

## **Tern Reproductive Success and Breeding Habitat Requirements on Barrier Islands**

Edward J. Raynor<sup>1</sup>, Aaron R. Pierce<sup>1</sup>, Cecilia Leumas<sup>2</sup> and Frank C. Rohwer<sup>2</sup>

<sup>1</sup>Department of Biological Sciences, Nicholls State University, Thibodaux, LA 70310

<sup>2</sup>School of Renewable Natural Resources, Louisiana State University Agricultural Center, Baton Rouge, LA 70803

Louisiana's barrier islands rival all other breeding habitat types in colonial waterbird density. However, this habitat is subject to degradation from wave energy and reduced accretion from the human-altered Mississippi River system. In response to these effects, there has been considerable restoration efforts focused on barrier islands, but little evaluation of their success in regard to habitat functions. Specifically, the Isles Dernieres Barrier Islands Refuge (IDBIR) in Terrebonne Parish, which consists of Wine, Trinity, Whiskey, and Raccoon Islands, is a major waterbird rookery that has experienced substantial restoration through sediment applications, rock breakwater installations, vegetative planting, and sand fencing efforts under the CWPPRA program. The majority of restored areas on IDBIR are not used by nesting waterbirds, yet suitable nesting habitat appears to be available. To determine nesting habitat requirements of colonial waterbirds, we measured a suite of potentially important habitat characteristics for colony formation of two abundant ground-nesting species, Royal Tern (*Thalasseus maxima*) and Sandwich Tern (*Thalasseus sandvicensis*) in 2008 and 2009. Habitat characteristics were also measured at apparently suitable yet inactive sites to determine potential differences between active and inactive habitats through discriminant analysis. Discriminant analysis revealed suitable nesting habitat was available on some inactive sites. Understanding the use of restored barrier islands by waterbirds and their nesting habitat requirements will help improve implementation and planning of future coastal restoration projects.