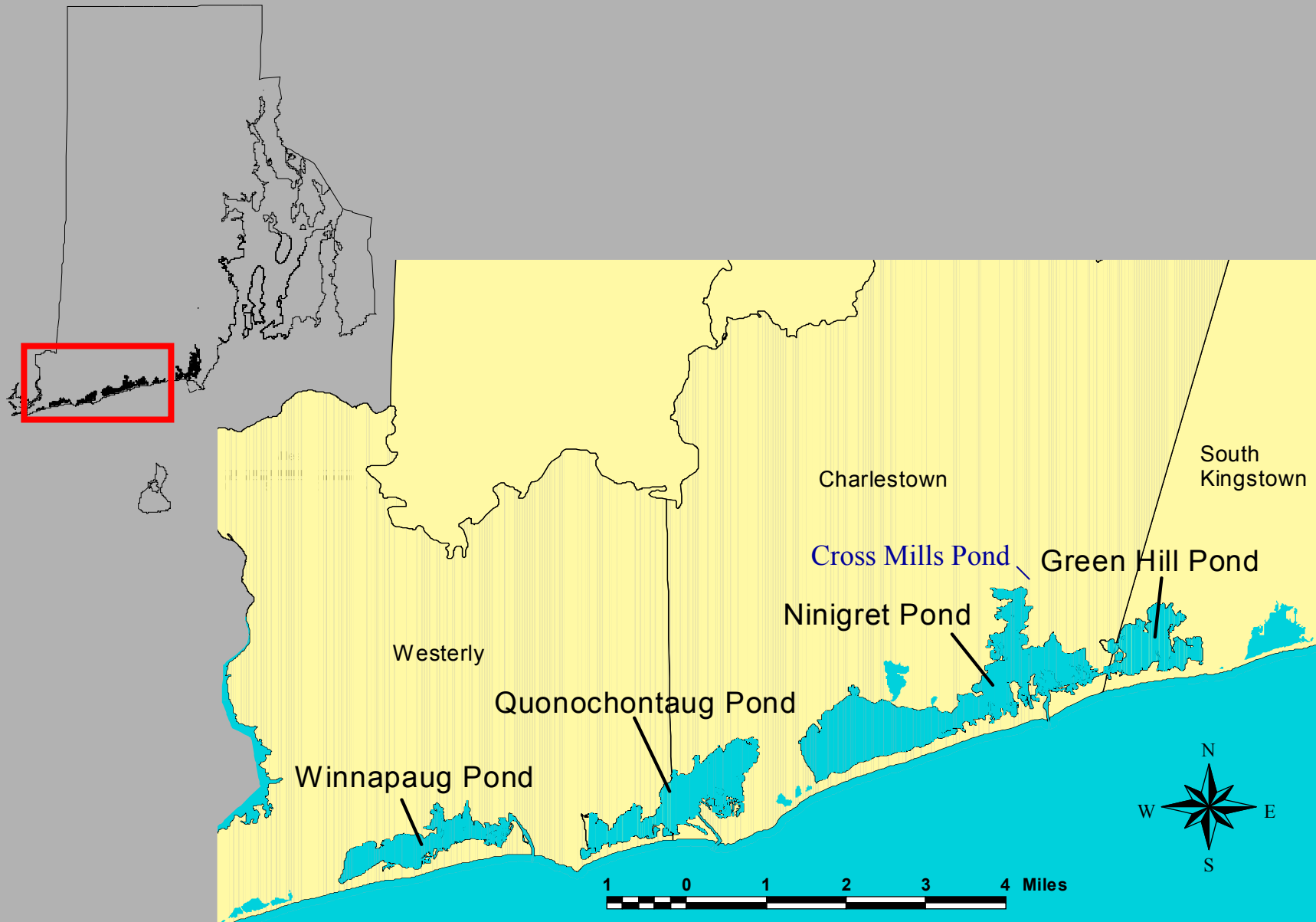


# South Coast Habitat Restoration Project: Measuring Restoration on a Large Scale

Janet Freedman, RI Coastal Resources Management Council

Megan Higgins, RI Coastal Resources Management Council









Charlestown Breachway  
September 25, 1950





Tidal Delta

Sediment Catch Basin

Charlestown Breachway  
August 19, 1952




An aerial photograph of a coastal area showing a complex tidal delta system. A dark, winding channel of water flows from the bottom center towards the top. The surrounding land is light-colored and textured, with various smaller channels and pools of water. A red arrow points from the left towards the top of the image, highlighting a specific area of the delta.

