

Mexico's Water Debt: 2010 to 2014

The Rio Grande serves not only as a natural international boundary between the state of Texas in the United States and Mexico, but also as an important water source to businesses and families living in the Lower Rio Grande Valley of Texas. The river is shared between Mexico and the United States by a series of agreements, but recent decisions by Mexico to use water within the country rather than deliver required amounts to the United States have put a strain on these cooperative relationships.

The Rio Grande

The river and its tributaries deliver water from storage reservoirs located in Mexico and two international reservoirs, Falcon and Amistad, for agricultural producers and cities across the border region in Texas. The International Boundary and Water Commission (IBWC) was created by Mexico and the United States to oversee operations of the Rio Grande and compliance with the 1944 Water Treaty.

The 1944 Water Treaty

The treaty defines how the United States and Mexico share water in the Rio Grande, Colorado, and Tijuana Rivers. The United States gives water to Mexico from the Colorado River—1.5 million acre-feet per year Mexico gives water to the United States from the Rio Grande—a minimum of 350,000 acre-feet per year in cycles of 5 years. One acre-foot equals 326,000 gallons, which is a year's worth of water for a family of four. Mexico is racking up a major debt this cycle.

The Current Cycle (fourth year ended Oct. 25, 2014)

Graphic showing required deliveries by October 2015 in accordance with the treaty, deliveries that should have been made from October 2010 to October 2014, and deliveries that have actually been made as of Oct. 25, 2014. Mexico has only delivered 78 percent during the current cycle as of Oct. 25, 2014, creating a deficit of 309,000 acre-feet.

Graphic showing reservoir levels as of Oct. 25, 2014. Amistad is at 60 percent normal capacity for the United States. The United States has 1,104,000 acre-feet and Mexico has 512,000 acre-feet in Amistad. Falcon is at 25 percent normal capacity for the United States. The United States has 392,000 acre-feet and Mexico has 375,000 acre-feet in Falcon.

On the whole Mexican reservoirs are at 86 percent normal capacity as of Oct. 25, 2014, but the Luis Leon Reservoir is at 95 percent normal capacity. The Luis Leon Reservoir in Mexico is on the Rio Conchos, a tributary to the Rio Grande. (Source: International Boundary and Water Commission (IBWC). Online. [International Boundary and Water Commission Webpage](#))

Impacts of Water Debt

During the last Mexican water debt, South Texas counties experienced a significant decrease in crop acreage, affecting economies dependent on agriculture. Between 1992 and 2002 Mexico Accumulated a water debt of 1.5 million acre-feet. Between 1992 and 2002, Cameron, Hidalgo, Starr, and Willacy Counties on average saw a 34 percent decrease in crop acreage.

Vegetables, cotton, and sorghum suffered the worst in the Lower Rio Grande Valley from the beginning of the water debt in 1992 to the height of the water debt in 2002. These are irrigation-heavy row crops.

Graphic showing 70 percent decrease in sorghum harvested crop acreage in Starr County, 99 percent decrease in vegetables harvested crop acreage in Hidalgo County, 80 percent decrease in cotton harvested crop acreage in Willacy County, and 75 percent decrease in vegetables harvested crop acreage in Cameron County. (Source: United States Department of Agriculture. 1992 and 2002 Census of Agriculture. Online. [Agricultural Census](#))

Economic Impact

The 2002 decrease in crop acreage generated a loss of \$135 million in business activity and a loss of 4,130 jobs. The 2013 decrease in crop acreage is projected to generate a loss of \$218 million in value added, \$395 million in economic output, and 4,840 jobs. (Source: Ribera, Luis, Dean McCorkle. "Economic Impact Estimate of Irrigation Water Shortages on the Lower Rio Grande Valley Agriculture." Texas A&M AgriLife Extension, June 2013.)

Irrigation districts supply water for agricultural and municipal use. Some irrigation districts in the Lower Rio Grande Valley are expected to run out of irrigation water, impacting municipal water deliveries to more than 800,000 residents. Affected communities are being forced to spend funds to purchase water – funds for which they originally had not budgeted. (Source: Texas Commission on Environmental Quality)

Drought Conditions

Forecasts predict another hot and dry summer in 2015. High temperatures plus low water equals continuing drought. Sporadic rainfall projected for summer 2015 will temporarily raise water levels in reservoir, but high temperatures will increase evaporation or loss of water from reservoirs.

The Bottom Line

Cities and communities in the Rio Grande Valley will continue to feel the negative impacts of extreme drought conditions and water shortage from the current deficit – a man-made drought.

In 2005, Mexico successfully worked with the United States to resolve the water debt with contributions from various water sources. A strategic approach with direct, meaningful, and active participation from Texas and Federal officials can resolve the 2010 water debt.

Prepared by the Texas Commission on Environmental Quality (Dec. 3, 2014). For the latest information on the water shortage issue related to the Mexican Water Deficit, visit Texas Commission on Environmental Quality Mexican Water Deficit Web page at www.tceq.texas.gov/border/water-deficit.html.