

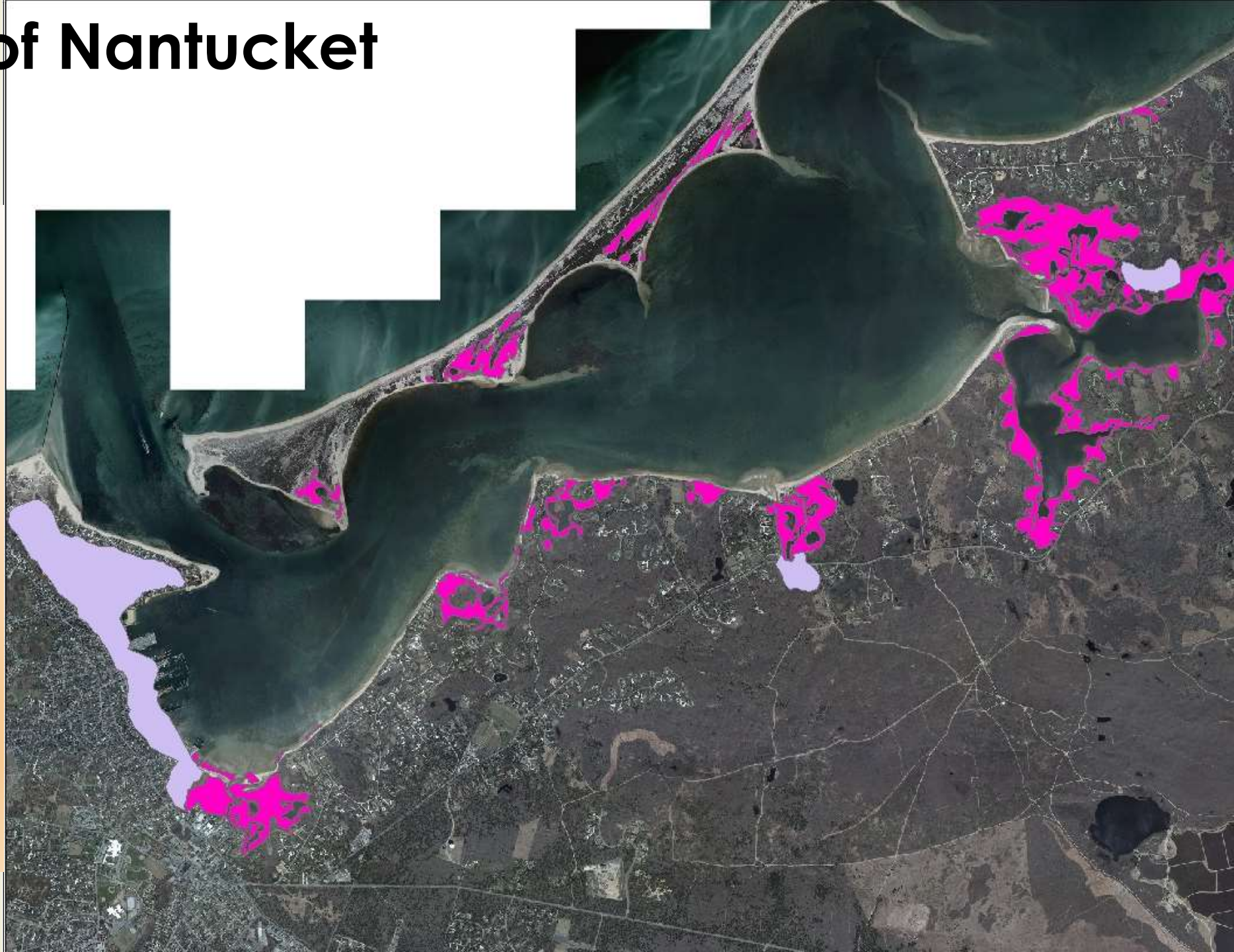
Protecting Key Coastal Buffers from Erosion and Over-Sedimentation

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Salt Marshes of Nantucket

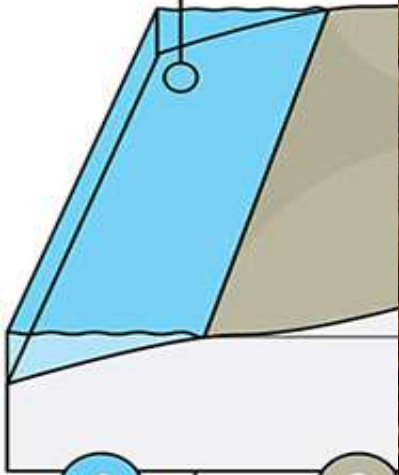
- Approximately 1 600 acres of salt marsh on Nantucket
- Nantucket Conservation Foundation owns approximately 1 200 acres
- Concentrated in protected Harbors, behind barrier beaches, etc.
- Not Erosional through typical coastal processes



