Finding Complexity in a Ditch: Hugh T. Lovin and Idaho Irrigation History

ADAM M. SOWARDS

In history, the Snake River Plain has often been an obstacle. The storied nineteenth-century overlanders looked out from their wagons and saw desolation through most of the landscape that stretched nearly four hundred miles long and up to one hundred miles wide.[1] For decades, regional promoters saw plenty of arable land but it was much too far from water. Even modern observers, such as Hugh T. Lovin, whose work is collected in this book, characterized portions of the plain in less than inviting terms: "Mostly a hot, uninviting desert, this region was covered with straggling sagebrush and strewn with flinty outcroppings of volcanic rubble that impeded travel."[2] Yet today, if you fly over southern Idaho—or zoom in on Google Earth—you find huge bands and circles of green and, looking closely, see reservoirs storing the region's scarce water supply. The desert has been transformed. Early dreamers imagined five million acres (the delusional envisioned up to nine million) irrigated throughout the Snake River Plain. The first generation of irrigation projects, those completed before 1920, put two and a half million acres into production through 13,000 miles of ditches and canals flowing to 18,000 farms. All of this helped fuel the state's population growth fourfold in just two decades between 1900 and 1920.[3] Plenty of failures and hardship line the historical route to the present, but it is hard to argue against the green results of irrigation.

As the nineteenth century closed, the American West faced a challenge of accommodating a new, growing population that demanded more from nature, especially its rivers. So, civic boosters, tech-

nological enthusiasts, and government agents turned attention to ways of maximizing opportunity. Because past traditions seemed to be failing, or were at least inefficient, they adopted new practices and forged new policies to develop the West, yielding success, failure, and combinations of the two.[4] Then, much later, as the twentieth century wound down, new challenges came to accommodate ever more people and demands on a shrinking water supply, and government officials and environmental activists wondered if there might not be a better way. For instance, in 1977 President Jimmy Carter unveiled a so-called hit list of proposed water projects he planned to eliminate while Earth First! rabble-rousers proposed breaching dams.[5] It would surprise only the unobservant that writers and historians during the late twentieth century turned their attention to the century before to understand how and why the West built its hydraulic infrastructure and its irrigation communities as it did. Hugh Lovin exemplified this historical practice at that moment—looking backward from a time of uncertainty to investigate a similar moment of flux. He did not toil alone, in isolation, or from a blank slate. Other writers and scholars explored irrigated landscapes, examined water regimes across many locales, and built on earlier reclamation traditions. Situating this book and Lovin, then, requires attention to these contexts and Idaho itself.

Like the tobacco and wheat crops they harvested, American farmers grew the nation, a fact easy to forget today when suburban and urban populations far outpace their rural counterparts. The farms that nourished the young nation's economic and political roots sat in the humid eastern half of North America. Insufficient water rarely caused long-term problems for those agricultural communities. Thomas Jefferson, among others, viewed the nation's virtuous farmers as the republic's bedrock. Although the Jeffersonian foundation of American agriculture had problems—slavery being the most obvious—environmental limitations seemed minor and only occasionally inconvenient. The nineteenth-century myth of inexhaustibility also propelled the United States' citizens west, and

they brought with them cultural expectations that farming would continue much as it had along the Atlantic seaboard and eastern river valleys. Public policy reinforced and powered this movement of people and products, auctioning off and giving away the public domain. But then, the American West threw up the obstacle of aridity, an environmental challenge that demanded readjustments to communities, law, and institutions. As one of nineteenth-century America's most celebrated explorers John Wesley Powell plainly put it, "the climate is so arid that agriculture is not successful without irrigation."[6]

People inhabited the American West from time immemorial, developing varied adaptive measures to survive in arid places. These included irrigation systems, such as the vast complexes among the Hohokam in what is now central Arizona or the flood irrigation methods used by various tribes in the Southwest. Others grew food along watercourses, adjusting seasonal mobility to ensure they were in the right place at the right time to plant, tend, and harvest crops. Droughts certainly occurred and severe ones forced indigenous groups to relocate. But thousands of years of successful adaptation demonstrated that civilizations could thrive in western North America.[7]

