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Long Island Horseshoe Crab Network Annual Inventory Report

CERCOM, Molloy University

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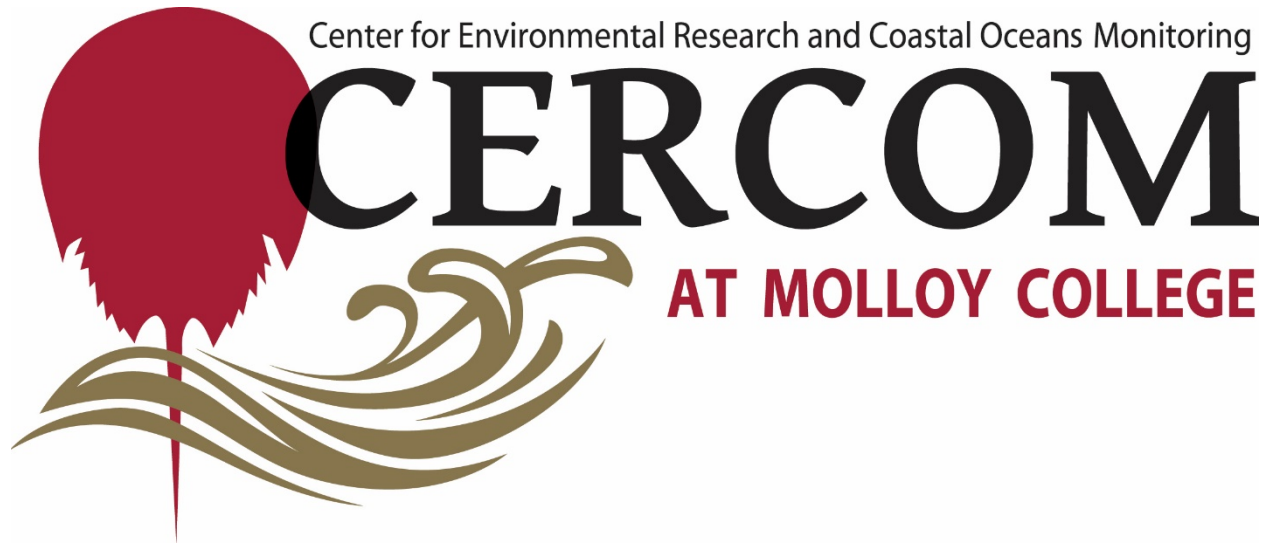
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Center for Environmental Research and Coastal Oceans Monitoring

(CERCOM)

