

# MONITORING AND RESEARCH SUBCOMMITTEE GALVESTON BAY COUNCIL

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**Meeting Minutes**  
**Wednesday, March 6, 2019**  
**9:30AM -11:30AM**

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: Kristen McGovern

## **Call to Order, Introductions**

Attendees: George Guillen (EIH-UHCL), Sarah Gossett (GBF), Chris Marshall (TAMUG), Jan Culbertson (TPWD), Lythia Metzmeier (TCEQ), Marc Hanke (UH), Laura Jurgens (TAMUG), Kerry Niemann (TCEQ by phone), Ryan Bare (HARC by phone), Kristen McGovern (GBEP), Lisa Marshall (GBEP), Lindsey Lippert (GBEP), and Christian Rines (GBEP).

**Approval of December 12, 2018 meeting minutes – approved.**

## **New Business**

**Presentation:** Rollover Pass Closure, Kevin Frenzel, Coastal Erosion Planning and Response Act (CEPRA) Manager for the Texas General Land Office (GLO)

**Member Spotlight Short Presentations** (presentations available upon request):

These short (~10 mins in length), informal PowerPoint presentations will serve as an introduction for new members and to keep everyone in the loop about what is going on in the watershed. One to two members will present at each meeting to share information on their position/affiliation, research/monitoring interests, current research/monitoring projects in Galveston Bay (with or without GBEP funding), and weblinks to their programs. Kristen McGovern asked members to let her know if they are interested in presenting at an upcoming meeting.

**George Guillen** (M&R Subcommittee Chair), Executive Director and Professor, Environmental Institute of Houston (EIH), University of Houston Clear Lake (UHCL)

<https://www.uhcl.edu/environmental-institute/people/staff/guillen>

**Christopher Marshall**, Interim Assistant Department Head and Professor, Ecomorphology and Comparative Physiology Laboratory, Department of Marine Biology, Texas A&M University at Galveston (TAMUG)

<http://www.tamug.edu/marshall/index.html>

### **Project Updates:**

The Impacts of Assimilative Capacity of Reservoirs on Coastal Inflows - GTRI: GTRI is finalizing analyses and preparing the final report.

Freshwater Inflows in Galveston Bay: Relationship to HABs - TAMUG: TAMUG has completed data analyses and is preparing the final report.

Nutrient and Sediment Monitoring of the San Jacinto River - USGS: Two sampling events have taken place; lab results pending.

Seafood Evaluation in a Portion of Galveston Bay - DSHS: DSHS will begin the characterization report once the results of the analysis are received from GERG.

Characterization of the Influence Freshwater Inflow on Trinity River Delta Indicators - EIH: EIH is continuing to sample through July 2019. A couple of sensors disappeared and will need to be replaced - not sure whether this was related to the recent plane crash in the area.

Intertidal Oyster Reef Mapping and Analysis - UH: UH and Black Cat GIS are working on two QAPPs (one for GIS work and one for fieldwork) for the project.

### **Information gaps and needs for the region:**

Information gaps and needs for the region that were previously identified by the M&R subcommittee were revisited and discussed in preparation for the upcoming project planning meeting in June. For each information need, current GBEP projects falling under that topic as well as actions from the Galveston Bay Plan, 2<sup>nd</sup> edition that corresponded to that topic were identified. This will better aid the subcommittee in ensuring that the actions identified in the Galveston Bay Plan, 2<sup>nd</sup> edition are being implemented.

1. Contaminants in aquatic organisms (seafood): There is one open project addressing this topic, and two projects that will commence in September: a) FY18: Seafood Evaluation in a Portion of Upper Galveston Bay, b) FY20: Pb isotopes and heavy metal concentrations in Galveston Bay water, sediments, and oysters, and c) FY20: Characterizing the PCBs and dioxins in the Houston Ship Channel and Galveston Bay post-Harvey.