However, the Euro-Americans who began exploring the far West in the late eighteenth and early nineteenth centuries saw the arid landscape with a different set of cultural eyes and social practices. Some of the earliest, like Zebulon Pike, called it the Great American Desert, effectively discouraging resettlement by Euro-Americans. However, Latter-day Saints worked together to build communal irrigation systems, including the Great Feeder Canal in what became southeastern Idaho, that succeeded and inspired others, although the close-knit nature of Mormon communities and the power of the church proved difficult to emulate elsewhere. Eventually boosters and a new national mindset promoted and encouraged individuals and families to repopulate the West after dislodging and marginalizing Native Americans through political and military might.[8]

Legally, water became like property—something that could be bought, sold, or transferred—after the Spanish and Mexican

communal traditions gave way to American imperialism and its governing institutions. Prior appropriation—usually abbreviated as "first in time, first in right"—guided most western territories and followed the practices originating in the West's mining lands. This legal practice set important precedents. It encouraged early use of water, as well as continuous use, for if farmers stopped using it their right would disappear. As opposed to riparian rights, which derived more closely from English common law, prior appropriation divorced water rights from the land, which allowed farmers to import water from off their property, often a prerequisite for irrigating western farms.[9]

The federal government tried to provide for an orderly process to get the public domain into private hands through laws like the 1862 Homestead Act. The first step in creating that order was a government survey. When government surveyor and polymath John Wesley Powell returned from his investigation of the interior West, he wrote his *Report on the Lands of the Arid Region*, which appeared in 1878. The *Report* issued would-be farmers and enthusiastic lawmakers a stern warning: "Many droughts will occur; many seasons in a long series will be fruitless; and it may be doubted whether, on the whole, agriculture will prove remunerative." In highlighting the challenges the region presented to American agriculture, the *Report* signaled a need to reshape land law and governance. For instance, in proposed legislation Powell included in his report, he allowed groups to organize irrigation districts to claim public lands with individual plots limited to 80 acres (instead of the 160 acres in the Homestead Act and larger acreages in other land laws). Many western lands simply were not useful when divided in surveyors' sections but needed to be organized around water availability. In general, Powell offered more cautious and less individualistic plans than most Americans preferred, and his conclusions and recommendations flew in the face of tradition and predilection; before too much time passed, he lost his job.[10]

Needless to say, the federal government did not follow Powell's visionary suggestions, but eventually it had to adjust its practices. For example, it incentivized individuals to develop irrigation with the Desert Land Act, passed in 1877, that gave more acreage to

a farmer who promised to bring irrigation to it. This failed and attracted fraud, as people and companies sought ways to acquire as much land as possible even it if they could not farm it. The business of land in the West was big business indeed and attracted the unscrupulous and genuine investors alike.[11]

The existing land system proved not as productive as many thought it ought to be. As journalist Marc Reisner explained, "For the first time in their history, Americans had come up against a problem they could not begin to master with traditional American solutions—private capital, individual initiative, hard work—and yet the region confronting the problem happened to believe most fervently in such solutions." And so, the federal government tried something new with the Carey Act (1894), a notable shift in government investment. The act gave desert states up to one million acres of federal public domain provided that the state get the lands irrigated, using private corporations and investors who profited by selling the water to farmers on the lands. The legislation largely failed across the West. But Idaho proved the exception, developing almost the full million-acre allotment and sending Idaho leaders to Washington, DC, asking for more. This success, along with the concomitant difficulties and setbacks, furnished Lovin much historical fodder.[12]

At the time, a national campaign for reclamation poured over the land like flood irrigation covered fields. William Ellsworth Smythe led the charge, publicizing all good things that would come from building irrigation works across the West. Writing at a moment of national imperialist fervor—the country had just emerged victorious with colonial possessions after the Spanish-American War—Smythe envisioned a western, domestic colonialism as a better bet. Filling up the West—characterized as *The Conquest of Arid America*, as he titled his 1900 book—would produce prosperity and a democratic one at that. Irrigation was a miracle, one chapter explained, that promised democratic communities comprised of Jeffersonian small farms. In Idaho, Smythe saw great potential, because the state "has barely crossed the threshold of its vast possibilities." What Smythe saw in underpopulated arid spaces of the West, like Idaho's Snake River Plain, were the roots of a greater

republic, places where irrigation would help tie people to the land and help propel a cooperative social and economic evolution that would fulfill America's potential. To advocates like Smythe, the transformation remained central to the *American* story, not just a *western* one.[13]

