

**Colorado and Lavaca Rivers and Matagorda and Lavaca Bays  
Basin and Bay Area Stakeholder Committee (BBASC)**

Tuesday, March 28, 2017, at 10:00 a.m.  
LCRA Riverside Conference Center in Bastrop, TX

**MEETING MINUTES**

**Attending Members**

Patrick Brzozowski, Chair; Myron Hess, Vice-Chair; Caroline Runge, Jack Maloney; Jeff Fox for Teresa Lutes; Jennifer Walker; John Hoffman; Karen Bondy; Mike Rivet for David Hill; Steve Box for Andrew Sansom

**Call to Order**

Chair Patrick Brzozowski called the meeting to order.

**Public Comment**

No public comments were made at this time.

**Approval of Meeting Minutes**

Approval of previous minutes postponed to a future meeting date due to lack of quorum.

**Election of Officers**

Election of officers postponed to a future meeting date due to lack of quorum.

**Discussion of Vacancies**

Vice-Chair Myron Hess announced five current vacancies on the BBASC. Members were asked to submit nominations for stakeholder representatives for the following groups: industry-refining (1 vacancy); recreational water users (1 vacancy); soil and water conservation districts (1 vacancy); free range livestock (2 vacancies). Jade Rutledge, Texas Commission on Environmental Quality (TCEQ), will distribute a nomination form to members via email. Chair Brzozowski asked whether there are rules about nominees coming from a government agency. Vice-Chair Hess responded that he is not aware of any such rules as long as the nominee's workplace allows participation in the BBASC. Member Jennifer Walker stressed the importance of geographic diversity for members and having representation from throughout the Colorado and Lavaca Basins. Member Caroline Runge stated that more representation from the upper portion of the Colorado Basin would be beneficial. Members agreed to form a small committee to solicit nominations. Members Caroline Runge, Jennifer Walker, and Karen Bondy volunteered for this committee.

**Status Report on Special Study to Evaluate Rainfall-Runoff Trends in Upper Colorado River Basin**

Kirk Kennedy, Kennedy Resource Company, presented an update on the study to evaluate causes of decreasing streamflow in the upper Colorado River. The study area is focused upstream of the Highland Lakes and includes 13 USGS sites. This area experienced severe drought in past years, but average flows are lower than what would be predicted from drought conditions. The study uses USGS data (period of record 1940 to 2016) and will reconcile monthly naturalized flow with historical precipitation

amounts. The naturalized flow is an adjustment of observed flow to reflect historical uses. Naturalized flow is used for the TCEQ's Water Availability Model (WAM), although some water use activities are not included in the adjustment, such as exempt reservoirs.

Mr. Kennedy stated historical precipitation does not appear to be declining; rather, precipitation amounts tend to be steady or increasing slightly over the study period. Initial conclusions show that despite the precipitation trends, streamflows are decreasing, even with adjustments for water rights and major reservoirs. He further indicated that relating naturalized flow to precipitation indicates that the relationship between the two variables has changed over time, but there is no clear explanation for the cause. The study is continuing to investigate factors that may contribute to this trend including exempt reservoirs, groundwater uses, brush infestation, temperature, evaporation, and land use changes.

The study also examined data from the TCEQ's dam safety database to locate exempt reservoirs and dates of construction in a single test watershed (Brady Creek Watershed) in the Colorado Basin. Mr. Kennedy stated that exempt reservoirs, such as those for domestic and livestock use, are typically less than 200 acre feet, and are not allowed on navigable streams. The Colorado WAM model structure was used to assess the theoretical impact for known exempt reservoirs in the watershed. Based on groundwater data from the Texas Water Development Board (TWDB), initial analyses show mixed results on whether aquifer levels in the area are steady, increasing, or decreasing. Two brush control projects were initiated in the North Concho River and Thomas to Spence Watershed. These projects removed significant brush groundcover, but did not produce significant results. Mr. Kennedy also analyzed temperature information, including daily maximum and minimum temperatures, and trends showing that temperatures are increasing steadily in Austin and San Angelo. Preliminary results show evaporation trends are increasing over time. The study will continue to investigate land use associations with changes in water availability in the study area, including population increase and land fragmentation. The draft report for the project is due to TWDB June 30, 2017, with comments from reviewers due July 31, 2017. The final report is due August 31, 2017.

