

PELICAN ISLAND NATIONAL WILDLIFE REFUGE

Clients: U.S. Fish and Wildlife Service, Merritt Island – Phase I
Indian River County – Phase II

Pelican Island is a two and one-half acre wildlife refuge located along the east-central Florida coast, about two miles south of Sebastian Inlet. In 1903 President Theodore Roosevelt designated Pelican Island a National Wildlife Refuge. Pelican Island has functioned as an important rookery which has faced many historical challenges during the urbanization of rural peninsular Florida.

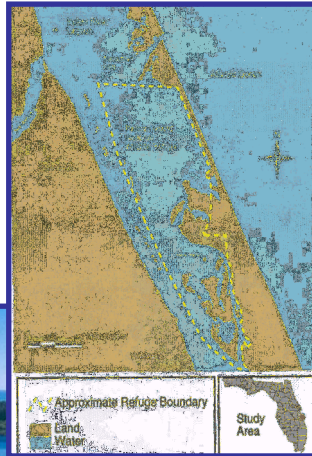


Photo courtesy of USFWS

The primary goal of this project was to initiate the restoration of Pelican Island by developing a conceptual plan for

stabilizing eroded shorelines. A secondary goal was to identify natural processes which may be used to stimulate sediment accumulation in areas currently undergoing submergence. The following objectives were accomplished:

- Conducted a survey of recent estuarine island features and quantified the physical and biological processes responsible for their development.
- Documented historical shoreline change and assessed the relevance of trends either unique to Pelican Island or shared by one or more of the other estuarine islands.
- Evaluated wave energy, sedimentology, and stratigraphy which may have been capable of inducing shoreline instability and land loss.
- Provided the USFWS with an *Action Plan* detailing a conceptual strategy for stabilizing eroded shorelines and inducing a reversal in historical land loss trends.

The successful completion of these objectives provided the information necessary to quantify shoreline instability on Pelican Island and to determine the relative influence of internal (i.e., soft island substrate) and external (i.e., wave energy) factors. The *Action Plan* was created from this information to mitigate shoreline erosion and land loss.

In 2004, Coastal Tech was selected to perform a site assessment, conceptual, preliminary and final design and permitting to restore a tidal marsh area previously altered by construction of mosquito ditches and adjacent agricultural use.

Key Elements

- Conceptual Plan
- Estuarine Survey
- Historical Shoreline Change
- Wave Energy
- Sedimentology and Stratigraphy

Date: 1999 – Phase I
2005 – Phase II

Cost: \$25,000 - Phase I
\$50,752 -Phase II

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