Pecos River Basin Assessment Program
FY04 CWA Section 319(h)
TSSWCB Project No. 04-11

Quarter no. 6 From 01/01/06 Through 03/31/06

I. Abstract

The "*Reconnaissance Survey of Salt Sources and Loading into the Pecos River*" and "*Influence of Tributaries on Salinity of Amistad International Reservoir"* have been completed. Both reservoir model development and model application to Red Bluff Reservoir are nearing completion. Stream flow and salt routing simulations have began using the SWAT as the starting model. The historical fact sheet titled "A Brief History of Water Resources Challenges Facing the Pecos Basin of Texas" has been draft and is under internal review. Four stakeholder watershed meetings along the river were planned, and will be held in April 2006. The project QAPP was approved by the TSSWCB and EPA. Copies were distributed to members of the team. Writing of the first draft of the Watershed Protection Plan has begun. Team members also continued work on a multi-layered interactive map of the Pecos River basin as well as the collection of historical water quality, irrigation delivery, rainfall, lake level, and groundwater monitoring data.

II. Overall Progress and Results by Task

TASK 1: Basin Assessment

Subtask 1.1: Aerial Photography, Delineation, and Characterization

The following actions have been completed during this reporting period:

a. Work continued on development of multi-layered maps of the Pecos River basin.

95% Complete

Subtask 1.2: Historical Water Quality, Irrigation Delivery, Rainfall, Red Bluff Lake Levels, and Groundwater Monitoring

The following actions have been completed during this reporting period:

a. Much of this subtask focused on data gathering and compiling reports and information sources that will benefit project participants. Some of the data that were gathered during this quarter includes the following:
    - EPA Watershed Training Module
    - Texas Water News Releases
    - EPA Comment on Watershed Manual
    - EPA Watershed Handbook release
    - Golden Algae News Release

- Texas Roots population information source
- Red Bluff Reservoir news article
- Texas Conservation Legacy website
- Pecos River Compact strategic plan
- EPA Watershed Funding Site
- Texas Water Development Board annual groundwater report
- EPA Smart Growth Water Resources publications
- River Basin Performance Indicator – Universities Council on Water Resources

60% Complete

Subtask 1.3: Aquatic Life and Habitat Inventory

The following actions have been completed during this reporting period:

a. Work on this subtask is scheduled to begin in June 2006.

5% Complete

Subtask 1.4: Identify and Characterize the Volume and Quality of Tributaries and Springs

The following actions have been completed during this reporting period:

a. There has been no activity this quarter, due to absence of measurable water quantities in tributaries identified as part of this study.

25% Complete

Subtask 1.5: Identify and Characterize Saline Water Sources Entering the Pecos River

The following actions have been completed during this reporting period:

a. The "Reconnaissance Survey of Salt Sources and Loading into the Pecos River" report has been revised and completed. The final report is attached. This task is now completed.

100% Complete

Subtask 1.6: Simulate Flow and Salinity of the Pecos River for Evaluating River Management Options

The following actions have been completed during this reporting period:

a. The *Influence of Tributaries on Salinity of Amistad International Reservoir* has been completed and is attached for review.
b. Both reservoir model development and model application to Red Bluff Reservoir are nearing completion.
c. Streamflow and salt routing simulation began using the SWAT as the starting model.

50% Complete

Subtask 1.7: Economic Modeling of the Pecos River Basin and Assessment of Saltcedar Control Activities

The following actions have been completed during this reporting period:

a. The principle investigator for this subtask has been called up for active duty in the Army National Guard, and will not return until 2007. As such, work on this subtask will be postponed until his return.

8% Complete

Task 2: Educational Programming

Subtask 2.1: Publish Written Informational Materials to Educate Private Landowners, Stakeholders, and Policy Makers about the Pecos River basin and the effects of saltcedar

The following actions have been completed during this reporting period:

a. The first draft of the historical fact sheet titled "A Brief History of Water Resources Challenges Facing the Pecos Basin of Texas" was completed, and is under internal review.

60% Complete

Subtask 2.2: Educational Meetings of Interested Parties for Input and Organizational Support

The following actions have been completed during this reporting period:

a. Project personnel met with the Pecos River Advisory Committee and agreed on the need for a Pecos River Technical Symposium, to be sponsored and supported by the Advisory Committee. The symposium would include presentations from experts on the Pecos River who are not currently involved in the project. A potential list of speakers was developed, and a tentative time frame of fall 2006 was discussed.
b. Four stakeholder watershed meetings along the river were planned, and will be held in April 2006. A newspaper article inviting the public was drafted and sent out. An invitation postcard was also sent to a list of 1,000 landowners. The meetings will include a short presentation about the project, followed by a comment and feedback session.
c. Project brochures and the year one Annual Report were distributed at the annual Rio Grand Basin Initiatives Conference.