Molloy College

Long Island Horseshoe Crab Network

Annual Inventory Report

2019

FINAL REPORT

Director; **Dr. John T. Tanacredi**

Scientific Research Technical Assistant; **Mr. Kyle F. Maurelli**

Administrative Coordinator; **Ms. Regina Gorney**

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2019

Student Intern

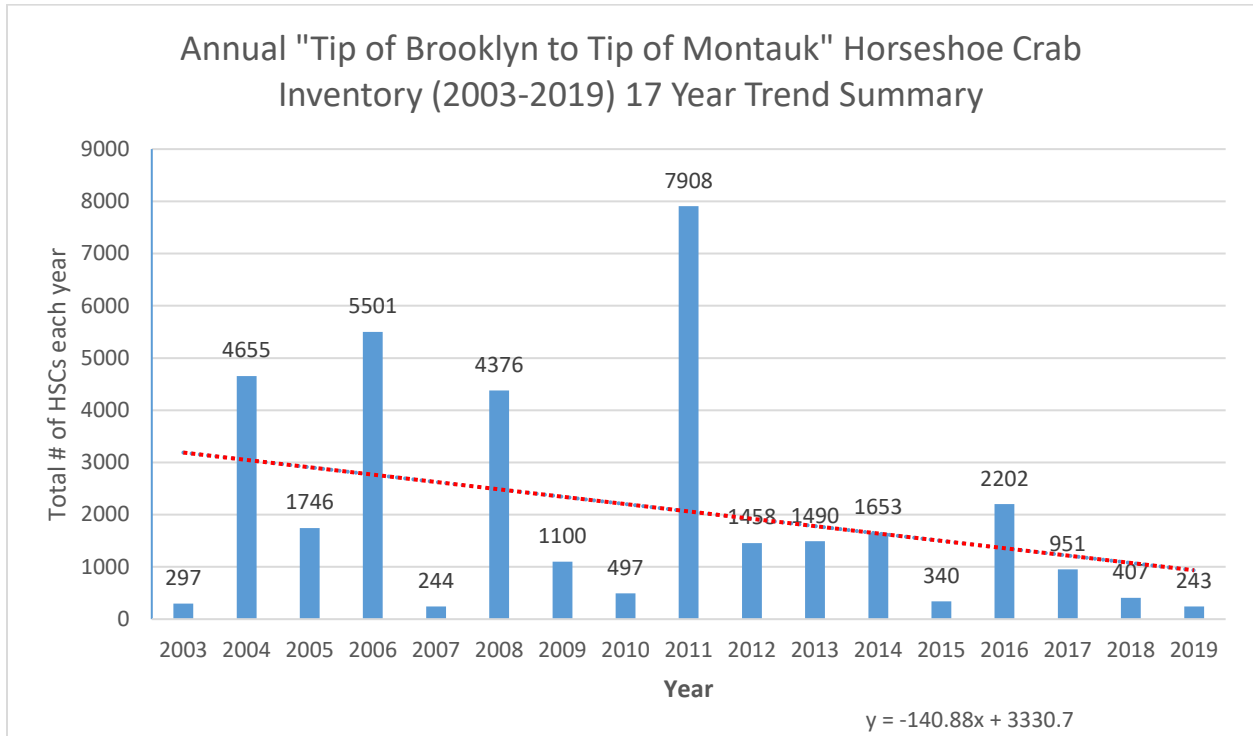
Participation:

| | | |
|----------------|---|----------------------------------|
| Drew O'Connor | Earth & Environmental Studies | Molloy College |
| Thomas Nadraus | Biology | Molloy College |
| Brian Ford | Biology | Molloy College |
| Ryan Mehryari | Biology | Molloy College |
| Daman Kaur | Nursing | Molloy College |
| Nick Buscemi | Earth & Environmental Studies/ Philosophy | Boston University |
| Desmond Smith | Earth & Environmental Studies | Molloy College |
| Erin Tudryn | Earth & Environmental Studies/ ART | Molloy College |
| Caroline Kane | Earth & Environmental Studies | Molloy College |
| Mark Maurelli | Biomedical Engineering | Stevens Institute for Technology |

CERCOM monitors 115 beach locations from Brooklyn – Montauk during optimal *Limulus Polyphemus* breeding season. These beach surveys take place for approximately 15 weeks, ranging from May-August. These beach locations are marked specifically using GPS coordinates, to assure the same location is visited each year. Students and volunteers are required to attend a HSC Survey training orientation lead by CERCOM's research assistant, Mr. Kyle Maurelli. Surveying is done around tide and moon cycles (New/Full Moon). Each site takes about 1-2 hours and data is recorded along an approximate 1 mile distance. Walking along the water's edge the number of male and female HSCs are counted as well as the dead and or molted HSCs. This data is recorded and submitted to Molloy College's online HSC inventory form on the Molloy College website. CERCOM provides data for total observed HSC populations per site as well as whether or not HSC breeding has or is occurring at each beach location. Trends in breeding beach existence and overall Long Island populations is recorded annually.

Figure 1.

