Rio Grande Salinity Management: Preliminary Economic Impact Assessment

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BACKGROUND

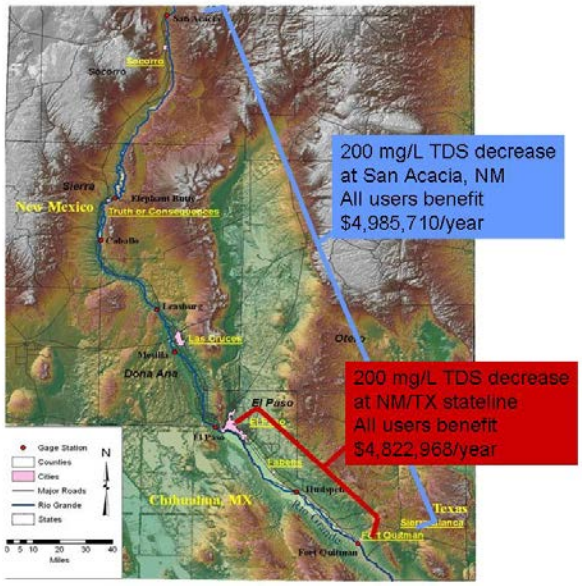
High concentrations of dissolved solids (also expressed as salinity) in the Rio Grande basin, are a major concern for water resource managers and water users. Elevated salinity concentrations adversely impact agricultural production, residential, commercial and industrial water users, and also have environmental consequences. The problems associated with high salinity take on greater importance as urban growth increases water demand. The Rio Grande Compact Commission, in collaboration with local water management entities, initiated a three state effort resulting in the creation of the *Rio Grande Salinity Management Coalition* (RGSMC) in January 2008. The RGSMC is composed of the Rio Grande Compact Commissioners from Colorado, New Mexico, and Texas, state water management agencies, local water utilities and irrigation districts, and university research organizations.

OBJECTIVES

The overall objectives of the RGSMC program are to better understand salinity concentrations, loading sources, and impacts in the Rio Grande basin from San Acacia, New Mexico to Fort Quitman, Texas, and to ultimately reduce salinity concentrations, increasing usable water supplies for agricultural, urban, and environmental purposes. Economic impacts attributable to salinity of Rio Grande water were estimated based on damage functions and calculation methods for residential, agricultural, municipal, and industrial uses within the study area.

PROGRAM RESULTS AND BENEFITS

- In this preliminary assessment, the total economic damage (cost) from Rio Grande salinity is estimated to be about $10.2 million per year: 76% for urban economic impacts and 24% for agricultural damages. The single category of the highest damages is residential, 42% of the total, followed by agricultural, commercial, and urban landscape.
- A 200 mg/L TDS reduction in salinity concentrations in Rio Grande water results in $5.0 million in benefit, of which approximately 80% would accrue to urban users in El Paso County, currently the only urban water uses of Rio Grande.
- Future growth in population and increased use of Rio Grande water for urban supplies would result in much higher economic impacts and make management of salinity concentration in the river increasingly important.
- Recommend to fill-in significant economic impact information gaps and refine the assessment analysis to improve evaluation of potential salinity management control alternatives.
- The preliminary assessment considered only existing conditions. Inclusion of full agricultural and other losses are anticipated to show much higher levels of damages.
- The results provide guidelines for evaluating and selecting alternative sites for salinity control.



Economic benefit of salinity reductions in the Rio Grande basin.

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