County Turtle Watch Looking For Another Big Year

BY DOUG RUTTER

It's that time of year again. The next five or six months will be busy ones for volunteers with the Brunswick County Turtle Watch program.

They'll be waking up early and staying up late, doing whatever they can to help baby sea turtles begin their tumultuous lives on the right foot—or in this case, the right flipper.

Sponsored by Brunswick County Parks and Recreation, the turtle watch uses volunteers to monitor sea turtle nestings, relocate nests threatened by tidal waters and help babies get to the ocean.

Tina Pritchard, county coordinator, said the county department started running the program three years ago. It's getting better each year, she says, because the same, experienced volunteers keep coming back.

Coordinators at the South Brunswick Islands beaches include Minnie Hunt at Sunset Beach, Gloria Hillenburg at Ocean Isle and Judy Bryan and Sid Swarts at Holden Beach.

The turtle nesting season in Brunswick County usually begins in mid-May and runs through late August. Nests typically start hatching in late July and continue into October.

Sea turtles laid about 400 nests along the Brunswick County coast last year, said Ms. Pritchard. From those nests, an estimated 11,500 young, each the size of a silver dollar, made it safely to the water.

Ms. Pritchard is afraid to predict what kind of year 1992 will be for sea turtle nesting. She called for a slow year in 1991, and Long Beach ended up having its biggest year ever.

"This year I told them that I refused to comment," she joked. "I hope it's a big year. We're expecting a lot of activity."

For the first time this year, Ms. Pritchard said volunteers involved in relocating the turtle nests are wearing red shirts and blue hats so they can be easily identified.

Nests have to be moved if the are in danger of being washed away by a high tide. It's a very tedious process, because the fragile eggs can't be twisted and must be placed in the new nest exactly as they were found.

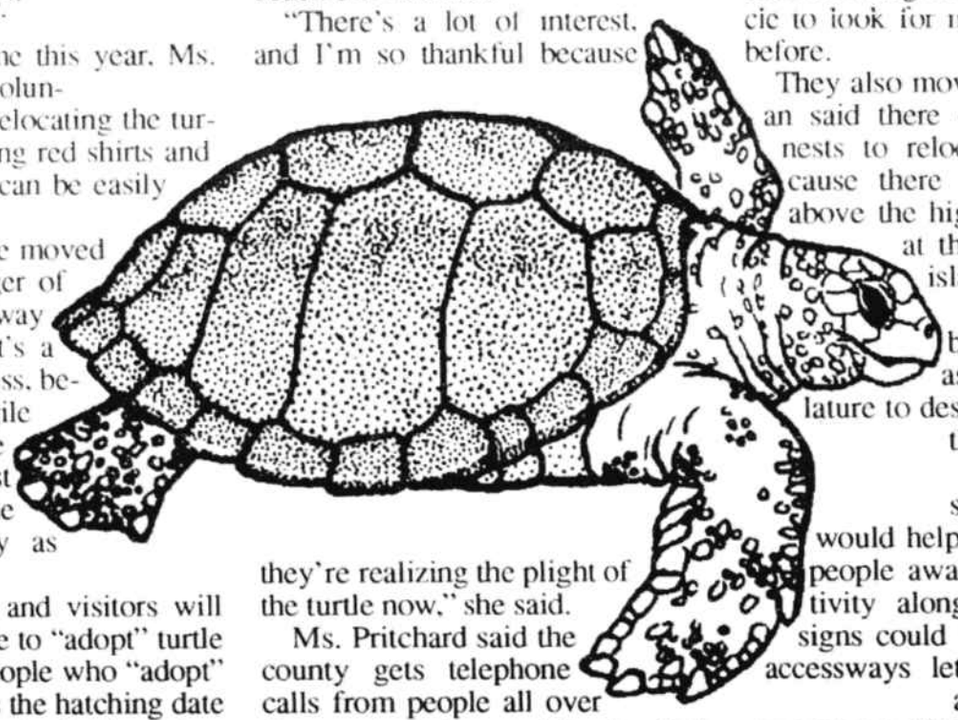
Area residents and visitors will once again be able to "adopt" turtle nests this year. People who "adopt" wait at the nest as the hatching date approaches, count the babies when they emerge from the nest and lead them to the ocean with flashlights.

Turtle watch coordinators don't anticipate any problem finding "parents" this year like they did a few years ago. "People are already calling and the season hasn't even started yet," Ms. Pritchard said earlier this month.

The "adopt-a-nest" program is a real hit with the tourists, many of whom are extremely curious about the sea turtle nesting and hatching activity.

Mrs. Bryan, one of the program coordinators at Holden Beach, said she received 437 letters over the winter from folks who want to adopt nests during their visit to the beach this summer.

"There's a lot of interest, and I'm so thankful because they're realizing the plight of the turtle now," she said.



Ms. Pritchard said the county gets telephone calls from people all over the country who want to plan their vacation around the sea turtles.

"They want to know when to come down so they can see a nest hatch," she said. Turtle watch volunteers can't say for sure when a particular nest will hatch, so adopting nests requires patience.

