



# *Evaluation of* **SHOREBIRD NESTING** *Use of Restored Beach Habitat*

## **PROJECT STATUS**

<b>Project Year:</b>	2015-2016
<b>Status:</b>	Complete
<b>Category:</b>	Migratory Bird
<b>Location:</b>	Caminada Headland, Port Fourchon, LA
<b>Project Partners:</b>	Coastal Protection and Restoration Authority, U.S. Fish and Wildlife Service, LA Department of Wildlife and Fisheries

## **BACKGROUND AND PROBLEM ADDRESSED**

Louisiana's barrier shoreline serves an important societal function through the protection of coastal communities and infrastructure by absorbing storm energy, but also provides critical habitat for numerous species of wildlife. Millions of birds utilize these habitats each year either as a stopping ground to refuel on long migratory journeys, or to nest and raise their young.

The Caminada Headland in southeast Louisiana was identified as essential habitat due to its role in the preservation and protection of gulf shoreline, inland wetlands and bays, as well as a significant and unique foraging and nesting area for threatened and endangered bird species.

Surveys conducted by BTNEP since 2005 have documented extensive breeding bird use along the Caminada Headland by Wilson's Plover (*Charadrius wilsonia*) and Least Tern (*Sternula antillarum*). The Wilson's Plover has been identified by the Gulf Coast Joint Venture as a priority bird for conservation management and by the U.S. Shorebird Conservation Plan as a species of high concern. The Least Tern is considered endangered in many parts of its range and is facing

population decline due to lack of available nesting habitat.

Over the last several decades, the Caminada Headland has experienced significant shoreline erosion and land loss due to anthropogenic impacts, storm over-wash, saltwater intrusion, wind and wave induced erosion, sea level rise, and subsidence. This reduces the availability of prime foraging and nesting habitat for shorebirds.

To combat this issue, Louisiana and the federal government have developed funding streams meant to help restore these important habitats. One such endeavor, The Caminada Headland Beach and Dune Restoration Project (BA-45), was designed by Coastal Protection and Restoration Authority (CPRA) to protect and preserve the structural integrity of the barrier shoreline and to restore hydrologic conditions, ecosystem processes, and habitats. The project restored approximately 6 miles of shoreline beach along the Caminada Headland through dredging and pumping sand from an offshore location to the new beach.





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## PROJECT DESCRIPTION

BTNEP conducted an experiment to evaluate nest site selection and hatching success of Wilson's Plover and Least Tern at restored beach habitat along the Caminada Headland. In addition to examining how birds utilize the new habitat created by restoration, BTNEP supplemented the beach with placement of additional substrates that are known to attract nesting shorebirds. Nine experimental plots of approximately 45,000 sq. ft. were delineated along the beach. The project lasted for a duration of two years beginning in April, 2016, and continuing through August, 2017. Year one consisted of a pre-treatment evaluation through monitoring breeding activity within our control study plots, followed by placement of the substrate treatments in the fall of 2016. During year two, BTNEP conducted the experiment using the supplemental material.

Nest predation by mammals, ghost crabs, and other birds can have devastating impacts on the success of ground nesting shorebirds. The study evaluated the substrates placed on the study area to determine if one type of substrate makes it more difficult for predators to find the nests, leading to greater hatching success. The data collected helps define nest fate associated with each substrate type through use of a nest survivorship model. Statistical analysis of the data was conducted to determine whether there are any significant differences in the selection of nesting substrate and any significant differences in nest fate.

## RESULTS

Least Terns appeared to preferentially nest on limestone versus the untreated substrate; however, this did not generate any sort of effect on nest success, reduced predation, increased Daily Survival Rate, or number of chicks produced. However, the small sample size for this study coupled with the very high predation rate limited the capacity of producing a strong relationship between any of these factors.



## CCMP ACTION ITEMS ADDRESSED

*EM = Ecological Management*

EM-15: Protection and Enhancement of Native Biological Resources

## REPORT LINKS

Evaluation of Bird Nesting Use on Substrate Enhanced Beach Habitat: Final Report  
Evaluation of Bird Nesting Use of Restored Beach Habitat: 2016 Season Report