Tidal Delta

Charlestown Breachway  
August 23, 1954





Tidal  
Delta

Charlestown Breachway  
July 1999





# South Shore Habitat Restoration

- Dredge areas of three coastal pond tidal deltas and restore eelgrass habitats which existed prior to establishment of manmade breachways.
- Restore anadromous fish passage ways to Cross Mills Pond which existed prior to manmade obstructions.
- Apply a systems approach to sediment management



40 acres restored eelgrass habitat

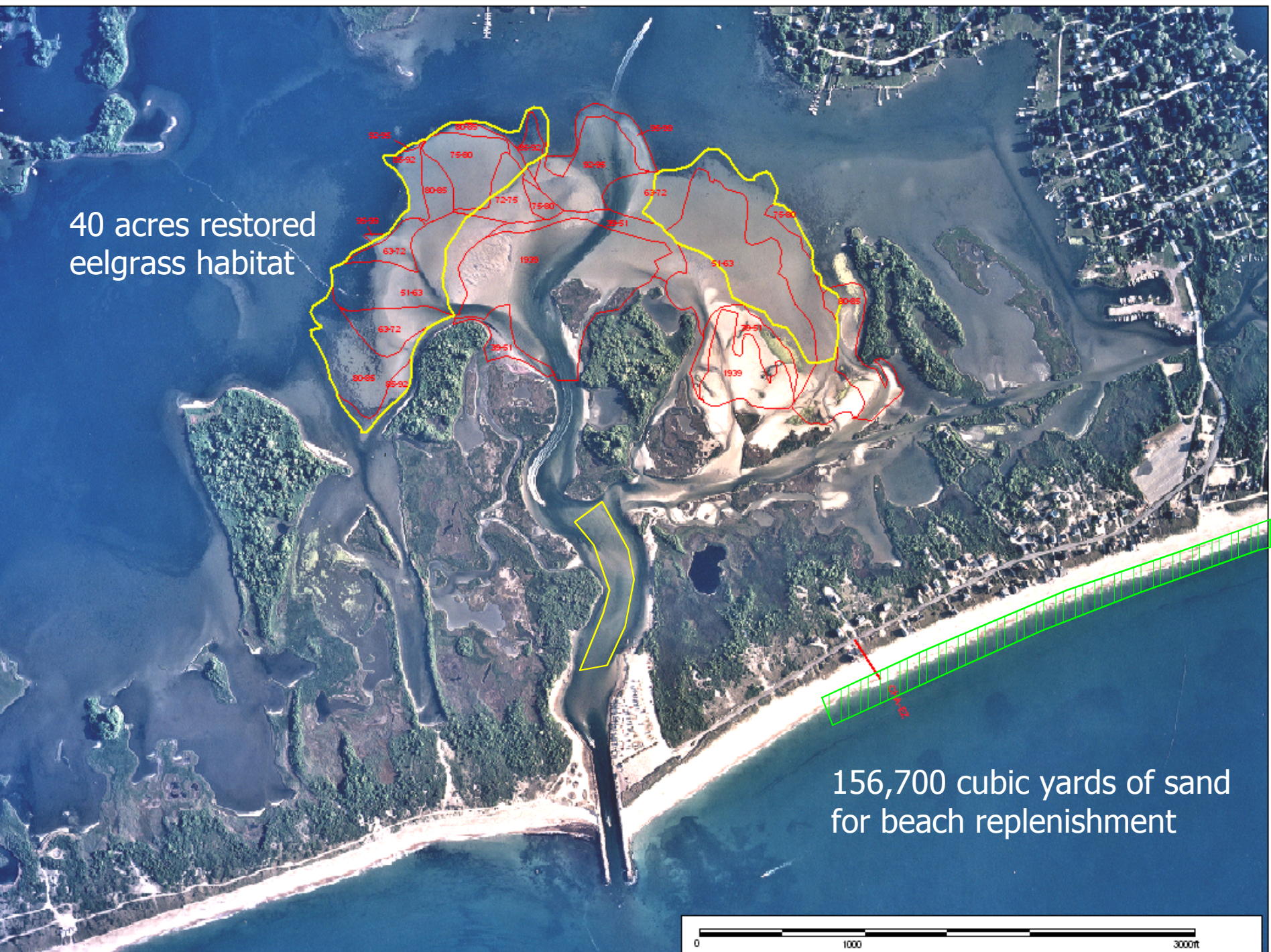
156,700 cubic yards of sand for beach replenishment

