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**COMMUNITY ACEQUIAS IN COLORADO'S
RIO CULEBRA WATERSHED: A
CUSTOMARY COMMONS IN THE DOMAIN
OF PRIOR APPROPRIATION**

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DEVON G. PEÑA**

INTRODUCTION

As water law and policy evolve to meet the challenges of a sustainable future, the role of community water institutions

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** Professor of Anthropology and Ethnic Studies, University of Washington, Seattle. The conception and execution of this article was altogether a shared effort grounded in Professor Peña's years of fieldwork in the *acequia* communities of the Culebra watershed. The authors would like to express their thanks to Hans Baade, David Benavides, Fred Cheever, Malcolm Ebright, David Getches and Donald Pisani, whose comments and questions have led us to a better understanding of our topic. Thanks are owed, too, to the people of San Luis de la Culebra, and especially to Corpus A. Gallegos, Joseph C. Gallegos, Charlie Jaquez, Adelmo and Veronica Kaber, Evan Valdez, and Ernesto Vigil for sharing their understanding of the *acequia*-hood. We are also indebted to Vickie Parker for her work in preparing the manuscript and to the Special Collections librarians of the Colorado Historical Society, the Colorado State Archives, the New Mexico State Records Center and Archives, and the Tutt Memorial Library of The Colorado College for their research assistance. Travel funding for this project was provided by the University of Texas Law School Foundation, the University of Washington Center for Labor Studies, and the University of Washington Law School Foundation. Additional support was provided by a grant from the National Endowment for the Humanities, Grant RO-22707-94. The views expressed by the authors do not reflect the official policies or views of the funding agencies or colleagues acknowledged above.

that have proved themselves as successful models of engagement with resource landscapes becomes more important. Durable and ecologically sound institutions are valuable in and of themselves.¹ Communities that have internalized norms of resource use consistent with the public interest offer models of natural resource management and may create opportunities for successful devolution of authority over natural resources to local institutions.² This article presents an account of the landscape and water institutions of the *acequia* communities of Colorado's Rio Culebra watershed. The physical and social landscape of the Culebra watershed, a product of water institutions introduced by Hispano settlers in the years immediately following the Mexican War, and the persistence of those institutions after the introduction of the system of prior appropriation, offers an instance of a successful engagement of community water institutions in the creation of a sustainable and resource-rich watershed landscape. The ultimate goals of this article are threefold. First, the article describes the *acequia* landscape and its social, cultural, and legal norms, to reveal the necessity of a multicultural perspective on water rights and water use in one community in the American West. Second, we explore the lessons that the history and waterways of Hispano irrigation communities offer to policymakers seeking to adapt water law and water

1. DOUGLAS S. KENNEY, RESOURCE MANAGEMENT AT THE WATERSHED LEVEL: AN ASSESSMENT OF THE CHANGING FEDERAL ROLE IN THE EMERGING ERA OF COMMUNITY-BASED WATERSHED MANAGEMENT (1997); NATIONAL RESOURCE COUNCIL, OUR COMMON JOURNEY, A TRANSITION TOWARD SUSTAINABILITY (1999); ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 50-55, 58-61, 88-102 (1990).

2. OSTROM, *supra* note 1, at 50-55, 58-61, 88-102; *see also* Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495 (1999); Sean T. McAllister, *The Confluence of a River and a Community: An Experiment with Community-Based Watershed Management in Southwestern Colorado*, 3 U. DENV. WATER L. REV. 287, 288-90 (2000). The concepts of watershed-based polities and of the organization of political and social communities defined by hydrographic boundaries are strongly associated in the history of the water policy of the American West with the work of John Wesley Powell. *See* JOHN WESLEY POWELL, REPORT ON THE LANDS OF THE ARID REGION OF THE UNITED STATES: WITH A MORE DETAILED ACCOUNT OF THE LANDS OF UTAH (Wallace Stegner ed., 1962); John Wesley Powell, *Institutions for the Arid Lands*, CENTURY MAG. May-Oct. 1890, at 111, 114 [hereinafter *Institutions for the Arid Lands*]. The communal water systems of Mormon and Hispanic communities seem to have been significant influences in the development of Powell's ideas. *See* WALLACE STEGNER, BEYOND THE HUNDRETH MERIDIAN: JOHN WESLEY POWELL AND THE SECOND OPENING OF THE WEST 228-29, 308 (1954).

institutions to support community well being and the flourishing of the natural environment. Third, this paper explores the ecological principles on display in the Culebra *acequia* communities, and the requirements for maintaining *acequia* institutional arrangements so as to promote the survival of a landscape that is collectively managed for optimum watershed functionality.

The heart of the matter in the Rio Culebra *acequias* is a continuing loyalty to a system of water allocation that depends on common maintenance of a network of earthen ditches and on a common commitment to the principle that water is to be shared in times of scarcity. The following anecdote from the drought summer of 2002 illustrates those commitments and their importance to the survival of *acequia* communities.

During the 2002 planting season in the Culebra watershed, the state district water commissioner denied most of the Culebra *acequias* their scheduled irrigation water deliveries. There simply was no water available to serve any but the most senior water rights. Adelmo Kaber, who farms forty acres, typically planted in corn, fava beans and potatoes, and served by the Cerro Ditch, was among the *acequia* farmers whose lands would receive no water because of the junior status of his ditch rights. He turned to a neighbor, Joseph Gallegos, who has senior water rights served by the San Luis People's Ditch, seeking permission to plant a crop on a portion of Gallegos' land. The rules of water law prohibited a diversion of Gallegos' water to Kaber's fields, so the farmers instead adopted the expedient approach of having Kaber farm some of Gallegos' land.

The request was situated in their relationship as farmers each of whom knew the other to be deeply committed to the *acequia* system as the defining institution in their lives as farmers. Gallegos is the *mayordomo* (ditch boss) of the San Luis People's Ditch and an articulate voice for the communal values that depend upon and find expression through the *acequia*. Kaber is an exceptionally gifted traditional farmer, whose knowledge of the management of water and whose commitment to such critical communal activities as seed saving and seed sharing and the maintenance of the system of earthen ditches, make him a pivotal member of the community of *acequia* farmers. Under their arrangement, Kaber paid Gallegos with a portion of the crop grown on Gallegos' land, but the return to Gallegos was less than it would have been had he

farmed the ground himself. In Gallegos' view, the absence of complete payment was offset by the value to the community of Kaber's ability to have a crop and to weather a difficult year. By sharing land lying on an *acequia* with water, the farmers found a way of maintaining their commitment to the customary principle of shared scarcity, an essential element in assuring long term community survival by offering protection to vulnerable members of the community.

The sharing of scarcity did not eliminate the fact of scarcity, nor did the sharing occur without cost. Their arrangement meant that Gallegos would have less land to farm than otherwise, while the amount of land that Gallegos was able to make available to Kaber fell far short of the acreage that Kaber would normally have under cultivation.

Such arrangements of mutual aid are far more common than might be supposed and indeed are expressions of the persistence of *acequia* culture, but they must not be romanticized. As the narrative that follows makes plain, the arrangement between Kaber and Gallegos was as much a sign of the vulnerability of *acequia* landscapes and of changes in those landscapes, as it was a sign of the persistence of *acequia* values. The arrangement arose from the lack of water in the Rio Culebra's junior ditches and was compelled by strict necessity. That failure, in turn, was attributable not only to short term climactic conditions, but also to causes grounded in Colorado's water law and water history that have made the conditions of contemporary *acequias* precarious. No amount of mutual accommodation among farmers will ever succeed in assuring the long-term viability of *acequia* farming and *acequia* watershed landscapes unless elements of contemporary water law and watershed management are adjusted to address the increasingly common experience of water scarcity among the *acequias*. The reasons for those scarcities and their effect on the physical and social landscapes of the Culebra *acequias* are explored in detail in this article. Here, at the outset, we wish simply to note the willingness of modern day *acequia* farmers to honor the reciprocal commitments required for the survival of a watershed landscape.

The *acequia* irrigation communities of the American Southwest have their origins in patterns of settlement under Spanish, and later Mexican, colonial authority, and in

indigenous and local practices.³ *Acequias* are among the oldest institutions in the United States for local self-governance and natural resource management. They are also widely hailed as a sustainable irrigation technology, as discussed in Part III below.

The building of irrigation communities on an arid frontier required common effort, and settlers and their descendants cooperated to establish and maintain the irrigation structures on which the livelihoods of all depended.⁴ From their inception, the communities were bound together in arrangements of mutuality for the allocation of water and for the sharing of other common resources.⁵

Acequia institutions produced characteristic landscapes in the river valleys of the high Southwest, a product of gravity-fed earth ditches delivering snow melt mountain waters to fields

3. IRA G. CLARK, *WATER IN NEW MEXICO: A HISTORY OF ITS MANAGEMENT AND USE* 9–17 (1987); MICHAEL C. MEYER, *WATER IN THE HISPANIC SOUTHWEST, A SOCIAL AND LEGAL HISTORY 1550–1850* 3–23 (1984); JOSE A. RIVERA, *ACEQUIA CULTURE: WATER, LAND, AND COMMUNITY IN THE SOUTHWEST* 1–8 (1998); Richard E. Greenleaf, *Land and Water in Mexico and New Mexico 1700–1821*, 47 N.M. HIST. REV. 85 (1972); Wells A. Hutchins, *The Community Acequia: Its Origins and Development*, 31 SW. HIST. Q. 261 (1928).

4. JOHN O. BAXTER, *DIVIDING NEW MEXICO'S WATERS 1700–1912* 6–12 (1997); CLARK, *supra* note 3, at 15; Hutchins, *supra* note 3, at 271–73; RIVERA, *supra* note 3, at 5–8; Richard L. Nostrand, *The Century of Hispano Expansion*, 62 N.M. HIST. REV. 361, 361–67 (1987).

The water institutions of the Hispanic Southwest were not the only instance of communal regulation of water to support subsistence agriculture in frontier communities in the American West. The system of water administration among the early Mormon communities similarly depended on communal construction of irrigation networks. The Mormon water master, like the *mayordomo* of the *acequia*, was charged with distribution

of the very life-blood of the community. [H]e distributed water by a system of rotation, delivering to each user a “stream” of irrigation water for a certain length of time, depending on the user’s needs. He was usually in charge of the repair of ditches in the spring, requesting the labor of each user in proportion to that person’s use of the water When controversies arose, he was the first “court” of arbitration.

ROBERT G. DUNBAR, *FORGING NEW RIGHTS IN WESTERN WATERS* 16 (1983).

5. BAXTER, *supra* note 4, at 10; VICTOR WESTPHALL, *MERCEDES REALES: HISPANIC LAND GRANTS OF THE UPPER RIO GRANDE REGION* 6, 12 (1983); Marc Simmons, *Spanish Irrigation Practices in New Mexico*, 47 N.M. HIST. REV. 140 (1972); John R. Van Ness, *Hispanic Land Grants: Ecology and Subsistence in the Uplands of Northern New Mexico and Southern Colorado*, in *LAND, WATER AND CULTURE: NEW PERSPECTIVES ON HISPANIC LAND GRANTS* 141 (Charles L. Briggs & John R. Van Ness eds., 1987).

and pastures in areas of little rain.⁶ The *acequia* system of irrigation and community control of water access was not simply an instance of “folk culture” but a tool for achieving coordination between land grants and access to the water resources required to inhabit and produce sustenance from those lands. The defining features of the *acequia* landscape as realized were the networks of diversion works, typically consisting of earthen ditches and of head gates and check dams built from locally available materials, and the parceling out and physical arrangement of private land holdings so that all settlers owned arable lands served by the ditch system.⁷ It was also typical in *acequia* communities to maintain tracts of common lands to provide to all community members grazing and forest resources not available on individual farmsteads.⁸ Defining features of the *acequia* system as a water rights regime also reflected this concern with communal and individual flourishing, and included allocation of water on the basis of equity and need as well as protection of reliance interests grounded in patterns of past use.⁹ The *acequia*

6. BONDS THAT BIND: A HISTORY OF THE SAN LUIS VALLEY 105 (Maclovio C. Martinez ed., 1998) [hereinafter BONDS THAT BIND]; CLARK, *supra* note 3, at 15; Alvar Ward Carlson, *Rural Settlement Patterns in the San Luis Valley: A Comparative Study*, 44 COLO. MAG. 111, 113, 116–19 (1967); Van Ness, *supra* note 5, at 141–52. See also *infra* text accompanying notes 192–200 for discussion of *acequia* history and vocabulary.

7. Devon G. Peña, *Cultural Landscapes and Biodiversity: The Ethnoecology of an Upper Rio Grande Watershed Commons*, in ETHNOECOLOGY: SITUATED KNOWLEDGE/LOCATED LIVES 107–32 (Virginia D. Nazarea ed., 1999) [hereinafter Peña, *Cultural Landscapes*].

8. BAXTER, *supra* note 4, at 3–16; CLARK, *supra* note 3, at 15–16; RIVERA, *supra* note 3, at 2–5; DANIEL TYLER, THE MYTHICAL PUEBLO RIGHTS DOCTRINE, WATER ADMINISTRATION IN HISPANIC NEW MEXICO 37 (1990); Carlson, *supra* note 6, at 115–19; Greenleaf, *supra* note 3, at 97–104; Hutchins, *supra* note 3, at 272–75; David W. Lantis, *Early Spanish Settlement in the San Luis Valley*, 20 SAN LUIS VALLEY HISTORIAN 5, 7–13 (1988); Simmons, *supra* note 5, at 135; Van Ness, *supra* note 5, at 159–61.

9. BAXTER, *supra* note 4, at 19, 32–34, 74–77; CLARK, *supra* note 3, at 15; MEYER, *supra* note 3, at 163–64; RIVERA, *supra* note 3, at 34, 168–71, 177–80; TYLER, *supra* note 8, at 13, 29, 161–64; Malcolm Ebright, *Sharing the Shortages: Water Litigation and Regulation in Hispanic New Mexico, 1600–1850*, 76 N.M. HIST. REV. 3, 13–25 (2001); Greenleaf, *supra* note 3, at 99; Simmons, *supra* note 5, at 144. The idea of prior use is not to be confused with that of temporal priority under appropriative rights regimes. Prior use under the Mexican system was merely one among a number of factors that might establish equity. It did not give the prior user a preferred claim on water over neighbors who could establish equally compelling equity on the basis of such considerations as need. See Ebright, *supra*, at nn.4, 16.

system continues to be administered by *mayordomos* (ditch bosses) and *comisionados* (commissioners), who are typically elected on a one landowner, one vote basis rather than under a voting structure indexed to the size of one's land holding.¹⁰ Other features of the *acequia* system include the requirement that water users contribute labor to maintain the *acequia* system¹¹ and the principle that rights in water arise from and depend on a landowner's holding arable land in the *acequia* community.¹² Water rights thus have the character of private

10. See, e.g., *Wilson v. Denver*, 961 P.2d 153 (N.M. 1998) (showing instances of one-person-one-vote *acequia* voting systems). For discussion of the roles of *mayordomos* and *comisionados*, see BAXTER, *supra* note 4, at 66, 70, 88–90; CLARK, *supra* note 3, at 25–26; STANLEY CRAWFORD, *MAYORDOMO, CHRONICLE OF AN ACEQUIA IN NORTHERN NEW MEXICO* (1988); MEYER, *supra* note 3, at 64–65; Simmons, *supra* note 5, at 140–41. In New Mexico in the early twentieth century, during a period when *acequia* institutions were being reshaped to conform their operation to the features of the prior appropriation system and to centralized control of water allocation by the State Engineer's Office, the institution of equal voting rights for all landowners voting in *acequia* elections was invalidated by the state supreme court precisely because voting rights were not proportional to each elector's interest in water in the ditch. *State ex rel. Cmty. Ditches or Acequias v. Tularosa Cmty. Ditch*, 143 P. 207, 214–15 (N.M. 1914). The New Mexico Court has more recently reaffirmed the view that *acequias* may validly choose among a number of voting systems, including the customary one-landowner-one-vote system, effectively overruling the contrary holding in *Tularosa*. *Wilson*, 961 P.2d at 153. In the case of the Culebra watershed, the by-laws of the San Luis Peoples Ditch establish a share-based voting structure but informal practices follow the customary one parciante-one vote pattern (see *infra* notes and text at 175–76). Also see SAN LUIS PEOPLES DITCH CORP., BYLAWS (Sept. 16, 1966) (on file with author).

11. BAXTER, *supra* note 4, at 70; CLARK, *supra* note 3, at 25; CRAWFORD, *supra* note 10, at 140–41; RIVERA, *supra* note 3, at 176; TYLER, *supra* note 8, at 37. The Spanish Archives of New Mexico (SANM) and the Mexican Archives of New Mexico (MANM) contain records both of municipal ordinances and of legal proceedings reciting the obligation of community members to construct and maintain *acequias*, and the legal consequences of non-compliance. See, e.g., *ORDENANZAS MUNICIPALES*, vol. I, reel 6, frs. 46–62 (1846) (on file with the SANM); *Journal of the Ayuntamiento of Santa Fe*, reel 14, frs. 990–91 (Apr. 12, 1832) (on file with the MANM). The territorial statutes of both New Mexico and Colorado were to adopt the requirement of the contribution of labor to the maintenance of community *acequias* and to establish penalties for non-compliance. See Act of Jan. 7, 1852, § 9, 1852 N.M. Laws 2d Sess. Territorial Assembly (an Act relating to ditches (*Acequias*) and currents of water) [hereinafter 1852 N.M. Ditches Act]; Act of Feb. 5, 1866, ch. 61, § 9, 1866 Colo. Laws 5th Sess. Legislative Assembly Territory (an Act to regulate ditches used for farming purposes in the counties of Costilla and Conejos).

12. CLARK, *supra* note 3, at 15 (community control of water); CHARLES R. CUTTER, *THE LEGAL CULTURE OF NORTHERN NEW SPAIN, 1700–1810* 143 (1995); RIVERA, *supra* note 3, at 33–39 (*acequia* as community asset); TYLER, *supra* note 8, at 45 (community control of water); G. Emlen Hall, *Tularosa and the Dismantling of New Mexico Community Ditches*, 75 N.M. HIST. REV. 77 (2000);

usufructuary rights in a community resource. Fragments of that landscape and of those allocational norms and governance structures persist in the Upper Rio Grande watershed of northern New Mexico and Southern Colorado.¹³ To this day the

Simmons, *supra* note 5, at 140. One of the most important consequences of community control of water was that the allocation of water in times of scarcity or abundance lay with community water authorities. The adoption of the law of prior appropriation, privatizing water rights, and the development of centralized state water agencies as the sole entities authorized to allocate initial water rights brought an end both to the community character of water ownership and to the formal power of *acequia* authorities to allocate water. See Hall, *supra*.

13. There are at present approximately one thousand community *acequias* recognized under New Mexico law and more than one hundred *acequias* recognized in Colorado. New Mexico in particular has embraced the *acequia* as a cultural asset and as a viable structure for the supply of irrigation waters. State law in New Mexico has preserved some features of *acequia* governance and recognized the power of *acequias* to hold, use and transfer water rights in their own right, but the *acequia* visions of water as a community resource are subordinated to the operation of the system of prior appropriation. Thus, the recognition of water rights in *acequias* as such is subject always to the requirement of actual beneficial use of water by the *acequias*, and where individual water rights holders within an *acequia* system wish to transfer their rights, they may do so, subject to the operation of normal rules governing water transfers. The *acequias* no longer have the authority to decree the allocation of water among water users or to hold water in their own right pending a later application to beneficial use. Individual rights holders have on occasion sold their water rights away from *acequia* lands, relying on transfer rules under the law of prior appropriation, undermining the functioning of *acequia* systems. See, e.g., CRAWFORD, *supra* note 10, *passim*; Joseph C. Gallegos, *Acequia Tales: Stories from a Chicano Centennial Farm*, in CHICANO CULTURE, ECOLOGY, POLITICS: SUBVERSIVE KIN 235 (Devon G. Peña ed., 1998) [hereinafter Gallegos, *Acequia Tales*]; RIVERA, *supra* note 3, at 147-72; Jose A. Rivera, *Irrigation Communities of the Upper Rio Grande Bioregion: Sustainable Resource Use in the Global Context*, 36 NAT. RESOURCES J. 491 (1996) (containing accounts of the contemporary face and viability of *acequia* institutions and landscapes in the face of political, legal and economic challenges). For the New Mexico statutes describing and governing the management, operation and legal character of community ditches and *acequias*, see N.M. STAT. ANN. § 73-2-1 *et seq.* (Michie 1978)); see also NEW MEXICO OFFICE OF THE STATE ENGINEER, *ACEQUIAS* (July 1997), available at <http://www.seo.state.nm.us/water-info/acequias/acequias-ditches.html> (last modified Oct. 29, 1998). For accounts of the absorption of *acequias* into the system of prior appropriation and their modification by that system, see Hall, *supra* note 12; Rivera, *supra*, and *infra* note 31.

The literature on contemporary and historic *acequia* institutions and landscapes is rich. For a bibliography of sources, see NANCY N. HANKS, AN ANNOTATED BIBLIOGRAPHY OF NEW MEXICO ACEQUIAS PREPARED FOR THE NEW MEXICO ACEQUIA COMMISSION (Nov. 8, 1995).

The publications and advocacy of the New Mexico *Acequia* Association and of the regional community press in New Mexico and Colorado offer perhaps the best sense of the depth of continuing political and cultural commitment to *acequia* institutions. For examples of these sources see LA JICARITA NEWS (a community advocacy newspaper for northern New Mexico) published in Chamisal, N.M.

cooperative and communitarian imperatives that shaped the first organization of *acequia* towns and settlements inform not only their physical landscapes but also their civic and economic life and their visions of water.

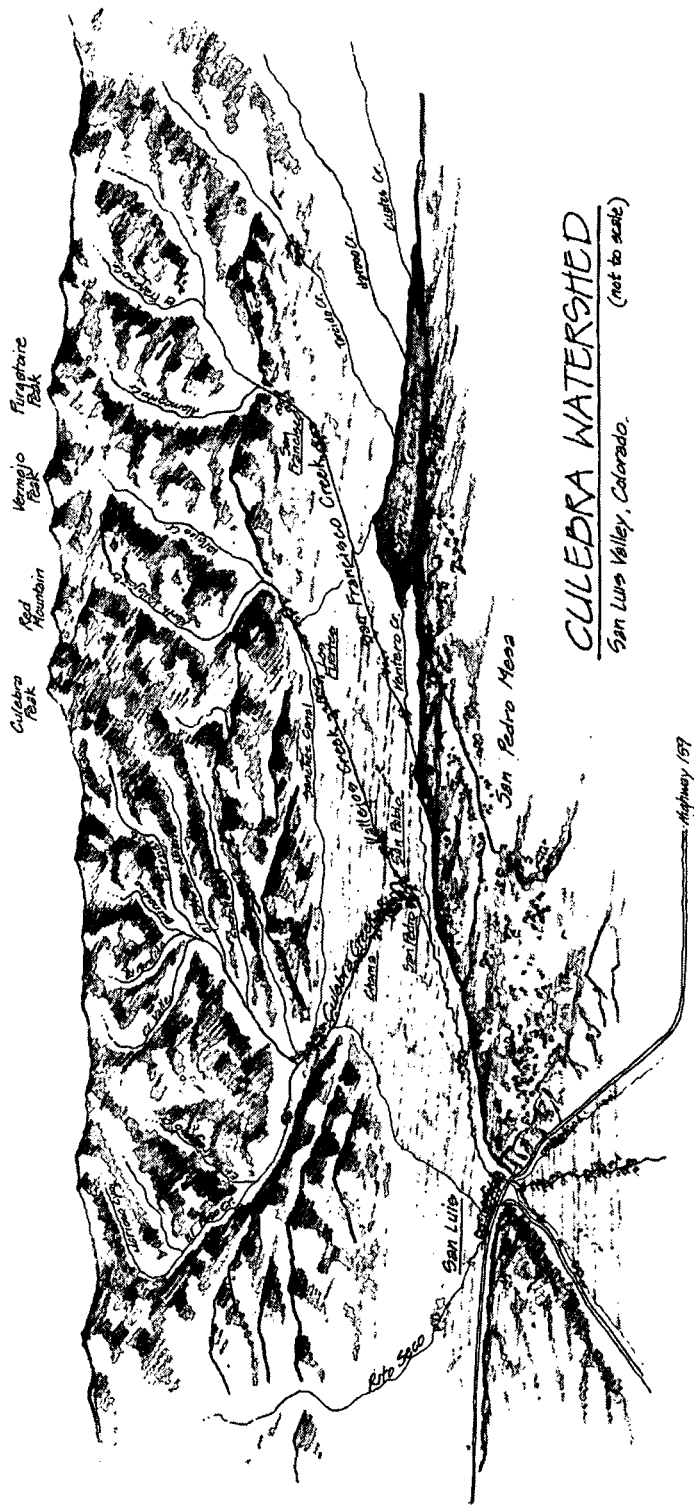
The Culebra watershed, the immediate subject of this study, is located in the southeastern quadrant of Colorado's San Luis Valley ("Valley") (see Drawing 1 below). The Valley is a high altitude alpine desert located at an average elevation of 7,800 feet above sea level and surrounded by high mountain ranges, including the Sangre de Cristo Range to the east and the San Juan Range to the west, each with numerous 14,000 foot-high peaks (see Map 1 below). The headwaters of the 360-square mile Culebra watershed are in the southernmost segment of the Sangre de Cristo Range in Colorado. Historically, an average of six to seven hundred farming families irrigated with *acequias* in this watershed. After the enclosure of the common lands of the Sangre de Cristo land grant in 1960, the number of family farms declined precipitously so that now approximately 270 families are using *acequia* water delivery systems to irrigate some 24,000 acres of crop and pasture lands.

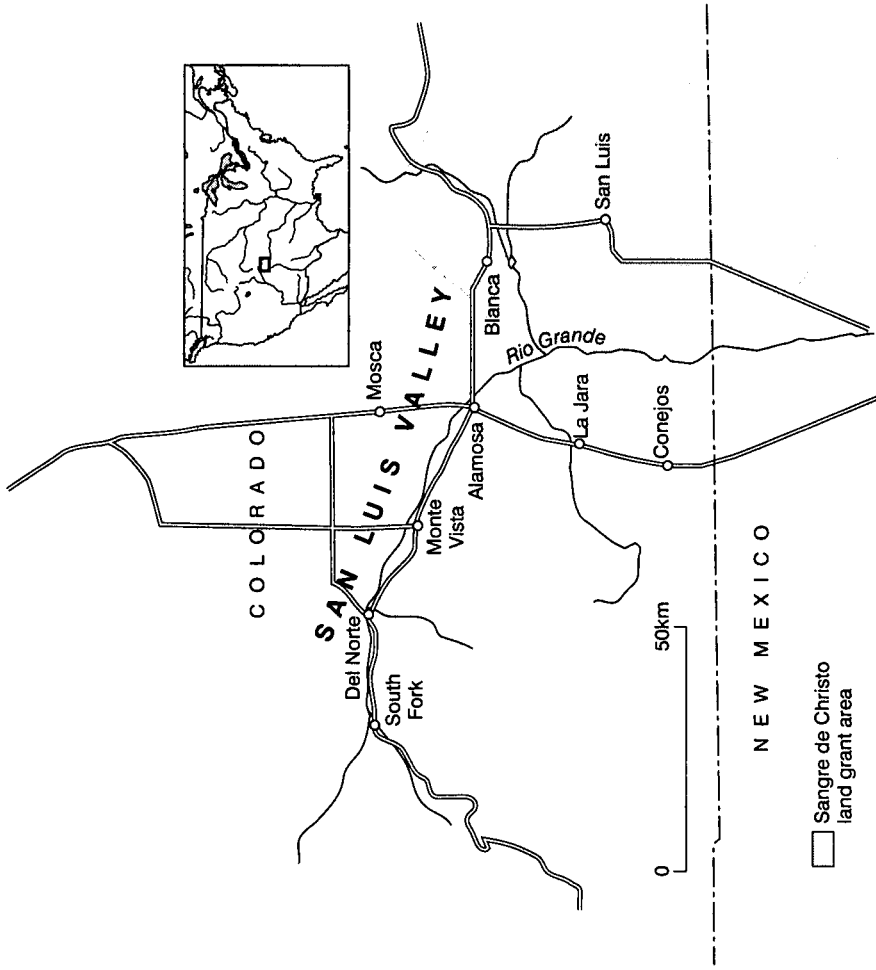
Water flows to users delivered by earth ditches maintained by common labor. The relatively modest scale of the Culebra watershed makes it comprehensible, and local knowledge about the movement of water through the network of natural streams and built ditches is good.¹⁴ These are communities of small holders bound together in informal networks for the exchange of labor, resources and mutual support.¹⁵ The descendants of the original nineteenth century settlers own much of the irrigated land in the watershed and they irrigate and work their croplands and grazing lands in ways that are based on the capacities and water delivery methods of the *acequia*

87521, and available at www.lajicarita.org; LA SIERRA NEWSLETTER, P.O. Box 124, San Luis, Colo. 81152; the publications of the New Mexico *Acequia* Association (a statewide advocacy and educational organization), available from the association at P.O. Box 1229, Santa Cruz, NM 87567, or available at <http://www.nmacequias.org>. Another excellent source of information on contemporary and historical *acequia* topics is The Center for Land Grant Studies at P.O. Box 342, Guadalupita, N.M. 87722, available at www.southwestbooks.org.

