

WATER, INC.
A BRIEF STUDY INTO THE POLITICS OF WATER IN THE ARID WEST
BY
E.C.M. HAMEETEMAN

3774236

MA thesis

American Studies, Utrecht University

15 Credits

Drs. Jorrit van der Berk

June 29, 2012

16,235 words

“Whiskey is for drinking, water is for fighting over”

—attributed to Mark Twain

Introduction

Historically, there has been a belief that the American West had infinite possibilities, was massive, and promised abundance. This belief provided an archetypical mindset for Americans—but the reality is something far different. There have been many myths about the West, recognized by Henry Nash Smith in his influential work *Virgin Land*, with the most persistent one of

a simple, rural people coming into a western country [...] and creating there a peaceful, productive life [...] By the millions they would find homes in the undeveloped vastness stretching beyond the settlements, bringing life to the land and turning it into the garden of the world.¹

The story of the West has been one of optimism, it being “a song, a dream, a fantasy that captured all the ambivalence in a people about their past and future.”² With this came a belief of the region’s moral uniqueness and that its vast lands were full of natural resources. This myth of the American West that would know no environmental limits created a mindset of entitlement—the idea of a right to plenty.

As one of America’s first and most influential conservationists, John Wesley Powell set out to challenge this attitude. The nineteenth-century scientist, explorer, linguist, and ethnologist was the first prominent figure to think realistically about the nature of the Western lands and to ask what the scarcity of a vital natural resource such as water would imply for settlement. In his travels, Powell observed that any American expansionism would have limits

¹ Donald Worster, *Under Western Skies: Nature and History in the American West* (New York, NY: Oxford University Press, 1992), 6.

² *Ibid.*, 6-7.

and advocated preserving the region's resources as "the land of plenty [was] running dry."³ However, these views were met with resistance. As historian Simon Schama noted, "America's optimism about its natural resources has always been spiced with clashes over conservation, going back to [...] Powell."⁴ Generally speaking, fellow historian Donald Worster believed that Powell actually experienced

the fate of heroes throughout history. Their ideas and achievements get transformed by later generations into cultural symbols that are meant to unify societies and overcome their differences. Heroes exist to bring people together, to rally them around a common cause.⁵

A key figure in the story of the American West, he had "anticipated a new set of concerns over productivity, order, and the limits of natural resources—including land itself—in the arid lands of the West."⁶ As clearly put by Worster, the "true West [...] is, first and foremost, a culture and society built on, and absolutely depended on, a sharply alienating, intensely managerial relationship with nature," especially with water.⁷

In his book *Under Western Skies*, Worster argued that the history of the American West should be looked upon beyond myths. Such a "new history" would "put the West back into the world community, with no illusions about moral uniqueness."⁸ Traditionally, the West was viewed as an opportunity of getting back in touch with nature, which endured in the popular mind. However, the drive for economic development and progress was "often a ruthless assault on nature, and it has left behind it much death, depletion, and ruin."⁹ The West was

³ "American Plenty," October 10, 2008 episode of *The American Future: A History*. Directed by Sam Hobkinson and Ricardo Pollack, 60 min., BBC: documentary series.

⁴ Ibid.

⁵ Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York, NY: Oxford University Press, 1985).

⁶ Scott Kirsch, "John Wesley Powell and the Mapping of the Colorado Plateau, 1869–1879: Survey Science, Geographical Solutions, and the Economy of Environmental Values," *Annals of the Association of American Geographers* 92 (2002): 548.

⁷ Worster, *Rivers of Empire*, 5.

⁸ Worster, *Under Western Skies*, 12.