0 1000 3000ft

40 acres restored eelgrass habitat

156,700 cubic yards of sand for beach replenishment

0 1000 3000ft



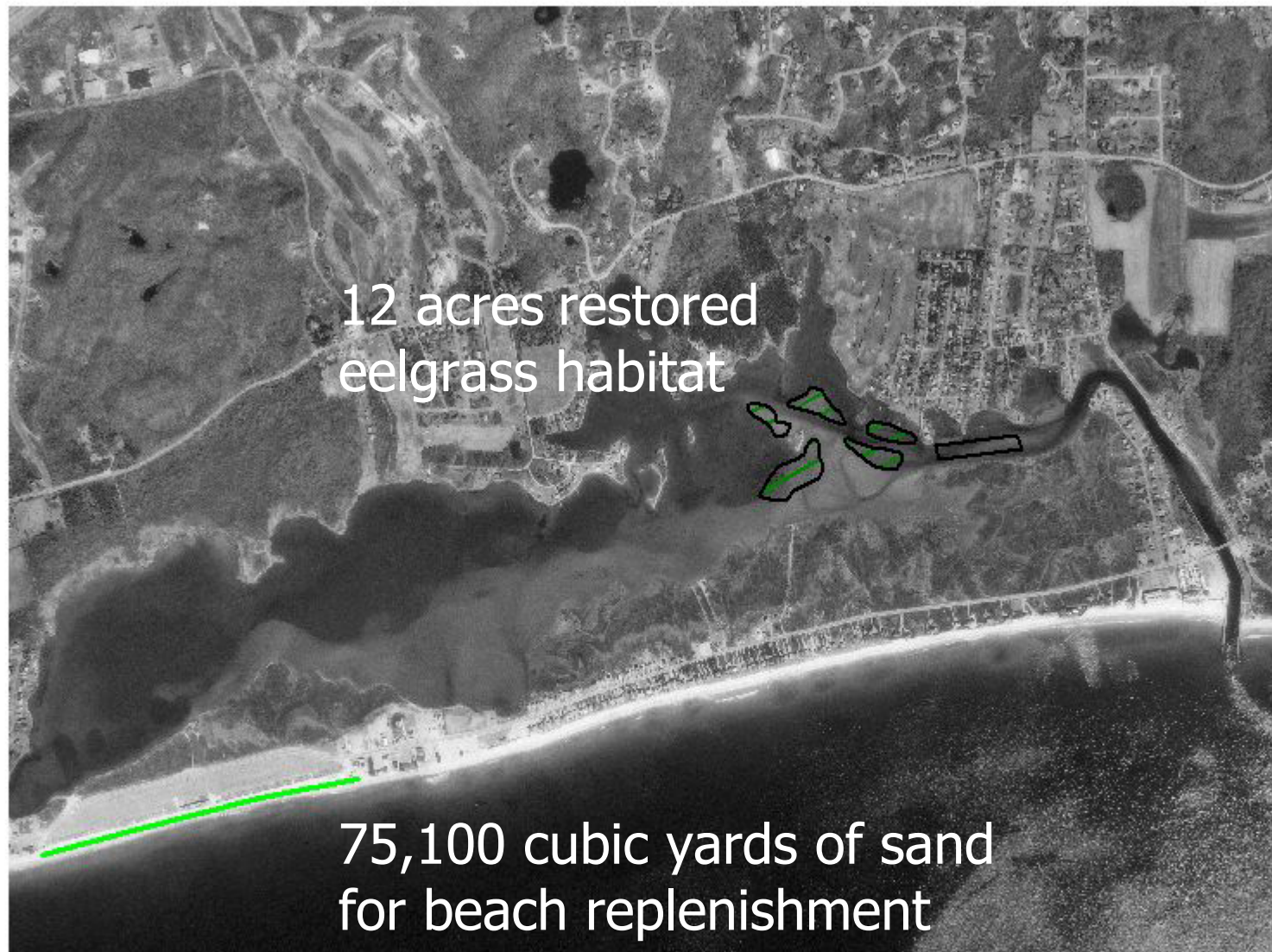










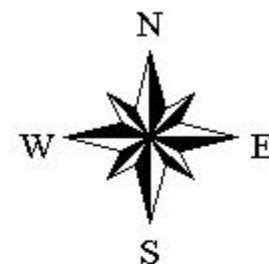
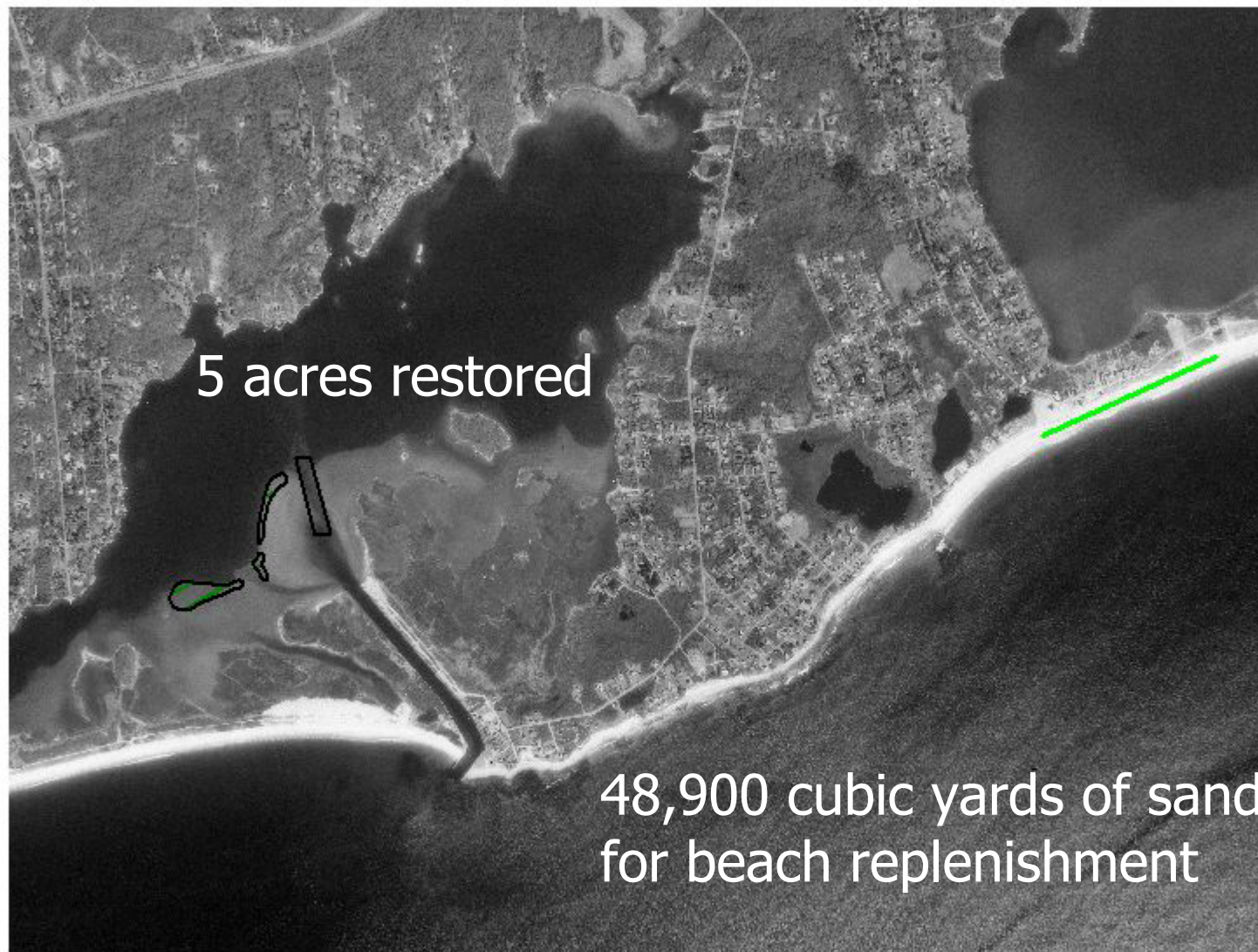






