

Sabine and Neches Rivers and Sabine Lake Bay
Basing and Bay expert Science Team (BBEST)
Thursday, August 20, 2009, 8:30 AM - 4:30 PM
Texas Parks and Wildlife Department Airport Commerce Facilities
1340 Airport Commerce Drive, Building 6, Suite 600A
Austin, Texas 78741

MINUTES

June 25 & July 25, 2009, Meeting # 7 & 8 minutes:

Members approved the June 25 & July 25, 2009 meeting minutes unanimously.

Cory Horan, TCEQ, noted that the TWDB had released new reimbursement forms and distributed copies to members. He also noted that the new forms were available on the group's website.

Primary Charge by Statute: update to "Work Plan" (timeline):

The BBEST agreed to work through the various subcommittees to get a report on Hydrologic Analyses, Geomorphology, Biology, and Water Quality and have a draft available by September 24, 2009. A two day workshop is scheduled in Beaumont, Texas on September 24-25, 2009. In this workshop the committee will begin the development of the final deliverable, in preparation for delivering the report to the TCEQ, the Environmental Flows Advisory Group, and the Basin Stakeholder group by December 1, 2009. The Committee also plans to schedule a meeting on October 27th and a workshop on October 28th in Beaumont, Texas to finalize their environmental flows recommendations report.

It was noted that the Texas Water Conservation Association will be meeting on October 21 thru 23, 2009 in San Antonio. The Committee discussed possibly scheduling a joint meeting with the Trinity/San Jacinto BBEST around the same time.

Addendum to Reports of Interest: Update:

Jim Brown, SRA, gave an update on the BBEST library website, indicating that an initial draft the final report outline had been developed and was now posted.

SAC Status Report:

George Ward, SAC Liaison, gave an update on SAC activities, specifically discussing the development of the Biological Overlay Guidance Document. The SAC approach has been to issue guidance documents and then interact with technical staff as needed. The biological overlay guidance document will be out in a couple of days.

Status of the water quality overlay: Part of the content of the water quality overlay is being addressed within the biological overlay guidance document. The SAC is considering an abbreviated version that will simply look at the regulatory framework of management of water quality at low flows. The SAC will continue to work with agency staff to finalize this overlay guidance document.

Discipline Reports

Hydrology Analyses

Jon Albright, Freese & Nichols, gave a brief overview of the Hydrology Based Environmental Flow Regime (HEFR) method and how it was used in his analysis. The Hydrologic subcommittee has generated some initial results that have been placed on the website for the BBEST members to.

Jon discussed the HEFR method advantages, concerns and precision of recommendations. Advantages of using the HEFR Method are that it uses readily available data and is relatively simple to calculate. Trying to quantify the link between biology and other environmental flow regime

components such as sediment transport is difficult. Precision of recommendations calculates a single value and other matrix methods show a range.

Cindy Loeffler, TPWD, pointed out that HEFR was not created to be a tool where you push a button and get an answer. The HEFR method will give you a first draft and then the members can take that initial output, along with information coming from the biological and other overlays to determine if these flows correlate with the information that we already have regarding what the particular flow needs are. The intent of HEFR is to create this framework that is consistent with the Texas Instream Flow Program.

Jon presented several questions for the BBEST to consider when developing flow recommendations:

- Do we currently have a sound ecological environment in the Sabin and Neches Basins?
- Does the matrix by itself describe a sound ecological environment? If it does not, what is missing?
- What are our goals in defining a flow regime? What are we trying to protect?
- What are the environmental functions we are trying to protect by specifying
 - Seasons
 - Seasonal classification (wet, average or dry)
 - Pulse flows
 - Flood flows
 - Base flows
 - Subsistence flows
- Is the flow matrix a boundary condition (like Lyons), or a flow prescription? If it is a prescription, how often should these goals be met? This will be a focus will be a topic of discussion at the next SAC meeting.

