

**Nueces River and Corpus Christi and Baffin Bays  
Basin and Bay Expert Science Team (BBEST)**

Friday, May 20, 2011 at 1:00 p.m.  
Hixon Ranch near Cotulla, Texas

**MINUTES**

**Members Present:** Sam Vaugh, Chair; Rocky Freund, Vice Chair; Jace Tunnell; Tom Arsuffi; Ryan Smith; David Buzan

**3) Call to Order, Introductions, and Public Comment**

Chairman Sam Vaugh called the meeting to order. There was no public comment at this time.

**4) Approval of Minutes from April 29, 1011 Meeting**

Consideration of the minutes for the April 29, 2011 meetings was deferred to the June 24, 2011 meeting.

**5) Science Advisory Committee (SAC) Report (Opdyke)**

Dr. Dan Opdyke, TPWD, reported on the SAC meeting held May 11, 2011. SAC member Dr. Paul Montagna updated the SAC on the activities of the Nueces BBEST and how the BBEST was leaning toward an unsound ecological environment. Todd Chenoweth, TCEQ, discussed the rules adopted for the Sabine/Neches and Trinity/San Jacinto Basins and gave an overview of the rule process. Mr. Chenoweth urged the remaining groups to strive for a consensus on recommendations. Dr. Opdyke discussed the geomorphology presentation organized by the TWDB and the need for guidance from SAC on the use of geomorphology in their review.

**6) Basin and Bay Area Stakeholders Committee (BBASC) Report (Vaugh)**

Chairman Vaugh gave a brief update on the BBASC and noted the group had not met since the last meeting. BBASC member Ray Allen would like a discussion with the BBEST on the SB3 process and how recommendations would be implemented. The next meeting of the BBASC is scheduled for July 20, 2011 in Uvalde.

**7) BBEST Budget Status (TWDB, Vaugh)**

Chairman Vaugh distributed a copy of the latest budget information. Members can charge a maximum of 5 hours per BBEST meeting and 2 hours per subcommittee meeting. He noted there were no new sources of funding. However, BBASC member Mr. Ray Allen did mention that CBBEP may possibly provide some funding for the report production. Chairman Vaugh discussed the contract to analyze flow – habitat relationships.

### **8) Recommendations Report Assignments & Schedule (Vaugh)**

Chairman Vaugh discussed the revisions made to the report assignments. Members were reminded of the FTP site where draft section reports should be posted for peer review.

### **9) Estuary Work Elements and Issues (Vaugh)**

BBEST member Jace Tunnell gave an update on the activity of the Estuary subcommittee and the status of the two contracts granted based on “pass through” SAC funding. Mr. Tunnell reported that Dr. Paul Montagna is monitoring the historical review of the Nueces Bay and will look at the Texas Oyster Commission files to determine what the Nueces Bay looked like in the past. This information will be a major factor in determining if the bay is representative of a sound ecological environment.

Member Greg Stunz is looking at finfish and salinity requirements to determine a connection between biology and freshwater inflows using the “Boosted Tree Regression Analysis”, and will present an update on his analyses at the July 8, 2011 meeting. He mentioned the data collected in the delta by the Center for Coastal Studies and efforts to access that data. He discussed the decision to separate Corpus Christi Bay and Nueces Bay into separate sections. He said Ben Hodges and Greg Stunz will address the lack of freshwater inflow from the Nueces River to Corpus Christi Bay in the report to explain why further study of the bay was not done. Chairman Vaugh urged members to stress science-based logic to support decisions in the report. Mr. Tunnell mentioned that the salinity gradient methodology will be used for the Nueces Bay with an additional focus on marshland vegetation.

Mr. Tunnell discussed the freshwater inflow regime matrix and noted that the subcommittee is reconsidering how to define the seasons. Member David Buzan raised some concern regarding future comparison of estuary and freshwater instream flow recommendations if the seasons are defined differently.

Mr. Tunnell reported the drought criteria methodology is basically the history of drought management in Lake Corpus Christi and Choke Canyon. He added that the draft report section on focal species is nearly complete.

