



Evaluation of Shorebird Nesting Use of Restored Beach Habitat

Project Status

Project Year: 2016-Present

Status: Ongoing

Category: Migratory Bird

Location: Caminada Headland, Port Fourchon

Project Partners: Coastal Protection and Restoration Authority, Greater Lafourche Port Commission, Wisner Land Trust

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 grounds to refuel on long migratory journeys, or to breed 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 Act (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. CPRA and BTNEP are in the process of evaluating the impacts of the restoration from the construction phase to the long-term effects of the completed project on the foraging and breeding ecology of shorebirds.



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Project Description:

BTNEP is conducting 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 will supplement the beach with placement of additional substrates that are known to attract nesting shorebirds. Nine experimental plots of approximately 45,000 sq. ft. have been delineated along the beach. The project will last for a duration of three years beginning in April, 2016 and continuing through August, 2018. Year one will consist 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 years two and three, BTNEP will conduct 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 will also record habitat use of nest predators through identifying their tracks and use of motion sensor cameras to log their daily activity. The study will evaluate 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 will help define nest fate associated with each substrate type through use of a nest survivorship model. Statistical analysis of the data would also determine whether there are any significant differences in the selection of nesting substrate and any significant differences in nest fate. The results of this study will be used to guide the management of future beach restoration projects to include the application of supplemental material that would benefit nesting birds on the Louisiana coast.

CCMP Action Items Addressed:

Preservation and Restoration of Barrier Islands (Ecological Management #5)

Protection of Habitat for Migratory and Resident Birds (Ecological Management #15)



Shorebirds have many predators including ghost crabs, coyotes, gulls, etc.