14. See *infra* discussion accompanying notes 212–224.

15. ARNOLD A. VALDEZ & MARIA A. VALDEZ, THE CULEBRA RIVER VILLAGES OF COSTILLA COUNTY, VILLAGE ARCHITECTURE AND ITS HISTORICAL CONTEXT 1851–1940 16, 19, 33–35 (1991); Lantis, *supra* note 8, at 10–13, 23–24.





networks of earthen ditches. Patterns of cooperative communal labor and mutual aid are quite evident.¹⁶

The original pattern of land apportionment was first designed to assure that each land holding would have access to the *acequia* system and be amenable to irrigation through gravity-fed systems.¹⁷ Farms are still laid out as relatively narrow strips running perpendicular to the principal streams and built ditches.¹⁸ Each property incorporates a portion of the arable alluvial soils lying near the watercourses.¹⁹ Water flows through the community of users, supplying individual rights holders while providing many benefits to the commons including irrigation of a community grazing commons and sustaining environmental assets of value to the community as a whole on land that is uncultivated or not privately owned.²⁰

16. See Devon G. Peña & Ruben O. Martinez, *Upper Rio Grande Hispano Farms: A Cultural and Environmental History of Land Ethics in Transition, 1598–1998*. Final Report submitted to the National Endowment for the Humanities, Grant No. 22707-94; Rio Grande Bioregions Project, Department of Anthropology, University of Washington, Seattle (Jan. 2000).

17. VIRGINIA MCCONNELL SIMMONS, *THE SAN LUIS VALLEY: LAND OF THE SIX-ARMED CROSS* 47–48 (1979); VALDEZ & VALDEZ, *supra* note 15, at 16–17; Carlson, *supra* note 6, at 115–18; Lantis, *supra* note 8, at 7–9.

18. Carlson, *supra* note 6, at 115–18; Lantis, *supra* note 8, at 7–9.

19. Carlson, *supra* note 6, at 115–18; Lantis, *supra* note 8, at 7–9.

20. The depth from the surface of the ground to the top of the first impermeable underground layer that underlies the unconfined aquifer constituting the alluvium of Culebra Creek and its major tributaries is quite shallow through much of the Culebra Creek watershed. The shallowness of this unconfined aquifer, combined with the low gradient of slopes and the relatively light and porous soils in the alluvium produce a high level of interaction between the movement of surface waters and of ground waters in the unconfined aquifer of the watershed. Phillip. A. Emery, *Water Resources of the San Luis Valley, Colorado*, in *GUIDEBOOK OF THE SAN LUIS BASIN, COLORADO* 129–32 (H.L. James ed., 1971). One result is that much of the water that seeps into the alluvium from the surface remains available in the rooting zones of many trees and shrubs. This water also provides subirrigation to grasses and plants with shallower root systems. In years of good water flow, the water table is often quite high, sustaining base flows in both natural stream reaches and irrigation ditches. These physical features of the watershed have been relied on historically as elements of the system of water delivery.

See Steven J. Shupe, *Wasted Water: The Problems and Promise of Improving Efficiency Under Colorado Water Law*, in *TRADITION, INNOVATION AND CONFLICT: PERSPECTIVES ON COLORADO WATER LAW* 74–75 (Lawrence J. MacDonnell ed., 1987) for a discussion of the importance of considering the effects of water diversion and application practices on watershed functioning and stream flows in evaluating whether the effect of those practices can properly be characterized as wasteful or beneficial. Colorado water law may be receptive to treating traditional irrigation systems as beneficial because of the environmental and irrigation services they provide rather than as wasteful because of their

The acequia system and the network of community ties they have created constitute structures that are reliable, well understood, governed by accepted rules, and that depend on technologies within the economic reach of the communities. The physical and social landscape of the "acequia-hood" as it has been labeled by Gallegos, *mayordomo* of the San Luis People's Ditch,²¹ has continuing value to the community of users because it promotes their common flourishing. It has wider public value for the stability of settlement and the suite of natural resource assets it has created.

A. *Communitarian Rights and the Tensions Created by the Modern Law of Appropriative Rights*

An uneasy relationship has existed for more than a century between the imperatives and opportunities of Colorado's law of prior appropriation, on the one hand, and on the other, *acequia* practices based on the law and customs of provincial Mexico, and, later, of territorial New Mexico. Those older laws were in effect when the Culebra *acequia* towns were first established in the years following the end of the Mexican War, before the organization of Colorado Territory in 1861.²²

It is important to recognize that the Culebra watershed, which is now part of Colorado, was inside New Mexico Territory and subject to its laws from 1851 until 1861 when the watershed was included as part of the Colorado Territory. Even with the organization of the Colorado Territory, the older water rights regime persisted and for a time was accommodated by Colorado territorial law and early Colorado state law.²³ Under the older Mexican water rights system,

porousness. See GEORGE VRANESH, VRANESH'S COLORADO WATER LAW 155 (James N. Corbridge & Teresa A. Rice eds., 1999); see also *infra* discussion accompanying notes 176–191; WATER IN THE VALLEY: A 1989 PERSPECTIVE ON WATER SUPPLIES, ISSUES, AND SOLUTIONS IN THE SAN LUIS VALLEY, COLORADO (Colorado Ground-Water Ass'n ed., 1989).

21. See *infra* discussion accompanying notes 212–214.

22. See *infra* text accompanying notes 39–91.

23. See *infra* text accompanying notes 92–100, 116.

This more complex history is at odds with the ringing statements of the Colorado courts that the state and territory have had no water law other than that defined by the system of prior appropriation. *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882). The Colorado Supreme Court has repeated the assertion on occasion. See, e.g., *Am. Water Dev. Inc. v. City of Alamosa*, 874 P.2d 352, 365 (Colo. 1994).

water rights typically arose from the actual use of water, never from riparian status and rarely from an actual grant of water.²⁴ The character of water rights that could be obtained from the use of water was thus fundamentally different both from the system of riparian rights and from the type of ownership later recognized by Colorado's current law of appropriation. The fundamental allocational principle of current law is that prior beneficial use establishes a prior right to water. In the case of water scarcity the claims of senior rights holders are filled before those of later comers. Under Mexican law, all users, whatever their priority, would find themselves included in a structure of access to a state-owned patrimony that looked to principles of equitable sharing and necessity to allocate water among all users.²⁵ Within the *acequias*, water use rights would have arisen by virtue of ownership of land served by the *acequia* system and from the recognition by authorities of one's status as a *parciante* within the *acequia* system, that is to say from one's status as a participant in the structure of mutual rights and obligations that defined *acequia* water use. Specific allocation was based on apportionment of available supplies among all users on the basis of need and fairness.²⁶

The striking aspect of water management in the Culebra *acequias* is the persistence of water practices and customs grounded in the allocational principles of Mexican water law long since superseded. Water rights, now defined by the law of prior appropriation, remain situated in a tradition that views water as a communal resource to be allocated on the basis of necessity and equity and managed to further both a natural resource commons and a civic commons rather than for other efficiencies alone.²⁷ Water is still viewed as an asset in-place, tied to the landscape and to the community economy it has created, rightfully belonging to the community that built the irrigation structures that first made the water available.²⁸ It is the continuing commitment to that tradition, and to the landscape that has been sustained by that tradition, which creates opportunities for sustainable and ecologically beneficial watershed management.

24. See *infra* text accompanying notes 61–68.

25. *Id.*

26. See *infra* text accompanying notes 47–70.

27. See *infra* text accompanying notes 212–224.

28. See *infra* text accompanying notes 185–214.

One of the complications of giving a fair account of the extent of the Culebra watershed's present-day commitment to its earlier water law and tradition is that water rights holders in the Culebra *acequia* communities are acutely aware of the relative priority of their water rights under present day Colorado law. They often insist on those priorities.²⁹ The long establishment of appropriative water rights in Colorado and the recognition that property rights in water are grounded in that system and not another, have necessarily made people attentive to their rights and willing to act to defend them in terms that the law requires.³⁰ In addition, the long established law of temporal priority has made it more difficult to enforce conformity to the old norms of sharing, especially in times of scarcity when those norms most count. Because the law no longer insists on sharing in times of scarcity, nor offers formal encouragement to *acequia* institutions, commitment to the older norms must of necessity be voluntary and based on mutual persuasion by those within the *acequia* communities.³¹

29. See *infra* text accompanying notes 185–192.

30. See *infra* text accompanying notes 181–182.

31. See *infra* text accompanying notes 185–192.

New Mexico, by contrast, has allowed some elements of the earlier water law and culture of Spain and Mexico to continue to play a role in shaping contemporary water law and policy, though the persistence of *acequia* traditions has been situated within the state's commitment to a system of appropriative water rights based on seniority of appropriation. See *supra* note 13. Recognition by the Territory, and later, by New Mexico of *acequia* water rights and institutions has varied considerably over time. In the years preceding and in the years immediately following the establishment of United States dominion under the Treaty of Guadalupe Hidalgo (1848) there was first the Kearny Code, promulgated in 1846 by General Stephen Watts Kearny during his occupation of the Mexican province of New Mexico. ORGANIC LAW FOR THE TERRITORY OF NEW MEXICO COMPILED UNDER THE DIRECTIONS OF GENERAL KEARNY, reprinted in OCCUPATION OF MEXICAN TERRITORY, S. DOC. NO. 896, 62nd Cong., 2d. Sess. 10, 175 (1912). The so-called Kearny Code provided that water rights and water institutions established under Mexican dominion would continue under the new United States sovereignty. *Id.*; see also SISTER MARY LOYOLA, THE AMERICAN OCCUPATION OF NEW MEXICO 1821–1852 59–66, 100–01 (1976). Neither the Kearny Code nor the undertaking in the Treaty of Guadalupe-Hidalgo that property rights in existence under Mexican dominion would be protected under the laws of the United States had the effect of making property rights and institutions arising under Mexican law immune from lawful redefinition and reshaping under United States law, either as a matter of established international law or of United States domestic law. See, e.g., Albuquerque Land & Irrigation Co. v. Gutierrez, 61 P. 357, 366 (N.M. 1900); 1 D.P. O'CONNELL, STATE SUCCESSION IN MUNICIPAL AND INTERNATIONAL LAW 109, 239–44, 248–50 (1967); LOYOLA, *supra*, at 71; HERBERT A. WILKINSON, THE AMERICAN DOCTRINE OF STATE SUCCESSION 37–52, 117–34 (1934). Nonetheless, for many years after

the Treaty of Guadalupe-Hidalgo, the Territory of New Mexico did not modify the essential attributes of *acequia* water rights and institutions, and indeed confirmed them. See, e.g., Statutes and Laws of the Territory of New Mexico, art. 1, ch. 1, § 8, Act of July 20, 1851; 1852 N.M. Ditches Act, *supra* note 11. A strong political culture had evolved that resisted alteration of substantive water rights as they had been defined under Mexican law. Reflections of that tradition can be seen in laws and official statements throughout the nineteenth century. As late as 1898, the New Mexico Water Commission concluded that the *acequia* system is “just and progressive and simple” and should not be changed. *Id.*

The 1905 and 1907 territorial water codes recognized *acequia* water customs and practices as a distinct set of valid water institutions, but each struck an ambivalent note in stating the law’s commitment to their protection. Each statute acknowledged and endorsed the decentralized and communal authority over water implicit in *acequia* governance but at the same time made clear that the foundation of water rights lay in appropriation and beneficial use. The 1907 water code further limited *acequia* authority by insisting on the centralized allocational authority over water of the territorial government and the territorial engineer. Compare Laws 1905, ch. 102, §§ 2, 10, 29, 37 (codified at N.M. STAT. ANN. §§ 72-1-2, -4-19, -9-2 (Michie 1978)), with Laws 1907, ch. 49, §§ 2, 23, 57, 59 (codified at § 72-9-1). Section 37 of Chapter 102 of the Laws of 1905 had provided that the territorial board of water control (established to make all adjudications of water within New Mexico) had no power to hear, determine or adjudicate any rights affecting *acequias*, without the unanimous consent of all interested parties. This striking limitation on government power was repealed, and the authority of the territorial engineer to adjudicate matters involving *acequia* rights declared, in the 1907 Water Code. See §§ 72-4-19, -9-2; see also BAXTER, *supra* note 4, at 104–05.

Following the change in statutory law, the earlier pattern of judicial deference to *acequia* governance of water was altered decisively with the 1914 decisions in *Snow v. Abalos*, 140 P. 1044 (N.M. 1914) and *State ex rel. Cmty. Ditches or Acequias v. Tularosa Cmty. Ditch*, 143 P. 207, 214–15 (N.M. 1914). It became clear through those decisions that *acequias*, as such, and distinct from their member-irrigators, could no longer own and could not control water communally. It was the individual *parciantes* who in the eyes of the law beneficially used the water and who were considered to hold the water right. *Snow*, 140 P. at 1048–51. Further, the *acequias*, as entities, had no power to control or to make dispositions with respect to water, which, until appropriated by a beneficial user, lay within the state’s power to allocate. *Tularosa*, 143 P. at 213–14; see also BAXTER, *supra* note 4, at 99–104; Hall, *supra* note 12.

More recently, New Mexico has embraced the heritage and public resource value of the *acequia* system, struggling, however, with the task of defining the extent to which *acequias* should enjoy the power to control and allocate water or the extent to which the state should reshape concepts of beneficial use and waste to support customary *acequia* methods of water diversion and application. New Mexico law now allows *acequias* to acquire water rights from their *parciantes*, to transfer those rights, and to protect them from the risk of loss for nonuse. N.M. STAT. ANN. § 73-2-22 (Michie 1978). There has been significant skirmishing between the State and the *acequias* on the vital question whether customary *acequia* methods of water use and diversion are compatible with prevailing theories of beneficial use. See, e.g., Letter of Special Master Vickie L. Gabin in the Rio Chama Adjudication to the Parties, *State v. Aragon*, U.S. District Court for New Mexico (No. CV 7941 SC) (October 30, 1997); *Acequias* Brief on Initial Legal Issues, *New Mexico v. Aragon*, U.S. District Court for New Mexico (No. CIV-7941); *Acequias* Response Brief on Initial Legal Rights Relating to *Acequia* Diversion

In practice, *acequia* water users have often chosen to adjust the exercise of their water rights to the needs of their junior neighbors and to the functioning of the *acequia* delivery system as a whole.³² *Acequia* governance is usually based on a one landowner, one vote system for the election of *mayordomos* and commissioners, compelling officials to be responsive to small holders individually and in the aggregate.³³ The moral authority of the *mayordomo* or of community leaders is often successful in persuading neighbors to remain true to a water heritage that the law no longer compels, perhaps by passing up a turn in order to accommodate a neighbor, by receiving water on a schedule that is fitted to the delivery capacity of the *acequia* system, or by agreeing, as did Adelmo Kaber and Joseph Gallegos, to share scarcity.³⁴ Elements of the culture and the custom of water sharing, of water allocation on principles other than temporal priority, and of commitment to the *acequia* as the common delivery system thus survive, constantly pressured by the rights structure of prior appropriation.

A fair characterization of the contemporary state of affairs might be that there is sufficient discomfort with the consequences of temporal priority as a commanding allocation

Rights, *New Mexico v. Aragon*, U.S. District Court for New Mexico (No. CIV-7941) (Oct. 14, 1997).

There nonetheless remains a deeply seated commitment in New Mexico to *acequias* as structures of community resource allocation and as foundations of cultural identity. That commitment has served as a foundation for an assumed legitimacy of *acequias* in the ongoing legal, administrative and legislative dialogue about the role and powers of *acequias*. See, e.g., RIVERA, *supra* note 3, at 148–50 (discussing, as indications of *acequia* legitimacy, the creation by gubernatorial Executive Order, of the New Mexico *Acequia* Commission as a water advisory body, and passage of the Water Resources Development Act of 1986, Pub. L. 99-662, 100 Stat. 4082 “direct[ing] the Army Corps of Engineers ‘to consider the historic *Acequia* systems (community ditches) of the southwestern United States as public entities [allowing them] to enter into agreements and serve as local sponsors of water-related projects’”); see also John R. Brown & Jose A. Rivera, *Acequias de Comun: The Tension Between Collective Action and Private Property Rights* 10–11, 19–22 (2000) (unpublished manuscript, available at <http://dlc.dlib.indiana.edu/documents/dir0/00/00/02/dlc-0000027-00/rivieraj041300.pdf>) (a paper presented at the Annual Meetings of the International Association for the Study of Common Property Feb. 13–15, 2000).

32. See *infra* text accompanying notes 208, 212–214.

33. See *infra* text accompanying notes 209–211, 240–242.

34. See Gallegos, *Acequia Tales*, *supra* note 13. The vulnerability of such systems of voluntary compliance within *acequia* communities has been noted in Brown & Rivera, *supra* note 31, at 20–22.

tool that older ways are at times preferred. That discomfort is based on the conviction that community solidarity and the good order of the landscape and the *acequia* system may depend on commitment to other principles of allocation than temporal priority.³⁵ For those reasons, *acequia* practices of water allocation, grounded in the circumstances of original settlement and once compelled by law, continue to shape conduct and expectations with respect to water use.

B. Overview

This article will describe the origins and the persistence of *acequia* practices in the Culebra watershed communities. Part of the story to be told is that of the atrophying of a set of collective water institutions under pressure from a new legal order and other social change. The *acequias*, a system of community water control, were formally supplanted in the late nineteenth century by a state-administered system of water rights grounded in appropriation and ownership of water by individual rights holders.³⁶ It is unquestionably the case that the loss of legal authority to regulate water as a community asset has reduced the effectiveness of *acequias* as governance structures.

A second theme, however, is the survival of practices and commitments of *acequia* water management, and the reasons for their survival. Briefly stated, *acequia* practices have survived because they contribute to the functioning of the watershed as a productive landscape, providing services to individual rights holders and to the community that would be difficult to replicate under feasible alternative institutional orders. This functionality of the *acequia* system is especially important because of the specific form that it takes. Reliance on earthen, gravity-fed ditches allows water to move through the landscape, supporting crop irrigation while providing an array of environmental and ecosystem services that would not likely survive the abandonment of *acequia* institutions or the abandonment of the physical systems of *acequia* water conveyance. It is the intersection of a particular technology with a particular landscape and a social and cultural order that

35. See Gallegos, *Acequia Tales*, *supra* note 13; see also *infra* text accompanying notes 184–191, 209–211, 240–242.

36. See *infra* text accompanying notes 117–183.

produces watershed functioning of a particularly high order.³⁷ For those reasons, this paper advocates appropriate adjustments in the prevailing law to accommodate *acequia* functioning. Because of their singular position as institutions that are legitimate in the eyes of long established communities and effective at providing ecosystem services, the *acequias* may represent a form of social and natural resource capital whose survival should be encouraged.

The narrative that follows is divided into four Parts. Part I offers a description of the founding of the Rio Culebra *acequia* communities and of the reshaping of their water institutions in the last decades of the nineteenth century as a result of the coming of the law of prior appropriation. That part of the narrative explores the consequences for the *acequias* of the loss of formal legal protection under Colorado law of the *acequia*

37. We do not make a claim for the universal efficacy of *acequia* institutions or for the universal beneficial consequences of *acequia* diversion and irrigation methods. The particular features of watersheds, including their scale, their water production, and the dynamics of ground and surface water interaction will be critical factors in determining the efficacy of *acequia* techniques in managing water in particular watersheds. Our ultimate argument is one in favor of embracing variant institutions of watershed governance and differing visions of efficiency and efficacy of water use, at least where specific local adaptations indicate their effectiveness and their conformity with desirable watershed functioning and social good.

For varying perceptions of the effectiveness of *acequia* systems, see, e.g., BAXTER, *supra* note 4, at 13–16, 95; FREDERICK HAYNES NEWELL, REPORT ON AGRICULTURE BY IRRIGATION IN THE WESTERN PART OF THE UNITED STATES AT THE ELEVENTH CENSUS 193–99 (1890); MAPS AND PANORAMAS: TWELFTH ANNUAL REPORT OF THE DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY OF THE TERRITORIES, 1878 273. The latter two documents reflect Newell's alternatively contemptuous and bemusedly admiring assessments of modest scale and technologically simple *acequia* systems as irrigation mechanisms. Newell was not alone in expressing a notably culturally-grounded hostility to the hispanic irrigation communities in the southwest. See HUBERT H. BANCROFT, HISTORY OF NEVADA, COLORADO, AND WYOMING 1540–1888 593 (1890). For other, varying assessments by strangers to *acequia* systems, see JOSIAH GREGG, COMMERCE OF THE PRAIRIES 104–108 (Max L. Moorhead ed., 1954); JANE E. NORRIS & LEE G. NORRIS, WRITTEN IN WATER, THE LIFE OF BENJAMIN HARRISON EATON 24–32 (1990) (describing Eaton's admiring encounters with Hispano *acequia* systems in New Mexico while a young man and before the beginning of his public life as territorial legislator, governor and irrigation advocate and promoter in Colorado); ZEBULON M. PIKE, 1 THE JOURNALS OF ZEBULON MONTGOMERY PIKE 401 (Donald Jackson ed., 1954); CLYDE PORTER & MAE REED PORTER, RUXTON OF THE ROCKIES 161 (LeRoy R. Hafen ed., 1950); Hutchins, *supra* note 3, at 274–75. Donald J. Pisani has noted the absence of discussion of the Spanish and Mexican water legacy to the American West by leading early scholars of western water institutions. DONALD J. PISANI, WATER, LAND, AND LAW IN THE WEST: THE LIMITS OF PUBLIC POLICY, 1850–1920 18 (1996).

water allocation regime. Part II describes the *acequia* as a structure of governance and as an institution for collective action and decision-making for a community-built natural resource commons. Part III describes the ecology of the Rio Culebra watershed *acequias*, focusing on the *acequias* as generators of natural resource wealth and as a natural resource management system that performs valuable environmental and ecosystem services. Part IV offers suggestions for an approach to protecting the value and use of water-in-place in *acequia* watersheds. Four main policy areas are addressed in Part IV: (1) protection of the community interest in water-in-place in *acequias* by recognizing appropriate *acequia* authority to limit water transfers inconsistent with watershed and ditch functioning; (2) modifications to the doctrine of beneficial use to produce more considered treatment of the ecological and economic value of traditional irrigation practices and water institutions; (3) strengthening the law's commitment to effective regulation of land use practices that affect watershed functioning; and (4) the promotion of reliable community-based watershed management organizations capable of preserving the natural capital represented by ecologically beneficial and sustainable uses of water.

I. HISTORY OF THE *ACEQUIAS* OF COLORADO'S RIO CULEBRA WATERSHED

This Part offers a history of the Rio Culebra *acequias*. It begins with their foundation as New Mexico frontier settlements established in the decade following the Mexican War and concludes with the decisive events that absorbed the *acequia* communities into the water rights regime of Colorado at the end of the nineteenth century.

The first phase of the history of the *acequias* of the Rio Culebra involves the application of established New Mexican community irrigation technologies, governance structures and legal arrangements to a distant watershed on the New Mexico Territory's northern frontier. The second phase of the history involves the absorption of those New Mexican watershed institutions into Colorado's emergent legal and social order in the years after the organization of Colorado Territory in 1861. The history reveals strong continuing commitment by the Hispano farmers to the originally established governance

principles and rights structures, and the difficulty of maintaining those commitments under the appropriative water rights regime definitively established in the watershed in the years after 1889 following an earlier period of accommodation of *acequia* institutions by Colorado law.

A. *Establishment of the Rio Culebra Acequia Communities*

The first attempts at settlement of Colorado's Culebra River watershed by Hispano colonists may have occurred as early as the 1820s or 1830s, but it was not until the years immediately following the conclusion of the Mexican War that permanent settlements supported by *acequia* water delivery systems were established.³⁸ The Culebra watershed lay within

38. Carlson, *supra* note 6, at 113–14; Nostrand, *supra* note 4, at 372–74; Forbes Parkhill, *Colorado's Earliest Settlements*, 34 COLO. MAG. 241–43 (1957); SIMMONS, *supra* note 17, at 43, 46; Marianne L. Stoller, *Grants of Desperation, Lands of Speculation: Mexican Period Land Grants in Colorado*, in SPANISH & MEXICAN LAND GRANTS IN NEW MEXICO AND COLORADO 24, 26, 34 (John R. Van Ness & Christine M. Van Ness eds., 1980); VALDEZ & VALDEZ, *supra* note 15, at 1–2, 9–12, 18.

There is some dispute among the commentators about the role that the first establishment of a United States military presence in the San Luis Valley may have played in permitting permanent settlement of the Hispano *acequia* communities of the Culebra. Some accounts seek to nest the Hispano settlements into a structure of stability created only through a series of campaigns by the United States against the Utes beginning in 1849 and culminating in 1855 with a treaty. See, e.g., LEROY R. HAFEN, COLORADO, THE STORY OF A WESTERN COMMONWEALTH 96–100 (1933); SIMMONS, *supra* note 17, at 46, 51–53; LeRoy Hafen, *Mexican Land Grants in Colorado*, 4 COLO. MAG. 83–87 (1927); Lantis, *supra* note 8, at 9. Members of the San Luis Hispano community maintain that, following initial sharp hostilities, a *modus vivendi* was worked out with the Utes independently of the United States military presence. The latter version of the relationship with the Ute people is in part verified by the oral history of the Ute people, and by Frank White (part Ute-part Chicano) who argues that the relationships between the Utes and the early Hispano settlers were complex but in time largely friendly, complicated by the United States War against Mexico and the coming of a United States military presence in its aftermath. Interview by Devon G. Peña with Frank White, Ute Nation member and retired teacher (June 1991) (on file with the author); see also JAMES JEFFERSON, ET AL., THE SOUTHERN UTES: A TRIBAL HISTORY (Floyd A. O'Neil ed., 1972); David J. Weber, *American Westward Expansion and the Breakdown of Relations Between Pobladores and "Indios Barbaros" on Mexico's Far Northern Frontier, 1821–1846*, in DAVID J. WEBER, MYTH AND HISTORY OF THE HISPANIC SOUTHWEST 117–132 (1988). In any case, although the first effort to establish *acequia* communities was repelled by Ute resistance in 1850, the first *acequia* community on the Culebra was established a year thereafter, more than a year before the establishment of Ft. Massachusetts as a permanent U.S. cavalry garrison (at the foot of the Sierra

the boundaries of the one million-acre Sangre de Cristo Land Grant conferred by Mexican authorities in 1844 to Stephen Luis Lee, sheriff of Taos, New Mexico, and Narciso Beaubien, the minor son of an influential Taos trader and entrepreneur, Carlos Beaubien.³⁹ Such grants were an instrument of a Mexican government policy intended to populate and stabilize frontier regions.⁴⁰ The grant petition submitted by Lee and Beaubien recited the intention to establish settlers on the grant lands.⁴¹

Repelled by Indian resistance and delayed by the U.S. invasion of New Mexico in 1846, settlement efforts did not succeed until the end of the 1840s.⁴² By that time, dominion of New Mexico had been transferred to the United States, and the original grantees had been murdered in the Taos Uprising of 1847. Carlos Beaubien, successor to the interests of Lee and

Blanca mountains and a good distance to the north of the Culebra watershed) and more than three years before the end of effective Ute resistance. See SIMMONS, *supra* note 17, at 47, 51-53. The *acequia* communities do not seem to have awaited control of the frontier by the United States before they established themselves on lands where the Ute nation still held sway. The willingness of the Hispano settlers to move into an area that was not secure has been attributed in part to their poverty and the opportunity represented by an unsettled land grant, in part to their character as a settler people of partial Indian ethnicity, comfortable that they could adapt to frontier circumstances and the indigenous population, and in part to the security of being part of an organized settlement effort. See SIMMONS, *supra* note 17, at 47, 51-53; Lantis, *supra* note 8, at 6-7, 9; Nostrand, *supra* note 4, at 361-64, 372; Stoller, *supra*, at 38.

39. Spanish Archives of New Mexico, Records of the Sangre de Cristo Land Grant, Reel No. 12, frs. 690-703; Stoller, *supra* note 38, at 31.

40. DAVID J. WEBER, *THE SPANISH FRONTIER IN NORTH AMERICA* 147-235, *passim* (1992); Nostrand, *supra* note 4, at 361-67; Stoller, *supra* note 38, at 22, 24, 27.

41. Stoller, *supra* note 38, at 22; John R. Van Ness, *Spanish American v. Anglo-American Land Tenure and the Study of Economic Change in New Mexico*, 13 SOC. SCI. J. 45, 47-48 (1976). Stoller and Van Ness maintain that the expectation of settlement attached both to community land grants and to substantial grants conferred on individuals. The expectation of settlement was plainly an element of the Sangre de Cristo Grant but not a requirement for its confirmation. See *Petition By Luis Lee and Narciso Beaubien to Governor Manuel Armijo (Dec. 27, 1843), and the Confirmation of the Grant By Mexican Authorities in Advance of Effective Settlement*, (available at SPANISH ARCHIVES OF NEW MEXICO, *supra* note 39, at fr. 690). A recitation of the history of the application for and confirmation of the Sangre de Cristo Grant appears in *Tameling v. U.S. Freehold Land & Emigration Co.*, 93 U.S. 644, 647 (1876), *aff'd* 2 Colo. 411, 416 (1874). The original grantees and, after their deaths in 1847, their successor, Carlos Beaubien, father of Narciso, sought to fulfill the obligation to settle the grant lands. THOMAS L. KARNES, WILLIAM GILPIN, *WESTERN NATIONALIST* 302 (1970); Stoller, *supra* note 38, at 31, 34.

