreation Department, the turtle watch program solicits volunteers at each beach to help monitor turtle nestings, relocate nests threatened by tidal waters and help babies get to the ocean.

Tina Pritchard, who runs the program for parks and recreation, said this is the second year that residents and visitors have "adopted" turtle nests on the Brunswick County beaches.

People who "adopt" wait at the nest as the hatch date draws near, count the babies when they hatch from the eggs and lead them safely to the water with flashlights.

A lot of the people who adopted nests last year came back to help this season. "The return ratio has been wonderful for us," Ms. Pritchard said. "It obviously has been a good experience for people if they're coming back."

The baby turtles, which are about the size of silver dollars, recently started emerging from the more than 200 nests that have been laid this year on the South Brunswick and Oak Island beaches.

Ms. Pritchard said turtles laid about 130 nests this year on Oak Island. In the South Brunswick Islands, nest totals through last week were 21 at Sunset Beach, 17 at Ocean Isle Beach and 34 at Holden Beach.

The nesting season in Brunswick County began in early May and runs through late August. Turtles usually start hatching in late July and continue into October.

Four different kinds of sea turtle are known to nest on Brunswick County beaches, but the most common is the loggerhead. Others are the Green Sea turtle, the leatherback and the Kemp's Ridley, which is extremely rare and projected to be extinct within 20 years.

Mrs. Bryan said the first two sea turtle nests at

Holden Beach hatched last week. Volunteers believe there is a Kemp's Ridley nest on the beach, based on the mother's tracks and size of the eggs.

Although nesting activity is slightly down from last year at Holden Beach, one of the loggerhead nests expected to hatch in mid-August has 175 eggs in it.

Ms. Pritchard said that's a record number of eggs for Brunswick County. "The interesting thing is to see if she comes back and lays that many again," she said.

Gloria Hunsucker, who is coordinating the turtle watch at Ocean Isle Beach, said two leatherbacks are among the 17 turtles that have nested on the beach this year.

On a negative note, she said some of the people visiting the beach have bothered the sea turtles when they come ashore to lay their nests. One group of people threw beer cans at a turtle.

"Human visitors are not our only visitors to this island," she said. "People need to move back, let them come up and lay their eggs."

If people don't let the adult turtles lay their eggs and allow the babies to get into the ocean, Mrs. Hunsucker said there won't be any turtles left at Ocean Isle 15 years from now.

Because sea turtles are an endangered and threatened species, people who harass the reptiles or destroy their nests can be fined up to \$10,000 and sentenced to 10 years in jail.

Sunset Beach Turtle Watch Coordinator Minnie Hunt and her crew of helpers have 21 nests to take care of this year, compared to seven last year.

"People seem to be extremely interested," she said. "Once they understand what's going on, they're also extremely protective."

Sea turtles almost always nest at night, dragging themselves across the sand to a spot above the high tide line where they dig a hole with their hind flippers, lay between 80 and 200 eggs and cover them with sand.

After an incubation period of 50 to 85 days, baby turtles come out of their nest. Hatchlings usually come out at night and are drawn to the ocean by reflective light from the moon.

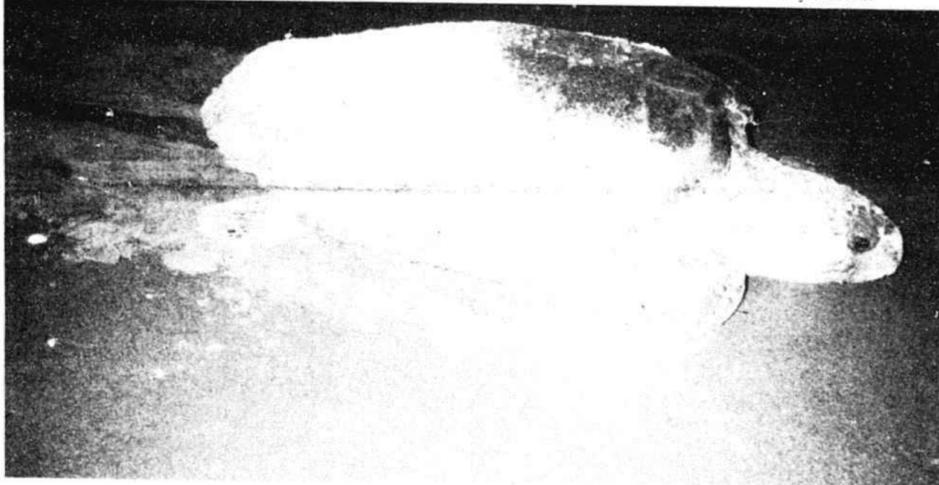
Experts estimate that only one in 1,000 babies survives to adulthood. Many eggs are wiped out by crabs and ocean tides before they hatch, and babies are often eaten by sharks, birds and other predators as they make their way to the Gulf Stream where they mature.

