HORSESHOE CRAB RECOVERY COALITION

ASMFC Urged to Keep Female HSC Moratorium

The Horseshoe Crab Recovery Coalition has written ASMFC's Horseshoe Crab Management Board urging that it maintain moratorium on the harvest of female horseshoe crabs.

The board's decision not to re-open a female harvest was widely applauded by the conservation community and the public. Interest in the twin survival of the horseshoe crab and red knot has grown strongly in recent years, as evidenced by the 30,000 public comment letters submitted to ASMFC in 2022.

In the interest of new science and overwhelming public concern, and in line with the actions of other entities interested in protecting horseshoe crabs and the species that depend on them, we asked that the management board retain the female moratorium and revamp the ARM model to prevent further risk to horseshoe crabs and the species that depend on them.

Read our full letter here.

Study Reveals Flaws in ASMFC ARM Modeling

A recently released technical analysis from University of Nevada, Reno Associate Professor Dr. Kevin Shoemaker finds that the computer model used by the Atlantic States Marine Fisheries Commission (ASMFC) does not accurately represent the impacts of a horseshoe crab bait harvest in Delaware Bay. As a result of the model's intrinsic flaws, relying on it to justify management decisions would further imperil the *rufa* red knot, a shorebird listed as threatened under the Endangered Species Act.

"This new analysis makes it abundantly clear that red knots remain at risk in Delaware Bay," said Ben Levitan, senior attorney for Earthjustice's Biodiversity Defense Program. "While the ASMFC did not authorize a female crab harvest for 2023 in response to overwhelming public concern, it also approved a fatally flawed computer model that is nearly certain to recommend a substantial female harvest in future years, which could have devastating impacts. Implementing the model's recommendations would pose a profound risk of violating the Endangered Species Act."

Added coalition co-founder David Mizrahi, vice president of research and monitoring at New Jersey Audubon, "Dr. Shoemaker's review and reanalysis of the ASMFC's adaptive resource management (ARM) framework makes it clear that the models used by this agency to manage horseshoe crabs must be revamped. The ASMFC's stated responsibility is to manage horseshoe crabs populations to ensure the long-term viability of red knot populations. The premise put forward by the ARM model outputs suggesting that the relationship between horseshoe crab and red knot populations are weak is an outcome of using the wrong metric to measure the relationship. Clearly, horseshoe crab eggs, which have been ignored by the ASMFC since the inception of the ARM framework, have the greatest influence on the trajectory of red knot populations."

You can read more about the study here.

USP Moves Closer to Recognition of Synthetic Lysate in Pharma Testing

In August, the U.S. Pharmacopoeia (USP), which helps set pharmaceutical industry quality standards, published draft guidelines on using synthetic alternatives to horseshoe crab blood. The move could significantly reduce the practice of bleeding horseshoe crabs for their blood, which kills up to 30 percent of the captured animals, according to some estimates.

Jaap Venema, chief science officer at USP, called the move a "first and important step" toward changing how companies test for bacterial contamination.

We applaud the work of the USPs microbiology expert committee in developing this new proposal. It would provide a sustainable source for endotoxin testing material that does not use the blood of a wild animal. Further, based on real-world evidence with medicines already on the market, the recombinant agents have been shown to be as good as, or better, than traditional testing using limulus amebocyte lysate (LAL).

While the new recommendation is an important step forward, our coalition believes that several actions could strengthen it further.

First, we believe there is a need for a bridge between Chapters 85 and 86 that would put the new recombinant tests on level footing with LAL, removing all obstacles to using the recombinant reagents in testing existing medicines as well as newly marketed products.

Second, there is a need to move rapidly toward harmonization to establish a common global testing standard with the synthetics. Finally, we would encourage USP to expedite the process to allow early publication of the chapter prior to the current target of November 2024.

Public comment on the proposal will commence November 1 and continue through next January 31. We will keep coalition members and friends advised of where and how to comment.

SC Protections Now in Effect

Horseshoe crabs and red knots will enjoy enhanced protection in South Carolina following an agreement between Defenders of Wildlife, the Coastal Conservation League, Charles River Laboratories and the South Carolina Department of Natural Resources.

According to the Southern Environmental Law Center, the agreement, for at least the next five years:

- prohibits horseshoe crab collection on the beaches of over 30 islands across the South Carolina coast that are established feeding sites for red knots during their annual migration;
- continues the prohibition on harvesting anywhere in Cape Romain National Wildlife Refuge;
- prohibits the placement of female horseshoe crabs in holding ponds so they continue to spawn on South Carolina beaches and red knots can access horseshoe crab eggs;
- provides additional permitting conditions that include enhanced protection of horseshoe crabs during the collection process; and,
- provides SCDNR with additional data from contract fishermen.

You can read more here.

Digging for Answers

By Susan Linder, HSC Egg Density Team Leader

During horseshoe crab spawning season, the abundance of horseshoe crab eggs is measured on N.J. beaches along Delaware Bay. They are conducted as part of a long-term study on shorebird habitat suitability, involving the N.J. Department of Environmental Protection (DEP), the Delaware Bay Shorebird Project, and coalition partners Wildlife Restoration Partnerships (WRP) and the American Littoral Society. The survey protocol was created by WRP and is based on strict scientific methodology concerning horseshoe crab egg density studies.

Two types of egg abundances are measured. Deep clusters are counted to a depth of 20 cm in the sand and is useful in determining the population of spawning horseshoe crabs.

Other samples taken from the top 5 cm of sand yield surface eggs, which have been uprooted from their nests by factors such as erosion due to wave action, and by subsequent female crabs digging in the sand to create nest cavities to lay their own eggs. This type of surface egg which is broken from the cluster and exposed to air is no longer viable, but does serve as a vital food source for migrating shorebirds, such as the federally-threatened *rufa* Red Knot, Ruddy Turnstones, Sanderlings, and others.

In this way, surface eggs provide a metric of shorebird food availability. Years in which the measure of surface eggs is low are disastrous to migratory shorebirds, who may leave the stopover in Delaware Bay in search of other food with less nutrition as compared to protein-rich horseshoe crab eggs. For this reason, having a statistical measurement of these eggs is imperative.

In the past, studies took place at beaches along Delaware Bay in both NJ and DE. Studies have since ended in DE, but remain in place at 17 beaches along Delaware Bay in NJ.

Egg density studies are expanding to include portions of the Atlantic coast other than Delaware Bay and are being conducted by trained coalition partners. Save Coastal Wildlife is surveying Raritan Bay, a water body which historically had tremendous spawning activity for horseshoe crabs. The Delaware Center for Inland Bays has begun egg density studies in Delaware at James Farm Ecological Preserve. Studies have also begun on the Georgia coast, and will begin at multiple beaches in Massachusetts during next year's spawning season.

Contact the Coalition at info@hscrabrecovery.org if your organization is located near a beach where spawning activity occurs if you are interested in conducting horseshoe crab egg density studies. Data collected will help you gain insight on the workings of your local ecosystem and will also provide a valuable metric which will be used to help restore horseshoe crab populations. We will provide training and other assistance.