He also suggested possible paths forward:

- HEFR as hypothesis
 - Pick a period
 - Pick a definition for wet, average and dry
 - Pick a statistical method (original or frequency-based)
 - Select gages (all or a subset)
- Define goals
- Obtain data from overlays (biology, geomorphology, water quality)
- Refine flow recommendations based on goals and overlays
- Develop a “confidence statement” regarding flow recommendations
- Develop a set of future activities related to environmental flows
- Make recommendations to legislature

Water Quality

Rex Hunt gave a presentation on the activities of the water quality subcommittee. He discussed the different areas the subcommittee including:

- Relationships between flow and water quality are not strong for most parameters
- Use water quality as more of a check point in the process rather than an overlay due to the fact that there is not a lot of change in water quality between a high flow and a low flow
- Avoid using environmental flow regime recommendations as a vehicle to solve water quality problems
- Don't focus on the 7Q2 in developing environmental flow recommendations. 7Q2 is not a good statistic to use when trying to compare quality at certain flow points.

He also discussed several questions the Water Quality Sub-Committee wanted to put to the BBEST:

- On what data should we focus (what parameters should the group consider)

- How should we present the data (dissolved oxygen, percent of saturation, temperature)
- What necessary information do we lack and how do we get it?

Geomorphology/Sediment Transport

Nolan Raphelt, TWDB, gave an update on his work looking at the Geomorphology/Sediment Transport component of environmental flows. In his study they have finished all sample collections, as well as the cross sections and physical data that were needed from the 12 stations. Over the next week or two this data will be put into a usable format.

To establish existing conditions they will need to have an existing condition and future condition to compare against. What they are trying to do is identify and quantify what magnitude of flow, and how frequent they would be needed to maintain effective discharge. He suggested that he choose one individual gage and run all the different channels that Jon Albright has thru the SAM model so that the group is at least working through the appropriate HEFR methods. Members will get together to talk about finishing up the consultants and subcommittees work to get the final comments in and gather consensus as to how the work is to be completed.

Biology (Ecological Review)

Ed Oborny, Bio-West, gave an update on their work on the ecological review or “drill down” contract. Both reports discuss the focal species approach and how the focal species were selected. The bulk of the reports are life history information on each of the focal species selected. The goal of the reports was to summarize some of the ecological relationships to flow to identify specific ecological needs and how some of this information may be useful to the BBEST in their efforts.

He then discussed findings outlined in the Fluvial Report summarizing stream flow, aquatic habitat, water quality, channel morphology and riparian vegetation. This report runs through all of the selected species and pulls together information on distribution and abundance. The BBESTs biological subcommittee chose several species that have a limited distribution and several species that were identified as species of concern. He explained that the reports were broken down into three parts: habitat relationship, species migration and reproduction, the effects of flow on the food supply. From a habitat stand point the committee was unable to find specific studies that were done for these species that would tell us that this species need this kind of flow for this amount of time.

He then noted the importance of the flow/habitat relationship stating that when over bank flows occur a lot of things start to happen: the most notable events will be when you pickup the value in the flood plain habitat and the connectivity to some of these other habitats. Then you also start to see shallow pools, back water, riffle start going up quickly. He explained that when you start looking at the various categories that HEFR will output you want take a look at some of the life histories such and their relation to base flows. It is recommended that the group not pick just one habitat or flow regime. He discussed species migration & reproduction noting that some fish lay eggs which drift as well as the larvae so you want to maintain a flow conditions where it's not just a big pool where all the sediment and eggs/larvae settles on the bottom which would limit reproduction. He then discussed the affects of flow on food supply, noting that some species feed on plankton, others on fish and bugs. These species can be grouped into several different categories, such as feeding structure, tolerance level, habitat, etc.