Member Steve Box asked how long it takes for organizations such as soil conservation districts to show that brush control projects are beneficial. Mr. Kennedy responded that he hasn't seen any quantifiable answer from those organizations and it varies depending on different reports. The projects investigated in the study did not produce meaningful results five years following brush removal.

### **Status Report on Special Study to Improve Groundwater/Surface Water Interaction in the Groundwater Management Area 12 Groundwater Availability Model**

Steve Young, INTERA, gave an update on the improvement of the simulation of groundwater and surface water interaction in the Colorado River basin. This project is a portion of a larger study funded by the TWDB to improve the groundwater model used

by the Groundwater Management Area 12 (GMA-12) groundwater conservation districts. The project area is in Bastrop County and focuses on the Carrizo-Wilcox aquifer's interaction with the Colorado River and its tributaries. The study includes a literature review and will produce a model representation with a refined grid structure of the data assimilated. This model refinement will allow for analysis of the relationship between streamflow in the Colorado River and its tributaries and aquifer levels.

As the study continues, INTERA plans to investigate possible benefits of using LCRA DROM as a tool for characterizing groundwater and surface water interaction and to develop a work plan to guide future field work. The schedule for the project is to submit a draft report in June 2017 and a final report in 2017.

Vice-Chair Hess asked for the timeline of the larger, TWDB-funded project. Mr. Young responded that the overall project would be finalized around February 2018, but a draft model would be available before then. Member Box asked whether outside groups could be involved with the calibration phase and use the draft model to develop comments. Mr. Young expressed that he is open to that, but the worry would be that a preliminary model would be released before being finalized. Cindy Ridgeway, TWDB, stated that the draft model would be available to the group when it is submitted for review.

### **Status Report on Special Study on Ecological Indicators and Habitat Characterization in Colorado and Lavaca River Basins**

Dr. Tim Bonner, Texas State University, and Brad Littrell, Bio-West, gave an update on the project to evaluate the adopted environmental flows standards and BBASC recommendations in the Colorado basin and across other basins using ecological indicators at a variety of flow levels. Currently, the team is developing a methodology to validate the standards to ensure they maintain a sound ecological environment. The project analyzes how various flow pulses are affecting the aquatic and riparian communities including responses in fish, invertebrates, and riparian tree species.

For the aquatic species, the study used five sites in the Colorado River Basin and a variety of flow tiers from the environmental flow standards and recommendations. The team sampled seasonally at base flow and following flow pulses. The fish species were sampled in four different habitats including riffle, run, pool, and backwater habitats. The team predicted that after a flow pulse occurs, the fluvial species would increase and the health of fish would also increase. The team has taken 95 samples so far for this study, including 31 species of fish and 16,000 macroinvertebrates. The team is attempting to develop methodologies from a range of flow tiers across different basins.

The riparian component of the study has two sites in the Colorado Basin and two sites in the Lavaca Basin. The team sampled in the fall of 2016 and will collect more samples this spring. Three tiers were established parallel to the river based on elevation and random sampling points were selected from each. At each sampling point, the team collected GIS data, identified tree species and maturity, took diameter at breast height (DBH), and noted the dominant herbaceous structure. While the sample teams were at the site, they mapped the river's edge and later correlated this data with inundation levels. After sampling, the team will compile data, perform an analysis, and prepare a

report. A draft report will be submitted in later summer 2017. The final product of the study will be a validation methodology tool for the groups to use.

Vice-Chair Hess asked how long it would take to measure a response in the community following a flow pulse. Dr. Bonner responded that, depending on the variable, some responses could take up to two to three years while others can be observed fairly quickly for aquatic species. Member Box asked why the Colorado River hasn't had any subsistence sampling during this study period. Dr. Bonner stated that previous rounds of this study included sampling during subsistence flows while in drought, but this round of the study sampling was done at higher flows because they were available.

