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G. Emlen Hall

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G. EMLÉN HALL\*

# Historical and Physical International Boundaries in Borderlands Water Conflicts: A Commentary

## ABSTRACT

*This commentary places in the context of boundaries a historical discussion of nineteenth century Native American/Hispanic conflict over water in southern California, a potential conflict between adjoining Mexican and U.S. municipalities along a shared international border, and a threatened Mexican wetland at the downstream end of a highly regulated and engineered U.S. river. The temporal boundary created by the U.S. adjudication of land and water rights inherited from Spain and Mexico and the geographical boundary created by the physical partition of watersheds between sovereigns have left similar problems in managing shared resources. Some unacknowledged values incidentally have survived existing joint management. But as pressure on the common resource increases and water supplies dwindle, the unintentional benefits of current arrangements must become intentional in a new round of negotiation.*

The three very different articles in this section of this issue of the *Natural Resources Journal* illustrate what desert people always have known: water reflects and scarce water reflects most clearly. Essential to all life where there is little water, scarce water generates conflicts that embody fundamental choices about the kind of world where different people live at different times. Because the scarcity is more or less timeless, the conflicts transcend particular historical periods, popping up almost 150 years ago in southern California and today in the Colorado River Delta. These timeless conflicts galvanize around frontiers, be they the political boundaries between indigenous peoples and newly arrived settlers or the international boundary between the two Nogales, one in Mexico, the other in the United States, and both sharing a common source of water. Wherever and however they appear, water conflicts reveal all the tensions of the world in which they are embedded.

In the first article of this section, Berry's account of the complex struggle for land and water at the end of the eighteenth century and the first half of the nineteenth century reflects conflicts that have racial, cultural, religious, and entrepreneurial aspects. The intricate Luiseño/Mission San Luis Rey/Pio Pico dance that Berry describes adds a specific southern Californian skirmish to the war fought for almost four centuries over access

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\* Professor of Law, University of New Mexico.

to and control of water in the Borderlands. Although a California backwater today, New Mexico in the sixteenth through the mid-nineteenth centuries was the heartland of southwestern hydraulic societies. The mission element important to Berry's tale was by and large missing from New Mexico. Otherwise the New Mexico experience deepened and extended the southern California one. The New Mexico conflicts were sharper. The legal shenanigans were more arcane. The explicit cultural and racial divides were clearer. The results, particularly under Mexican rule from 1821 to 1846, were as devastating for New Mexico's large group of sedentary, water-wise Pueblos as the mission influence was for southern California. The essential elements of the struggle for water were the same.<sup>1</sup>

Two general aspects of the specific southern California water battle that Berry describes and the water wars fought over the southwestern terrain against which it was played out are important here. For one, the nineteenth century Mission San Luis Rey situation shows the inextricable relationship between land and water. As in southern California, Spanish and Mexican grants of land were primarily important in the southwest for the rights to water that they implied and for the access to water that they afforded.<sup>2</sup> Famous struggles for rights to land in the area often were proxies for rights to scarce water. As Berry implies in her description of the battle over the Rancho Temecula Grant, the real prize in the land battle was the scarce water. The hidden high stakes and the confused bitter results were everywhere exacerbated by the re-adjudication of these ancient land and water disputes, originating under Spanish and Mexican law and finally ruled on under U.S. law.

Indeed, the succession of the United States to sovereignty in the southwest in 1848 established an international boundary between Mexican and U.S. claims to common waters that is as real as the geographical boundary that separates the two countries today. The 1848 Treaty of Guadalupe Hidalgo, the 1854 Gadsden Purchase, and implementing federal legislation put the United States in the unwitting position of adjudicating rights to land (and implicitly water) that originated under the laws of its antecedent sovereigns, Mexico and Spain. In the process, the United States had to balance Mexican-based claims and U.S.-based claims to water originating from a common physical source.

The results of that balancing are still very much with us today. U.S. courts and various international tribunals are still trying to untangle the correlative Mexican and U.S. rights to waters still governed by the law of

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1. See generally G. EMLÉN HALL, *FOUR LEAGUES OF PECOS* (1984).