42. See *supra* note 38.

his son, worked diligently to recruit settlers in conformity with the promises in the original grant petition and in spite of the fact that Mexican authorities had already confirmed the grant in 1844 in advance of successful settlement.⁴³ Although the formal grant had already been issued by Mexican authorities, and in advance of successful settlement, Beaubien in all likelihood believed that strict conformity with all promises made to Mexican authorities by the original petitioners would facilitate ultimate confirmation of the grant by United States authorities.⁴⁴ It was a turbulent period, and it would have been unclear whether the United States as successor sovereign would confirm the grant, or, given the then fluid state of the law on the question of grant confirmation, what the conditions of any such confirmation might be.⁴⁵ By 1852, the first *acequia*, the San Luis People's Ditch, was established and delivering water to settlers in the chief Culebra settlement of San Luis de la Culebra.⁴⁶

This establishment of an *acequia* community on the Culebra was but one episode in the longer history of Hispano settlement of the Rio Grande watershed.⁴⁷ The diffusion of

43. See KARNES, *supra* note 41; Stoller, *supra* note 38; SPANISH ARCHIVES OF NEW MEXICO, *supra* note 39.

44. See KARNES, *supra* note 41, at 302; Stoller, *supra* note 38, at 34–35. In 1850, the U.S. Supreme Court reasserted its insistence that compliance with Spanish and Mexican law was necessary to perfect land titles within territory acquired by the United States. *U.S. v. Boisdoré*, 52 U.S. (11 How.) 63 (1850).

45. PISANI, *supra* note 37, at 73, offers a description of the then state of the law. The U.S. Supreme Court had ruled on dozens of contested Spanish land titles in Louisiana and Florida and in a majority of the cases had emphasized the paramount right of American settlers to establish title to unoccupied land through preemption. The sanctity of Spanish grants had been emphasized in a minority of the cases. The Court in 1850 in *United States v. Boisdoré*, restated its formal commitment to the principle that the grants of Mexican grantees who conformed with the requirements of Mexican law would be confirmed by the United States. There nonetheless existed a strong natural rights-grounded sentiment that large Mexican grants should be suspect in themselves, because their scale was inconsistent with the achievement of a democratic landscape reflecting Harringtonian and Lockean principles. Settling the Sangre de Cristo Grant would thus have served a dual purpose for Beaubien, conforming with normal Mexican expectations for such grants, and peopling with small holders an empty and extensive land grant.

46. 1 COLORADO AND ITS PEOPLE 118 (1948); HAFEN, *supra* note 38, at 96–97; SIMMONS, *supra* note 17, at 48; Carlson, *supra* note 6, at 114–16; Francis T. Cheetham, *The Early Settlements of Southern Colorado*, 5 COLO. MAG. 5 (1928); Lantis, *supra* note 8, at 10; Nostrand, *supra* note 4, at 372.

47. See SIMMONS, *supra* note 17, at 47–48; Carlson, *supra* note 6, at 113–19; Lantis, *supra* note 8, at 7–13; Nostrand, *supra* note 4, at 372.

acequia irrigation techniques and institutions along the Rio Grande and its arable tributaries had proceeded for generations with the expansion of Hispano settlement.⁴⁸ From the eighteenth until the mid-nineteenth century, Hispano settlement probed north and west from older established communities along the Rio Grande searching out watersheds amenable to irrigation.

The settlers of the Culebra had come principally from towns and communities elsewhere in the northern New Mexico Territory,⁴⁹ and they brought with them a commitment to irrigation techniques and institutions of water governance cultivated for many years.⁵⁰ The construction and maintenance of the irrigation system lay at the heart of new settlements.⁵¹ Individual farmsteads were apportioned rights in the community irrigation system.⁵² Intending settlers were obliged to contribute their labor to the building and maintenance of the irrigation system and their persons to the common defense.⁵³

It is important to emphasize that the diffusion of *acequia* techniques and culture involved more than the successive application of a proven and adaptable technology to new watersheds. The people also carried with them a commitment to the institutional arrangements of *acequia* governance, embodied in long-standing law and custom,⁵⁴ sometimes written down but often not, and created for the allocation of water and other natural resources in new settlements.⁵⁵ These

48. See CLARK, *supra* note 3, at 12–16; RICHARD L. NOSTRAND, THE HISPANO HOMELAND 361–66 (1992); RIVERA, *supra* note 3, *passim*; Hutchins, *supra* note 3, at 271–75.

49. See NOSTRAND, *supra* note 48, at 372–75; SIMMONS, *supra* note 17, at 47–48; John Philip Andrews, History of Rural Spanish Settlement and Land Use in the Upper Culebra Basin of the San Luis Valley, Costilla County, Colorado (1972) (unpublished Master's thesis, University of Colorado, on file with author). Summary descriptions of the origins of the Culebra watershed settlers appear in Carlson, *supra* note 6, at 114; Cheetham, *supra* note 46; Parkhill, *supra* note 38; Edmond C. Van Diest, *Early History of Costilla County*, 5 COLO. MAG. 141 (1928).

50. Carlson, *supra* note 6, at 116–19; Lantis, *supra* note 8, at 6–10; Simmons, *supra* note 5, at 135–144.

51. Carlson, *supra* note 6, at 116–19; Lantis, *supra* note 8, at 6–10; Simmons, *supra* note 5, at 135–144.

52. Carlson, *supra* note 6, at 116–19; Lantis, *supra* note 8, at 6–10; Simmons, *supra* note 5, at 135–144.

53. See *supra* notes 47, 50.

54. See MALCOM EBRIGHT, LAND GRANTS AND LAWSUITS IN NORTHERN NEW MEXICO 62–63 (John R. Van Ness ed., 1994); RIVERA, *supra* note 3, at 33; Greenleaf, *supra* note 3, at 97–104.

55. See *infra* text accompanying notes 57–60, 69; BAXTER, *supra* note 4, at

sources of community water practices are a reason for their great durability and for the depth of commitment to them even in our own time.

The chief concerns of the New Mexico water law regime were the assurance of the stability of settlements and the expansion of settlement within the limits of the environmental capacity of the landscape.⁵⁶ The frontier was precarious and the achievement of community stability was crucial.⁵⁷ The law of community *acequias* had a collectivist cast, grounded in custom and the institutional requirements of establishing organized settlement in an arid frontier. Stable settlement depended on shared duties in the construction and maintenance of the community water supply systems and a sharing of water in times of scarcity.⁵⁸ Customs of allocation based on these principles might vary from locality to locality,⁵⁹ but variations were grounded in a consistent commitment to the recognition of the importance of equity and necessity, and to methods of allocation and dispute resolution that would promote the distribution of sufficient water to all for the most essential uses.⁶⁰

1–14; CLARK, *supra* note 3, at 15–16, 25–26; CUTTER, *supra* note 12, at 1–11, 19–30, 69–128; MEYER, *supra* note 3, at 145–64; RIVERA, *supra* note 3, at 25–41; Carlson, *supra* note 6, at 111–19; Ebright, *supra* note 9, at 3, *passim*.

56. See PISANI, *supra* note 37, at 18; MARC SIMMONS, SPANISH GOVERNMENT IN NEW MEXICO 39, 74–75, *passim* (1968). Simmons emphasizes the precariousness of many of the New Mexico settlements and the great importance placed on promoting their stability. See also BAXTER, *supra* note 4, at 21, 32–36; MEYER, *supra* note 3, at 148–52, 159–64. BAXTER, *supra* note 4, at 34–35; EBRIGHT, *supra* note 54, at 29–32; and Hall, *supra* note 12, each discuss controversies arising from the effort to accommodate newcomers to watersheds where existing users were already established. Their discussions illustrate the tension that could exist between the desire to stabilize existing settlements and the desire to accommodate new arrivals and new uses of resources, typically resolved by fitting the new demands into the existing structure of use to the extent possible and allocating water on principles that considered not only prior use but equity and the needs of all, including new comers and new uses.

57. See SIMMONS *supra* note 56, at 39, *passim*, and WESTPHAL, *supra* note 5, at 6, 9, for especially clear expositions of the effect that the vulnerability of a frontier condition had on Spanish and Mexican government policy with respect to the establishment of settlements. Simmons notes the imposition of penalties on settlers who abandoned their communities.

58. See MEYER *supra* note 3, at 161, 163.

59. See BAXTER, *supra* note 4, at 31–42; EBRIGHT, *supra* note 54, at 27, 62–63; RIVERA, *supra* note 3, at 38; TYLER, *supra* note 8, at 21–29; Ebright, *supra* note 9, at 9, *passim*.

60. See BAXTER, *supra* note 4, at 19, 44–46, 68–70; MEYER, *supra* note 3, at 159–64; RIVERA, *supra* note 3, at 49–62; TYLER, *supra* note 8, at 15–29, 40–41;

What was the basis of water rights in the Rio Arriba region of the Rio Grande valley? What rights did the Culebra settlers have in water, and what was the foundation for those rights? It seems clear, first of all, that rights in water did not arise as a result of the ownership of riparian land.⁶¹ Also, grants of land were not considered to create grants of water by implication, however much the settlement and development of the lands might depend on access to water.⁶² Express grants of water, although possible under Mexican and Spanish law, were neither typical nor common.⁶³ The default rule, which would have applied in all cases where a land grant was silent with respect to rights in water, as is the case with the Sangre de Cristo land grant,⁶⁴ was that all natural water bodies within a land grant remained the property of the sovereign, available to the people for their uses and to be allocated among them on the basis of need and fairness.⁶⁵ That is to say, a settler on grant lands obtained access to water by using it, but the rights that any such user could secure never ceased to be subject to the universal rights of others to share available water when scarcity required rationing.⁶⁶ In particular, an established use did not give the earlier user a clear right based on her seniority to take water while newer users went without.⁶⁷ The continuing public character of the resource and the continuous operation of the twin principles of necessity and fairness as the basis of allocation precluded such an outcome. Prior use and established reliance might be factors in determining equity of

Ebright, *supra* note 9, at 32–33.

61. See *State v. Valmont Plantations*, 346 S.W.2d 853, 859–65 (Tex. Civ. App. 1961), *aff'd*, *Valmont Plantations v. State*, 355 S.W.2d 502 (Tex. 1962), and sources cited).

62. MEYER, *supra*, note 3, at 133–44, through his emphasis on acquisition of water rights by formal grant, may seem to suggest that such grants were the common and typical method of securing access to water in those portions of the Spanish and later Mexican dominions that were to become parts of the American Southwest. The teaching of the historical sources cited in *Valmont Plantations*, 346 S.W.2d 853, is otherwise. See also HANS W. BAADE, *The Historical Background of Texas Water Law – A Tribute to Jack Pope*, 18 ST. MARY'S L.J. 2, 67–75 (1986). Ebright's commentary of New Mexico sources on this point also indicates the comparative rarity in New Mexico of formal grants of water with or without grants of land. See Ebright, *supra* note 9, at 8, and sources cited.

63. *Valmont Plantations*, 346 S.W.2d 853; Ebright, *supra* note 9, at 8.

64. See, SPANISH ARCHIVES OF NEW MEXICO, *supra* note 39.

65. *Valmont Plantations*, 346 S.W.2d at 859–65.

66. *Id.*

67. See Ebright, *supra* note 9, at 9–11.

allocation, but under conditions of scarcity the law required allocation on the basis of criteria whose ultimate concerns were fairness to all and responsiveness to need.⁶⁸

It was a system of water law and water management deeply seated in the communities where it was applied. This law had been articulated and enforced by varying administrative and judicial authorities during the different phases of the Spanish colonial and Mexican government of New Mexico.⁶⁹ Municipal and town councils, provincial governors and justices of the peace, local water judges and ditch bosses (*mayordomos* or *repartidores de aguas*) were variously charged with interpretation and enforcement of rights and duties with respect to waters and *acequias*.⁷⁰

There were few trained lawyers on the New Mexico frontier, and available compilations and digests of the law offered only broad general principles for the resolution of particular disputes where books were available at all.⁷¹ The distance of most of the New Mexico settlements from administrative centers meant that resolution of most water disputes and allocational questions was accomplished by local authorities and community leaders who applied to particular disputes the commonly accepted principles of allocation.⁷² Hearing records or the resolution of water disputes were not usually put in writing, but if appealed the substance of the dispute and its resolution would be reduced to writing.⁷³ Though the written sources of law might often be unavailable

68. *Id.*

69. *Id.*; see also TYLER, *supra* note 8, at 14–29. For an account of the structures of provincial and local government and of judicial proceedings in New Mexico during the late Spanish colonial period, see SIMMONS, *supra* note 56, *passim*.

70. BAXTER, *supra* note 4, at 17–48; CUTTER, *supra* note 12, at 1–11, 19–30, 69–128; MEYER, *supra* note 3, at 145–63; RIVERA, *supra* note 3, at 52–60; SIMMONS, *supra* note 56, at 135–44; Ebright, *supra* note 9, at 9–11.

71. See CUTTER, *supra* note 12, at 77–80, 87–88, 99–102; SIMMONS, *supra* note 56, at 39, 176, (discussing the availability of legal materials, including treatises, codes and compilations of laws, the state of training in the law by major and minor officials and administrators in New Mexico, and the role of the written law in adjudicated disputes); see also MEYER, *supra* note 3, at 145–64; Malcolm Ebright, *Frontier Land Litigation in Colonial New Mexico: A Determinant to Spanish Custom and Law*, 8 W. LEGAL HIST. 199, 200–03 (1995); Joseph W. McKnight, *Law Books on the Hispanic Frontier*, in SPANISH AND MEXICAN LAND GRANTS AND THE LAND 74–84 (Malcolm Ebright ed., 1989).

72. EBRIGHT, *supra* note 54; MEYER, *supra* note 3; Ebright, *supra* note 71.

73. EBRIGHT, *supra* note 54.

to those who interpreted and applied the law, adjudicated outcomes were grounded in consistent principles of decision governing the allocation of water, including necessity, equity, the common good, and prior use.⁷⁴

The substance of the Mexican water law survived the transfer of dominion to the United States. Especially in the years immediately following the transfer of dominion from Mexico to the United States, New Mexico Territory legislative assemblies maintained and protected existing *acequia* institutions.⁷⁵ The laws of the first sessions of the New Mexico territorial legislature were particularly forceful in asserting the continuity of customary rules established by community *acequias*.⁷⁶ The statutes adopted tended to crystallize the

74. See MEYER, *supra* note 3, at 145–64 (consideration of the factors used by decision makers in adjudicating water disputes); RIVERA, *supra* note 3, at 33; Ebright, *supra* note 9, at 9–11 (distinguishing between the meaning of prior use as a basis for allocation under Mexican law and the quite different notion of priority of rights under the modern western law of prior appropriation).

The enforcement of *acequia* rights and duties through informal adjudication processes by persons lacking formal training in the civil law seems to suggest that *acequia* rules and customs may have been a bit unmoored from the structure of civil law adjudication. It is important first to emphasize that the practices and rules of community *acequias* were viewed by government authorities as structures of enforceable obligations and rights in *acequia* communities. Second, the Spanish and Mexican civil law traditions allow for the development of customary practices and rules as valid expressions of the civil law and indeed invite interpretation and local variation in the meaning of law by promulgating laws in the form of statements of broad principles for the determination of substantive rights. Mexican and Spanish laws governing water allocation in frontier communities are often laws of this very character. See MEYER, *supra* note 3, at 145–64; RIVERA, *supra* note 3, at 31; Ebright, *supra* notes 9; and 71, at 200–03. *Acequia* authorities or local municipal authorities, whether or not they knew to situate a particular decision as an expression of a specific code provision, typically sought to conform their decisions to broad principles of equity and necessity known to be prevailing. See MEYER, *supra* note 3, at 145–64; Ebright, *supra* note 9, at 9–11. The main pressure for the conformity of rulings with well-established principles of water allocation was that affected communities of users were aware of and committed to those principles. See BAXTER, *supra* note 4, at 38–48. It is a misapprehension of the civil law tradition to suppose that valid law may not consist of elastic standards to be weighed in adjusting rights and duties or that the content of the formal law may not be shaped and defined by an evolving body of customary interpretations of broadly stated legal principles and rules. Law is no less law in the civil system for consisting of sets of standards that decision makers must seek to apply with reasonable consistency in specific fact situations. Nor do customary rules and practices necessarily fail as expressions of law. See EBRIGHT, *supra* note 54, *passim*.

75. See BAXTER, *supra* note 4, at 61–67; CLARK, *supra* note 3, at 24–26.

76. See BAXTER, *supra* note 4, at 61–67; CLARK, *supra* note 3, at 24–26.

received pattern of rights and duties of landowners whose lands were served by *acequias*.⁷⁷

An 1856 Act of the New Mexico Territory's fifth legislative assembly fitted the newly formed communities of the Culebra watershed into the prevailing structure of early territorial New Mexico water rights jurisprudence. The Act reads:

An Act Establishing Three Additional Precincts in the County of Taos

Be it enacted by the Legislative Assembly of the Territory of New Mexico:

SECTION 1. That all the settlements on the Culebra River shall compose one Judicial precinct, separated from the Costilla precinct, designated precinct number 15.

SECTION 4. That the judge of probate of Taos County shall, immediately after the passage of this act, order an election to be held in the precincts herein formed, for the purpose of electing one justice of the peace and one constable for each precinct.⁷⁸

The special significance of this legislation is that water rights and irrigation matters were an important part of the jurisdiction of justices of the peace.⁷⁹ Their authority also included adjudication of the rights and common duties of owners of lands watered by *acequias* and the supervision of the election of *mayordomos*.⁸⁰ For the New Mexican settlers of the Culebra, the assurance that there was law in that frontier community, including a magistrate to adjudicate water matters along familiar lines, would have been important.

77. See *supra* note 31 for a description of the profound qualification of the commitment to *acequia* institutions in later years in New Mexico.

78. Act of Jan. 10, 1856, 1856 N.M. LAWS 24, ch. 10 (act establishing three additional precincts in Taos County).

79. See *supra* note 11, 1852 N.M. Laws at 276–77 (act relating to ditches and water streams); see also sources cited *supra* note 53.

80. See Act of Jan. 9, 1852, 1852 N.M. LAWS 309, 2d Sess. (act establishing justice courts and defining the duties of justices of the peace).

The bill's proponent is unknown, but Antonio Ortiz, member of the territorial legislative assembly from Taos County, offered the motion for its passage.⁸¹ It is unknown whether Carlos Beaubien played any role in promoting the bill. He was at the time working to attract new settlers to the Sangre de Cristo grant and to stabilize the communities that had already been established.⁸² Beaubien had earlier set up rules for conduct of the colony, including the requirement that newcomers obtain permission to live in the town either from him or from the justice of the peace with jurisdiction over the area.⁸³ It is not too fanciful to imagine him favoring legislation to name a new justice of the peace in the principal watershed of his distant grant lands.⁸⁴

The population of the Culebra settlements grew steadily from the first establishment of San Luis in 1851. The San Luis People's Ditch was constructed in April 1852, and six other *acequias* were established in the Culebra watershed by the end of 1855.⁸⁵ Eight others followed between early 1856 and the

81. Territorial Archives of New Mexico, Min. entry of Jan. 4, 1856, Council Journal of the Sixth Legislative Assembly, Reel 1, fr. 571.

82. See *supra* text accompanying notes 40-44; Nostrand, *supra* note 4, at 372-73; Stoller, *supra* note 38, at 31, 34.

83. See Deed Record Book No. 1, 256-57 (Costilla County, Colo.) (on file with authors); Cheetham, *supra* note 46, at 6; SIMMONS, *supra* note 17, at 48. The Beaubien rules for settlers were adopted as a county ordinance by the Costilla County Commissioners on May 18, 1863. Proceedings of the Costilla County Commission (Book I) (on file with authors).

84. Beaubien was a ubiquitous figure in the political and administrative life during the latter years of Mexican dominion and in the early years of New Mexico Territory. See HERBERT O. BRAYER, WILLIAM BLACKMORE: THE SPANISH-MEXICAN LAND GRANTS OF NEW MEXICO AND COLORADO 1863-1878 63 (1949); KARNES, *supra* note 41, at 153; LOYOLA, *supra* note 31, at 37-40; Lawrence R. Murphy, *Charles H. Beaubien*, in 6 THE MOUNTAIN MEN AND THE FUR TRADE OF THE FAR WEST 23 (LeRoy R. Hafen ed., 1968); Stoller, *supra* note 38, at 31, 34. Public records show him serving in Taos as a justice of the peace and later as a judge of the Superior Court. He regularly appears in records of court expenses as a recipient of fees for his services as a translator in court proceedings. *E.g.*, Territorial Archives of New Mexico, Records of the U.S. District Court for the First Judicial District and of the New Mexico Territorial Circuit Court of Rio Amber and Taos Counties, 1848-1865. His grant holdings and his influence in the territory would have made him sensitive to the desirability of taking all actions needed to assure confirmation of his grant. See *supra* text accompanying notes 40-48.

85. See SIMMONS, *supra* note 17, at 47-48; Cheetham, *supra* note 46, at 6; Nostrand, *supra* note 4, at 372-73; and sources cited therein for narrative descriptions of the founding of the *acequia* communities of the Culebra watershed. An official indication of their founding dates is available in the June 14, 1889 decrees for waters from the Culebra River in Costilla County Colorado. *In re*

transfer of political jurisdiction from New Mexico to Colorado Territory in 1861.⁸⁶ By 1860, when Beaubien's ownership of the Sangre de Cristo was confirmed by the United States government,⁸⁷ seventeen hundred people, mainly from communities in Taos County, were living in the Culebra watershed.⁸⁸

The point of this detailed narrative of the early water law history of the Culebra is to make plain that the settlers who came to the Culebra River villages were people who arrived with a particular water rights regime and who carried with them an understanding that adherence to the law and custom of *acequias* was necessary for their common flourishing on the frontier.⁸⁹ The water rights regime that they inherited and transmitted was anything but a set of vaguely articulated casual arrangements. From the first settlement of the Culebra villages until 1861 when the portion of modern day Colorado lying south of the thirty-seventh parallel was separated from New Mexico Territory and made a part of the newly organized

Water District No. 24, (D. Ct. Colo. 1889) [hereinafter the 1889 Decrees], setting the priority dates for water rights with reference to the diversion of water by the several community ditches.

86. See the 1889 Decrees, *supra* note 85.

87. See H.R. EXEC. DOC. 36-14 (1st Sess. 1860); see also BRAYER, *supra* note 84, at 63; KARNES, *supra* note 41, at 302 (accounts of confirmation of the Sangre de Cristo Grant). The application for approval of the grant, together with supporting documents and the report of the United States Surveyor General's Office at Santa Fe, recommending congressional approval of the grant can be found in the Spanish Archives of New Mexico, *supra* note 39, at Reel 12, frs. 690-715.

88. See EIGHTH U.S. CENSUS (1860); VALDEZ & VALDEZ, *supra* note 15, at 21; Stoller, *supra* note 38, at 34.

89. See *supra* text accompanying notes 45-58. The doctoral dissertation of Estevan Rael Gálvez, currently New Mexico State Historian at the New Mexico State Records Center and Archives, documents the diffusion of families in the frontier regions of New Mexico. His work indicates that in spite of the remoteness of settler communities, the settlers themselves were never isolated or separated culturally from their places of origin. Settlers, once established, frequently went "home" on significant or pressing occasions. Newcomers to established settlements often were members of the families of original settlers. Rael Gálvez suggests that this process may have reinforced the tendency of settlers to remain committed to the practices and customs of their home areas. Telephone Interview with Estevan Rael Gálvez, New Mexico State Historian, New Mexico State Records Center and Archives (Oct. 15, 2001) (notes on file with authors); Estevan Rael Gálvez, *Identifying Captivity and Capturing Identity: Narratives of American Indian Slavery in Colorado and New Mexico, 1776-1934* (2002) (unpublished Ph.D. dissertation, University of Michigan) (on file with authors). His hypothesis is shared by other commentators. See generally RIVERA, *supra* note 3; Nostrand, *supra* note 4.

Colorado Territory,⁹⁰ the Hispano settlers of the Culebra looked to the law and water culture of New Mexico to define water rights and provide principles of governance for community water systems.⁹¹

B. Territorial and Early Statehood Years (1861-1882): A Period of Accommodation

The content of water law and of *acequia* water rights seem not to have changed in the years immediately following transfer of political control of the Culebra watershed to Colorado in 1861. The Hispano settlers of the Rio Culebra continued to look to the old law as a foundation for ordering rights and responsibilities. More important, there is strong evidence that their understanding of the continuity of basic water institutions was justified in light of Colorado law in the territorial period and in the early years of statehood.

Colorado session laws concerned with irrigation practices in the southern counties of the Territory are consistent in their recognition and protection of *acequia* institutions during the period 1861–1876. Legislation was passed in 1866 for Costilla and Conejos counties, and in 1872 was extended to Huerfano and Las Animas counties, giving *acequia* authorities the legal power to insist upon the contribution of labor by persons using water supplied by *acequias*, and establishing the duties of *mayordomos* and their manner of election.⁹² More important, the same 1866 and 1872 statutes recognized a preference for water uses by agricultural *acequias* over industrial and milling uses irrespective of priority, and required public *acequias* to prefer agricultural water uses over non-agricultural uses during the farming season, irrespective of the temporal priority

90. See LeRoy R. Hafen, *Status of the San Luis Valley, 1850–1861*, 3 COLO. MAG. 46, 46–49 (Mar. 1926).

91. See discussion accompanying *infra* notes 105–113 for a description of the effect of New Mexico law on the Culebra settlers' understanding of their land and water rights on the Sangre de Cristo grant.

92. See Act of Feb. 6, 1866, 1866 Colo. Sess. Laws 61, 63, 5th Sess., §§ 4, 12 (regulating ditches used for farming purposes in Costilla and Conejos counties); Act of Jan. 22, 1872, 1872 Colo. Sess. Laws 143, 9th Sess. (act to make the Act of Feb. 6, 1866 applicable to the County of Huerfano); Act of Feb. 9, 1872, 1872 Colo. Sess. Laws 145, 9th Sess. (act to make the Act of Feb. 6, 1866 applicable to Las Animas county).

of the non-agricultural use.⁹³ Another characteristic *acequia* rule—that the irrigation of forage crops could be limited where necessary to assure water availability for more essential food crops⁹⁴—probably lay behind an otherwise puzzling special act passed for Huerfano County at as late a date as 1876:

That from and after the passage of this act, it shall be unlawful for any person to divert the water of any stream, in the county of Huerfano from and after the 20th day of June, until the 31st day of August of each year, from its natural course, for the purpose of irrigating meadow or hay land.⁹⁵

Such a regulation, preferring grain crops, gardens and orchards over forage and fodder crops, was a common practice of *acequia* water allocation.⁹⁶

The recognition and protection of *acequia* institutions can be seen as part of a broader pattern of integration of Hispano

93. See Section 12 of the Act of Feb. 6, 1866, which states: “[t]hat public acequias, during the farming season, shall have preference over all ditches used for any mills, machinery, or any other ditch that may not be exclusively used for farming purposes.” 1866 Colo. Sess. Laws 61, 63, 5th Sess.

The provision is not quite comparable to Colorado laws of the period that obliged companies organized to construct ditches to prefer water users using water in a way consistent with the terms of the ditch company’s certificate. See, e.g., Act of Aug. 15, 1862, 1862 Colo. Sess. Laws 48, § 14 (enabling road, ditch, manufacturing and other companies to become corporate bodies):

Any company constructing a ditch under the provisions of this act shall furnish water to the class of persons using water in the way named in the certificate as the way the water is designated to be used, whether miners, millmen or farmers . . . and shall at all times give the preference to the use of the water in said ditch to the class of persons so named in the certificate.

Section 12 has a different sense. It states a categorical preference for agricultural uses by community *acequias* and a preference for water use by *acequias* over other classes of diverters. *Id.* § 12.

94. See BAXTER, *supra* note 4, at 75 (describing the general preference for farmland over meadow and pasture irrigation, though grassland irrigation was also deemed worthy of encouragement). See also RIVERA, *supra* note 3, at 33–37 (discussing principles of allocation of water in times of scarcity and of the practice of preferring uses deemed most essential).

95. Act of Feb. 10, 1876, 1876 Colo. Sess. Laws 79 (preventing the use of water in meadow lands in the county of Huerfano during certain months).

Legislative acts promoting *acequia* institutions seem not to have been uncommon in this period. In addition to the laws noted, see also Act of Feb. 12, 1874, 1874 Colo. Sess. Laws 167–168 (concerning irrigation, for the establishment of an “*Acequia Madre*” by the inhabitants along the San Francisco river in Las Animas County).

