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American Indian Culture and Research Journal

Title

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Permalink

<https://escholarship.org/uc/item/42b9k7qr>

Journal

American Indian Culture and Research Journal , 33(1)

ISSN

0161-6463

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Publication Date

2009

DOI

10.17953

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“Left High and Dry”: Federal Land Policies and Pima Agriculture, 1860–1910

DAVID H. DEJONG

The Akimel O’odham, or “River People” (Pima), have lived in the middle Gila River Valley for centuries, irrigating and cultivating the same land as their Huhugam ancestors did for millennia. This history of agriculture is part of the social, economic, and cultural fabric of the Pima, who benefited from a sufficient and fertile land, a steady and reliable supply of water, and favorable physiographic conditions to produce an abundance of food and fiber crops. These conditions continued until upstream diversions from the Gila River by settlers in the latter 1860s.

The Pima economy depended on the waters of the Gila River and its tributaries. Following the *himdag*, or the cultural ways, of the Huhugam, the Pima exercised sovereignty over their land, enabling them to remain economically and politically independent for generations. They were, as sixty-five-year-old Pima elder George Pablo noted in 1914, “a self-supporting people” who raised crops “in abundance.”¹ This independence changed to dependence in the 1860s, when federal land policies encouraged and fueled settlement in the Gila River Valley. Emigrants then diverted the limited water supplies from the river upstream of the Pima villages, leaving the Indians, in the words of one Pima elder, “high and dry.”²

The Huhugam built the earliest canals along the Gila River. Many of the historic canals constructed by the Pima followed these prehistoric alignments and irrigated lands in the historic breadbasket of the Pima villages.³ The Pima cultivated these lands since before the arrival of Spanish conquistadors in the sixteenth century, with the period between the late 1700s and the 1860s representing the pinnacle of Pima agriculture before upstream water deprivation destroyed their agricultural economy (see fig. 1).

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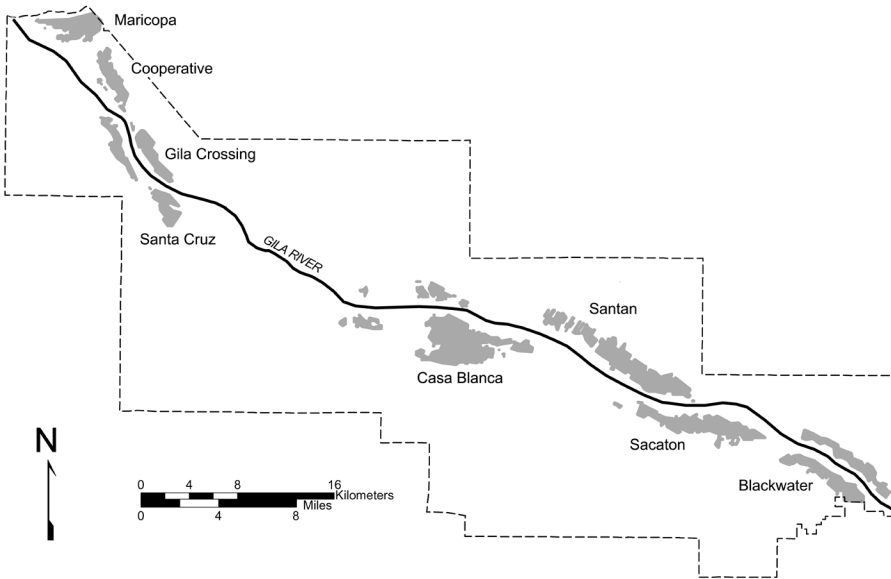


FIGURE 1. *Historical geophysical features of the Gila River Indian Reservation.*

As upstream diversions (and cessation of Apache hostilities) changed Pima economics in the 1860s, the Indians constructed new canals corresponding with the establishment of dispersed settlements, upstream and downstream of the main corridor of Pima villages. Some Pima relocated to the Salt River Valley, while others reestablished old settlements near Blackwater, resulting in new irrigation canals on both sides of the Gila River. In the 1870s, the Pima established the new upstream village of Hashan Keik (just upstream of Sacaton) and constructed additional ditches. On the north side of the river, they established the village of Santan and used water from the newly constructed Lower Santan and Santan Indian canals to irrigate new fields. With old ditches and canals abandoned in the Casa Blanca district due to water loss and geomorphic changes in the Gila River, the Pima constructed new canals or rehabilitated existing canals in an effort to maintain their economy. Other villagers moved downstream and established new villages in Santa Cruz, Gila Crossing, Cooperative, and Maricopa, and constructed new ditches to irrigate smaller parcels of land.

LAND POLICIES AND PIMA AGRICULTURE IN THE NINETEENTH CENTURY

In the early nineteenth century, a remarkable, although ephemeral, economic transformation occurred among the Pima. Continuing their irrigated agricultural economy bequeathed to them by their Huhugam ancestors, the Pima leveraged a favorable geopolitical setting into a viable and sustainable

agricultural economy that resulted in economic prosperity. Accordingly, they sought inclusion in the emerging American economy of the Southwest and by the late 1840s were an economic force in the middle Gila River Valley. Parlaying their economic savvy stimulated by Spanish, Mexican, and American citizens in the latter eighteenth century and first decades of the nineteenth century, for less than five decades the Pima enjoyed economic success, producing food and fiber crops for emigrant trains and military expeditions alike. Moreover, crops from their fields provided a source of food for the Mexican presidio in Tucson, as well as the American mining districts near Prescott.

Emigrant settlement above the Pima villages eventually deprived the Indians of the water needed to sustain their economy. This undermined their agricultural economy and by the 1890s, they faced the pangs of hunger and poverty and became dependent on the US government for subsistence. The demise of their economy, however, resulted from complex and complicated issues. Although American settlers sought, and federal policies worked, to “bring Indian resources, land and labor into the market,” neither settlers nor federal policies encouraged Indian participation in the national economy.⁴ Despite federal policies that encouraged Indian agriculture, political rhetoric rarely matched reality in Indian country, even in those environments in which indigenous economies were based on agriculture.

This article argues that the Pima had a well-established and successful agricultural economy that was destroyed by the effects of federal land and federal Indian policies. The rhetoric of agrarian assimilation underlying federal Indian policy failed to match the reality of the Pima, and federal land policies further eroded the application of such policies. Rather than enabling the Pima to participate in the national market economy, the effects of economic liberalism forced the Indians into a dependent state that undermined their economy and economic well-being. Economic liberalism as a socioeconomic and political philosophy used by the United States to foster settlement of the West enabled settlers, speculators, and politicians to manipulate its application to their advantage and dispossess the Indians of their resources.⁵

FEDERAL ECONOMIC LIBERALISM

In the American West, water is the key to economic sustainability. Although historically our understanding of the West was predicated on the theory that the federal government took a *laissez faire* approach to settlement and the utilization of water resources, there was a strong federal presence.⁶ Employing liberal land and resource policies, the federal government directed the development and exploitation of the West and its resources. These policies facilitated settlement and represented a strong federal presence in shaping not only the culture of the West but also its very development. Because these policies were economic in nature, they are as a whole referred to as economic liberalism.⁷

Born in the age of enlightenment, economic liberalism was the guiding principal for national expansion in the nineteenth century. By the 1880s, it was supported by scientific racism and bolstered by anthropologist Lewis

Henry Morgan's development of the seven stages on the civilization-savagery continuum. Morgan relegated American Indians to the low end of savagery, just above Africans.⁸ The American scientific academy institutionalized this Darwinian transformation of the American Indian in the latter nineteenth century and poignantly exhibited it at the 1915 Panama-Pacific International Exposition in San Francisco, where James Earle Fraser's *The End of the Trail* served as a not-so-subtle metaphor of American Indians.⁹

Federal policies in the nineteenth century did not support yeoman Pima (or American Indian) agriculture but focused on promoting non-Indian settlement and agriculture in central Arizona to the disadvantage of Indian agriculturalists.¹⁰ The broader settlement of the American West and the concomitant American Indian displacement from the land resulted from this government philosophy, with social and scientific theory influencing the federal policies that shaped social thought and action in dispossessing tribal nations such as the Pima of most of their water resources.

