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*by Matthew Padilla**

The snow that falls in the Rockies' Sierra Sangre de Cristo range holds water during the winter months, slowly releasing water over the spring and summer months into the tributaries and aquifers that feed the Rio Grande basin.[1] As the climate continues to warm, the ability of the Rio Grande basin to replenish itself may become increasingly threatened as snowpack decreases and evaporation rates increase.[2] Past droughts and environmental catastrophes are archeologically preserved in the ruins of ancient southwestern cities such as Chaco Canyon[3] and serve as dire warnings of what may occur in a dryer climate. As the Southwest prepares for population growth and increased water scarcity, Albuquerque and El Paso's stories illustrate how the destinies of all the communities in the Rio Grande valley are intertwined.

In the 1980s, New Mexico and the city of El Paso litigated and negotiated water rights in federal court and before the New Mexico State Engineer.[4] New Mexico's "beneficial use" provision in its state Constitution and related water management statutes place strict restrictions on water exports.[5] Eventually, New Mexico was not compelled to provide its water to El Paso, thus allowing farmers and cities in the state to keep part of an already limited supply of water from booming El Paso.[6] As a result, El Paso was forced to pump more water out of its aquifer in the Hueco Bolson. El Paso and Ciudad Juarez, which both draw water from the Hueco Bolson water basin, have been estimated to have as little as two years of freshwater remaining in their aquifer and both face population growth.[7]

El Paso is experiencing increased growth because of military base realignments, which will add nearly 28,000 soldiers, not to mention their families, to Fort Bliss through 2013.[8] With limited groundwater or water from the Rio Grande to sustain growth, the city of El Paso turned to the federal government and Senator Kay Bailey Hutchinson (R-TX) for federal assistance.[9] The solution was the largest inland desalination plant in the world, meant to treat the remaining brackish ground water and ensure El Paso's future growth.[10] It is estimated that depleting the Hueco will enable the city of El Paso to maintain an estimated fifty years of projected growth.[11] The Hueco, however, is not easily recharged and there appear to be no plans for the city if the Hueco is tapped dry.

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The lifeblood of multiple communities is the Rio Grande. Above is a portion of the Rio Grande Valley State Park near downtown Albuquerque. Photo taken by Matthew Padilla.

North of El Paso, Albuquerque, New Mexico's largest city, is urgently trying to balance growth and make use of the San Juan-Chama diversion project instead of tapping its finite aquifer. Through a series of mountain pipes and dams, the project diverts New Mexico's water from the Colorado River basin southwards towards Albuquerque via the Rio Grande.[12] The project was spearheaded by former Senator Dennis Chavez (D-NM) and signed into law by President Kennedy in 1961.[13] Senator Chavez spent nearly three decades of his Senate career working to pass the diversion project as a safeguard against drought.[14]

Albuquerque, after learning that its aquifer was smaller than previously believed, has begun to rely on the additional San Juan-Chama water as a primary potable water source.[15] It is believed that the San Juan-Chama diversion project will enable Albuquerque to sustain predicted growth for the next sixty years without draining its aquifer.[16] In addition to the diversion project, the city of Albuquerque has curtailed its water use by over thirty-percent in the past decade and begun efforts to promote increased water awareness and eco-friendly development.[17] Albuquerque is experiencing rapid growth rates, and will have to contend with proposed developments which will place greater strain on its water supplies.[18]

Population growth is not the only variable affecting the sustainability of water supplies along the Rio Grande. Exacerbating the problems posed by population growth, climate change has the potential to derail any planning in the Rio Grande basin that is based on current water models.[19] Declining water supplies due to decreased snowpack and increased evaporation in the Rio Grande system will lead to less water and increased litigation over what is left. Ensuring there is enough water for all entities could impact agricultural land availability and result in bidding wars over water rights between stakeholders as has been the case in other water-scarce regions.[20]

How the states monitor available water in light of global warming is also important. The Chair of the Senate Energy and Natural Resources committee Senator Bingaman (D-NM) and senior member Senator Domenici (R-NM) have both called for an accounting of western water in light of increased stress due to global warming.[21] Such preparation is vital if the communities of the Rio Grande are to continue using the available water for the beneficial use of all in the warmer future. Regardless of the outcome, as snowpack lessens and evaporation increases, the thirsty Rio Grande will have less to share with the communities she sustains.