Kristen McGovern asked if the subcommittee thought that there were still information gaps that needed to be addressed under this topic during FY21 project planning.

Jan Culbertson said that she spoke to NOAA about the Mussel Watch; it has not been completed yet because of the government shutdown. As soon as it is completed, the report will be published on the NOAA website. We are very interested in knowing where the hotspots are even though we received some early information. Once we know where the hotspots are and where sampling needs to occur, she will plan on bringing to committee that might be the next data gap to pursue - but we can't know that until we read the report. George Guillen asked what contaminants NOAA was looking at. Jan Culbertson said that they sampled for most contaminants of interest, including metals, PCBs, and dioxins. George Guillen asked if they were just looking at oysters, and Jan Culbertson indicated that yes, they only sampled oysters. They collected the day after the storm in Galveston Bay and at other points along the Texas coast where they have been sampling for years (so there is a timeseries to compare the data to). Jan Culbertson indicated that we are very interested to see the data to see where the hotspots were.

Jan Culbertson brought up that turtles eat oysters, especially in Christmas Bay, and asked if anyone has looked at contaminants in turtles from eating oysters, as oysters can bioaccumulate contaminants. Christopher Marshall stated that he had been talking to colleague that is a toxicologist about the possibility of looking at contaminants in turtles.

George Guillen stated that EIH collected a number of dolphin tissue samples, as some dolphins were all the way up in Morgan's Point, but they have not been able to get the samples analyzed due to funding constraints. There are 50+ plugs. Terry Wade up at GERG indicated that they would be able to process the samples (they have processed marine mammal tissues before). George Guillen indicated that he is interested in looking at contaminants in apex predators to see if the contaminants are going up the food chain. Jan Culbertson stated that once we have a map of where the high concentrations are from NOAA, we will be able to formulate what we want to do next. Jan Culbertson will let Kristen McGovern and Lisa Marshall know as soon as the report is available. GERG already has the results, but can't release them until the report is published.

George Guillen stated that as far as contaminants in fish tissue in regard to human health, we are in a holding pattern waiting for DSHS and NOAA. The NOAA measurements of contaminants in oyster tissue has direct implications for human health.

Laura Jurgens asked if NOAA looked at microplastics since they can covary really strongly and suggested that it might be something we consider looking at in the future (whether microplastics are facilitating the concentrations of some of the contaminants). Christopher Marshall stated that he was recently at a meeting where people reporting finding very small particle sizes of microplastics in oysters. Marc Hanke indicated that he recently read a paper about the same thing. Laura Jurgens stated that the particle size determines whether the oyster can filter them out - if the particles are quite small, the oysters do retain them. There are a number of papers on oysters even being consumed with high concentrations of microplastics. Jan Culbertson indicated that she would like to see the papers. Laura Jurgens and Marc Hanke stated that they would send some relevant papers to Kristen McGovern for distribution to the subcommittee. Sarah Gossett stated that that type of study would relate to the waterway trash/ marine debris identified information gap on a microscale (two birds, one stone).

2. Waterway trash/ marine debris: The M&R subcommittee has not funded a study on this topic, but the WSQ subcommittee is funding an FY20 project: Occurrence of microplastics in tributaries to Galveston Bay.

Kristen McGovern asked if there are other information gaps that the subcommittee would like to consider regarding contaminants in water and sediments or waterway trash/ marine debris. Sarah Gossett stated that part of the waterway trash/ marine debris issue is macroplastics monitoring, in addition to microplastics monitoring. Although it has been discussed numerous times, it is still a data gap that exists.

Cynthia Clevenger asked if there are partners that would like to revisit the 1993 study on marine debris that was done for GBEP to see where we are at, since there is likely more plastic now than there was in 1993. George Guillen asked if that would include more than just plastic and agreed that it needed to be done periodically.

