

Colorado-Lavaca Basin and Bay Expert Science Team
December 21, 2010 8:30am-2:30pm
Action Items and Consensus Decision Points

The CLBBEST met December 21, 2010 at LCRA in Austin. All members were present.

Consensus Decision:

The group adopted the minutes of the November 16, 2010 meeting. Joe Trungale also relayed his approval of the Oct. 19, 2010 meeting's consensus points and action items.

Discussion: Budget

The group held a brief review of the budget. An estimate for final report preparation and production is included.

Discussion: Rapid Cross-section Method and Habitat Availability

The cross-section data has been formatted and delivered to Thom Hardy. The TWDB screened the cross section data through the database, in an attempt to find matching cross-sections. About 60% of the sections had suitable matches. Dr. Hardy will further process the data by first relaxing the initial default tolerance, then using other sources of information or Manning's equation as necessary.

The second step of the process is developing habitat suitability curves for the identified focal fish species. Brad Littrell with BioWest is working with TPWD to construct habitat suitability curves for each species. These individual species curves will be utilized by TPWD to create envelop curves for each guild. The slackwater guild was separated into two groups- shallow and deep based on the need of the species in these guilds.

Habitat to flow curves will be computed for each guild with the use of the cross-section output and guild curves. The habitat-to-flow curves are the analytical linkage between flow and biology and are a critical component of the biological overlay.

It was noted that Blue Suckers, a focal fish in the lower Colorado, need to be reflected in the focal fish write-up for the final report.

Discussion: SAC Guidance Document

A copy of the Framework for SAC Review of BBEST work products was provided to team members and all team members were encouraged to review and follow the SAC guidance in drafting their text.

Discussion: Hydrographic Separation

Dave Buzan and Thom Hardy independently evaluated the base flow separation at 5 sites. The results at Columbus were presented. While the separation technique (seasonal, 75th percentile) is imperfect, the hand tuned flow time series did not produce significantly different HEFR output. Specifically, Dave Buzan changed 1258 daily flows from the Pulse to Base category, and 911 from Base to Pulse. Dr. Hardy moved 180 from Pulse to Base and 248 from Base to Pulse. Joe Trungale then reran HEFR with each of the corrected flow time series and the results were compared. There was less than a 5% change for any given seasonal flow at Columbus. This outcome validates the seasonal separation approach and this process will be documented in the final report.

Discussion and Consensus Decision: Zero Flow Days

Dave Buzan led the discussion on upper Colorado River basin gages with numerous zero flow days. It is common for these systems to have significant periods of zero flow. The HEFR analysis at these sites identify a subsistence flow of zero. The BBEST discussed the need for a protective strategy for this region, noting that the full HEFR regime may not be appropriate. The goal for these sites is to prevent the extension of zero flow days beyond what naturally occurs (no additional pumping during zero flow periods). Consensus Decision The team decided that a non zero subsistence flow and a base flow would be protective in these systems. The low base value will be used for the subsistence values to attempt to ensure that frequency and duration of no-flow periods is not increased by new water rights permits.

Discussion: HEC-RAS Update

HEC-RAS modeling output, which demonstrates the extent of flood plain inundation, is available for some sites in the Colorado River basin. These outputs are useful to compare with the NWS approach currently utilized in the riparian overlay. Steve Watters and Bryan Cook will work with Melissa Romigh to obtain the appropriate output. Three sites, one above and one below the Highland Lakes and one tributary (Pecan Bayou or the Llano River) will be targeted.

Discussion and Consensus Decision: Final Site List

The team discussed the final site list to ensure that there were no omissions or need for corrections. Only the Navidad at Ganado was identified as an inactive gage. However, this gage is critical for the Lavaca Basin, as it has a long period of record. This identified the need to combine this site with the Navidad at Edna (though a drainage area ratio technique) to produce a single period of record. This discussion identified the need to extend the period of record for several sites that have a relatively short flow history. Consensus Decision The team decided that it would be appropriate to extend the period of record for sites as needed to include the drought of record (1950's

drought) in the record for each site that did not have actual flow data collected in the 1950s. Although this produces a somewhat synthetic hydrology, it does allow for flows to be estimated during the drought of record. The absence of this extension of the flow record would likely result in the overestimation of instream flow needs in these systems.