After an off-year at Holden Beach in 1991, Mrs. Bryan expects a "bumper crop" of turtle nests this year. Sea turtles laid 43 nests on the beach last year, down from 65 nests in 1990.

"Last year was characterized as a poor year," Mrs. Bryan said. "I don't think it was so poor because we worked so hard."

A core of 13 volunteers makes up the community's turtle patrol. They take turns riding the strand each morning in an all-terrain vehicle to look for nests laid the night before.

They also move nests. Mrs. Bryan said there could be a lot of nests to relocate this year because there isn't much beach above the high tide line except at the west end of the island.

Several local beach towns have asked the state legislature to designate them as turtle sanctuaries.

Ms. Pritchard said the designation would help educate and make people aware of sea turtle activity along the coast. Also, signs could be posted at beach accessways letting people know about penalties for harassing turtles.

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.

Bald Head Island has its own turtle watch program conducted by the BHI Conservancy, a non-profit organization dedicated to protecting the island's natural resources. Visitors can become conservancy members and "adopt" a nest as they can at other area beaches.

Four different kinds of sea turtles are known to nest in Brunswick County, but the most common is the loggerhead. Others are the Green Sea turtle, the leatherback and the Kemp's Ridley, which is extremely rare.

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.

Scientists 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.

Baby Sea Turtles Guided By Natural Compass

BY DAVID WILLIAMSON
UNC-CH News Services

Did you ever wonder how baby sea turtles can scurry down to the ocean after hatching, paddle thousands of miles across the North Atlantic and find their way back years later to the beach where they were born?

A University of North Carolina at Chapel Hill biologist curious about the creatures has discovered at least part of the answer. Baby loggerhead turtles, no bigger than a child's hand, use the earth's magnetic field and waves to orient themselves and direct their marathon swims.

Writing in the January issue of *Scientific American*, Kenneth J. Lohmann, Ph.D., assistant professor of biology, describes experiments showing the turtles' sophisticated biological compasses.

"The extraordinary navigational abilities of sea turtles have no doubt contributed to their evolutionary success, enabling them to exploit feeding grounds far removed from nesting sites," Lohmann says. "They are an ancient group of animals, relatively unchanged in the fossil record for millions of years."

Working with Michael Salmon and Jeanette Wyneken of Florida Atlantic University, the biologist tethered loggerhead hatchlings to a lever-arm device and placed them in a fiberglass satellite dish filled with water. The tether enabled the researchers to record which direction the reptiles swam in the dark.

"We knew right from the very beginning that many orientation cues might be available to the hatchlings," Lohmann said. "Other migratory animals, for example, rely on cues such as the position of the sun or stars, polarized light, odors, low frequency sound—such as that from waves breaking on a beach—and the earth's magnetic field."

But unlike most other cues, the earth's geomagnetic field is constant night and day and remains largely unaffected by weather.

After the researchers turned out the lights and plunged the hatchlings into total darkness in the laboratory, the turtles circled the satellite dish as if confused.

But within minutes, they established consistent courses toward a specific direction. Later they alternated between circling and swimming in the same direction they had chosen earlier.

"When we calculated the average direction that the different hatchlings swam toward, it became clear that the turtles were not swimming randomly," Lohmann said. "Instead, most hatchlings swam toward points between magnetic north and east, adopting bearings that would lead them away from the east coast of Florida and toward the Gulf Stream."

BEACON FILE PHOTO

SCIENTISTS BELIEVE baby sea turtles use the earth's magnetic field to guide them on their long journey at sea.

To verify the magnetic effect, the researchers constructed a tubular device known as a Rubens cube coil that circled the big dish of water and could change the magnetic field around the animals.

"When activated, the coil generated a weak, relatively uniform magnetic field throughout the area it enclosed," Lohmann said. "The coil was adjusted to generate a field twice as strong as the horizontal component of the earth's field but opposite in direction. Thus we could reverse at will the magnetic field experienced by the turtles."

The biologists found that when they reversed the magnetic field, the hatchlings swam in the opposite direction—toward the southwest. Repeating the experiment in a floating cage offshore, they found that the animals swam vigorously toward the open sea even when out of sight of land.

A further discovery at sea was that the baby turtles often swim into waves because waves usually come from the open ocean. Lohmann and his colleagues confirmed that shortly after Hurricane Hugo when a strong west wind created unusual waves that moved eastward away from the Florida coast. On that day, untethered turtles swam into the waves, back toward land.

How adult turtles are able to use the earth's magnetic field and other cues is not yet understood, he says. Adults may be able to determine their position through differences in the field at different latitudes. They might also recognize their birthplaces by the chemical composition of the water.

The sun could help guide adult loggerheads, but since other researchers have found them to be extremely nearsighted, it is unlikely they navigate by stars.

"Understanding how adult turtles navigate may one day enable returning females to be tricked into nesting on protected beaches," Lohmann says. "Studying the orientation mechanisms of sea turtles not only provides insight into one of the most sophisticated navigation systems ever to evolve, it may also help save these animals from extinction."