Lythia Metzmeier asked if there were set size ranges for macro- vs. microplastics and how you detect which is which. George Guillen asked who provides the standards. Christopher Marshall stated that it is in the literature, but depends on what types of microplastics are being studied (e.g., beads vs. fibers). Lythia Metzmeier asked if you could see them under a microscope or if you need electron microscopy to see them. Christopher Marshall indicated that electron microscopy was not required and that sizes were as small as tenths of millimeters. A subcommittee member indicated that laundry effluent, specially microplastics from polyester in particular, are

microscopic but not nanoparticles. George Guillen asked if they could be seen in a dissecting scope or if a compound scope would be required. Laura Jurgens indicated that nanoparticles do exist, but the cutoff for the definition of microplastics is much larger, but it is in the literature. Lisa Marshall stated that the microplastics project being funded by GBEP is using 5 mm as their cutoff.

Cynthia Clevenger indicated that we also don't have a handle on macroplastics and that is needed as well - a lot of partners here are trying to figure out how to measure that, since everyone is doing different things - there is a need to organize effort. George Guillen indicated that a standardized protocol should be developed. Sarah Gossett stated that through GBEP, they are creating a standardized monitoring protocol that they would implement through their citizen science program. As part of that, they would do some of the backend research on a regional level to determine what the best protocol for our region. The hope is that if it could be implemented effectively in GBF's citizen science program, it could be expanded across the region. Lythia Metzmeier indicated that Buffalo Bayou would be a good place to pick up a range of sizes from the trash booms.

Christopher Marshall stated that he has a master's student that is looking at microplastics in clupeid fishes; he will be doing some experimental work. TAMU has a fish collection going back to the 1950s, so they will start surveying the collection to see when things started to show up. There is a protocol for vertebrates (and maybe bivalves), where you can tag it with a fluorescent tracer and look for the presence or absence of microplastics. Laura Jurgens indicated that it was quantifiable using the visual intensity under the scope (need special equipment).

The other previously identified information gaps and needs were not discussed due to time constraints and will be discussed in the June meeting.

George Guillen mentioned that he thinks point source and nonpoint source variability (two of the other topics identified as information gaps) are big items that need to be revisited periodically.

**State of the Bay Symposium update:** Cynthia Clevenger indicated that although she doesn't think the bid went out yet, they are close to getting the venue space secured. The next step is to circle back around to people who volunteered to assist with the call for abstracts within the next few weeks. The number one choice for dates for the symposium are January 22-23, 2020 (Wednesday/Thursday), and depends on what venue space is available.

**GBEP, Council, and subcommittee updates:**

- **Natural Resource Uses:** TBD
- **Public Participation and Education:** TBD
- **Water and Sediment Quality:** March 7, 2019 1:30-3:30
- **Budget and Priorities:** TBD
- **Galveston Bay Council:** April 17, 2019 9:30-12:30

## **Old Business**

### **Announcements/Path Forward Items**

**Next M&R Meeting:** Kristen McGovern stated that many people will be at the GOMA meeting during the next scheduled M&R meeting. We would like to reschedule for June 4<sup>th</sup> or June 19<sup>th</sup> and will send out a Doodle poll.

Kristen McGovern announced that Texas A&M Agrilife is hosting a post-Harvey resilience workshop May 20-21 at the Galveston Island Convention Center and will send the details in an email.

Lisa Marshall announced that GBEP is going to TCEQ's Commissioner's agenda on March 27 to get approval for the Galveston Bay Plan and council member nominations. We are happy to have Christian Rines on board as the new WSQ coordinator, and our last vacancy has been filled and the person will be starting on March 18. GBEP will be fully staffed.

Sarah Gossett announced that Bay Day would be held May 18<sup>th</sup> at Kemah Boardwalk if anyone is interested in having a booth. She left some flyers.

George Guillen announced that Dr. Jessica Labonte, an assistant professor at TAMUG, would be speaking at UHCL on March 7 from 12:00-12:50 on *The Impact of Hurricane Harvey on Microbial Communities Inhabiting Galveston Bay*.

### **Adjourn**