

NAVIGATING THE WATERS OF THE TEXAS-MEXICO BORDER: COMPLICATIONS OF ASYMMETRY

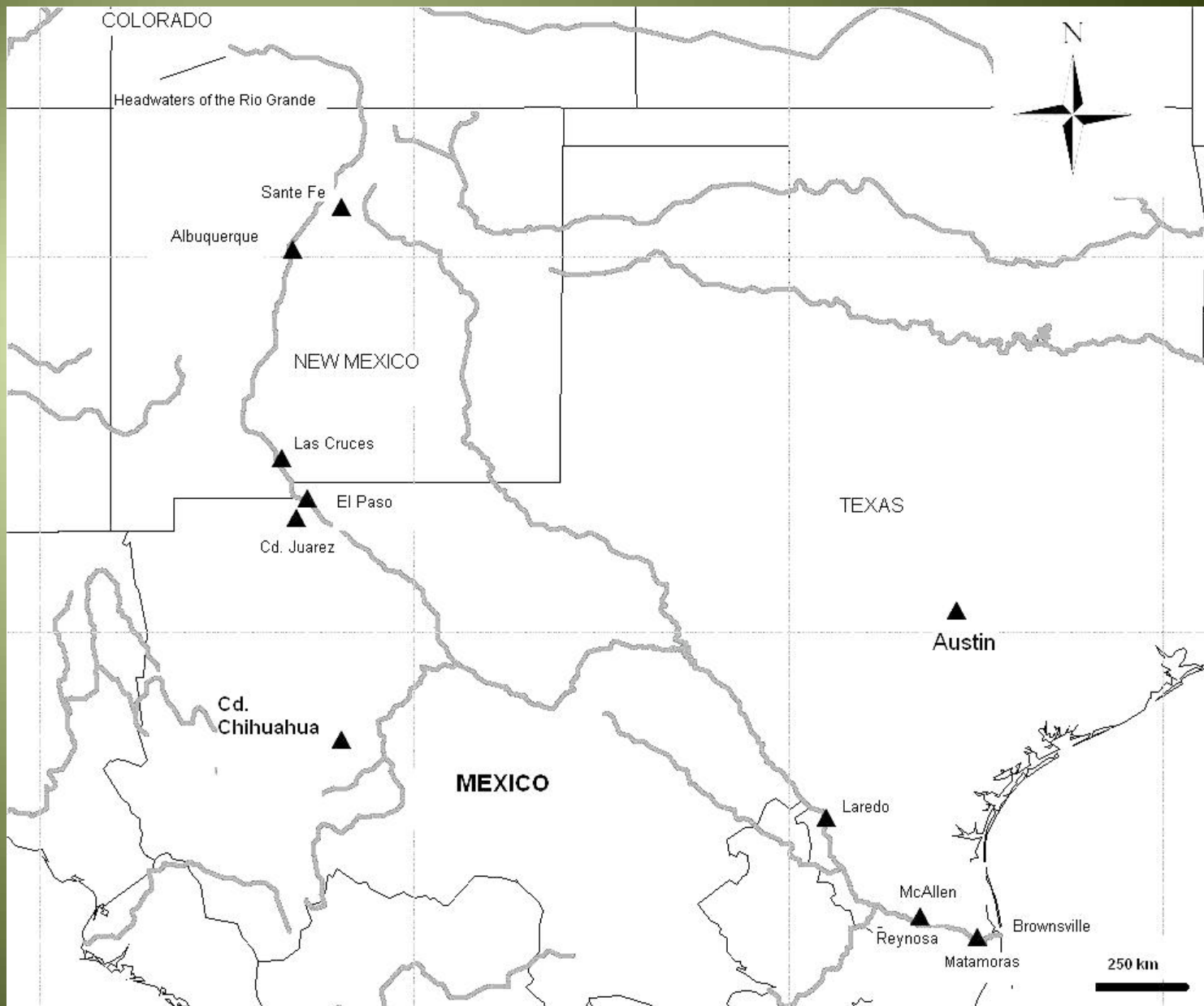
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The Broader Issues

- ◆ Water Scarcity
- ◆ Pollution/degradation
- ◆ Access to safe drinking water

The Setting:

- ◆ Binational
- ◆ El Paso, Texas and Ciudad Juárez, Chihuahua
 - ◆ Straddles developed and developing nation
 - ◆ Resource and power imbalance



◆ Significant population growth

	1950	1990	2000	2006
◆ El Paso	130,000	515,342	563,662	624,365
◆ Juárez	122,566	798,499	1,217,818	1,455,687

