

**Brazos River and Associated Bay and Estuary System Basin and  
Bay Expert Science Team (BBEST) Meeting  
Wednesday, September 21, 2011 at 10:00 am  
Brazos Center, College Station, Texas**

**Minutes**

[All BBEST members except Dan Gise were in attendance.]

**1) Public Input**

None.

**2) Approval of Minutes**

Minutes from the August 16, 2011 meeting were approved without changes.

**3) Budget**

Tom Gooch said that TWDB has approved funds for the next biennium. The BBEST amount for FY 2012 is \$87,977. Tom requested that BBEST members be sure and turn in any FY 2011 statements for reimbursement as soon as possible. Mark Wentzel (TWDB) gave an update on the report-writing contract saying that they're working with TWRI on the overhead costs. The work start date is not an issue since the contract monies have been carried over to FY 2012. The group started to discuss how to allocate the FY 2012 funds but decided to wait until later in the meeting to come to a decision. The BBEST revisited this topic after the discussion of the timeline. A motion was passed on a preliminary apportionment between additional meetings (six meetings for \$37,800) and work done outside meetings (\$50,177). Tom said that he will send the budget allocations to Ruben Solis (TWDB) so that reimbursement requests can be processed.

**4) Discussion of Timeline**

Kirk Winemiller reviewed the "Updated Outline 9/21/2011" and the "Schedule of Deliverables" handouts (posted to website) with the group. He pointed out some of the goals of the meeting as being to achieve consensus environmental flow recommendations and to refine the outline for the final BBEST report. Tim Bonner said that the group could not arrive at final flow recommendations until Dan Opdyke (TPWD) has had a chance to respond to Phil Price's pulse flow analyses. Tom said that he would contact Dan to see when he's available to present any comments, preferably before the next BBEST meeting. It was later determined that Dan was available the week of October 3<sup>rd</sup>, so the BBEST decided to have a conference call sometime during that week.

The group next discussed the preliminary "Table of Contents" handout, which was based in large part on the Guadalupe-San Antonio BBEST Report table of contents. Members discussed various ways to organize the report contents. Kirk volunteered to revise the table of contents based on the discussion and distribute to the BBEST for comments. He also offered to suggest preliminary member assignments for the write-up of each report section. George Guillen mentioned the high points of the freshwater inflow-

related sections where the instream flow recommendations from the most downstream gage (i.e., Richmond) would be the default recommendation for inflows, and that there would be several recommendations for adaptive management to help address the lack of information and resources. George also said that he would like to see the Richmond daily flows rolled up into monthly volumes, with the local coastal watershed contributions added (from TWDB), to make comparisons among historical, with-recommendations, and with-project inflow scenarios.

## **5) Ecology Subcommittee Discussions**

### **a. Monitoring under current drought conditions**

Tim Osting with Espey Consultants gave a presentation (posted to website) concerning water quality evaluations on the Brazos River for the SB 2 instream flow program. He first gave an overview of the water quality goals or criteria for various parameters, with dissolved oxygen (DO) and temperature being of greatest interest. He showed plots of DO and temperature data from the TCEQ database for a Brazos River station near Waco as well as longitudinal plots of DO data for a set of stations over a range of flow conditions. In summary, Tim said that the DO and temperature goals were for the most part being met at the sites in the mid-to-lower Brazos River, even during low-flow and high temperature conditions, though temperatures would occasionally exceed 35° C for short durations.

Ed Oborny with Bio-West continued the presentation with preliminary results of field sampling at five sites in the Little River sub-basin. The sampling is associated with BRA's draft systems operation permit and water management plan, the latter of which prescribes monitoring at eight sites (water quality protection points) in the Brazos Basin. The five sites in the Little River watershed are the Leon River near Belton, Leon River near Gatesville, Lampasas River near Belton, North Fork San Gabriel River near Georgetown, and San Gabriel River near Laneport. The sites were sampled between July and September 2011 during an extremely hot and dry summer. Ed displayed the 7Q2 and Q95 values for each of the sites, as well as the measured flow at the time of sampling. The Leon River near Belton wasn't sampled because of releases from Lake Belton. Flows at two of the sites were below Q95. A diversity of fish species were sampled from a variety of habitats at three of the four sites visited. Fewer fish species were collected at the North Fork San Gabriel River site due to the presence of uniform habitat (shallow bedrock runs). Live or recently dead mussels were observed only at the Leon River near Gatesville site, which had at least five different species. Overall, Ed said that the fish communities appear to be doing fine at these low-flow conditions due at least in part to the availability of different habitat types. The group discussed the concept of when a system is in a subsistence condition and how much buffer to allow around that condition.