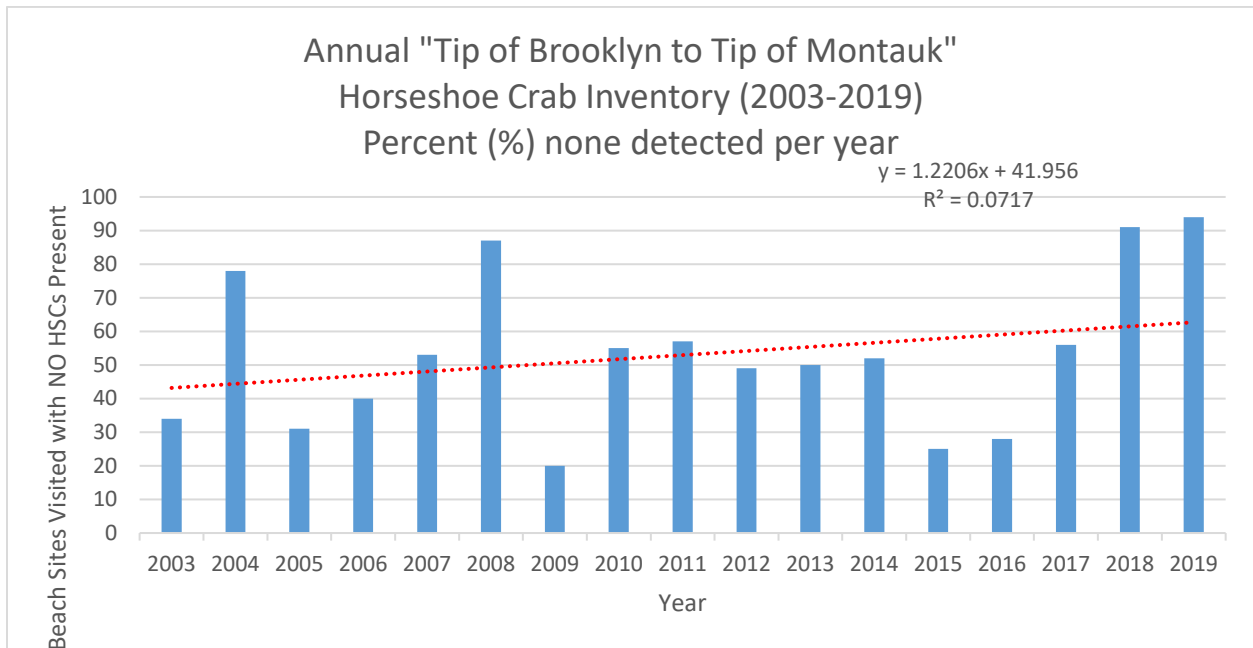
Annual totals with calculation of declining trend for 17 years of CERCOM data from 2003 – 2019.



*Raw Data available upon request, held in reserve at CERCOM.

Figure 2.

Annual totals with calculation of beach locations in with HSC absence
from 2003- 2019



*Raw Data available upon request, held in reserve at CERCOM.

Figure 3. Yes & No chart for individual CERCOM monitoring locations (HSC), to show if both male and female Horseshoe Crabs (HSCs) were present at each beach site for indication of breeding:

Breeding Records 2003-2018

| Location | 2014 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 |
|---|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 Stepping Stone Park | N | M | N | N/A | Y | N | Y | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 Plum Beach Point | CLOSED | Y | N/A | N/A | N/A | N/A | N/A | N/A | Y | Y | Y | N/A | N | Y | Y | N |
| 3 Half Moon Beach | N | Y | Y | N/A | Y | N | Y | N | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4 Moonstone Beach Park | Y | Y | N | N/A | N/A | N/A | N/A | N/A | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 5 Pleasant Park | Y | Y | Y | Y | Y | Y | Y | N | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 6 Lead Point Museum Beach | CLOSED | N/A | N | Y | Y | N | N | N | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 7 Lead Point Museum | N | N | N | N | N | N | N | N/A | N/A | N | N/A | N | N | N | N | Y |
| 8 North Sunnyside Beach Park | N | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 9 Seaboard Beach | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 10 Theodore Roosevelt Memorial Park | N | Y | Y | Y | Y | Y | Y | N | Y | N/A | Y | N/A | N/A | N/A | N/A | N/A |
| 11 Center Island Beach (Hvnm) | N | N | Y | N/A | N | N/A | N/A | N/A | N/A | Y | Y | N/A | N/A | N/A | N/A | N/A |
| Center Island Beach (Bay) | N | N | Y | N/A | N/A | N/A | N/A | N/A | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A |
| 12 Sagamore Hill Historic Site | N | N | N/A | N/A | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 13 Lloyd Neck Beach Club | N | Y | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N | N | Y | N |
| 14 Braughman Rd, Cold Spring Harbor | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 15 Gurneet State Park | N | Y | N/A | N/A | N/A | N | N | N | N/A | N/A | N/A | N/A | N | N | Y | N |
| 16 Cold Spring Harbor Lab | N | Y | N/A | N/A | N/A | N/A | N/A | N | N | N/A | N/A | Y | N | N | Y | Y |
| 17 Cold Spring Harbor Beach Club | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A | N | N/A | N/A | Y | N | N | Y | Y |
| 18 Gold Star Beach Club | N | Y | Y | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 19 Target Rock National Wildlife Refuge | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 20 Bay Mills Beach, Huntington | N | M | Y | N | N | N/A | N/A | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 21 Concrete Beach Town Park | N | N | N | N | Y | N/A | N/A | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 22 Neptune Beach Park | N | Y | Y | Y | N | N | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 23 Beach Cove Beach Park | Y | N | Y | Y | N | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 24 Outcrops Beach Park | Y | N | N | Y | N | N | Y | N | N/A | Y | Y | N/A | N | N | Y | N |
| 25 Asharoken Beach Park | N | Y | N | Y | Y | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 26 Amchabon Park | CLOSED | N/A | N | N/A | N/A | N/A | N/A | N | N/A | N/A | N/A | N | N | N | Y | N |
| 27 Short Beach, Winesapogon | Y | N | Y | N/A | Y | N/A | N/A | N/A | N/A | N/A | N/A | Y | Y | Y | Y | N |
| 28 Long Beach Town Park (Stone) | N | Y | N/A | N/A | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Long Beach Town Park (Bay) | N | N/A | Y | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 29 Cedarwood Park, Stony Brook Harbor | N | Y | N/A | N/A | N | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 30 West Meadow Wetlands Preserve | Y | Y | Y | N/A | N/A | N | N | N/A | N/A | N | N/A | N | N | N | Y | N |
| 31 Station Beach, Whitford Ave | N | N/A | N/A | N/A | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 32 Pleasant Beach, Chestnut Ave | N | Y | Y | N/A | N/A | N | N | Y | Y | Y | N/A | Y | N | Y | Y | N |
| 33 Mt Seal Riding Spot | Y | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 34 Mt Sinai Cedar Tower Beach | M | N | Y | N | N/A | Y | N | N | Y | Y | N/A | Y | N | Y | N | Y |
| 35 Mt Sinai Harbor Beach Rd | N | N/A | N/A | Y | N | Y | N | N | Y | Y | N | Y | N | Y | N | Y |
| 36 Linderoth Rd, Miller Place | N | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | Y | N/A | N | Y | N | Y | N |
| 37 South Ave, Miller Place | N | N | N/A | N/A | N | N | N | N/A | N | N/A | N | Y | N | Y | Y | N |
| 38 Maperman Landing Rd, Rocky Point | N | N | N/A | N/A | N | N | N | N/A | N/A | N | N/A | Y | N | N | Y | N |
| 39 Beach Ln, Shoreham | N | N | N/A | N/A | N | N | N | N | N/A | N | N/A | N | N | N | Y | N |
| 40 Clark Rd, Walling River | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 41 Middlebrook State Park | N | N | N/A | N/A | N | N | N | N/A | N | N/A | N | N | N | N | Y | N |
| 42 Beavert Beach | N | N/A | N/A | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 43 Beavert Ave | N | N | N/A | N/A | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 44 Secret Ave | N | N | N/A | N | N/A | N/A | N/A | N/A | N/A | N | N/A | Y | N | N | Y | N |
| 45 South Janssopert Beach | N | N/A | N | N/A | N | N | N | Y | N/A | N/A | Y | N/A | Y | Y | N | Y |
| 46 Southport Rd, Mattituck | N | N | N | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 47 Bullock Beach Park, Mattituck | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 48 New Suffolk Beach, Lot 22 | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 49 E Rd, Southold | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 50 Peconic County Park | N | N/A | N/A | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 51 Stony Brook | N | Y | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 52 McCashey Beach | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 53 South Harbor Park, Southold | N | N/A | N | N/A | N | N | Y | N | N | N | Y | N | N | N | N | N |
| 54 Norman E. Kilgus Marine Park | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 55 Southold Town Beach, East Marion | N | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 56 Ocean House | N | N/A | N | N | N/A | N | N | N | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 57 Miller Hills State Park | N | N/A | N/A | N/A | N/A | N | N | N | N/A | N/A | N/A | Y | N | Y | N | N |
| 58 Moppage Harbor Rd, Montauk | N | N | N/A | N/A | Y | N/A | N/A | N/A | N/A | N/A | N/A | N/A | Y | N | Y | N |

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