

**Brazos River and Associated Bay and Estuary System Basin and
Bay Expert Science Team (BBEST) Meeting
Wednesday, October 26, 2011 at 10:00 am
Brazos River Authority, Waco, Texas**

Minutes

[All BBEST members except Tim Bonner were in attendance.]

1) Public Input

Tiffany Morgan relayed e-mail comments from one of the BBASC recreational users member replacements, Dan Loomis (Lake Granbury resident and fishing guide). He encouraged the use of real-time data and the consideration of the USGS gages near Glen Rose and Graford. He also said there's been a drastic change in the ecology of the upper end of Lake Granbury where sediment deposition has formed a natural dam. This and the discontinuation of hydroelectric power generation at Possum Kingdom Reservoir are contributing to more favorable habitat for non-native carp and less favorable habitat for bass.

2) Approval of Minutes

Minutes from the September 21, 2011 meeting were approved as presented. In response to a question, Mark Wentzel (TWDB) said that the report-writing contract with TWRI has now been signed.

3) Budget

Tom Gooch led a discussion of the number of BBEST meetings that likely remain. A late November/early December meeting will be targeted with the potential for a few meetings beyond that, though not necessarily at monthly intervals.

Dan Opdyke (TPWD) mentioned that at the previous BBASC meeting members discussed the need to raise funds for things such as facilitation and technical support with FRAT and that a funding subcommittee was formed to address this. BBEST members discussed ways in which they could potentially assist the BBASC with FRAT support and being present at BBASC meetings to answer questions, etc.

Tiffany also mentioned that BBASC members wanted to start receiving presentations on the BBEST recommendations at the January 24th BBASC meeting in Waco. Tom said that he would contact the BBASC chair and propose some potential topics for the January meeting (discussed later in the meeting).

4) Discussion of Timeline

Kirk Winemiller revisited the "Schedule of Deliverables" handout with the group and summarized the progress that has been made to date. He said that the BBEST still needs to finalize the pulse recommendations and the geomorphological overlay. Regarding the geomorph analysis, Mark Wentzel reported that they have obtained sediment data on the Richmond site and still need to acquire data for the Seymour site. David Dunn said that he's in the process of getting the updated current conditions WAM (Run 8) from TCEQ and then would still need to disaggregate monthly flows to daily numbers. David reiterated the

scenarios that would be run for the sediment analysis: current conditions (WAM 8) and future conditions (2060 Brazos G WAM) with and without projects on the upper river (proposed Double Mountain Fork Brazos River on-channel reservoir) and the lower river (Navasota River on-channel and Little River on-channel reservoirs) and an infinite infrastructure project upstream of Richmond. Phil Price asked if a Run 3 analysis needs to be done for the BBASC. Mark said it could be added fairly easily. David said that the overall analysis could be completed within the next three weeks with David handling the WAM data disaggregation, Dan running FRAT, and Nolan Raphael (TWDB) running the sediment model. Kirk stressed that all tasks need to be tightly coordinated in order for the overall analysis to get done in a timely fashion. Dan Opdyke reminded the group that he needs flow regimes, implementation rules, hydrologic conditions, and lake elevations of proposed projects to run FRAT.

5) Hydrology Subcommittee Discussions

Phil summarized where the group last left off in discussions of pulse flows in that they were looking at not changing the default HEFR values for magnitude, volume, and duration, but that clear rules need to be formulated about when a pulse flow requirement is terminated. Besides the standard cutoffs of when either the volume or duration is reached, the BBEST discussed additional thresholds such as when flow changes less than 5% between days and when flow falls below the overall 25th percentile flow. Phil said that these additional criteria would be consistent with how the pulse values were derived in HEFR. BBEST members were agreeable to the additional pulse termination rules. The group next discussed the issue of memory in the context of pulse implementation. All agreed to the approach previous BBESTs have used where pulses are accounted on a calendar year basis and across the specified period (i.e., seasons, year, multiple years), that pulse sequence can make a difference in meeting requirements (e.g., an early large pulse can satisfy requirements for smaller pulse categories), and that passed events can't be "banked" toward meeting requirements in a subsequent period. Kirk said that these pulse implementation rules that are built into FRAT need to be written out in the report. Phil volunteered to draft up some text on the subject and have Dan Opdyke review it. Dan mentioned that the Nueces BBEST report would provide a good example for a write-up of pulse implementation rules.

Tom encouraged all members to start writing their respective sections and try to have them done by December 5th to allow internal review prior to submittal to TWRI. If possible, members can submit their sections earlier to allow for Kirk's review since he'll be traveling starting on December 5th. The group decided to change the writing deadline to November 30th. Kirk mentioned that he forwarded a style guide to everyone for reference and volunteered to take on the role of ensuring that the different sections are compatible in style. Dan Opdyke said that the Colorado-Lavaca BBEST report could also serve as a good example. Kirk recommended that members be succinct and to the point in the body of the sections and relegate extra detail to the appendices.

The BBEST next discussed the report appendices. Members should submit material as they compose it and the ordering of the portions will be done later. Tom volunteered to write the preamble for the report, much of which can be tailored from previous reports. The executive summary, as well as the adaptive management section, can be done near the end of the writing process. Members should e-mail their sections to the entire BBEST. Any large files (maps, images, figures) can be posted to the Freese Nichols FTP site. Figures don't necessarily need to be in final form. TWRI can hopefully assist with their finalization.