With the founding of the United States, national policies toward tribal nations centered on socially and culturally molding American Indians into self-sufficient farmers in the Euro-American model.¹¹ Treaties with tribal nations frequently contained provisions for agricultural goods and equipment. In the 1790 Creek Nation treaty, for instance, the United States encouraged the "Creek Nation . . . to become herdsmen and cultivators" and agreed "from time to time [to] furnish gratuitously . . . useful domestic animals and implements of husbandry."¹² Furthermore, in the 1825 Osage treaty the United States agreed to provide "farming utensils . . . and shall employ such persons to aid the [Osage] in their agricultural pursuits."¹³ The yeoman Jeffersonian farmer exemplified American agrarian idealism. Inherent in this idealism was the belief that all tribal economies were based either on hunting or gathering. Although generally true of Western tribes, the Pima enjoyed a successful agricultural economy before the effects of economic liberalism crippled it.

American agricultural idealism finds its roots in the ancient Greeks and Romans and is traced to the biblical command of subduing and cultivating the earth.¹⁴ European theorists, such as Swiss jurist Emmerich de Vattel, adopted this idealism and represented agriculture as "the most useful and necessary" of the arts and an endeavor in which civilized nations were obliged to engage.¹⁵ Following de Vattel's reasoning, societies naturally progressed from transient herding (barbarism) to a state of gathering to that of hunting before advancing to cultivation of the soil, which marked a society's entrance into the realm of civilization. This reasoning influenced colonial and federal Indian policies.

In North America, the yeoman landowning farmer symbolized political and economic independence and decency. Colonial agricultural clubs spread this gospel of yeoman farming, viewing those who cultivated the soil as "heroic figure(s) of the idealized frontier . . . armed with that supreme agrarian weapon, the sacred plow."¹⁶ Thomas Jefferson opined that those who tilled the soil were "the chosen people of God" and "wedded to [a nation's] liberty and interests, by the most lasting bonds."¹⁷ Jefferson's views, influenced by natural law theory, found fertile soil in agrarian idealism and revolutionary

egalitarianism and helped canonize the social theory that, in order to survive, American Indians must “advance toward civilization” through agrarian social development. Congress seeded these theories by appropriating \$15,000 to encourage Indian agriculture in the 1802 Trade and Intercourse Act.¹⁸ These funds became permanent with the enactment of the 1819 “Civilization Act.”¹⁹ The theory that American Indian civilization could not “exist without cultivation of the soil” was the basis of federal Indian policy by 1830.²⁰

The most far-reaching aspect of federal action in the West was the 1862 Homestead Act, which, with its companion legislation found in the Timber Culture Act (1873) and Desert Land Act (1877), influenced how and where the West was settled. Social reformers envisioned these acts supporting a “Jeffersonian utopia of small farming.”²¹ The intent was to carve up the West into parcels of land, sell them for a nominal fee, and enable settlers to develop the nation’s resources. In short, these laws provided a framework and vehicle for populating the West by throwing it open for settlement. Nevertheless, although shaped by American social thought and action and serving as a safety valve for an overpopulated east, these liberal policies stimulated fraudulent and dummy land entries in Arizona that left large blocs of public domain in the hands of land speculators.²² Rather than facilitate individual landownership, these federal land laws frequently “promoted monopoly and corruption,” especially in and around the mountain west river valleys.²³

As settlers quickly discovered, the real wealth of the West was its life-giving streams. Although the Homestead Act and the Desert Land Act were part of the larger social experiment of transforming the West into a series of yeoman farms, the lack of precipitation necessitated an alternative means of supplying water to the land. Westerners, led by Nevada Senator Francis Newlands, advocated federal support for reclamation projects. The US Geological Survey, then surveying potential western water development, advocated “single use resources [with] many potential uses,” including reclamation. The older, more established Army Corps of Engineers “placed upon private landowners” responsibility for reclamation, holding to a more conservative orthodoxy of water use and development.²⁴

By the closing years of the nineteenth century, the federal government asserted control of western water independent of state law. The Corps of Engineers controlled the construction of dams on navigable rivers, and in 1898 Congress affirmed federal authority over all water passing through national forests if it could be used for “domestic, mining, milling or irrigation” purposes. The following year, the US Supreme Court opined in *U.S. vs. Rio Grande Dam and Irrigation Company* that if any part of a river, including its tributaries, were used for transportation it fell under federal auspices.²⁵

As importantly, in the Desert Land Act Congress subjected to prior appropriation all public land titles as long as such rights did not include “surplus waters over and above such actual use.”²⁶ States might distribute water, but the federal government retained all of its rights.²⁷ By the turn of the twentieth century, Congress was primed for a national reclamation policy that facilitated land development. With the ascendancy of Theodore Roosevelt to the presidency, a progressive leader occupied the White House. Despite tepid

eastern support, backing for reclamation was assured, and Congress enacted the National Reclamation Act on 30 June 1902.

The passage of the Reclamation Act was one of the more decisive laws in the history of the American West, initiating an era of federally subsidized reclamation projects. Although ostensibly designed to complement land laws and foster yeoman settlement of the West, powerful and politically well-heeled speculators, government bureaucrats, and congressional allies asserted control over the region's water resources and manipulated the act to their benefit. In the initial years of the twentieth century, western water advocates strengthened their position by forming political alliances to determine and manipulate water policy in the West further.²⁸ This alliance consisted of key congressional committees and legislators, executive agencies (that is, the Reclamation Service and the Army Corps of Engineers), and special interest groups (water users in the West). This "iron triangle" influenced public policy to its own advantage, and, rather than benefit yeoman farmers, the Reclamation Act became part of an overall "incongruous land system" that encouraged speculation.²⁹ Even though the economy of the West was affected, the Reclamation Act did not fulfill its purpose of fostering yeoman farming.³⁰

Although iron triangles influenced the development of Western land and resource policies, Congress used its constitutional authority to direct federal Indian affairs.³¹ The 1790 Trade and Intercourse Act authorized the United States to interact lawfully with tribal nations by asserting authority to regulate Indian trade. Federal treaties with tribes further advanced the goal of pastoralizing American Indians.³² The territorial expansion of the United States resulted in amendments to the Trade and Intercourse Act. In 1851 and in 1856 an amended act extended federal authority over the Pima villages.

