

Evaluation of Regulatory Protection of Seagrasses in the Redfish Bay State Scientific Area, Texas

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Abstract: In May 2006, the Texas Parks and Wildlife Department enacted a regulation which prohibits the uprooting of seagrasses by propellers within the Redfish Bay State Scientific Area (RBSSA) located in Aransas and Corpus Christi Bays, Texas. Two complementary studies were implemented to evaluate the efficacy of the new regulation and to quantify the magnitude of propeller scarring. In the first study, 35 randomly-selected 100-m transects were established and the total number of propeller scars on each transect were recorded annually, with qualitative and quantitative information collected on each scar. Following enactment of the regulation, significantly fewer scars (69%) were observed ($P < 0.0001$). Prop scars recovered rapidly; of the 97 scars observed in 2006, 91 were considered recovered in 2007. In the second study, high resolution aerial imagery (0.1 m) was acquired in spring 2006 and 2007 and estimates of scarring were generated using automated feature extraction methods. Preliminary analysis from the 2006 imagery gave estimates of scarring at less than 1% of the vegetated area.

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1. Deceased.