96. See *supra* note 94.

communities into the life of the new territory. Annual resolutions in Colorado session laws of the period provided for the translation of session laws into Spanish for distribution in the southern counties.⁹⁷ Governor Benjamin Harrison Eaton and others involved in territorial government, such as Lafayette Head, a member of the territorial legislative assembly and later of the state senate, recognized the value of *acequia* institutions in the localities where they had been established, both for their functionality and for their stability as settled institutional structures.⁹⁸

These indications of accommodation of *acequia* practices should not be surprising. While it is an article of faith in some quarters that Colorado has never had any water law but the law of "first in time, first in right,"⁹⁹ early water institutions of the state and territory indicate a more complex picture. The water law during the territorial and early statehood period suggests strongly that the commitment to prior appropriation, and especially the commitment to the complete preference for senior rights in times of scarcity, may not have been as unqualified as the courts of the state were later to insist. In the earliest session laws of the territorial legislature, the Session Laws of 1861, there is a strong intimation that water sharing by agricultural users in times of scarcity was a prevailing practice, protected by law. Section four of those laws provided that in times of scarcity commissioners would be appointed by the justice of the peace nearest to the stream or river to apportion,

in a just and equitable proportion, a certain amount of said water upon certain or alternate weekly days to different localities, as they may, in their judgment think best for the

97. See, e.g., 1862 Colo. Sess. Laws 151; 1864 Colo. Sess. Laws 258; 1865 Colo. Sess. Laws 150; 1866 Colo. Sess. Laws 48, 6th Sess.; 1872 Colo. Sess. Laws 159-161; 1876 Colo. Sess. Laws 84.

98. For a description of Eaton's early interest in Hispano water institutions, see NORRIS & NORRIS, *supra* note 37, at 24-26, 27-32.

Lafayette Head, leader of the Conejos Colony, and a member of the territorial legislative assemblies first of New Mexico and later of Colorado, is known to have played an active role in the territorial assemblies of both Colorado and New Mexico to promote the interests of the Conejos Colony and its *acequia* communities. See FRANK C. SPENCER, *THE STORY OF THE SAN LUIS VALLEY* 48-49 (1925). Head served as President of the Colorado State Senate from 1876 to 1878. COLO. LEGIS. COUNCIL, *PRESIDENTS AND SPEAKERS OF THE COLORADO GENERAL ASSEMBLY* 3-4 (1980).

99. See *supra* note 23.

interests of all parties concerned, and with a due regard to the legal rights of all.¹⁰⁰

The provision may have been intended only to create a structure for water use rotation within the structure of senior rights preferences. Indeed the court in *Coffin v. Left-Hand Ditch Co.* was later to conclude as much.¹⁰¹ The passage, however, strongly emphasizes the idea of equitable sharing among all water users, whatever their temporal priority. While the passage sounds somewhat like the common law riparian rights doctrine, its phrasing and content are remarkable for their similarity to provisions in Mexican law for the apportionment of water in times of scarcity, right down to the appointment of commissioners to oversee the process of fair allocation among all users.¹⁰² The principle that water is to be

100. 1861 Colo. Sess. Laws 67.

101. 6 Colo. 443, 448 (1882).

102. Formal authorization of commissioners under New Mexico territorial law to inspect water flows along *acequias* and to evaluate disputes first appears in statutes of 1863 and 1865, providing for the appointment by probate judges and justices of the peace of three-member commissions of "*hombres peritos*" (expert men) to assist the *mayordomo* in matters of *acequia* governance. 1863 N.M. Laws 34 and 1865 N.M. Laws 2-3; *COLECCION DE LEYES DEL TERRITORIO DE NUEVO MEXICO* (Estanislao N. Ronquilla ed., 1881). The naming of such commissioners is in all probability grounded in the practice of naming and relying on the advice and good judgment of *hombres buenos* (good and true men) in formal proceedings of conciliation of water disputes overseen by local judges, a practice dating at least as far back as the beginning of the nineteenth century in New Mexico and a remedy that had to be pursued to its conclusion before water litigation could be commenced. See BAXTER, *supra* note 4, at 38-39, 44-46; TYLER, *supra* note 8, at 24-27.

NORRIS & NORRIS, *supra* note 37, at 116-18, describes an attempted conciliation between farmers at the Greeley Colony and appropriators in the Ft. Collins area during the summer of 1874. The Ft. Collins irrigators, junior appropriators, proposed a plan of conciliation involving appointment of "a disinterested referee to divide the water for the remainder of the year according to the greatest need, pledging that enough water would be sent downstream immediately so that Greeley's permanent plantings and grains might be saved." The men of the Union Colony were skeptical. "There could be no rest until some kind of irrigation legislation brought reason and a measure of security to those who were investing their all in a way of life that now stood in jeopardy." The episode indicates both that water users believed that priority in time was not firmly established as the basis for allocation, and that need and fairness might be relevant allocational considerations, and the unwillingness of a senior rights holder to have its rights determined on such grounds.

Donald Pisani describes an 1854 act of the California legislature which ratified a community water control system that had prevailed in southern California since the Mexican period. The act authorized the creation of water commissions in townships in nine agricultural counties. These commissions were

allocated without prejudice to any members of the community, but in the best interest of all, and grounded in principles of equitable sharing, scarcity, and realization of the common good, lay at the heart of the Mexican legal regime for water allocation within community *acequias*.¹⁰³

The possibility that Section four may have had a provenance in the Hispanic irrigation regime is speculative, but the structure of the provision's wording is immensely suggestive and far more consonant with the Mexican system of community water allocation than with either American riparian or appropriative law. It would be very helpful if one could answer definitively the question of the relationship that Section four contemplates between equitable sharing and "legal rights" as bases for allocation. That is to say, were the ideas of "equitable sharing" and "legal right" intended to be iterative, or instead, to operate as independent, separate considerations in allocating water in times of scarcity? Under common law riparianism, the right to a correlative share would be a complete description of the content of each water user's legal right. The law of prior appropriation, by contrast, would view the principle of proportionality or equitable sharing as useful only to allocate scarce water among rights holders of parallel seniority. The Mexican system, however, would view both elements—equitable sharing and a due regard for rights arising from prior use and reliance—as operative and as separate relevant considerations in making appropriate allocations in times of scarcity.¹⁰⁴ Whatever Section four's intent, what does seem clear is that it did not look to temporal priority as the exclusive basis for allocating water in times of scarcity.

Section one of the 1861 Session Law also seems to approve the allocation of water on principles other than temporal priority:

All persons who claim, own or hold a possessory right or title to any land or parcel of land within the boundary of Colorado territory . . . when those claims are on the bank,

required "to examine and direct such water courses, and apportion the water thereof among the inhabitants of their district, determine the time of using the same, and upon petition of a majority of persons liable to work upon ditches, lay out and construct ditches." PISANI, *supra* note 37, at 18.

103. See *supra* notes 57–60, 64–68 and accompanying text.

104. *Id.*

margin or neighborhood of any stream of water, creek or river, shall be entitled to the use of the water of said stream, creek or river for the purposes of irrigation, and making said claims [in the land] available, to the full extent of the soil, for agricultural purposes.¹⁰⁵

The plain intent is to promote the full agricultural development of arable land lying along watercourses and in the vicinity of watercourses. In the earliest days of the territory, the difficulties of irrigating bench lands away from the riparian zone were well understood.¹⁰⁶ The technical challenges of upland irrigation were recognized as the major hurdle to the expansion of irrigation.¹⁰⁷ Thus, a law that encouraged full development of the irrigation potential of riparian and near-riparian lands, in some measure restraining experiments in upland irrigation, is true to the times.¹⁰⁸

Both sections one and four of the 1861 statute received rough handling in the pivotal decision of *Coffin v. Left Hand Ditch Co.*¹⁰⁹ in 1882. Interpreting Section four, the Court seized upon the phrase, "the legal rights of all," to sweep away the act's focus on apportionment and sharing of scarcity, discovering instead a provision intended to protect the priorities of senior rights holders.¹¹⁰ Section one of the 1861 Session Laws was found to have been superseded by subsequent legislation.¹¹¹ It is now accepted that the *Coffin* Court's peculiar vehemence in rejecting the claim that other theories of water rights had ever been recognized in the state or territory of Colorado arose from a need for a clear system for setting water priorities.¹¹² The decision occurred against the background of hectic competition among entrepreneurs to

105. 1861 Colo. Sess. Laws 67.

106. See NORRIS & NORRIS, *supra* note 37, at 85–94.

107. *Id.*

108. The law by no means prohibited irrigation away from riparian corridors. Section two of the same Act protects the right to divert water to farm lands not lying along stream courses. Section one of the Act instead seems to create a preference for full development of lands on the bank, margin or near vicinity of streams. 1861 Colo. Sess. Laws 67; see also *infra* note 115 and accompanying text.

109. 6 Colo. 443 (1882).

110. *Id.* at 448.

111. *Id.* at 451–52.

112. DUNBAR, *supra* note 4, at 80–81; NORRIS & NORRIS, *supra* note 37, at 116–18, 137–39; DONALD J. PISANI, TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY 1848–1902 55–58 (1992); VRANESH, *supra* note 20, at 3–9.

obtain control of water in a time of rapid development.¹¹³ What can now be acknowledged, as well, is that the push in *Coffin* for an unambiguous law suited to the needs of its time was preceded by an earlier period in Colorado water law when other principles of water rights and water allocation, at odds with the emerging prior appropriation doctrine, were recognized and protected by law.¹¹⁴

The ambivalent state of early Colorado law is evident elsewhere in the 1861 Session Laws. The same Act in which sections one and four are found also contains, in Section two, a provision that protects senior appropriative rights, and the right to divert water to non-riparian lands.¹¹⁵ The inconsistency of Section two with the language of sections one and four reflects the simple fact that conflicting impulses coexisted in the law of the time. Patterns of water use and

113. See sources cited *supra* note 112. See also HAFEN, *supra* note 38, at 227–30, for a brief account of irrigation expansion in the 1880s.

114. The vehemence of *Coffin* is still to be found in Colorado decisions. In *American Water Development v. City of Alamosa*, 874 P.2d 352 (Colo. 1994), successors in interest to the grantees of Baca Land Grant No. 4 argued that local law and custom, prevailing in the San Luis Valley at the time of the conveyance to their predecessors in interest by the United States government in 1864, defined the scope of water rights appurtenant to the land. *Id.* at 363–64. They maintained that local law and custom prevailing in the San Luis Valley at the relevant time supported their claim to own, as an attribute of the lands and not dependent upon appropriation, ground water underlying the granted lands. *Id.* at 365. The Colorado Supreme Court rejected any possible relevance of local custom and law inconsistent with generally prevailing territorial law:

We believe that at least after Colorado was organized as a territory on February 28, 1861, the proper inquiry concerning local law and custom is to be made on a territory-wide basis. The use of the term “law” indicates that we should look to the body empowered to make law—here the territorial legislature—and suggests that “custom” should be examined within the same territorial compass.

Id. at 366 n.21. The court went on to find that relevant territory-wide law defining water rights in surface waters and tributary ground water after February 28, 1861 was the rule of appropriation, relying on the 1882 decision in *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882), for its assertion that prior appropriation had been recognized at all relevant times as the only basis for the obtaining of water rights in Colorado. *Am. Water Dev.*, 874 P.2d at 366 n.21. While AWDI’s effort to establish the existence of an appurtenant water right grounded in Mexican law may well have been ill-founded as a matter of Mexican law, the court spoke too broadly in supposing a uniformity of water law in territorial Colorado. The court’s statements are indicative of the potency of the *Coffin* Court’s inaccurate description of the history of Colorado water law and institutions.

115. An Act to Protect and Regulate The Irrigation of Lands, 1861 Colo. Sess. Laws 67.

settlement varied considerably and included mining establishments, westering communities of farmers from the states, and the *acequia* institutions of the recently absorbed Hispano communities of the south. The law of that early period seems to have accommodated a number of existing and serviceable approaches to water allocation rather than committing itself to a single structure. That this was likely so is no more surprising than the later insistence in the *Coffin* era that a single law of water rights must be established and had indeed always prevailed. While the face of state law changed decisively after the adoption of the 1876 Constitution and with the *Coffin* decision, the essential point is that there is good evidence of a more complex water history in Colorado than was acknowledged at the time of the *Coffin* decision.

The acceptance of multiple water institutions by Colorado territorial law and in the earlier years of statehood is meaningful for the present study. It suggests a reason why the San Luis valley *acequia* communities may have continued in their customary ways after the shift of political jurisdiction of the valley from New Mexico to Colorado. In the early period of territorial government and state government in Colorado, it might well have well seemed to Hispano settlers in *acequia* communities that the familiar structure of water rights and governance they had known as New Mexicans would continue under Colorado law. The older ways had not been outlawed by Colorado. They had been accommodated. Especially given the number of special laws passed in favor of *acequia* institutions,¹¹⁶ it would have been rather natural for the *acequia* communities to view the emerging law of prior appropriation as not quite applying to their circumstances and certainly not intended to force the abandonment of their customary approaches to water allocation.

C. *First Stirrings of the Doctrine of Prior Appropriation:
The 1889 Decree*

It was in the last decade of the nineteenth century that the law of appropriation first became consequential for the Culebra *acequias*. The change was prompted by a series of challenges to *acequia* water rights initiated by the United States Freehold

116. See *supra* notes 93–97 and accompanying text.

Land & Emigration Company ("U.S. Freehold") in the years following the *Coffin* decision.

U.S. Freehold was established in 1869 to finance the development and promotion of the Costilla Estate, the southern half of the original Sangre de Cristo Land Grant confirmed to Carlos Beaubien by the United States government in 1860.¹¹⁷ The company came into being following a series of transactions between the end of 1862 and the fall of 1864, in which William Gilpin, governor of the newly organized Colorado Territory, bought five-sixths of the grant lands from Beaubien's widow and former partners.¹¹⁸ Following an evaluation of the investment potential of the lands and the assembly of investor groups to promote and develop the lands, Gilpin and his associates divided the grant in 1869 into northern and southern estates of roughly 500,000 acres to create more manageable investment units.¹¹⁹ The Culebra watershed lay within the southerly 500,000 acre Costilla Estate. In 1871 all lands within the Costilla Estate were sold by the original investment group to U.S. Freehold, and William Gilpin was named resident manager to coordinate efforts to sell the lands to intending settlers drawn from the East and from abroad.¹²⁰

The rights of the earlier Hispano settlers became a matter of active concern for U.S. Freehold in the early 1870s.¹²¹ Beaubien's original New Mexican settlers opposed the company's development plans, claiming as their own the lands and water the company wished to promote and sell.¹²² The company's ownership was also clouded by the claims of settlers who arrived in the years after Beaubien's conveyance to Gilpin and who could not claim rights from Beaubien. Throughout the period, there was a stream of Hispano settlers, newcomers who were part of an outward push from older New Mexico settlements.¹²³ They were viewed by U.S. Freehold and by later

117. BRAYER, *supra* note 84, at 107-15; Stoller, *supra* note 38, at 35.

118. BRAYER, *supra* note 84, at 65-66. Gilpin was later to acquire by purchase the remaining one-sixth interest in the grant from James Quinn in 1871. *Id.* at 67.

119. *Id.* at 72-86.

120. *Id.* at 79, 95.

121. *Id.* at 107-08.

122. *Id.* at 108-10.

123. See Lantis, *supra* note 8, at 17-21; David William Lantis, *The San Luis Valley, Sequent Rural Occupance in an Intermontane Basin 146-49* (1950) (unpublished Ph.D. dissertation, Ohio State University) (on file with the authors); Stoller, *supra* note 38, at 35.

owners of the Costilla and Trinchera estates as no better than squatters, and that characterization was often accurate. The sense of frustration of the new corporate owners at not being able to resist or manage this continual influx of unwanted newcomers was profound.¹²⁴ Correspondence by U.S. Freehold officials during the period indicates a continual effort to differentiate between “squatter” claims and those that would have to be honored.¹²⁵ Some claims were resolved by selling squatters the land they occupied.¹²⁶ The more important point, though, is that the new owners viewed the Hispano occupants, Beaubien settlers and later arrivals alike, as an impediment to clear title and to development.¹²⁷ The fact that there were Hispano squatters on the land seems to have been an irritant that shaped the company’s response to all Hispano occupants whether or not they had been invited to settle by the previous owners. A certain presumption of illegitimacy seems to have tainted the company’s view of all Hispano settlers and their claims. The company attempted first to negotiate a limitation of the settlers’ land claims in the choice lands near the town of San Luis,¹²⁸ and later, in the years after the *Coffin* decision, mounted challenges to *acequia* water rights.

The resistance by Hispano settlers to U.S. Freehold’s efforts to dislodge them from the lands they had chosen for their *acequia* systems was to be expected. It was assured, however, as a result of Carlos Beaubien’s last visit to San Luis de la Culebra in May of 1863. While in San Luis, Beaubien granted more than one hundred deeds to settlers already

124. See, e.g., BRAYER, *supra* note 84, at 108–10. Disputes with Hispano settlers became quite protracted, and resolution of claims to land did not occur in some cases until the first decade of the twentieth century. See, e.g., Letter of Edmund C. Van Diest to Paul B. Albright (Feb. 25, 1906), describing terms of settlement with settlers in Costilla basin (*available at* the Van Diest Collection, Box 76, Copybook B, pp. 322–23, Tutt Library, The Colorado College) (hereinafter the Van Diest Collection).

125. Letter of Edmund C. Van Diest to Paul B. Albright (Feb 25, 1906) (*available at* the Van Diest Collection).

126. The correspondence of Edmund C. Van Diest, U.S. Freehold’s resident manager from 1886 through 1903, contains numerous letters and receipts chronicling payments and postponements of obligations arising from such sales. See, e.g., List of Lands Sold by United States Freehold Land and Emigration Company and Costilla Land and Investment Co. (*available at* the Van Diest Collection, Box 74, Copybook D, pp. 262–66).

127. BRAYER, *supra* note 84, at 108–10.

128. *Id.*

established along Culebra Creek.¹²⁹ He also executed a document ("Beaubien Document") describing his understanding

129. See GRANTOR/GRANTEE INDEX COSTILLA COUNTY COLORADO (Book 1) (Grantor index). Professor Hicks has counted 105 recorded deeds filed in the weeks following Beaubien's visit that confirm conveyances by Beaubien to Hispano grantees of land lying along Culebra Creek. Lists of Beaubien's donations to individual settlers appear in the J.L. Gaspar papers, which are available at Land Grant File, Colorado State Historical Society. Beaubien had appointed Gaspar as his agent in 1862. Stoller, *supra* note 38, at 35 n.49. In a letter of January 21, 1890 to prospective investors in the Costilla Estate, Edmond C. Van Diest, company agent of U.S. Freehold, suggests that Gaspar may himself have executed the 1863 deeds, naming Beaubien as grantor, and may have exceeded his authority in doing so. Letter from Edmund Van Diest to prospective investors (Jan. 21, 1890) (*available at* the Van Diest Collection, Box 74, Copybook 2, pp. 102-05) [hereinafter the Beaubien Document].

The text of the Beaubien document, translated into English, reads:

Plaza of San Luis de la Culebra, May 11, 1863

It has been decided that the lands of the Rito Seco remain uncultivated for the benefit of the community members (*gente*) of the plazas of San Luis, San Pablo and Los Ballejos and for the other inhabitants of these plazas for pasturing cattle by the payment of a fee per head etc.,] and that the water of the said Rito remains partitioned among the inhabitants of the same plaza of San Luis and those from the other side of the vega who hold lands almost adjacent to it as their own lands, that are not irrigated with the waters of the Rio Culebra. The vega, after the measurement of three acres from it in front of the chapel, to which they have been donated, will remain for the benefit of the inhabitants of this plaza and those of the Culebra as far as above the plaza of Los Ballejos, including with them those who lives as far as along the side of the Rito of the deceased Jose Gregorio Martin. Those below the road as far as the narrows will have the right to enjoy the same benefit. The plaza, it is understood, and I have recently determined that the drains (chorreras) and rights for the households are on the east, fifty varas of land, as well as on the west side, and no one has rights to the south, nor to the north, nor in any other direction and cannot, as some have believed, place any obstacle or obstruction to anyone in the enjoyment of his legitimate rights, and if anyone has done so, he will have to remove the obstacle immediately and without delay. Also, the regulations for the roads will be observed well without allowing those who travel and have business to conduct within the limits of the farm lands to be injured. Likewise, each one should take scrupulous care in the use of water without causing damage with it to his neighbors nor to anyone. According to the corresponding rule all the inhabitants will have enjoyment of benefits of pastures, water, firewood and timber, always taking care that one does not injure another. Furthermore, the mills which have been built without damage to a third party may remain in their respective places. For the well being and protection of the plantings and animals, except those needed solely for domestic service, will not be allowed for a distance of one league from the farm land. It will be understood that every person who comes into the place with rights, by purchase, or in another manner has to give personal service, the same as all do, or by

of the land, water and natural resource rights held by the Hispano settlers who owned farmsteads on the grant. The visit seems to have been intended to set the stage for Beaubien's sale of the Sangre de Cristo Grant to Gilpin and his syndicate of investors.¹³⁰ It had the effect of confirming Beaubien's settlers in a sense of the privileges and rights they enjoyed under the original terms of settlement.

The purpose of the Beaubien Document seems to have been to clarify certain rights of the settlers as owners of grant lands and to provide reassurance that their mutual duties to each other and their rights of access to natural resources on grant lands would survive the transfer of ownership to Gilpin.¹³¹ The document has little to say about the essential matter of water allocation, and refers to *acequia* governance only obliquely, restating the duty of community members to contribute labor to maintain the *acequia* system.¹³² The broad thrust of the document, however, is to confirm that the established practices and customs of the Culebra settlements would continue.¹³³

means of a representative, that he is obligated to maintain weapons sufficient for defense and to comply with the municipal duties, the same as the rest, this being among others, the requisite condition of his admission.

Carlos Beaubien
Witnesses, J.L. Gaspar
Nasario Gallegos

Note:

The limits of the plaza of San Luis de la Culebra are: on the south side of the *acequia* which is located adjacent to the mill of the Senores St. Vrain and Easterday; on the north as far as facing the foot of the mesa; to the entrance of the vega, and the houses which are built without permission further above this point and from the chapel (their owners) will have to pay five pesos for each twenty varas from north to south and in proportion to their corresponding rights from east to west. The rights of the chapel in the four directions will be 50 varas, and 200 varas to the north from the rights of the limits for the chapel there is set aside 100 square varas, it being understood that the inhabitants will have to fence them well, immediately and sufficiently, in order to prevent animals from coming into the cemetery, etc.

Carlos Beaubien
Witnesses, J.L. Gaspar
Nasario Gallegos

Id.

130. KARNES, *supra* note 41, at 304–05.

131. See Beaubien Document, *supra* note 129.

132. *Id.*

133. The mix of the suggestive and the specific in the Beaubien document has made its exact meaning a matter of controversy. Its elliptical style greatly

If one imagines the setting of the drafting of the Beaubien Document—a public meeting in San Luis on the eve of transfer of the grant lands to new owners, attended by Beaubien and the very settlers he had recruited a few years earlier—then the obliqueness and incompleteness of the document with respect to such critical matters as commons rights and water allocation seems less strange and less hostile to the expectation of continuity. A critical part of the context of the document and of the meeting would have been a set of shared assumptions about water rights and *acequia* governance. Beaubien and the settlers would have assumed the customary rules of water rights and water allocation to be of continuing validity without discussion or specification. Those principles, including community water governance and proportional water sharing in times of scarcity, were so deeply situated in the custom and practice of Hispano settlement that the settlers would have felt no need to insist upon them or to recapitulate them in writing.¹³⁴ Further, the Colorado law with respect to *acequia* rights would also have indicated to the settlers that their water rights were secure.¹³⁵ The meeting with Beaubien was an important way station in the early history of San Luis, forming a shared understanding among settlers and their descendants about their rights and status as members of the community. It no doubt solidified the settlers in their sense of the legality of their presence and of their claims to land, water and to the other commons resources thought to be essential to the founding of the Culebra settlements.

The company was not successful in ousting the Hispano settlers from their settlement sites along the Culebra and

complicated the effort of modern descendants of Beaubien's colonists to establish that Beaubien intended that the grant lands would, after transfer, remain subject to the customary usufructuary hunting, fishing, firewood gathering, timber, and wildcrafting rights enjoyed by settlers in common on the uncultivated lands of Mexican grants. See *Rael v. Taylor*, 876 P.2d 1210 (Colo. 1994). The Colorado Supreme Court has recently decided that the Beaubien Document, together with other evidence surrounding the terms of settlement of the Sangre de Cristo Grant and the actual use by settlers and their descendants of grazing, timber and firewood resources on grant lands, has established rights of access to those resources through prescriptive easement, easement by estoppel and an easement from prior use. *Lobato v. Taylor*, 2002 WL 1360432, at *5 (Colo. June 24, 2002). The Court issued the following advisory with respect to its opinion: "Notice: This opinion has not been released for publication in the permanent law reports. Until released, it is subject to revision or withdrawal." *Id.*

134. See *supra* text accompanying notes 48–92.

135. See *supra* text accompanying notes 93–111, 117.

seems not to have attempted to challenge *acequia* water rights directly until its 1889 petition for the adjudication of water rights.¹³⁶ That proceeding resulted in a water rights decree dated June 14, 1889 ("1889 Decree") quantifying rates of instantaneous flow and establishing the priority of water rights in the Culebra. Priority dates from 1851 to 1860 were assigned for the longest established of the Culebra *acequias*, incidentally making them the most senior of all Colorado water rights.¹³⁷ The *acequia* water rights were also recast as a set of individualized property rights held by *parciantes* and not by the community of *acequia* users.¹³⁸

D. Aftermath of the 1889 Decree: Destabilizing Effects of Watershed Crowding

The June 14, 1889 decree and its placement of *acequia* water rights within the structure of prior appropriation produced immediate consequences. On August 2, 1890, U.S. Freehold sued all *acequia* rights holders under the 1889 Decree, maintaining that the *acequia* appropriations were excessive and that the diversion works that supported them represented a continuing trespass against the *riparian* rights of U.S. Freehold.¹³⁹ The odd claim of a violation of riparian rights was apparently based either on the premise that riparian water rights might attach to U.S. Freehold's land ownership as a result of the confirmation of their predecessor Beaubien's title by action of the government of the United States, or on the premise that riparian rights may have attached as a consequence of the original Mexican land grant.¹⁴⁰ The proceedings never progressed far enough to deal

136. See the 1889 Decrees, *supra* note 85. The delay in challenging the water rights of the *acequias* is striking in view of U.S. Freehold's prompt challenge of certain land titles of Hispano settlers and their successors in interest. See BRAYER, *supra* note 84. The basis for challenging land claims may have seemed clearer at the earlier date than the basis for challenging water rights, given the state of Colorado water law at the time. See *supra* text accompanying notes 80-95.

137. BRAYER, *supra* note 84, at 5-7; COLO. WATER CONSERVATION BD. & COLO. A&M COLLEGE, A HUNDRED YEARS OF IRRIGATION IN COLORADO, 100 YEARS OF ORGANIZED AND CONTINUOUS IRRIGATION 1852-1952 3 (1952).

138. See the 1889 Decrees, *supra* note 85.

139. Complaint of United States Freehold Land & Emigration Company, U.S. Freehold Land & Emigration Co. v. Gallegos (D. Colo. June 19, 1890).

140. Although Colorado had by this time rejected the "California Doctrine"

with either of those misapprehensions of law. Instead, in response to a motion by the *acequia* water rights holders to dismiss the U.S. Freehold claims, the court held that U.S. Freehold had adequately stated a valid cause of action.¹⁴¹ The ruling prompted a settlement embodied in a 1900 water rights decree finally entered a decade later ("the Hallett Decree").¹⁴² Under the Hallett Decree, ninety-one cubic feet per second of the total 197 cubic feet per second decreed to *acequia* rights holders in the original 1889 adjudication were ceded to U.S. Freehold.¹⁴³ The settlement provided, however, that U.S. Freehold could divert the ceded amounts only after the twenty-three senior *acequias* involved in the settlement had satisfied their calls on the Culebra or its tributaries.¹⁴⁴ In effect, U.S. Freehold had been granted the twenty-fourth priority in the waters of the Culebra for an instantaneous flow equal to forty-six percent of the water originally decreed in 1889 to the oldest Culebra *acequias*. The water lost to each of the twenty-three *acequias* corresponded closely to the overall percentage loss, and in each case caused the water rights associated with an

in *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882), U.S. Freehold's claim of riparian rights suggests that its lawyers may have viewed the action of the United States in 1860 confirming the Sangre de Cristo grant in Carlos Beaubien as tantamount to the conferring of a grant by the United States to Beaubien, with the effect of conferring riparian water rights as an attribute of the grant of lands. Under the "California Doctrine," grants of riparian public domain lands made prior to 1866 carry riparian water rights. *Lux v. Haggin*, 10 P. 674, 724-28 (Cal. 1886). Alternatively, U.S. Freehold's lawyers may have thought that riparian rights arose under the original Mexican grant, indicating a misapprehension of the nature of water rights under Mexican law and of Mexican practices with respect to grants of water in connection with grants of land. See *supra* text accompanying notes 61-68 for a description of the water rights that would have existed under Mexican law. The U.S. Supreme Court was not to decide until 1909 that congressional patents granted pursuant to the Treaty of Guadalupe-Hidalgo created no new water rights and that parties with confirmed land grants acquired water rights either under state or territorial law or retained water rights granted under the law of the predecessor sovereign. *Boquillas Land & Cattle Co. v. Curtis*, 213 U.S. 339, 344 (1909).

141. *U.S. Freehold Land & Emigration Co. v. Gallegos*, 89 F. 769 3(8th Cir. 1898).

142. *In re U.S. Freehold Land & Emigration Company v. Gallegos, Decrees for Water from the Culebra River and Other Streams in Costilla County, U.S. Circuit Court for the District of Colorado* (July 17 1900) (hereinafter *The Hallett Decrees*).