- ◆ Arid environment
 - ◆ El Paso average annual precipitation 8.77 inches
 - ◆ Maximum average precipitation occurs in Aug (1.75 in)
 - ◆ Minimum average precipitation occurs in April (0.23 in)
 - ◆ Average high temperature - June -- 95°
 - ◆ Average low temperature – Jan -- 33 °
- ◆ Limited surface water

Water Allocation: Historical Context

- ◆ 1906 Treaty
 - ◆ 60,000 acre feet water allocated to Mexico
 - ◆ Groundwater rights not mentioned
 - ◆ Shortage sharing
 - ◆ Salinity levels high for Mexico
 - ◆ Elephant Butte Irrigation District
 - ◆ Upstream irrigation increase salinity levels
- ◆ 1944 treaty
 - ◆ Sister treaty to the 1906 treaty
 - ◆ Between the two allocate water resources of Rio Grande/ Rio Bravo from El Paso to Gulf of Mexico

Rio Grande Compact

- ◆ Texas, New Mexico and Colorado
- ◆ Elephant Butte Reservoir in New Mexico
 - ◆ 750,000 acre feet annually
 - ◆ End point for TX delivery
 - ◆ New Mexico under obligation to deliver TX water
 - ◆ Flow dependant
 - ◆ Allocations 53% New Mexico and 47% for Texas

- ◆ Diminishing and degraded groundwater
 - ◆ Historical reliance on Hueco Bolson
 - ◆ Subject to severe cones of depression detectable in both Ciudad Juarez and El Paso because of pumping

Scarcity Mitigations

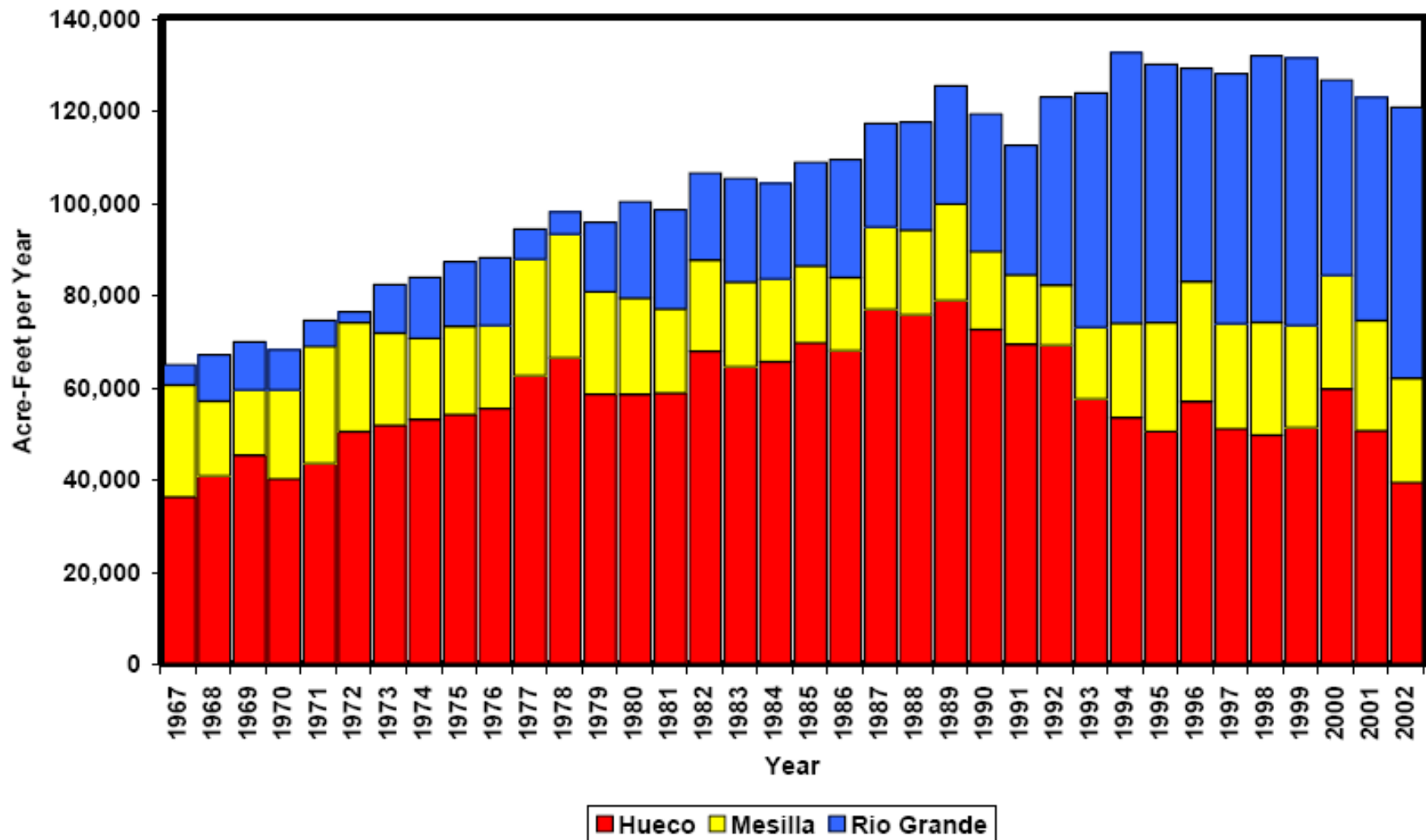
- ◆ Technological fixes
 - ◆ Infrastructure development
 - ◆ Desalination
 - ◆ Reservoirs
 - ◆ Water treatment
 - ◆ Delivery systems
 - ◆ Water markets
 - ◆ Change water norms/behavior