Endnotes:

[1] Western Governors' Association, Water Needs and Strategies for a Sustainable Future (June 2006), *available at* http://www.westgov.org/wga/publicat/Water06.pdf (last visited Jan. 11, 2008).

[2] Western Governors' Association, *id.*; *see also* Brian Hurd & Julie Coonrod, *Climate Change and Its Implications for New Mexico's Water Resources and Economic Opportunities* (July 2007), *available at* http://agecon.nmsu.edu/bhurd/hurdhome/index.htm (last visited Jan. 13, 2008).

[3] Jared Diamond, Collapse: How Societies Choose to Fail or Succeed 137 (Viking Penguin 2005).

[4] Robert Reinhold, *El Paso's Battle for Water Entering Crucial Phase*, N.Y. Times, Feb. 27, 1987, *available at* http://query.nytimes.com/gst/fullpage.html?res=9B0DE5D6173BF934A15751C0A961948260&sec=&spon=&pagewanted=2 (last visited Jan. 12, 2008).

[5] N.M. Const. art. XVI, § 2.

[6] City of El Paso v. Reynolds, No. 80-730HB, 1984 U.S. Dist. LEXIS 24276, at *1 (D.N.M. Aug. 17, 1984).

[7] Robin Emmott, *Mexico, U.S. suffer as Rio Grande sucked dry*, San Diego Union-Trib., Dec. 17, 2007, *available at* http://www.signonsandiego.com/news/mexico/20071217-0503-mexico-usa-water.html (last visited Jan. 10, 2008).

[8] Dan Huff, *Bliss building boom a boon for local business*, El Paso Inc., Feb. 10, 2008, *available at* http://www.elpasoinc.com/showArticle.asp?articleId=454 (last visited Feb. 11, 2008).

[9] Alicia A. Caldwell, *El Paso desalination plant opens up after 15 years of planning*, Daily Texan, Aug. 9, 2007, *available at* http://media.www.dailytexanonline.com/media/storage/paper410/news/2007/08/09/StateLocal/El.Paso.Desalination.Plant.Opens.Up.After.15.Years.Of.Planning-2930024.shtml (last visited Jan. 10, 2008).

[10] Caldwell, *id.*

[11] *El Paso to Dedicate 'World's Largest Inland Desalination Plant'*, Waste & Water Dig., Aug. 3, 2007, *available at* http://www.wwdmag.com/El-Paso-to-Dedicate-Worlds-Largest-Inland-Desalination-Plant-NewsPiece14116 (last visited Jan. 10, 2008).

[12] About the San Juan-Chama Drinking Water Project, San Juan-Chama Drinking Water Project website, http://www.sjcdrinkingwater.org/ (last visited Feb. 15, 2008).

[13] DennisChavez.org, Chavez Shepherds Project to Bring N.M. Cities Water, http://www.dennischavez.org/archives/view/349/ (last visited Feb. 15, 2008).

[14] Chavez, *id.*

[15] Chavez, *id.*

[16] Chavez, *id.*

[17] Safe Water Supply, City of Albuquerque website, http://www.cabq.gov/sustainability/green-goals/water (last visited Feb. 15, 2008).

[18] Erik Siemers, *Albuquerque City Council: No TIDD for SunCal*, Albuquerque Trib., Dec. 4, 2007, *available at* http://www.abqtrib.com/news/2007/dec/04/albuquerque-city-council-no-tidd-suncal/ (last visited Jan. 12, 2008).

[19] Hurd & Coonrod, *supra* note 2.

[20] *See generally,* Maude Barlow, *The Worlds Water: A Human Right or a Corporate Good?, in* Whose Water is it 25, 25 (National Geographic Society, 2003).

[21] James W. Brosnan, *New Mexico's Domenici, Bingaman push for new water survey*, Albuquerque Trib., Dec. 12, 2007, *available at* http://www.abqtrib.com/news/2007/dec/12/new-mexicos-domenici-bingaman-push-new-water-surve/ (last visited Jan. 11, 2008).