



# Post Hurricane Sandy Coastal Resiliency Restoration Projects: Delaware Bay

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# Delaware Bay Resiliency Restoration Projects

## **Core Partners**

LJNiles and Associates

Stockton University Coastal Research Center

Conserve Wildlife Foundation of New Jersey

## **Funding provided by**

National Fish and Wildlife Foundation

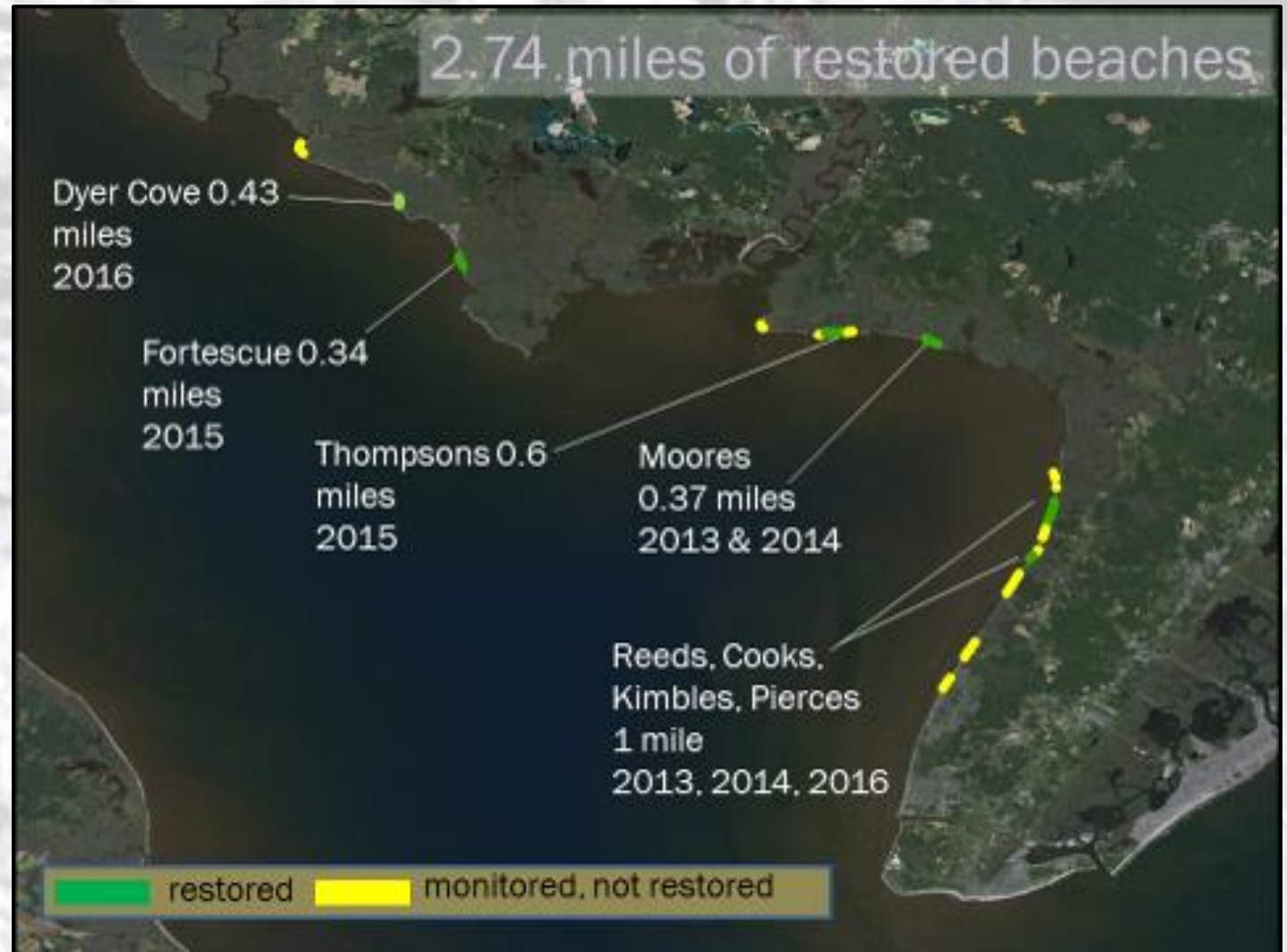
Department of Interior (US Fish and Wildlife Service)

William Penn Foundation

Geraldine R. Dodge Foundation

# Beach Restoration

- Three separate grants starting in 2013 (NFWF, Penn, Dodge)
- 2014 (NFWF and USFWS)
- Additional funding 2016 (USFWS)
- 2013 team led by the American Littoral Society and the Conserve Wildlife Foundation of New Jersey restored just over a mile of damaged beach successfully in spring 2013 (39,000 cy)
- Finished the job at 5 beaches in 2014
- Sand transport study began
- Restored 1<sup>st</sup> source beach 2016



# Delaware Bay Restoration Projects

- 2.74 Miles of Beach Restored (56.5 acres)
- 2,051 Tons of Rubble Removed
- 200,996 Cubic Yards of Sand Trucked and Placed
- 5 of 5 Intertidal Oyster Reefs (1,610 lf)
- Delaware Bay Sediment Transport Analysis Tool (D.B.S.T.A.T.)
- 18,550 horseshoe crabs tagged



# Within months after Hurricane Sandy at 5 beaches..... And 3 others through 2017



# Intertidal Living Shoreline Reefs

- 5 reefs permitted, 5 in place currently
- 1,610 lf of reef habitat
- March 31<sup>st</sup> - 4<sup>th</sup> Annual Shell-a-Bration (BBQ)
- Deter sand movement
- Reduce wave energy (35%)
- Create diverse habitat
- Planning two more (Cooks and Baycove)

# Reeds Beach Reef – Veterans Reef

- **Inshore/Offshore Reef**
- **200' long**
- **Approximately 23 10 foot segments**
- **Built in two hours**





THAT JUST  
"LITTORALLY"  
HAPPENED!

