Guadalupe, San Antonio, Mission, and Aransas River and Mission, Copano, Aransas, and San Antonio Bays and Basin and Bay Area Stakeholder Committee (GSA BBASC) Meeting

Wednesday, September 30, 2015; 10:00 a.m.
GBRA River Annex, Seguin, TX

Meeting Minutes

Members Present

Suzanne Scott, Chair; Dianne Wassenich, Vice-Chair; Julia Carrillo for Roland Ruiz; Roger Biggers for Paula DiFonzo; Lance Thomasson; James Dodson for Ken Dunton; Garrett Engelking; Jennifer Ellis; Chris Hale; Mike Mecke; Con Mims; Tommy Hill for James Murphy; Hope Wells for Robert Puente; Doris Cooksey; Milan Michalec; David Mauk

Public Comment

No public comments were made at this time.

Discussion and Agreement on Agenda

BBASC members were informed that Agenda Item IX concerning GBRA Region L Water Plan Reuse Projects and SAWS Bed and Banks Authorization had been requested to be postponed so that TCEQ Technical Specialist, Kathy Alexander and Ron Ellis, could attend. Members were in agreement to postpone the item to a future meeting date.

Approval of Meeting Minutes

The minutes from the May 22, 2015 meeting were approved by consensus.

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

Chair Suzanne Scott informed members that two nominees, Jace Tunnell and Ray Buck, had been received for consideration to represent Environmental Interests. Members discussed briefly each candidate's background and nominees were provided the opportunity to present their qualifications. Through majority vote, members confirmed Jace Tunnell as the new representative for the interest group.

Discussion and Appropriate Action Regarding filling the Municipality Vacancy on Stakeholder Committee

Chair Scott informed members that Jerry James, City of Victoria representing Municipal Interests had resigned from the GSA BBASC. Mr. James recommended Kate Garcia to replace him as representative for Municipal Interests. Members discussed whether to solicit additional nominations or vote to appoint Mrs. Garcia. Members voted to appoint Mrs. Garcia as the new Municipal representative to the GSA BBASC.

Briefings and Presentations from Science Teams Awarded TWDB SB3 Contracts

1) *Rangia* Clam Investigation in the Upper Guadalupe Bay System – SARA, UTMSI and Bio-West, inc.
    a) Rebecca Reaves, SARA, introduced the study team members. Marty Heaney, Bio-West, provided members information on the project's background, objectives, and methods. He informed members that analysis of samples from Mission Lake and upper Guadalupe Bay revealed that live *Rangia* collected primarily belonged to the same cohort (size class 55-59 mm), which indicated that little recruitment is occurring over the recent past for the species in these locations. Mathew Dzaugis, UTMSI, then presented the results of *Rangia* cross-dating to members. He indicated that samples were pooled across several bays (Mission Lake, Trinity Bay, and Sabine Lake) because of the recovery of few live specimens, which are required for cross-dating. Results of this portion of the study revealed that no differences were observed between the growth of live and dead individuals from the same location, but that significant differences were observed among bays. The study team stated that this was likely attributed to an increase in freshwater inputs as you move eastward across Texas. Further, while no correlations were observed for growth chronologies vs. temperature or inflow, a strong correlation was found between growth chronologies and salinity. Mr. Dzaugis stated that the salinity correlation might also have a lag effect on *Rangia* recruitment. Future suggested directions of study include using middens to compare historic growth with current growth, collecting longer lived individuals from fresher sources, and using trees chronologies to better evaluate freshwater inflows over extended time periods. Members inquired as to other factors that might explain the differences between sites, such as water chemistry, and if faster growth signifies a healthier organism or population. Mr. Dzaugis indicated that growth differences might be attributable to other environmental factors but additional work would be needed to evaluate this, and that faster growth does not necessarily relate to a healthier organism or population.
2) Guadalupe-San Antonio River Delta Measurement and Modeling of Flows – UT-CRWR
    a) Dr. Ben Hodges, UT-CRWR, provided members information on the project's background and objectives. He stated that the model presented did not include any gates or their operations as well as emphasized that future work is need to properly calibrate the model. He presented to members results demonstrating how the connectivity of the system might change based on flows. Dr. Hodges suggested that future work could consist of analyzing the collected field data, developing inundation maps at water surface elevations of interest to the BBASC, and the addition of gates and their operational criteria to the hydrodynamic model. Member inquired as whether the model will be made available to the public, and Dr. Hodges indicated that the model is open source, though experience and training are required to run the model correctly.

3) 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 – UTMSI

   a) Dr. Lindsay Scheef, UTMSI, presented the results of the MAR (multivariate autoregressive) models evaluating the drivers of blue crab and white shrimp abundance. For blue crabs, modeled results indicate negative associations between abundance and high water temperatures and predators as well as with high salinity but only at short time lags. Positive relationships were observed with high salinity and river discharge at longer time lags. For adult white shrimp, modeled results indicated a negative association of abundance with predators and higher salinity, but a positive relationship with higher water temperatures at all time lags and river discharge at only longer time lags. Lastly, abundance of juvenile white shrimp positively correlated with higher salinity and negatively associated with river discharge at longer time lags. Dr. Scheef recommended future work evaluate inter-bay effects, compare data across Texas estuaries, and evaluate different times scales or natural breaks in the data such as wet versus dry periods. Members inquired as to how the seasons or breaks in the data were defined currently, whether modeled equations are included in the final report, and whether the model will be available to the public. Dr. Scheef indicated that seasons or breaks in the data were based primarily on the life-history of the species, that the modeled equations were included in the final report, and that the model was open source and available to the public. Lastly, members inquired as to whether the model could be modified to predict species abundance responses to freshwater inflows to use in validating the standards. Dr. Scheef indicated that the model could be modified to compare to the freshwater inflow standards but additional modeling work would be required.