2. See G. Emlén Hall, *Shell Games: The Continuing Legacy of Rights to Minerals and Water on Spanish and Mexican Land Grants in the Southwest*, 36 *ROCKY MTN. MIN. L. INST.* § 1.01, at 1-2 to 1-4 (1991).

both sovereigns.<sup>3</sup> Thorny issues about what law applies, when and where, are as typical of these historical issues as they are to current conflicts based on a shared physical border. Those issues have their source in the shared history of the apportionment of waters governed by the law of successive sovereigns. In that sense, Berry's accounts of ancient California water conflict are as contemporary as today's accounts of physical border conflicts over shared water. The vertical, time-based border built into accounts like Berry's is as real as the more obvious horizontal, physically grounded border that separates Ambos Nogales.

Morehouse, Carter, and Sprouse's article emphasizes this physically intimate water connection between growing urban areas sharing a common water resource and separated by an international boundary. All along the border between Mexico and the United States the same general problems crop up. Water is scarce on both sides of the border and the principles of apportionment are unclear. Laredo/Nuevo Laredo, El Paso/Ciudad Juarez, San Diego/Tijuana, and Ambos Nogales must deal with the same multi-dimensional problems involved in a common source of water; a substantial literature treats them all. The authors add two unique twists that are important across the arid region. Both twists deal with the special considerations that desert aridity adds to at best fully taxed water systems. First, there is the problem of water variability. The common source of water available to the U.S. Nogales and the Mexican Nogales varies, as the authors show, from month to month, from year to year, from decade to decade and beyond. The same variability has vexed southwestern water planners for centuries. Where water availability and water uses are as tightly ratcheted as they are in places like Ambos Nogales, slight, inevitable reductions in supply will throw out of joint the complex, often unstated compromises in claims and values that allow more fully supplied common systems to get along.

Morehouse, Carter, and Sprouse emphasize the vulnerability of a fully supplied Ambos Nogales to what they call "sustained drought." But so long as periodic variations are within the historic limits of recorded water availability, such inevitable variations are not "droughts."<sup>4</sup> They are variable events that are to be expected and will re-occur. The Santa Cruz River and its interconnected aquifers seem especially susceptible to short and long-term precipitation variations.

When they occur, some values presently served by the more fully supplied system will have to give way. As these authors show, the

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3. See *Summa Corp. v. California ex rel. State Lands Comm'n*, 466 U.S. 198 (1984); *City of Los Angeles v. Venice Peninsula Props.*, 253 Cal. Rptr. 331 (Ct. App. 1988).

4. See John W. Hernández, *An Analysis of the Drought of 1996 in the Middle Rio Grande Valley of New Mexico*, 39 NAT. RESOURCES J. 133 (1999).

presently well-watered lower riparian areas of the lower Santa Cruz River are highly prized on the U.S. side of the Border and the incidental result of a very different, equally valued municipal use on the Mexican side. As municipal uses increase and water availability declines, the waste water effluent that currently serves the environment of the lower Santa Cruz will become more attractive as an additional source for upstream municipal use. The conflicting Mexican and U.S. claims to waste water for conflicting purposes will be put to the test of articulated choice.

All across the arid and semi-arid western United States, water institutions face the same dilemma. For example, in the middle reach of the Rio Grande between the city of Albuquerque and Elephant Butte Reservoir, river managers, until recently quite unintentionally, have depended on discharges to the river from the City's waste water treatment plant to provide enough surface water for the state of New Mexico to meet its interstate obligations to downstream Texas under the schedules established in the 1938 Rio Grande Compact. In fact, in terms of discharge points, the city's plant already is the fifth largest river in New Mexico.<sup>5</sup>

