

Brazos River and Associated Bay and Estuary System Basin and Bay Expert Science Team (BBEST) Meeting

Monday, May 23, 2011 at 10:00 a.m.

Freese Nichols, Inc. Offices

Austin, Texas

Meeting Minutes

1) Public Input

None.

2) Approval of Minutes

Tim Bonner noted that his name was absent from the hydrology subcommittee and should be added. With this change, the BBEST approved the May 23, 2011 meeting minutes.

3) Approval of Budget

The BBEST reviewed a preliminary budget for the remainder of the state 2011 fiscal year (ending August 31st). The number of planned meetings was adjusted from 10 to 6. All the members approved the budget as amended. Tom Gooch will e-mail the revised budget to everyone.

4) Approval of Timeline

Kirk Winemiller gave an overview of his preliminary "Timeline of Steps for Environmental Flows Assessment by the Brazos BBEST", which lays out a schedule of the major tasks to be accomplished by the BBEST in developing environmental flow recommendations. Though not explicitly mentioned in the draft timeline, Kirk said there may be a need to have 2-3 meetings after August, when BBEST funds are no longer available, in order to ensure that the final report comes together to everyone's satisfaction. He stressed that the timeline is a living document and can be changed as needed. All members were comfortable with moving forward with the timeline as written.

5) Geographic Scope of Study

Tom stated that the geographic scope of the BBEST efforts is the Brazos River, San Bernard, and Austin Bayou basins. The group agreed to add the San Bernard River near Boling to the list of gages to be evaluated. Members discussed the Austin Bayou and Oyster Creek watersheds and decided that additional information is needed to help the BBEST determine what level of evaluation can be done. Tiffany Morgan agreed to check with Houston-Galveston Area Council regarding the Watershed Protection Plans that cover some of these smaller, coastal streams. David Dunn will look into what he can find out on Austin Bayou and Oyster Creek. He also agreed to compile water rights information within these smaller watersheds.

6) Hydrology Subcommittee Discussions

The group revisited the preliminary list of gages that were chosen at the previous meeting to evaluate for flow recommendations and discussed whether any modifications (additions, deletions, or substitutions) to the list are needed. BBEST members were presented with a list of all USGS gages in the Brazos basin as well as other information regarding existing reservoirs and select gage-specific daily, monthly, and annual flow statistics. Philip Price agreed to prepare a graph of total reservoir conservation storage and flood storage in the basin over time. The group also considered additional information such as water quality analyses, mussel studies, vegetation, threatened and endangered

species, ecologically significant stream segments, aquifers, etc. Tiffany Morgan previewed some preliminary water quality analyses with data she has gathered thus far.

Dan Opdyke (TPWD) gave a PowerPoint presentation to the group demonstrating a period of record analysis for 4 separate gages in the basin (Salt Fork Brazos nr. Aspermont, Brazos River nr. Glen Rose, Little River nr. Cameron, and Brazos River nr. Hempstead). He provided examples of how early and late periods of record could be looked at to assess potential long-term changes in hydrology and how that might inform the group's decision on period of records to use. Tom stated that he would like for the list of gages to be settled first, then the hydro subcommittee would analyze each gage and make recommendations on period of record for the entire BBEST to evaluate. Philip said he would put together information regarding changes in hydrology in the basin over time (e.g., initiation and cessation of hydropower releases from Possum Kingdom Reservoir).

Dan next gave a presentation on hydrographic separation techniques, giving examples of five example approaches (2 IHA runs, 2 MBFIT runs, and 1 "bright line" run) for two different gages (Aspermont and Hempstead). In assigning daily flow data into one of the four flow components, he stressed that the ecological function provided, and not the source of the water, is the focus. Dan said that the BBEST would need to compare methods and decide on what they think works best. He offered to be a resource as the BBEST evaluates their approach. Tom said that he would prepare some initial thoughts on hydrographic separation and send them to the group for feedback.

