

## Researchers declare success in 15-year quest for artificial bait

For more than 15 years, University of Delaware researcher Nancy Targett has been on an odd and elusive quest to identify just what it is in the scent of a horseshoe crab that makes it such an alluring bait.

Alas, she never succeeded. She still doesn't know what precisely constitutes *eau de crab*.

But earlier today, she and other officials announced a breakthrough that could help solve one of fishery management's most knotty problems — how to lessen the harvest of crabs to save some birds, yet still allow watermen who use them as bait to make a living.

The helmet-shaped horseshoe crab, it turns out, exudes a scent that is a magnet for eel or whelk. One whiff — or whatever it's called if the chemical cue is under water — and they head for the trap that the crab has been baited with.

Then, *yikes!*, it's off to the cannery or Asian food market, where whelk and eel are deemed delicacies.

The harvest, which reached 2.7 million crabs coast-wide in the 1990s as demand for eel and whelk soared, has been blamed for the decline of migrating shorebirds that stop at Delaware Bay every spring, exhausted and famished, to refuel on the crabs' fat-rich eggs.

One of them, the red knot, has declined precipitously since the mid-1990s.

Several years ago, fisheries managers for the first time restricted a harvest not for a fish (or in this case, a crab) but for a bird.

New Jersey currently has a moratorium on the horseshoe crab harvest. This year, Delaware has an allowable harvest of 161,881 crabs, males only.

Watermen have grouched about the situation for years.

Now, the researchers unveiled an artificial bait that is easier to use than the helmet-shaped horseshoe, requires less refrigeration and is *certainly* less stinky than an old dead crab.

The bait is considered such a coup that it rated its own press conference today in Lewes, Del., where Targett is based.

Officials of every stripe lauded the new bait, whose development took uncountable hours by a host of partners, including academics, fisheries biologists, watermen and even DuPont chemists who eventually helped analyze 100 of the crab's chemical compounds.

Delaware Gov. Jack Markell, who planned to come but had to settle for sending kudos, touted the new stuff as "a solution that has great economic and environmental benefits."

The new bait still requires a bit of the original recipe — actual horseshoe crab — but by tinkering and tweaking, adding seaweed, gel and an invasive Asian crab species that's been bothersome anyway, Targett and her associates have managed to come up with an effective eel and whelk bait that requires the use of only 1/24th of a horseshoe crab per chunk of bait. And unlike a real crab, each bait chunk can be used multiple times.

And — this is important — it can be a male instead of a female, preserving the breeding potential of a creature that lays thousands of eggs a season.

"It's been a long time," said Targett, dean of the university's College of Earth, Ocean and Environment, with evident relief. "It's finished."

Conversely, it's a nice beginning for LaMonica Fine Foods in Millville, N.J.

LaMonica — a family tradition since 1923 and "home of the hand-shucked clam!" its website proclaims — is branching out.

Using the recipe Targett and her colleagues developed, LaMonica has devised a commercial version. So far, they're calling it "Ecobait" — something like *Crabbie's Eel Elixir* probably didn't have the right ring — and watermen have claimed it a success.

"I just think this is a real success," said LaMonica's Michael Lavecchia, who figures that "by next season, we can be in full swing with this," He was delighted that, for once, big industry, environmental groups and "end users" -- the watermen -- could all be on the same side.

The researchers also released a small-batch version of the recipe — you, too, can try this at home if you have a large blender to grind up the crab.

For all the hoopla, Targett is a tad wistful. When she started, she hoped to find the silver bullet of crab scent, the counterpart to the stuff in a vanilla bean that allows manufacturers to create artificial vanilla for cooks.

She never found it. Eventually, a DuPont colleague suggested coming at the problem from the other end, just seeking ways to use less crab. It worked.

Along the way, Targett gained new respect for this creature that has lived since the time of dinosaurs and, to be precise, is more closely related to spiders than to crabs.

If its eel-attracting odor is still a mystery, she said, it's nevertheless "nice to know that Mother Nature doesn't want to give up all her secrets."