The final list of sites has been reduced to 22 stream sites plus the 3 bays for which detailed summaries and environmental flow recommendations will be provided in the report.

Discussion: Freshwater Inflow Needs

Melissa Romigh led the discussion on the development of the freshwater inflow needs recommendation for Matagorda Bay. The recommendation is a reflection of the recently completed Matagorda Bay Health Evaluation, which is considered to be the best available science for the Matagorda Bay. Melissa has prepared an initial draft for the report that provides the basis for the recommendation, references to the appropriate reports and literature that were used to create the MBHE report, and provides a comparison to the other inflow studies conducted in Matagorda Bay. She is also drafting a report for East Matagorda Bay. Cathy Wakefield is drafting portions of the report for Lavaca Bay, focusing on previous studies in the estuary. Dave Buzan requested some TxBend hydrodynamic modeling of Lavaca Bay to obtain salinity traces at selected locations in system. Bryan and Dave will use this information to relate freshwater inflows to estuarine conditions, similar to the approach that was conducted in the MBHE report. This approach should provide consistent recommendations for both bays.

Discussion: Flood Plain Maps

Melissa will contact Lynne Hamlin to request information about the determination of the riparian and floodplain vegetation communities and their relationships to inundation.

Discussion: Geomorphology Update

Nolan Raphelt identified the need for a future hydrology to assess the geomorphology overlay. He explained the HEFR table alone is insufficient to protect the stream channel. The hydrology team will work with Nolan and the TWDB to develop a future hydrology for this analysis.

Discussion: Report Preparation

TWRI presented a timeline for report production. Ideally, TWRI would like to have the final draft by January 31st. They provided the team with a style guide and a mock-up of the Colorado River at Silver detail sheet for review. The team discussed the need for

printed copies and budgeting for those copies. This decision will be made later in the process. TWRI will estimate printing costs for the BBEST.

Each photographs should be submitted to TWRI as an individual file.

The team discussed the report tasks provided by Dave Buzan. Overall, the report outline and tasks seemed appropriate. Dr. Hardy and Joe were added with 4 hr each to help with the adaptive management/Work Plan section. Richard Hoffpauir will add folders to the ftp site to store draft document sections. It was suggested that a secondary reader be assigned to each task. Richard and Dave are slated to provide the documents management.

Dave will send a revised report assignments list recommending which team members should review which sections of the report.

The team discussed inclusion of a historical hydrology section for inclusion in the detailed summary for each site. The team considered it an acceptable idea however the team wanted it to be summarized in some format, ex. table. Dave will draft a sample historical hydrology section for team review.

Kirk will draft text for the WAM discussion.

Consensus Decision: Basin Maps

The team reviewed the basin maps produced by TCEQ. Team members agreed that water rights permits should not be located on the maps. The team also agreed that it preferred to have the site name with the USGS gage number (in parenthesis) on the map rather than just the USGS gage number. There should be a map for each site that shows the drainage basin for that site and it is preferable to just show the name (and USGS gage) for that site. Kathy Alexander said she would work with her staff to modify the maps and produce them for the remainder of the sites.

Dave will review maps already produced by Lynne Hamlin of the bays and will request as appropriate comparable maps for East Matagorda, Matagorda, and Lavaca bays. The Matagorda Bay map should show the Colorado River at Bay City site.

Discussion: Substitute Terms

The team agreed not to substitute new terminology for “base flows”. This agreement was based on discussion that there is current literature that uses “base flow” in a more inclusive context than having it just refer to groundwater contribution to stream flow. The

team agreed to include a clear definition of what base flow means in the context of the team's analysis and recommendations.

Consensus Decision: January Workshop

The team decided that a two day workshop in January was needed. The workshop will compare the overlay to HEFR flows at each site, make a sound ecological environment determination, and produce a final environmental flow regime recommendation. The workshop will be held on January 18th and 19th, meeting time and location to be determined.

Joe Trungale identified the need to produce an example implementation to help the BBASC understand how the flow recommendations may be implemented in a project. He will work to prepare an example and discuss at the workshop.

Steve Box's photos:

Steve Box made a road trip of the basin and compiled his photographs into a presentation which he gave to all the BBEST members on CD.