⁹ Ibid., 13.

considered to be a moral and democratic place as power and corruption were left behind in the East. History has shown, however, that the region has been ruled by an undivided power and has been “a scene of intense struggles over power and hierarchy.”¹⁰

The regional distinctiveness of the American West is one that is based on its relationship with water; therefore, being a “hydraulic society.” This is a West that “has been created by irrigation ditches, siphons, canals, and storage dams. Its daily existence depends on the intensive management of that scarce, elusive, and absolutely vital natural resource, water.”¹¹ In his book *Oriental Despotism*, historian Karl Wittfogel argued, in essence, that

[w]here the scale of water control escalated in the ancient desert world [...] where larger and larger dams and more and more elaborate canal networks were built, political power came to rest in the hands of an elite, typically a ruling class of bureaucrats.¹²

Worster explains that within these societies,

aridity has been a crucial, though not a rigidly deterministic experience for people to deal with. Whenever they attempted to overcome that condition, they gave a new shape to the environment, creating artificial rivers with dams, aqueducts, and the like.¹³

Such a “water empire is a purely western invention,” because the scarcity of water made it a valuable commodity.¹⁴ The intensive, large-scale manipulation of water is based upon the notion that

the typical irrigator is not merely trying to enhance his production by buying a little water now and then. He is critically dependent on that single resource and, to survive, must

¹⁰ Ibid., 15.

¹¹ Ibid., 29.

¹² Worster, *Rivers of Empire*, 22-23.

¹³ Ibid., 22.

¹⁴ Worster, *Under Western Skies*, 29.

have it delivered on a steady, reliable basis [...] the western farmer does not have any real choice in the matter; he lives or dies by the level of water in his ditches.¹⁵

The region's core reality is based in its aridity and attempts to make the lands suitable for agriculture. In a sense, this was reflected in a need to control the environment.

According to Worster, there were several social conditions that went along with the emergence of this "hydraulic West." First, the region wanted to grow its hydraulic system more elaborately, which meant that "[s]ome form of power elite [...] would be required to carry out that ambition."¹⁶ What follows is then a "concentration of power within human society," which stems from the need to control water and this being "the deliberate goal of ambitious individuals, one they pursued even in the face of protest and resistance."¹⁷ A second consequence was the intensification and concentration of urban growth:

Cities need water too; and in a region of scarcity, where water sources are few and far between, the city must reach over great distances to fill that necessity. The bigger the city, the more power it has to wield over its rivals [...] Despite an abundance of space, people have found themselves being driven to a few isolated oases where they live packed closely together, while all around them, the land stretches away like a great, wild void.¹⁸

Thirdly, the emergence of a "hydraulic society" in the West has shaped people's imagination; "[o]ld ideas have been reborn there, or they have been applied in new ways."¹⁹ It has "promoted the cultish idea of the collective domination of nature."²⁰ Wittfogel's theory is based on a social order founded on the intensive management of water. Irrigation and water

¹⁵ Ibid., 29-30.

¹⁶ Ibid., 31.

¹⁷ Worster, *Rivers of Empire*, 20.

¹⁸ Worster, *Under Western Skies*, 31.

¹⁹ Ibid.

²⁰ Ibid., 32.

use have thus been formative elements in the West, a so-called “underlying infrastructure out of which social relations grew.”²¹

It can be said that warnings from concerned individuals, such as Powell, were ignored as the American West attained the definition of an untouched frontier full of promise. Due to growing populations, the harsh desert conditions of the lands were challenged with the belief that “rain follows the plow.” It was in fact “the scarcity of water, not its excess [...] that made people aware of the significance of this element holds for living.”²² As Joan Didion argued in her essay “Holy Water,” “[w]ater is important to people who do not have it, and the same is true to control.”²³ She supports this claim through an association between the sacredness of water and her fascination with the ability to control it. The actual fear of “going dry,”

has driven many communities to extraordinary efforts, providing in them the deepest anxiety, the sorriest desperation, forcing them to make radical changes in their behavior and institutions. It has stirred them out of lethargy to undertake the most difficult labors: building enormous engineering works to bring water from distant places and stave off their thirst. That reaching out to establish control over a river, often driven by the raw instinct to survive, has had profound implications for the course of history.²⁴

This has led to a need to conquer and exert power over nature, particularly over water, which is reflected in the organization and structure of institutions in the West.