143. *Id.*

144. *Id.*

acequia to approximate a duty of water of one cubic-foot per second instantaneous flow for each eighty acres of land.¹⁴⁵

The settlement seems a curious one in light of then-prevailing law. While Colorado law was quite clear at the time of the Hallett Decree that a decreed water right could be curtailed if less water than the decreed amount was beneficially used,¹⁴⁶ the standards of efficient water use were not so clear or uniform as to make the amounts that had been decreed to the *acequias* in 1889 obviously vulnerable to attack.¹⁴⁷ The Colorado court's handling of the 1897 appeal in *X.Y. Irrigating Ditch Co. v. Buffalo Creek Irrigating Co.*¹⁴⁸ offers some insight into the lax standards then prevailing for establishing the scope of a water right. *X.Y. Irrigating Ditch Co.* appealed a decree in favor of Buffalo Creek Irrigation Co., arguing that Buffalo Creek had not adequately established the number of acres continuously and beneficially irrigated by its ditch. In a decision wholly affirmed by the Colorado Supreme Court, the Colorado Court of Appeals found that the degree of certainty of proof of irrigated acres and of water beneficially used should be responsive to the fact that water users' records were either poor or non-existent. While the court commended *X.Y.*'s exact proofs of its own irrigation use, it did not consider

145. *Id.* The Hallett Decrees nowhere recite a standard duty of water or articulate a standard of water use efficiency, a common omission at the time because the law required only that court decrees establishing priorities state those priorities in cubic feet per second of time or with reference to the carrying capacity of the ditch serving the decree. Irrigation, ch. 69, § 2403, MILLS COLO. ANN. STAT. 678 (1891) (repealed 1943); see *Water Supply and Storage Co. v. Larimer & Weld Irrigation Co.*, 51 P. 496, 501 (Colo. 1897). Each set of *acequia*-based water rights was reduced to a level to produce a right of one cubic-foot per second instantaneous flow per eighty acres. That standard was not made explicit until a later 1905 Culebra adjudication, see *infra* note 164.

146. See, e.g., *New Mercer Ditch Co. v. Armstrong*, 40 P. 989 (Colo. 1895).

147. Doctrines of waste and efficient utilization were just emerging. See, e.g., REPORT OF THE STATE ENGINEER TO THE GOVERNOR OF COLORADO FOR THE YEARS 1883 54-58, 83-85 (1884); FIFTH BIENNIAL REPORT OF THE STATE ENGINEER TO THE GOVERNOR OF COLORADO, 1889-1890 46-47 (1890); PRELIMINARY REPORT ON THE DUTY OF WATER, BULLETIN NO. 22, THE STATE AGRICULTURAL COLLEGE, THE AGRICULTURAL EXPERIMENTAL STATION (Ft. Collins 1893); Shupe, *supra* note 20, at 93-95; see also *Cache La Poudre Irrigating Co. v. Larimer & Weld Reservoir Co.*, 53 P. 318, 320 (Colo. 1898); *X.Y. Irrigating Ditch Co. v. Buffalo Creek Irrigating Co.*, 55 P. 720, 721 (Colo. 1898); *Combs v. Agricultural Ditch Co.*, 28 P. 966, 968 (Colo. 1892). The reservoir which was to hold the water lost to the *acequias* and transferred to U.S. Freehold was to be named for one of the persons elected to the committee of negotiators working on the farmers' behalf, A. A. Salazar.

148. 49 P. 264 (Colo. App. 1897), *aff'd*, 55 P. 720, 721 (Colo. 1898).

that quality of evidence as necessary or even as a desirable benchmark for satisfactory proof of acres irrigated or historic beneficial use:

[This court] cannot declare, in the face of the fact that disastrous consequences would in many cases assuredly follow, that the proof necessary to maintain water rights, which affect interests of such immense value in this state, must be measured by such a standard only, and stand or fall thereby. Such a rule would be especially inequitable and unjust to the early appropriators of water. They were the pioneers of their respective localities, and founded their homes when the supply of water was abundant,—in excess of all demands,—and neither law, custom, nor necessity required them to keep an accurate account of the quantity of water used, or the amount of land cultivated or irrigated. It should be remembered, too . . . “that in the early years of water adjudications in this state priorities were decreed upon the capacities of the ditches.”¹⁴⁹

The decision seems to tolerate some generosity, too, in the computation of the amount of water needed to irrigate a given parcel. The Court of Appeals approved the adjudication referee's conclusion that an allowance of one cubic-foot per second per forty-four acres of land was appropriate, and consistent with beneficial use.¹⁵⁰

The easy approach to proof of beneficial use and duty of water in *X.Y. Irrigating Ditch* makes the result of the Hallett Decree very puzzling. The effect of the 1889 Decree had been to establish a right of continuous flow of one cubic-foot per second for each 39.5 acres of *acequia* land. It was a generous estimate, but not outlandish by the standards of the time,¹⁵¹ and the eighty-acre figure substituted by the Hallett Decree

149. *Id.* at 265.

150. *Id.* See also DUNBAR, *supra* note 4, at 98 and 215, for a discussion of the problematic duties of water claimed by nineteenth century water users and approved by water courts.

151. Edmond Van Diest, manager of U.S. Freehold's interests on the Costilla Estate and a serious student of irrigation methods, reported in 1888 and 1889 letters to prospective investors that competent estimates of appropriate duties of water for the Culebra watershed lands ranged between fifty-five and eighty acres for each cubic-foot per second of instantaneous flow. Report on Irrigation of Part of the Costilla Prairie (July 27, 1888) (available at the Van Diest Collection, Box 74, Copybook 2, at 13).

seems rather severe in view of then-prevailing assumptions of water use in the Culebra watershed.¹⁵²

What happened? In a comment on the terms of the settlement, Moses Hallet, the presiding judge said:

The litigation which resulted in the rendition of the foregoing decrees was commenced in the month of January, 1890, and terminated in July, 1900. The water rights of several hundred settlers were involved. The settlers were represented by a committee selected by them. This committee consisted of the following persons: Hon. William H. Meyer, Hon. A. A. Salazar, and Hon. Louis Cohn. The result as embodied in the following decrees being satisfactory to all the parties in interest."¹⁵³

There is reason, however, to believe that the Citizens Committee may not have been the best representatives of *acequia* interests, and indeed may have been inclined to favor the interests of U.S. Freehold. Each of the members, Mr. Meyer, Mr. Salazar and Mr. Cohn, was a leading merchant in Costilla County.¹⁵⁴ Two of them, Mr. Meyer and Mr. Salazar, were friends and business associates of the land manager for U.S. Freehold, Mr. Edmond C. van Diest. It was to W.H. Meyer that Mr. Van Diest was later to write a valedictory letter, looking back at their long, shared battles to oust the Beaubien and other Hispano settlers and to develop U.S. Freehold lands:

The time will come when the Costilla people will grant their lower Culebra, the Trinchera their prairies, when some means of providing water for stock will be devised or brought about and if it comes in 10 years from now, will you still have the energy, the power and the will, or even the desire to compel?¹⁵⁵

152. Mr. Van Diest's calculations for necessary reservoir capacity to develop U.S. Freehold's lands consistently adopted a duty of water of one cubic-foot per second of flow for each sixty acres of irrigated land. *Id.* at 135-42. It is striking that the Culebra Hispano settlers were moved to accept a water allocation of one cubic-foot per second for each eighty acres.

153. The Hallett Decrees, *supra* note 142, at 59.

154. See SIMMONS, *supra* note 17, at 58, 152.

155. Letter from Edmund Van Diest to W.H. Meyer (Dec. 7, 1903) (*available at the Van Diest Collection, Box 82, Folder A Letter*).

And, on February 23, 1899, while the Hallett Decree proceeding was pending, Mr. Van Diest wrote to W.H. Meyer's father, Ferdinand, to A. A. Salazar, and to Louis Cohn to advise them in the management of their mercantile business with its largely hispanic clientele:

A noted economist, speaking of the prevailing credit system in the Philippines, and Malay Archipelago, and of the natives, in a manner quite applicable to the conditions here prevailing, says, 'Another temptation he (the native) cannot resist is to get goods on credit . . . It extends trade, no doubt, for a time, but it demoralizes the native, checks true civilization, leads to no permanent increase in the wealth of the country, and in no way benefits the individual, the trade 'or the community.' An advantage of no small importance is the opportunity afforded the store keeper for directing his energies to the development of his private enterprises, such as lands, cattle, etc. without in any way losing any portion of the control or direction of the parent business . . .¹⁵⁶

Mr. Van Diest is clear in expressing his view that the commercial relationships of colonial merchants to "natives" in Southeast Asia may be instructive in setting up a mercantile operation in the San Luis Valley and defining an appropriate role for the Hispano settlers in the local economy.¹⁵⁷ The fact that he communicated this vision to Cohn, Salazar and the senior Meyer also points to a certain shared commercial vision among these men for development of the valley.

A more exact sense of the possible loyalties of the Citizens Committee is suggested in a January 2, 1902 letter from Mr. Van Diest to General William J. Palmer of Colorado Springs. In that letter describing how the Hallett Decree have resulted in U.S. Freehold's obtaining control of water supplies needed to

156. Letter from Edmund Van Diest to Fred Meyer (Feb. 23, 1899) (available at the Van Diest Collection, Box 83, Copybook of letters dated Dec. 13, 1898 through Sept. 3, 1899).

157. Mr. Van Diest was born in Buitenzorg, Batavia, Dutch East Indies, in 1865, the son of a Dutch colonial official. He moved to Colorado with his family at the age of six, when his father was asked by the Dutch government to look after the interests of its citizens in the mining region centered on Rosita, Colorado. A biographical sketch of Mr. Van Diest appears as part of A RESOLUTION ON THE DEATH OF MR. EDMUND C. VAN DIEST BY THE TRUSTEES OF THE COLORADO COLLEGE (Oct. 13, 1950) (available at the Van Diest Collection, Box 82, "Memories Book"). It is unknown at this writing whether Mr. Van Diest's earlier background may have informed the views expressed in the letter quoted in the main text.

develop the company's lands, Mr. Van Diest indicates that he viewed Mr. W.H. Meyer as a decidedly friendly presence on the Citizens Committee:

As to the actual condition of these [legal] settlements, Mr. W.H. Meyer is fully conversant with the water settlement, as after some difficulty he was made Chairman of the Committee for the people, to settle the matter with me for the Co.¹⁵⁸

What may have happened in this strange business of the Hallett Decree is that the local farmers were advised by the Citizens Committee to avoid the consequences of a full hearing on the validity of their water rights and were persuaded to settle the dispute with U.S. Freehold. The terms of the settlement seem quite disadvantageous given the lax standards of the day with respect to the computation of appropriate amounts of water for irrigation. The *acequia* farmers may simply have been misled about the vulnerability of their rights under the law, but the expense and risk of a protracted dispute may also have made settlement seem attractive. In any case, the entry of the Hallett Decree represented a significant victory by U.S. Freehold in diminishing *acequia* water claims and in establishing useable water priorities for the company.

Soon after entry of the Hallett Decree, U.S. Freehold began to develop plans for the construction of reservoirs and ditches to make use of its new water rights.¹⁵⁹ Exceptionally low runoffs in the upper Rio Grande basin in three of the four years following the settlement meant, however, that the available flows in the Culebra were exhausted before the turn of the company's twenty-fourth priority came up.¹⁶⁰ In the end, U.S. Freehold never succeeded in attracting prospective buyers for its lands before its debts became overwhelming. In 1902, the company was forced to sell its interest to a successor corporation, the Costilla Estate Development Company for a

158. Letter from Edmond C. Van Diest to General William J. Palmer (Jan. 2, 1902) (*available at the Van Diest Collection, Box 76, Copybook 9, at 416*).

159. See Report on Irrigation (December 7, 1900) (*available at the Van Diest Collection, Box 75, Copybook 8, at 367-78*).

160. See COLO. DIV. OF WATER RESOURCES, RIO GRANDE RIVER ANNUAL CALENDAR YEAR FLOWS 1890-2000 (2001) (hereinafter *RIO GRANDE FLOWS*); Lantis, *supra* note 123, at 348; BONDS THAT BIND, *supra* note 6, at 110.

token amount, shifting to a new group of investors the hopes of large scale development of the Sangre de Cristo grant lands.¹⁶¹

The attacks on *acequia* water rights continued after U.S. Freehold had passed from the scene. There were three exceptionally good water years beginning in 1906, renewing hope that a challenge of *acequia* rights might produce useable water for the arid uplands eastward of the *acequia* communities.¹⁶² In 1907, the Costilla Land & Investment Company, an investor in Costilla Estates Development Company, contracted a survey of *acequia* diversions in an attempt to learn what water might be made available for development efforts if *acequia* use could be further reduced.¹⁶³ The specific hope was to make good the paper rights conferred under the 1900 Hallett Decree as well as a set of supplemental water rights that had been conferred by a 1905 decree.¹⁶⁴ It is perhaps typical of the American west that good water years trigger optimism and spates of new water rights applications

161. See BONDS THAT BIND, *supra* note 6; BRAYER, *supra* note 84, at 123; Lantis, *supra* note 123, at 348. A continuous sequence of tax delinquencies and tax sales dogged the U.S. Freehold lands in the hands of successor owners for decades thereafter. BRAYER, *supra* note 84, at 123.

162. See RIO GRANDE FLOWS, *supra* note 160. The correspondence of Edmond C. Van Diest during 1905 and 1906 reflects the hopes of developing the arid uplands east of San Luis. He had by this time entered the employ of General William J. Palmer and was overseeing the interests of an investor group, the Costilla Land & Investment Company, in the Costilla Estate lands. His correspondence of the period reflects a keen interest in obtaining water from the Culebra, especially the unappropriated spate flows of the spring and summer run-offs and the excessive appropriations of the *acequias* to support reservoir and ditch development. See, e.g., Letters from Edmond Van Diest to Albert Smith of Denver (May 19, 1905 and July 20, 1905) (*available at* the Van Diest Collection, Box 76, Copybook A, at 232-34, 398-99) (Mr. Smith was attorney for U.S. Freehold and its successors); Letters from Edmond Van Diest to Mr. Brooks, a prospective investor (Jan. 1, 1906 and Jan. 10, 1906) (*available at* the Van Diest Collection, Box 76, Copybook B, at 219-20, 234-36).

163. Letter from Edmond Van Diest to Paul B. Albright, manager of the Costilla Estate (Nov. 4, 1907) (*available at* the Van Diest Collection, Box 77, Copybook D, at 254) [hereinafter The Albright Letter].

164. See The Hallett Decrees, *supra* note 142; In the Matter of the Adjudication of Priorities of Right to the Use of Water for Irrigating and Other Purposes in Water District No. 24 of the State of Colorado, Decretal Order of 14 December 1905 (hereinafter the 1905 Decree). The November 4 letter from Mr. Van Diest to Paul Albright, his successor as manager of the Costilla Estate, prompted a detailed response setting out objections to the award of supplemental water rights to the *acequia* rights holders in the 1905 Decree. Letter from Paul Albright to Edmond Van Diest (Nov. 11, 1907) (*available at* the Van Diest Collection, Box 50, Folder 325).

by appropriators too junior to expect water in average years or dry years.¹⁶⁵

Nothing immediately came of the survey, but the succession of good water years led to the creation of a new enterprise, the San Luis Power & Water Company, to develop the water rights in the Culebra and Costilla watersheds formerly held by U.S. Freehold, the Costilla Estates Development Company and the Costilla Land & Investment Company.¹⁶⁶ The *acequia* farmers saw that this transfer might cause the water rights ceded in the Hallett Decree to be meaningfully asserted at last, and they tried unsuccessfully to

165. Indeed in the twenty-five years following 1905, only three produced flows in the upper Rio Grande below the average for the period 1890–2002. See RIO GRANDE FLOWS, *supra* note 160.

166. San Luis Water & Power Company was incorporated on April 15, 1909, and purchased the Culebra and Costilla River water rights of U.S. Freehold and its successors before November 1, 1910. COLORADO INCORPORATION RECORD, BOOK 132, 167. On November 1, 1910, San Luis Power & Water pledged the Culebra and Costilla water rights to secure the guarantee of repayment of \$800,000 of its bonds by the Costilla Estates Development Company. The proceeds of the sale of bonds were to be used for water development projects and for repayment of money already owed to the Costilla Estates Development Company. Indenture—The San Luis Power & Water Company and Boston Safe Deposit and Trust Company 2–4 (November 1, 1910) (*available at* the Van Diest Collection, Box 20, Folder 127). U.S. Freehold's successor, the Costilla Estates Development Company, in spite of success in promoting reservoir constructions and bringing irrigation water, had never been successful in selling or developing the great bulk of its lands. It transferred all water rights acquired under the 1900 Hallett Decrees to the San Luis Water & Power Company. A lawsuit was brought by *acequia* rights holders in 1914 to enjoin Water & Power from exercise of the purchased water rights and to enjoin water officials from enforcing the rights. The position of the *acequia* rights holders was that the 1900 settlement had never been approved by the state water court as required by law, but had been approved only by the federal court. Summons and Complaint, *Vigil v. Swanson* (D. Costilla County, Apr. 6, 1914). The *acequia* rights holders argued that, irrespective of their agreement to the terms of the 1900 settlement—an agreement that in their view had been forced upon them—water rights could not be created or transferred by a federal court settlement in the absence of review and approval by the Colorado water court. The *acequia* rights holders maintained that the only effective adjudications of rights in the Culebra watershed waters were the 1889 original decrees and the 1905 supplemental rights decrees that established supplementary water rights in the Culebra and its tributary streams. Their position was rejected. The water court decided that the decrees entered in the United States Circuit Court were valid and binding agreements between the parties with respect to whatever water rights the ceding rights holders might have conveyed. Order, Findings and Decree, *Vigil v. Swanson* (D. Costilla County, Mar. 26, 1917).

block it by challenging the validity of the Hallett Decree on which the U.S. Freehold water rights depended.¹⁶⁷

San Luis Light & Power never functioned as a power generating company, but the water rights to which it succeeded were used for irrigation in the years after 1914. In some years there was not enough water available after the *acequia* calls had been satisfied.¹⁶⁸ In other years of more abundant flows, the water might go unused because market conditions for farm products or a scarcity of new immigrants willing to farm caused the arid bench lands to remain fallowed.¹⁶⁹ This pattern of fitful use persisted even though the Sanchez Reservoir, a storage facility, had been completed in 1908–1909 to capture and store flows of the Culebra not required to meet the water calls of the senior *acequias*.¹⁷⁰

E. Situating the Culebra Acequias in an Appropriative Rights Regime After the Hallett Decrees

U.S. Freehold's initial challenge of *acequia* water rights and the aftermath of that challenge modified the conception of water rights among *acequia* water users. The company's pressure introduced a new focus on seniority of rights and showed that even the most senior water rights might be vulnerable to challenge through the emerging doctrines of waste, duty-of-water, and beneficial use. It is important to note that until the 1889 adjudication and its aftermath, the law of appropriation had not taken hold in the Culebra watershed. Whether or not the *acequias* were aware of the formal change in the law effected by the definitive choice of a system of appropriative rights, they were slow to react to the change in the legal foundation of their water rights.

It must be remembered that until the pressure brought by U.S. Freehold began to take effect, demands for new appropriations in this isolated valley were rather infrequent, and competition among new and more established water users

167. Order, Findings and Decree, *Vigil v. Swanson* (D. Costilla County, Mar. 26, 1917).

168. See JOSEPH C. GALLEGOS, *The Acequiahood, in VOCES DE LA TIERRA: FOUR HUNDRED YEARS OF ACEQUIA FARMS IN THE RIO ARRIBA, 1598–1998* (Devon G. Peña & Rubén O. Martínez eds., forthcoming).

169. See Carlson, *supra* note 6; Lantis, *supra* note 123, at 404–07; and Lantis, *supra* note 8.

170. See *supra* note 160.

would have been resolved in any case with reference to an earlier and older law of water.¹⁷¹ Nine new *acequia* ditch systems were established in the Culebra watershed in the twenty year period from 1861 to 1882.¹⁷² None seem to have been based on anything other than the customary practice of allowing new ditch networks to be established when a consensus existed as to the availability of water and as to the compatibility of the new works with the existing network of *acequias*.¹⁷³ None seem to have departed from the older New Mexico-derived law, which would allocate water among newer and older ditches on principles that included, but which were not limited to, seniority of water use.¹⁷⁴ While the evidence is inferential and indirect, it seems that the expansions of the *acequia* network that occurred in the Rio Culebra watershed in the years following the organization of the Colorado Territory and until the 1889 Decree were consistent with traditional processes for accommodating new water uses to existing uses.

Customary conceptions of water rights were reshaped by the external challenges of *acequia* water that culminated in the

171. See *supra* text accompanying notes 54–98.

172. See the 1889 Decrees, *supra* note 85, at 5.

173. The evidence for this statement is indirect. James A. French, Engineer of the United States Reclamation Service, Report on the Sources and Flows of the Rio Grande River by the New Mexico State Engineer's Office (Dec. 1910), appendix A 6-29, at 156–75 [hereinafter The French Report] (comprehensive report on the sources and flows of the Rio Grande River commissioned in anticipation of the negotiations ultimately leading to the Rio Grande Compact); The Albright Letter, *supra* note 163; and the the 1889 Decrees, *supra* note 85, each offer some corroboration of the relatively informal process through which new *acequias* were in all likelihood fitted into the landscape of existing water use in the years preceding the the 1889 Decrees. The detailed accounts in these sources of the points of diversion, means of diversion, and in the case of the French Report, an exhaustive description of the courses and capacities of ditches, strongly suggest a process in which the newer *acequia* ditches were methodically fit into the existing water landscape. The relations of the newer *acequias* to their neighbors must have been thought out with some care. The response of the *acequia* rights holders to the 1914 water transfer application proposing the sale of the Hallett Decree rights to San Luis Water & Power also suggests the communal consciousness that seems to have shaped relations among the Culebra watershed *acequia parciantes*. The complaint filed in response to the proposed transfer communicates not only solidarity in the face of a common external threat, but an understanding by *acequia parciantes* who took their water from different and potentially competing *acequias* that the rights of all the *acequia* users were elements of an integrated system managed to promote the health of the community as a whole. See Summons and Complaint, *Vigil v. Swanson*, *supra* note 166, at § XI.

174. See *supra* text accompanying notes 51–68.

1889 Decree and the Hallett Decree. *Acequia* practices of water sharing and administration by *mayordomos* for the benefit of the community continued, but rights were increasingly understood and exercised with reference to their relative priority. There were continual disputes among existing rights holders and between them and new appropriators.¹⁷⁵ A continuing process of readjustment of water rights through litigation and administrative actions unfolded in the years after the Hallett Decree.¹⁷⁶ Senior *acequia* rights holders in lean water years became willing to take advantage of a legal regime that imposes the effects of water scarcity on juniors.

It is reported by older residents in the San Luis community that physical altercations occurred on the ditches as *acequia parciantes* struggled with the conflict between the customary ways and the rights and opportunities created by the doctrine of prior appropriation.¹⁷⁷ They tell the story that during those unsettled years a *parciante* was killed by a shovel blow to the head for stealing water.¹⁷⁸ If there indeed was such an incident, it likely involved a fight during a time of scarcity and arose from confusion about whether the old practice of sharing the impact of scarcities among all users, or the new rule of allocation of scarcity through priority calls, was to govern. The 1889 adjudication had made it plain that *acequia* water rights

175. The offices of the Colorado Department of Water Resources, District 3, in Alamosa, have on file the comprehensive record of proceedings with respect to water rights for Water District 24, which embraces the Culebra watershed. A perusal of the file reveals the ongoing efforts of water claimants to obtain or confirm water rights and to improve the terms of their exercise.

The decree of December 14, 1905 established supplemental water rights for *acequias* existing at the time of the 1889 Decrees and recognized newly created water rights associated with land conveyances made by U.S. Freehold in the years after 1889. Decretal Order in the Matter of the Adjudication of Priorities of Right to the Use of Water for Irrigating and other purposes in Water District No. 24 of the State of Colorado 4-5 (Dec. 14, 1905). It was among the more significant later proceedings. *Id.* Also of great importance were decrees in 1935 that, among other matters, established storage and use rights with respect to reservoirs constructed in the watershed. Decree of Adjudication in the Matter of the Adjudication of Priorities of Water Rights for Irrigation, Power, Seepage Rights, Domestic Rights, and Reservoir Storage Purposes in Water District No. 24 of the State of Colorado (Feb. 11, 1935). Chief among these were the Sanchez Reservoir, with storage water priority dates of 1908 and 1909, and the Salazar Reservoir, with storage water right priority dates of 1911 and 1917. *Id.*

176. See the adjudication decrees cited *supra* note 175.

177. Interview by Gregory Hicks with Ernesto Vigil, Commissioner of the Cerro *Acequia* (July 12, 2000) (on file with author).

178. *Id.*

would be fit into the new structure of temporal priority, but the consequences of the new rights structure were not brought home until scarcities caused by lean water years and by the exercise of the rights ceded in the Hallett Decrees created circumstances where the senior rights mattered. In the face of scarcity, *acequia* rights holders proved themselves willing to insist on their rights under the new regime of prior appropriation.

The template of efficiency that was used under the Hallett Decree of 1900 to diminish the water rights of the Culebra *acequias* may have had the dual consequence of providing an unreliable source of water to irrigators of the arid uplands not served by the *acequia* system and of stripping water needed for productive and sustainable use of the land in the *acequia* valleys over time frames longer than single irrigation seasons. The surplus available water of good water years is a vital part of the economy of the *acequias*, allowing the farmers to weather the inevitable lean water years in an alpine desert dependent on the vagaries of available annual snow melt. So-called surplus water is essential for restoring moisture to the subsoil and for extending cultivation to lands that can be irrigated only in good water years.¹⁷⁹ The transfer of that water from *acequias* injured the *acequia* farmers materially and continues to do so, but it did not produce the hoped-for sustainable development of lands away from the riparian zones first settled by the *acequia* farmer.

A succession of intending settlers came and went from the arid upland farms over the years,¹⁸⁰ and long periods of non-use

179. See, e.g., *Trinchera Irrigation Dist. v. First Nat'l Bank*, 102 P.2d 909 (Colo. 1940). There the court affirmed a decree adjudicating rights to flood waters of Trinchera Creek. The court's ruling had the effect of affirming an award of one cubic-foot of water for twenty-six acres. This very generous duty of water was approved on the basis of a quite specific form of beneficial use—the flooding of arable land with surplus waters as a means of recharging water to the soil, supporting a water table which made the land more productive and producing durable seep flows to the Rio Grande and through the unconfined aquifer during drier seasons.

180. Lantis, *supra* note 123, at 407–08. The great gulf between the development aspirations of U.S. Freehold and its successors on one hand, and the irrigation capacity of the Culebra watershed on the other, was stated succinctly in the French Report, *supra* note 173:

Irrigation, in this district, as now practiced, is along the streams in the lower lands, generally above the town of San Luis. This is carried on by the native Mexicans and descendants of the early settlers of the valley.

* * *

led to the U.S. Freehold rights being placed on the state abandonment list in 1984, together with a number of *acequia* water rights.¹⁸¹ In an ironic turn of events, *acequia* rights holders argued that neither their rights nor those of U.S. Freehold had been abandoned, but that water had been used to the extent feasible given the unreliable patterns of availability.¹⁸² The *acequia* users plainly preferred the status quo in which water from the unexercised U.S. Freehold rights might remain available to the *acequia* users to the abandonment of the U.S. Freehold rights and the creation of a fresh opportunity by a new junior appropriator to try to make effective use of an unreliable water source.¹⁸³

*F. A Contemporary Anecdote of Allegiance and Defection
Under Conditions of Scarcity*

In spite of the revolution in formal water rights begun with the 1889 adjudication and its aftermath, the norms of prior appropriation still sit uneasily in the Culebra *acequia* communities. The culture of prior appropriation remains incompletely absorbed. An anecdote from the summer of 2000 provides a snapshot of the tension between the current legal framework of prior appropriation and a continuing commitment to communal water institutions.

In mid-July 2000, low water flows in the Rio Culebra caused the water master of the *acequias* serving the town of San Luis and the surrounding hamlets of San Pedro and Chama to shut off water diversions to the Cerro ditch, a junior

[T]he State Engineer's report [gives] as the area possible for irrigation 24, 226 acres; this means within the present irrigated area. The [Costilla] Estates Company proposes to water from 70,000 to 100,000 additional acres.

Id. at 42; see also PAUL HORGAN, GREAT RIVER: THE RIO GRANDE IN NORTH AMERICAN HISTORY 888–89 (4th ed. 1984) (summary description of the gulf between the development aspirations for the San Luis Valley and the capacity of the river and its tributaries).

French's analysis also appears in JAMES A. FRENCH, NEW MEXICO STATE ENGINEER'S OFFICE, SURFACE WATER SUPPLY OF NEW MEXICO 1888–1917 (1918).

