

**Brazos River and Associated Bay and Estuary System  
Basin and Bay Stakeholder Committee (BBASC)**

Thursday, October 19th, 2023 at 1:30 p.m.

Brazos River Authority Central Office located at 4600 Cobbs Drive, Waco, Texas  
and Virtual Meeting (Microsoft Teams)

**Minutes**

**Members Present:** Dale Spurgin, Chair; Tom Michel, Vice-Chair; Horace Grace; Dr. Ken Kramer; Glenn Lord; Eddie Saucedo; Bruce Bodson; Tiffany Malzahn, Ronald Woodruff; Ronald Kelling; David Stratta; Brandon Wade.

**Call to Order**

Chair Dale Spurgin called the meeting to order and member attendance was taken.

**Public comment**

There were no public comments made at this time.

**Approval of Meeting Minutes**

BBASC members unanimously approved the October 26, 2022 meeting minutes.

**Presentations on scientific studies**

a. Investigating Drivers of Streamflow in the Brazos River Basin – Dr. Yu Zhang

Dr. Zhang gave an overview of the study regarding drivers of streamflow in the Brazos River Basin. He discussed potential drivers for the downward trends in streamflow and runoff, including changes in precipitation and distribution, rising temperatures, and other factors. The study sought to determine relative roles of drivers through model simulations over 42 years (1979-2022). The study used six USGS stations with significant trends and an adequate record, with 5 stations with diminishing yield in the northern portion of the basin. He further discussed modeled trends versus observed trends. The model simulations were unable to reproduce the downward trends. The simulation produced positive trends at all six locations. He also covered the analysis of the National Water Model Output, which takes both precipitation and temperature as forcing variables in computing runoff. He also explained a land cover analysis which looked at increases in cultivated land over the last 20 years, specifically agricultural activities. He summarized by explaining that only a few USGS stations are trend significant; models are unable to reproduce the trends in runoff; experiments are still ongoing to determine impacts of temperature; and land cover analysis showed agricultural activities may be a big driver in trends.

b. Major findings and data products from analysis of the riverine estuary of the Brazos basin – Dr. George Guillen

Dr. Guillen gave an overview of the project to analyze the riverine estuary of the Brazos basin. He utilized historical data, as well as new data collected in 2018 and 2020. Water quality data, cross-sectional flow sediment data, nekton trawl, zooplankton, automated

monitoring, aerial and satellite photography, and turbidity were analyzed. The study sought to provide a data report covering the upper end of the tidal portion of the Brazos River to the Gulf. The study analyzed sediment transport and water quality for comparison to biota to determine the response. They identified focal species for different sites, tiers, and seasons. Drone imagery was used for wetland mapping of delta and topography. The delta is highly dynamic, as it's influenced by storms and high river flows leading to delta building and erosion events. The team collected preliminary suspended solids seasonally and in a variety of flows.

c. Assessment of how streamflow and groundwater elevation trends in the Brazos River Basin may affect surface water availability and attainment of environmental flow standards – Dr. Spencer Schnier

Dr. Schnier presented an overview of the study with the goal to quantify future changes in water availability to 2070. The steps of the study were preparing time series on various scales, such as seasonal and hydrologic conditions; analyzing time series for trends and creating adjustment factors; and extrapolating to predict 2070 streamflow. The team then inputted the data into the Texas Water Availability Model. They calculated adjustment factors for precipitation and gross evaporation based on trends in average temperature. Then, they adjusted the incremental flow and added upstream basin contributions for a projected total flow. The study also analyzed evaporation trends by converting temperature and precipitation into evaporation. They projected net evaporation for Possum Kingdom Lake. Predictions for reservoir firm yields and run-of-river availability in the upper basin decreased and predicted increased run-of-river availability in the lower basin. These projections could have water planning implications, with potential to expect decrease in supply, with a possible increase in the lower basin. Dr. Schnier emphasized that the study has limitations due to the uncertainty of trend slopes and is only one scenario. Furthermore, it is a snapshot of a trend and relies on historical data. The report for this study is available online. A follow-up study will be conducted by Dr. Zhang.

d. (1) surface water-groundwater interactions in the Brazos River Alluvial Aquifer and (2) sediment data collection at SB3 environmental flow standard sites in the Brazos basin – Dr. Mark Wentzel

Dr. Wentzel gave an overview of two studies in the basin. The first is the project to instrument existing Texas A&M Farm monitoring wells, which were installed in 1996 and have been intermittently monitored for various research projects. The project would look at surface water and groundwater interaction at varying distances from the river. The study found that the closest well is very connected to river activity, while others just a short distance away were less responsive to river fluctuations. In the future, Dr. Wentzel would like to pursue projects investigating the heterogeneity of the aquifer, such as using aerial electromagnetic surveys. This project would require additional funding.