Recent revisionist geological studies have suggested that the city's hefty discharges to the river do not make up for water initially withdrawn by interconnected City wells, as originally believed. Instead, they add to the river unconnected groundwater in storage that otherwise would never get there.<sup>6</sup> In other words, Albuquerque provides new water, not replacement water, to the Rio Grande. The city is not obligated to make that new contribution. As with Nogales, Sonora, as Albuquerque's municipal needs grow and natural supplies dwindle, Albuquerque is less willing to make that voluntary contribution to surface flows. Indeed the city looks to its own effluent as a source of new supplies for its own consumptive uses. In the case of Albuquerque, the state of New Mexico's delivery obligation to Texas under the 1938 Compact and the federal government's obligation to the Rio Grande silvery minnow under the Endangered Species Act will be implicated. In the case of Ambos Nogales, the lower Santa Cruz River would suffer as Nogales, Sonora, re-takes effluent that in flusher times it was willing to let go downstream incidentally to serve highly valued environments near Nogales, Arizona.

The problem of municipal effluent as a source of water in times of stress in Ambos Nogales, in Albuquerque, and across the southwest is a

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5. Gary Daves, Albuquerque Water Resources Department, Speech to Annual Meeting of the New Mexico Society of Professional Engineers (Mar. 12, 1999). See also *Comparison of Cumulative Change in Three Reaches of the Rio Grande, San Felipe to Bernardo*, WATERLINE, Summer 1999, at 6.

6. See JOHN MICHAEL KERNODLE ET AL., SIMULATION OF GROUND-WATER FLOW IN THE ALBUQUERQUE BASIN, CENTRAL NEW MEXICO, 1901-1994, WITH PROJECTIONS TO 2020 (U.S. Geological Survey, Water Res. Investigations Report No. 94-4251, 1995).

sub-set of a larger problem just inside the United States: the problem of return flows.<sup>7</sup> What wastewater discharges are to municipal water systems, return flows are to agriculture. They both represent that portion of water diverted through irrigation ditches or wells, not directly consumed by the use to which they are put, and returned to the system from which they came. Return flows always have occupied an ambiguous legal place, caught between claims that they belong either to the original diverter or to those downstream who have come to rely on the return flows or to those looking for a new source of water belonging to no one and available for new uses. Western water law has not sorted out the competing claims very well. Yet on the kind of international level represented by Ambos Nogales, the competing claims for Santa Cruz watershed water are precisely those characteristic of competing claims to return flows generally. If there is no uniform domestic law on access to return flows, increasingly important in times of water scarcity, to what principles can international law appeal?

The same problems that plague Ambos Nogales haunt the delta of the Colorado River in Mexico, but in reverse. On the Santa Cruz River, the downstream Arizona riparian habitat so prized by the U.S. environmental community exists as the incidental result of very different upstream water needs, values, and choices in upstream Sonora, Mexico. In the Colorado River Delta, the paltry remaining downstream delta wildlife habitat in Mexico still exists only because the upstream U.S. storage facilities, obviously serving very complex and different water values, have had to spill excess water, the temporary surfeit of nature's erratic desert supply. In both cases environmental values are unintentionally served in the face of antithetical upstream water uses.

In both cases, the beneficial incidental consequences will give way as explicit antithetical needs increase and as supplies dwindle. In that event, in both cases the incidental consequences will reverse. In its search for additional municipal supplies, Nogales, Sonora, will try to recapture its share of effluent, thereby reducing the water that supports the lower Santa Cruz River riparian zone. In its zeal to meet existing formal Colorado River demands, the United States will destroy what little wildlife habitat is left in the rich Colorado River delta. The incidental benefits in times of surplus and deficits in times of shortage can be prevented only if all implicit consequences can become explicit and formal choices are made in the apportionment of both river basins.

So doing will require new processes in new institutions. Morehouse, Carter, and Sprouse impliedly suggest a couple of prerequisites for Ambos Nogales: good science and good faith negotiation

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7. See generally 2 ROBERT E. BECK ET AL., *WATER AND WATER RIGHTS* §§ 13.03-13.04 (Robert E. Beck ed., 1991 ed.).

among all participants. Pitt, et al., go further in the processes and principles that the Colorado situation requires. Lawsuits, especially ones involving violations of the Endangered Species Act (ESA), will play a role.