The issues put forth also find their grounding in a historical account such as Marc Reisner’s *Cadillac Desert*, which depict federally-subsidized river development as the flawed source of growth throughout the American West for most of the twentieth century. Similarly to Worster, Reisner argues that practices such as agriculture and livestock farming simply do not have a place in the West and that the heavily subsidized, expensively irrigated farming of the region is just not sustainable. He too refers to the West as being a “hydraulic society,”

²¹ Ibid., 54.

²² Worster, *Rivers of Empire*, 19.

²³ Joan Didion, “Holy Water,” in *The White Album* (New York, NY: Simon & Schuster, 1979), 97.

²⁴ Worster, *River of Empire*, 19-20.

being founded on and maintained by the greed and competitiveness that is behind the American Dream. Reisner's examination of the West is one that is centered on its ecologically dangerous, and ultimately harmful, dependence on dams and aqueducts. By focusing on these water systems, he too shows the American need to control the environment and how this affected the ecological welfare of national resources. In fact, he envisions "a region where people begin to recognize that water left in rivers can be worth a lot more—in revenues, in jobs—than water taken out of rivers."²⁵

As clearly put by Worster, the "true West [...] is, first and foremost, a culture and society built on, and absolutely depended on, a sharply alienating, intensely managerial relationship with nature," especially with water.²⁶ In a similar fashion, Reisner argued that "lack of water is the central fact of existence [in the West], and a whole culture and set of values have grown up around it."²⁷ Water is part of a larger discourse of the region having infinite possibilities and abundant resources, and is thus imbued with cultural values. Looking at the present circumstances, the Western states have inherited problems that have stemmed from decisions made by investors and land speculators in the first part of the twentieth century as their interests often took priority over local interests and environmental concerns. Because of increasing water demands, more extensive development of irrigated lands, the industrialization and growth of cities, and escalating population, current water resources, such as the Colorado River, cannot continue to sustain a steady water supply. This will become an increasing problem in the future—it has already been estimated that there is a fifty percent chance that Lake Mead, which is a central source of water for millions of people in the Southwest, will be dried up in the next decade if the effects due to drought and overuse are not cut back. Projections have been made by states in which they foresee water shortages

²⁵ Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* (New York, NY: Penguin Books, 1993).

²⁶ Worster, *Rivers of Empire*, 5.

²⁷ Reisner, *Cadillac Desert*, 12.

within the next five years, even under non-drought conditions.²⁸ So in order to understand the American West, one must also consider its issues with water and aridity.

In this thesis, I will argue that the current problems regarding water in the American West stem from decisions made in the first half of the twentieth century as economic development and progress were deemed more important than the sustainable management of the arid lands, which John Wesley Powell had warned against. Present issues in respect to water rights and privatization come to fore in contemporary documentaries and feature films, which can be related back to, and are best understood, when looking at this history. They illustrate the power of water as a commodity and its connection to popular culture.

This thesis is divided into three parts: first, I will discuss Powell's insights and observations regarding irrigation and water use in the arid West, analyzing his recommendations in respect to revising the division of lands and introducing water rights. The International Irrigation Congress of 1893 serves as an example of how the issues of politically motivated opponents directly clashed with Powell's efforts to deliver his views regarding the sustainable management of the Western lands. In the second part, I will discuss several disputes over water rights in the first half of the twentieth century, such as the ones over the Owens and Hetch Hetchy Valleys in California. Additionally, the Hoover Dam in Nevada is an example of how private interests took priority over local interests and environmental concerns. Third, I will look how the discussed issues and conflicts regarding water take on different roles in contemporary documentaries and feature films. The examples given revolve around three subjects: reviving historical disputes over water rights, the consequences of privatizing municipal water supplies, and the impact of the bottled-water industry. In general, current issues center around one dichotomy: viewing water as either a market commodity or as a human right.