The second project collected sediment data at ten sites in the basin over the last six to seven years. TWDB contracted with USGS to collect data. They collected suspended

sediment data, discharge, and flow, as well as channel slope and shape. They analyzed the size of sediment being moved and the size of sediment in the banks of the river. The study included a geomorphic overlay. Sediment data has been collected but has not been analyzed yet. The study aims to determine how much bed sediment is being moved and which sites have issues with incision, depending on changes in flow regime. Dr. Wentzel hopes to expand this project to all environmental flow sites statewide.

### **Announcement of vacancies**

Chair Spurgin informed members that there are 4 vacancies on the BBASC for the following stakeholder groups: free range livestock (1 vacancy), municipalities (1), environmental interests (1), and agricultural irrigation (1). Members discussed the two members that are out of contact with the group (Dan Loomis and Keith Pate) and the Chairs stated they would try to contact them.

### **Announcement of nominations**

Two nominations were received for the following stakeholder groups: Aubrey Spear for municipalities and Nick Dornak for Environmental Interests.

### **Action on nominations**

Through majority vote, members approved the nominees: Mr. Spear to represent Municipalities and Mr. Dornak to represent Environmental Interests.

### **Legislative Session Update**

Dr. Ken Kramer gave an update on the recent 88th legislative session. In February 2023, the Texas Water Caucus formed and grew from 38 to 73 members. The bipartisan group worked on funding for additional water projects. Members are holding educational forums in their districts. The session also saw major water legislation pass. Proposition 6 (originating from Senate Bill 28) for the Texas Water Fund will be voted on in a statewide election in November 2023, which would provide additional water funding. Senate Bill 1397 passed (the TCEQ Sunset bill). The bill included provisions involving the Senate Bill 3 process, specifically the Environmental Flows Advisory Group (EFAG). The EFAG was tasked with a periodic review of the standards, setting criteria for reviews, and developing a biennial statewide work plan. The TCEQ will submit a biennial report to the EFAG. Additionally, the bill removed the abolishment date for the Science Advisory Committee (SAC) and the EFAG. Dr. Kramer asked Dr. Kathy Alexander, TCEQ, to provide an update on the implementation of the requirements. Dr. Alexander stated that the first biennial report is due at the end of 2023, which will include the progress made over the biennium implementing the environmental flow standards, consider activities provided by the TWDB and TPWD, and recommendations for the EFAG work plan.

Dr. Kramer also gave a brief update on the revised publication *Freshwater Inflows to Texas Bays and Estuaries*. The project should be published in January 2024. A Spring 2024 meeting is planned to present the updated publication. A table of contents will be distributed to the group.

### **Financial Report**

Chair Spurgin stated that the Brazos BBASC has funds in the amount of \$18,036.98 held at the West Central Texas Council of Governments (WCTCOG) in Abilene, which has remained unchanged from the previous meeting. Dr. Kramer asked whether funds could be used for BBEST travel expenses. Chair Spurgin stated that the way funds are spent is at the discretion of the BBASC. Ms. Malzahn mentioned that some entities with BBEST members on staff would contribute staff time and travel.

### **Texas Water Development Board Update**

Dr. Carla Guthrie, TWDB, gave an update on the TWDB biennial report, which was recently submitted to TCEQ. A recommendation made in the report was to consider staggering activities among basins. The report included a summary of activities over the last biennium and compiled a bibliography of studies since 2013. In Fall 2023, TWDB posted a solicitation of project ideas over a range of water resource subjects and received 43 submissions that are currently under review. The next step will be to develop scopes of work and look for contracts. TWDB is always open to receiving project ideas anytime because additional funding could become available in the future. Chair Spurgin asked about the status of BBEST funding. Dr. Guthrie responded that TWDB doesn't currently have a mechanism to fund BBEST travel and activities.

### **Other Items**

None.

### **Next Meeting Date and Future Agenda Items**

Chair Spurgin discussed that the BBASC will have a set quarterly meeting time to create more continuity in meetings going forward. The poll favored the second Thursday of the month. The next meeting was established as January 11, 2024 at 10 am. Chair Spurgin suggested future meeting agenda items could include an educational component on the SB 3 process, studies, and original recommendations. Dr. Kramer also suggested checking the status of BBEST members and identifying potential vacancies. Vice-Chair Michel also suggested past study teams could identify potential follow-up studies.

### **Public comment**

There were no public comments made at this time.

### **Adjourn**