181. COLORADO DEPARTMENT OF WATER RESOURCES, DIVISION 3 ABANDONMENT LIST (July 1, 1984).

182. See BONDS THAT BIND, *supra* note 6, at 109–16; GALLEGOS, *supra* note 168.

183. See BONDS THAT BIND, *supra* note 6, at 109–16.

ditch in the system.¹⁸⁴ Holders of land served by the Cerro ditch would go without water, while the owners of land served by more senior ditches would continue to divert water. This outcome is to be expected under the law of prior appropriation, but it produced substantial disquiet and intense discussion within the community. The early shutting of a junior head gate made plain the degree of water scarcity, and no doubt created concern among more senior rights holders that their own rights might produce no real water as a dry summer progressed. But there was also concern for the harm done to the community by the pointed demonstration that the system of prior rights was creating water winners and water losers.

Why should there have been such disquiet after so many years' experience with the consequences of prior appropriation? The reason seems to have been that the very holders of senior water rights, who benefited from the priority established by Colorado water law, believed that their own interests would be jeopardized if the holders of junior rights were forced to sell their land and water rights because of continuing scarcity. The possible shift of water away from *acequia*-dependent uses threatened the end of the *acequias* as a water delivery system and as a political, economic, and social institution vital to the cohesion of the community.¹⁸⁵ A new generation of uses that neither depended upon the *acequia* system nor provided usable return flows to the *acequias* would reduce the total volume of water carried through the *acequias*, frustrating the ability of the earthen ditch networks to operate.¹⁸⁶ Another basis of

184. The following narrative is based on direct observations by the authors, who were in San Luis at the time of the events described and who attended the meetings and witnessed the conversations described.

185. Such concerns are not unique to *acequia* communities but are characteristic of many irrigation communities in the American West jeopardized by the withdrawal of water and the contraction of local community. See LAWRENCE J. MACDONNELL, *FROM RECLAMATION TO SUSTAINABILITY: WATER, AGRICULTURE, AND THE ENVIRONMENT IN THE AMERICAN WEST* (1999) (discussing the anguish experienced by farmers selling their water rights).

186. Colorado water law is in general highly protective of third-party water rights threatened by proposed transfers or changes in the exercise of water rights, but imposes no duty on a water rights-holder who has relied on an unincorporated common ditch as her source of water delivery to continue using that source. Abandonment of the ditch by the departing rights holder is not considered to create a protected reliance interest by other water users along the ditch to the continuing contribution of the departing rights holder's water to total ditch flows. Abandonment of the ditch similarly relieves the water rights holder of all duties to the ditch. *Brighton Ditch Co. v. City of Englewood*, 237 P.2d 116, 120-21 (Colo.

concern was that the community of labor that has maintained the ditch system at relatively low cost would be undermined if land in the watershed were separated from the *acequia* system. Neighbors would no longer look to each other to keep the system up.¹⁸⁷ At a certain point there would be too few owners to maintain the *acequia* system, and those who remained would lack the resources to purchase services to replace the many acts of mutual aid and forbearance that define the *acequia* neighborhood and allow it to function. The successor system, and the successor landscape, would, it was feared, be inferior with respect to functionality and to amenity.

Industrial-scale gold mining and logging on the private lands of the upper watershed had already begun to affect the timing, volume, and quality of water flows from the high country, speeding up snowmelt and run off and diminishing the availability of usable water flows to the *acequia* system.¹⁸⁸

1951); *Compton v. Knuth*, 190 P.2d 117 (Colo. 1948); *Nichols v. McIntosh*, 34 P. 278 (Colo. 1893); *Strole v. Guymon*, 37 P.3d 529, 532–33 (Colo. App. 2001); VRANESH, *supra* note 20, at 279. The *parciantes* were concerned that for *acequias* not organized as mutual ditches, there was a risk that ditch duties and mutual expectations might not be enforceable. Very good arguments suggest, however, that *acequias*, with their long-established practices of reciprocal obligation and their long-continued customs with respect to such matters of water-rotation are in every important way different from the common ditches contemplated by the rule in *Brighton Ditch*, which seems to contemplate relations between strangers unburdened by mutual reliance. This paper argues below that *acequias* should not be viewed as common ditches. See *infra* discussion accompanying notes 256–269.

187. The expectation of the contribution of labor to ditch maintenance is not unique in Colorado to the *acequias*. The duty to repair and clean ditches is an obligation imposed on rights holders on all joint or common ditches, of which *acequias* are only one example. See VRANESH, *supra* note 20, at 278. Nonetheless, the duty to contribute labor has a special resonance in *acequia* systems. The *acequia* obligation pre-dated the modern law, and remains an expression of older communal duties and of continuing commitment to a vision of community. The annual spring ditch cleaning is an occasion defined by ritual and festival. The assertion of these commitments is significant as a foundation of community solidarity in a landscape of newly individualized water rights, reaffirming commitment to *acequiadad* (*acequia*-hood) and the community of labor that sustains it. See *infra* text accompanying notes 193–211.

188. Robert Curry, *The State of the Culebra Watershed: The Impact of Logging on the Southern Tributaries*, 1 LA SIERRA 10–11 (Fall/Winter 1996). For a comparable study, and description of the methodology used in studies of the alteration of “stream hydrograph slope,” see J.A. Jones & G.E. Grant, *Peak Flow Responses to Clear-Cutting and Roads in Small and Large Basins, Western Cascades, Oregon*, in 32 WATER RES. RESEARCH 959–74 (1996). The Colorado *Acequia* Association, as part of its research activities for an EPA planning grant to support development of a watershed protection plan, is also gathering data on the alteration of stream flows in the Culebra headwaters and expects to report on its

Those physical changes to the watershed, producing more dramatic snow melt and run off events and destroying the watershed's capacity to store water as snow, sharpened the sense of risk. If the *acequia* system could not deliver adequate water to its members, or could do so only through the construction of reservoirs beyond the community's economic reach, the community would collapse, as long-standing land owners either sold off their farms or abandoned familiar practices and commitments in favor of a new set of arrangements not dependent on the *acequia* system or on the functioning of a relatively intact watershed.

The events of July 2000 demonstrate a deep tension between the pursuit of collective goals and the insistence on private rights. The most favored rights holders understood that their way of life depended on the *acequia* system and that the *acequia* system could not be maintained without the commitment of the relatively less favored. Yet in a time of stress they insisted on their superior water rights to the injury of other *acequia parciantes* and perhaps to the injury of a viable *acequia* system.

By coincidence, on the very day that the closing of the Cerro head gate was announced, there was a meeting in San Luis of the board of directors of the Colorado *Acequia* Association (CAA), an organization founded in 1998.¹⁸⁹ The meeting had been called to explore how the water rights holders in the community might be brought together to deal with the problem of weakened commitment to *acequia* institutions. The early shutting of the junior head gates and the demonstrated willingness of the senior rights holders to insist on their seniority in a difficult water year provided a focal point for the discussion of a persistent set of problems. The central problems in the eyes of the CAA board were protection of watershed functioning, improvement of conditions of water flow through the watershed, and prohibiting the severance of water rights from the *acequia* landscape. In their view, the formula for the survival of the physical and social landscape of the Culebra *acequias* depended on protection of the natural capacity of the watershed to store and deliver water and on strengthening communal commitments by

findings in a cumulative watershed assessment report to be issued in the fall of 2003.

189. See *supra* text accompanying notes 214–215.

encouraging rights holders to tie their rights to the *acequia* system, and to be responsive to appeals by *mayordomos* and ditch commissions to make their water available for the greater good. The board concluded that the social commonwealth and physical landscapes that had been created over time by *acequia* methods and institutions could not survive unless water was wedded to the landscape and unless the capacity of the *acequias* to deliver adequate water to all was improved, physically and institutionally. The *Acequia* Association board expressed the view that water is a situated resource, brought into being by shared labor for the good of a community and subject to the claims of that community and of the watershed.¹⁹⁰

The discussion acknowledged that rights holders, however much they might be committed to a communal vision of water resources, must weigh the advantages of agreeing with their neighbors to bind their water rights to the *acequia* system in the interest of greater security against the possible advantages of holding tight to their priorities and the possibility of some day selling or leasing their water rights outside the *acequia* system. No less troubled was the question of how state water law might respond to efforts to enforce mutual commitments based on long-established customary practices. Could the particular norms and rules systems of *acequias* be accommodated under existing institutional and legal structures?¹⁹¹ Were feasible modifications of existing structures within reach?

The tension within the *acequia* community caused by the effort to develop strategies for collective action in a setting of privatized water rights is real, as the difficult conversations of

190. See *supra* text accompanying notes 12 and 43–60.

191. One institutional structure considered by the CAA at the July, 2000 meeting was the creation of a community water trust that could function as a pool of all water rights. Such a trust might hold rights of first refusal with respect to water transfers by rights holders and thus be able to keep water in the *acequia* system. It might also be charged with rationalizing the distribution of the *parciantes'* water in difficult water years to produce optimum allocations. The technical challenge of managing such a process of regulation of irrigation flows typically involves use of an artificial reservoir as a regulating tool. The dependence of the Culebra on the natural functioning of the watershed as a regulator of flows may diminish arrangement options. Any formal transfer of a water right from an individual *acequia parciante* to a corporate body would of course be subject to state approval and to inquiries into the beneficial use of the water in the hands of both the transferor and the transferee.

the summer of 2000 illustrate. Individual *parciantes* understand well that their security may lie in collective strategies for the management of water, and yet the press of immediate scarcities often binds them to their individual rights and to hopes that more generous water flows in better snow years will save them and their neighbors. It is no small thing that individuals remain amenable to persuasion by their *mayordomos* and neighbors to the necessities of others. More formal institutional arrangements remain elusive. The transmission of *acequia* values and practices to future generations currently depends on an ongoing process of acculturation and persuasion of each new generation of landowners by the present community of water users. The reasons for the strength of commitment to *acequia* practices and for the depth of feeling aroused when individual rights are asserted to the injury of the common good are explored in the next two Parts. Part IV will explore possible solutions to the problem of creating the institutions and structures considered by the CAA board to enforce mutual commitments.

II. WATERSHED DEMOCRACIES: ACEQUIA CULTURE AND SELF-GOVERNANCE

Acequias are not just a form of sustainable irrigation technology, an attribute discussed in detail in Part III below. They are in fact among the oldest local governmental institutions in the United States.¹⁹² This Part provides a detailed discussion of the *acequias* of the Culebra watershed as contemporary governmental and cultural institutions, which has largely been neglected in the discussion of community

192. The U.S. Congress recognizes *acequias* as bona fide political subdivisions of the state. The 1986 Water Resources Development Act, Pub. L. No. 99-662, 100 Stat. 4082, 4302 (1986), directs the Army Corps of Engineers "to consider the historic *acequia* systems [community ditches] of the southwestern United States as public entities [allowing them] to enter into agreements and serve as local sponsors of water-related projects." *Id.* at § 1113. Section 1113 also states: "The Congress finds that . . . these early engineering works have significance in the settlement and development of the western portion of the United States [and] therefore, declares that the restoration and preservation of the *Acequia* systems has cultural and historic values to the region." *Id.*

The laws of New Mexico also recognize *acequias* as political authorities and grant them certain rights such as the ability to collect taxes, impose fees, or assess mill levies and the management of land uses within their respective watersheds. *Id.* For further discussion, see RIVERA, *supra* note 3, at 148-50.

water institutions. Further, we examine the reproduction of the cultural values of the *acequia* and the maintenance of traditional systems of self-management.¹⁹³

The great majority of *acequias* in the Upper Rio Grande are highly informal, loosely organized civic associations. While New Mexico *acequias* have bequeathed a rich and varied corpus of historical and more contemporary records, the Colorado *acequias* have not. Colorado *acequias* are formally incorporated as ditch associations or ditch companies. Thus, record keeping of decision-making processes is scant and often difficult to trace. For example, in the Culebra watershed only the San Luis People's Ditch, one out of the twenty-three

193. The social scientific and historical literature on *acequias* is quite diverse. There is a large body of historical literature on *acequias* that includes substantial research on the cultural sources of *acequia* customary law and focuses on the underlying Roman, Spanish, Moorish, and Pueblo Indian influences. See, e.g., CLARK, *supra* note 3; PHIL LOVATO, N.M. STATE PLANNING OFFICE, *LAS ACEQUIAS DEL NORTE: THE COMMUNITY DITCH SYSTEMS OF NORTHERN NEW MEXICO*, TECHNICAL REPORT NO. 1, FOUR CORNERS REGIONAL COMMISSION (1974); RIVERA, *supra* note 3; Brown & Rivera, *supra* note 31; Simmons, *supra* note 5, at 135–50. All these approaches acknowledge the significant role of the Islamic culture in shaping the customary law of the *acequia* system in Spain. For a different view that emphasizes Roman influences and reduces the role of Islamic culture in the development of *acequia* institutions in Spain, see Karl W. Butzer, et al., *Irrigation Agroecosystems in Eastern Spain: Roman or Islamic Origins?*, in 75 ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS 479–509 (1985). Several important autobiographical works on *acequias* have been published; these include CRAWFORD, *supra* note 10, and Gallegos, *Acequia Tales*, *supra* note 13. A few studies have focused on the environmental history and environmental ethics of *acequia* farms, and one study focuses on the ecosystem services of *acequias* and their relationship to principles of watershed management. Among others, see RIVERA, *supra* note 3 and Peña, *Cultural Landscapes*, *supra* note 7, at 107–32. The Rio Grande Bioregions Project conducted a study on the cultural and environmental history of *acequia* farms in the Upper Rio Grande between 1994 and 1998. See Peña & Martinez, *supra* note 16. The only study on the ecosystem services of *acequias* is Devon G. Peña, *The Watershed Commonwealth of the Upper Rio Grande*, in NATURAL ASSETS: DEMOCRATIZING ENVIRONMENTAL OWNERSHIP (James K. Boyce & Barry Shelley eds., forthcoming Mar. 2003) [hereinafter Peña, *Watershed Commonwealth*]. There also is a growing body of research on socioeconomic, cultural, and environmental qualities of *acequias*. For a study of the social organization of *acequias*, see Clyde Eastman et al., *Acequias, Small Farms, and the Good Life*, in 19 CULTURE AND AGRIC. 14–23 (1997). For reports on contemporary *acequia* self-governance, see Brown & Rivera, *supra* note 31, at 6–14 and Lovato, *supra* note 193. In *ACEQUIA CULTURE*, Jose Rivera provides the most comprehensive survey of historical and contemporary practices of *acequia* management and governance. See RIVERA, *supra* note 3. In *Acequia Tales*, Joseph Gallegos provides an important set of insider observations on daily ditch management of the San Luis People's Ditch in Colorado. See Gallegos, *Acequia Tales*, *supra* note 13. In *MAYORDOMO*, Stanley Crawford provides similar observations for a ditch in Embudo, New Mexico. See CRAWFORD, *supra* note 10.

principal *acequias*, is formally incorporated and maintains a steady record of minutes documenting decision-making and managerial processes. In most cases, ethnographic materials provide the best, and often the only, source of data on processes of social organization, decision-making, and management of water rights.

Historians long have acknowledged that the *acequia* system of local self-governance has roots in late antiquity.¹⁹⁴ Linguistics provides some clues about the *acequia's* historical origins. The word "*acequia*" is derived from the Arabic term *as-Saquiya*, which translates as "the water bearer." In fact, much of the terminology for traditional *acequia* irrigation technology and practice derives from Arabic words.¹⁹⁵ Some examples include *noria* for well, *atarque* or *presa* for dam, *zanja* for irrigation ditch, and *tarea* for the job or task each *parciante* has for cleaning a section of an *acequia*.¹⁹⁶ There are several different kinds of ditches in an *acequia* network. The *acequia madre*, or mother ditch, is the main stem ditch off the point of diversion from the water source. The *sangria*, or bleeding ditch, is a lateral ditch running off the mother ditch to deliver water into a farmer's fields. The *espinazo*, or spinal ditch, typically delivers water to the center of an irrigated field or set of fields.

The *acequia* is managed collectively by the *propietarios* (local landowners with water rights on the ditch) who elect a *mayordomo* (ditchrider or water master) and a *comisión* (commission that oversees the work of the *mayordomo*). The *parciantes* are the voting members of an *acequia*. While in New Mexico state statutes require that "votes . . . shall be in proportion to the interest of the voter in the ditch or water,"¹⁹⁷ in actuality *acequias* there have differed greatly in the exercise of voting privileges. Many *acequias* follow the customary "one *parciante*, one vote" rule.¹⁹⁸ This is certainly the case in Colorado's Culebra watershed, where all of the *acequias*,

194. See CLARK, *supra* note 3, at 9–10; Powell, *supra* note 2, at 111–16.

195. CLARK, *supra* note 3, at 9–10; RIVERA, *supra* note 3, at 2–5.

196. A useful glossary is provided in RIVERA, *supra* note 3, at 227–32. For further discussion of the Arabic influence in shaping the vernacular of the *acequia* institution, see ROSA MARIA CASTAÑER MARTIN, *FORMA Y ESTRUCTURA DEL LEXICO DEL RIEGO EN ARAGON, NAVARRA Y RIOJA* (1983).

197. N.M. STAT. ANN. § 73-2-14 (Michie 1978).

198. Brown & Rivera, *supra* note 31, at 12.

including the San Luis People's Ditch, follow the one *parciante*, one vote rule.¹⁹⁹

A. *Five Principles Underlying Customary Law and Traditional Management Practices of the Acequias*

Most scholars agree that the customary law of the *acequia* derives from a synthesis of Roman, Spanish, Arabic, and Pueblo Indian sources.²⁰⁰ According to separate studies by Rivera and Peña, five basic principles appear to underlie the customary law and traditional management practices of the *acequias*: (1) the principle of individual usufructuary rights to a common pool resource (CPR) which emphasizes the community instead of the commodity value of water, (2) the principle of the non-transferability of water, (3) the right of thirst, (4) the practice of cooperative labor or mutual aid, and (5) the principle of local self-governance.²⁰¹

The first principle of individual rights to a common resource holds that water rights allotted to individual *parciantes* are tied to ownership of farmland on the *acequia* riparian corridor. Individual irrigators do not own the water and instead have usufructuary rights to water-in-place. This principle implies that water is considered a CPR and is not a privately owned commodity. The right of *parciantes* to use water is contingent on their exercising those rights in the overall *acequia* system.

The second principle of nontransferability holds that one cannot separate water from the land. Because water cannot be treated as a commodity that can be exchanged for money, there are strict controls against the conveyance of water to other users outside the ditch for non-irrigation purposes. Water cannot be severed from its role in the management of the land and the transfer of individual irrigation rights is strictly prohibited. By focusing on the interconnectedness between water rights and the land upon which they depend, the first

199. Letter from Joseph C. Gallegos, President, Colorado *Acequia* Association, to Devon G. Peña (June 13, 2002) (on file with author).

200. CLARK, *supra* note 3; RIVERA, *supra* note 3; Peña, *Cultural Landscapes*, *supra* note 7; Simmons, *supra* note 5.

201. RIVERA, *supra* note 3; Peña, *Cultural Landscapes*, *supra* note 7; see also Peña & Martinez, *supra* note 16.

two principles illustrate the *acequia* emphasis on the community and agroecological value of water.²⁰²

Third, the right of thirst holds that all living things with thirst have a right to water, and human use of water cannot deny plants and animals their rightful share.²⁰³ The right of thirst is directly derived from Islamic law, and its significance has been largely overlooked in the historical literature. It is also apparently the source of the most conflict between *acequias* and modern state institutions such as the state department of water resources and the district water courts.²⁰⁴

Fourth, the maintenance and operation of the *acequia* relies on a deep-rooted tradition of mutual aid and communal labor. One important aspect of this involves the annual springtime ditch cleanup. In many communities, including San Luis, this event takes place around May 15th, which is the feast day of San Ysidro Labrador, the patron saint of the farmers. The cleanup of the ditch involves the participation of all the *parciantes* who must provide labor and supplies to clear the *acequia madre* of debris, vegetation, and obstructions that have accumulated over the course of the winter and spring. In some cases, *parciantes* may hire a laborer to perform the work or, in a few isolated examples, may pay a fee so the *acequia* can hire workers to fulfill their share of the work. Moreover, water use rights are conditioned by a variety of other rules including participation in the maintenance and operation of the *acequia*, respect for irrigation schedules, and conformance with rules against waste of water or damage to other farmers and the land. Repeated violation of these rules may result in the loss of usufructuary rights.

Finally, the fifth principle embodies the idea that the organization and administration of *acequias* is based on local

202. F. LEE BROWN & HELEN M. INGRAM, *WATER AND POVERTY IN THE SOUTHWEST* (1987).

203. On the "right of thirst" in the context of Muslim societies, see DANTE A. CAPONERA, *WATER LAWS IN MOSLEM COUNTRIES* (1973). For a comparative study that includes discussion of water law in the American West, see James J. Wescoat, Jr., *The 'Right of Thirst' for Animals in Islamic Law: A Comparative Approach*, in *ANIMAL GEOGRAPHIES: PLACE, POLITICS, AND IDENTITY IN THE NATURE-CULTURE BORDERLANDS* 259 (Jennifer Wolch & Jody Emel eds., 1998). For further general discussion in the context of Spanish and Mexican colonial law, see CLARK, *supra* note 3, at. 9; BETTY EAKLE DOBKINS, *THE SPANISH ELEMENT IN TEXAS WATER LAW*, 63-70 (1959); RIVERA, *supra* note 3; Peña, *Cultural Landscapes*, *supra* note 7.

204. See discussion *infra* accompanying notes 256-257.

self-governance. The election of *acequia* officers, the *mayordomo* and *comisionados*, is governed by each individual association of *parciantes*. The process of decision-making is thus place-based and driven by the authority of the members of a given *acequia*. Moreover, local *acequias* are granted considerable leeway to define and enforce regulations that directly involve them in watershed-wide land and water use planning and regulation. It is the quality of local self-governance that has led some scholars to characterize *acequia* institutions as watershed democracies.²⁰⁵

These customary principles are not abstractions or mere memories of a cultural heritage and political legacy that has long since past. Despite the imposition of the appropriative rights regime, these principles continue to guide the organization and management of contemporary community *acequias* throughout the Upper Rio Grande. For example, in 1989, a Houston-based multinational corporation, Battle Mountain Gold (BMG), offered the San Luis People's Ditch \$50,000 for temporary water during the construction of a gold mine and cyanide leach vat milling facility located in the Rito Seco Creek watershed about six miles northeast of the town of San Luis. The People's Ditch firmly rejected the offer on two separate occasions in years when plenty of water was available for all the *acequias*. As the former *mayordomo* of the San Luis People's Ditch explained, "You cannot sell the water and separate it from the land. The water belongs to the community. It is not for sale."²⁰⁶ Instead of selling BMG water, the San Luis People's Ditch and other local *acequias* filed a lawsuit against BMG opposing the corporation's plans to transfer agricultural water rights to industrial uses.²⁰⁷ This incident illustrates how the riparian and community value of

205. RIVERA, *supra* note 3; Peña, *Cultural Landscapes*, *supra* note 7.

206. Interview by Devon G. Peña with Joseph C. Gallegos, President, Colorado *Acequia* Association, in San Luis, Colo. (July 8, 1990) (on file with the author); see also Devon G. Peña & Joseph C. Gallegos, *Nature and Chicanos in Southern Colorado*, in *CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS* 141-60 (Robert D. Bullard ed., 1993).

207. BMG had acquired two farming properties from absentee owners in the northern part of Costilla County; and center-pivot sprinklers irrigated these acres. The company proposed to transfer the water from the farms to the mine site. The case was tried in the Division Three Water District Court during November and December, 1989. See Dist Ct., Water Div. 3, State of Colo., Case No. 89CW32.

water remain fundamental principles guiding the management of *acequia* water rights in the Culebra watershed.

The persistence of the usufructuary principle is also evident in the contemporary affairs of the Culebra watershed *acequias*. In interviews, the *parciantes* of the San Luis People's Ditch confirmed that an adjudicated right to water does not, in their estimation, mean that the irrigator "owns the water." Instead, the *parciantes* manage the water as a collective resource owned by the *acequia* as a whole because the flow volumes must be maintained at a constant rate for the entire system to function. This is the primary reason for the position that water cannot be sold or severed from the *acequia* because the loss of even the smallest amount would impair the overall functioning of the ditch.²⁰⁸

The persistence of the principle of the right of thirst is also evident in contemporary *acequia* management practices. The overwhelming majority of *acequias* in the Culebra watershed remain earthen works (that is, they are natural dirt channels and are not lined with cement). Interviews with *parciantes* reveal shared narratives that describe a desire to leave ditches unlined because a more natural *acequia* provides important services to the human community and to wildlife. Joseph C. Gallegos, President of the CAA and former *mayordomo* for the San Luis People's Ditch, has described natural, unlined ditches as "equal opportunity providers."²⁰⁹ Research reported elsewhere demonstrates that the *acequia* farmers of the Culebra watershed are aware of the ecological benefits they receive from the maintenance of the unlined ditch system, as discussed in greater detail below in Part III and Table 1.²¹⁰

The persistence of the principle of local self-governance has been repeatedly illustrated by the practices followed for the election of *mayordomos* and other *acequia* officials. The *acequias* still widely follow the practice of one-*parciantes*, one

208. Devon Peña, Ruben Martinez & Louis McFarland, *Rural Chicana/o Communities and the Environment: An Attitudinal Survey of Residents of Costilla County, Colorado*, in 4 PERSPECTIVES IN MEXICAN AMERICAN STUDIES: EMERGING THEMES IN MEXICAN AMERICAN RESEARCH 45-74 (1993).

209. Interview by Devon G. Peña with Joseph C. Gallegos, President, Colorado *Acequia* Association, in San Luis, Colo. (June 3, 1996) (on file with author); see also Devon G. Peña, *A Gold Mine, an Orchard, and an Eleventh Commandment*, in CHICANO CULTURE, ECOLOGY, POLITICS: SUBVERSIVE KIN, *supra* note 13, at 264 [hereinafter Peña, *A Gold Mine*].

210. Peña, *Cultural Landscapes*, *supra* note 7; Peña & Martinez, *supra* note 16; Peña, *supra* note 160.

vote and elect their representatives on that basis. Moreover, some *acequias* have become directly involved in the process of local land and water use planning and regulation. One important example is the *Acequia de San Antonio* in Valdez, New Mexico outside of Taos. This *acequia* adopted and enforced a local ordinance regulating the construction of roads, bridges, and culverts that impact the functioning of the *acequia* system.²¹¹

The *acequia* farmers of the Upper Rio Grande continue to be bound together in arrangements of mutuality for the allocation of water in a social landscape where labor and wealth are invested in the maintenance of common institutions. The underlying, and decidedly communitarian, principles of the *acequia* system are clearly at odds with the values of the dominant society, and their preservation is notable. How then do *acequia* farming communities internalize and reproduce the norms of collective resource use and management in the context of a broader political economic system that is decidedly market-oriented and that privileges private property rights? How does the common property resource regime of the *acequia* survive and thrive in such a milieu? What are the practices that maintain the structures and traditions that promote mutuality and mutual assurance within a manageable group that embraces the values of a common property resource regime? The answers to these questions, in part, reside in an examination of the quotidian labor processes of an *acequia*.

B. *The Reproduction of Acequia Managerial Values and Quotidian Labor Processes*

The day-to-day operation of an *acequia* system is not simply governed by the set of rules adopted by the *parciantes* in the manner of customary law and practice. Instead, it involves an intense set of on-going intimate relationships between and

211. The text of the ordinance partly reads: "Notice. This ditch is property of *Acequia de San Antonio* in Valdez, New Mexico. Swimming, playing, boating, or discharging of pollutants into this stream is prohibited. Anyone violating this order will be prosecuted under the provisions of the *acequia* laws and section forbidding criminal trespassing." The ordinance describes minimal standards for construction of culverts, bridges, and roadways in a manner consistent with *acequia* functioning, and describes application for permits from the *acequia*. See RIVERA, *supra* note 3, at 189–90.

among the *parciantes*, the *mayordomos*, and *comisionados*. As Joseph C. Gallegos, the *mayordomo* of the San Luis People's Ditch, explains, "To be a good ditch rider means you also have to be a good psychologist—you have to be in a position to understand human behavior and to resolve conflicts that could spiral out of control."²¹² Intense social relationships on the *acequia* create a sense of what Gallegos calls the "*acequia*-hood," the neighborhood of irrigators or the condition of a sense of place embodied by the affinities of belonging to the *acequia* institution.²¹³ The sense of neighborliness is reinforced by the annual cycles of labor activity. This involves not just the spring ditch cleanup but a wide range of other activities related to irrigating, planting, cultivating, harvesting, and processing of crops. The circumstances of limited economic resources means the *acequia* farmers must rely on mutual aid strategies to survive. Thus, it is common for *acequia* farmers to share resources including labor, farm tractors, plows, cultivators, combines, and other implements, seed, and even land.

The traditions of mutual aid and cooperative labor are evident in the organization and objectives of the CAA. The Association's mission statement highlights this commitment to mutual aid and cooperative labor by declaring that the *acequias* are a "local grassroots participatory democracy."²¹⁴ This participatory democracy extends to labor processes. It is common among the Culebra *acequias* for *parciantes* to participate in the planting, cultivating, and harvesting of each other's crops. Elder farmers like Adelmo Kaber and Evan Valdéz assist younger farmers with this work and in the process share their local knowledge of agroecology. For example, Adelmo Kaber often makes suggestions to younger farmers about the appropriate crops for a given soil type or recommends the least erosive techniques for plowing fields before planting. The reproduction of local agroecological knowledge is therefore completely dependent on the intimate social relations that characterize the interactions among elder and more youthful *parciantes*.

