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Caswell Beach using habanero powder to outfox predators

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Caswell Beach may be on the cutting edge of protecting sea turtle nests from predators, especially foxes - a long-running issue in the Oak Island beach town where the furry carnivores abound.

With the town's support, Turtle Watch volunteers are deploying habanero pepper powder this nesting season to repel fox incursions. Mayor Harry Simmons suggested the method as an alternative to trapping and killing foxes, a controversial step some turtle advocates suggested last year.

In a novel partnership for turtle protection, the town is collaborating with the Gumbo Limbo Nature Center in Boca Raton, Fla., where marine conservationist Kirt Rusenko first tested the habanero pepper method in 2004. Predator consumption of turtle eggs dropped significantly.

Though Rusenko said he cannot take credit for being the first to use pepper to deter predators, he said Boca Raton was the first community to use this specific method.

"Most people would probably use chili pepper or jalapeno pepper," Rusenko said. "We figured out that you need the hottest pepper."

While tabasco sauce has a hotness of 5,000 Scoville heat units, a measure of pepper hotness, habanero peppers deliver a powerful punch at 200,000 units. The idea to use habanero pepper first occurred to Rusenko five years ago when a co-worker came back from vacation with a hot pepper sauce. The co-worker accidentally rubbed her eye after touching the hot sauce and was in pain for several hours.

"I thought, 'Wouldn't it be great if a fox could feel that?' " Rusenko said.

While the pepper doesn't hurt the predators, he said, it teaches them to associate turtle nests with an unpalatable sting, thereby working as a sort of behavioral training method rather than a ritual punishment. He said foxes actually learn to avoid the



Photo courtesy of S. McElhone

A red fox with a reptile in its mouth at the Fort Fisher State Recreation Area, North Carolina.

turtle nests.

"This has been a godsend to us as far as keeping out the foxes," he said.

The Caswell Beach turtle patrol has used wire caging to protect turtle nests since 1976, but Rusenko found that the cages were actually attracting foxes and raccoons.

"They learned to associate the cages with eggs," he said. "They learn pretty quickly what the cages mean."

Rusenko and his staff first experimented with drizzling pepper sauces on the nests, but that attracted fire ants. Eventually, they hit on pepper powder as the best medium because it didn't attract other animals. As in Caswell Beach, the powder is used in conjunction with a wire screen over the nests.

"If a fox or raccoon has dug, we take our shaker and shake pepper into the hole," Rusenko said.

For maximum effectiveness, he said, generous amounts of pepper should be used: up to two tablespoons. He said a film of red powder should be visible on the surface of the nest.

Rusenko said his sister, Becky Blue of Wilmington, was instrumental in putting him in touch with Simmons, who asked for Rusenko's help training Caswell Beach Turtle Watch volunteers.

Rusenko is regularly in touch with the volunteers, who are currently keeping watch on nine turtle nests in Caswell Beach.

Simmons said all nests with habanero pepper will be clearly marked. Though the power has no effect on reptiles, it's a powerful irritant for mammals.

"We do want to make sure that nobody gets hurt by this stuff," he said. "It could certainly be an irritant for a dog or a kid, but we haven't had any incidents so far."

He also said the success of the program depends on another factor: that people not feed foxes. Feeding foxes is against town ordinance and is illegal.

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