Tapping into this enthusiasm—and Idaho's exceptional success notwithstanding—reformers pushed for even greater federal assistance that they hoped might solve the shortcomings of the Carey Act, resulting in the National Reclamation Act, also known as the Newlands Act, of 1902.[14] This legislative program inserted the nation-state to a greater extent into efforts to promote and build irrigation systems in western territory. It would use proceeds from public land sales to seed a reclamation fund distributed for constructing dams and canals to expand the West's irrigated acres. Then: new homes, new farms, new crops, new money would spring forth from western deserts and sagebrush plains. With a limit of 160 acres on these federal projects, the law presupposed small-scale family farms, ever the American Jeffersonian hope, and showed how the reclamation campaign fulfilled ideological impulses as well as economic functions. Yet, by creating a new federal agency—the Reclamation Service, later promoted to the Bureau of Reclamation—and funding it through federal dollars, the act put the national government more firmly in the reclamation business.[15]

Although proceeds from successful irrigation projects were meant to repay the reclamation fund, results were mixed. After two decades, a scant 10 percent of the funds had been repaid and 60 percent of farmers were in default on their repayments. Ultimately the federal government forgave many projects' debts. Meanwhile, the Depression of the 1930s arrived and reclamation projects grew larger in response to the need for labor and the greater technical expertise engineers acquired. Irrigation history did not conclude with the Depression, but Lovin's interest remained firmly rooted in these initial decades.[16]

And for good reasons: those years were exciting times for Idaho. A chief engineer on the Twin Falls North Side Land and Water Company, E. B. Darlington, captured that zeitgeist in an essay,

"The Romance of a River," that appeared in 1920 in *Reclamation Record*. The engineer's romance grew out of an imagination as fertile as the Snake River Plain. Darlington shared a history lesson with irrigation engineers—"men of great vision and master designers"—at the center, who considered themselves "understudies of the Creator, delegated to bring forth upon the earth a better condition of life, a finer spirit of contentment, a higher state of development, and an advancement in human progress." The future beckoned for more of the same, but pitfalls lurked if farmers followed reckless plans. Darlington concluded that duty required the river be transformed into an agent "only of beneficence…for the greatest good of the greatest number." Darlington, who later served as the superintendent of the federal Minidoka Project, embodied the confidence of the era, a belief that experts could produce widespread benefits and "full utilization" of natural resources.[17]

Darlington's article showed how irrigation was always about fulfilling visions—of farmers, engineers, and politicians; in short, of anyone who hoped to transform desert spaces into productive farms. Historians like Hugh T. Lovin examined these stories, trying to show the ways these reclamation impulses served progress and development. But historians found many reasons not to share in Darlington's unequivocal enthusiasm.

In the mid-1980s, as Lovin researched and produced many of his studies, two major books on western irrigation appeared—one by a journalist and one by a historian—and each used the past to frame and explain then-present concerns. Both saw the West's current hydraulic regime as failing, a system that subverted both environmental and democratic ends. For the journalist Marc Reisner, watering the West came from a deluded biblical mission to make the desert bloom as a rose, an effort he characterized as "messianic." The book's epigraph, Percy Bysshe Shelley's elegiac (or is it prophetic?) sonnet "Ozymandias," evoked the inevitability of declining power in desert civilizations. Further, Reisner's story

in *Cadillac Desert: The American West and Its Disappearing Water* abounded in bureaucratic rivalries between the U.S. Army Corps of Engineers and the Bureau of Reclamation competing for ever greater projects, rejecting economic and ecological rationality as a matter of course in the pursuit of administrative power. Dam failures, cost overruns, and corruption marked the West's history with reclamation, as surely as cowboys and Indians rode through 1950's westerns.[18]