4) Strategy Options for Meeting Attainment Frequencies for the Estuaries – San Antonio Bay Partnership

   a) James Dodson, San Antonio Bay Partnership, and Joe Trungale, Trungale Engineering and Science, presented to members the study's methodology for determining shortfalls in freshwater inflow targets, and the strategies evaluated for addressing these shortfalls to estuaries. The study focused on the dedication of wastewater return flows, using new appropriations and dedication of existing permits, and Aquifer Storage and Recovery (ASR) to address the gap between freshwater inflow target frequencies and shortfalls. They outlined for members ASR implementation with an estimated total cost of $464,400,000. They suggested future investigations evaluate modeling the impact of freshwater inflows on salinity in bays as well as verifying some of the hydrogeologic assumptions with regard to potential aquifer recharge rates and water quality. BBASC members inquired as to how the stored water would be protected legally and costs of the next stages of the project to match funds from TWDB? Mr. Dodson and Mr. Trungale indicated that stored water would be protected through an accounting process and stated that the next stages of the project would need a couple $100,000 to match the funds from TWDB.

5) Texas Instream Flow Program Studies – SARA, Bio-West inc. Baylor University, Texas State University and Texas A&M University

   a) Ed Oborny, Bio-West, introduced the study team members and outlined the project's overall objectives and goals. Dr. Tim Bonner presented the results of the aquatic component of the study. He indicated that very few statistically significant relationships were observed between abundance of specialist fishes and discharge or flow tiers; however, he stated that though differences were not evident this could be attributable to time lags of sampling events, etc. and that more information is needed to evaluate these ecological relationships. Additionally, the significant relationships observed in the study showed that at higher flow tiers the number of slackwater fishes increased but the number of darters decreased.

      Mr. Oborny presented the study team's research on riparian responses to instream flows and the distributions correlated with environmental flow BBASC/BBEST recommendations and TCEQ standards. He explained that the study team evaluated compliance with the recommended or adopted flow tiers if flows inundated 80% or more of the indicator species distribution. Results showed that TCEQ flow standards met requirements for riparian species in some sampling locations, such as at Goliad, but not for others such as Blanco River at Wimberley. In addition, while a 1 per year pulse met most of the requirements for all indicator species, it was strongly emphasized that timing of this pulse was not evaluated in this study, and it would be important when assessing the pulses' benefit to riparian communities. Mr. Oborny then presented the study team's assessment of oxbow connectivity in the lower basin. The results presented demonstrated that oxbow habitats maintain different fish assemblages compared to that of rivers and lakes. In addition, most oxbows (6 out 7) evaluated in the study were found to be connected during high pulse events under the current TCEQ standards.

      Future directions of study team include a continuation of each project component (aquatics, riparian, etc.) and development of a standardized tiered statewide approach to validating the environmental flow standards. Mr. Oborny indicated that the approach would need to take into account multiple ecological components and reflect the BBASC's priorities in assessing the ecological health and integrity of their basin.

TWDB Funding and Next Steps/Future Environmental Flow Studies

Greg Eckhardt informed members that the review committee had provided comments to TWDB on the draft studies described above and their efforts were acknowledged by the group. Nolan Ralphelt and Carla Guthrie, TWDB, provided an overview of the Cycle II funding process. They informed the BBASC that the total amount of funding available for the continued study of environmental flows is $2 million for all basins. They indicated that at present five out of seven of the SB3 basins have expressed interest in the funds and that the $2 million would be evenly split among interested basins, resulting in approximately $285,000 - $400, 000 per basin. Additionally, Mrs. Guthrie informed the BBASC that the RFQ process can be bypassed by directly contracting with universities and federal/state agencies including river authorities, and that the deadline

to spend the full funding amount is August 31, 2017. In addition, members were informed that an addendum would need to be submitted for selected studies outside the scope of the original work plan. At present, TWDB recommended stakeholder groups identify priority projects and develop scopes of works to submit to TWDB for approval soon. As outlined below, members were provided with a tentative TWDB board meeting schedule and deadlines for submitting the SOWs to TWDB.

TWDB Board Meeting Date	Deadline to Submit Item
December 7, 2015	October 30, 2015
December 21, 2015	November 13, 2015

Members expressed interest in continuing the studies currently funded and inquired to the Board on whether this was a possibility? Mr. Ralphelt indicated that the BBASC group could have a limited call for proposals, but that they could not extend the current contracts which have already ended. Members were in agreement to form a work group to prioritize projects, develop scopes of work, and provide recommendations to the BBASC. The work group includes the following BBASC volunteers: Dianne Wassenich, Jennifer Ellis, Garrett Engelking, Jace Tunnell, Mike Peters (not attending) and non-BBASC volunteers: Cindy Loeffler, TWDB, Greg Eckhardt, Sam Vaugh, and Debbie Madgin. As during the previous funding cycle, members with potential conflicts of interest can participate in development of SOWs but will need to recuse themselves from voting. The work group tentatively scheduled to meet October 9, 2015. BBASC member, Tommy Hill, suggested the work group also evaluate whether other work plan studies might be more of a priority rather than continuing the studies funded previously.

Set next meeting Date, Time and Location
BBASC members indicated they would like to meet at the end of October to discuss the priority project recommendations of the work group.

Agenda Items for Future Consideration
GBRA Reuse and SAWS bed and banks project discussions were postponed to the next meeting.

Public Comment
No public comments were made at this time.

Adjourn