After the Civil War, Congress enacted policies designed to assimilate American Indians, with the 1887 General Allotment Act providing statutory authority for the Indian Service to divide tribal land by allotting them in severalty to American Indians. This era of land severalty represented an extraordinary attack on tribal nations and was another example of economic liberalism. The US Supreme Court supported such policies. In *Lone Wolf v. Hitchcock* (1903), the Supreme Court upheld federal authority to dispose of unallotted, or "surplus," lands without tribal consent.³³ Nonetheless, the same court recognized tribal resource rights in *U.S. v. Winans* (1904) and *Winters v. U.S.* (1908); the latter upheld tribal rights to water resources.³⁴

Federal land and resource policies became more extraneous with the passage of a western water policy and allotment of Indian lands, which resulted in great demands being placed on tribal lands and resources. Under intense pressure by land-hungry settlers and government agents to part with their land and resources, tribal nations faced a juggernaut of continental imperialism, resulting in the loss of more than 86 million tribal acres between 1887 and 1934.³⁵

The philosophy of economic liberalism underlay federal land and Indian policies in the West and enabled speculators, settlers, and politicians to undermine Indian economies and access to resources, resulting in economic dependence by Native Americans rather than their participation in the

national market. Partly a result of misunderstanding the West, as well as a misapplication of land and resource policies beyond the 100th meridian, the political philosophy of economic liberalism undermined the Pima economy and favored non-Indian settlement and economic development over that of American Indians. Although there was an element of racial privileging in the enforcement of Western land and resource policies and in the application of economic liberalism, the exercise of this philosophy ignored the planning and foresight advocated by John Wesley Powell. Had government officials heeded Powell's advice they might have mitigated some of the malignant impacts (that is, monopolization of water) of economic liberalism on tribal nations.³⁶ Lack of federal foresight and adequate planning compounded federal liberality, with aggressive settlers usurping Pima water and marginalizing the Indians from the national market.

THE GILA RIVER PIMA

Congress established the Gila River Indian Reservation by legislative act in 1859, with seven presidential executive orders expanding the reservation to 371,792 acres by 1915. The reservation varies from three to thirteen miles in width and has a low western gradient of 579 feet. It is composed of a mosaic of agro-environments shaped by precipitation, soil types, geology, drainage patterns, and slope gradients. It is surrounded by low-lying mountains that provided rain runoff that the Pima used to their agricultural advantage for centuries. The mountains, in turn, are surrounded by sedimentary alluvial fans, which emanate from the foothills and coalesce with the lower-lying floodplain along the Gila River. For centuries these physiographic features, including temperature and precipitation, influenced cultural attitudes toward the land. With a mean annual rainfall on the reservation of just 8.37 inches, evapo-transpiration exceeds annual precipitation, necessitating a supplemental water supply to yield adequate harvests.

Descriptions of the Pima's agricultural economy date to 1694, when Jesuit priest Eusebio Francisco Kino described the quality and quantity of cultivated and natural Pima food crops.³⁷ These accounts, supported by eighteenth-century Franciscan priest Pedro Font, advance the assertion that the Gila River fostered the Pima's industriousness and contributed to their hospitable attitude.³⁸ Cultivating food and fiber crops, the Pima developed and sustained a stable economy based on summer cotton, corn, melons, beans, and squashes, as well as winter wheat. The latter, introduced by the Spaniards, became a mainstay of their autochthonous cropping patterns by the 1740s.³⁹ During the eighteenth century, the Pima recognized that the Gila River gave them a level of affluence not enjoyed by other tribes in the region, and by the nineteenth century they were a materially wealthy people.⁴⁰

The Pima did not grow food as a commercial crop until the latter eighteenth century, instead producing sufficient crops for subsistence, limited trading, and seed. Their incorporation of Spanish wheat set the stage for their prosperity in the latter eighteenth and nineteenth centuries. Planted in the fall and harvested in late spring when winter stores were at their lowest,

wheat was a complementary crop planted off-season from the traditional crops of corn, beans, and squash. Wheat provided the people with a balanced food supply and insured a stable economy because it could be stored for long periods.⁴¹ Passing through the Pima villages in the spring of 1774, Spanish colonizer Juan Bautista de Anza Jr. described “fields of wheat . . . so large that, standing in the middle of them, one cannot see the ends, because of their length. They are very wide, too, embracing the whole width of the valley on both sides [of the river].” Pima cornfields were “of similar proportions.”⁴² So great was the Pima’s cotton production that their Sonoran neighbors coveted their excess.⁴³

At the end of the eighteenth century, Pima intercourse with Spain diminished and by the time of Mexican independence in 1821, the Pima engaged in little commerce with Hispanic towns to the south, although they did interact in trade with American fur trappers in the 1820s. The Pima remained “willing to share their food and shelter” with emigrants.⁴⁴ The advent of the Mexican War in 1846 extended this hospitality. That fall, two US military detachments descended upon the Pima villages. In November, General Stephen Austin Kearny led US troops down the Gila and through the Pima villages en route to San Diego. Henry Smith Turner, one of the 120 dragoons forming the column, welcomed the “hospitality and friendship” of the Pima. They were, Turner concluded, “more industrious than I have ever found Indians—they have all the necessaries of life in sufficient abundance, & all produced by their own industry.”⁴⁵

The army of the West camped eight or nine miles above the Pima villages. Once word was dispatched to the villages regarding the friendly nature of the visit, it was only a matter of hours before the camp was filled “with Pimos loaded with corn, beans, honey and zandias (watermelons)” to trade. Although a “brisk trade was at once opened,” when Army scout Kit Carson asked to purchase bread to sustain the dragoons he was informed “bread is to eat, not to sell; take what you want.”⁴⁶

The American troops were struck by the nature of agriculture in the villages, including the draining of the water from the land. “We were at once impressed with the beauty, order and disposition of the arrangements for irrigating and draining the land,” topographical engineer William H. Emory notes. “All the crops have been gathered in, and the stubbles show they have been luxuriant.” Large fields were divided by earthen borders into smaller fields for convenience of irrigating. For fifteen miles downstream, the troops passed over a luxuriantly rich, cultivated land. “The plain,” Emory estimated, extended “in every direction 15 or 20 miles.” Pima farmers drew off the “whole water” of the Gila for irrigation, taking care to return the unused water to the river “with little apparent diminution in its volume.”⁴⁷

Emory concluded the Pima “surpass[ed] many of the Christian nations in agriculture” and were “little behind them in the useful arts.”⁴⁸ They grew “bountiful crops” for their own use, as well as to trade with emigrants.⁴⁹ When 340 tired Mormon troops arrived in the villages from the south six weeks later, a cadre of mounted Pima men met them eight miles from the villages. They came with “sacks of corn, flour, beans,” Henry Standage recalls. They were

“glad to see us, running and taking us by the hand.” Colonel Philip St. George Cooke traded “every spare article for corn,” mustering twelve quarts per animal for the trip to California. The “wonderfully honest and friendly” Pima eagerly traded and sold food crops “for bleached domestics, summer clothing of all sorts, showy handkerchiefs, and white beads.” Sergeant Daniel Tyler opined that the Pima were so industrious, “our American and European cities would do well to take lessons in virtue and morality from these native tribes.”⁵⁰

By the time the California 49ers passed through the villages, the Pima recognized the advantages of participating in the national economy, with the establishment of the Southern Trail through their villages in 1849 proving to be an economic boon. Tens of thousands of emigrants passed through the villages, purchasing or trading for food and forage crops. Although the Pima initially traded food crops for material goods, by 1850 they demanded silver and gold coin, using it to purchase goods directly from merchants in Tucson.⁵¹ Having seen modern American and Mexican farm tools, the Pima sought to acquire such implements so they could more efficiently and effectively cultivate their fields and expand production.⁵²

The opening of the national road through the Pima villages in 1858 further expanded their economy. Although the Pima sold 2,400 bushels of grain in 1858, they constructed new canals upstream of their villages and by 1860 produced more than 171,180 bushels of grain and 222,895 bushels of corn.⁵³ They sought to purchase oxen, mules, and other draft animals, indicating that their mode of agriculture was changing from manpower to animal power. The Pima irrigation system “comprise[d] nearly five hundred miles of well-defined acequias and extend[ed] over a tract of land eighteen miles in length.”⁵⁴