The historian Donald Worster, on the other hand, connected the West to a long and global history, one rooted in despotism that grew out of past societies that sought to control nature—especially water. Controlling water, Worster maintained in *Rivers of Empire: Water, Aridity, and the Growth of the American West*, allowed ruling elites to control people in places like India, China, and the American West. Applying insights from thinkers like Karl Marx and Karl Wittfogel, Worster argued that rather than a place synonymous with freedom as it liked to think of itself, the American West "is increasingly a coercive, monolithic, and hierarchical system, ruled by a power elite based on the ownership of capital and expertise," best shown by the irrigation canal. To Worster, the West's hydraulic empire was a creation of the state melded with capitalism that wreaked unequivocal environmental and social havoc by serving an agribusiness immune to the people's interest.[19]

Both Worster's and Reisner's stories of the West show a certain imperialism at work. They see the West as a place colonized and manipulated by bureaucrats, engineers, politicians, and more, a region where nature itself was shackled to a statist-capitalist imperative. Consequently, the books are akin to medieval morality plays.[20] They are eloquently written, passionately argued, and, if not exactly caricatured, then perhaps they sell exceptions as more of the rule than is merited.[21] From that perspective, they might have become too influential. In these accounts, too, California and the Colorado River play outsized roles, exaggerating their history as indicative of the West writ large.[22] So, the history of irrigation in a place like Idaho might reveal other historical contours. This is why we need Lovin's work.

Building farms in Idaho's Snake River Plain was difficult and risky. Land needed clearing; water needed moving; pests needed removing; droughts needed avoiding. These factors and more had stalled agricultural expansion in the late nineteenth century before large-scale reclamation projects developed, and they would continue as ubiquitous challenges to Idaho farmers even when more investment and greater technological might arrived. Beyond environmental forces, aspiring reclaimers required steep capital investments and complex engineering works to transform a sagebrush-covered range into sugar beets, alfalfa, orchards, and, of course, potatoes. Money often ran out, even for scrupulous investors (and not all were). Meanwhile, gravity-fed canal systems were prone to failure and pumping systems required power, which made them more expensive. Laying out irrigation tracts required audacity in vision and comfort with risk against sometimes high odds. Against such obstacles, it's sometimes a wonder any irrigation systems got built.

So, in 1890 or 1920, what interested locals most was not grand theories about state power and despotism but getting canals to deliver water to fields so crops could grow and capital could flow. And no one accounted for this process in Idaho better than Lovin. What he showed in his many articles, some of the choicest pieces represented here, was no clear overriding thesis that might interpret all of Idaho's reclamation experience. After all, Idaho often fits poorly in sweeping historical generalizations, and reclamation history is no exception.[23] No one demonstrates this better than Lovin. His collective work succeeded where the morality plays failed in part because of scale. Often, his research focused on a single project, trying to account for its success or failure or some creative mix of the two—seemingly the most common outcome. Lovin developed these nuanced histories through painstaking research and attention to historical detail. That was often the criticism of other books: Worster's monolithic state was, well, too monolithic and did not reckon with the fragmented and localized nature of the nation a century ago.[24]

When Lovin searched for Idaho's history in an irrigation ditch, he found complexity. At one point, after years of research, Lovin characterized—typologized really—the main actors in Idaho reclamation efforts as "dreamers, schemers, and doers."[25] The labels functioned as a sort of shorthand for those who imagined a prospering plain irrigated by the Snake and its tributaries (dreamers), those who manipulated images and often others' money to promote this or that tract with an eye for profit (schemers), and those who buckled down and built the dams, canals, and farms that transformed the dry, fat bottom of the state (doers). The lines between types blended too easily, with shady developers promising easy riches and state agents promising water before it was available in close collaboration a century ago in a state hurrying to grow.