212. Gallegos, *Acequia Tales*, *supra* note 13, at 241.

213. GALLEGOS, *supra* note 168, at 4.

214. COLORADO ACEQUIA ASSOCIATION, PROTECTING AND EXPANDING THE NATURAL ASSETS OF THE COLORADO ACEQUIAS THROUGH THE ESTABLISHMENT OF A LAND AND WATER TRUST, at 1 (draft, Apr. 2001) (on file with the author) (proposal and concept paper prepared for the Ford Foundation) [hereinafter COLORADO ACEQUIA ASSOCIATION].

The Association has over the years emphasized the importance of reproducing the next generation of *acequia* farmers. A concern for the needs of limited resource farmers extends to the provision of services for women and youth who are just starting to engage in agricultural work. One strategy has been to provide new farmers with support in acquiring heirloom seeds, gaining access to planting, cultivating, and harvesting equipment, and mentoring them in the arts of flood irrigation.

The sharing of resources also involves an informal network of seed savers and exchangers. In fact, the practice of heirloom seed saving is one of the most significant cultural traditions among *acequia* farmers of the Culebra watershed. Heirloom seed saving represents a connection to past generations and is an important agroecological adaptation to place.²¹⁵ Through seed saving and exchanging, *acequia* farmers in the Culebra watershed cooperate in the development of horticultural varieties that have been adapted to the unique climatic and hydrological conditions of the San Luis Valley, i.e., a high altitude alpine desert environment with a three-month growing season. These heirloom crop varieties, which agroecologists call native land races, demonstrate a high level of resistance to natural pests, are adapted to drought conditions, and are not damaged by the desiccation caused by the intensity of solar radiation at an elevation of nearly 8,000 feet above sea level.²¹⁶ The Corpus A. Gallegos family farm includes several varieties of *calabasa* (squash) with names like the "Elaiza Special," in honor of the great-grandmother who first introduced and developed this heirloom variety more than ninety years ago. Adelmo Kaber and Veronica Sanchez are equally proud of an heirloom variety they call "Romaldita," aptly named after Kaber's ninety-year-old mother who first planted this *calabasa*. Heirloom seed saving reinforces the customary values of mutual aid, cooperative labor, and self-reliance.

The persistence of mutual aid and cooperative labor is apparent in San Luis in another way. In 1991, the local *acequia* farmers established a cooperative known as the Culebra Cooperative Growers, in part to gain the power of

215. Peña, *Cultural Landscapes*, *supra* note 7, at 119.

216. *Id.*, at 114, 119. For further discussion of traditional polycultures and native land races, see also MIGUEL A. ALTIERI, *AGROECOLOGY: THE SCIENCE OF SUSTAINABLE AGRICULTURE* 107-44 (2d ed. 1995).

higher volume purchases of seed. The cooperative also provides training and support for farmers interested in organic certification, the niche marketing of heirloom crop varieties including *chicos* (a white roasting corn that is a high-end delicacy in the region), and workshops on holistic resource management. The Culebra Cooperative Growers is important because it addresses technical needs that are usually left unmet by the United States Department of Agriculture and its various agencies including the Natural Resources Conservation Service (NRCS).²¹⁷

However, the Cooperative is especially significant because it addresses the vital issue of the reproduction of *acequia* values and organizational norms across generations. Institutions for collective governance of common property resources are often challenged by the need to reproduce themselves.²¹⁸ The *acequias* are accomplishing this, in part, through the establishment of grassroots organizations like the Cooperative that have instituted special programs to assist young farmers who are just getting started and have limited resources. As one *mayordomo* explains, "Without the youth, the *acequia* way of agriculture cannot survive. We can protect the water and the land, but if we don't prepare the next generation, then this way of farming will just disappear."²¹⁹

In times of drought, as was the case during the 2000 and 2002 growing seasons, the need for other forms of mutual aid and cooperation became apparent. The 2002 drought was so severe that only three of the twenty-three *acequias* were apportioned water sufficient for irrigation. Many of the farmers were thus left high and dry. Where circumstances permitted, farmers from dry *acequias* planted on extra acreage on land belonging to farmers with running *acequias*. For example, Adelmo Kaber, a farmer on the Cerro Ditch without water for the 2002 irrigation season, planted *chicos*, beans,

217. For further discussion of the relationship between Hispano farmers and the USDA, see Devon G. Peña, Environmental Justice and Sustainable Agriculture: Linking Social and Ecological Sides of Sustainability, policy paper prepared for the Second National People of Color Environmental Leadership Summit, Washington, D.C. (Oct. 23–27), available at <http://www.ejrc.cau.edu/summit2/sustainableAg.pdf>.

218. See OSTRUM, *supra* note 1; JOANNA BURGER, ET AL., PROTECTING THE COMMONS: A FRAMEWORK FOR RESOURCE MANAGEMENT IN THE AMERICAS (2001).

219. Interview by Devon G. Peña with Evan Valdez, President, Colorado *Acequia* Association, in San Luis, Colo. (Oct. 8, 2000) (on file with author).

calabasa and other crops on several acres belonging to Joseph C. Gallegos, who was able to irrigate with water from the San Luis People's Ditch.²²⁰ In this manner, the *acequia* farmers of the Culebra watershed manage to find new ways to share scarcity. Because the extant legal regime of prior appropriation does not allow for the sharing of water scarcity, the farmers cooperate by growing food together on the limited land that can be irrigated. Of course, while these adaptive responses to water scarcity are laudable, they do not eliminate the economic hardship that results wherever ditches run dry under the restrictive demands of priority calls for limited water. The principle of the right of thirst is abrogated, and *parciantes* are prevented from managing their water resources on the basis of collective goals of the community.

The persistence of customary norms and principles of collective management are evident in the everyday operation of the *acequia* system. The usufructuary nature of *acequia* water rights implies the existence of a collective basis for revoking water use rights for *parciantes* who engage in a variety of behaviors that are discouraged and controlled by the community to protect the watershed and the functioning of the ditch. This may involve the imposition of informal sanctions including ridicule, isolation, withdrawal of cooperation, and even the shutting and locking down of *compuertas* (headgates) for acting "*como tildeo*" (a bird similar to the sandpiper).²²¹ Control can also involve more formal sanctions including fines for water waste or for taking water out of turn. Wasteful irrigation practices are especially frowned upon and can result in being labeled a "water hog." In the more extreme cases, water hogs face fines or are subject to strict supervision under the watchful eye of the *mayordomo*.²²²

The annual spring ditch clean-up; the tacit skills and experiential knowledge related to flood irrigation; and the sharing of labor for planting, cultivating, irrigating, harvesting, and processing of crops—all these represent the persistence of *acequia* customary norms of mutual aid and cooperative labor.

220. See Devon Peña's field observation notes on effects of 2002 drought on irrigation practices and interviews by Devon G. Peña with Adelmo Kaber and Joseph C. Gallegos, in San Luis, Colo. (May 17, 2002) (on file with author).

221. Interview by Devon G. Peña with Joseph C. Gallegos, President, Colorado *Acequia* Association, in San Luis, Colo. (May 15, 1996) (on file with author).

222. Gallegos, *Acequia Tales*, *supra* note 13, at 240–42.

To avoid the breakdown of the values underlying collective management of the *acequia* system, the *parciantes* must also continuously work at reproducing the highly specialized artisan knowledge that is necessary for the skillful practice of flood irrigation with gravity-driven ditches. It takes years of practice and mentoring by a skilled practitioner for a younger farmer to develop the needed level of competence to irrigate with *acequia* technology. One elderly *parciante*, a former *mayordomo*, once explained how

[y]ou can't just open the headgate and let the water go. You have to tend the water. Watch it, change it. Keep it under control. The one thing you can always count on about water . . . is that it just keeps coming. To be a good irrigator you have to be patient. You cannot rush things. You have to know the shape of your [crop] fields. How the land slopes here and there. You must know every little bump; every low area where the water might slow down and settle.²²³

He cautioned that it takes decades for a *parciante* to become skilled enough at flood irrigation so that soil erosion and waste of water are avoided. The process of transmitting irrigation skills always involves direct, experiential knowledge and lifelong mentoring relationships. The second author has had the privilege of participating in this process over the past decade on the numerous occasions when he was invited to an important predawn ritual—*El cambio de agua* (the changing of the water). This local knowledge cannot be easily reproduced: "It is a lot like becoming a priest or a rabbi," Joseph C. Gallegos explains:

You don't get ordained overnight. It takes years of training and practice, right? It is the same with *acequia* irrigation. You don't just put a shovel in someone's hands and let them have at it. The only way to learn a sense of the water is through years of practice.²²⁴

223. Interview by Devon G. Peña with Corpus C. Gallegos in San Luis, Colo. (Sept. 13, 1997) (on file with author).

224. Interview by Devon G. Peña with Joseph C. Gallegos, President, Colorado *Acequia* Association, in San Luis, Colo. (June 8, 1998) (on file with author).

C. *Resistance of the Culebra Acequias to Modernization*

These informal relationships and modes of personal control are unfolding in the context of significant processes of cultural, demographic, technological, and legal change. As Gallegos notes:

The personal relationships on the ditch are changing. Managing the ditch is less personal and more formal each passing year It used to be that the ditch was managed on a person-to-person level. The members' word was the law. The human aspect was foremost, and the law was distant and removed from the everyday work of the ditch. Today, it is getting more formal, and this can create problems, because the law does not abide by the land.²²⁵

The arrival of newcomers, including a significant and growing number of non-Hispanic farmers, is one source of the changes occurring in even the most traditional of *acequias*. Again, Gallegos: "[W]ith more newcomers on the ditch, well, they want to follow everything by the book. They think the old way is a wasteful manner to manage water, and with the changing laws, new technologies, and more complexity, the potential for conflict is increased."²²⁶

These changes, as well as the ecological and economic threats posed by industrial logging, mining, and subdivisions, led to the establishment of the CAA, which is part of a relatively recent trend involving the establishment of watershed and statewide *acequia* organizations. However, the formal organization of Colorado *acequias* is much older and dates back at least to the early 1960's and President Lyndon Johnson's "War on Poverty." The formal incorporation of the San Luis People's Ditch dates back to this period and was in fact a response to opportunities created by federal anti-poverty programs in rural areas. The State Engineer's Office had demanded that the San Luis People's Ditch be lined with concrete, and the ditch *parciantes* found themselves obliged to secure financing to "modernize" their *acequia madre*. To obtain this funding from the federal government, the San Luis People's Ditch first had to incorporate as a ditch company in

225. Gallegos, *Acequia Tales*, *supra* note 13, at 241.

226. *Id.*

order to be a qualified borrower under the terms of the rural anti-poverty program.²²⁷

Despite such adaptations as formal incorporation and gradual modernization, resistance to the modernization of the ditches, in their physical and in their institutional arrangements, persists. Resistance seems strong in the Colorado *acequias*, which unlike some of their New Mexico counterparts, have rarely embraced a vision of modernity in exchange for proffered financial support. The New Mexico *acequias* have been “beneficiaries” of state-funded support for several decades, and have received that support on condition that the ditches be concrete-lined. New Mexico *acequias* in the northcentral Rio Arriba region remain steadfastly committed to traditional earthen works in current landscape practices, but many *acequias* in the Middle Rio Grande Valley (between Albuquerque and Santa Fe) have lined numerous *acequia madres*.²²⁸

Commitment to a system of earth, including gravity-fed ditches and the waterways that the adequate functioning of such a system requires, lies at the heart of the water practices of the Culebra village *acequias*. The very functioning of the *acequia* network depends upon the porousness of the system. Water constantly escapes from the network of earth ditches into the unconfined aquifer of the watershed, replenishing ground water flows that in turn support springs and surface water flows in the Culebra and its tributaries.²²⁹ What this means is that water comes to rights holders not only directly through the ditch network, but as a result of the water’s movement through the landscape. This light hold on the water also provides sub-irrigation to the 633-acre community grazing commons of the chief Culebra town of San Luis and supports uncultivated woodlands and windbreaks that shelter wildlife and livestock and retard soil erosion.²³⁰ Command of the water is incomplete, but the capacity to use the water for longer periods while producing extensive landscape benefits is served by this incomplete command. It is a system that disperses and

227. Interviews by Devon G. Peña with Corpus A. Gallegos and Joseph C. Gallegos of the San Luis People’s Ditch, San Luis, Colo. (May 15 and Aug. 12, 1997) (on file with author).

228. Authors’ observations.

229. See *supra* note 20.

230. Peña, *Watershed Commonwealth*, *supra* note 193.

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225. Gallegos, *Acequia Tales*, *supra* note 13, at 241.

226. *Id.*

Even in the case of the “modernized” San Luis People’s Ditch, *parciantes* have in some cases attempted to mimic the functionality of the older earthen ditch with the new concrete ditch. The new ditch structure blocked the subirrigation of ground along the ditch margin and caused a corresponding loss of the corridors of phreatophytic trees and shrubs that functioned as windbreaks and animal habitat. Noxious weeds typically filled the void. Some *parciantes* have attempted to address the problem of an improved ditch by conducting water from the San Luis People’s Ditch not into pipes or smaller, tributary concrete ditches for more exact distribution of water to irrigated lands but directly onto the ground where the water is allowed to seep onto the upper end of pasture lands for subirrigation. This effort to replicate the ditch landscape created by earthen ditches has been successful near the places where the concrete ditch can be made to “leak” at the individual take-out gates of farmsteads. However, control of noxious weeds and the loss of windbreaks remain a cost of ditch modernization along much of the length of the concrete-lined portion of the San Luis People’s Ditch.

Some of the conflicts between the *acequias* and Colorado law are rooted in the differences between customary law and the doctrine of prior appropriation. The right of thirst underlies the decision by most *acequias* to maintain their ditches in a more natural state with earthen-work banks that support habitat for wild plants and animals many of which are important sources of food or medicine. Thus, many *acequias* resist lining the ditches with concrete to reduce leakage along the riparian corridors. The State Engineer’s Office and water courts tend to view this as a wasteful and inefficient practice. There is increasing pressure placed on the *acequias* to “modernize” and line the ditches to reduce the loss of water to phreatophytes (riparian vegetation).²³⁵ In fact, under Colorado water law, the loss of water to vegetation, including the creation of wetlands through sub-irrigation, can be considered “non-beneficial evapotranspiration.”²³⁶ This corresponds with the idea that the state can compel irrigators to become more efficient in their use of water to meet with the doctrine of maximum utilization by reducing evaporative losses of water.

235. Peña, *Cultural Landscapes*, *supra* note 7, at 117–18; Peña, *A Gold Mine*, *supra* note 209, at 263–65.

236. Peña, *A Gold Mine*, *supra* note 209, at 265.

The logical extension of this doctrine in technological terms means that irrigators should abandon the gravity-driven system of flood irrigation and use perforated pipes or drip irrigation to deliver water to crops, that the leaky earth banks of *acequias* should be lined with cement to reduce losses to riparian vegetation, and that the *acequias* should adopt other tools and practices to apply water more precisely to crop lands.

The resistance of the *acequias* to modernization is further complicated by the environmental history of the Culebra watershed. Some proponents of ditch modernization have blamed local *acequia* farmers for the degraded state of the common lands and the watershed. They have suggested that Hispano livestock owners have been the principal source of land and watershed degradation caused by overgrazing and overstocking of sheep and cattle.²³⁷ This argument has been invoked to attack the legitimacy of the struggle to restore the historic use rights to the Sangre de Cristo common lands and to undermine the claims of the *acequias* to protect their water rights and irrigation technologies and practices.²³⁸ However, research scholars have demonstrated that the degradation of the Culebra watershed was largely the result of enclosure of the common lands by the Taylor family, an event that precipitated the first large-scale commercial logging operations in the watershed. Prior to 1960, la Sierra was largely roadless and unlogged, with the exception of the Salazar Tract and the Whiskey Pass Road. Overgrazing in the watershed was also the result of the arrival of the railroad at New San Acacio in 1910, which tied the area to mass markets for wool across the region. The overstocking of sheep was largely a consequence of

237. See, e.g., TOM WOLF, *COLORADO'S SANGRE DE CRISTO MOUNTAINS* 265, 275 (1995).

238. For further discussion, see Devon G. Peña & Ruben O. Martinez, *The Capitalist Tool, the Lawless, and the Violent: A Critique of Recent Southwestern Environmental History*, in *CHICANO CULTURE, ECOLOGY, POLITICS: SUBVERSIVE KIN*, *supra* note 13, at 141–76 [hereinafter Peña & Martinez, *The Capitalist Tool*]; and Devon G. Peña, *Identity, Place, and Communities of Resistance*, in *JUST SUSTAINABILITIES: DEVELOPMENT IN AN UNEQUAL WORLD* (Julian Agyeman, et al. eds., 2003) [hereinafter Peña, *Identity and Place*]. This was apparent during the course of negotiations between local representatives and governmental appointees to Governor Roy Romer's Sangre de Cristo Land Grant Commission. During one particularly heated discussion in October of 1995, an official from the Colorado Division of Wildlife stated that local people could not be trusted to participate in the co-management of the Taylor Ranch because they had overgrazed the Vega, a 633 acre village common outside San Luis.

the intrusion of large commercial operators from outside the area, many of which came from Conejos County on the west side of the Rio Grande.²³⁹

The CAA is only too acutely aware of the complex and controversial state of the area's environmental history. With support from the EPA, the CAA has initiated a long-term watershed-monitoring program and planned for a pilot watershed restoration project. The key problems identified by the Association's members include sedimentation of the water courses and ditches caused by runoff from the numerous logging roads and skid trails that have been constructed on the Taylor Ranch over the past thirty years.²⁴⁰

This resistance to modernization does not mean that *acequias* exist in a timeless, unchanging, and romantic prehistory. On numerous occasions, the *acequias* of the Culebra watershed have had to adapt to changing circumstances. This is nowhere made clearer than the process that led to the formal incorporation of the San Luis People's Ditch. Corpus A. Gallegos and Joseph C. Gallegos both confirm that the bylaws for the San Luis People's Ditch, adopted in the mid 1960's, were essentially derived from a "boilerplate" document.²⁴¹ These boilerplate bylaws were opportunistically used to incorporate in order to qualify for money to modernize the *acequia madre* as a result of pressures coming from the State Engineers Office to reduce leakage along the mother ditch to increase the delivery rate to the users farthest down the ditch. These boilerplate bylaws require that the votes for *mayordomo* and commissioners should be apportioned on the basis of the number of shares each *parciante* has (as quantified by the irrigated acreage for each *parciante*). However, the boilerplate bylaws do not reflect the actual practice of one *parciante*, one vote for *mayordomo* and commissioners, which again, ethnographically, can be shown to constitute a very

239. For more on the environmental history of the Culebra watershed, see generally Lantis, *supra* note 123; Peña & Martinez, *The Capitalist Tool*, *supra* note 238, at 154–57.

240. COLORADO ACEQUIA ASSOCIATION, PROPOSAL FOR A CUMULATIVE WATERSHED ASSESSMENT AND PILOT RESTORATION PROJECT, GRANT PROPOSAL SUBMITTED TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY (May 1998) (on file with author).

241. Interview by Devon G. Peña with Corpus C. Gallegos, farmer in San Luis, Colo. (June 7, 1996) (on file with author); Interview by Devon G. Peña with Joseph C. Gallegos, President, Colorado *Acequia* Association, in San Luis, Colo. (May 17, 2002) (on file with author).

dense set of informal relationships among the *parciantes*, *mayordomo*, and commissioners.

Superficially, it would appear that the *acequias*, as reflected in these boilerplate documents, have evolved under a default organizational form imposed by the pressures of modernity. However, for the *acequia* farmers, the adoption of these bylaws was merely a step toward the goal of receiving federal rural antipoverty funds to modernize the mother ditch. It was an instrumentalist, and not a normative, use of the formal process of incorporation. The reality is that, despite the adoption of boilerplate bylaws (reflecting the problematic norms of the common or mutual ditch association under the doctrine of prior appropriation), the San Luis People's Ditch continues to follow the customary practices reproduced over generations through the survival of local legal norms that treat individually allocated water rights as rights subject to the functionality of what is managed by a community more as a common property resource.²⁴² In more recent times, the *parciantes* of the San Luis People's Ditch have initiated discussions to review and revise the bylaws to bring them in line with extant customary norms and practices. These include a desire to recapture a culturally specific sense of place by officially restoring the original name of the San Luis People's Ditch, which was *La Acequia de la Gente de San Luis*.²⁴³

III. THE LANDSCAPE ECOLOGY OF THE ACEQUIA: WATERSHEDS, ECOSYSTEM SERVICES, AND SUSTAINABILITY

The following Part discusses customary *acequia* practices in the Culebra watershed and their effects on the landscape ecology of the watershed. In a previous study, a team of interdisciplinary researchers identified three major ways that *acequia* systems contribute to the ecological and economic integrity of the watershed.²⁴⁴ First, the *acequia* system

242. See *supra* discussion accompanying notes 161–62.

243. Letter from Joseph C. Gallegos, President, Colorado *Acequia* Association, to Devon G. Peña (July 10, 2002) (on file with author).

244. The formal model used to arrive at these estimates is presented in Peña, *Watershed Commonwealth*, *supra* note 193, and is based on a synthesis of the principles of ecological economics outlined in the compilation *NATURAL ASSETS: DEMOCRATIZING ENVIRONMENTAL OWNERSHIP*, *supra* note 193, and the work of the ecosystem services theorist Robert Costanza; in Robert Costanza et al., *The Value of the World's Ecosystem Services and Natural Capital*, 25

generates agricultural income in goods and services sold in markets as well as through informal barter. In addition to being productive agricultural systems in their own right, the *acequia* agroecosystems are storehouses of native wild plant and landrace crop genetic diversity. The value of heirloom landraces and traditional knowledge to local plant breeders includes annual savings from reduced seed purchases, reduced agrochemical inputs, and reduced losses to pests and other pathogens. These heirloom landraces have additional value as a "firewall" protecting agricultural and food security from threats posed by the erosion of genetic agrobiodiversity. Second, the raw materials, open spaces, wildlife habitat, vernacular architecture, and built environments generated by the *acequia* system produce significant artisan, subsistence, and amenity values. Third, as detailed below, the *acequia* system provides ecosystem services such as soil formation and water quality. For example, the anthropogenic wetlands created by *acequias* produce higher water quality, which in turn reduces the cost of water treatment and pollution mitigation.

The historic *acequia* agroecosystem annually produces significant agricultural, open-space, wildlife habitat, water quality, forest conservation, and other environmental and economic values. The *acequia* landscape mosaic, including croplands, meadows, anthropogenic wetlands and woodlots, and riparian corridors, consists of a landscape pattern and a set of complementary agroecological practices. For example, the trees and vegetation that grow in the *acequia* riparian corridors, a landscape feature created by water seepage from earthen ditches, act as a shield against wind erosion. The preference for unlined earthen ditches also stems from a desire to produce ecological services such as habitat for edible and

ECOLOGICAL ECON. 3 (1998). Artisan production includes hand-crafted wood products (furniture, wooden saints in the form of *retablos* and *bultos*, and other art objects); building and shelter materials (*vigas*, *latillas*, fenceposts, lumber); wildcrafted herbs and medicinal plants; hand-woven rugs, blankets, vests, and coats; hand-made artifacts; and tools for the home and ranch. Subsistence production includes crops harvested from family garden plots and orchards; vegetables and fruits canned for storage, barter, or sale; medicinal and edible plants wildcrafted for home use; hunting and fishing for the family table; gathering of firewood; and related services to produce these subsistence goods. Amenity production includes the sales and services generated by the tourism industry such as lodging, food, and other retail sales, but does not include sales of arts and crafts.

medicinal wild plants. The preference for rotational intercropping (an agricultural practice) conserves soil and replenishes soil nutrients (an ecological service). The choice of landrace cultivars is further informed by local adaptations to climatic and other ecological limits. The mosaic thus extends biological diversity by blending native and domesticated landscapes to create a watershed-wide stock of natural assets.²⁴⁵

Table 1 provides a synopsis of the types of economic and ecological benefits provided by the mosaic. In addition to the ecological services, Table 1 includes the value of farm income, goods, and services (including formal and informal sectors but not subsistence activity),²⁴⁶ and the value of revenues from artisan, subsistence, and amenity economies associated with the presence of the mosaic.

A. *Acequia Ecosystem Services and the Maintenance of Local Landscapes and Economies*

An important issue involves the calculation of benefits of the *acequia* system in the Culebra watershed. Approximately 273 families in the Culebra watershed use *acequias* to irrigate approximately 24,000 acres of privately owned croplands and pastures. These *acequia* farms are the heart of the local agricultural economy. An additional 10,000 acres of anthropogenic wetlands are produced by subirrigation from *acequias*. We estimated the annual output of crops for cash sale from the Culebra basin *acequias* at \$9.4 million. This includes the substantial savings provided by the landscape mosaic in the form of reduced outlays for agricultural production inputs. In this region of Colorado, industrial-style farms spend considerable amounts on herbicides and chemical fertilizers. Generally, the Hispano *acequia* farms of the

245. For further elaboration of the biological and cultural principles underlying this approach see Peña, *Watershed Commonwealth*, *supra* note 193, and G. Stanley Kane, *Restoration or Preservation? Reflections on a Clash of Environmental Philosophies*, in BEYOND PRESERVATION: RESTORING AND INVENTING LANDSCAPES 69 (A. Dwight Baldwin et al. eds., 1994); see also R. EDWARD GRUMBINE, GHOST BEARS: EXPLORING THE BIODIVERSITY CRISIS (1992).

246. It is difficult to develop an accurate estimate of the size of the informal sector, but our survey research indicates that the informal sector is very large, and in some cases even rivals the formal sector of the regional economy.

Table 1: Economic and Ecological Services of the *Acequia* Landscape Mosaic

Service	Example	Benefits
agrobio-diversity	seed-saving of heirloom varieties preserves crop genetic diversity <i>in situ</i> and continually improves productivity and pest resistance	agricultural sales
food production	riparian corridors and anthropogenic wetlands create habitat for medicinal and edible wild plants for home use or sale	artisan, subsistence, agricultural sales
raw materials	woodlots and orchards provide materials for food, firewood, tools, and handicrafts	artisan, subsistence, agricultural sales
natural controls	intercropping, allelopathic plants, and companion planting controls weeds and insect pests without chemical inputs, preserving trophic webs in agroecosystem	subsistence, agricultural sales, ecological value
soil conservation	riparian corridors act as shield against wind erosion of soil	agricultural sales, ecological value
soil formation	<i>acequia</i> flood irrigation creates soil	agricultural sales, ecological value
nutrient cycling	perennial polycultures and companion planting add nutrients to the soil	agricultural sales, ecological value
water supply	ditch networks and anthropogenic wetlands store and retain water	ecological value
water regulation	riparian corridors and anthropogenic wetlands control and buffer water flow through local hydrological system	ecological value
water treatment	anthropogenic wetlands absorb and filter pollutants and runoff and provide pH buffering	ecological value
microclimatic regulation	riparian corridors are populated by phreatophytes that contribute to local hydrological cycle through evapotranspiration	ecological value
wildlife habitat	riparian corridors and anthropogenic wetlands create habitat, food sources, and movement corridors	ecological value, amenity
recreation	cultural and ecological landscapes provide opportunities for recreation and tourism	amenity
cultural ecological	local management of <i>acequia</i> system encourages land ethics over generations	groundwork for future benefit flows

Culebra watershed do not use these agrochemical inputs: they have always been "organic," relying on natural control, principally crop diversity and rotation, to protect crops from pests and maintain soil fertility. Additional savings are reaped from the local practice of heirloom seed saving, which means that the *acequia* farmers do not need to purchase seed commercially.

Artisan and amenity values contribute an additional \$3.9 million in goods and services, largely via income derived from tourism. The "unique cultural landscapes" of northern New Mexico and southern Colorado account for at least two-thirds of the tourism in the region, according to the New Mexico Office of Cultural Affairs. In Costilla County, the hunting and fishing component of the tourism economy is particularly important, and here the *acequia* farms play a critical role. Most of the county's "blue-ribbon" trout fisheries are located on stretches of the local creeks that course through the heart of the *acequia* bottom lands.

We also estimate the contributions of the so-called informal economy. Interviews revealed that most *acequia* farmers are engaged in a substantial amount of barter of goods and services. It is common, for example, for farmers to trade services (such as plowing) for a portion of the crops harvested. In a sample of twenty-two farmers, the average value given to this barter by the respondents was \$3,000 a year.²⁴⁷ From this average we calculate that the annual value of informal barter among the 273 *acequia* farming families in Costilla County is about \$820,000.

Taken together, the estimated annual economic impact of the *acequia* farms in Costilla County from agricultural production and artisan, amenity, and subsistence values is \$14.1 million. This amount represents roughly forty percent of total personal income in the county—including income from jobs in other sectors like retail sales, government, and county services. Especially since Costilla County is an economically distressed region with high unemployment and poverty, the impact of the *acequia* farms is critical to the local economy.

The ecological services provided by the landscape mosaic in Costilla County include substantial annual savings in the form

247. Based on unpublished survey of parciantes by Devon G. Peña, San Luis, Colorado (June–July 1998) (on file with author).

of soil conservation and soil formation. Hydrologist Robert Curry, Director of the Institute for Watershed Science at the University of California at Monterey Bay, views the *acequias* as "soil banks" which, more than reducing erosion, actually create soil as the combination of irrigation practices, perennial polycultures, and crop rotations adds depth and organic materials to the soil horizon.²⁴⁸ We estimate that the *acequias* yield at least one million dollars per year via soil protection in the Culebra watershed.