In the first half of the 1860s, the Pima grew and sold most of the wheat and corn for the newly established Arizona Territory, with wheat selling for two dollars a bushel to military contractors, miners in Prescott, and emigrants passing through the villages. The Pima supply of grain was “ample for all the citizens and a portion of the troops at present in Arizona.” Their surplus grain and corn, Pima farmer Henry Austin observed in 1914, “used to fill up all [the trader’s] store houses.”⁵⁵ They used the proceeds to purchase clothing and other “articles as they require” in Tucson or from local traders.⁵⁶ When Joseph Pratt Allyn visited the villages in the summer of 1864, he estimated that Pima grain production had quadrupled since 1859.⁵⁷

The Pima were so prosperous that in 1866 they informed Indian agent M. O. Davidson that they “want[ed] no aid at the hands of the Government, except such as will promote their education . . . in the mechanic arts, and agriculture.”⁵⁸ When C. H. Lord, deputy agent in Tucson, visited Pima Chief Antonio Azul and the village chiefs in May, he distributed additional agricultural implements and noted that there were “many well-to-do farmers” among the Pima. Lord estimated the Indians would have more than 1.5 million pounds of grain to sell in the spring.⁵⁹ The Pima expanded their area of cultivation again, reclaiming previously irrigated land above the reservation in the Blackwater area. In 1866, they sold more than two million pounds of wheat, in addition to corn and beans.⁶⁰

The first sign of trouble came in 1863 when Arizona Superintendent of Indian Affairs Charles Poston notified federal officials of the three most important considerations facing the Pima: “Water! Water!! Water!” Settlers were arriving in the Gila Valley and settling on the land under the provisions of the Homestead Act. This was problematic to Poston, who recognized that, should settlement above the villages occur without protecting Indian water, trouble would result.⁶¹ By 1868, forty-two individuals filed Homestead entries for 160 acres each directly above the reservation. Florence soon boasted of a population of 268 and nearby Adamsville was home to more than 400.⁶² A year later, settlers in Florence intentionally diverted and wasted river water to deprive the Pima of the water needed to irrigate their crops.⁶³ The Pima reciprocated by threatening to drive the settlers out of the valley.⁶⁴

Lieutenant Colonel Roger Jones, assistant inspector general for the US Army, raised the specter of war if Pima water concerns remained unaddressed. More settlers arrived each year and Jones predicted that in a low-flow year Pima crops “would be ruined for want of water.” The continued waste of river water above the villages by settlers would “inevitably result in a collision.”⁶⁵ In June 1869, Interior Secretary Jacob Cox requested that the US Army remove intruders from the reservation and “protect [the Indians] in their occupancy of the land, and in the right to the waters of the Gila for purposes of irrigation.”⁶⁶ Although the military protected Pima land and water from encroachment, the federal government continued to encourage settlement in complete disregard of Pima rights.

The trouble predicted by Poston arrived in the fall of 1869. Following a disastrous flood that destroyed three Pima villages, the Sacaton and Casa Blanca trading posts, and the Casa Blanca flour mill, and a poor crop in 1869, the Pima openly resisted the settlers who encroached on their ancestral land above the reservation. A detachment of troops from Camp McDowell was sent to “quell the disturbance.” In the fall, four hundred Indians, mainly Pima, left the reservation and claimed the fields of upstream Mexican settlers near Adamsville.⁶⁷ Another group of Pima took up land above the reservation in an attempt to protect the headwaters of the Little Gila River, and a third group clashed with settlers in October. Diminished rainfall in 1870 left Pima crops in ruin, with Chief Antonio Azul publicly admitting that he could no longer preserve order among the Pima.⁶⁸ Settlement of the Upper Gila Valley beginning in 1872 added to the water users above the villages, leading the federal government to seek removal of the Pima to Indian Territory.⁶⁹

Diminished rainfall in 1875 and continuing through 1883 added to Pima hardships. In virgin flow conditions they dealt with drought by utilizing the low water flow to irrigate their crops. As upstream homesteading increased, this flow diminished and made ineffective the Pima irrigation system. By 1877, five hundred Pima (and some Maricopa) supported themselves off the reservation on “good land and plenty of water” in the Salt River Valley, with an additional two hundred families living above the reservation on the Gila River. Alarmed residents petitioned the Indian Office and Congress to return all the Indians to the Gila River Reservation. When Commissioner of Indian Affairs Ezra Hayt urged Pima agent John Stout to comply, the agent

objected that to do so would cause “great suffering.” By the winter of 1878, the Pima irrigated less than one-quarter of their fields, with no harvest projected below Sacaton.⁷⁰

By 1880, the surface flow of the Gila River was insufficient to sustain the Pima economy, with some families lacking even domestic water. For the first time the US government purchased wheat for “destitute Indians.”⁷¹ Sixty-seven-year-old Pima elder Chir-purtke described how his people “were prosperous and contented” before “white people began to take water from the river.” The first diversions of water for irrigation purposes were so small, Chir-purtke continued, “we hardly noticed it, but they gradually took more out each year till we noticed our loss by not being able to irrigate all our fields. We were forced to abandon them little by little, until some twenty years ago [1894] when we were left high and dry.” Pima farmer Juan Lagons was more forthcoming, lamenting “that civilization did us more harm than good.”⁷² The Pima had “ample lands” but lacked water and feared the destruction of their “pride as independent and self-supporting people.”⁷³

Between 1889 and 1901, upstream settlers added 14,154 acres of new irrigated farmland, representing 86 percent of the new land developed along the Gila River, with the 2,116 Pima acres representing new (largely downstream) land put into production after the failure of water on their traditional farmlands in and around Casa Blanca (see table 1). Antonito Azul lamented these losses, explaining to Charles Southworth in 1914 that he and his father, Chief Antonio Azul, “abandoned about 123 acres . . . because there [was] no water to irrigate with.”⁷⁴ What water remained in the river increasingly failed

Table 1
New Acres with Priority Rights to Water, 1889–1901

Year	Florence–Casa Grande	Safford/Solomonville	Pima Reservation
1889	205	1,919	130
1890	143	865	233
1891	974	888	110
1892	400	603	105
1893	326	372	105
1894	192	240	105
1895	740	568	473
1896	310	993	90
1897	0	1,110	90
1898	38	790	90
1899	5	690	90
1900	0	1,074	340
1901	40	668	155
Total	3,373	10,781	2,116

Source: “Gila River Priority Analysis, Water Distribution Chart #1 and #2,” United States Indian Service, Irrigation, 20 January 1926.

