



Rio Grande near Las Cruces, New Mexico

## **Rio Grande Basin Salinity Management Program San Acacia, NM to Fort Quitman, TX**

**October 2012**

### **Background and Purpose**

Problems associated with elevated salinity in the Rio Grande from above Elephant Butte Reservoir, New Mexico, to Fort Quitman, Texas, have long been recognized and are increasing due to rapid urban growth and increasing water demand. Recent research has identified natural sources as the principal salinity contributor in the area, offering hope for intercepting salinity before it impacts water supplies.

The multi-state Rio Grande Project Salinity Management Coalition was formed to improve water quality in the New Mexico -Texas border region, and provides technical guidance. The Coalition is composed of TX, NM, and CO state water agencies; irrigation districts; El Paso and Las Cruces water utilities; and university researchers.

### **Rio Grande Salinity Management Program**

The overall objectives of the Rio Grande Project Salinity Management Program are to reduce salinity concentrations, mass loading, and impacts in the Rio Grande Project area from San Acacia, New Mexico to Fort Quitman, Texas to increase usable water supplies for agricultural, urban, and environmental purposes. On behalf of the Salinity Coalition, the NM Interstate Stream Commission, NM Environment Department, Texas Commission on Environmental Quality, Texas Water Development Board and the U.S. Army Corps of Engineers (Corps) are working on a Water Resources Development Act Section 729; Phase 3 Rio Grande Basin, CO, NM, TX, San Acacia to Ft. Quitman, TX, Salinity Management Program to bring together existing information and develop a recommended strategy for moving forward with a salinity management program.

The Phase 3 Rio Grande Basin Salinity Management Program includes four parts:

#### **1) Rio Grande Project Salinity Assessment**

- Compile and integrate Rio Grande Project salinity source information
- Develop a baseline salinity budget based on existing water quality data and known saline inputs
- Determine critical data and information gaps needed to develop salinity management alternatives
- Develop preliminary estimates of the economic impacts of elevated salinity

## 2) Salinity Management Alternatives Analysis and Feasibility

- Develop and screen salinity management alternatives
- Detailed analysis and focused site investigations of salinity management alternatives selected for further evaluation
- Develop comparative cost estimates for salinity management alternatives
- Alleviate information gaps, devise and install monitoring systems as needed
- Conduct a detailed assessment of economic damages and benefits
- Conduct an assessment of environmental salinity impacts to wildlife and habitat

## 3) Pilot-Scale Salinity Control Project Testing

- Implement feasible pilot-scale salinity control project or projects
- Monitor and evaluate pilot-scale salinity control and cost effectiveness
- Identify and develop implementation plans for projects determined to be effective

## 4) Expanded Scale Salinity Control Project Implementation, Monitoring and Evaluation

- Implement expanded scale salinity control projects
- Continuing monitoring and documentation of water quality improvements and salinity management benefits

The first step towards accomplishing the Coalition's objectives was completion of the Phase 3 Part 1 in December 2009 resulting in a Rio Grande Salinity Assessment, Economic Impact Assessment and a geospatial salinity database.

Phase 3 Part 2, again occurring under WRDA section 729, began in May 2010 and consisted of developing salinity management alternatives for specific areas and filling critical data gaps. This phase identified the southern end of distal Mesilla as the most promising site for salinity interception and management. The Coalition's goal is to identify specific potential pilot project areas in FY2013 and then begin feasibility assessment efforts in FY2014, potentially utilizing WRDA 5056 if it is reauthorized and funds appropriated.

### **Rio Grande Project Salinity Management Coalition**

- Rio Grande Compact Commissioners from Texas, New Mexico & Colorado
- Texas Commission on Environmental Quality
- Texas Water Development Board
- New Mexico Interstate Stream Commission
- New Mexico Environment Department
- Colorado Division of Water Resources
- El Paso Water Utilities
- Las Cruces Utilities Department
- Elephant Butte Irrigation District
- El Paso County Water Improvement Irrigation District No. 1
- Hudspeth County Conservation and Reclamation District #1
- New Mexico State University, Water Resources Research Institute
- Texas A&M AgriLife Research and Extension Center
- University of Texas at El Paso, CERM
- New Mexico Department of Agriculture
- US Bureau of Reclamation
- US Geological Survey, NM & Texas Water Science Centers



Elephant Butte Reservoir