

## Matagorda Bay Mitigation Trust – Progress Report

**Project Name:** A research and monitoring program to mitigate the impact of harmful algal blooms on the Matagorda Bay and San Antonio Bay ecosystems

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**Contract No.:** 0014

**Reporting Period:** 3/1/23-5/31/23

### Task 1: Real-time, high frequency detection of HABs and other phytoplankton.

Status of the task during this reporting period:  not started  in progress  completed

- Describe major accomplishments for this reporting period.
  - Additional “training” of the FlowCytobot to recognize algal cells was conducted using water samples collected as part of Task 2 (approximately 20 classes have more than 1000 annotated images each, including two target HAB species of interest).
  - Testing of data transmission/communication equipment continued, including set-up of modem, remote management card and environmental sensor, and successful remote data syncing software and scripting.
  - The shed that will house the FlowCytobot was constructed and deployed on site. Pictures of the shed are attached.
- List the deliverable(s)/milestone(s) completed during this reporting period.
  - Nothing to report.
- Were there any problems or obstacles encountered during this reporting period (e.g., delays, remedial action taken, schedule revision).  Yes  No If yes, please explain:

The instrument has had multiple component failures and unresolved electrical/programming issues: sheath pump motor, valve motor mount, and stir bar motor (which had not yet been used). The manufacturers sent replacement motors and mount, which have been installed. Resolution of electrical issues are ongoing, and we are awaiting receipt of a new computer board that will need to be installed.

This has resulted in the instrument being inoperable for periods of a week or several days at a time, and we are unable to install the instrument in its housing for field deployment until the electrical and function issues are resolved.

- Briefly describe plans for the next reporting period.
  - Assuming that there are no additional parts failures or delays, we are now aiming for deployment in July-August 2023.

### Task 2: Water sampling program for HABs and relevant environmental conditions.

Status of the task during this reporting period:  not started  in progress  completed

- Describe major accomplishments for this reporting period.
  - Water sampling took place weekly at 6 sites, for a total of 7 sampling events during the quarter.

- List the deliverable(s)/milestone(s) completed during this reporting period.
  - On 3/9/23, we reported the presence of *Dinophysis sp.* at the Port O'Connor site to Texas Parks & Wildlife Department so that they could follow up.
- Were there any problems or obstacles encountered during this reporting period (e.g., delays, remedial action taken, schedule revision).  Yes  No If yes, please explain:
- Briefly describe plans for the next reporting period.
  - Complete analysis of previously collected samples.
  - Continue to synthesize water quality data collected during the two years of sampling.

**Task 3: Stakeholder meetings.**

Status of the task during this reporting period:  not started  in progress  completed

- Describe major accomplishments for this reporting period.
  - Nothing to report.
- List the deliverable(s)/milestone(s) completed during this reporting period.
  - Nothing to report.
- Were there any problems or obstacles encountered during this reporting period (e.g., delays, remedial action taken, schedule revision).  Yes  No If yes, please explain:
- Briefly describe plans for the next reporting period.
  - Postdoctoral researcher Laura Beecraft will give an update on the project at the Lavaca Bay Foundation meeting in mid-June.



**Figure 1. Shed that has been constructed to house the FlowCytobot at the TPWD's Port O'Connor facility.**