He then discussed findings outlined in the Estuarine Report. He stated that the goal was to pick local species and give life history information, summarize the abundance and biodiversity and try to see how they relate to freshwater inflows. Focal species were selected in the same manner as for the Fluvial/Instream report. He noted that they tried to be consistent with information pulled either from outside the Sabine system, the Texas coast, and the Louisiana coast. It was concluded that if there are minor shifts to the salinity of the estuary, this is not likely to have any impacts on your species. Shifts in seasonal variability can be problematic due to the timing that these organisms are in the bay. He noted that there are several other considerations to take into account and it is difficult to know how

many people are fishing and the affect on abundance, how many crab traps are set, etc. It was noted that a flow recommendation is valid on it's own for meeting the requirement for SB3, regardless of whether or not there is the capacity to controls these flows, it still gives the BBEST a recommendation for what protects the environment.

Rangia Study: Norman Johns, NWF, gave an update to the group stating that their *Rangia* study is moving along quickly since the initial presentation given at the last BBEST meeting. He outlined the four components to this study: 1) existing *Rangia* population characterization (50% complete); 2) Salinity modeling: link salinity to current population (60% complete) 3) salinity modeling: salinity analysis with proposed inflows (0% completed) and 4) synthesis: help shape the development of a freshwater inflow regime (0% completed). The third & forth components haven't begun yet, due to the unresolved issue of how to move from the HEFR matrix to the time series. The final report should be available in about six to eight weeks showing the results of the work that Bio-West has completed. The TxBlend salinity model was recently completed. The purpose of this exercise was to try to understand how Salinity might influence or control *Rangia* population. He noted that *rangia* larvae require salinity within a narrow range: 2-10 ppt for early larvae and 2 to 20 ppt for older larvae. There are two primary things that were found in the literature: 1) there is an area where they are found as adults and 2) 10 ppt is necessary for larvae survival. The next step is to determine sample locations and perform the sample collection.

Recommendations Report: Update

Roger Kelley gave an update on the recommendations report, primarily focusing on the two aspects of the report which is the overall organization and style of the recommendations. The two terms that were defined in the statute were the Environmental Flow Analyses and Environmental Flow Regime. He noted that he will have something together by the September meeting for the BBEST to review and then continue development and completion at the October meeting. He will also send a PDF version of the Environmental Flow Regime outline to the group.

Draft FY 2010 Budget

Dr. Rubin Solis, TWDB, gave an update on the Draft FY 2010 budget and reminded the committee members to get travel expenses turned in as soon as possible. The TWDB was given the budget for the next biennium and the next step will be to determine how to allocate the money between the existing BBEST and the BBESTs that will be coming in sometime this fall or early next year, as well as the third tier of BBESTs that will be coming in next year. There is a need to determine what tasks need to be done for the remainder of this process and approximately how many meetings we will need to have to finish up our activities. The Chairs of each existing BBEST have both agreed that each will need approximately seven more meetings. What has been allocated for meetings is approximately \$48,000. Key BBEST members will participate in future stakeholder meetings to provide guidance on the final recommendations report to that group. In January the group will meet again as a full BBEST meeting with the stakeholder group to go over the final recommendations in more detail.

Public Comments

Norman Johns, NWF, mentioned a project they are currently working on, explaining the scope of work to try to overlay the overbank flow recommendation. This study may not be completed in time for use by the BBESTS, but should be available for use by the Stakeholder group.

Next Meeting and Suggested Agenda Items

The next meetings are scheduled for September 24 & 25, 2009 to be held in Beaumont, Texas.

Suggested meetings items include:

- Hydrologic Analyses
- Geomorphology/Sediment Transport study Update
- Biology Update
- Water Quality update

Tentative meeting dates:

- The TWCA will be meeting on October 21 thru 29, 2009 in San Antonio. The Committee will try to schedule a joint BBEST meeting at this time.
- The committee will also have a meeting on October 27th & 28th in Beaumont, Texas to complete the final recommendations report and finalize outstanding issues.
- In November the committee will do a final review and pass on the report to the TCEQ, the Environmental Flows Advisory Group, and the Stakeholder group in order to have the deliverable complete by December 1, 2009.