

# 2013 Horseshoe Crab Survey Annual Report for Delaware's Inland Bays

In 2008, the Inland Bays Horseshoe Crab Survey was established, modeled on the long-standing Delaware Bay Horseshoe Crab Survey. Since that time, hundreds of volunteers have conducted surveys at sites around the Inland Bays to gather data on this ancient and unique species. This is a snapshot of the 2013 Survey. For more information on the Inland Bays Horseshoe Crab Surveys go to [inlandbays.org](http://inlandbays.org).



## Why are horseshoe crabs important?

- At least 11 species of migratory birds, including the red knot, depend upon horseshoe crab eggs for food as they migrate north to their nesting grounds.
- Striped bass, white perch and many other fish, crabs and sea turtles eat horseshoe crabs or their eggs.
- An extract from their blood is used by the pharmaceutical and medical device industries to ensure that products, such as intravenous drugs, vaccines, and medical devices are free of bacterial contamination.

## Why count horseshoe crabs?

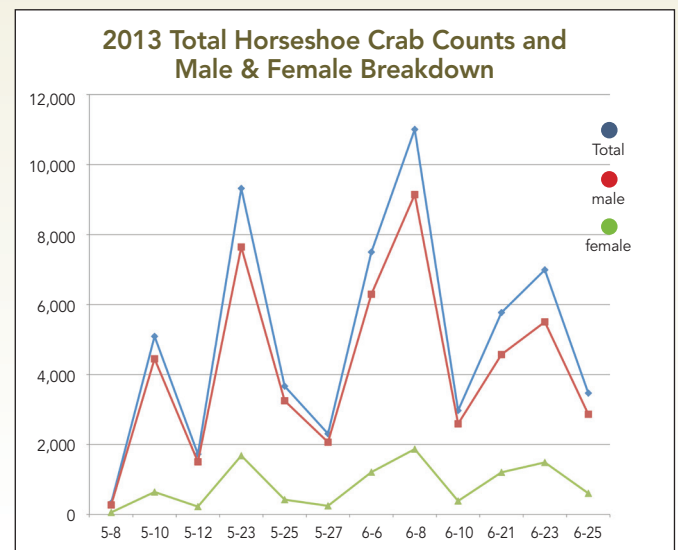
- To determine the significance of the Inland Bays' horseshoe crab population to the regional population, and find out if their numbers are increasing or decreasing over time.
- To increase the data available to agencies and researchers that are working to manage the population to protect the species.
- To understand their distribution on the Inland Bays so that important spawning habitats can be managed and protected.

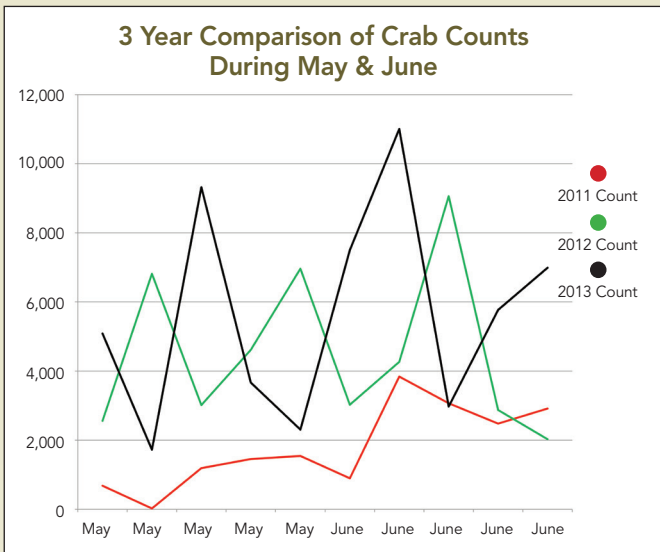
### Why are there more male horseshoe crabs than female crabs?

Because they are "broadcast spawners," the more males that are present the more likely it will be that the eggs from the female will be fertilized in the sand.

