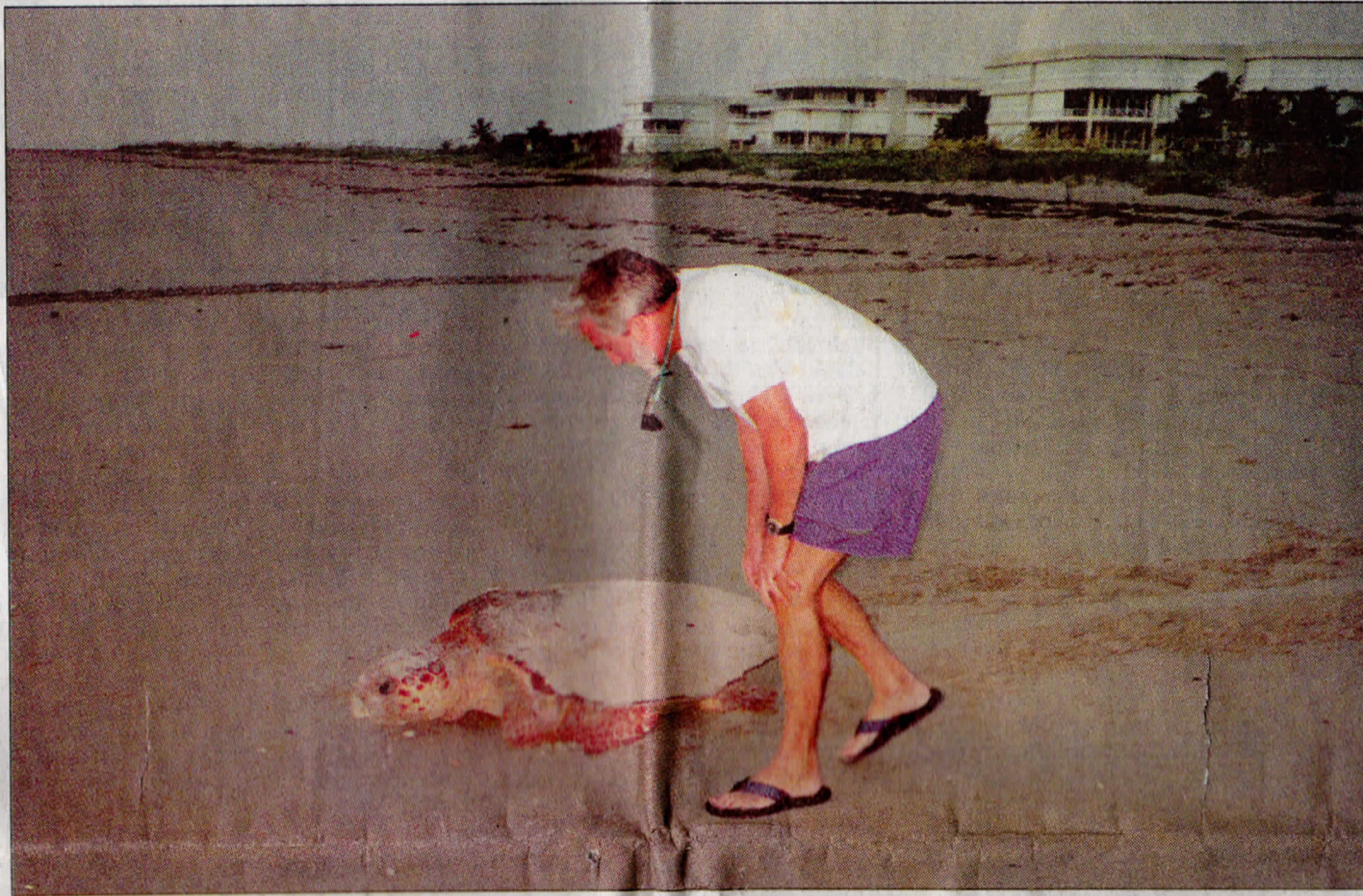


Tracking the turtle nests



Photographer: DAN McCUE

R. Erik Martin looks to see if this sea turtle that came to lay eggs near Bath Tub Beach was tagged or not in the early morning hours recently.

Banner year seen for turtle nesting

By Dan McCue
of the News staff

species.

As of Monday morning, an unprecedented four adult males had turned up

to retrieve the trapped turtles and release in the ocean.

"We see a lot of juvenile green turtles, those weighing 30 to 40 pounds," he said as three other biologists loaded what turned out to be a 250 pounder on a scale to be weighed.

Counts on area beaches encouraging

By Dan McCue
of the News staff

BATHTUB REEF BEACH — Reaching into a sea turtle nest early one morning, marine researcher R. Erik Martin appeared surprisingly puzzled for a man who has spent much of his life conducting sea turtle research.