To a substantial degree, the state grew, as Lovin showed, through bringing irrigation to undeveloped landscapes. The process seemed straightforward: sagebrush (and rabbits) had to be removed; land had to be sold; and water had to be provided. But within those parameters much trouble might be made. Government officials—state and federal—overpromised water, leading to shortfalls. Financiers overpromised money, leading to bankruptcies. Engineers overpromised technical solutions, leading to system failures. At least sometimes. At other times, it worked. Investors like Frank Buhl and Peter Kimberly faithfully put together solid projects like the Twin Falls South Side project that irrigated nearly a quarter-million acres, a model under the Carey Act and envy of others.[26] Federal reclamation built its own projects, such as Minidoka and Boise, helping to create Idaho's landscape and build its economy. Lovin's work demonstrates how mammoth was the task of making the desert bloom as the rose, which promoters so easily promised.

To be sure, Lovin had blind spots or areas that may not have interested him. His histories are essentially about establishing projects and the political, financial, and technical requirements to do so. Cultural and social histories of irrigation might not have even occurred to him, although we now have searching analyses of some of the art and literature inspired by Idaho ditches, as well as personal reflections on water by Idaho authors.[27] Studies and

accounts of the way women both promoted and experienced reclamation projects add a contour Lovin neglected.[28] The sticky and ubiquitous issue of indigenous water rights and how they intersect with irrigation regimes did not gain attention from Lovin, although we know the importance of tracking those relationships.[29] The labor required to build irrigation works and, then, to plant, tend, and harvest the crops that are the ultimate products of reengineered rivers never drew Lovin's focus. And scholars still have done little to see the land-labor nexus in Idaho fields and along Idaho rivers as they have in other locations.[30] Concerns about the environment—concerns that occupied other histories, especially as Lovin's career wound down—played a minimal role in Lovin's scholarship.[31] Had he carried his investigations further into the twentieth century, Lovin surely would have had to reckon with questions related to groundwater pumping.[32] Any scholar working on reclamation in Idaho today would be expected to consider at least some of these topics.

None of which is to minimize Lovin's achievements collected in the exemplars contained in this book. In the pages that follow we confront the work of a careful historian, a scholar who focused a career on understanding one of the most fundamental elements that built the state that paid his salary as a professor at Boise State University. He pursued no overt political agenda. Lovin evinced a partisanship neither for free enterprise nor federal reclamation projects; his was a partisanship dedicated to historical facts, as he found them. Mythology didn't blind him in the archives. The result is a body of work that stands up to the test of time and helps Idahoans understand how their irrigated landscape came to look so much as it does today.

Adam M. Sowards is professor of history and director of the Program in Pacific Northwest Studies at the University of Idaho. He is the author of several articles and books, including *The Environmental Justice: William O. Douglas and American Conservation*, and the editor most recently of *Idaho's Place: A New History of the Gem State.*

Notes

1. Peter G. Boag, "Overlanders and the Snake River Region: A Case Study of Popular Landscape Perception in the Early West," *Pacific Northwest Quarterly* 84, no. 4 (Fall 1993): 122–29.

2. Hugh T. Lovin, "A 'New West' Reclamation Tragedy: The Twin Falls-Oakley Project in Idaho, 1908–1931," *Arizona and the West* 20, no. 1 (Spring 1978), 5–6. Reprinted in this volume as Chapter 7.

3. Most figures are Lovin's and are repeated in many of the following chapters. The outlier number of nine million acres came from the Idaho State Bureau of Immigration and is from Lovin, "Water, Arid Land, and Visions of Advancement on the Snake River Plain," *Idaho Yesterdays* 35, no. 1 (Spring 1991), 7 and is the Epilogue in this volume. For the canal mileage and farms, see Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 1999), 23.

4. Perhaps the best overview of the efforts to develop the West's natural resources is Charles F. Wilkinson, *Crossing the Next Meridian: Land, Water, and the Future of the West* (Washington, DC: Island Press, 1992).

5. On Carter, for instance, see Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water*, revised and updated (New York: Penguin, 1993), ch. 9; for Earth First! see Susan Zakin, *Coyotes and Town Dogs: Earth First! and the Environmental Movement* (New York: Viking, 1993).