40% Complete

Subtask 2.3: Develop a Website for Dissemination of Information

The following actions have been completed during this reporting period:

a. Ongoing activities and updates were posted to the project website.

85% Complete

Task 3: Establish a Monitoring Program

Subtask 3.1: Develop a QAPP for Sampling Protocol

The following actions have been completed during this reporting period:

a. The project QAPP was reviewed and approved by the EPA. Copies were distributed to members of the team.
b. An amendment to include work done by USGS under subtask 1.3 is currently being drafted.

90% Complete

Subtask 3.2: Water Quality Monitoring, including Total Dissolved Solids (TDS), Total Suspended Solids, Potential Hydrogen (pH), Dissolved Oxygen (DO), and Electrical Conductivity (EC)

The following actions have been completed during this reporting period:

a. Routine water quality samples were collected as part of the Texas Clean Rivers Program.

40% Complete

Subtask 3.3: Quantity and Fate of Water Salvage as a Result of Saltcedar Control

The following actions have been completed during this reporting period:

a. Additional profile data was collected and pumping tests were conducted in boreholes to determine hydraulic properties of the shallow aquifer.
b. The profile for both test sites A and B was verified and finalized.
c. Water level monitoring data was assessed to determine the relationship between surface water and groundwater.
d. Water level monitoring data was analyzed using statistical methods.
e. Literature review was completed for the interim report.
f. A presentation was made at the Rio Grande Basin Initiative annual conference on March 29.
g. An interim report was prepared.

50% Complete

Task 4: Watershed Protection Plan

Subtask 4.1: Develop Annual Reports and a Final Report Summarizing Basin Assessment, Educational Programming, and Monitoring

The following actions have been completed during this reporting period:

a. No activity this quarter.

25% Complete

Subtask 4.2: Produce the Final Watershed Protection Plan for Pecos River Segments 2312, 2311, and 2310

The following actions have been completed during this reporting period:

a. Writing of the first draft of the Watershed Protection Plan began.

5% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

- To rectify past billing errors, a correction will be made to the next billing invoice and adjustments have been made to ensure proper future billing.
- The project work plan was amended to provide for additional data processing and mapping by the Agricultural Research and Extension Center at El Paso to (1) collect images (satellite and aerial photos) and shape files available for the Pecos River project area; (2) process images and overlay different layers; and (3) develop maps over the base map.
- In order for USGS to conduct the Aquatic Life and Habitat Inventory under Subtask 1.3, a QAPP revision will be required. The amendment to the QAPP has been drafted and is being reviewed by USGS before submission to the TSSWCB.

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

Subtask 1.1 – Work will continue towards the completion of multi-layered Pecos River basin maps.

Subtask 1.2 – Additional research, data links, and information sources will be provided to the team.

Subtask 1.3 – The biological assessment will begin in June. IBWC will coordinate dual efforts by the TCEQ and USGS to complete this task.

Subtask 1.4 – Selected tributaries will be sampled if measurable water quantities exist.

Subtask 1.5 – The “Reconnaissance Survey of Salt Sources and Loading into the Pecos River” report will be forwarded to TSSWCB for their review.

Subtask 1.6 – Finalized the report on the impact of tributaries on salinity of Amistad Reservoir for submittal to the State Board. Complete the modification of the routing model embedded in SWAT, then begin validation using the USGS data. Begin the formulation of riparian zone simulation.
Subtask 1.7 – No activities planned.
Subtask 2.1 – Review and finalize the historical fact sheet.
Subtask 2.2 – Conduct four stakeholder meetings in April, and incorporate the resulting information into the Watershed Protection Plan. Stakeholder meetings will be held on April 10th in Mentone, April 11th in Imperial, April 20th in Iraan, and April 21st in Sheffield.
Subtask 2.3 – Post updates and documents to the project website.
Subtask 3.1 – Finalize and submit amendments to the QAPP regarding the biological assessment.
Subtask 3.2 – Routine water quality samples will be collected as part of monitoring activities carried out through the Texas Clean Rivers Program.
Subtask 3.3 – Conduct additional pumping tests in boreholes to determine hydraulic properties of the shallow aquifer. Conduct additional permeability tests of soils collected from the test sites. Conduct flow measurements as the condition permits. Measure water quality in the boreholes and along the river from the top of Site B to the bottom of site A. Develop a conceptual model for surface water and groundwater interaction.
Subtask 4.1 – No activities planned.
Subtask 4.2 – Continuation of writing the first draft of the Watershed Protection Plan.

Reconnaissance Survey of Salt Sources and Loading into the Pecos River

Influence of Tributaries on Salinity of Amistad International Reservoir