A second important ecological service of the mosaic is the protection of water quality, thanks to the presence of anthropogenic wetlands and riparian corridors. In addition to underpinning the benefits derived from the protection of fish habitat, the water quality services they provide reduce the costs of water treatment by an estimated \$5.5 million a year.²⁴⁹ Taken together, the annual value of the ecological services of soil building and water quality is approximately \$6.5 million. While it is possible that modernization of the *acequia* system would increase the agricultural output of the Culebra watershed, the ecosystem services would be lost. Yet, the *acequia* system cannot easily be modernized. The land holdings within the *acequia* system of the Culebra watershed are too small to be reorganized within the parameters of larger, mechanized economies of scale. The cultural landscape features of the mosaic would have to be radically transformed and thus destroyed, to modernize agricultural production, and this would result in irrevocable losses to the local community and ecosystem.

These findings compel us to reexamine the prevailing legal norms that legitimize concepts of efficiency and maximum utilization based on a privileging of private and individualized appropriation and consumptive uses of water that have clear economic but unclear ecological or social benefits. The next Part discusses alternative concepts of efficiency and proposes an approach that would allow for the protection of *acequias*, their landscape ecology, and cultural traditions within the context of the dominant doctrine of appropriative rights.

248. Letter from Robert Curry, Director, Institute for Watershed Science, University of California, to Devon G. Peña (June 6, 1996) (on file with author).

249. Letter from Costilla County Water and Sewage Department to Devon G. Peña (Oct. 8, 1999) (on file with author).

IV. CONTEMPORARY WATER LAW AND THE CONDITIONS OF *ACEQUIA* SURVIVAL

The impact of water resources laws on the operation of *acequia* systems is comprehensive. Water law defines the terms under which *acequia* rights may be exercised and defines limits to those rights. A matter of major concern to the viability of *acequia*-based communities is the operation of legal doctrines that affect necessary or desirable features of *acequia* water allocation and delivery. There are four principal areas of concern. These are (1) the prevailing legal standards for the beneficial use (and waste) of water, (2) the scope of the right to transfer water rights to new uses and to new places and modes of use; (3) the protection of watersheds through appropriate land use regulation; and (4) the development of legal institutional arrangements to make *acequias* more effective and robust as local water managers. This Part considers these four areas briefly and offers proposals either to clarify or strengthen the protection the law affords *acequia* practices and traditional *acequia* governance.

A. *Beneficial Uses and Optimal Utilization—Acequia Practice and Doctrinal Evolution*

Acequia water rights are rights of very long standing, and so are often the most senior water rights in a legal system that gives priority to first-in-time users. While all water rights under an appropriative system are formally limited by the doctrine of beneficial use, which prohibits waste of water, that doctrine has not in general been applied to require greater efficiencies of older diversion and application technologies. The chief reason is the strength of the locality rule that measures the adequacy of diversion and application methods with reference to generally prevailing techniques in a locality.²⁵⁰

250. See A. DAN TARLOCK ET AL., *WATER RESOURCE MANAGEMENT* 178–79 (5th ed. 2002). Similarly, reviewing courts tend to take a tolerant view of duties of water that have been established by adjudication referees in formal proceedings, even though allocations might seem overly generous by contemporary standards. See also sources cited in Shupe, *supra* note 20, at 87–95 (especially the Colorado sources at 94–95). When accusations of excess water use are made, the water courts are inclined to dismiss cases once it has been established that the amount of water diverted at the ditch head-gate does not exceed the decreed right. Interview by Gregory A. Hicks with Judge Robert G.

That customary level of tolerance is not taken for granted in the Culebra *acequia* communities. The experience of the Hallett Decree has had a lasting effect on community understanding of how their water rights are viewed by the law, prompting an unusual alertness to the necessity of justifying customary water use practices as beneficial and not wasteful. The *acequia parciantes* have had the experience, unusual under Colorado law, of actually having lost decreed water rights, the result of the challenge of the Hallett objectors. That loss occurred at a time in the state's water law history when the range of acceptable water duties was rather generous.²⁵¹ The singular experience of having lost water in a judicially administered proceeding is remembered, and has produced a certain determination among modern *acequia* right holders to defend their methods. They know that acceptance by water authorities of their irrigation practices cannot be taken for granted. They know that they are viewed by outsiders as dabblers in water and believe that water authorities see them as people wedded by poverty and indolence to antiquated water ways.

In their conviction that their traditional methods are not necessarily immune to legal challenge, the *acequia* farmers have perhaps anticipated a future that awaits all water users. As the need for improved allocation of scarce water becomes more pressing, it may be that senior rights, traditionally exercised, will come under closer scrutiny and need to change in the interest of efficiency or to accommodate new uses in an over appropriated system.²⁵²

Ogburn (Colorado Water Court, Division 3), in Alamosa, Colo. (July 15, 2000) (on file with author); Shupe, *supra* note 20, at 86, 95. The degree of administrative acquiescence in established patterns of diversion and application is indicated by the discrepancy between enforcement efforts in most instances and the directives of multiple sections of the Colorado Revised Statutes, including Section 37-92-502(2): "Each division engineer shall order the total or partial discontinuance of any diversion in his division to the extent the water being diverted is not necessary for application to a beneficial use . . ." COLO. REV. STAT. § 37-92-502(2) (2002); *see also* §§ 37-84-107, -108, discussed in VRANESH, *supra* note 20, at 205.

251. *See* text accompanying *supra* note 246.

252. *See* Shupe, *supra* note 20, at 73-74; Matter of Rules and Regulations Governing Use, Control, and Protection of Water Rights for Both Surface and Underground Water Located in Rio Grande and Conejos River Basins and Their Tributaries, 674 P. 2d 914, 923 (Colo. 1983) [hereinafter *Alamosa-La Jara*]; Cache La Poudre Water Users Assoc. v. Glacier View Meadows, 550 P.2d 288, 294 (Colo. 1976).

The value of insisting on more effective systems of water delivery and use is plain, so long as the conception of improved efficiency of water use is a sound one. The strongest argument in favor of the physical efficiency of the Culebra watershed *acequias* is their long-term success in providing irrigation water through an appropriate technology and their effect on the functioning of the watershed. Among legitimate considerations relevant in evaluating *acequia* water practices are the provision of environmental services, including watershed and endangered species services, and even the preservation of a rural landscape and community.²⁵³ Culturally based systems of water use and water governance may be important elements of the structures that create and sustain environmental wealth. The preservation of some culturally dependent natural resources like landrace fruits, vegetables and grains, often depend on the protection of specific patterns of habitation, land use, and social interaction which, if lost, would also destroy the environmental assets they created and sustained.²⁵⁴

Colorado's doctrine of optimum or maximum utilization of water is consistent with the encouragement of the watershed and landscape services provided by well-ordered *acequia* systems. The pursuit of consumptive efficiencies is only one element of optimum utilization.²⁵⁵ The current law seems to contemplate that consumptive efficiency, or maximum utilization, is not the ultimate goal. The more comprehensive goal is optimum utilization which can and does include the

253. *Alamosa-La Jara*, 674 P.2d at 935; NATIONAL RESEARCH COUNCIL, WATER TRANSFERS IN THE WEST: EFFICIENCY, EQUITY AND THE ENVIRONMENT 45-54 (1992); Peña, *Cultural Landscapes*, *supra* note 7, at 113-26; Peña, *Watershed Commonwealth*, *supra* note 193. See generally ETHNOECOLOGY, *supra* note 7, at vii-ix, 10, 13-14. The existence of area-of-origin restrictions and requirements for preservation of minimum stream flows evince an emerging willingness in contemporary water law to protect landscape values from market processes. That may be so because of a prevailing skepticism that the price negotiated by a rights holder for sale of its rights will capture the full value of the water and adequately protect third-party and public interests dependent on the water in place. See JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 196, 204 (3d ed. 2000).

254. Peña, *Watershed Commonwealth*, *supra* note 193.

255. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 85-86 (Colo. 1996); *State Engr v. Castle Meadows, Inc.*, 856 P.2d 496, 505-06 (Colo. 1993); *R.J.A., Inc. v. Water Users Assoc.*, 690 P.2d 823, 828 (Colo. 1984). A rather narrow application of maximum utilization occurs in *Alamosa-La Jara*, 674 P.2d 914 (focus is on consumptive efficiency and expansion of use).

preservation of landscape and ecological values dependent on water-in-place.²⁵⁶ The legal status of *acequia* water practices would be greatly improved were such a vision of optimum utilization applied to *acequia* methods and to the results achieved by *acequia* water management.

B. *Transferability of Water Rights*

An essential part of *acequia* history is that the provision of water to private holdings was premised on the need of frontier communities for a combination of individual and collective flourishing. In the eyes of many *parciantes* communal claims continue to supply normative and functional justifications for encumbering with mutual obligations water rights that are decreed to individual *parciantes* under Colorado law. In this view, the property represented by a water right comes to the owner freighted with obligations that condition the owner's prerogatives in dealing with it. Property created by collective effort is viewed as being properly subject to collective claims and encumbered by continuing obligations to the community.²⁵⁷ Thus, the question of the freedom of individual rights holders to transfer or change their water rights to new users or modes of use that do not depend on or sustain the *acequia* system has been a sensitive one in the Culebra *acequia* communities.

The possibility that the water rights of *acequia parciantes* might be separated from the *acequia* system is viewed generally as wholly inconsistent with the nature of those rights. The suggestion of water transfer or sale outside the community of *acequia* users can prompt strident declarations that water is not for sale, or that to sell the water is to sell the lifeblood of the community.²⁵⁸ A strong norm and practice prevails that resists severing water from the network of *acequia*-dependent users.²⁵⁹

256. See *Alamosa-La Jara*, 674 P.2d 914.

257. See *supra* text accompanying notes 172–78, and for theoretical engagement with these principles, see generally MICHAEL WALZER, *SPHERES OF JUSTICE: A DEFENSE OF PLURALISM AND EQUALITY* (1983); Judith Andre, *Blocked Exchanges: A Taxonomy*, in *PLURALISM, JUSTICE AND EQUALITY* (David Miller & Michael Walzer eds., 1995); Elizabeth Anderson, *The Ethical Limitations of the Market*, 6 *ECON. & PHIL.* 179 (1990).

258. See, e.g., RIVERA, *supra* note 3, at 150–51; Gallegos, *Acequia Tales*, *supra* note 13.

259. As illustrated by the Kaber-Gallegos anecdote discussed earlier. See text *supra* pages 103–04.

The chief threat to these commitments is economic pressure to sell or lease water. There is new concern within *acequia* communities that collective values may some day succumb to opportunities to turn water into cash. While Colorado's commitment to the protection of third-party interests threatened by proposed changes and transfers of water rights is particularly strong,²⁶⁰ some clarification and adjustment may be needed to assure that those protections extend to the collective interests of *acequia parciantes* as participants in a community irrigation system. Mutual ditch companies have long had the power to adopt bylaws that restrict the freedom of shareholders to transfer water rights to prevent injury to the ditch or its member-shareholders as a result of reduction of flows through the ditch.²⁶¹ *Acequias*, however, do not fit neatly into the system devised for incorporated mutual ditch associations. Many *acequias* are unincorporated associations, and for those *acequias* that have incorporated as mutual ditches, certain aspects of that form of organization are problematic.

For unincorporated community *acequias*, there is some risk that the law will view them as "joint ditches" or "common ditches," the default form of organization for ditches that are not formally organized as mutual ditch companies.²⁶² Characterization as a joint or common ditch would prevent *acequias* from controlling the defection of members proposing to transfer water outside of the *acequia* system or to use water in a fashion inconsistent with collective interests. The joint ditch or common ditch is thought to create a severable tenancy-

260. See, e.g., COLO. REV. STAT. § 37-92-305 (2002) (for detailed categorization of the forms of changes and transfer of water rights that are subject to third-party no-injury principles); see also VRANESH, *supra* note 20, at 258-266.

261. See, e.g., *Fort Lyon Canal Co. v. Catlin Canal Co.*, 642 P.2d 501, 509 (Colo. 1982); *In re Application for Water Rights of Certain Shareholders in the Las Animas Consol. Canal Co.*, 688 P.2d 1102, 1107 (Colo. 1984); see also VRANESH, *supra* note 20, at 285-87; Barton H. Thompson, Jr., *Institutional Perspectives on Water Policies and Markets*, 81 CAL. L. REV. 673, 731-739 (1993). Thompson explores in detail the problematic features of this capacity and its possible abuse.

262. See VRANESH, *supra* note 20, at 278-82. Colorado law at present acknowledges only common ditches and mutual ditches as forms of organization for member-owned irrigation systems. Formal recognition of a *acequias* as a distinct category of water institution with rules of governance and control over water distribution appropriate to *acequia* functioning would remedy the difficulties created by the poor fit between the forms of organization now recognized by law and the operation of *acequia* systems.

in-common among ditch members.²⁶³ Water rights holders are thought of as being able to sever their ties to the ditch at will with no obligation to the ditch or its water rights holders for injuries that might be caused by abandoning the ditch and adopting alternative means of water diversion not dependent on the ditch delivery.²⁶⁴ Further, the law that protects third parties from alterations in the conditions of flow existing at the time of the establishment of their water rights seems not to operate to protect rights holders along common ditches from changes in the condition of flow along the ditch.²⁶⁵

The imposition on unincorporated community *acequias* of the no-duty rules applicable to unincorporated joint ditches would be singularly inappropriate. Like mutual ditches, community *acequias* are communal undertakings created and maintained by the investment of their members, who are participants in a shared regime of managing and maintaining water flows. A close reading of *Brighton Ditch Co. v. City of Englewood*, the leading Colorado authority for the absence of mutual duties among water users sharing a common ditch, makes plain that the absence of mutual duties in Englewood is based on the absence of evidence of enduring reciprocal obligations.²⁶⁶ Where there is evidence of express contract or even of a long-continued custom of limiting the exercise of individual water rights in the interest of common ends, a basis exists for enforcing reciprocal obligations and expectations with respect to water use.²⁶⁷

The rationale for the enforcement of mutual expectations regarding water flow conditions in an irrigation system constructed and maintained through common effort is not limited to formally incorporated mutual ditches. The rationale for protecting such promises is the desirability of investment in user-owned water systems that allow users to build enforceable networks of reliance and of mutual expectation.²⁶⁸ Those qualities of commitment define the customs of community *acequias* and the relations of *parciantes* to each other. The

263. *Brighton Ditch Co. v. City of Englewood*, 237 P.2d 116, 120–21 (Colo. 1951); VRANESH, *supra* note 20, at 279–80.

264. VRANESH, *supra* note 20, at 279–80.

265. *Id.*

266. *Brighton Ditch Co.*, 237 P. 2d at 121.

267. *Id.*; *cf.* *Strole v. Guymon*, 37 P.3d 529, 532–33 (Colo. Ct. App. 2001).

268. *Fort Lyon Canal Co. v. Catlin Canal Co.*, 642 P.2d 501, 509 (Colo. 1982); *Wadsworth Ditch Co. v. Brown*, 88 P. 1060 (Colo. 1907).

mutual ditch is a product of the law's decision to protect water users' investment in their own natural resource commons, embodied in the ditch and in the ditch rules. *Acequias* and their users, whether or not the *acequia* is incorporated as a mutual ditch, should have the legal right to challenge exercises of water rights, including proposed transfers, whenever necessary to protect the conditions of flows on which the *acequia* system depends.

For those *acequias* formally organized as mutual ditches, the problem is the poor fit between voting rules for mutuals and the principles of *acequia* governance. *Acequia* rights holders are strongly committed to *acequia* governance grounded in one landowner, one vote.²⁶⁹ The voting structure and share distribution within mutual ditches is based proportionally on water rights serviced by the mutual ditch.²⁷⁰

The San Luis People's Ditch offers an example of the tension that can result when standard form mutual ditch governance rules are applied in an *acequia* environment. When the San Luis People's Ditch was incorporated in 1966, it adopted a standard set of mutual ditch bylaws. The adoption of those bylaws was contentious because they contained voting provisions that required that votes be apportioned on the basis of the number of shares each *parciante* owned in the mutual ditch, a number based on their respective numbers of irrigated acres. These standard and obligatory voting provisions did not reflect the established practice of one *parciante*, one vote, especially for the election of the *mayordomo* and the ditch commissioners. The new voting procedures were perceived by the *parciantes* as inconsistent with a governance structure under which the *mayordomo* and the *comisionados* were obliged to be as responsive to the concerns of small holders as to those of large holders.

After the adoption of the mutual ditch bylaws, the San Luis *parciantes*, as required by law, cast their ballots for *mayordomo* and for ditch commissioners on the basis of the number of shares held in the ditch, but only after an extended informal negotiation process intended to produce a consensus as to who the *mayordomo* and *comisionados* should be. A highly social and discursive process of informal negotiation was

269. See *supra* text accompanying notes 197–199.

270. See VRANESH, *supra* note 20, at 282–85.

used to mediate a hostile formal voting structure. In the end, the election of *acequia* leadership conformed to essential elements of *acequia* governance including consensus and equality among *parciantes*. On other matters which are brought to a vote and where the law of mutual ditches seems less insistent, the San Luis People's Ditch has maintained the one *parciante*, one vote structure. These include issues of maintenance and operation of the ditch and matters of broad policy.

It has sometimes been the case that newcomers to the ditch have resisted the informal selection process of ditch leadership, and insisted that voting on all matters be based on shares in the ditch.²⁷¹ Such insistence on the formal rules is within their rights, and illustrates pointedly the vulnerability of a customary normative order in the face of incompatible positive law. What is most acutely needed in this setting is a formal recognition by the law that *acequias* should have the capacity to adopt governance structures, including alternative voting structures, consonant with their traditions and customary practices.²⁷² All that is required is a clear statement that the law views *acequias* as a singular form of mutual ditch entitled to adopt appropriate variant voting rights structures.

C. Watershed Protection Through Local Self-Management

The ability of the *acequias* to protect and improve conditions of water flow in their watersheds is critical to their survival. Community-based watershed management is naturally a contentious matter, however. There is the concern that a given community may lack the capacity to engage competently in the tasks of water management. There is the additional concern that the community's vision of how the watershed should be managed will not correspond with the public interest.

271. See Gallegos, *Acequia Tales*, supra note 13, at 238–39.

272. New Mexico's statute governing *acequia* elections provides for alternative methods by which to calculate interests in the *acequia* for purposes of determining voting procedures. Voting in ditch elections can be conducted on a one user/one vote system, as well as others, including proportionality of water rights. *Wilson v. Denver*, 961 P.2d 153 (N.M. 1998) (interpreting N.M. STAT. ANN. § 73-3-3 (Michie 1978)).

The recent Colorado Supreme Court ruling in *Lobato v. Taylor*,²⁷³ restoring the use rights of the community to the historic common lands of the Sangre de Cristo Land Grant, demonstrates the importance to the future of the Culebra *acequias* of managing land uses within the watershed consistent with *acequia* functioning. The 77,000 acre Taylor Ranch was part of the historic commons of the community, and its passage into private ownership in the nineteenth century give it the distinction of being a privately-owned watershed critical for the survival of the oldest adjudicated water rights in Colorado, the Culebra *acequias*. The Colorado Supreme Court, in its ruling, restored the use rights of the land grant heirs to graze their livestock, collect fuel wood, and cut timber.²⁷⁴ As a result of the decision, it will be necessary to establish institutional arrangements for local co-management of the ranch property by the owners of the land and by the members of the community who share usufructuary rights in those lands. Modes of access must be negotiated and regimes for exercise of the grazing, timbering, and fuel wood rights restored to owners of the lands first settled by Carlos Beaubien's grantees must be administered.

A critical task will be the establishment of an institution for co-management that will be effective in managing and conserving the restored commons and in managing that commons with an eye to the functioning of the watershed as a natural water delivery system. There exists a San Luis Land Rights Council, but there are at least three reasons why the *acequia* governing bodies are a better choice as representatives of the community of usufructuary rights holders in co-managing access to and use of commons resources. The institutions of *acequia* governance have a long history of managing common pool resources with one objective: watershed protection. Culturally, the *acequias* are the only institution with established practices to sustain local participation in collective decision-making consistent with local values. Politically, the *acequias* are the only institution that can organize this participation in an equitable and democratic manner. The heritage and experience of the *acequias* as a watershed democracy offers the best prospect for equitable and

273. No. 00SC527, 2002 WL 1360432 (Colo. June 24, 2002).

274. *Id.* at *1.

sustainable co-management of the restored commons of the Sangre de Cristo Land Grant.

In the spring of 1995, shortly after commercial logging operations began on the Taylor Ranch, La Sierra Foundation of San Luis and the San Luis *acequias* pressured the Costilla County Commission to develop a land use code to regulate logging and its impact on the watershed. The code language put forward by the *acequias* and by the foundation included a unique watershed protection ordinance, ultimately adopted in 1998 that called for the application of the principles of conservation biology to watershed management.²⁷⁵ The adoption of the land use code through House Bill 1041 and the watershed protection ordinance were a demonstration of the commitment of the *acequias* to accepting the opportunities for local stewardship of watershed resources encouraged by House Bill 1041.²⁷⁶ In 1995, acting for the *acequias*, La Sierra

275. See Costilla County Land Use Code, art. 5, Zoning District Regulations at § 40ff. The version cited is published in the local legal newspaper, COSTILLA CTY. FREE PRESS (Colo.), Jan. 2, 1998, at 50:1. Article 5 provides for the establishment of ten zoning districts including a watershed protection overlay district (WPD). Section 5.3 defines the WPD's Purpose and Specialized Submittal Requirements. These establish two sets of regulatory values: (1) value of watershed protection for drinking water, agricultural production, recreation, aesthetic enjoyment, wastewater treatment and other activities, *id.* § 5.3.a; and (2) value of watershed protection for wildlife and its habitat. *Id.* § 5.3.b. Both of these values are to "be maintained and enhanced to protect the diversity of wildlife species and to promote the health, welfare, and prosperity of present and future inhabitants. . . ." *Id.* § 5.3 at 11. The WPD includes five sets of regulations: (i) prohibiting significant degradation of the "watershed environment," (ii) protecting watershed from pollution, (iii) requiring harmony with wildlife habitat, (iv) preserving the natural environment, historical and cultural resources, and aesthetics of the watershed; and (v) ensuring compatibility with watershed protection values. These regulations were first proposed by a team of experts brought together in 1996 by *La Sierra* Foundation, the Costilla County Conservancy District, and the *Acequia* Advisory Board (precursor of the Colorado *Acequia* Association). See Robert Curry, Devon Peña et al., Critical Analysis of Montana Best Management Practices and Sustainable Alternatives (Oct. 15, 1996) (Technical consultant report presented to the Costilla County Land Use Planning Commission, San Luis, Colorado) (on file with the author).

276. Colorado, through House Bill 1041, has created a structure for significant participation by local government bodies in the planning and permitting of land uses that might pose threats to natural, historical or archaeological resources of statewide importance. See COLO. REV. STAT. §§ 24-65.1-107 to -202 (2001). The capacities created for local government through House Bill 1041 are focused, however, on a defined range of activities that embrace major public works, the siting and development of new communities, and, through the capacity to challenge the efficient utilization of water resources by municipal and industrial water projects, efforts to transfer water outside of a

Foundation also developed a ballot measure to establish a Regional Service Authority²⁷⁷ that could function as a taxing authority, issue bonds and undertake indebtedness to support land acquisition and restoration to improve watershed functioning.²⁷⁸ More recently, the Costilla County Commission, under the leadership of Commissioner Joseph C. Gallegos, has developed a ballot proposal to establish the Rio Culebra Parks and Recreation District, again to create a public entity that can generate tax revenue, undertake indebtedness, and pursue funding for the purchase and restoration of land on the Taylor Ranch critical to protecting the watershed. The leaders of the Culebra *acequias* have been persistent in developing a sound vision of watershed management and in working to build institutional capacities and community commitment to improve and protect watershed and landscape values in the Culebra.

Finally, in 1998, the CAA decided to initiate planning for a land and water trust. This strategy was partly a logical extension of the earlier efforts by La Sierra Foundation to acquire the Taylor Ranch in a partnership with Colorado. However, the *parciantes* wished to focus on watershed management instead of land grant rights. They hoped to protect the watershed from the headwaters zone of the uplands

local government's jurisdiction. See COLO. REV. STAT. § 24-65.1-203 (2002). The great value of these capacities in the settings defined by the statute is demonstrated in *City and County of Denver v. Bd. of County Comm'rs*, 782 P.2d 753 (Colo. 1989) (upholding the requirement that the City and County of Denver obtain permits from Grand County to construct and operate water collection and diversion facilities to be located within local government's jurisdiction), and *Colo. Springs v. Bd. of County Comm'rs*, 895 P.2d 1105 (Colo. Ct. App. 1994) (upholding county board of commissioners' denial of permits for the major extension of a water collection system based on cities' failure to satisfy county regulatory criteria for wetlands protection and nuisance abatement). For a consideration of House Bill 1041 and its effect on water development and water rights transfers, see Geoffrey M. Craig, *House Bill 1041 and Transbasin Water Diversions: Equity to the Western Slope or Undue Power to Local Government?*, 66 COLO. L. REV. 791 (1995). House Bill 1041 recognizes the principle of local control over developments affecting local and regional watershed functioning, but its effectiveness as a tool for preserving and restoring the functioning of watersheds as natural systems is limited. The statutory list of the activities subject to its reach does not include smaller scale residential development, timber harvest, or mining activity impact on protected natural, archaeological or historic resources of statewide importance.

277. COLO. REV. STAT. §§ 32-7-101 to -146 (2002).

278. The statute enumerating the powers of Regional Service Authorities specifically mentions their authority to make regulations to protect land and soil and to engage in planning and preservation efforts. COLO. REV. STAT. §§ 32-7-111(q), 32-7-114.

down to the farms, open space, and wildlife habitat of the riparian bottomlands. This strategy recognizes the twofold nature of the problems that threaten the future of the Culebra *acequias*. The first threat involves ecologically harmful land use practices like logging and mining in the upland headwater zone. *Parciantes* know from local experience that degradation of the upper watershed has in fact increased soil erosion and sedimentation in the ditches. They observe changes in the behavior of the watershed and attribute those changes to the clearing of the canopy and to resulting alterations to the snowmelt cycle, shortening the length of the irrigation season. A second threat stems from a growing real estate market for acreage in the riparian bottomlands that are the heart of the *acequia* farming landscape.²⁷⁹ According to the CAA, “[A] land and water trust [is essential] in order to more effectively protect and preserve the natural assets controlled by Hispano farmers and ranchers.”²⁸⁰ The CAA has long struggled to protect the headwaters in the Culebra watershed on the Taylor Ranch property. The establishment of a land and water trust is seen as the vehicle that will allow the Culebra *acequias* to more effectively control the destiny of their own watershed and prevent outsiders from gaining control of *acequia* farm land in order to transfer water from the *acequias*.

CONCLUSION

Could there be a contemporary approach to water management that takes advantage of *acequia* institutions as a vehicle for protecting the flourishing of watersheds? A law of “*acequia*-amenable valleys?” The effect of the *Coffin* decision’s vigorous extirpation of important parts of Colorado’s water history has been to create a substantial conceptual barrier to recognizing traditions other than prior appropriation as either legitimate or as true to place. Perhaps one of the most harmful aspects of the widely held view that Colorado water law was at all times defined only by a commitment to prior appropriation is its marginalization of other traditions. And yet other water landscapes existed, and survive, more or less intact, within the

279. For discussion of the globalization of property ownership in Costilla County, see Peña, *Identity and Place*, *supra* note 238, at 146–47.

280. COLORADO ACEQUIA ASSOCIATION, *supra* note 214 at 1; *see also* Peña, *Identity and Place*, *supra* note 238, at 161–63.

context of the prevailing legal order. The effort to develop a more refined water policy means that we cannot afford to marginalize as quaint or as primitive watershed management traditions that are long-established and that might serve us well were they incorporated into and protected by modern water law. Variant and useful water institutions that could not be a part of the legal universe of the *Coffin* era can perhaps be a part of our own.

Entering the town of San Luis from the south, from the direction of the New Mexico state line, the traveler will see on the right hand side of the road, just north of the Culebra River bridge, a state historical marker that notes that the water rights of the *parciantes* of the San Luis People's Ditch constitute the earliest decreed rights of any water rights in Colorado. Indeed they are. But the marker is misleading, allowing the reader to infer a continuity between original *acequia* water institutions and those that arose under the doctrine of prior appropriation. The events leading up to and following the absorption of the Culebra *acequias* into an appropriative rights landscape instead formed a chapter in the consolidation of Colorado's law of prior appropriation. The shift to an appropriative system by the *acequias* marked a definitive break with the earlier body of law in which *acequia* rights had been situated. The learned conformity of the Culebra *acequias* to the ways of Colorado prior appropriation law and the willingness of *acequia* rights holders to pursue advantages arising from that law should not obscure the defensive, reactive posture of the *acequias* to the new legal regime. Indeed, the *parciantes* continue to see the watershed and the appropriate use of water in terms derived from an earlier legal tradition. The persistence of *acequia* norms in our own time may provide a vehicle for redeeming some of the potential harm of severing water from landscape and social context.