Dams and Diversions Along the Rio Grande



El Paso Water Utility Water Source

EPWU Supply



◆ El Paso

- ◆ Municipality has no direct access to surface water
- ◆ Trends
 - ◆ Reduced dependence upon Hueco Bolson
 - ◆ Increased conservation/reuse/reclaim water
 - ◆ Desalinization plant
 - ◆ Projected water shortages (demand exceeds supply)
~2060

◆ Ciudad Juarez, Mexico

- ◆ Water viewed as a public good
- ◆ Under the legal purview of the federal government
 - ◆ Continues to be almost 100% reliant upon Hueco Bolson for water
 - ◆ No desalinization plants (and none planned because of tremendous expense)
 - ◆ Primary water treatment plants with future plans for constructing secondary treatment plants
 - ◆ Increased use of Mesilla Bolson
 - ◆ Negotiating with Mexican irrigation districts for water in exchange for reuse water
 - ◆ Only guaranteed 60,000 acre feet annually of surface water from Rio Grande

Governing Entities

- ◆ International Boundary and Water Commission and Comisión Internacional de Límites y Aguas (IBWC and CILA)
 - ◆ Charged with resolving binational boundary disputes and managing the conveyance of the waters of the Rio Grande.
- ◆ La Paz Agreement
 - ◆ Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area
- ◆ Integrated Border Environmental Plan (IBEP)
 - ◆ Effort to expand the scope of the La Paz agreement;
 - ◆ Largely a failure
- ◆ Environmental Protection Agency (EPA) and the Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP)
- ◆ Border XXI Program
 - ◆ Corrective measure to failed IBEP
 - ◆ Goal is to promote sustainable development in the border region

Governing Entities continued

- ◆ Commission for Environmental Cooperation
 - ◆ International agency created by Canada, the United States and Mexico under the North American Agreement on Environmental Cooperation
 - ◆ Established to address regional environmental concerns; to help prevent potential trade and environmental conflicts; and to promote the effective enforcement of environmental law
 - ◆ Articles 14 and 15 allow a NGO or individual to file a complaint against any of the three countries for failure to enforce their environmental laws
 - ◆ Since 1995, 65 complaints filed – 54 are closed; 11 still active
 - ◆ 7 cases against Mexico
 - ◆ 3 against Canada
 - ◆ 1 against United States

Governing Entities continued

- ◆ Border 2012
 - ◆ Successor to Border XXI
 - ◆ Mission is to protect the environment and public health in the U.S.-Mexico border region consistent with the principles of sustainable development
 - ◆ By design, a bottom-up approach with local decision-making and project implementation

- ◆ The Border Environment Cooperation Commission (BECC) – Comisión de Cooperación Ecológica Fronteriza (COCEF)
- ◆ Created as part of NAFTA to address environmental aspects/concerns associated with increased trade
- ◆ Purpose is to help conserve, protect and enhance the environment in the US-Mexico border region through the development and certification of environmental infrastructure projects
- ◆ Doesn't fund
 - ◆ NADBank is one funding mechanism for BECC certified projects

- ◆ New Mexico-Texas Water Commission
 - ◆ Created as a result of the settlement of a decade-long lawsuit between El Paso and New Mexico
 - ◆ Objectives:
 - ◆ To work together to study, identify and address common concerns and objectives with respect to water resources in the region, including the possibility of securing additional supplies of surface water for the region from upstream sources.
 - ◆ To work together in a cooperative effort to maximize the utilization of waters provided to New Mexico and Texas through the Rio Grande Project in order to provide reliable and cost effective water supplies to meet current and projected long-term agricultural and municipal needs of the region.

