



US Army Corps  
of Engineers®  
Norfolk District

# Continuing Authorities Program, Section 204, Beneficial Uses of Dredged Material, Cedar Island, Virginia



## Problems and Concerns

- Cedar Island is in an accelerated rate of shoreline retreat. Retreat estimated at  $-5.5$  meters per year over the long term (1852-2007) and  $-15.4$  meters per year over the short term (2007-2010). The island is predicted to continue to narrow and fragment (Richardson 2012).
- Cedar Island has breached in multiple areas including adjacent to the U.S. Coast Guard Base, indicating the island itself is fragmenting (Richardson 2012).
- The tidal creek lagoon habitat is at risk of being fragmented and lost. The lagoon provides migratory and nursery fish habitat for species with recreation and commercial value including summer flounder, clams, and oysters. Inlet channels provide nursery habitat for the juvenile Loggerhead and Atlantic Ridley sea Turtles (Priest et al. 1986)
- Loss of Cedar Island would increase erosion and storm effects to the adjacent tidal creek lagoon estuary and potentially impact the Wachapreague mainland.
- Colonial water bird and nesting shorebird habitat on the Atlantic Ocean side of the island is at risk of being fragmented and lost.
- Based on a GIS analysis conducted in the Cedar Island back-barrier, Erwin et al. (2004) estimated a 9% loss of tidal wetlands in a study site in the Cedar Island back-barrier during the 1949-1994 time period.



Residential homes on ocean side of Cedar Island 8 May 2004 (left) and by 28 October 2004 (right) after the two easternmost homes washed away (Figure provided courtesy of Ayers (2005)).

## Study Goals and Objectives

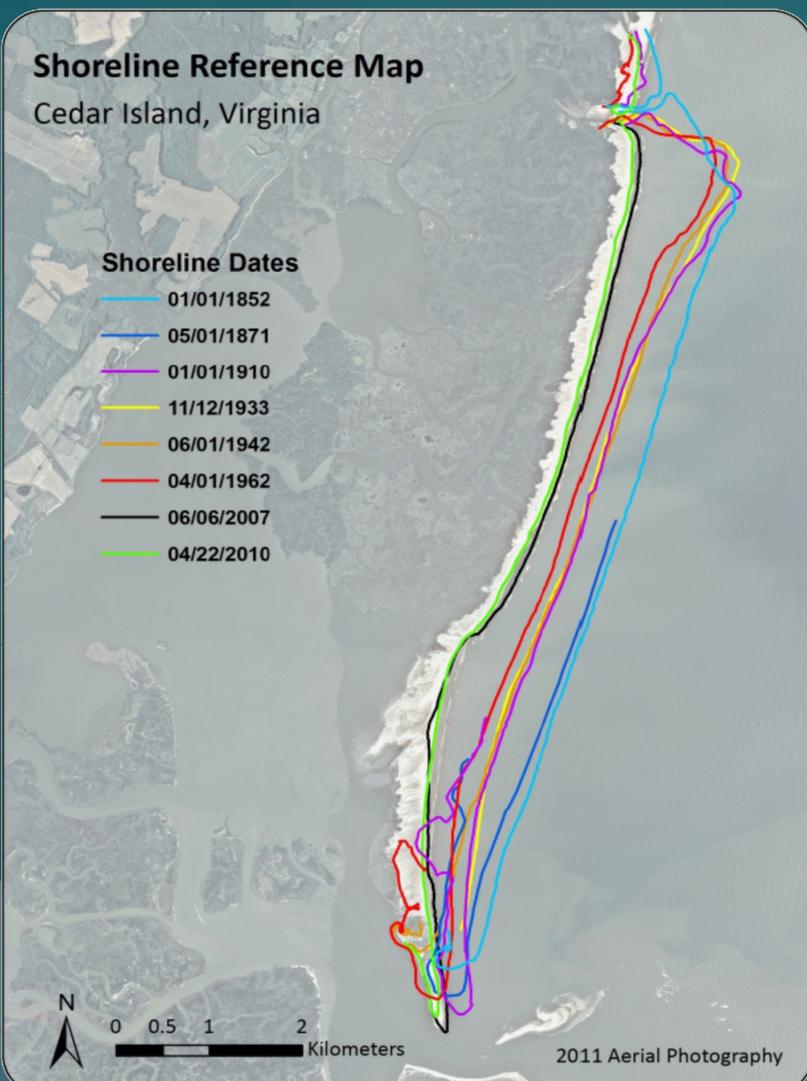
The goal of the project is to beneficially use dredged material from the Cedar Island back-barrier for enhancement, expansion, and protection on the Cedar Island back-barrier shoreline wetlands and marsh islands.

Key objectives of this study are to:

- Reduce the current rate of tidal wetland shoreline and marsh island degradation and loss;
- Expand and enhance the existing wetlands and marsh islands to enhance fish habitat, fishery resources, and wildlife habitat;
- Increase the area of intertidal mudflat habitat to provide increased foraging opportunities for avian fauna;
- Create long-term, sustainable solutions to reduce tidal wetland erosion rates, increase sediment accretion rates, and increase shoreline protection;
- Enhance existing shoreline protection to the Town of Wachapreague through wetland and marsh island creation, enhancement, and protection;
- Adaptively manage dredged material placement sites in response to the constantly fluxing ecosystem that is under the continual threats of such erosion, subsidence, and sea level rise.

## Study Authority

Section 204, provides authority for the USACE to beneficially use material dredged from authorized federal navigational channels for the protection, restoration, and creation of aquatic and related habitats.



Estimated shoreline changes from 1852-2010 showing Cedar Island shoreline retreat (Figure courtesy of Richardson (2012)).