### **Status Report on Special Study on Variability of Sediment and Nutrient Loading into Matagorda Bay**

Mike Lee, USGS, presented an update on the data collection of nutrient and sediment data in the lower portion of the Colorado River Basin from Bay City to Matagorda Bay. A preliminary study in the lower reaches of the Colorado River indicated a potential predictive relationship for suspended sediment and nutrients using a surrogate model based on acoustic backscatter. A permanent index-velocity gage was installed and data is currently being collected to obtain a continuous record of suspended-sediment concentrations. Mr. Lee stated the device was installed at the USGS gage station 08162501 (Colorado River near Wadsworth, Texas) in September 2016. Currently, the team has about 12 discrete discharge measurements, but more measurements are required to capture a complete tidal cycle and a variety of hydrologic conditions. The team has done additional sampling for nutrient and physical properties to ground-truth the model in the lower basin four times since the gage installation. The next step for this project is to develop and calibrate the surrogate model with the data from the instrument in place. In the future, the public will be able to go online and see discharge and suspended sediment measurements on the National Real-Time Water Quality site (<https://nrtwq.usgs.gov/>).

Vice-Chair Hess asked when the gage will provide live data on the website. Mr. Lee responded that the timing depends on whether the team gets the necessary flows to calibrate the model. At this time, the team needs data from some moderately high flows, instead of the very high, flood-like flows that occurred during the last study period. Mr. Lee stated that he hopes to have the real-time data available by next fall. The USGS received cooperative dollars for a portion of the installation costs for the gage, so there is now more funding available for additional sampling events.

### **Consider Process for Submitting Comments on Draft Reports**

Vice-Chair Hess discussed the opportunity to submit comments on the draft reports from the study teams. During the last round of studies, a workgroup comprised of BBASC and BBEST members volunteered to comment on one or more reports. An email will be sent to solicit volunteers in the summer. Dr. Carla Guthrie, TWDB, mentioned that Dr. Nelun Fernando, TWDB, is the contract manager for the Kennedy Resource Company study and Ms. Cindy Ridgeway is the contract manager for the INTERA study.

For more information on the overarching project, Ms. Ridgeway suggested that a member of the BBASC contact TWDB to be on a mailing list to receive updates. Dr. Guthrie said to compile the reviewer list early so that TWDB will be ready to distribute the draft reports to the reviewers when they are submitted. Some study teams may not submit a draft report until closer to the August deadline, which would give reviewers a shorter window for review. During the last round of report submission, Vice-chair Hess compiled all comments from the review group and asked the review group to approve the combined comments. The comments were revised as necessary and submitted to TWDB. Chair Brzozowski and Member Box expressed interest in reviewing the draft reports.

### **Other Business and Discussion of Next Meeting**

Chair Brzozowski suggested the next BBASC meeting be held in October 2017. A Doodle Poll will be sent out for availability in summer 2017.

### **Public Comment**

Vice-Chair Hess initiated a conversation about the potential listing of four Texas mussel species as threatened or endangered by the United States Fish and Wildlife Service. The Texas Comptroller of Public Accounts has funding to conduct studies related to the listing process. The comptroller's office also examines whether measures can be taken at the state level to eliminate the need for listing. Staff from the comptroller's office has expressed an interest in presenting to the BBASC on this issue at the next meeting. The time period for a decision on listing of the mussels is September 2018. Vice-chair Hess also indicated a three-day workshop will be held in October 2017 for interested members to attend and there is a mailing list they can join. Ms. Rutledge indicated she will send out the mailing list information to the group.

Ms. Rutledge also gave an update on the Environmental Flows Advisory Group (EFAG). Senator Creighton and Senator Kolkhorst are two new members appointed to the EFAG. Chair Brzozowski asked which entity will initiate the next step for the SB3 adaptive management process. Vice-Chair Hess commented that it may be led by the TCEQ or the EFAG. The last two legislative sessions earmarked funding for continued studies and these studies are crucial for the adaptive management process. It is not known whether similar funding will be available again from the current legislative session.

### **Adjourned**