

**Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Area Stakeholder Committee (GSA BBASC) meeting**

Friday, May 22, 2015; 10:30 am  
Victoria County Community Center; 2905 E North St.  
Victoria, TX 77901

**MEETING MINUTES**

**Members Present**

Suzanne Scott (Chair); Diane Wassenich (Vice-Chair); Bill Braden; Doris Cooksey; Milan Michalec; James Lee Murphy; Mike Peters; Jennifer Ellis; Jay Gray; Con Mims; James Dodson for Ken Dunton; Liz Smith for Chris Hale; Mike Mecke; Eddie Seidensticker for Mike Mecke; Jack Campbell; Tommy Hill for James Murphy; Jerry James; Steven Bereyso for Robert Puente; Thurman Clements; Julia Carillo for Roland Ruiz

**Public Comment**

No public comments were made at this time.

**Discussion and Agreement on Agenda**

A quorum was present at the meeting and all members agreed to accept the agenda as drafted.

**Approval of Meeting Minutes**

Members unanimously approved the November 21, 2013, April 11, 2014, and December 9, 2014, draft meeting minutes.

**Action Regarding the Chemical Manufacturing Group Vacancy on Stakeholder Committee**

Leslie Patterson, TCEQ, informed members that two nominations were received for the Chemical Manufacturing Interest Group vacancy, Brad Bredesen and Lance Thomasson. A short background on each nominee was provided to members. Members voted 10 to 8 affirming Mr. Thomasson as the new representative for Chemical Manufacturing.

**Discussion and Appropriation Action Regarding Soliciting Nominations for the Environmental Interests Vacancy on the Stakeholder Committee**

Chair Suzanne Scott informed members that BBASC member, Tyson Broad, representing Environmental Interest Groups had resigned. Members present supported soliciting nominations from stakeholders, science committee members, and other entities prior to the next BBASC meeting.

**Briefings and Presentations from Science Teams Awarded TWDB S.B. 3 Contracts**

- a) *Rangia* Clam Investigation in the Upper San Antonio Bay System – Marty Heaney, Bio-West and Dr. Bryan Black, University of Texas Marine Science Institute (UTMSI), in partnership with San Antonio River Authority (SARA), and National Wildlife Federation (NWF)

Mr. Heaney presented a summary of the status of *Rangia* clam investigations in the upper San Antonio Bay system. He stated that the goals of the project are to identify the location and extent of *Rangia* within the upper San Antonio Bay system as well as collect *Rangia* for subsequent growth increment analysis. A workshop held with stakeholders identified two locations, Mission Lake and the upper Guadalupe Bay, as likely to have *Rangia* beds. Side-scan sonar, bathymetry data, ground-truthing, and biological collections were used to conduct investigations in the two identified areas. Preliminary data analyses and field collections supported the presence of *Rangia* in Mission Lake and upper Guadalupe Bay, with 20 dredge tows out of 80 at all sites resulting in collection of 41 live *Rangia*. In addition, 59 sites sampled contained evidence of deceased *Rangia*.

Dr. Black provided members an update on the status of cross-dating *Rangia* growth ring chronologies. He demonstrated how growth rings can be correlated to climate parameters such as temperature and river discharge. At present, preliminary analyses are ongoing of living and deceased *Rangia* from the Trinity, Sabine, and Mission Rivers. From the limited data analyzed, no age specific differences between dead and live individuals from the Sabine watershed have been observed; however, in Mission Lake, dead specimens appear to have been much longer lived when compared to shells for collected live specimens. In addition, in an analysis of the shells of living specimens across basins, growth of *Rangia* appears correlated with river discharge such that lower flows equal slower growth. Dr. Black stated that in general wet and warm years equals stronger *Rangia* growth. Members inquired as to whether Dr. Black could determine at what point a dead *Rangia* died and if stitching of growth increments together would yield a more extensive chronology/climate history? Dr. Black informed members that while it is theoretically possible to overlay growth increments to make more comprehensive chronologies, using a short-lived species, such as *Rangia*, is problematic because it limits the ability to confidently overlap chronologies. He further explained that collection of longer-lived specimens or species would increase the robustness and reliability of cross-dating the growth increments. In addition, members asked whether additional areas will be searched and Dr. Black indicated that field investigations will continue further upriver, although time is limited. The next steps for the project team include finalizing the data analyses and submitting a draft report to TWDB with the final report due August 31, 2015.

