

Quarterly Progress Report

December 2024

Project Title

Mercury Exposure through Seafood Consumption in the Matagorda Bay System: Human Health Study and Public Education

Contract # 065

Submitted to

Matagorda Bay Mitigation Trust

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Project Summary

Humans are primarily exposed to mercury (Hg) through seafood consumption. This study will investigate people's exposure to Hg through seafood consumption in the Matagorda Bay system using hair Hg analysis and surveys focusing on demographic factors, seafood consumption patterns, and health issues associated with Hg toxicity. In addition, social media accounts will be created and a website constructed to educate the public on the toxicology research occurring in the Matagorda Bay system, with the focus on the Alcoa (Point Comfort)/Lavaca Bay Hg Superfund site. Social media posts and the website will be written in English, Spanish, and Vietnamese.

Project Goals and Objectives

The proposed project has two goals: 1) investigate people's exposure to Hg through seafood consumption in the Matagorda Bay system, and 2) develop online resources to educate the public about the toxicology research occurring in the Matagorda Bay system, with the focus on the Alcoa (Point Comfort)/Lavaca Bay Hg Superfund site. This can be broken down into five objectives:

Objective 1: Calculate how much of each fish and shellfish species can be consumed by an adult or child per week before exceeding the FAO/WHO MeHg PTWI and how that varies spatially throughout the Matagorda Bay system.

Objective 2: Investigate why people are fishing in the Alcoa Hg Superfund site even though the area is closed to the retention of fishes and blue crab.

Objective 3: Investigate seafood consumption patterns in recreational anglers throughout the Matagorda Bay system.

Objective 4: Measure hair Hg concentrations in English, Spanish, and Vietnamese speaking communities bordering Lavaca Bay and Matagorda Bay and interpret the results based on demographic factors, seafood consumption habits, and health histories.

Objective 5: Create social media accounts and construct a website to educate the public on the toxicology research occurring in the Matagorda Bay system. The information will be available in English, Spanish, and Vietnamese.

Project Update

The following was completed this quarter:

Objective 2

Survey collection started in July to investigate why people are fishing next to the Causeway (SH-35) even though the retention of fishes and blue crab is not allowed from the Closed Area. The goal is to collect 100 surveys. To date, 56 surveys have been collected. Initial findings indicate that while some people are just doing catch and release fishing, other people are retaining and consuming their catch. Further discussion with these anglers indicated that there is confusion about which part of the bay next to the Causeway is closed to the retention of fishes and blue crab. There are three signs stating their retention is prohibited when you enter the road next to the Causeway (Fig. 1), so people do not retain catch from there. However, further along the road there are no signs and people think they are allowed to keep the catch. While there is a map on the sign showing that the entire road is closed to the retention of their catch, anglers are basing their decision on the presence or absence of a sign.

PI Dutton met with representatives from Alcoa in October 2024 and explained the problem and recommended installing more signs. At an U.S. EPA and Alcoa community meeting in Port Lavaca in December 2024, Alcoa announced they are installing more signs to provide better public awareness about what part of the bay is prohibited to the retention of fishes and blue crab. As a result, there has been a positive outcome from this objective.



Figure 1. Location of signs next to the Causeway (SH-35).

Objective 3

Survey collection started in July to investigate fishing activity and seafood consumption patterns in recreational anglers in the Matagorda Bay system. The goal is to collect 150 surveys in Port Lavaca, Point Comfort, Palacios, Matagorda, and Port O'Connor. All 150 surveys have been

collected from Port O'Connor and data is being inputted into Excel spreadsheets. 118 surveys have been collected from Matagorda, 101 from Port Lavaca, and 18 from Point Comfort.

Objective 5

- The Instagram account (@matagordabaytoxicologystudy) has 14 posts and 56 followers
- The website domain has been purchased. The URL is www.matagordabaytoxicologystudy.com

Community presentation and resulting media interest

PI Dutton gave a public presentation in Port Lavaca on August 22nd, 2024, titled “Mercury concentrations in sediment and biota in the Alcoa (Point Comfort) Superfund site”. Objectives 3, 4, and 5 were mentioned during the presentation. To date, five news articles have been published about the event:

The future of Lavaca Bay. Crossroads Today. October 30, 2024. https://www.crossroadstoday.com/news/local-news/calhoun-county/the-future-of-lavaca-bay/article_280bc290-96ba-11ef-8eff-472a03b1e2a4.html

New research revealing high levels of mercury in Texas bay raises alarms about dredging for oil tankers. Oil and Gas Watch. August 29, 2024. <https://news.oilandgaswatch.org/post/new-research-revealing-high-levels-of-mercury-in-texas-bay-raises-alarms-about-dredging-for-oil-terminal>

Experts warn of mercury levels in Lavaca Bay. The Port Lavaca Wave. August 28, 2024. <https://www.portlavacawave.com/articles/333/view>

What dangers does the mercury in Lavaca Bay pose for the community? The Victoria Advocate. August 23, 2024. https://www.victoriaadvocate.com/news/business/what-dangers-does-the-mercury-in-lavaca-bay-pose-for-the-community/article_5e3e6298-6170-11ef-8d80-0f5961e3cebb.html

Mercury found in Lavaca Bay poses serious health risks, warning from experts. Crossroads Today. August 22, 2024. https://www.crossroadstoday.com/lifestyle/mercury-found-in-lavaca-bay-poses-serious-health-risks-warning-from-experts/article_53c34740-6105-11ef-8942-0b254a4dc7ea.html

Goals for the Next Quarter

- Organize the Hg data for bay fish and shellfish to calculate how much of each fish and shellfish species can be consumed by an adult or child per week before exceeding the FAO/WHO MeHg PTWI (Objective 1)
- Continue to survey people on why they are fishing next to the Causeway even though the retention of fish and blue crab is not allowed from the Closed Area (Objective 2)
- Continue to survey recreational anglers about their seafood consumption patterns and enter the data into Excel spreadsheets (Objective 3)
- Create the Facebook account (Objective 5)
- Start to construct the website (Objective 5)