²⁸ Tim P. Barnett and David W. Pierce, "When Will Lake Mead Go Dry?" *Water Resources Research* 44 (2008), 1; Mark Strassmann, "America's Dwindling Water Supply," *CBS News*. January 8, 2010: CBS Reports: Where America Stands.

PART I John Wesley Powell's Cautionary Vision: The Scarcity of Water in the Arid West of the United States

John Wesley Powell is considered to be the first prominent figure to think realistically about the distinctiveness of the West and to examine how the potential scarcity of water would have major implications on its settlement. Based on his experiences during extensive expeditions, Powell believed that American expansionism would have its limits and that the region's resources should be preserved to adhere to future demands. In this first part, I will discuss Powell's beliefs in respect to irrigation and water use in the arid West by analyzing his *Report on the Lands of the Arid Regions of the United States* and subsequent proposals for revising the division of lands and for introducing water rights in the West. Because he plead in favor of a need for limits that was not in line with the beliefs then common, Powell endured a multitude of setbacks in advocating his vision. This can, for example, be seen during the 1893 International Irrigation Congress, in which interests in support of economic development and progress were favored over Powell's views of sustainable management of the arid lands.

Powell first came to know of the Colorado River during an expedition along the Platte River in 1867, which was part of the U.S. Geographical and Geological Survey of the Rocky Mountain Region. He spent the summer, along with a group of students, in the Rocky Mountains in order to conduct a geographical study of Colorado. At this time, a large part of the Platte River and its surrounding plateau were still defined as "unknown territory" on government maps.²⁹ This fact sparked Powell's determination to explore the length of the Grand, Green, and Colorado Rivers by boat in order to map this region and to obtain geologic data on the surrounding lands. Powell made two trips "down the Great Unknown," one in 1869, the other in 1871, which were endorsed by President Andrew Johnson, because they

²⁹ Donald Worster, "A River Running West: Reflections on John Wesley Powell," *Journal of Cultural Geography* 26 (June 2009): 115.

coincided with expansion in the region.³⁰ Prior attempts had been made to explore the region, but failed due to the treacherous waters of the Colorado River.³¹ The goal of this last great exploration of the American West was to discover, observe, analyze, and map the unknown banks of the Colorado River Basin.³² Powell invited nine men to join him, most of whom lacked scientific credentials. He crewed the main boat, “Emma Dean,” together with soldier and traveler Jack C. Sumner and William H. Dunn, a hunter, trapper and mule packer. Other boats were the “Kitty Clyde’s Sister” which had Powell’s brother Walter, an officer of artillery, and lieutenant George Y. Bradley on board; the “No Name” with Frank Goodman and brothers Oramel G. and Seneca Howland; and the “Maid of the Canyon” with cook William R. Hawkins and Andrew Hall.³³ Realizing what the impact a visual record would have on Congress as well as the general public, Powell manned his second expedition with artist Thomas Moran and photographers E.O. Beaman, James Fennemore, and John K. Hillers.³⁴ Additionally, there was frequent correspondence by the crew with editors of prominent newspapers during the expeditions.³⁵

Powell’s accounts were first published as a series of articles for *Scribner’s Monthly* in 1875.³⁶ Around the same time, his official report to Congress, titled *Exploration of the Colorado River of the West*, was released and sold out immediately.³⁷ The following year, the Smithsonian Institute published the articles in book form as *Report on the Exploration of the*

³⁰ John Wesley Powell, *The Exploration of the Colorado River and its Canyons* (New York, NY: Penguin Group, 2003 reprint), 247.

³¹ Charles F. Hutchinson, “John Wesley Powell and the New West,” *Cosmos Journal* (2002).