"Typically, the eggs would be right here, under the highest part of the nest mound," he said, leaning over the hole on a hand and both knees, his right arm buried up to his elbow.

Finding the eggs in a turtle nest is important to researchers because it aids in assessing hatchling development and provides clues to the success of overall sea turtle nesting.

"Maybe they're here," Martin said, drawing a circle in the sand a few inches away.

In a moment, sweat beading on his brow, Martin refilled the first hole he dug at the nest and started another, then another.

"Three tries is our standard," Martin said moments later, as he decided to give up the search. "You don't want to disturb the nest too much."

Rising to get the stakes and



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"Three tries is our standard," Martin said moments later, as he decided to give up the search. "You don't want to disturb the nest too much."

Rising to get the stakes and orange cord he will use to mark off the nest, Martin, scientific director for Ecological Associates of Jensen Beach, turns to congratulate the absent loggerhead sea turtle

Banner year seen for turtle nesting

By Dan McCue
of the News staff

HUTCHINSON ISLAND — Though green sea turtle nesting started only last week, wildlife biologists working for Florida Power and Light Co. say there's good reason to think this will be a banner year for the endangered

species.

As of Monday morning, an unprecedented four adult males had turned up in the intake canal of the St. Lucie Nuclear Power Plant.

"This really is highly unusual," said Michael Bresette, senior biologist with Quantum Resources in Palm Beach Gardens, the company the utility pays

to retrieve the trapped turtles and release in the ocean.

"We see a lot of juvenile green turtles, those weighing 30 to 40 pounds," he said as three other biologists loaded what turned out to be a 250 pounder on a scale to be weighed.

"One big guy really is a once a year event," he said. "Four tells me there's a lot of green turtle activity off our shores, and that suggests we could potentially see a record number of nests

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NESTS

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that made the nest.

"If this nest is any indication, her genetic material is going to be on this planet a long time," he said. "If I can't find the eggs, I doubt a predator will."

As the annual sea turtle nesting season approaches its climax during the next several weeks, Martin and his fellow researchers will spend hours patrolling Treasure Coast beaches for nesting signs.

The past two years have been particularly good for endangered leatherback turtles on the Treasure Coast, according to the Florida Marine Research Institute.

Last year, 60 leatherback nests were counted in St. Lucie County by turtle monitors, up from 41 in 1998.

Also last year, 3,621 loggerheads and six green turtles nested on the beaches in St. Lucie County.

Will the trend continue? That's what a unique band of beachcombers is trying to find out.

Day starts early

Although the sea turtle nesting season begins with the arrival of the first endangered leatherbacks on our shores — this year it began Feb. 28 with a nest on Jupiter Island — Martin's team doesn't really get busy until the loggerheads begin to arrive, usually around Easter.

For him and colleagues Cary Crady and Audrey Rotrock, the research day begins shortly after 5:30 a.m. when they assemble to load equipment onto all-terrain vehicles.

Equipment used in their research is simple — stakes, tape and data collection sheets, and bottled water to get them through the six hours they probably will spend on the beach.

"The survey period generally lasts from April 15 through Sept. 15, though because some nests are laid as late as August, we're usually out here well into October," Martin said over the roar of his ATV.

Much of what transpires with turtle eggs — ranging from the sex of the hatchling to when or whether they will hatch — is directly tied to weather, Martin said.

The earlier a nest is laid, the cooler the weather, so the longer it takes for the eggs to hatch. This year's first nest on the Treasure Coast, a leatherback nest laid Feb. 28, hatched at the beginning of June, 91 days later.

tant to know exactly where the eggs are, he digs a series of test holes to try to find them.

If the nest needs to be marked, he'll use the eggs' location to determine where stakes should be placed.

Location's effects

Sea turtles will build nests anywhere on the beach. Although most seem to be between the dune and the high-tide line, it's not uncommon for turtles to nest high among the dune grasses or low, along the tide line at the ocean's edge.

Nest location might play a vital role in species' survival, Martin said. As in the case of alligators and other reptiles and amphibians, the temperature the eggs are exposed to determines the hatchling's sex.

If it's warmer, more females will be born. Lower temperatures result in more males. The dividing line seems to be about 84 degrees.

Martin said statistics indicate 90 percent of all sea turtles born on Hutchinson Island are female.

"Since the dunes and the low

"You never can tell with sea turtles. Where we are now might have no bearing on where we end up, in terms of our records and that kind of thing."

R. ERIK MARTIN

beach area are cooler than the predominate nesting zone, it may well be that high and low nests, resulting in male offspring, are vital to the continuation of the species," he said.

Another vital component to turtle survival is an absence of predators. Ironically, development on Hutchinson Island has made it an ideal place for turtles to nest.