It is believed that female sea turtles always return to the beach where they were born to lay their eggs. Once they are mature, turtles nest every two or three years and can live to be 100 years old.

Despite the high mortality rate and nesting problems associated with beachfront development, scientists believe sea turtles have existed for 200 million years. They go back to the days of the dinosaurs.



KATHERINE BELCHER of Holden Beach leads a group of baby sea turtles to the ocean last summer. Volunteers use flashlights to guide the turtles through a shallow trench to the sea.



A FEMALE LOGGERHEAD returns to the ocean after laying a nest of 116 eggs earlier this year at Holden Beach. The babies are expected to hatch in a few weeks.

Researchers Studying Best Ways To Protect Sea Turtle Populations

BY DEBBIE GRIFFITH

Sea turtle preservation efforts that so far have focused on protecting eggs and helping hatchlings return to the ocean will not be sufficient to prevent the extinction of endangered or threatened species like the loggerhead, says a zoologist at North Carolina State University.

Far more effective in reversing the steadily declining numbers of nesting sea turtles would be approaches that save large juvenile and adult turtles, says Dr. Larry O. Crowder, NCSU professor of zoology. And, he said, one of the most promising methods of saving the older turtles is continued use of the controversial turtle excluder devices on shrimp trawlers.

Crowder reached those conclusions after developing a mathematical population model of loggerhead turtles.

The model showed that the large juvenile and young adult stages that are often

drowned in shrimp trawler nets are the very stages that contribute most to the sea turtles' population recovery.

"What really came as a shock is that the beach-oriented protection programs alone will not protect the loggerhead. We found that putting all our efforts (at preservation) on the beach, where most efforts have been directed so far, is not the answer," Crowder said. "We've got to protect the larger juveniles and adults to really make a difference in future populations."

Working with Dr. Deborah T. Crouse, a scientist at the University of Wisconsin, Crowder developed the population model based on 20 years of data on loggerhead turtle populations at Little Cumberland Island, Ga.

The research took into consideration each life stage's reproductive value—that is, how much an individual at a particular stage of life can contribute to the future growth or

maintenance of the population.

Because a sea turtle lays thousands of eggs in her lifetime and because most of the hatchlings will succumb in their first year to predators, the reproductive value of a turtle egg is very low. On the other hand, the reproductive value of a turtle that has survived to the large juvenile stage (8 to 15 years old) is six times that of an egg. A mature breeder's reproductive value is more than 500 times that of an egg.

Using those values, Crowder determined that because the reproductive value of the earlier stage was so very low compared to the older stages, even protecting 100 percent of the eggs and hatchlings would not be sufficient to reverse the decline in numbers of nesting females.

"We found that the stage we need to target—the stage that most needs to survive to get the species back up on an even keel—is the large juvenile. We found that a 15 to 20

percent increase in survivorship of the large juveniles would allow the population to recover," Crowder said.

Crowder is using his population model to help marine fisheries officials determine the effectiveness of turtle excluder devices (TEDs), now required equipment on most shrimp trawlers.

TEDs, which serve as a trap door to allow turtles to escape the nets and avoid drowning, were developed in the early 1980s after marine biologists recognized that trawling was responsible for a significant number of turtle deaths each year. A National Academy of Sciences report published last fall concluded that trawling is the single largest cause of turtle deaths—an estimated 40,000 to 50,000 loggerheads per year in U.S. waters.

But the use of TEDs has been hotly contested, especially in the Gulf Coast states, by many shrimpers who argue that the use

of the equipment reduces their shrimp catch.

Crowder said his continuing research on turtle populations will provide the analysis to show whether TED use will improve turtle populations. Early data indicate that TED use not only saves individual turtles, but that use of TEDs and other measures to protect large juvenile and adult turtles may be critical to marine turtle species.

"Beach-oriented conservation programs are fine, but they are not enough. If your resources are limited you need to attack the problem in the area where you can see the greatest chance for improvement—and that's at the large juvenile and adult stage.

"There's promising evidence that TEDs will have very positive effects on the population," Crowder said, "but it will take time because turtles are long-lived. My message is hang in there, but don't expect to see big results right away."

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