Table 2
Pima Grain Production, 1887–1904

Year	Grain (bushels)	Corn (bushels)
1887	105,000	5,000
1888	110,000	2,700
1889	144,000	3,600
1890	114,000	3,000
1891	50,000	—
1892	110,000	5,500
1893	76,000	3,000
1894	62,000	0
1895	70,950	500
1896	51,250	0
1897	51,250	0
1898	117,819	0
1899	34,488	1,072
1900	12,980	180
1901	25,417	36
1902	16,955	18
1903	42,051	18
1904	12,000	500

Source: Annual reports of the Pima Agency, 1888–1905.

to reach the reservation or arrived in short ephemeral floods. Seepage into the sandy alluvium claimed more water than what arrived on the reservation.⁷⁵ Summer crops failed eleven times between 1892 and 1904, and winter crops failed five times between 1899 and 1904, marking the years between 1892 and 1904 as the years of starvation. Although the Pima grew 8,640,000 pounds (144,000 bushels) of winter grain in 1889, they grew just 720,000 pounds (12,000 bushels) in 1904, as shown in table 2. Conditions were so serious that Indian inspector William Junkin recommended the purchase of flour and bacon for “destitute Indians.”⁷⁶

Every year from 1892 to 1904, the Pima grew insufficient crops to sustain themselves. Agent Cornelius Crouse estimated that one thousand Indians would raise no grain at all in 1893 and asked for departmental authority to purchase three hundred thousand pounds of wheat for subsistence and seed. The Pima fenced and prepared about five thousand acres of land in 1895, but because of the “scarcity of water,” they could not irrigate their grain.⁷⁷ The Pima not only “abandon[ed their] old farms and homes” but also reduced their irrigated crops.⁷⁸ Conditions were so severe on the reservation that Agent J. Roe Young requested permission to purchase an additional 225,000 pounds of wheat “to prevent starvation.”⁷⁹ In 1894, settlers improved more

than 2,100 new acres above the reservation in Florence, bringing the total acreage of improved land in Florence to 26,343.⁸⁰ There were 6,520 then-being-irrigated acres in Florence and 19,239 then-being-irrigated acres in the Upper Gila Valley, meaning there were 25,759 irrigated acres above the reservation.⁸¹ Having farmed fifteen thousand acres in 1859, the Pima now farmed fewer than four thousand.⁸²

Federal policies sanctioned settlement and diversions of water upstream of the reservation. Following federal mandates spelled out in the 1877 Desert Land Act, settlers were required to apply water to their land or risk losing it and any improvements thereon. To comply with federal law, settlers constructed the Florence Canal above the reservation, which further deprived the Pima of their legal rights to Gila River water.⁸³ By 1900, upstream settlers largely appropriated the natural flow of the Gila River.⁸⁴ Geomorphologic changes in the river channel forced the Pima to abandon most of their traditional irrigation system, with many “ditches lying idle and covered with brush.”⁸⁵ To irrigate Pima fields now required a costly conveyance system that headed upstream. They need “water for irrigation or [they will] starve,” Agent Franklin Armstrong informed Interior Secretary Ethan Allen Hitchcock in 1901.⁸⁶ Continued non-Indian diversions resulted in the Pima share of the river declining to less than 30 percent of the total flow by 1918, as shown in table 3.

Table 3
Percentage Use of Gila River Natural and Flood Water Flow, Select Years:
1866–1918²

Year	Pima Reservation ¹	Florence-Casa Grande	Safford/Solomonville
1866	100	0	0
1878	73.60	11.23	13.57
1892	48.27	9.79	35.38
1901	42.69	10.90	36.56
1910	37.99	10.50	41.30
1914	36.38	13.00	40.71
1918	29.50	28.64	33.62

¹ Percentage calculated by default after Florence-Casa Grande, Safford-Solomonville, and other smaller users subtracted. This amount represents total available flow (natural and flood) not the amount that actually reached the reservation boundary.

² Percentages do not total 100% as smaller users are omitted.

Source: “Gila River Priority Analysis, Water Distribution Chart # 3,” United States Indian Service, Irrigation, 20 January 1926.

The passage of the National Reclamation Act in 1902 set off the final showdown over control of Indian land and resources in central Arizona. North of the reservation was Maricopa County’s Salt River Valley, which increased in population from 20,487 in 1900 to 34,488 in 1910. With the completion of the Salt River project (Roosevelt Dam), the number of farms

within the county more than doubled to 2,229, with the value of farm property increasing 312 percent to \$33,879,281, which was more than double the territorial average increase of 150 percent. Further development above the reservation in Graham and Pinal counties influenced Pima access to water and agricultural development. More than 58 percent of the farms in Arizona were in the three counties above and adjacent to the reservation.⁸⁷

Settlers living above and adjacent to the reservation cultivated 142,322 acres in the Salt River Valley, 35,000 acres in the Gila River Valley, and 18,000 acres in the Casa Grande Valley.⁸⁸ Federal legislation assisted these settlers in acquiring and developing the land and required them to make bona fide application of water in order to perfect their land titles. These federal requirements put settlers in direct competition with the Pima over control and use of the waters of the Salt and Gila rivers.

The loss of water created a domino effect that reduced Pima irrigated acres and field size. By 1900, the Pima farmed just 3,600 acres. Statewide, the amount of Indian land irrigated under the Indian Irrigation Service in 1919 plummeted to 8,733 acres from 19,386 acres. Non-Indian irrigated acreage, however, increased 46.1 percent to 467,565 acres, with 247,260 acres north of the reservation in the Salt River Valley.⁸⁹ Upstream settlers irrigated another 76,982 acres along the Gila River above the reservation, with 33,019 acres irrigated upstream of the Pima along the Santa Cruz River. Just as revealing, capital improvements along the Gila River and its tributaries (including the Salt River) increased 509.1 percent between passage of the Reclamation Act in 1902 and 1919, jumping to \$25,165,814. Of this, Reclamation Service improvements totaled \$20,277,919 while Indian Irrigation Service improvements totaled just \$585,029.⁹⁰

The Pima abandoned fields across the reservation, with most of these fields in the traditional breadbasket along the river in the central region of the reservation. These abandoned fields had greater mean field sizes (21 percent larger than the 1914 cultivated acres), indicating that the effects of federal policy reduced the aggregate acreage in production and the mean size of those fields that remained in production, as shown in table 4. The result among the Pima was not unexpected: "Our pride as a self-supporting and independent people was . . . taken from us."⁹¹

Pima agriculture related proportionally to upstream irrigated agriculture. Although settlers diversified their agricultural production, the Pima, having limited water resources and needing to feed their families, did not

Table 4

Mean Field Size of 1914 Pima Lands and Lands Abandoned Due to Water Loss

Category	1914	Abandoned Due to Water Loss
Fields	2,112	1,066
Acres	12,069	6,998
Mean Field Size (in acres)	5.16	6.57

Source: Analysis of the 1914 Southworth maps.

Table 5
Comparison of Pima and Maricopa and Arizona-wide Crop Selection, 1914

Crop	Pima/Maricopa Acreage	% of Total	Arizona Acreage	% of Total
Corn	920	8%	18,878	6%
Grain	9,911	82%	96,723	31%
Hay	1,001	8%	124,922	41%
Cotton	164	1%	53,151	17%
Other	73	1%	14,197	5%

Source: Pima/Maricopa is based on an analysis of the 1914 Southworth maps. Arizona data are an average of 1910 and 1920 census reports.

(see table 5). Overall, non-Indian farmers sowed 31 percent of their acres to grain, while Indian farmers sowed 82 percent to grain, lending credence to the hypothesis that economic liberalism had a deleterious impact on Pima agriculture. Indian Irrigation Service Chief Engineer Wendell Reed supported this assertion in 1919 when he acknowledged in congressional testimony that the lack of water related directly to the disproportionate acreage sown to grain.⁹²

CONCLUSION

As the Pima case study indicates, the success of American Indian agrarian economies rarely matched the rhetoric of policy makers. Although settlers were free to homestead in the West, federal law required them to file for the land and then improve it through the application of water. These land policies competed with and contradicted federal Indian policies designed to encourage Indian agriculture. Encouraging yeoman non-Indian agriculture by its very nature discouraged Indian agriculture as both groups competed for the same scarce water resources necessary for a sustainable agricultural economy. With the federal government failing to protect Pima water and involvement in the national economy, it undermined its own policies and goals for Indian agriculture.

