MONITORING AND RESEARCH SUBCOMMITTEE
GALVESTON BAY COUNCIL

Meeting Minutes
Wednesday, September 11, 2024
9:30 a.m. – 11:30 a.m.

Subcommittee Chair: George Guillen, Environmental Institute of Houston-University of Houston Clear Lake (EIH-UHCL)

Subcommittee Vice Chair: Mike Lee, United States Geological Society (USGS)

GBEP Representative: Jenelle Estrada

Call to Order, Introductions (Via Microsoft Teams)

Attendees: Anna Armitage (TAMUG), Ryan Bare (HARC), Kristin Brzeski (MTU), Jessica Casillas (H-GAC), Sally Clark (GBF), Hope Coler (TCEQ), Kevin De Santiago (TWT), Jim Dobberstine (Lee College), Jessica Geiskopf (TPWD), Mandi Gordon (EIH-UHCL), George Guillen (EIH-UHCL), David Hala (TAMUG), Vanessa Hulse (HARC), Naima Khan (TAMUC), Erin Kinney (HARC), Mike Lee (USGS), Chris Marshall (TAMUG), Sherah McDaniel (EIH-UHCL), Sandra Metoyer (EIH), Theresa Morris (TAMUG-GCSTR), Alyssa Quackenbush (GBF), Antonietta Quigg (TAMUG), Thushara Ranatunga (H-GAC), Hanadi Rifai (UH), Bill Rodney (TPWD), Melanie Rogers (EIH-UHCL), Maggie Sager (TIRN), Megha Shrestha (H-GAC), Luke Travis (USGS), Huy Vu (USEPA), Robert Wells (TAMUG), Katie Wilson (GCHD), Natasha Zarnstorff (GBF), Matthew Abernathy (GBEP), Zoe Gapayao (GBEP), Lindsey Lippert (GBEP), Lisa Marshall (GBEP), Christian Rines (GBEP), Morgen Zander (GBEP).

Approval of June 12, 2024 meeting minutes – Motion to approve by Chris Marshall, and a second by Mandi Gordon.

Proposal Presentations:

Contaminant Accumulation in a Sentinel Species: Are Terrapin What They Eat? – *Mandi Gordon, University of Houston-Clear Lake* – This project will evaluate trophic bioaccumulation of PFAS and microplastic contaminants in a sentinel species terrapin and their primary prey sources. It will expand education and outreach efforts for wildlife conservation and effects of contaminant accumulation across trophic levels

Development of a Comprehensive Regional Wetlands Database and Economic Valuation of Ecosystem Services - *Thushara Ranatunga, Houston-Galveston Area Council* – This project aims to deliver a comprehensive inventory of detailed classified wetlands and economic evaluation of various ecosystems services within the identified wetlands using advanced AI technologies, LiDAR, Aerial and Satellite imageries. The findings will be disseminated through the GBEP website, interactive geospatial web tools, white papers, and public presentations.

From Scat to Conservation: Community-based research of Galveston Bay's ghost wolves - *Kristin Brzeski, Michigan Technical University* – This project aims to couple

citizen science with novel noninvasive genomic tools to determine how environmental conditions preserve the endangered red wolf DNA found in coyotes (locally called Ghost Wolves) in the Galveston Bay ecosystem. The project will establish partnerships to develop educational materials for citizen science recruitment and outreach.

Continuum Approach for evaluating variable inundation influences on Hydro Biogeochemical attributes for Trinity-San Jacinto Estuary at Galveston Bay- *Naima Khan, Texas A&M University-Commerce* – This project will couple the ModEX approach with ICON (Integrated Coordinated Open Networked) science principles to generate a process-based model for evaluating and predicting hydro biogeochemical resiliency during under wet and dry conditions across the scales for the Galveston Bay Estuarine Ecosystem.

Distribution of key emergent pollutants in the aquatic biota (oysters and fish), sediments and surface waters of Galveston Bay – *Antonietta Quigg, Texas A&M University at Galveston* – This project will measure the exposure response across trophic levels to a selection of contaminants of emerging concern (CEC) and then translate the results to both plain language/ practical knowledge. These CEC's are present in aquatic biota (oysters and fish), sediments and surface waters, but we do not know the spatial extent, nor do we know what are "typical" concentrations occurring in Galveston Bay.

Ecosystem effects of the Pelican Island Bridge Collision and Vacuum Gas Oil Spill in Galveston Bay – *David Hala, Texas A&M University at Galveston* – The objective of this project is to study the environmental impacts of the recent barge with the Pelican Island bridge that released ~2,000 gallons of toxic vacuum gas oil into Galveston Bay. It will integrate the use of hydrodynamic modeling, acoustic tracking, analytical, and pollutant biotransformation capability in the exposed fish.

Developing Molecular Tools for Demographics and Distribution of Galveston Bay Estuary System Sea Turtles – *Christopher Marshall, Texas A&M University at Galveston* – This project will identify the presence/absence of specific sea turtle species and test the eDNA method's ability to provide quantitative vs. qualitative abundance of each species seasonally. The sea turtle hospital will be used to validate eDNA signatures collected for this project from known sea turtle species held in mesocosms in the rehabilitation hospital.

Informing ongoing management of environmental water transactions to preserve or enhance tidal bayou function in East Bay. – *Kevin De Santiago, Texas Water Trade* – This project will study the outcome of a semi-controlled experiment, informing the adaptive management of transacted water to restore or enhance tidal bayou function, specifically habitat provision for nekton species such as blue crab, brown and white shrimp, gulf menhaden, etc. Water quality, nutrients, and primary production will be considered as potential drivers of observed patterns.

Galveston Bay Bottlenose Dolphin Exposure to Legacy Contaminant Stressors – *Sherah McDaniel, University of Houston-Clear Lake* - This project aims to assess PCBs, dioxins, and mercury concentrations in Galveston Bay bottlenose dolphins. The results of elevated concentrations of these contaminants could result in a focus of resources to Galveston Bay to continue to investigate these legacy contaminant pollutants, and

better inform the design and implementation of restoration/conservation projects to benefit dolphins.

Presentations available upon request.

Project Updates: **done online due to time constraints*

- Regional Monitoring Database – HARC (Ryan Bare)
- Long Term Monitoring of Living Shorelines – Lee College (Jim Dobberstine)
- Monitoring Ecosystem Indicators for Science-Based Restoration and Enhancement – TAMUG (Hui Liu)
- The Distribution and Fate of Highly Toxic Tire Rubber-Derived Chemicals in Galveston Bay – TAMU (Michael Shields)
- Evaluating Galveston Bay's Resilience to Ocean and Coastal Acidification – HARC (Stephanie Glenn)
- Establishment of an Oyster Sentinel Program for Tracking *Perkinsus marinus* (Dermo) in Oysters of Galveston Bay – UHCL (Mandi Gordon)
- Tracking Perkinsus Marinus (Dermo) Infection in Sun-Cured Oysters - UHCL (Mandi Gordon)
- Monitoring to Assess Long-term Restoration Success in Galveston Bay Wetlands - TAMUG (Anna Armitage)

Announcements/Path Forward Items:

- NRU subcommittee meeting: Wednesday, September 18, 2024, 10:00 a.m.–12:00 p.m.
- B&P meeting: Wednesday, October 2, 2024, 1:00 p.m. – 3:00 p.m.
- GBC meeting: Wednesday, October 16, 2024, 9:30 a.m.– 12:30 p.m.
- **Next meeting**: December 11, 2024, 9:30 a.m. – 11:30 a.m.

Adjourn