The group next discussed how they would define seasons. Examples were given regarding how previous BBESTs determined seasons for their flow recommendations. Members discussed possible criteria with which to assign seasons. Kirk said that photoperiod, temperature, and flow are common cues for fish in the temperate zone. Tom asked everyone to give it some thought so that a decision can be made at the next meeting. Philip and Tiffany agreed to put together some ideas for the group to consider.

The BBEST came back to the task of finalizing their preliminary gage list. Regarding the Clear Fork Brazos River gages at Ft. Griffin and Nugent, the group decided to use both gages. In discussing the upper Brazos River gage sites, the BBEST agreed on removing the Dennis gage and adding the gage near Palo Pinto. The North Bosque River nr. Clifton was substituted for the Valley Mills gage. The Brazos River nr. Highbank was replaced with the Waco gage. The group maintained the Lampasas River nr. Kempner gage, but Tom said he would evaluate extending the period of record based on the Youngsport gage. On the Brazos River nr. Bryan gage, David will look into extending the record. The San Bernard River nr. Boling will be added to the list. For gages on the revised list, Philip, Tom, and David agreed to give preliminary recommendations on period of record. David will cover basin gages at South Bend and upstream; Tom will cover the Glen Rose, Palo Pinto, Clifton, Kempner, Gatesville, Cameron, and Little River gages; and Philip will handle all Brazos mainstem gages from Waco downstream, as well as the Easterly gage.

7) Ecology Subcommittee Discussions

The BBEST engaged in a discussion of the concept of a sound ecological environment. Kirk said that it is key to maintain the native biota, the habitats that sustain them, and the cues they need to complete their life cycles. Instead of talking in terms of optima, he advocated a focal taxa approach that covers a broad range of organismal lifestyles. Based on the amount of data available, he suggested the use of fish and possibly riparian vegetation. As far as the flow components that biological information could help determine, he said that in the lower basin, high flow pulses could be determined at flow levels where water enters oxbows.

For base flows, an instream habitat/PHABSIM approach could be done, but there's limited existing habitat data. Joe Trungale described the rapid approach employed by the Colorado-Lavaca BBEST and the more detailed approach being used by the Nueces BBEST. The groups discussed the pros and cons of such approaches. Kirk also mentioned that biotic integrity could be another way to go about it. Biological data that's been collected can inform the ecological soundness determination and can assist with focal species determination. George Guillen said that there may not be enough information on the estuarine component to facilitate a quantitative analysis, but at the least, there should be a narrative description of the system and the existing data gaps. Tim volunteered to check with TPWD about whether there is any habitat data from the basin.

The group discussed whether or not to commission any data collection efforts. Kirk expressed that flow-sensitive focal species can be selected, and then searches of the literature can be done to gather any flow-specific information that may be available. That information can then be used to run iterations of HEFR. The results would be evaluated based on expert opinion. For geomorphic analyses, Nolan Raphelt (TWDB) said he would need locations and the baseline and future conditions. Dan said that the steps would involve coming up with a set of implementation rules, a flow matrix to plug into FRAT, and a water development project for evaluation. Nolan would then evaluate the amount of sediment moved in the with and without project condition. Seven gages were selected for the geomorphic analysis: Ft. Griffin, Richmond, South Bend, Cameron, Easterly, Waco, and Seymour.

The BBEST discussed the possibility of contracting out the literature review. The work would entail generating PDFs of each article and a synthesis of the content. The group approved \$3500 to go toward a literature review contract with TAMU. Kirk, Tim, and Jack Davis will work on coming up with appropriate focal species.

8) Other Business

The date for the next meeting is June 13 from 10-6 in College Station. The following meeting will be on July 19 at BRA in Waco. The group went over assigned work tasks. Tom encouraged everyone as much as possible to try and write up work products with a mind toward eventual incorporation into the final report. The following assignments were made:

- David will work with Nolan on scope of sediment analyses
- Jack will compile fish data for focal species determination
- Kirk will work on identifying riparian focal species
- George will draft summary of estuary condition and issues
- Tom will send list of tasks and agenda for next meeting out to everyone
- Dan will send his PowerPoint presentations to the group
- Tom will send out initial thoughts on HEFR parameterization
- Tiffany will offer input on subsistence flows