6. William deBuys, ed., *Seeing Things Whole: The Essential John Wesley Powell* (Washington, DC: Island Press, 2001), 156. The interpretation offered of agricultural expansion and the challenges of western aridity is a standard one. A good account can be gleaned from Richard White, *"It's Your Misfortune and None of My Own": A New History of the American West* (Norman: University of Oklahoma Press, 1991), esp. chs. 6, 9, 15. A useful account of Jeffersonianism and its complicated reality is Roger G. Kennedy, *Mr. Jefferson's Lost Cause: Land, Farmers, Slavery, and the Louisiana Purchase* (New York: Oxford University Press, 2003).

7. Adaptive measures to aridity and drought are described in William deBuys, *A Great Aridness: Climate Change and the Future of the American Southwest* (New York: Oxford University Press, 2011), ch. 3; Norris Hundley Jr., *The Great Thirst: Californians and Water: A History*, revised ed. (Berkeley: University of California Press, 2001), ch. 1; Adam M. Sowards, *United States West Coast: An Environmental History* (Santa Barbara, CA: ABC-Clio, 2007), 74–78.

8. Although the main topic of the book is John Wesley Powell, Wallace Stegner accounts for the booster attitude imbued in the West in his classic, *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West* (1953; reprint, New York: Penguin, 1992). One example that shows the displacement of Native peoples is Ned Blackhawk, *Violence Over the Land: Indians and Empires in the Early American West* (Cambridge: Harvard University Press, 2006).

9. The best places to begin with the legal elements include Hundley, *The Great Thirst*, chs. 2–3; Donald J. Pisani, *To Reclaim a Divided West: Water, Law, and Public Policy, 1848–1902* (Albuquerque: University of New Mexico Press, 1992), chs. 2–3; Wilkinson, *Crossing the Next Meridian*, ch. 6.

10. For context, see Stegner, *Beyond the Hundredth Meridian*; White, *"It's Your Misfortune,"* chs. 5–6. For Powell's plan, see deBuys, ed., *Seeing Things Whole*, 149–208; quotation from 158; plan specifics from 192.

11. The most thorough account of federal land law is Paul W. Gates, *History of Public Land Law Development* (Washington, DC: Government Printing Office, 1968), 399–401 for Desert Land Law and its failure.

12. Reisner, *Cadillac Desert*, quotation from 110. For Carey Act, see Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Oxford University Press, 1985), 157. Lovin summarized the Carey Act in Idaho in Hugh T. Lovin, "The Carey Act in Idaho, 1895–1925: An Experiment in Free Enterprise Reclamation," *Pacific Northwest Quarterly* 78, no. 4 (October 1987): 122–33 (appearing as Chapter 4 in this volume).

13. William E. Smythe, *The Conquest of Arid America* (New York: Harper & Brothers, 1900), quotation from 184; Smythe divided his book into four parts, the first concerning "Continental Expansion at Home," which culminated in chapter five: "The Miracle of Irrigation."

14. It is important to note that in Smythe's imaginings the federal government played a muted role. But his work helped legitimize the larger reclamation project, thus building support for what became the Newlands Act of 1902. On Smythe, see Worster, *Rivers of Empire*, 118–25.

15. The Newlands Act is a central piece of reclamation history, and it plays a central role in Worster's argument. See *Rivers of Empire*, 156–69. Also see Pisani, *To Reclaim a Divided West*, 273–325; Reisner, *Cadillac Desert*, 111–19.

16. The default rate comes from Reisner, *Cadillac Desert*, 116.

17. E. B. Darlington, "The Romance of a River: A Past, Present and Future Survey of Irrigation in Southern Idaho," *Reclamation Record* 11 (March 1920): 122–23. Fiege analyzes Darlington in *Irrigated Eden*, esp. 23, 172, 177. Darlington's later position on the Minidoka Project comes from a letter appended to an Idaho Department of Water Resources decision found at www.idwr.idaho.gov/files/legal/orders/20130211_AFRD2-Final_Order_Re_Inst_to_Water_Dist_1_Watermaster.pdf.

18. Reisner, *Cadillac Desert*, front matter, 3, and passim.

19. Worster, *Rivers of Empire*, quotation from 7; see also chs. 1–2.

20. Perhaps this genre is inherent when writing about western water, for Wallace Stegner's biography of John Wesley Powell certainly frames the narrative around competing moral characters, too. See Stegner, *Beyond the Hundredth Meridian*.

