

Updated Outline 9/21/2011

Timeline of Steps for Environmental Flows Assessment by the Brazos BBEST

In their initial meeting, the Brazos BBEST members agreed it is desirable to perform the bulk of our work during the period April 1–August 31, 2011. The Brazos BBEST has until March 31, 2012 to complete its task of producing a final recommendations report. However, state funding in support of the BBEST's work is only available for FY2011. The Brazos BBEST members have set for themselves an ambitious timetable that will require working efficiently. This appears feasible given the advantage of having the work of previous BBESTs for guidance and comparison.

April 18, 2011 – **1st BBEST Meeting:** introductions, description of task, discussion of budget issues, adoption of consensus rules, election of chairs, identification of environmental flows (EF) study components, preliminary discussion of geographic scope, candidate gages to define study reaches, assignment of subcommittees (Hydrology, Ecology), planning for future meetings

Apr. 19-May 22 – Individual assignments

- 1) Obtain information on gages and periods of record – *Hydrology subcommittee*
- 2) Draft budget for TWDB approval – *Tom Gooch*
- 3) Draft timeline of steps for our EF assessment – *Kirk Winemiller*
- 4) Review SAC guidance documents and previous BBEST reports – *ALL*

May 23 – **2nd BBEST Meeting:**

- 1) Approval of budget – *Tom Gooch*
- 2) Discussion of draft timeline – *Kirk Winemiller*
- 3) Discussion of geographic scope – *Tom Gooch*
- 4) Review/approval of gage selection; periods of record – *Hydrology subcommittee/BBEST*
- 5) Review/discussion of flow separation procedures – *Dan Opdyke, TPWD*
- 6) Ecology components – discussion for consensus of “sound ecological environment”, evaluation of strategies for obtaining EF recommendations, focal taxa, etc – *Ecology subcommittee/BBEST*

May 25 - June 15 – Individual assignments

- 1) *Hydrology subcommittee* – summarize and examine data records for preliminary set of gages selected by the BBEST, examine changes that have occurred
- 2) *Hydrology subcommittee* – examine options for seasonal divisions
- 3) *Hydrology subcommittee* – Begin review of methods to evaluate geomorphology and sediment transport in response to flow in the basin
- 4) *Ecology Subcommittee* – Examine species occurrence/abundance data for selected stream segments; evaluate options for sets of focal species; begin to assemble ecological information from reports, publications, databases

- 5) *Ecology Subcommittee* – Review of scientific literature for evaluation methods for four ecological components (water quality, aquatic fauna [fishes, mussels?], riparian plants, estuary) and for four flow components (subsistence, base, in-bank pulse, over-bank pulse); inquire to TPWD about existence of any flow-habitat studies in basin

June 13- 3rd BBEST Meeting:

- 1) Hydrology Committee Discussions – 3 hours
 - a. Changes in the basin over time
 - b. Likely future changes
 - c. Period of record to use for environmental needs by gage
 - d. Discussion of Flow Separation Procedures – Dan Opdyke
- 2) Ecology Subcommittee Discussions – 3 hours
 - a. Review of species abundance data by focal stream reach; assessment of current conditions
 - b. Discussion leading to selection of focal species for each focal stream reach
 - c. Discussion of options for how to use ecological information for making in flow separations (MBFIT, IHA, etc.) and HEFR summarizations of flow components and regimes
 - d. Discussion of prioritization of ecological information to be gathered for analysis to inform flow separations and regime summarizations

----- <<<<<< >>>>>> -----

Mid June - mid July – Activities

- 1) *Hydrology subcommittee* – perform additional preliminary hydrological analysis (flow separations for a few gages, yielding various flow components (magnitude, duration, frequency, recurrence) Dan Opdyke performed analyses
- 2) *Hydrology subcommittee* – perform geomorphological/sediment analysis, summarize ?
- 3) *Ecology Subcommittee* – perform analysis of –
 - a. water quality (DO x flow; primary productivity x flow, etc) 7/1/11
 - b. aquatic focal species 7/1/11
 - c. riparian trees We are assuming that to address aquatic needs for high pulses and overbank flows will take care of riparian vegetation – no critical bottomland hardwood issues in basin.
 - d. estuarine focal species We are assuming that to address aquatic needs for high pulses and overbank flows will take care of needs of the estuarine reaches of the Brazos and San Bernard rivers.
- 4) *Hydrology and Ecology Subcommittees* – decide how to use the biological analyses to direct flow separations, with the goal of setting –
 - a. subsistence

- b. base Review ecology subcom. proposal - 7/19/11 BBEST meeting
- c. in-bank pulses
- d. over-bank pulses

5) *Perform flow separations and generate HEFR tables for each gage/segment*
Dan Opdyke did these.

July 19 - 4th BBEST Meeting:

- 1) All BBEST members - review HEFR tables ✓
- 2) All BBEST members - analyze subsistence, base, in-bank pulses, over-bank pulses in relation to ecological functions and processes ✓ (*geomorphological - not done*)
- 3) Initial report writing assignments

----- <<<<<< >>>>>> -----

August 16, 2011- 5th BBEST Meeting: August 16

- 1) Evaluated EF recommendations;
- 2) Discussed additional analyses:

flow pulse implementation rules;
Palmer index for establishing dry, average, wet conditions;
geomorphology/sediment analysis;

----- <<<<<< >>>>>> -----

Sept. 21, 2011 - 6th BBEST Meeting:

- 1) Discuss any new evidence or refinements of EF recommendations; achieve consensus EF recommendations
- 2) Refine outline for BBEST recommendations report
- 3) Discuss plan for assembling charts and figures for segments of the recommendations report and begin drafting text for segments (some segments will be mostly drafted by this point)

Sept. 17, 2011 - Mar. 1, 2012 - Continue discussions and refine recommendations document; assist Brazos BBASC with evaluations of flow recommendations and implementation issues' draft adaptive management (future research needs) recommendations for Brazos BBASC; prepare, sign and submit final BBEST recommendations report