Moreover, federal policy was inconsistent, failing entirely to protect the cornerstone of Western Indian agricultural policy—the water upon which farming depended. Although it is assumed that tribal nations struggled in adapting to market forces, the Pima did not, readily adapting only to be squeezed systematically out of the market by the application of the philosophy of economic liberalism. To tribal nations willing to adopt an agrarian economy, the Pima might well have served as the model upon which they could look to find success.

The philosophy of economic liberalism had several additional effects on the Pima. Initially, its application by the federal government fostered an economic boon (1846–68) that resulted in greater material prosperity, expansion of the Pima economy, and an increase in Pima acreage under irrigation (an estimated 15,000 acres by 1859). New ditches were extended above the villages and away from the Gila River, resulting in an era of unprecedented

economic growth. This era is the peak of Pima agriculture and economy. But with Pima agriculture supporting settlers and miners in the territory, and as settlement above the reservation rooted and expanded after the Civil War, a second stage in the application of economic liberalism resulted in water deprivation among the Pima (1869–91). The Pima share of the river water declined year by year until it resulted in widespread famine throughout the villages. The final stage culminated in the complete capitulation of the Pima economy (1891–1911). During this time the Pima faced starvation, near complete water deprivation, and extreme poverty.

In the end, federal action despoiled the Pima agricultural economy and pushed the Indians to the periphery of the national economy.⁹³ Federal policy makers had “little real interest in the welfare of Native Americans” and manipulated a dynamic federal resource policy for the purpose of controlling and directing the land and its resources for their own or their constituents’ benefit.⁹⁴ Rather than promote yeoman agriculture in the West, federal land and resource policies combined with federal Indian policies diminished Pima agriculture.⁹⁵ Economic and social policies designed to foster the yeoman indigenous farm instead fractionated the land and deprived the Pima of their water, making economic enhancement of tribal lands difficult.

Had Pima farmers not been deprived of the waters of the Gila River and its tributaries, they might have continued their highly successful adaptation to a market economy and may have gained parity with local farmers and remained part of the national economy. Handicapped by federal land and resource policies, the once-prosperous Pima descended into poverty, and their overall irrigated acreage declined precipitously (see table 6). Convenient scholarly assumptions that American Indians were inherently unfit for, or overwhelmed by, unfamiliar Western economies, however, are specious.⁹⁶ In the case of the Pima, it was not a matter of the triumph of Western civilization that displaced their economy as much as it was the federal philosophy of economic liberalism that prevented them from building on their economic success.

Table 6
Estimated Pima Irrigated Acreage, Select Years: 1850–1911

Year	Acres
1850	12,500
1859	15,000
1860	14,582 ¹
1876	7,000–8,000
1893	<5,000
1896	<4,000
1900	<3,600
1911	4,500

¹ Based on double cropping

Source: Annual reports of the Commissioner of Indian Affairs, 1850–1912 and US Geological Survey, 1904.

NOTES

1. C. H. Southworth, "Statements by Pima Indians Regarding Irrigation on the Gila River Indian Reservation," A 0690 in the Arizona State Museum Library, Tucson, AZ (hereinafter Statement); statement of George Pablo, 29.

2. Statement of Frank Hayes, 8.

3. Frank Russell, *The Pima Indians* (Tucson: University of Arizona Press, 1976), 87.

4. Richard White, *Roots of Dependency: Subsistence, Environment and Social Change among the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983), xv.

5. The concept of economic liberalism underlies federal policies in general across the latter nineteenth and early twentieth centuries and is applicable to settler activity as well. This article focuses on its impact on the Pima and serves as a model for interpretation among other tribal nations as well.

6. See, in general, Patricia Limerick, *The Legacy of Conquest: The Unbroken Past of the American West* (New York: W. W. Norton and Company, 1987). See also William H. Goetzmann, *Exploration and Empire: A History of the Exploration of the American West from 1805 to 1900 Which Reveals the Impact of the Great Adventure on the Whole American Culture* (New York: Vintage Books, 1972), xii–xiii.

7. For a framework of economic liberalism see Christopher McGrory Klyza, *Who Controls Public Lands? Mining, Forestry and Grazing Policies, 1870–1990* (Chapel Hill: University of North Carolina Press, 1996); Robert F. Berkhofer, *The White Man's Indian: Images of the American Indians from Columbus to the Present* (New York: Knopf, 1978), 154–56.

8. Lewis Henry Morgan, *Ancient Society: Or Research in the Lines of Human Progress from Savagery through Barbarism to Civilization* (New York: Henry Holt and Company, 1877).

9. Frederick E. Hoxie, *A Final Promise: The Campaign to Assimilate the Indians, 1880–1920* (Lincoln: University of Nebraska Press, 1984), 83–115.

10. White, *Roots of Dependency*, xiv–xv, argues that the collapse of aboriginal economies was an intentional by-product of federal policy designed to foster dependency by conditioning Indian economies to rely on the American market.

11. See, in general, R. Douglas Hurt, *Indian Agriculture in America: Prehistory to the Present* (Lawrence: University Press of Kansas, 1987). See also Francis Paul Prucha, *The Great White Father: The United States Government and the American Indians* (Lincoln: University of Nebraska Press, 1986), 50–51.

12. Treaty with the Creek Nation, dated 7 August 1790, *Statutes at Large of the United States of America, 1789–1873* (hereafter *Statutes at Large of USA*), 7:35.

13. Treaty with the Great and Little Bands of Osage, dated 2 June 1825, *Statutes at Large of USA*, 7:24.

14. David Rich Lewis, *Neither Wolf nor Dog: American Indians, Environment, and Agrarian Change* (New York: Oxford University Press, 1994), 7.

15. Emmerich de Vattel, *The Law of Nations, or Principles of the Law of Nature: Applied to the Conduct and Affairs of Nations, Book I* (Philadelphia: T. and J. W. Johnson, 1883), ch. 7, 34–35.

16. Quoted in Lewis, *Neither Wolf nor Dog*, 8.

17. Thomas Jefferson, "Notes on the State of Virginia" and "Letters," in *Thomas Jefferson: Autobiography, Notes on the State of Virginia, Public and Private Papers, Addresses, Letters*, ed. Merrill D. Peterson (New York: Viking Press, 1984), 290, 818.

18. "An Act to regulate trade and intercourse with the Indian tribes and to preserve peace on the frontier," *Statutes at Large of USA*, 2:139.

19. "An Act making provision for the civilization of the Indian tribes adjoining the frontier settlements," *Statutes at Large of USA*, 3:516.

20. Henry Rowe Schoolcraft, *The American Indians, Their History, Condition and Prospects, from Original Notes and Manuscripts* (Buffalo, NY: George H. Derby, 1853), 367.

21. Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water* (New York: Penguin Books, 1986), 43.

22. Earl Zarbin, "Desert Land Schemes: William J. Murphy and the Arizona Canal Company," *Journal of Arizona History* 42, no. 2 (Summer 2001): 155–80; John Wesley Powell, *Report on the Lands of the Arid West, with a More Detailed Account of the Lands of Utah* (Washington, DC: Government Printing Office, 1879). Chapter 2 specifically deals with Powell's proposals to reform federal land laws by inhering water with the land. The loopholes in federal land laws, Powell argued, encouraged monopolization of the water.

23. Wallace Stegner, *Beyond the Hundredth Meridian* (Boston: Houghton-Mifflin, 1954; repr., New York: Penguin Books, 1992), 211; Reisner, *Cadillac Desert*, 45–47.

24. Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890–1920* (Cambridge, MA: University of Harvard Press, 1959; repr., New York: Athenum Press, 1980), 6–8.

25. *U.S. v. Rio Grande Dam and Irrigation Company*, 174 U.S. 690, (1899); Robert G. Dunbar, *Forging New Rights in Western Water* (Lincoln: University of Nebraska Press, 1983), 61–81.

26. "An act to provide for the sale of desert lands in Certain Territories," 3 March 1877, *Statutes at Large of USA*, 19:377.

27. Donald Pisani, *Water and American Government: The Reclamation Bureau, National Water Policy and the West, 1902–1935* (Berkeley: University of California Press, 2002), 35.

28. Daniel McCool, *Command of the Waters: Iron Triangles, Western Water Development, and Indian Water* (Tucson: University of Arizona Press, 1994), 14–15; Karen L. Smith, "The Campaign for Water in Central Arizona: 1890–1903," *Arizona and the West* 23, no. 2 (1981): 127–48.

29. McCool, *Command of the Waters*, 66–110; Pisani, *Water and American Government*, 275–76; Donald Worster, *Rivers of Empire: Water and Aridity and the Growth of the American West* (New York: Pantheon Books, 1985), 171–72.

30. Gerald D. Nash, *The Federal Landscape: An Economic History of the Twentieth Century West* (Tucson: University of Arizona Press, 1999), 21–39; Pisani, *Water and American Government*, xi–xvii.

31. Congress based its authority on the US Constitution, art. 1, sec. 8, cl. 3, which states that Congress has the authority "to regulate commerce . . . with the Indian tribes."

32. Francis Paul Prucha, *American Indian Treaties: The History of a Political Anomaly* (Berkeley: University of California Press, 1994), 9–12.

33. *Lonewolf v. Hitchcock* 187 U.S. 553 (1903).

34. *U.S. v. Winans* 198 U.S. 371 (1904); *Winters v. U.S.* 207 U.S. 564 (1908).

35. Janet McDonnell, *The Dispossession of the American Indians, 1887–1934* (Bloomington: University of Indiana Press, 1991), 121; D. Otis, *The Dawes Act and the Allotment of Indian Lands*, ed. Francis Prucha (Norman: University of Oklahoma Press, 1973), 17.

36. Powell was not a proponent of the neatly surveyed grids in the American West, arguing that the West should be reorganized by watersheds. This would enable scientific planning of irrigation works and enjoin legal disputes that were otherwise inevitable. Such progressive thinking could only be done under the authority of the federal government and was ultimately rejected in the National Reclamation Act, which provided none of the safeguards advocated by Powell. See Charles F. Wilkinson, *Crossing the Next Meridian: Land, Water, and the Future of the West* (Washington, DC: Island Press, 1992), 239.

37. Herbert E. Bolton, ed., *Father Eusebio Kino's Historical Memoir* (Cleveland, OH: Arthur H. Clark, 1913), 1:195–97; Herbert E. Bolton, ed., *Anza's California Expeditions: Opening a Land Route to California* (Berkeley: University of California Press, 1930), 2:389.

38. Herbert E. Bolton, ed., *Anza's California Expeditions: Font's Complete Diary*, (Berkeley: University of California Press, 1930), 4:44.

39. More than fifty edible desert plants and nearly two dozen animals—excluding nine native fish—rounded out the Pima diet. Edward Castetter and Willis H. Bell, *Pima and Papago Indian Agriculture* (Albuquerque: University of New Mexico Press, 1942), 56–57; Russell, *The Pima Indians*, 69–78.

40. Amadeo M. Rea, *At the Desert's Green Edge: An Ethnobotany of the Gila River Pima* (Tucson: University of Arizona Press, 1997), 9; Nathaniel Michler, “From the 111th Meridian of Longitude to the Pacific Ocean, Report of Lieutenant Michler,” in “Report on the United States and Mexican Boundary Survey Made under the Direction of the Secretary of the Interior by William H. Emory,” vol. 1, pt. 1, *Senate Executive Document 108*, 34th Cong., 1st sess. (Washington, DC: A. O. P. Nicholson, Printer, 1857), 117.

41. Herbert E. Bolton, ed., *Anza's California Expeditions: An Outpost of Empire* (Berkeley: University of California Press, 1930), 1:263; Herbert E. Bolton, ed., *Rim of Christendom* (New York: The Macmillan Company, 1936; repr., Tucson: University of Arizona Press, 1984), 248; Peter Masten Dunne, ed. and trans., *Jacobo Sedelmayr, 1744–1751: Missionary, Frontiersman, Explorer in Arizona and Sonora; Four Original Manuscripts* (Tucson: Arizona Pioneer's Historical Society, 1955), 23, 28.

42. Herbert E. Bolton, ed., *Anza's California Expeditions: Opening a Land Route to California* (Berkeley: University of California Press, 1930), 2:124, 126, 304.

43. *Rudo Ensayo*, trans. Eusebio Guiteras, vol. 5, no. 2 of the Records of the American Catholic Historical Society of Philadelphia (Philadelphia: n.p., June 1894; repr., Tucson, AZ: Arizona Silhouettes, 1951), 15.

44. Statement of Cos Chin, 61.

45. Dwight L. Clarke, ed., *The Original Journals of Henry Smith Turner with Stephen Watts Kearny to New Mexico and California 1846–1847* (Norman: University of Oklahoma Press, 1966), 107–8.

46. William H. Emory, “Notes of a Military Reconnaissance from Fort Leavenworth, in Missouri, to San Diego, in California, including Parts of the Arkansas, del Norte, and Gila Rivers made in 1846–1847,” *Senate Executive Document 7*, 30th Cong., 1st sess. (Washington, DC: Wendell and Van Benthuysen, 1848), 82; “Report of A. R. Johnston, aide-de-camp to S. W. Kearny,” in *ibid.*, 598.

47. *Senate Executive Document 7*, 85.

48. Turner, 109; *Senate Executive Document 7*, 84.

49. Statement of Antonito Azul, 19.

50. "Report from the Secretary of War, communicating a copy of the official journal of Lieutenant Colonel Philip St. George Cooke, from Santa Fe to San Diego, etc.," *Senate Report No. 2*, 30th Cong., 1st sess. (Washington, DC: Wendell and Van Benthuysen, 1849), 49; Frank Alfred Golder, *The March of the Mormon Battalion Taken from the Journal of Henry Standage* (New York: The Century Company, 1928), 198; Philip St. George Cooke, "Report of Lieutenant Colonel P. St. George Cooke of His March from Santa Fe, New Mexico, to San Diego, Upper California," in *House Executive Document 41*, 30th Cong., 1st sess. (Washington, DC: Wendell and Van Benthuysen, 1848), 254–55.

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54. J. Ross Browne, *Adventures in Apache Country* (New York: Harper and Brothers, 1869; repr., Tucson: University of Arizona Press, 1974), 107.

55. Statement of Henry Austin, 24.

56. "Ammi White to Charles Poston," dated Agency of Pima and Maricopa Indians, Pimo Villages, 30 June 1864, in RG 75, M234, *Letters Received by the Office of Indian Affairs, 1824–1881*, roll 3.

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58. "M. O. Davidson to D. N. Cooley," dated Enriquilla, 12 January 1866, in RG 75, M234, roll 3.

59. "C. H. Lord to D. N. Cooley," dated Tucson, Arizona, 4 June 1866, in *Annual Report of the Commissioner of Indian Affairs, 1866* (Washington, DC: Government Printing Office, 1867), 112.