#### **Key Action Items:**

- Regression analysis update by Dr. Stunz at July meeting

### **10) Instream Work Elements and Issues (Buzan)**

#### **Flow-Habitat Relationships, Presentation & Status (Trungale):**

Joe Trungale, Trungale Engineering and Science, reported that the instream subcommittee is developing relationships between habitat and flow using habitat modeling for riverine work. He presented background on the model, data needed

(velocity, depth, and substrate), and areas of uncertainty. He presented a progress report on data collection performed under contract with the BBEST and the preliminary results from the habitat modeling completed for the two upper sites (Nueces at Laguna and Frio at Concan) of the six sites identified in the instream scope of work. He was asked to include in his report a table on the hierarchal taxonomy regarding habitat structure. He suggested a future discussion on how mesohabitats are defined and the targets and goals set for each. He added that the measurement sites have been marked so that, if any additional data is needed, the sites can be easily located.

Mr. Trungale stated that once the data is modeled and the curves generated, they can be used to evaluate the HEFR estimates, generate a habitat time series by creating time series from the flow data and applying the flow time series to the curves, or finding correlations between durations of periods of poor to no habitat and seasons. He recommended applying the curves in an historical context since the species present have evolved during those conditions. Members discussed how to use this tool in their evaluation, applying the HEFR methodology, what data is missing, and what future studies will be recommended.

In response to SAC comments, Chairman Vaugh talked about the need to demonstrate that something different has been done to HEFR based on sound reasoning, and that decisions on what adjustments to make need to be made within the next two weeks to allow Mr. Trungale time to complete multiple iterations. Members discussed decisions based on the following questions:

- Selections should (not) be based solely on maximizing diversity;
- Adjustments that result in a move in the direction to increase habitat area for guilds are (not) acceptable;

Members discussed the period of record and potential shifts in the period of record based on shifts in the hydrologic data and biological overlay information.

BBEST member Ryan Smith will schedule a meeting of the instream flow subcommittee, Joe Trungale, TPWD staff, and other BBEST members within the next two weeks to determine focal species, habitat suitability curves, and review data. The subcommittee will also evaluate approaches and methodologies and present their recommendations to the BBEST for consideration and approval at the next meeting.

Members agreed to direct Mr. Trungale and TPWD river studies staff to collect data at the Three Rivers site next week, and provide an appropriate number of cross sections. Chairman Vaugh reiterated that the City will need to be notified more than ten hours in advance to make timely releases from Choke Canyon Reservoir.

Chairman Vaughn summarized the status of the different elements:

- Water Quality: Chairman Vaughn will make additional assignments at the next meeting;
- Geomorphology: Nolan Raphelt (TWDB) will work with the sites identified. Members decided to prioritize sites to focus on the Nueces River at Laguna, Cotulla, and Three Rivers. The site at the Frio River at Concan was pulled from consideration in this effort.
- Riparian Vegetation: David Hoeinghaus and his group are progressing on this section and will report at the June meeting;

Members discussed the three locations chosen for geomorphology and example project analyses. Chairman Vaughn noted that the BBASC would likely prefer that the BBEST not simulate projects in the Regional plans. Members agreed to work with Three Rivers (before and after Choke Canyon Reservoir), Cotulla (Cotulla Reservoir project studied, but not recommended, in a regional plan), and Laguna (run-of-river diversion with off-channel storage). The site at Laguna was substituted for Uvalde because of the availability of biology data. At Laguna, a run of the river with off-channel storage will be evaluated. Members decided to evaluate a large reservoir at Cotulla.

### **11) Hydrology Work Elements and Issues (Vaughn)**

Dr. Dan Opdyke distributed a handout and discussed what ecological flows would be appropriate for intermittent streams. He discussed his analysis and presented the findings to the group. Members discussed how to address intermittent streams in the recommendations. Dr. Opdyke will provide his slide presentation and thoughts on intermittent streams to the group via email.

Members discussed introducing an intermediate pulse. BBEST member Ryan Smith will prepare an example of this showing how it could be implemented for the groups' consideration.

Chairman Vaughn mentioned the concept of hydrologic conditions with respect to the three distinct areas in the basin. Since members do not presently favor a recommendation of a one tier base flow, the group will need to discuss and define hydrologic conditions. On the estuary side, he reported that TWDB staff is taking the data provided by BBEST member Rocky Freund and working through diversions and returns.

### **Future Activities and Deliverables:**

- Flow regime structure at intermittent sites
- Method(s) for assessment of hydrologic conditions

- Development of time series data to support geomorphology analyses and flow regime recommendations

## **12) Future Meetings**

The next BBEST meeting will be held on June 24, 2011 in Austin. Future meetings are tentatively scheduled for: July 8<sup>th</sup> in Corpus Christi, July 29<sup>th</sup>, and August 19<sup>th</sup>.

## **13) Public Comment and Adjourn**

There was no public comment at this time.