



Unlocking The Mysteries Of Leatherback Turtles

by [Alan Pollock](#)

HARWICH — The Cape has no shortage of curious summer visitors, but one is downright mysterious. It's the leatherback turtle, and it's the subject of a research project that bases some of its operations in Harwich Port.

Kara Dodge is a doctoral candidate working in the Large Pelagics Research Center at the University of New Hampshire. She and other researchers regularly hop aboard the fishing boat Sea Holly, owned by Mark Leach, to find, capture, examine and radio-tag the reclusive, endangered sea turtles. In a presentation to a small group of people at town hall last week, Dodge said many questions persist about the species.



Harwich Port fisherman Mark Leach, pictured with Henry, the first tagged leatherback of 2008. KARA DODGE PHOTO

Though they grow up to six feet in length, weighing up to 1,500 pounds, leatherbacks have a seemingly meager diet, compared to the sea grass and crabs eaten by other turtles. "They eat jellyfish, only jellyfish," Dodge said. And since jellyfish are mostly water, leatherbacks need to eat them in huge amounts. Because they have the ability to raise their internal body temperature, unlike most cold-blooded animals, leatherbacks apparently never get cold-stunned like other sea turtles found in these waters.

Leatherbacks spend most of their time feeding in waters relatively close to the surface, but sometimes they dive---and they do it with gusto. One leatherback was recorded diving to 1,270 meters, deeper than every other air-breathing animal except sperm whales. "And nobody knows why they do it," Dodge said.

Research on leatherbacks began in the 1960s. Before that, when a leatherback was caught off the coast of Cape Cod, it was assumed that the animal had simply strayed from the tropics. Dodge showed an old photo of people posing next to a giant leatherback strung up between two trees as a curiosity. "It was sort of like a sideshow," she said. Research advanced in the 1980s, when Mass. Audubon researcher Robert Prescott led several studies. Primitive tracking devices were developed, and ultimately confirmed leatherbacks' impressive annual migration. Females lay their eggs on the tropical beaches of Florida, the Caribbean, and the northern shores of South America, the same beaches where they hatched, and travel

north in the summer to the waters off New England and Canada to feed.

Because a leatherback's carapace isn't a hard shell, it's not easy to attach a radio transmitter. At first, the devices were strapped on like backpacks; today's transmitters are much smaller and more sophisticated, and are attached with a biodegradable tether tied to a hole in one of the ridges of the carapace. After a year of collecting data, the transmitter comes loose and is lost, allowing the leatherback to swim unimpeded. But attaching the radio tag requires first finding and catching the animal.

To do the job, Dodge and her team recruited two fishermen with appropriate boats, equipped with low transoms for hauling the leatherbacks aboard. The boats had to be outfitted with pulpits and towers like a tuna boat, so they can sneak up on unsuspecting leatherbacks. One boat is the Sea Holly, and another is from Woods Hole.

Using cues radioed in by airborne spotters, the crew travels to an area where leathernecks are known to be feeding, and then tries to spot one. It's no simple task, Dodge said.

"It's even hard to find whales out there," she said. Leatherbacks are much smaller, and they're at the surface only briefly to breathe. "That was our first hurdle," she said. Eventually they bring the boat alongside a leatherback, and use a custom-designed purse net positioned with a rig that looks like the frame of a giant butterfly net. The turtle is captured and positioned on a special wooden plank which is then hauled aboard the boat. Once on deck, the leatherback gets a physical workup by a New England Aquarium biologist, and then receives a microchip similar to the kind used to identify cats and dogs. It's not always easy, since the turtle has its own plan.

"You can't actually stop them from walking around the boat," Dodge said, so the crew uses cushions and life jackets to keep the animal from harming itself. Then, the radio tag is installed. Each unit costs between \$3,500 and \$5,000, and provides up to 12 locations each day, transmitting the data to polar-orbiting satellites. The transmitter also collects data on the water temperature and depth of dives. So far, 20 leatherbacks have been tagged, 18 of them off Cape Cod.

Researchers like Dodge want to know why some nesting areas are more productive than others, and ultimately, whether certain "high use areas" might require more careful monitoring. One such area, Cape Cod Bay, appears to pose a navigational challenge for leatherbacks, based on their satellite tracking data.


"We can't prove this, but it almost looks like they don't know how to get out of Cape Cod Bay," Dodge said. That's a problem, particularly if they get tangled in fishing lines. One leatherback was freed from fishing gear in the bay, only to be found later tangled up again. Another animal died after getting hopelessly tangled in a 10-pot string of lobster traps. With better research, it might be possible to provide mariners with better real-time advisories on leatherback positions, or to suggest fishing gear reductions in certain areas. For the time being, people are encouraged to report sightings of sea turtles in Massachusetts waters by calling 1-888-SEA-TURT.

Mariners finding an entangled sea turtle should contact the Coast Guard on marine Channel 16.

Though new data is emerging all the time, the research leaves a number of questions unanswered. Because leatherbacks are most easily observed were when they are laying eggs, there is a much broader knowledge base about females than about males. And very little is known about juvenile leatherbacks, which are very rarely seen. "It's really hard to protect them when we don't know where they are," Dodge said.

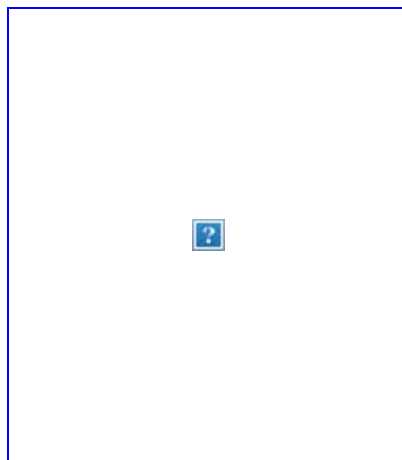
Last month, the researchers tagged their first turtle of the season in Nantucket Sound. The crew named the turtle Ethan, after the grandson of Ernie Eldredge of Chatham, another one of the project's fishermen collaborators. Ethan's position is posted daily at www.seaturtle.org/tracking/?project_id=423.

Funding for the research comes from the National Oceanic and Atmospheric Administration, the National Fish and Wildlife Foundation, the Cape Cod Commercial Hook Fishermen's Association, the New England Aquarium and the Provincetown Center for Coastal Studies. The work is expensive, and members of the public are encouraged to adopt Ethan by making a donation of between \$25 and \$100.

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