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61. “Charles D. Poston to William P. Dole,” dated 15 April 1863, in Charles D. Poston Letterbook, RG 75, M734, *Records of the Arizona Superintendency of Indian Affairs, 1863–1873*, roll 8.
62. Roger Nichols, “A Miniature Venice: Florence, Arizona, 1866–1910,” *Journal of Arizona History* 16, no. 4 (Winter 1975): 339–40.
63. *Annual Report of the Commissioner of Indian Affairs, 1869*, 219–20.
64. “George W. Dent to Nathaniel Taylor,” dated La Paz, Arizona Territory, 15 April 1869, RG 75, M734, roll 3; “John Stout to Ely Parker,” dated 25 October 1871, RG 75, M234, roll 2.
65. “Roger Jones to Randolph B. Marcy,” dated Washington DC, 21 July 1869, *Records of the Inspector General* (Washington, DC: Government Printing Office, 1870), 662.
66. “J. D. Cox, Secretary of the Interior, to John Rawlins, Secretary of War,” dated Department of Interior, Washington, DC, 9 June 1869, RG 393, *Records of the U.S. Army Continental Commands, 1821–1920*, M1120, Fort Mojave, Letters Sent and Received, 1859–1890, roll 6.
67. “Frederick Grossman to George W. Andrews,” dated Sacaton, Arizona Territory, 9 November 1869, RG 75, M734, roll 3; “Frederick Grossman to George W. Andrews,” 15 February 1870, RG 75, M734, roll 4; *Weekly Arizona Miner*, 26 September 1868, 3.
68. “Frederick Grossman to George W. Andrews,” dated Sacaton, Arizona Territory, 11 November 1869, RG 75, M734, roll 3.
69. David H. DeJong, “See the New Country: The Removal Controversy and Pima-Maricopa Water Rights, 1869–1879,” *Journal of Arizona History* 33, no. 4 (Winter 1992): 367–96.
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71. “Letter from John Stout, Agent, to Commissioner of Indian Affairs Ezra Hayt,” dated Pima Agency, 15 August 1878, in *Annual Report of the Commissioner of Indian Affairs, 1878*, 3; “A. B. Ludlam to Ezra Hayt, Commissioner of Indian Affairs,” dated Pima Agency, 5 September 1880, in *Annual Report of the Commissioner of Indian Affairs, 1880*, 4.
72. Statement of Juan Manuel (Chir-purtke), 73; statement of Juan Lagons, 76.
73. “P. McCormick, United States Indian Inspector, to Cornelius Bliss, Secretary of the Interior,” dated Sacaton, Arizona Territory, 4 April 1897, 3, in *Reports of Inspections of the Field Jurisdictions of the Office of Indian Affairs, 1873–1900* (hereafter Reports of Inspector), RG 75, M1070, roll 36; Southworth interviews, statement of William Wallace, 6; “Report of Elmer A. Howard to Commissioner J. D. C. Atkins,” in *Annual Report of the Commissioner of Indian Affairs, 1887*, 4.
74. Statement of Antonito Azul, 18.
75. “Gila River Priority Analysis, Water Distribution Chart #3,” US Indian Service, 20 January 1926, in the San Carlos Irrigation Project Archives, Coolidge, AZ.
76. *Annual Report of the Commissioner of Indian Affairs, 1890*, 5; “William Junkin, United States Indian Inspector, to John Noble, Secretary of the Interior,” dated Pima Agency, 30 September 1890; *Reports of Inspections*, roll 36, 3.
77. “Cornelius Crouse, U.S. Indian Agent, Sacaton, Arizona Territory, to Commissioner of Indian Affairs Daniel Browning,” 10 May 1893, RG 75, *Letters Received*,

Office of Indian Affairs; "Report of C. C. Duncan, United States Indian Inspector, to the Honorable Secretary of the Interior Michael H. Smith," dated Pima Agency, 23 November 1894, *Reports of Inspectors*, roll 36, 1.

78. Statement of Joseph Head, 82.

79. *Annual Report of the Commissioner of Indian Affairs, 1895*, 121; "Letter from J. R. Young to Secretary of the Interior Michael H. Smith," dated 4 December 1894, in RG 75, *Letters Received, Office of Indian Affairs*.

80. This includes filed acreage, not irrigated. "Duncan to Smith," dated Pima Agency, 23 November 1894, *Reports of Inspectors*, roll 36.

81. Gila River Priority of Irrigated Acres, Chart #2, US Indian Service, Irrigation, 20 January 1926, in the San Carlos Irrigation Project Archives, Coolidge, AZ.

82. *Annual Report of the Commissioner of Indian Affairs, 1898*, 126; *Annual Report of the Commissioner of Indian Affairs, 1900*, 196; "Franklin Armstrong, United States Indian Inspector, to Lucius Q.C. Lamar, Secretary of the Interior," dated Pima Agency, 26 February 1887, in *Reports of Inspections*, roll 35, 57.

83. "Copy of Minutes of the Florence Canal Company Board of Directors, November First, A.D. 1887," in "Duncan to Smith," dated Pima Agency, 23 November 1894, *Reports of Inspectors*, roll 36.

84. Fred Nicklason, "Report for the Gila River Pima and Maricopa Tribes," in *Indian Water Rights of the Five Central Arizona Tribes of Arizona, Hearings before the Committee on Interior and Insular Affairs, United States Senate, 94th Cong., 1st sess., October 1975* (Washington, DC: Government Printing Office, 1975), 657–59.

85. Statement of John Rhodes, 79.

86. "Frank C. Armstrong, Special Agent, to the Secretary of the Interior," dated 23 November 1901, in "Conditions of Reservation Indians, Letter from the Secretary of the Interior," dated 21 February 1902, in *House Document 406, 57th Cong., 1st sess.* (Washington, DC: Government Printing Office, 1902), 56.

87. *Thirteenth Census of the United States Taken in the Year 1910, Volume VI, Agriculture* (Washington, DC: Government Printing Office, 1912), 70–76. The counties were Maricopa, Pinal, and Graham.

88. Eric V. Meeks, "The Tohono O'odham, Wage Labor, and Resistant Adaptation, 1900–1930," *The Western Historical Quarterly* 34, no. 4 (2003): 468–89.

89. *Fourteenth Census of the United States Taken in the Year 1920, Volume VII, Irrigation and Drainage* (Washington, DC: Government Printing Office, 1922), 110.

90. *Fourteenth Census of the United States Taken in the Year 1920, Volume VII, Irrigation and Drainage*, 111–12.

91. Statement of Frank Hayes, 8.

92. Testimony of Wendell Reed, in *Indians of the United States, Hearings before the Committee of Indian Affairs, House of Representatives, on the Conditions of Various Tribes of Indians*, vol. 2, Hearings, 66th Cong., 1st sess. (Washington, DC: Government Printing Office, 1919), 1014–15.

93. Lewis, *Neither Wolf nor Dog*, 170–74.

94. Pisani, *Water and American Government*, 154.

95. See Leonard A. Carlson, *Indians, Bureaucrats, and Land* (Westport, CT: Greenwood Press, 1981), for a discussion of the economic impacts to tribal nations with the advent of land severalty. Carlson theorized that allotment policies hastened the demise of Indian agriculture rather than promoted it.

96. White (315) explained that “early colonists and administrators in America rarely asked why the [American Indians] starved. [That] they starved [these same settlers and administrators assumed, was because] they had always starved; starvation was simply the natural result of their dependence on the hunt or on primitive and inefficient agriculture.” As White illustrates, starvation was not a natural result.