Horseshoe crab may be recovering | delmarvanow.com

LEWES -- In more than a decade of watching, the Delaware Shorebird monitoring team never saw a spring like this one.

From the air, the beaches of Delaware Bay were covered with spawning horseshoe crabs.

"We were seeing beaches literally green with eggs," said Kevin Kalasz, a state wildlife biologist who leads the Delaware research effort.

And then there were the moments when they stepped onto the beach, a soft, spongy mat. That, too, was a blanket of horseshoe crab eggs.

In beach samples, the ratio of eggs to sand was at 50-50 -- levels unheard of in the last decade.

"It was amazing," Kalasz said.

This bounty of spawning may signal the beginnings of a population increase among the population of crabs -- a population that fisheries managers believe was severely depleted from overfishing in the early 1990s.

Between 1998 and 2006, Atlantic coastal states reduced their harvest of horseshoe crabs -- used as bait in conch and eel fisheries -- by 70 percent.

Meanwhile, scientists who study migratory shorebirds began to see the number of birds migrating through Delaware Bay each spring begin to plummet. Among the species most at risk is a robin-sized shorebird called the red knot.

Two species linked

The link between the success of the horseshoe crabs and the migrating shorebirds is clear. The birds arrive at the same time the crabs are spawning. They have a limited time frame to fatten up on the pearly green horseshoe crab eggs before migrating north to breed.

David R. Smith, a U.S. Geological Survey scientist who is studying horseshoe crab populations, said the crab numbers have begun to show signs of recovery, first with an increase in juveniles, then males and now, it appears, female crabs.

The Atlantic State Marine Fisheries Commission is considering a new management approach that would link a sustainable horseshoe crab harvest to red knot abundance, Smith said.

This year's riches of horseshoe crab eggs could be a signal that a decade of fisheries management is paying off, Kalasz said. The first rounds of crabs that were protected are just reaching sexual maturity. A typical female horseshoe crab in Delaware Bay produces 80,000 eggs and reaches maturity at 9-12 years of age.

The bounty this year meant that eggs were abundant from Prime Hook beach north to Woodland beach.

And that abundance had a profound impact on shorebirds, Kalasz said.

The number of red knots this year was still around 15,000. But instead of congregating at one feeding point -- in the past it was Mispillion Harbor near Slaughter Beach -- the birds spread along the coast, said Greg Breese, a U.S. Fish & Wildlife Service biologist.

The researchers noticed something else. In the past, shorebird species like the ruddy turnstone – another species that had been declining -- would spend all day picking at the sand and looking for food.

This year, Kalasz said, they were filling their crops with food and then resting on rocks and jetties to let the food digest.

When the birds congregate in one area, it makes it easy to catch and assess large numbers. But this year, with the birds spread out, it made it harder for the researchers to catch birds for study.

The benefit is that the birds aren't concentrated in one area, where predators or a catastrophic event or disease could quickly reduce the numbers, he said.

'Not out of the woods yet'

But this season still doesn't signal a significant change in red knot populations, according to Kalasz.

"I don't think we're out of the woods yet," he said. "We need a good number of years where conditions in the Arctic are good and conditions in South America are good."

What researchers are uncertain of is why recruitment of young birds still seems low.

Young birds typically don't make the full migration from Tierra del Fuego to Delaware Bay and then on to the Canadian Arctic until they are 3 years old, Kalasz said.

The scientists believe the adult birds are surviving. This year alone, they have spotted 2,000 red knots that were tagged in previous years at Delaware Bay. And they have seen one bird at various places along the migratory route that is at least 17 years old.

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