United Organizations  
Inland Fisheries  
Community Engagement

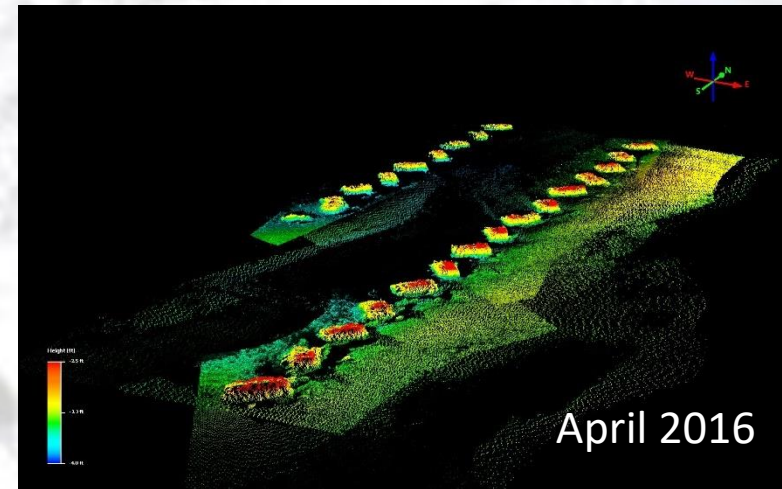
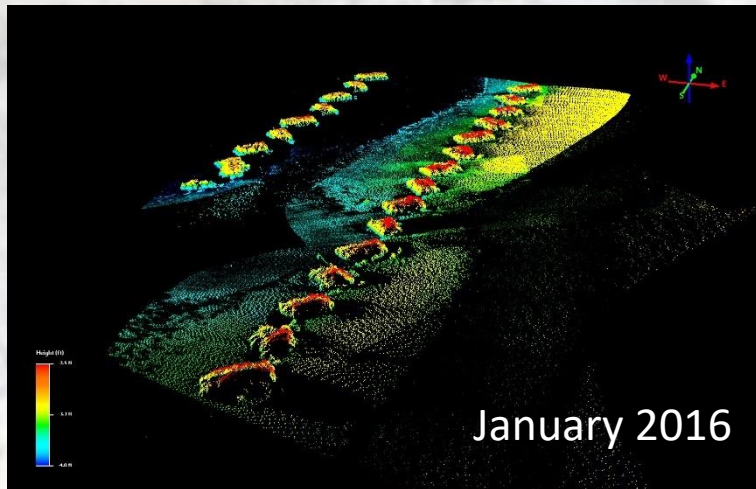
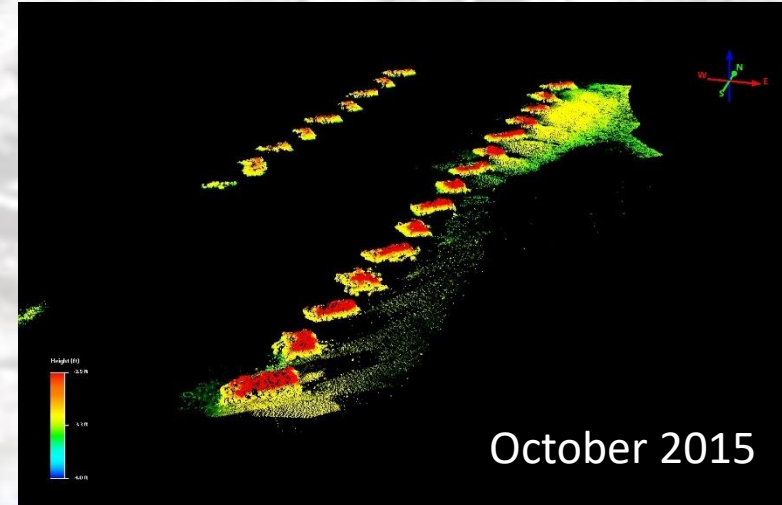
  
WWW.LITTORALLY.ORG



# Outreach: U.S. Veteran's Intern Program



# Veterans Reef – It's working!







The reefs were resilient!



# Marsh Restoration



- 1 area behind Thompson's Beach
- State-owned (permitted for 3.75 ac)
- Reduced from 13 acres to 1 acre
- Beneficial reuse – dredge material
- Incremental increases (Phased approach)
- 5 years of post - restoration monitoring

# Monitoring

- Reef biodiversity studies
- Horseshoe crab counts
- Horseshoe crab tagging
- Horseshoe crab egg density
- Avian studies
- Wave attenuation
- Sediment Transport Study



# Restoration through US Veteran and Community Involvement

- 13 Veteran volunteers
  - Littoral environmental observation data collection
  - Horseshoe crab tagging & surveying
  - Reef construction
  - Biological monitoring
  - Species identification
  - Community outreach/Focus Groups



# It's Shell-a-Bration Time – All are Whelk-come



- April 2015
- Over 140 Volunteers
- Approximately 2,500 bags of whelk shell
- “Green Eggs in the Sand” Easter Egg Hunt
- BBQ
- 2<sup>nd</sup> Annual not so good (BBQ)



# Annual Veterans Day on the Bay



Event held to honor all veterans and also our full-time and paid part-time US Armed Forces Veteran interns

# Delaware Bay Sediment Transport Analysis Tool

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# Thank You

**For More Information**

[www.LittoralSociety.org](http://www.LittoralSociety.org)

**Project Websites**

[www.RestoreNJBayshore.org](http://www.RestoreNJBayshore.org)

[www.WreckPond.org](http://www.WreckPond.org)

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