

# Horseshoe Crab Survey

## Project Contact:

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HSC spawning. Photo by Ken Sigvardson

## Project Summary

### Why Do Horseshoe Crabs Matter?

Not crabs at all but more closely related to spiders, horseshoe crabs are Delaware's state marine animal and are found throughout the Inland Bays. Horseshoe crab eggs serve as a vital food source for migratory shorebirds, resident bird species like laughing gulls, and various fish species such as striped bass. Additionally, an extract from their blood, limulus amebocyte lysate (LAL), is used to test for bacterial contamination in drugs, vaccines, and medical devices, literally saving lives! Historically, horseshoe crabs have also been used as bait in local fisheries for generations. For millions of years, horseshoe crabs have made their journey to spawn on the sandy beaches along the Bays. However, this prehistoric pilgrimage is now under threat from climate change, sea level rise, and development. Protecting these spawning sites is crucial to restore horseshoe crab populations in the Inland Bays.



HSC embryos  
Photo: Master Naturalist John Hoyt

### How Do We Complete the Survey?

In May and June, horseshoe crabs travel to sandy beaches in the Inland Bays and congregate in mass spawning events that peak at high tide near the full and new moon. On these peak nights, volunteers move along the beach's high tide line counting and sexing the horseshoe crabs found within one-square-meter "quadrats". Following each survey, a portion of the horseshoe crabs are tagged and released as part of U.S. Fish & Wildlife Service population surveys.



### Survey Goals

The goals of this project are to assess current horseshoe crab population levels and sex ratios and monitor any changes over time. The data collected during the Center's horseshoe crab surveys can be compared to and shared with data collected by other nearby National Estuary Programs.

Participatory scientists surveying HSC



## Legend

LOCATION  
HIGHEST  
NIGHTLY  
TOTAL  
COUNT

PENINSULA

261  
613

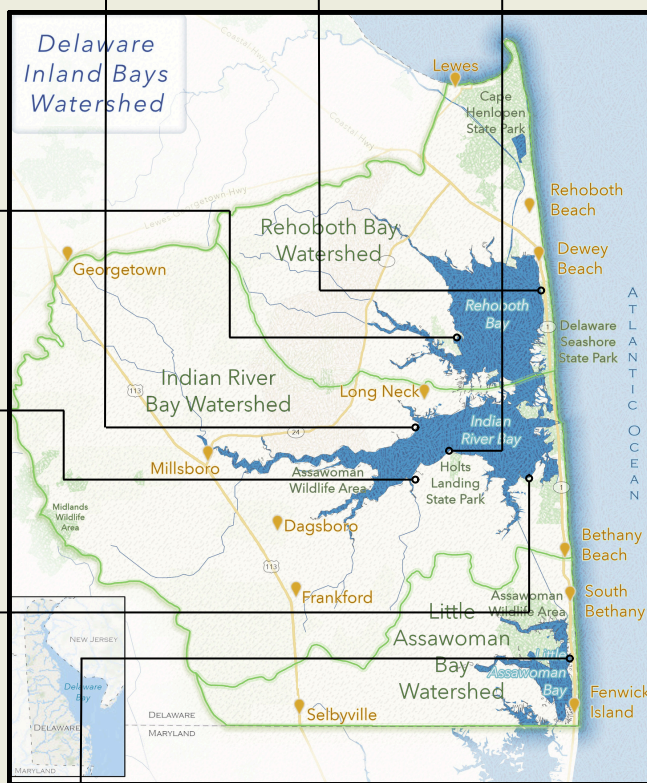
TOWER ROAD

1,763  
8,382

ELLIS POINT

1,762  
6,691

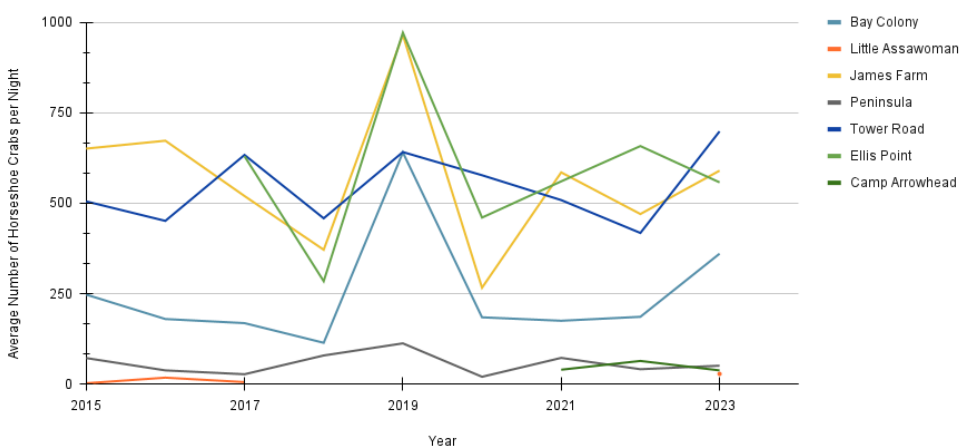
Delaware  
Inland Bays  
Watershed



2023 total horseshoe crab counts by sampling site

## Yearly Comparison of HSC Counts

Historic Average of Nightly Spawning Horseshoe Crabs at the Inland Bays Beaches from 2015-2023



Average counts of horseshoe crabs per night for each survey year

## 2023 Survey Highlights

- 27,888 HSCs counted—24,361 males & 3,527 females (compared to 21,984 total HSCs counted in 2022)
- 3,000 HSCs were tagged
- The survey site at Tower Road had the highest total number of horseshoe crabs counted this season with 8,382 HSCs
- Tower Road also had the highest number of crabs counted in one night at 1,763, but Ellis Point trailed by one with their highest count being 1,762 HSCs
- The Center surveyed the Little Assawoman site, which was last surveyed in 2017. This site typically has the lowest counts due to the crabs' long journey to shore



Tagged HSC

## Want to Get Involved?

Help us count and tag horseshoe crabs! We are always looking for volunteers. If you see a horseshoe crab with a tag on it, report it to USFWS. For more information, go to [inlandbays.org](https://inlandbays.org).



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**INLAND BAYS**  
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The Delaware Center for the Inland Bays is a nonprofit organization established in 1994 to promote the wise use and enhancement of the Inland Bays and its watershed. With its many partners, the Center conducts public outreach and education, develops and implements restoration projects, encourages scientific inquiry, and sponsors research. To learn how you can get on board with the bays, go to [inlandbays.org](https://inlandbays.org).