21. Perhaps the most astute and persistent critic of these views is Pisani. For a concise version of his criticism, see Donald J. Pisani, *Water and American Government: The Reclamation Bureau, National Water Policy, and the West, 1902–1935* (Berkeley: University of California Press, 2002), 283–84.

22. Worster's index includes no entries for Idaho or the Snake River, for instance. Hundley argued an alternative interpretation for California, suggesting that it is not Worster's California focus that inherently created his argument; see *The Great Thirst*.

23. I make a similar point about Idaho as a poor fit in my introduction, "Idaho's Place: Reckoning with History," in *Idaho's Place: A New History of the Gem State*, ed. Adam M. Sowards (Seattle: University of Washington, 2014), 3–10.

24. No one has pushed Worster on these points harder than Donald J. Pisani. See, for instance, *To Reclaim a Divided West*, 331–33.

25. Hugh T. Lovin, "Dreamers, Schemers, and Doers of Idaho Irrigation," *Agricultural History* 76, no. 2 (Spring 2002): 232–43 [Chapter 1 in this volume].

26. Besides Lovin's work contained in this volume, see Pisani, *Water and American Government*, 66–77.

27. See Richard W. Etulain, "Shifting Currents: Cultural Expressions in Idaho," in *Idaho's Place: A New History of the Gem State*, ed. Adam M. Sowards (Seattle: University of Washington Press, 2014), for instance, 241–42 on Mary Hallock Foote's fiction and 247–48 for her art; Fiege, *Irrigated Eden*, 171–202, which examines myth and metaphor of Idaho's landscape; and Robert T. Hayashi's meditation on race and place in *Haunted by Water: A Journey through Race and Place in the American West* (Iowa City: University of Iowa Press, 2007), which includes both an analysis of Idaho's reclaimed landscape and his own experience of the larger landscape of the place with water as a key theme. Mary Clearman Blew, ed., *Written on Water: Essays on Idaho Rivers* (Moscow: University of Idaho Press, 2001).

28. For women and Idaho irrigation, see Annie Pike Greenwood, *We Sagebrush Folks* (New York: D. Appleton-Century, 1934); Susan H. Armitage, "'Too Little, Too Late': Annie Pike Greenwood, Failed Sagebrush Pioneer," in *Terra Pacifica: People and Place in Northwest States and Western Canada*, ed. Paul W. Hirt (Pullman: Washington State University Press, 1998); and Laura Woodworth-Ney, "Water, Culture, and Boosterism: Albin and Elizabeth DeMary and the Minidoka Reclamation Project, 1905–1920," in *The Bureau of Reclamation: History Essays from the Centennial Symposium* (Denver: U.S. Department of the Interior, Bureau of Reclamation, 2008), 385–405.

29. One example of a scholar working through these issues is Amy E. Canfield, "'These Lands are Worthless without Water': The Federal Government's Divided Loyalties in Irrigating the Fort Hall Indian Reservation, 1902–1920," *Pacific Northwest Quarterly* 105, no. 3 (Summer 2014): 122–35.

30. Again, Fiege's *Irrigated Eden*, 117–42 is an exception, although it essentially ignores the Latino presence that has grown into an important source of labor. Errol D. Jones, "Latinos in Idaho: Making Their Way in the Gem State," in *Idaho's Place: A New History of the Gem State*, ed. Adam M. Sowards (Seattle: University of Washington Press, 2014), 201–34 offers a useful overview.

31. The best account of irrigating Idaho primarily from an environmental perspective is Fiege's *Irrigated Eden*.

32. Zachary A. Smith, *Groundwater in the West* (San Diego: Academic Press, 1989), 97–103. Also, Adam M. Sowards and Brynn M. Lacabanne, "Instituting Water Research: The Water Resources Research Act (1964) and the Idaho Water Resources Research Institute," *Water History* (2017), doi:10.1007/s12685-016-0190-x, http://link.springer.com/article/10.1007/s12685-016-0190-x, demonstrates some of these concerns.