- b) Guadalupe – San Antonio River Delta Measurements and Modeling of Flows University of Texas – Dr. Ben Hodges and Dr. Paola Passalacqua, Center for Research in Water Resources (UT-CRWR)
- Dr. Passalacqua provided an update to members concerning the status of hydrodynamic modeling of the Guadalupe Delta and Estuary system. The defined study area of the project is the region south of the Guadalupe, San Antonio River confluence to Mission Lake, more specifically the four bayous and HW 35 diversion canal within the Guadalupe Wildlife Management Area. Dr. Passalacqua identified the project's objectives as to produce inundation maps to identify channel connectivity in the system, use field work to identify potential flow

restrictions and install sensors, and analyze the system using Frehd modeling. To date she indicated that water feature classification and inundation maps have been completed as well as sensor deployment had commenced. Data retrieval is currently ongoing from the sensors, in addition to preparing bathymetry data for incorporation into the model. Dr. Hodges showed members a preliminary model run depicting how freshwater would flow through the system without the presence of the salt-water dam or other restrictions. He requested members provide feedback on the areas included in the model that could restrict water flow such as addition dams, barriers, etc. Members inquired whether the model included any information from the San Antonio River. Dr. Hodges indicated that the model looks at total flows at one USGS gaging station which reflects flow information below the confluence of the San Antonio and Guadalupe Rivers. He indicated the next steps for the project include retrieving the deployed sondes and additional model analysis, before submitting a draft report to TWDB. Post meeting, BBASC/BBEST members were invited to participate in a conference call to facilitate Dr. Hodges modeling efforts and provide feedback on modeling scenarios.

- c) Texas Instream Flow Program Studies – Dr. Tim Bonner, Texas State University (TSU) in partnership with San Antonio River Authority (SARA), BioWest, Baylor University, and Texas A&M University  
Dr. Bonner provided an overview of the funded Environmental Flows Validation study. The stated goals of the project are to enhance the understanding of flow-ecology relationships and develop a methodology for testing established flow standards, specifically high flow pulses. Dr. Bonner indicated twelve sites had been selected to analyze factors affecting aquatic and riparian communities, fish recruitment, and oxbow connectivity. He indicated that at least one sampling event had occurred for each of the 12 sites; however, the mussel component of the study had been postponed. Determination of relationships between flow tiers and aquatic and riparian species is ongoing, but preliminary analyses indicate some correlation with specific flow tiers. In addition, Dr. Bonner reported that 7 total floodplain lakes (5 on lower Guadalupe and 2 on lower San Antonio) had been sampled to evaluate oxbow connectivity and fish community composition. Current results show that per site species richness ranges for 2 to 32 species with the initial estimates of connection discharge range from 207 cfs to greater than 10,000 cfs. He further indicated that one additional sampling event is scheduled in early June. Lastly, Dr. Bonner informed members that the draft report is due to TWDB for review July 31, 2015, with the final report Due August 31, 2015. He also provided an outline of the team's report as specified in the TWDB contract.
- d) Assessing the effects of freshwater inflows and other key drivers on the population dynamics of blue crab and white shrimp using a multivariate time-series modeling framework – Dr. Lindsay Scheef, Mission - Aransas National Estuarine Research Reserve (MANERR), University of Texas – Marine Science Institute (UTMSI)  
Dr. Scheef presented on the status of the freshwater collaborative research project examining the population dynamics of blue crab and white shrimp. The deliverables of the project include

a comprehensive literature review and multivariate autoregressive (MAR) model. According to the study team's timeline, the literature review is in the final stages of review. In addition, preliminary results for both blue crab and white shrimp models are supportive of known predator-prey dynamics and environmental variables that have been shown to affect the abundance of each species (i.e. blue crab populations are significantly negatively correlated with major predator populations such as red drum, black drum, and spotted sea trout as well as temperature at a lag of 0 years; while white shrimp populations are negatively correlated with salinity at a time lag of 0 years). Dr. Scheef indicated that because the variables were significant at a time step of 0 years that portioning the datasets further, such as by seasons, could provide more insight into the drivers of abundance for each species. Dr. Scheeff stated the next steps of the project include evaluating shorter time increments and adding additional data sets. A draft report is due to TWDB in June for review, with the final report due out August 31, 2015.