Tim Osting displayed results of an analysis of how best to break down seasons within a year. While the BBEST analysis primarily looked at flow and water temperature, Tim's analysis also incorporated other data types such as riparian information. Tim said that he arrived at seasonal delineations that were very similar to those derived by the BBEST.

Conversation shifted to a discussion of how best to incorporate scientific literature and analyses into the final BBEST report in order to sufficiently demonstrate a science-based approach yet not overwhelm the reader with excessive technical detail. Members agreed that the “meat and potatoes” of analyses and data would go into appendices. Literature would be cited and referenced but not reproduced in the report. The important points of the literature, data, and analyses would be distilled into the main body of the report. Those points would be further summarized in the executive summary. SAC members Paul Jensen and Ed Oborny added that the BBEST recommendations need to be fully documented and to include anything showing direct linkage between flow and ecology.

#### **b. Update on endangered fishes in upper basin**

Tim Bonner discussed the recent TPWD effort to protect the sharpnose and small-eye shiners from effects of the drought. He said that approximately 1400 individuals of each species were collected from the upper Brazos River above Possum Kingdom Reservoir and taken to the TPWD’s Possum Kingdom Fish Hatchery. The purpose for collecting the minnows is that, in case the upper Brazos River goes dry, the species can be reintroduced once favorable conditions return.

#### **c. Other topics**

No other ecology subcommittee discussions took place.

### **6) Hydrology Committee Discussions**

#### **a. Palmer Hydrologic Drought Index analysis update**

Phil Price discussed his most recent analyses of the Palmer Hydrologic Drought Index. He calculated an index value for each gage site weighted for the upstream watershed for each gage, and then compared those values to the full-basin values. For simplicity’s sake, Phil advocated for the use of the basin-wide values. David Dunn said that when the basin-wide Palmer indicates a wet condition, there still could be pockets of dry conditions within the basin, which could adversely affect reservoirs. Members discussed whether to switch to reservoir storage as a hydrologic condition indicator in those instances, to adapt the index to nearby weather stations, or just to put off those analyses until the adaptive management phase of the process. Phil said that for now, the watershed-based index values should be used.

#### **b. Adjusted pulse peak analysis update**

Phil reviewed the pulse peak frequency issue that was discussed at the last BBEST meeting. He showed the group an example at the Richmond gage of what pulse magnitude truly occurs at least once a year, where additional occurrences of pulses of that magnitude are not counted in the averaging. Members discussed the potential implications of this approach. Tim reiterated the need to have Dan Opdyke give his perspective on this issue to the group. Phil also showed frequency examples of meeting the magnitude and duration or magnitude and volume. The BBEST discussed whether the frequency or the magnitude of the pulse is the more important characteristic. Mark Wentzel said that the actual frequency depends on how you implement the pulse recommendation. John Botros (TPWD) posed the question of whether the smaller magnitudes would still satisfy the geomorphological needs of the

system. Phil said that he's not against the higher pulse magnitudes out of HEFR, as long as the accompanying statistics are accurately depicted. In either case, having no memory from year-to-year is key to achieving the expected frequency over time. Members preliminarily agreed to the HEFR pulse magnitudes, but there was still question about how the accounting of the volume and duration happens (start at beginning of pulse or when magnitude is reached), and whether implementation needs to differentiate between project types (reservoirs vs. run-of-river diversions). Phil agreed to run the two different accounting scenarios using pulse flow examples from an upper basin and a lower basin site to help BBEST members make a decision. It was decided that this could be handled by e-mail before the next meeting.

### **c. Other topics**

Tiffany Morgan asked for ideas on additional riparian documentation, saying that she hasn't found much information to date. John Botros recommended contacting Tom Hayes.

### **7) Other Business**

Tim Bonner stressed the importance of leaving some time near the end of the process to review the draft report, prior to finalization.

Nolan Raphelt said that the sediment samples haven't been collected yet, but will be soon.

Phil agreed to follow up with Dan Opdyke to see if a conference call is still needed for the week of October 3<sup>rd</sup>.

The next BBEST meeting was scheduled for October 26 at BRA in Waco.

Kirk reminded everyone of the upcoming Nov 1 – Dec 15 window on the schedule of deliverables for submitting draft sections of the report to TWRI. He said there should be an opportunity between Jan 13-27 to make changes.

### **8) Public Input**

None.