

**Brazos River and Associated Bay and Estuary System
Basin and Bay Stakeholder Committee (BBASC) Meeting
Tuesday, July 17, 2012 at 10:00 a.m.
Brazos River Authority Offices
Waco, Texas**

Minutes

Call to order

BBASC chair Dale Spurgin called the meeting to order. BBASC members introduced themselves.

Review of agenda & meeting goals

Facilitator Suzanne Schwartz reviewed the meeting agenda and goals with the BBASC. No agenda modifications were suggested.

Public comment

Chris Wingert with West Central Texas Municipal Water District reiterated five points in his comments to the BBASC. His comments are posted to the BBASC web page at:

http://www.tceq.texas.gov/permitting/water_rights/eflows/brazos-river-and-associated-bay-and-estuary-system-stakeholder-committee-and-expert-science-team.

Approval of June 27-28, 2012 meeting minutes

BBASC members approved the June 27-28, 2012 meeting minutes without changes.

Subcommittee updates

Funding/facilitation

Dale Spurgin reviewed an updated finance report detailing the contributions to and payments from the BBASC funds account administered by the fiscal agent, West Central Texas Council of Governments (WCTCOG).

Report writing

Subcommittee chairman Tom Conry asked that all BBASC members submit their personal testimonies of their experiences with the river. And since the City of Waco will be hosting the next set of meetings (July 30-31), Tom invited all to see examples of old and cutting edge water treatment technologies at the City's facilities. A majority of the group indicated that setting up a tour prior to the first day's meeting would work best.

Technical analysis

Presentations on technical analyses followed the subcommittee reports.

Strategies

Attention was directed to a Strategies Development memo (handout) provided by subcommittee member Matt Phillips. A detailed discussion of strategies is planned for the July 30th meeting. Suzanne reminded BBASC members to provide any strategies-related information that they're aware of to the subcommittee.

Technical reports, including: (1) project yields under possible environmental flow standards; and (2) biological impact of changing pulse flows

Kevin Mayes from TPWD coordinated with Dr. Wilde from Texas Tech University, at the request of the BBASC, to determine the impact on the smallmouth shiner of reduced magnitude and frequency of high flow pulses based on the Cedar Ridge Reservoir template using HDR's WAM/FRAT output for the Double Mountain West Reservoir simulation at the Double Mountain Fork at Aspermont gage. Kevin presented his analysis (PowerPoint slides available on the BBASC webpage):

http://www.tceq.texas.gov/permitting/water_rights/eflows/brazos-river-and-associated-bay-and-estuary-system-stakeholder-committee-and-expert-science-team). The following are responses to the questions and answer session or represent discussion that followed:

- In the slides, the “no-eflow” scenario assumes no required releases from the reservoir for environmental flows, but with water rights releases. It is shown for comparison purposes.
- The minimum length of river for health of the smalleye shiner population is not known at this time.
- Mean summer discharge = daily flow from May to September (base flows + high flow pulses). It is, essentially, any discharge registered at the Brazos River at Seymour streamflow gage.
- Q: Will the species survive the low base flow periods?
A: The smalleye shiner needs pulse flows. They spawn when there is flow. Spawning peaks during pulses. Cindy Loeffler, TPWD, added that base flows without pulse flows over extended time would create problems.
- The Wilde study shows the threshold requirement is 227 cfs for the Brazos River at Seymour. If the mean summer discharge is greater than 227 cfs, the species population increases; if it is less, the population decreases.
- An EFS to meet the 227 cfs could be calculated.
- The smalleye shiner was chosen because it is endemic to the Brazos River, is a broadcast spawning minnow with a requirement for flow to reproduce, and is a candidate for listing under the Endangered Species Act with U.S. Fish and Wildlife Service gathering data on it.

Cory Shockley of HDR Engineering, at the request of the BBASC, provided information on impacts to the yield of the Double Mountain Fork and Little River Reservoir (on-channel) if additional pulse flows were required above those in the Cedar Ridge Reservoir (CRR) template, which the BBASC adopted for gages 4, 5 and 6 at its June 28 meeting. (Power point slides available on the BBASC website). The following are responses to the questions and answer session or represent discussion that followed:

- The calculation is based on a year and not just a summer.
- Q: What is the spawning cue flows for the Brazos?
A: (Kevin Mayes) It is site specific and depends on the species present. Smalleye shiners do asynchronous spawning when the river is flowing; this level of spawning does not build up the population. Pulses cause synchronous spawning: a significant increase in numbers. This is because the eggs float and need flows for dispersal. The smalleye shiner can spawn many times each season, depending on flow and whether eggs remain.
- Kirk Winemiller of the Brazos BBEST, told the BBASC that the information provided by Kevin Mayes and Cory Shockley was important and what they need to consider risk management to both the species and water supply. He noted the following related to biology:
 - Transport is important, but so is turbidity, which enhances survival of early life stages. Both are aided by pulses.
 - The BBEST focused on these fluvial species because they are the most sensitive. But high flow pulses are important for other things like geomorphology, which assure the channel is adequate for the species also.
 - The BBEST environmental flow regime already represents a reduction of flows from the status quo. This is further compounded because the flow regime will not be reproduced as it is shown. It was designed with multiple tiers to protect biodiversity.
- Kevin Mayes noted that there is a difference between Clear Fork species and species that live in the upper Brazos. They have different reproductive strategies and thus the spawning cues, timing and habitat needs may be very different. He also noted that the CRR template reduces the geomorphological functions of high flows. He also gave his opinion that eliminating pulses is a high risk to the species.
- Cory Shockley noted that the high flows are important to reservoir yield. At HFP 1 and 2, the reductions in yield are great from including additional pulses to the CRR template, but the increases in flow are small. Also, only one acre-foot out of four makes it from the Double

Mountain Fork site downstream (to Possum Kingdom and, especially pronounced by Lake Waco).

- Q: what does the CRR template do to the passage of pulses over time?
A: (Cory) The reservoir will meet other HFP much of the time with the CRR template, but those would not be “protected.” The drought of record is where the greatest impact is. Adding additional pulse flows increases the time the reservoir takes to refill, essentially prolonging the drought of record.
- Q: Would the drought kill the smalleye shiner?
A: (Kevin) In nature, the shiner would follow water downstream. Reservoirs would stop that movement. The shiner do not do well in the reservoir, and is more subject to predators. We don't yet know the effectiveness of the TPWD's attempts to relocate the Brazos River shiners downstream of Waco.
- Q: What is the benefit of releasing water in a year like 2011?
A: (Kevin) We haven't looked at specific possibilities using different flow levels. But the data provided in the power point provides parameters that can be considered.
- Q: What kind of change is acceptable?
A: (Kevin) Minnows are used because data was available and they are sensitive. A 1-2-1 CRR template at Aspermont creates a very high risk to the minnows.
- Kirk Winemiller said to understand more about their response would require a modeling effort of three to five years, and \$300,000 to \$500,000.

Develop environmental flow standard components: base and pulse flows; hydrologic triggers

General discussion: BBASC members discussed the balancing process it is statutorily charged to accomplish.

- Our recommendations could kill a project, and we're using a blunt instrument to make our decisions. Projects will require a rigorous review before being built.
- Kathy Alexander noted the following in response to questions:
 - Once TCEQ adopts environmental flow standards, it will evaluate new projects to see if there is unappropriated water available for the project after satisfying the EFS. Then, TCEQ would include environmental conditions in the permit to protect the EFS.
 - When TCEQ is developing and adopting EFS rules, it will consider the BBASC, BBEST, public comments etc.
 - TCEQ will evaluate whether the BBASC recommendation maintains the possibility of future permits.
- Need to reflect challenges of different parts of the basin
- Differing views were expressed about the impacts of setting EFS high or low given the potential to use adaptive management and thus change EFS rules in the future. Kathy Alexander explained that once TCEQ adopts EFS rules, those standards are imposed on all future permits, unless the EFS rules are changed. BBASC members expressed the following:
 - It will be difficult to make EFS less stringent once they are adopted.
 - If standards are set too low now, water will be appropriated, effectively preventing the water from being used for the environment in the future or for more stringent EFS to be adopted.
 - There is not much water available in the basin without a storage project.
 - The special conditions imposed in a water right permit based on EFS can be relaxed (lowered) in an unlimited amount, but can be adjusted in a more stringent manner only by 12.5%
- BBASC members discussed what projects the regional water plans identify as needed. Regional water plans identify three categories of strategies to meet water needs: recommended, alternative, and evaluated. For the Brazos, recommended projects include Cedar Ridge, Turkey Peak, Lake 07 (Lubbock), Millers Creek Augmentation, Post. (The BBASC determined later in the meeting to ask TWDB for a list of projects that are recommended and alternative, including yield and cost.)

- The process to design and permit these projects starts 20 to 25 years ahead of their completion.

Implementation rule; hydrologic trigger.

The facilitator asked the BBASC to clarify the extent of its decisions from the June 28 meeting relating to the use of the implementation rule and the hydrologic trigger.