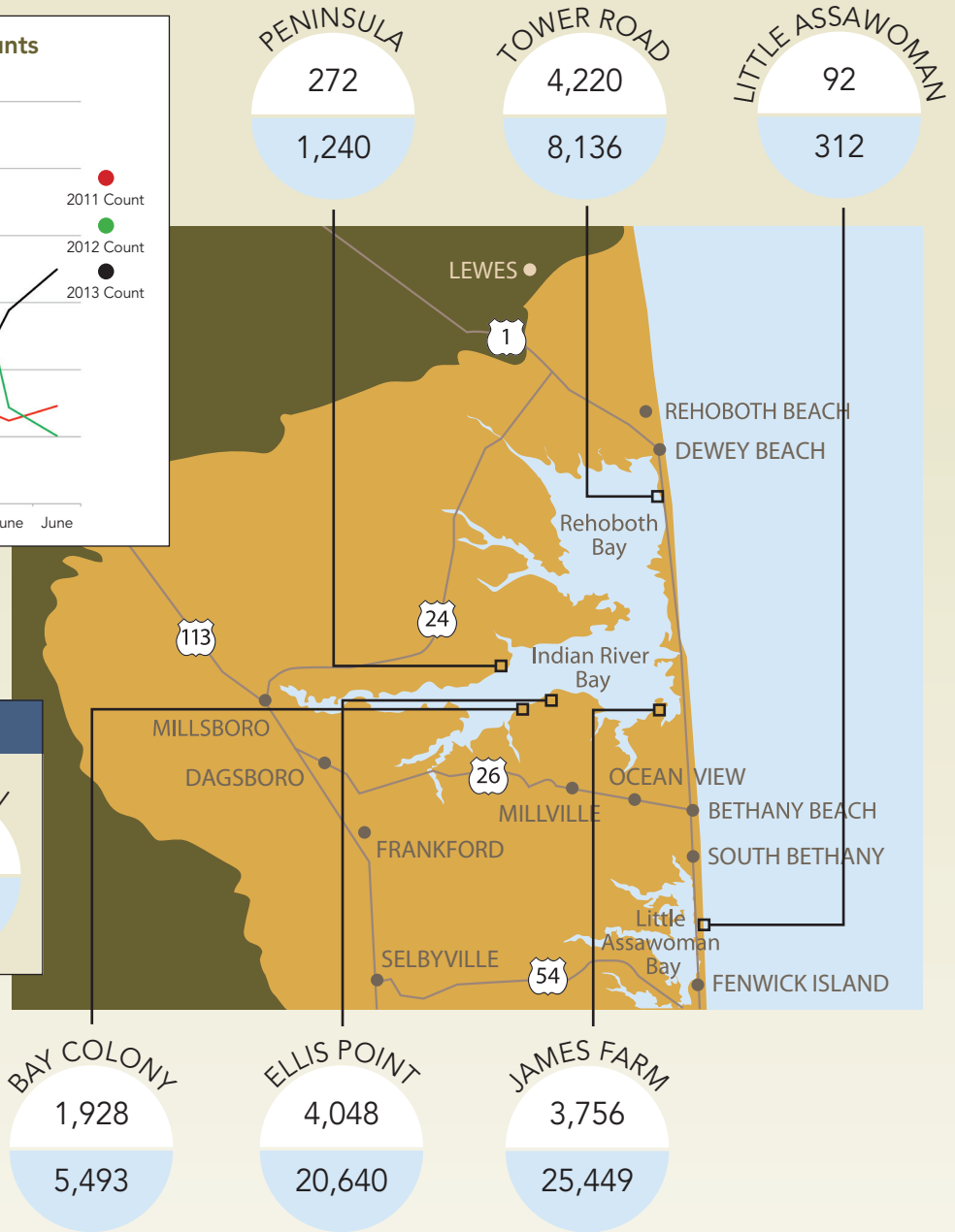
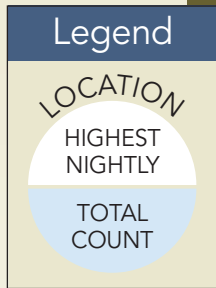
## 2013 Horseshoe Crab Survey facts & figures

- The first sighting of horseshoe crabs reported in the Inland Bays this year was on April 10 at the James Farm Ecological Preserve on Indian River Bay.
- The peak of the spawning season, determined by the highest one-night count, was 11,008 crabs on June 8. It was on a new moon and the water was about 67 degrees.
- The single highest count at a survey site, 4,220 horseshoe crabs, occurred on May 23 at Tower Road on Rehoboth Bay at the full moon.
- From late April to early August, survey volunteers recorded a total of 61,270 horseshoe crabs.
- Out of 61,270 horseshoe crabs, there were 10,310 females and 50,960 males; for each female, there were approximately 5 males.





At this time, we don't know why there is so much variability in the data from year to year. The variations within a single year seem to coincide with the proximity of the survey to the actual dates of the new and full moons. A closer examination of our data, the protocols, comparison with surveys in other locations, and additional years of monitoring will help us better understand the variability.



## How do you count horseshoe crabs?

- Teams of volunteers go to designated beaches at the evening high tide around the new and full moons in May and June.
- Starting at one end of the beach and using a rope measured in meters, members of the team count the number of male and female horseshoe crabs that fall within a 1-square meter 'quadrat' that is placed at previously determined random points, while another team member records the data.
- The random samples are used to estimate the number of horseshoe crabs per length of beach, the total number of females nesting on that beach, and the ratio of males to females.

## What can I do to help?

**Join a team!** If you would like to participate in the 2014 Inland Bays Horseshoe Crab Survey, send your contact information to [habitat@inlandbays.org](mailto:habitat@inlandbays.org) and you will be invited to the Survey planning meeting in spring 2014.



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