Indeed, very recently the Defenders of Wildlife sued various U.S. agencies alleging violations of the ESA in their operation of Colorado River facilities.<sup>8</sup> The new international twist to this suit involves the claim that the domestic operation of U.S. federal facilities (Colorado River dams and diversions within the United States) has resulted in the foreign "taking" of protected species (reduction of habitat in the Mexican Colorado River Delta) for which the United States is responsible. While solidly grounded in ESA law, this ESA suit reaches farther afield than most, into the international apportionment of water between competing nations.

No one believes at this point that domestic U.S. federal courts should actually work out the detailed settlement of these complex international water problems. But on the domestic front the suits have primarily helped to get all parties to the same table. On the Rio Grande and on the Pecos River in New Mexico, federal ESA suits have spurred far-ranging negotiations that may explicitly incorporate water values that previously were at best informally served. Elsewhere in the western United States, the incompatible cultural, economic and political values that have so troubled water affairs in Alta California, Ambos Nogales, and the Colorado River Delta may provide more detailed models for how these seemingly intractable problems will be worked out.

One may be the 1994 Bay Area Delta Accord that explicitly addressed and settled for the time being competing new and old claims to California water resources.<sup>9</sup> No international water problem could have involved more bitterly contested boundaries separating incompatible water claims. The battle pitted northern California against southern California, surely two hydraulic communities with a long and controversial common water history and a shared interest in the Bay-Delta watersheds. The battle set municipalities against farmers and both against environmentalists, the interests involved in the microcosm of Ambos Nogales. In the Bay Area Delta battle, two sovereigns with shared jurisdiction over common water—the federal government and the state of California—fought for contested water terrain as surely as Mexico and the United States now are involved in the Colorado Delta and the Santa Cruz River struggles. And lying somewhere behind both the Bay Area Delta Accord and the struggle

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8. See *Defenders of Wildlife v. Babbitt*, No. 1:00CV01544 (D.D.C. filed Jun. 28, 2000).

9. See Alan M. Patterson, *Water Quality, Water Rights, and History in the Sacramento-San Joaquin Delta: A Public Historian's Perspective*, 9 W. LEGAL HIST. 75 (1996); Elizabeth Ann Rieke, *The Bay-Delta Accord: A Stride Toward Sustainability*, 67 U. COLO. L. REV. 341 (1996); Sue McLurg, *Delta Deal?*, WESTERN WATER, July-Aug. 2000, at 1, available at <<http://www.water-ed.org/westernwater.asp>>.

over the wetlands of the Colorado River Delta lies the preemptive national and international mandates of the Endangered Species Act.

Somehow out of all these competing interests, the parties in California forged a workable solution that acceptably balanced them all. Underlying the successful process was a frank and sophisticated discussion that made all known trade-offs explicit and all known consequences intended. Within the outer boundaries of formal legal constraints that set some limits, there turned out to be a lot of room to maneuver, enough room in fact to incorporate more of the different values competing for scarce water than was thought possible in the often bellicose arid water world.

Other recent efforts at revision and restoration cut across the arbitrary political and legal boundaries that geography and interest groupings impose. Some, like the Bay Delta Accord and the so-called Everglade Restoration Plan,<sup>10</sup> are huge enough and sufficiently well-funded, until now, to come close to encompass the ecosystems whose water problems they address. Addressing the problems of the Mexican Colorado River Delta wetlands involves assessing the consequences of massive upstream U.S. land and water choices on an even vaster scale. But if the more modest (in scale) Ambos Nogales problems and the more remote (in time) Mission San Luis Rey embroglios can be solved, they must first be addressed. The history and the unintended consequences revealed by the articles in this section provide a good beginning.

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10. See Keith W. Rizzardi, *The Everglades in Jeopardy: A Drama of Water Management and Endangered Species*, 27 FLA. ST. U. L. REV. 349 (2000).