e) Strategy options for meeting attainment frequencies for the estuaries – James Dodson, San Antonio Bay Partnership (SABP) and Truncale Engineering & Science (TES)

Mr. Dodson, informed members of the progress to date on development of affordable, viable strategies to better manage water resources during droughts and meet freshwater inflow attainment frequencies for estuaries. The project's approach is to identify voluntary strategy options to provide for estuary inflow needs and meet "Strategy Target Frequencies (STFs)" with a focus on the donation, purchase or lease of existing water right permit options and the use of Aquifer Storage and Recovery (ASR) to increase water available for environmental releases. He stated that a literature review on strategies had commenced as well as modeling and analysis of the volumes and timing of freshwater inflows needed to meet STFs. Preliminary modeling of the volumes and timings of freshwater inflows into the estuary suggests that supplemental supplies of 100,000 and 50,000 acre-feet in Spring and Summer, respectively could reduce or eliminate shortfalls to the goal STFs. Using the Region L WAM Baseline Run which includes effluent return flows Mr. Dobson evaluated the following three strategy options in the model: dedicated wastewater return flow, dry year option on irrigation water rights, and purchase/conversion of unused water rights which were all previously identified as strategies by the GSA BBASC. Mr. Dobson indicated that the final deliverables will include potential quantities of estuarine inflows necessary to achieve goal STFs and how those quantities can be generated by acquiring water rights and/or using ASR as well as cost estimates and steps to implement strategies. A draft report is due shortly to TWDB for review, with the final report due August 31, 2015. Members inquired as to whether joint projects between entities would affect strategy costs such as the Victoria 2018 project? Mr. Dobson indicated that joint projects would most likely lower the costs.

### **Next Steps / Future Environmental Flow Studies**

Suzanne Scott suggested that contractors present their results to the BBASC upon completion of the studies in August/September 2015. Stakeholders present were supportive of this suggestion.

Nolan Ralphelt, TWDB, informed members that TWDB is seeking volunteers from the BBASC and BBEST groups to review the work plan funded project reports and handed out a guidance document outlining the reviewing process. He also stated that the focus of the review would be limited to within the context of the original scope of work (SOW), comments are expected to be submitted as one consolidated document in electronic format, and reviewers will have approximately a two week window to complete their review of the studies. Following discussion, stakeholders were in agreement to request volunteers to serve on a subcommittee to review the draft reports. Volunteers include Liz Smith, Debbie Magin, Greg Eckhardt, Sam Vaughn, and Tim Bonner. Additional BBEST members not present will be polled to provide them an opportunity to volunteer to review. In addition, once the final reports are submitted they will be posted on the TCEQ SB3 GSA basin website as well as distributed to all members.

In addition, Brian Mast, SARA, informed members that the TWDB had requested \$2.0 million in legislative funding for the continued study of environmental flows and that no specific amounts were currently earmarked for any specific basins. He emphasized that the BBASC should consider moving forward with development of new SOWs for the next round of funding sooner rather than later.

### **Next Meeting Date, Time and Location**

Members were in agreement to hold the next meeting this coming September in either Seguin or San Antonio. A poll will be sent out to determine the next meeting date.

### **Agenda Items for Future Consideration**

- Action on Environmental Interest Vacancy
- SAWS Bed and Banks permit application and GBRA Reuse/Return Flows
- Membership Terms

### **Public Comment**

James Dodson announced that a stakeholder group will be meeting to discuss strategy options for meeting attainment frequencies for the estuaries Thursday, June 4, 2015 at 2:30 p.m. in Victoria, TX.

### **Meeting Adjourned**