Coastal Wetlands Prevented \$625M in Property Damage During Hurricane Sandy

ES

Striped bass,
seaweed,
flounder,
clams



1

2

SUBTIDAL
Submerged

TIDAL MUD
Flooded at high



ket:

low tide

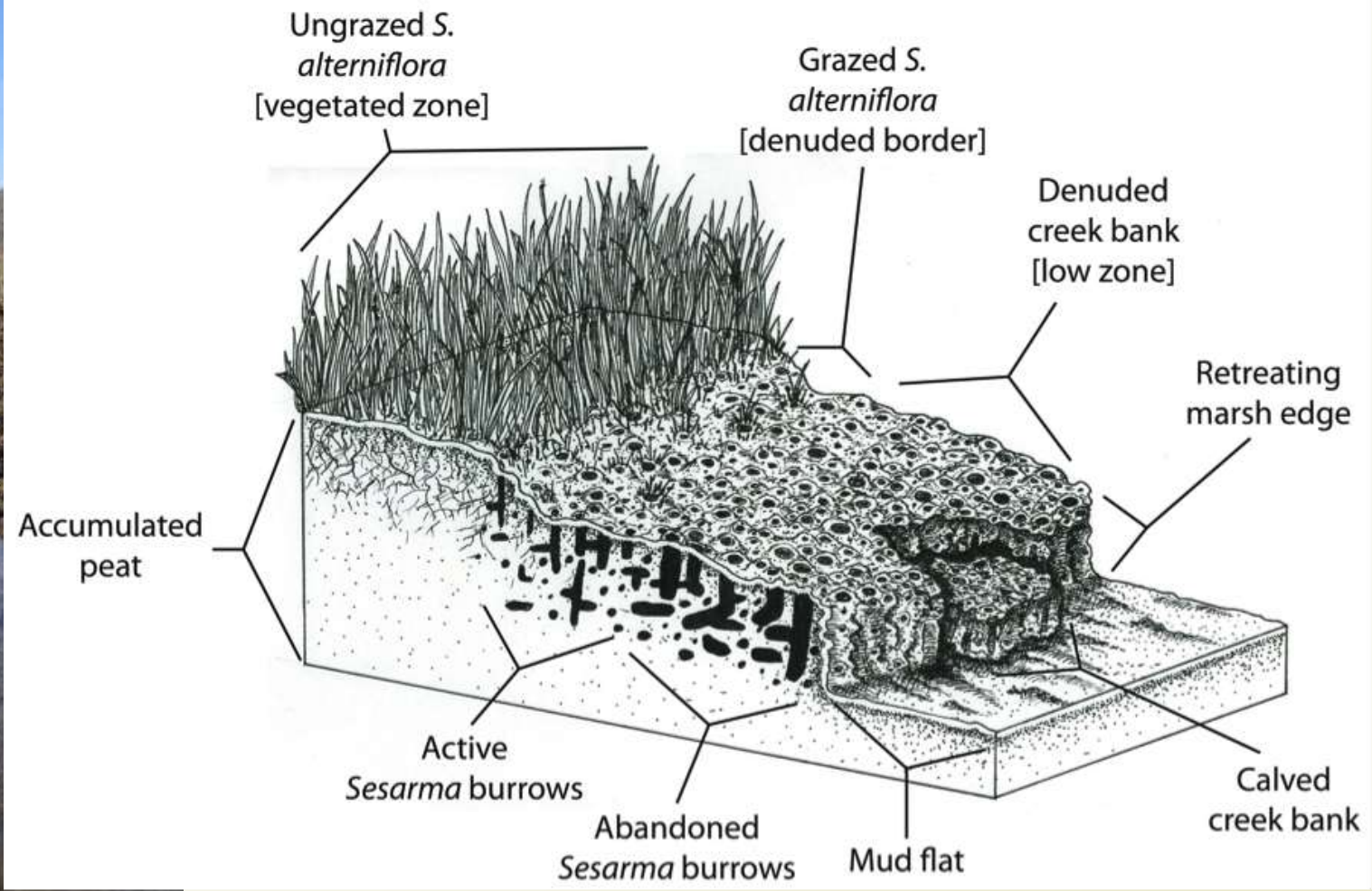
zone

Nantucket Conservation Foundation Research on Impacted Island Salt Marshes





Salt Marsh Dieback and Erosion: Polpis Harbor



Research Project: Artificially Rebalance Marsh Ecology



Research Goals

- ▶ Can we artificially reduce crab populations over:
 - ▶ One season
 - ▶ Year to Year
- ▶ Can we restore plant density while trapping crabs?
 - ▶ Maintain increased density over time
- ▶ Can we slow marsh elevation loss over time?
- ▶ Can we scale up to more marshes?

Hither Creek Salt Marsh Burial Research



Hither Creek Sand Deposition Extent November 2017



Hither Creek Sand Deposition Extent November 2018



Monitoring Observations

- Average sand depth over salt marsh = 0.71m
- Salt marsh and coastal wetlands essentially eliminated
- **Coastal Dune plants establishing slowly**
- Turbidity of Tidal flow = sediment moving into Hither Creek
- Flooding of surrounding properties has increased



Choose to stabilize the Dune





Future of Nantucket's Coastal Buffers

- ▶ Time to think holistically and long-term about:
 - ▶ Protecting resilient habitats
 - ▶ Evaluating restoration and habitat function
 - ▶ Creating/Facilitating Coastal Buffers

Questions?

NCF Science and Stewardship Blog

www.nantucketconservation.org

Thank You

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