Kirk asked members if they're comfortable with his section assignments and told them to feel free to ask for help if they get overburdened.

After a lunch break, the BBEST revisited the revised report outline. Section 1 (Preamble) was assigned to Tom. The member assignments for Section 2 (Overview of Brazos Basin) were modified slightly. Section 3 (Instream Flow Analysis – Framework) was reorganized somewhat and some of the subsection titles were changed. Section 4 (Hydrologic Separation) was renumbered and incorporated into Section 3. The group briefly discussed the overbank flows subsection. Dan Opdyke explained that HEFR is now coded to label to top row of the matrix as overbank and that post-processing is needed to appropriately label the correct overbank level or levels, if there are any. Dan said he would be willing to go back and edit the HEFR tables to designate the proper overbank levels. He also mentioned that the Nueces BBEST had HEFR programmed to incorporate rounding and other formatting aspects. David will check with Sam Vaughn (Nueces BBEST chair) to see if their HEFR tweaks were worthwhile and will report back to the group with a recommendation. Members agreed that they didn't expect the preliminary HEFR values to be adjusted from the overlay activities. A brief statement would be included to explain any other changes (e.g., why the 2 per year pulse wasn't included, etc.). For the Ecological Analysis section (now Section 4), the geomorphology subsection was moved ahead of the estuarine subsection. An estuarine subsection was added to the E-Flows Recommendation section (now Section 5) as well as a subsection describing the flow matrix framework. The instream flow recommendations, ordered reach by reach, would be its own subsection. Site photographs would be included with the flow matrices. Testing Flow Regimes (now Section 7) was pulled out of Implementation Rules (now Section 6). Dan Opdyke asked the group about a rule for diversions between subsistence and low base flows and described how other groups have dealt with this. The BBEST agreed to go with the same approach recommended by the Guadalupe-San Antonio BBEST (50% rule). An estuarine check was added to Section 7. The BBEST then discussed ideas for inclusion in the Adaptive Management section (Section 8). Paul Jensen (SAC) encouraged the perspective of assessing where you are versus what you're expecting and factoring in the need to be adaptive to new situations. Kirk added the need for biological "gages" or indicators. Phil will e-mail the revised outline and section assignments to the entire group.

6) Ecology Committee Discussions

Members discussed the estuary analysis. George Guillen mentioned that he has the estimated historical freshwater inflows from TWDB to look at what has occurred in the past. You can then make a rough comparison to what comes out of the sediment transport analysis. Kirk recommended mainly a qualitative narrative on what potential impacts would be, noting that the biota have historically migrated up and down the river with changes in flow and salinity but that reduced sediment delivery would negatively affect the coastal habitats. George also mentioned the factor of sea level rise. Jack Davis added the impacts of salinity on quality of estuarine nursery habitats. And George reiterated the lack of biological data from the Brazos estuary. The group discussed how the most downstream gage could play a role. Dan Opdyke mentioned that some of the previous groups have recommended that an extrapolation method be developed for permits downstream of the furthest downstream gage to provide for some protection below that gage, in addition to specific inflow recommendations. Phil Price volunteered to come up with an extrapolation approach.

Kirk led a discussion of the recently released riparian report by Dr. Jacquelyn Duke at Baylor University which dealt in part with riparian areas on the Brazos River. He felt that some parts of it could be used in the BBEST report, but the hydrology used isn't readily adaptable to a flow regime that the BBEST would be using. Kirk said that there were so few transects and locations such that it would be hard to extend her interpretations very far. She did recommend useful indicator tree species. Tiffany said she summarized the report and referenced some of it in her section write-up, but generally kept things high-level.

7) Other Business

Phil asked about the bibliography section. Members agreed to add references at the end of their own sections so that they can all be compiled into a separate references section later. TWRI can hopefully help with the formatting of this section. George asked if TWRI would compile the references in bibliographic software (e.g., EndNote). They can be asked to do it, but aren't obligated to do so.

The BBEST discussed the topic of hydrologic conditions. The strengths and weaknesses of both the Palmer Hydrological Drought Index and reservoir storage were talked about. A majority of the group favored the Palmer Index. Dan Opdyke mentioned that the BBEST could focus more on setting percentages of time that the dry/avg/wet condition categories should be applied and less on the actual mechanism. Phil said that the Palmer values corresponding to the 25/50/75 percentages for dry/avg/wet can be calculated, and he volunteered to do those calculations.

Members went ahead and discussed the BBASC need for technical presentations from the BBEST regarding their recommendations. Tiffany said that BBASC chair Dale Spurgin asked for an overview of what the BBEST considered and ultimately selected and provide technical backup on any questions. Phil recommended coming from the perspective of the outline/table of contents of the report. The group suggested the following topics and the BBEST members who would present the topic: 1) e-flow paradigm - Kirk, 2) geographic scope (gages, seasons, etc.) – Tom, 3) hydrologic separation – Phil, 4) ecological considerations – Tiffany/Jack, 5) recommended matrices and implementation – Tom/Phil, 6) testing/scenarios – David. Tiffany said she will present these topics to Dale with the idea of doing 1-2 topics per meeting and see how he wants to proceed. Dan Opdyke suggested that topic #6 as it relates to FRAT should be done earlier since the BBASC will need to do their FRAT work fairly soon. It was agreed to make sure the topic gets covered by March.

The next meeting of the BBEST will be held on November 30th in Austin at the offices of HDR, Inc. The meeting will start at 10:00 am.

8) Public Input

None.