

## Responses to Questions from the BBASC

### *Set 4, Received June 12, 2012*

1. *Appropriateness from the perspective of a sound ecological environment of using USGS TxHAT-based classification of flashiness as a factor to consider in treating gage locations similarly.*

The BBEST hasn't discussed the limitations or benefits of TxHAT classification scheme, so we will not comment on its appropriateness in maintaining a sound ecological environment.

We need more information from BBASC before beginning our discussion. Specifically, what is the purpose of using TxHAT in the instream flow recommendation process; has TxHAT been used by other BBASC committees to inform instream flow decisions; why does TxHAT seem appropriate for use in the Brazos River basin; and how will TxHAT be applied and used to adjust BBEST recommendations?

2. *The BBASC has discussed applying the 50% implementation rule found in Section 6.2 of the BBEST report to all levels of base flow, rather than just to dry base flow conditions at some gages. They would like your analysis of the impact on a sound ecological environment of doing so.*

The BBEST understands this to mean that when average/wet base flows drop below the recommended cfs, new water rights could use 50% of the difference between flow without the new water right and the subsistence flow recommendation.

Under dry conditions, many river reaches will naturally move to subsistence flows. The 50% implementation recognizes this. However, it is unlikely that river flows will move towards subsistence flows under average to wet conditions. Therefore, we recommend not pushing base flows towards subsistence under average and wet conditions (i.e., we did not recommend the 50% implementation rule). Allowing average and wet base flows to move towards subsistence with a 50% implementation rule would likely produce negative consequences to the aquatic community. Most riverine communities survive in boom-bust cycles. Communities survive during the lean times (dry years) because of the benefits of the good times (wet years). Shaving flows during the good times will lessen the lasting benefits.

For example, research in the upper and lower Brazos River demonstrates that more water moving through the systems will increase survival of larval and juvenile fish. Also, less water forces fishes into less preferred habitats. Under average and wet base flows, water managers should maintain the historical central tendency of base flows. Dropping this level through diversions or impoundments with a 50% implementation rule would lessen the ecological benefits of the average/wet year.

3. *The BBASC has asked about the impact of changing the subsistence flow for the Brazos River at Palo Pinto gage to a lower number because of the decommissioning of the hydropower operation at Possum Kingdom dam.*

It is not likely that the decommissioning of the hydropower facilities at Possum Kingdom will substantially change low flows in the river. The low flow releases from the dam, which will be continued after the decommissioning, have a greater influence on subsistence flows. If the BBASC wishes, the BBEST could look at the impact of lower subsistence flows at the Palo Pinto gage on DO and water temperature.

4. *The BBASC also is looking forward to receiving the BBEST response to their previous question about Golden Algae.*

Those responses have been provided separately.