

## Quarterly Report for Matagorda Bay Mitigation Trust September 30, 2022

**Project:** Lavaca Bay Ecosystem Assessment: Gathering Key Baseline Data Among Nursery Habitats Spread Across a Pollution Gradient

**Organizations:**

<sup>1</sup>Center for Sportfish Science and Conservation (CSSC) at Harte Research Institute for Gulf of Mexico Studies Texas A&M University at Corpus Christi

<sup>2</sup>BIOWEST, INC.

**Investigators:**

Gregory W. Stunz, Ph.D.<sup>1</sup> (PI)

Matthew K. Streich, Ph.D.<sup>1</sup> (Co-PI)

Edmund L. Oborny, Jr. Project Manager, ELO/eo<sup>2</sup>

**Contract No.:** 0021

**Project Term:** 03/01/2022 – 08/31/2024

**Reporting Period:** 3/1/2022 – 8/31/2022 (2)

The contracted project with the Matagorda Bay Mitigation Trust was initiated as of March 1, 2022. After this date, we identified and got approval for a subcontractor with expertise in areas not covered by researchers at Texas A&M University-Corpus Christi. The chosen contractor was BIOWEST, Inc.

**Task 1 - Ecological Assessment:** Conduct a seasonal ecological assessment in fringing and back marshes in Lavaca, Cox, and Keller bays.

Status: Initiated

Spring '22

- BIO-WEST prepared for and participated in a site evaluation / site selection reconnaissance field effort on Friday, April 29th with coastal scientists from TAMU-CC. Following formal site selection, BIO-WEST initiated seasonal avian community sampling in the Lavaca Bay complex on May 17-19, 2022. This effort involved a team of two biologists performing timed point counts (8 per site) at each of four established sites within the Lavaca River Delta, Cox Bay, Keller Bay, and Carancahua Bay. At each site, two acoustic recorders were deployed and set to record autonomously throughout the remainder of the Spring breeding bird season. Point count surveys were performed in predominately emergent marsh habitats and produced a total of 1,587 individual birds represented by 53 species. The observed bird community was typical of the Texas Gulf Coast, with multiple species of rail inhabiting the marsh, and an abundance of foraging tern, heron, and wading bird species utilizing the edge habitat. In addition, several iconic species were observed including King Rail, American Oystercatcher, and Black Skimmer.

- BIO-West initiated data reduction and analysis of collected timed point count data. Acoustic analysis for Spring sampling was also initiated by reviewing recordings for evidence of calling Eastern Black Rail and Whooping Crane.
- CSSC selected 8 sampling sites within four zones after their recon trip with Bio-West, see map 1. These sites were first sampled on May 10<sup>th</sup>. Sampling included pulling three replicate epibenthic sled tows at each site for a total of 24 samples. Nurdle surveys were conducted at all eight sites.
- CSSC performed the second Spring sampling trip on May 26<sup>th</sup>. Nurdle surveys were conducted at all eight sites. CSSC currently has 48 marsh edge epibenthic samples in house.

#### Summer '22

- BIO-WEST traveled to the study sites in August to retrieve the acoustic recorders that had been in place since the completion of the Spring 2022 sampling event.
- BIO-WEST continued data reduction and analysis of collected timed point count data from Spring. Additionally, acoustic analysis for the summer quarter was initiated by reviewing recordings for evidence of calling Eastern Black Rail and Whooping Crane. Fall avian surveys will be conducted in late October / early November.
- CSSC completed the first of two Summer sampling events on August 9<sup>th</sup>. Three replicate tows were taken at all eight sites, accounting for 24 marsh edge epibenthic sled samples.
- CSSC completed the second Summer sampling event on August 22<sup>nd</sup>. All 24 marsh edge epibenthic samples are accounted for. Nurdle surveys were conducted at all eight sites. CSSC currently has 96 marsh edge epibenthic sled samples in house.

**Task 2 – Data Comparison:** Comparison of seasonal ecological data from this study and the MBMT Colorado River Delta project and TWDB Guadalupe River Delta project.

Status: Not yet begun

Map 1