³² The Powell explorations were part of the Great Surveys of the American West—set into place to investigate, map, and study the natural resources and geology of the American West. The other three were: the Geological Survey of the 40th Parallel, led by Clarence King from 1867 to 1878; the Geological and Geographical Survey of the Territories, led by Ferdinand Hayden from 1867 to 1879; and the U.S. Geographical Survey West of the 100th Meridian, led by George Wheeler from 1871 to 1879. In 1879, all four Surveys were either concluded or consolidated under the newly created office of the U.S. Geological Survey. Anne Gaines, *John Wesley Powell and the Great Surveys of the American West* (New York, NY: Chelsea House Publishers).

³³ Powell, *Exploration*, 120-123.

³⁴ Marcia L. Thomas, “John Wesley Powell: White Water to White City,” *Scholarly Publications* 5 (2007): 5.

³⁵ *Ibid.*, 4; examples of biographical sketches and original documents of the first Powell expedition that were sent to the press can be found in the *Utah Historical Quarterly* 15 (1947).

³⁶ Articles published as “The Cañons of the Colorado,” *Scribner’s Monthly* 9 (January 1875): 293-311; (February 1875): 394-409; (March 1875): 523-537.

³⁷ Thomas, “John Wesley Powell,” 5.

Colorado River of the West and Its Tributaries and were revised in 1895 as *The Exploration of the Colorado River and Its Canyons*. Powell included incidents from the second river expedition in his narrative, but “neglected to credit his crew.”³⁸ It was foremost an adventure tale written for a popular audience, despite the book being marketed as a purely scientific report on the expeditions.³⁹ As biographer Wallace Stegner puts it,

he had his eye partly on scientific results and the scientific reader, partly on the persuasive power the narrative might have on appropriations committees, and partly on the public impression he would make.⁴⁰

The book was to some extent a work of the imagination as it was loosely based on journal entries, recounting the dangers and beauty that characterized the exploration.

The expedition took off on May 24, 1869 in Green River City, Wyoming and safely passed through the first three canyons of the Colorado River, namely Flaming Gorge, Horseshoe Canyon, and Kingfisher Canyon, in the first week.⁴¹ In his account, Powell described many events that happened in the following months: the “No Name” got destroyed at the Canyon of Lodore in the first week of June, causing the loss of a number of instruments and a third of the food supply; Powell almost fell off a rock face at Echo Park, but was pulled up by Bradley through using his pants as a rope; and Frank Goodman had “seen danger enough” and decided to leave the expedition in the first week of July.⁴² On July 11, more instruments were lost after Powell was flung out of the “Emma Dean” while running a rapid. At Separation Rapid, the Howland brothers and William Dunn decided that it was “better to abandon the river” and walked four days to the nearest Mormon settlement.⁴³ At this point,

³⁸ Ibid.

³⁹ Ranked #4 in “The 100 Greatest Adventure Books of All Time.” *National Geographic’s Adventure Magazine*, May 2004.

⁴⁰ Wallace Stegner, *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West* (Lincoln, NE: University of Nebraska Press, 1982), 148.

⁴¹ Practically all sites during the expedition were named by Powell.

⁴² Ibid., 154-157, 169, 187.

⁴³ Ibid., 195, 278; the Howland brothers and William Dunn were sure they would all die if the journey was continued. After leaving the party at Separation Rapid, the men were attacked and killed, allegedly by Shivwits

Powell himself started considering whether or not it was a wise decision to go on; however, he felt that to

leave the exploration unfinished, to say that there is a part of the canyon which I cannot explore, having already nearly accomplished it, is more than I am willing to acknowledge, and I determine to go on.⁴⁴

After successfully navigating the last stretch through the Grand Canyon, the ninety eight-day, thousand-mile journey ended when the six remaining crew members were welcomed by settlers fishing at the river bank of the Virgin River on August 30.⁴⁵