Each year, more than 40 percent of the sea turtle nests laid on Jupiter Island, particularly on the grounds of the Hobe Sound National Wildlife Refuge there, are damaged or destroyed by

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Nests laid more recently will hatch much faster, hurried by the warmth of summer.

"It usually takes about three days for the baby turtles to emerge from the sand after hatching," Martin said as he checked on a nest originally documented May 26.

"When they first hatch, they're literally shaped like the egg. So they need time to uncurl. Once that happens, they then start to move toward the surface as a group."

Manmade threats

Martin is a founder of Ecological Associates, a six-year-old environmental consulting firm that assesses the effects of dredging, beach renourishment projects and the St. Lucie Nuclear Plant on the environment.

The work of Martin and partner Bob Ernest contributed to strict state guidelines on when and where major coastal projects can be built, and Martin County today uses their data in analyzing local coastal areas.

The secondary research they do is no less important — helping the state keep tabs on where turtles are nesting and how successful that nesting activity is. They've been at it so long people call them "the turtle guys."

Trails in the sand

This particular morning brings an unexpected bonus — a 300- to 400-pound loggerhead turtle heaving her bulk across the beach on her way back to sea.

Asked how old she might be, Martin said there's no certain way to tell.

"They reach sexual maturity at about 25 years of age," he said, "and lay eggs for as much as 20 years after that."

Although the task seemed to tire her out — the entire process of nesting can take as long as three hours — the loggerhead made quick time across the beach. Within five minutes, the ocean waves were crashing over her and she was gone.

A moment later, Martin was standing over her nest, describing how trails in the sand tell a compelling, night-enshrouded story.

"A loggerhead's crawl, or trail, is a series of alternating steps," he said. "Oftentimes, in early morning, before people begin to arrive on the beach, they're so well preserved you can see if a turtle has lost part of a fin through a shark bite or other mishap."

This is when Martin's real work begins. Because it's impor-

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predators, mostly raccoons and armadillos.

By comparison, Hutchinson Island loses only about 10 percent of its nests.

Nests "doing well"

Back in his office, Martin began a comparative analysis of sea turtle nesting data.

As of Wednesday, there were 1,367 loggerhead nests on Hutchinson Island, compared to 1,176 on the same date last year.

Leatherback nests are down, numbering just 51 so far this year, compared to last year's 68.

The numbers for green turtles aren't yet meaningful because they don't begin coming ashore until late May and early June.

"You never can tell with sea turtles," Martin said. "Where we are now might have no bearing on where we end up, in terms of records and that kind of thing.

"What's more important is the rate of nesting success," he said. "And right now, we're doing well in that category too, with 60 percent of our nests producing viable hatchlings."



Photographer: DAN McCUE

In the early morning hours recently, R. Erik Martin examines turtle tracks near Bath Tub beach.

TURTLES

■ CONTINUED FROM A1

this summer."

Green turtles differ from their cousins, the endangered leatherback and threatened loggerhead, in that their nesting is particularly cyclical in nature, high years alternating with low years.

However, since 1995, Bresette said, an encouraging trend has been emerging. The number of nests each high nesting year — the last was in 1998 — have been steadily increasing in number, while the low nesting years have been fairly consistent.

Last year, a low year, 36 green turtle nests were dug in Martin and St. Lucie counties. In 1998, a high year, 666 turtle nests dotted area beaches, according to Ecological

Endangered sea turtles trapped in the FPL nuclear plant's cooling intake provide an indication of the turtle population.

Associates of Jensen Beach.

That sea turtles get into the canal at all came as something of a surprise to the utility, said FPL environmental spokeswoman Winifred Perkins.

When FPL's intake canal was built in the early 1970s, utility managers recognized that fish and other sea life might be sucked through the one 16-foot pipe and two 12-

foot pipes that pull water from the ocean to cool the plant.

Their solution was a "recovery cap," which allows the water in but theoretically reduces the ability of wildlife to get inside.

However, as the caps became overgrown with barnacles and other marine life, they became a favorite haunt of the turtles, she said.

The pumps pull about a million gallons of water a minute from the Atlantic Ocean to cool the plant's two nuclear power generators. The water moves through the canal, which is about a half-mile long, 300 feet wide and 25 feet deep.

Once turtles get pulled into the canal, there's no way out except with the help of

biologists.

On average, FPL rescues about 500 trapped sea turtles each year.

The turtles are captured in two tangle nets in the canal, which are deployed 12 hours a day, and checked each hour — sooner, when the team thinks it sees a turtle enter.

Once captured, each turtle is weighed and measured, and a small metal identification tag is attached to one of its flippers.

Once the turtles are weighed and measured, they're placed in a low slung trailer behind an all-terrain vehicle and taken to nearby Turtle Beach Nature Trail north of the plant and released back to the ocean.