

**Lower Rio Grande, Rio Grande Estuary and Lower Laguna Madre
Basin and Bay Expert Science Team,
20 July- 21 July 2011 meeting
University of Texas - Pan American**

MINUTES

Wednesday 20 July 2011

Members Present: Hudson DeYoe, Chair; Warren Pulich; Bob Edwards; Jude Benavides; Carlos Marin

I. Introductions and minutes

The meeting was called to order. Approval of previous meeting minutes was postponed.

II. Project Administration

A. SAC and BBASC updates (Horan and/or R. Brandes)

SAC liaison Bob Brandes reported that the SAC released a technical memo as an addendum to the previously published guidance on geomorphology as an overlay, but noted that it may not affect the Lower Rio Grande BBEST as much as the Upper Rio Grande BBEST. Additionally, the SAC is in the process of reviewing work-plans for the first two Senate Bill 3 groups. He informed the group that the Environmental Flows Advisory Group will meet on September 8, 2011, where SAC Chairman Bob Huston will give a status update of all Senate Bill 3 groups.

BBASC chair Tony Reisinger reported that the BBASC group is going to plan a joint meeting with their BBEST's at some point in the near future.

B. Budget update (DeYoe)

1. Unallocated funds

2. Letter to TWDB for 2012 funding forwarded to Ruben Solis

The BBEST identified which assigned tasks each member will work on to use the remaining funds for Fiscal Year 2011. Warren Pulich will use GIS to analyze TxBLEND results. Bob Edwards will complete analysis on TPWD fisheries data on the Laguna Madre and identify focal species for further analysis. Water quality of the tidal portion of the Rio Grande and Lower Laguna Madre will be completed by Hudson DeYoe, who also hopes to develop a nutrient budget for the Lower Laguna Madre. Carlos Marin and Jude Benavides will continue to refine the water balance of the system.

III. Water balance for Lower Rio Grande (Marin and Benavides)

Carlos Marin and Jude Benavides gave a status update on development of the water balance for the Lower Rio Grande. The water balance for the Lower Rio Grande computed well, but the water balance for the Arroyo Colorado will require additional analysis and a need for specific data on irrigation return flows. The BBESST also plans

to compare runoff from ungaged watersheds as estimated by a simple coefficient versus existing models such as the TxRR model.

IV. **Updates on qualitative summaries**

1. **Resacas (Buzan):** Update postponed to future meeting
2. **San Martin Lake (Buzan and DeYoe):** Chair DeYoe stated that although conditions in San Martin Lake are not amenable to populations of seagrass (as evidenced by a failed restoration project), the group agreed this does not necessarily suggest that the system is not a sound ecological environment.
3. **Bahia Grande (DeYoe):** Chair DeYoe reported that the Bahia Grande evaluation is ongoing which will address whether or not it can be considered a sound ecological environment.
4. **Above tidal Rio Grande (fish- Edwards, riparian veg- Pulich, WQ- DeYoe):** Pulich stated that he would like to provide a historical summary of how the system has changed over the years, which will help to determine whether the system can be considered a sound ecological environment.

V. **Application of TxBLEND salinity output maps to delineating the target seagrass area for Arroyo Colorado plume impacts (Pulich)**

Warren Pulich gave a presentation to the BBEST on how TxBLEND model output can be used to map salinity contours for the Lower Laguna Madre to more easily visualize salinity gradients as predicted by the model. Pulich overlaid the TxBLEND grid model onto 2009 NAIP aerial imagery of the Lower Laguna Madre. Salinity contours were mapped for years that were representative of dry, average, and wet conditions. Results show there was not a well-defined salinity gradient in the Lower Laguna Madre, but during wet years a plume from the Arroyo Colorado became more evident and displayed a northerly flow. The plume lasted up to several months, especially when flow in the Arroyo is extended, and can reach north all the way to Port Mansfield. When salinity contours are overlaid onto the NAIP aerial imagery for wet years, it appears that the seagrass populations flourish south of the freshwater plume from the Arroyo Colorado. The Arroyo plume (which stayed on the GIWW side of the Lower Laguna Madre until it reached north of Green Island and then fanned out to the east) tended to overlay bare bottom or sparse seagrass. This analysis brought up several questions that the BBEST would like to investigate:

- What is the distance/area of a significant plume? Does the area of this plume define the target zone of seagrass bed for inflow impacts? What is the minimal flow from the Arroyo Colorado that produces this significant plume into the Lower Laguna Madre? And during which seasons?
- How does this plume information inform the upcoming nitrogen (N) isotope field study? What is the best sampling design to detect the postulated N gradient produced by such a plume?

VI. Interaction with Mexico- pros and cons

The BBEST discussed whether or not they should include Mexico in their deliberations on environmental flows. Bob Brandes stated that unless there is significant technical information to be gained, interactions with Mexico may not be advantageous. His concern was that the BBEST would become engaged in long-winded conversations in which the issue of implementation might become unavoidable. Brandes also stated that the U.S. would have no way to implement standards for water that is appropriated to Mexico. The BBEST agreed that they would at least like to determine if there is technical information that can be gained from interaction with Mexico.

Thursday 21 July 2011

I. Budget Update

Ruben Solis, TWDB, reported that TWDB was able to identify additional funding on the order of \$200,000 from the Research and Planning Funds to help fund Senate Bill 3 activities in Fiscal Year 2012. Once TWDB receives requests from the currently active groups (Nueces, Brazos, Upper and Lower Rio Grande and SAC), TWDB will determine how best to divide the funds among the groups. Remaining funds from Fiscal Year 2011 (from SAC and other BBESTs) may exist and may be used after the fiscal year if the funds can be encumbered for contracts. The BBEST discussed what type of contract they could potentially request in order to take advantage of the remaining FY11 funds. They will attempt to put a scope together within the next week to submit to TWDB.

II. TxBlend model report (Carla Guthrie, TWDB)

Carla Guthrie, TWDB, reported that the documentation for the calibration and validation of the TxBLEND model in addition to documentation for coastal hydrology estimates for the Lower Laguna Madre will be released next week or the following week.

**The BBEST requested that TWDB provide salinity-inflow regressions for the Lower Rio Grande using Datasonde data and USGS stream flow gages.

Ruben Quintanilla, TCEQ, reported that a representative from the Rio Grande Watermaster Office will be available to give a presentation to the BBEST for the next meeting. Quintanilla also gave an update on the status of reservoir levels.

The next meeting of the LRG BBEST is scheduled for August 16 and 17 at University of Texas-Brownsville in Brownsville, Texas. Agenda items include a presentation on technical issues from the Watermaster, in addition to discussions on biological, hydrological, and water quality aspects of their inflow recommendations and to begin outlining the contents of their report.

Future meeting dates are tentatively scheduled for September 19, 2011, October 24, November 21 and 28 (tentative dates, only one will be chosen). A meeting scheduled for December 16 will be strictly conference call. January 16, 2011 and February 6 and 20 are tentatively scheduled for 2012. Environmental flow recommendations from this BBEST are due on March 1, 2012.

Adjourn