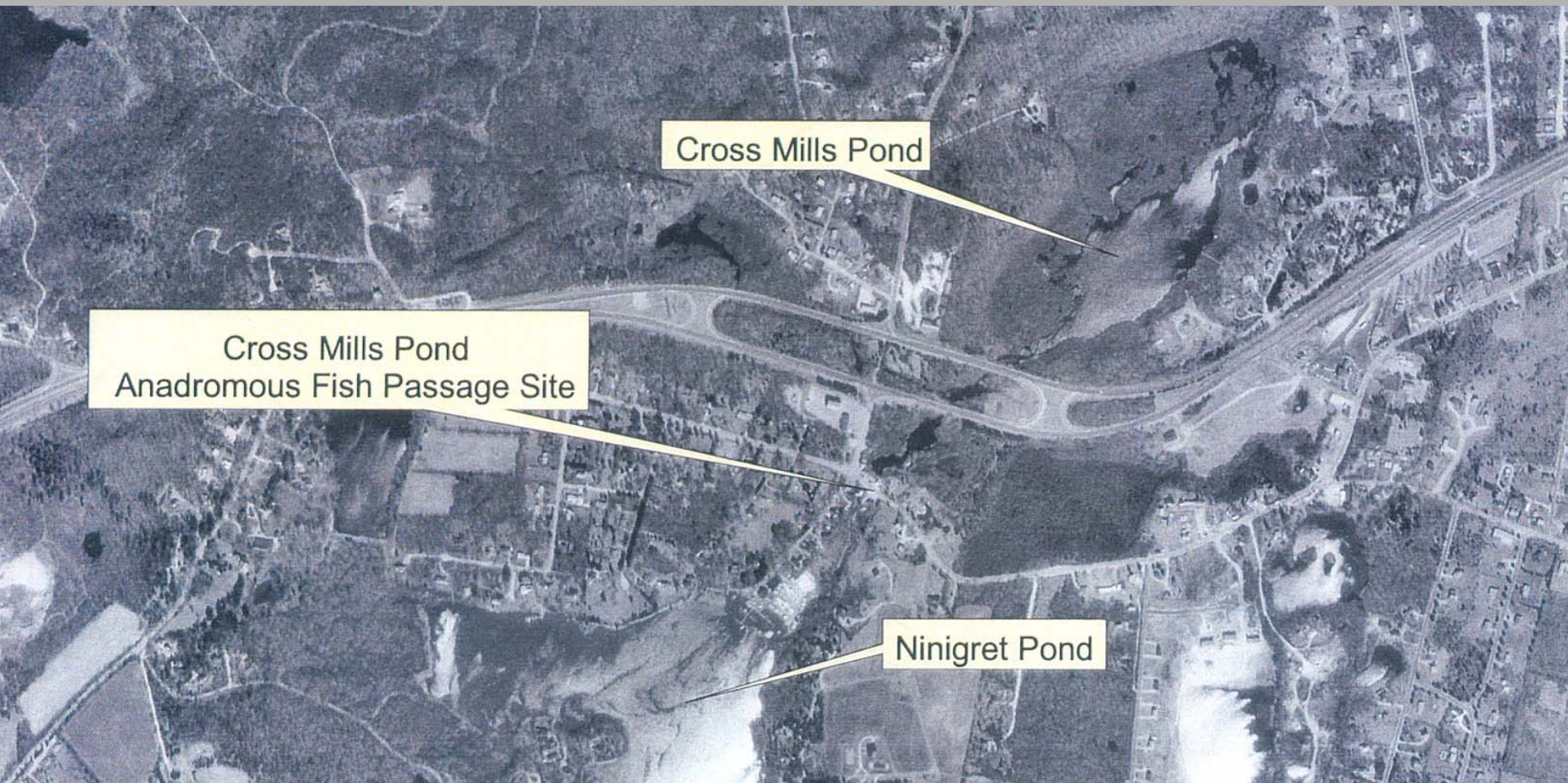
-  Eelgrass Restoration Sites
-  Sedimentation Basin
-  Potential Disposal Areas
-  Potential Dewatering Sites