- ◆ Paso del Norte Task Force
 - ◆ Unites water managers, water users, experts and citizens working cooperatively to promote a tri-state, binational perspective on water issues that impact the future prosperity and long-term sustainability of the region
- ◆ Irrigation districts
- ◆ Municipalities

Mexico-United States

Asymmetry

- ◆ Historical lack of trust between Mexico and United States
 - ◆ From Mexico perspective: Mexican-American War is referred to as the American Invasion
- ◆ From Mexico perspective, border region is a success story
 - ◆ High employment
 - ◆ Higher wages than interior Mexico
 - ◆ Tremendous economic growth
 - ◆ 98% of city connected to tap water
 - ◆ 80% has sewage
- ◆ From U.S. perspective, border region is a third-world city
 - ◆ High poverty
 - ◆ Unsanitary living conditions
 - ◆ Environmentally polluted
- ◆ However, Juárez driving the economy of the region

- ◆ Border growth asymmetry
 - ◆ By 1990, every Mexican border city was larger than its American twin
 - ◆ Growth spurred by Border Industrialization Program and more recently, NAFTA
 - ◆ Mexico offered access to relatively cheap labor; proximity to the U.S.; and more lax environmental regulations

NAFTA

- ◆ Mexican negotiating abilities are far from equal to the U.S. or Canada
 - ◆ NAFTA did not reconcile commercial laws between countries; consequently, Mexican firms can lose their claims due to ignorance of the way commercial regulations work in the United States
 - ◆ Most Mexican firms are small businesses that cannot afford to wage NAFTA panel disputes
 - ◆ Trade between Mexico and the United States involves intra-industry trade – that is, trade among U.S. or foreign-owned MNCs located in the United States with subsidiaries in Mexico
 - ◆ This trade does not represent a comparative advantage that Mexico has in the manufacturing sector; but a corporate strategy in which Mexico's locational advantages are exploited
 - ◆ Juarez's economy is significantly tied to the United States

Interdependencies between Texas and Mexico

- ◆ Mexico's maquiladoras are tied to U.S. industrial production
 - ◆ 90% of Mexican exports go to the United States
- ◆ El Paso economy tied to maquiladora industry in Juárez
 - ◆ El Paso provides myriad of services to maquiladoras
 - *Real estate
 - *Warehousing
 - *Transportation
 - *Logistics
 - *Computer systems
 - *Management
 - ◆ 10% increase in production in sister Mexican city increases bordering U.S. city employment by 1% to 2%
- ◆ Historically, ~14% of El Paso's retail sales have been due to Mexican shoppers

Interdependencies between El Paso, Texas and Ciudad Juárez, Chihuahua

- ◆ Both rely upon the same natural resources
 - ◆ Air pollution recognizes no geo-spatial boundary
 - ◆ Both depend upon the same surface and groundwater sources of water
- ◆ Both share a similar culture and history that is unique to the border region

Rene Franco

- ◆ “We are pretty much in the same boat – we have the same problems as El Paso with the increasing saline content of the aquifer water. The same technology is available to us, but we don’t have the resources. We don’t have the economic resources. The bottom line is we have to use what we can afford.”

Gonzalo Bravo (BECC)

- ◆ “The population growth on the Mexican side of the border is the most pressing water problem; and we need money because if you don’t have infrastructure on one side, then you don’t have good quality of life, you don’t have development, you don’t have investments, you don’t have the generation of jobs. And then, the people that come here might want to cross to the United States.”

Timothy Brown (1997)

- ◆ Does each nation hoard its own or will neighbors share?
- ◆ How will Mexicans react to extravagant Americans who use 10 times more water per person than they do?
- ◆ What is to be done about potable water problems or with treated sewage?

Current Project

- ◆ Goal: answer Brown's questions
 - ◆ Intensive interviews with region's water stakeholders on both sides of the border
 - ◆ Emphasis on climate change mitigation planning and projects
 - ◆ Develop an historical account of border NGOs and their efficacy including the Paso del Norte Stakeholders Taskforce

Recent Issues in Border Water Negotiations

- ◆ Increase in public participation in watershed management
- ◆ Increased attention on maintaining river flows sufficient to restore healthy environmental habitats
- ◆ Exploration of a conjunctive use of surface and ground water

- ◆ There are significant water savings to be had at all levels
 - ◆ Eliminate flood irrigation in favor of more water saving methods
 - ◆ Undeveloped mixed use (gray and potable water) conveyance systems at the household level
 - ◆ Analysis of agriculture subsidies that encourage inefficient water uses
 - ◆ Water market

- ◆ Paradigm shift needed that incorporates a vision for the border region that goes beyond narrowly defined national and geopolitical interests
- ◆ The presence of multiple binational institutions and programs to deal with the myriad of environmental problems is a hopeful sign
- ◆ The presence of multiple institutions can lead to paralysis as jurisdictional squabbles get sorted out

Southern Rural Sociology

Special Issue:

Environmental Issues on the Mexico-U.S. Border

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