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Delaware Bay, where horseshoe crabs come to spawn

Quiet and sheltered beaches make the area the busiest breeding ground in the world

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LEWES -- Keeping tabs on Delaware's horseshoe crabs is a labor of love.

The state's annual spring counts typically start in the middle of the night. It's dark, often windy, and there's a good chance your boots will fill with water within the first five minutes.

But year after year, a handful of volunteers from all over the mid-Atlantic trudges up and down Delaware Bay beaches documenting the behavior of these prehistoric survivors.

"Isn't it romantic, though?" said longtime volunteer Jane Pillet, 69, of Magnolia. "I think it's really interesting that they've been around since the time of the dinosaurs and no one's ever paid any attention to them."

Actually, the Department of Natural Resources and Environmental Control has been paying attention for about a decade now, and for good reason.

Horseshoe crabs spawn from Maine to Mexico, but Delaware Bay is the busiest spawning ground in the world. A 2003 estimate put the number at 20 million.

The crabs are attracted to the bay's quiet, sheltered beaches. The hot spots on the Delaware side are Mispillion Harbor, Bowers Beach, Pickering Beach and the Ted Harvey Wildlife Area.

"We have these large expanses of sandy beaches," said DNREC fisheries scientist Stew Michels, 43, of Smyrna. "And the orientation of the bay just makes this nice sheltered area for the horseshoe crabs to spawn."

The crabs have tough shells and very little meat, so scientists think the adults are largely left alone when they winter offshore. However, when they crawl out of the water to spawn in the spring, they attract a good bit of attention.

Conch and eel fishermen use horseshoe crabs as bait, and the pharmaceutical industry uses blood from females to test the purity of injectable drugs. Also, migrating shorebirds gorge on the protein-rich clusters of crab eggs -- about 10,000 a day -- before the last leg of their journey to the Arctic.

The high demand means the population must be managed to prevent overharvesting, and the volunteer surveys help gauge the success of Delaware's and New Jersey's regulations.

"It is probably our single best tool for monitoring horseshoe crab spawning in Delaware Bay," Michels said. "It is one of the key indices we have to see how the population is responding to management and regulation."

In the past 10 years, the surveys have shown a steady spawning population, but Michels is expecting to see the fruits of the regulations soon.

New Jersey banned the harvest in 2008, and Delaware limits it to males after the peak of spawning.

"There is a sustainable number of crabs that you can harvest," said DNREC resource planner Susan Love, a veteran crab counter. "Our goal as coastal managers is to manage the resource in such a way that there is enough for everybody -- there's enough for the fisherman, there's enough eggs for the birds, there's enough eggs so that crabs can reproduce and continue to thrive."

Spawning peaks during the full and new moons of May and June, just after the nighttime high tide. That's when the scientists and volunteers hit the beaches.

Courtney Levering, a 27-year-old University of Delaware employee from Wilmington, is in her third year of volunteering.

"It's a completely different way of seeing the beach," she said. "There's something bigger going on than just us."

There are too many crabs to count them all, so teams of two take a 1-by-1-meter sample every 20 meters.

"It is a fantastically designed survey," Love said. "It's one of the best-designed volunteer surveys in the country, and one of the longest-running."

Last year, the count was down after a strong Mother's Day storm cooled the bay and kicked up heavy surf. But Love is expecting a good season this year.

"The weather has been relatively calm and the temperatures have been good. If we can stay away from any late coastal storms, I think it's probably going to be a good year."

Michels hopes the volunteer program helps raise awareness about horseshoe crabs.

"It's surprising to me how many folks have this phenomenon going on right at their doorstep and have no idea what a spectacle it is. It's something that you have to really see to appreciate."