-  Eelgrass Restoration Sites
-  Sedimentation Basin
-  Potential Disposal Areas
-  Potential Dewatering Sites





20 acres restored  
spawning habitat



# Four Phases

- Reconnaissance Study
  - Completed June 1998
- Final Feasibility Study and Environmental Assessment
  - Completed June 2002



# Four Phases (cont.)

- Construction
  - Ninigret Pond eelgrass restoration
    - Plans and Specifications completed 2004
    - Dredging - fall 2004/spring 2005
    - Eelgrass seeding and transplants – summer 2005
    - Monitoring until summer 2007
  - Cross Mills Pond anadromous fish passage
    - Plans and Specifications completed 2004
    - Construction fall 2004





Eelgrass seeds



Photo credit Thomas Freeman

**SAVE THE BAY**



# Four Phases (cont.)

- Construction

- Winnapaug Pond

- Construction completed in summer 2006
    - Monitoring completed in summer 2008

- Quonochontaug Pond

- Construction completed in summer 2007
    - Monitoring completed in summer 2009

# Beach Replenishment

- Total amount of sediment removed from the flood tidal delta:
  - Ninigret Pond – 156,700 cubic yards
  - Quonochontaug Pond – 48,900 cubic yards
  - Winnapaug Pond – 75,100 cubic yards



# Four Phases (cont.)

- Operation and Maintenance
  - Sedimentation basins expected to need dredging every five years to maintain project
  - CRMC is pursuing purchase of a dredge with the ACOE and Congressional representatives through the Water Resources Development Act and OSPAR Funds.

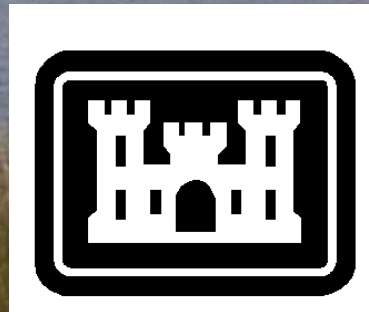
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**US Army Corps  
of Engineers**  
New England District