

Comments on “Technical Memorandum” dated March 8, 2010 Table 1, subpart 1. “Contribution of Edwards Aquifer Springflow to Freshwater Instream Flow”

From: Kirk Patterson

- (1) As for the present sources of data and analysis referenced under “Contribution of Edwards Aquifer Springflow to Freshwater Instream Flow” in the Technical Memorandum, it would be helpful for subsequent discussions to have the following described:
 - a. The “methodology” used in each source referenced for analyzing the data, whether gage to gage, or other methodologies that might take account of various gains and losses in the various reaches of the Guadalupe river, including losses to evaporation, phreatophytes, streambeds (aquifers), and diversions, and gains such as flows from wastewater discharges, tributaries, and aquifers, using adjustments to take into account both gains and losses in the various discrete river reaches, tributary reaches, and aquifers bringing water to or from the Guadalupe River; and
 - b. The “particular time periods” for the data that was used in the analysis, whether drought of record, severe drought, dry times, average times, wet times, or some other time period; and
 - c. The “particular reaches” of the Guadalupe River, San Antonio River, tributaries and aquifers that were used in the analysis for describing source waters and the gains and losses for waters reaching the bays and estuaries during the various time periods; and
 - d. Some general “conceptual” description of the contributions that various proposed strategies being considered by the EARIP might make to the waters issuing from the springs or flowing downstream of the springs that may or may not make it to the bays and estuaries that provide whooping crane habitat, including changes in critical period management, pumping reductions and recharge enhancement options being considered. In this regard, consider adding as a possible new reference: “Regulatory Impact Assessment for Proposed Rule Chapter 711 (Groundwater Withdrawal Permits) Subchapter J (Aquifer Recharge, Storage and Recovery Projects)” dated November 2002, prepared by Hicks & Company for the Edwards Aquifer Authority.
- (2) As for works in progress that could provide both new data and new analysis that might be useful for discussion and inclusion in the Technical Memorandum, consider the follow up study now under way to the literature search published in 2008 by the USGS entitled “Streamflow Conditions in the Guadalupe River Basin, South-Central Texas, Water Years 1987 – 2006 – An Assessment of Streamflow Gains and Losses and Relative Contribution of Major Springs to Streamflow”.

The Project Proposal for this follow up study is entitled “Gain-Loss Streamflow Assessment in the Lower Guadalupe River Basin”. This follow up study is suggesting collecting data from not only the 28 streamflow gaging stations of USGS that existed at the beginning of that study, but also from approximately 10 to 15 additional measurement sites to add to the measurement network. According to the Project Proposal, USGS gaging stations will be used to define a set of stream reaches, or segments, for which streamflow gains and losses will be calculated for each selected synoptic period, for each stream reach. For each stream reach, change in Streamflow (gain or loss) will be calculated as a result of calculations of Outflow, Inflow, Discharges and Withdrawals in each such stream reach.

According to the Project Proposal, the Deliverables will include: (1) “measurement data” reviewed and entered into the USGS database according to established quality-control procedures, and streamflow measurement data will be published in the 2010 USGS annual data report, and (2) a USGS report will be published that will document the measurements and gain/loss calculations. The target date for completion of the draft report is September 30, 2010. The report is due to be reviewed and published in Q2 of FY 2011.

It would be helpful to have this report, presently underway, described generally in the Technical Memorandum section dealing with “Contribution of Edwards Aquifer Springflow to Freshwater Instream Flow” as a kind of a placeholder for a discussion that might take place in the EARIP stakeholders group itself or committees, subcommittees and working groups thereof, as to the effect of Edwards springflows on Freshwater Instream Flow and flows to the bays and estuaries. This could include a discussion of:

- a. data that needs to be collected on the various stream reaches under different conditions, including extreme droughts and low flow conditions;
- b. analysis that needs to be done on the data that exists and the data that might be collected in the near future and during the period covered by adaptive management, and
- c. analysis that might be done on the various options that the EARIP might look at for providing water to the springs and the spring environments, as to the change that each option might make to the instream flows and the flows to the bays and estuaries under different conditions, including the drought of record and extreme drought conditions.