Consensus

The BBASC reviewed its decisions at the last meeting and confirmed as follows:

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- For gages 4 (Clear Fork Brazos near Nugent), 5 (Clear Fork Brazos near Fort Griffin) and 6 (Brazos River near South Bend): In adopting the BBEST base flows on June 28, the BBASC also intended to adopt the BBEST 50% implementation rule (associated with diversions between the dry base flow standard and subsistence flow)
- For all gages: For the hydrologic trigger to determine if the base and pulse flows must meet dry, average or wet standards, the BBASC determined to use the Palmer Hydrologic Drought Index (PHDI) and to divide the basin into three areas for such application: above Possum Kingdom Reservoir dam, below Possum Kingdom Reservoir dam but above Lake Whitney dam, and below the Lake Whitney dam.

Consideration of EFS for gages 1 (Double Mountain Fork near Aspermont), 2 (Salt Fork Brazos near Aspermont) and 3 (Brazos River near Seymour).

Before considering specific EFS for gages 1, 2 and 3, BBASC members discussed some of their needs and interests in developing the EFS recommendations, by responding to the following question:

“The EFS for gages 1-3 need to be designed in a way that...” (responses from BBASC follow):

- Considers other uses for water
- Flexibility for e-flows in the future, allows for adaptive management
- Doesn't eliminate endangered species
- Maintains a healthy system
- Doesn't preclude development of new water sources, reservoirs
- Recognizes the flashy nature of the gages in the area and that the area is different than in the lower basin

The BBASC members then brainstormed some ideas to meet these needs:

- Pray for rain
- Build an ark
- Require environmental flow releases from stored water
- Adaptive management programs to preserve species in dry periods:
 - Habitat creation
 - Recirculate water
 - Create refuge in reservoirs
- Legislature funds the state water plan
- Watermaster
- Flow from other sources
 - Wastewater treatment plant
 - Brush control (e.g. to eradicate salt cedar)

Consensus

The BBASC affirmed its decisions on gages 1 (Dbl Mtn Fork near Aspermont), 2 (Salt Fork near Aspermont) and 3 (Brazos at Seymour) from May 27-28 to adopt the BBEST recommendations for base flow, including the 50% implementation rule, for gages 1, 2 and 3.

BBASC members generated ideas for handling pulse flows for gages 1, 2 and 3:

- Simplify flows at gages and voice specific concerns in the narrative submitted to TCEQ
- Use the 1-2-1 Cedar Ridge Reservoir template
- Revisit in work plan
- Consider EFS for specific projects without species impact separately
- Provide a narrative about competing needs and species
- Adopt the Cedar Ridge Reservoir template but with increased pulse frequencies
- Provide winter pulses
- Adopt one of the alternate CRR template pulse flow scenarios (from Cory's presentation):
 - 3-4-3
 - 2-3-2
 - 2-2-1
- Adopt BBEST and revisit via adaptive management and include language to allow projects to move forward
- Could move some if I know something is being done to protect species
- Use the Cedar Ridge 1-2-1 template, modified by using the high pulse flow 3&4 in the winter
 - Concern about channel morphology function of the higher pulse flows
 - But they will occur anyway
- Adopt the Cedar Ridge (1-2-1) standard for all of gages 1 through 6. But add caveat to the EFS recommendation that any reservoir to be built above these gages should show they would not impact the shiner

Brad Brunett noted that the evaluations the technical work group conducted, and those that Cory Shockley conducted also, shows that throughout the basin, the yield of on channel reservoirs would be impacted by $\pm 40\%$, but there would be little impact to the yield of off-channel reservoirs. Kathy Alexander noted that in determining whether an off channel reservoir could be permitted, and the effects of the standards on a future off-channel project, TCEQ staff look at how much water is available for diversion from the river.

The BBASC began to consider the structure of an EFS at gage 11, Leon River near Gatesville. The following notes reflect concerns or considerations in developing the EFS:

- The Cedar Ridge Reservoir template (1-2-1) is not scientifically justified
- Yield reduction if the BBEST template is used
- Will TCEQ accept the BBEST template?

It does not appear probable that an on-channel reservoir on the main stem of the Brazos would be built.

Wrap up

Next Meetings:

July 30 & 31 City of Waco's Riverside Water Treatment Plant located at 200 Colcord Avenue in Waco, Texas.

- July 30 Morning tour of City of Waco facilities
- July 30 1 p.m. BBASC meeting, focus on report and strategies
- July 31 8 a.m. BBASC meeting, focus on environmental flow standards

August 15-16 BRA headquarters

August 28 BRA headquarters

Action items	
What	Who
Population dynamics model of shiner species at Seymour under BBEST/FRAT for gages 1 and 3	Kevin Mayes coordinates
List of Regional Water Plan projects for Brazos Basin, by category.	Suzanne coordinate with TWDB
Yield impact of DMF and Little River on channel with overbank flows removed	Cindy Loeffler coordinate with HDR

Public Comment

Kirk Winemiller of the BBEST encouraged BBASC members in their deliberations to consider what's best for the basin, and not what TCEQ might do in the rulemaking process.

Adjourn