Powell published his influential *Report on the Lands of the Arid Region of the United States* several years after his expeditions in 1879. As a result of his continuous surveying across the Colorado Plateau, Powell warned the nation that the lands in the West were very dry and that this fact would put a limit on American expansionism. He was not the first to acknowledge that the lands in the West were arid. After Long's expedition in 1820, the region was marked as the "Great American Desert" and that the lands would prove to be uncultivable. General William B. Hazen, among others, protested the misrepresentation of the western lands by railroads and land companies in the 1870s. In a pamphlet entitled *Our Barren Lands*, Hazen declared that the region between the Missouri River and the Sierra Nevada mountains was not much more worth than "one penny an acre except through fraud or ignorance."⁴⁶ Hazen believed that the United States was "rapidly approaching the limit of time when the landless and the homeless" would no longer be able to "acquire both lands and homes merely by settling them."⁴⁷ Powell was the first to define the problem of aridity in the context of the entire West and recognized the fact that there was not enough water in spite of

Indians. That was at least the story Powell heard when visiting the area in the following year. See also "Three of the Powell Expedition Killed by Indians," *Deseret Evening News*, September 8, 1869.

⁴⁴ Powell, *Exploration*, 279-280.

⁴⁵ *Ibid.*, 285-286; see also "The Powell Expedition," *Deseret Evening News*, September 7, 1869.

⁴⁶ David M. Wrobel, "The Closing Gates of Democracy: Frontier Anxiety Before the Official End of the Frontier," *American Studies* 32 (Spring 1991): 52.

⁴⁷ William B. Hazen, "The Great Middle Region of the United States, and Its Limited Space of Arable Land," *North American Review* 120 (January 1875): 22.

the general belief that the Colorado River could provide all the water for the West. He also correctly saw the pattern of droughts in the West, which effected the lands and the water.

This meant that a different approach to agriculture was necessary as the soil in the West was fundamentally different to the ones found in the East:

The eastern portion of the United States is supplied with abundant rainfall for agricultural purposes, [...] but westward the amount of [...] precipitation diminished [...] until at last a region is reached where the climate is so arid that agriculture is not successful without irrigation.⁴⁸

This region was defined by Powell as being the “Arid Region” of the United States, which began about “midway in the Great Plains and extend[ing] across the Rocky Mountains to the Pacific Ocean”—being about four tenths of the nation.⁴⁹ The lands could be characterized as being arid when the amount of rainfall in a particular region was twenty inches or less per year and was relatively evenly distributed over the year. This amount limited the type of crops that could be grown without irrigation.⁵⁰ Only three percent of the lands could be turned into farmlands without irrigation and its agricultural use was only possible when it would be artificially watered.⁵¹ It was Powell’s prediction that many droughts would occur in certain arid lands and that this would have significant effects on agriculture due to the harsh conditions.⁵² The *Report* was influential in the sense that, for the first time, someone had positioned the problem of aridity in the context of the entire West. Powell proposed practical solutions in order to counter the problems due to insufficient rainfall and non-irrigable lands for agricultural purposes. In a sense, Powell gave “a sober and foresighted warning about the

⁴⁸ John Wesley Powell, *Report on the Lands of the Arid Region of the United States: With a More Detailed Account on the Lands of Utah* (Cambridge, MA: Harvard University Press, 1962 reprint), 1.

⁴⁹ *Ibid.*, 11.

⁵⁰ Powell recognized that in some parts of the “Arid Region,” rainfall was concentrated to such an extent that there was a “rainy season” in certain months. Wherever the temperature of the rainy season was adapted to the raising of crops, it was found that “dry farming” could be carried with less than twenty inches of annual rainfall. There were three such districts along the borders of the “Arid Region,” namely along the eastern border, in the San Francisco Region, and in Arizona and New Mexico. Powell, *Report*, 61-66.

⁵¹ *Ibid.*, 68.

⁵² *Ibid.*, 13.

consequences of trying to impose on a dry country the habits that have been formed in a wet one.”⁵³

According to Powell, the “Arid Region” consisted of three types of lands, being “the irrigable lands below, the forest [or timber] lands above, and the pasturage lands in between.”⁵⁴ This classification could serve as a system in order to distinguish the different characteristics and conditions of the public lands so that they could be utilized in the most profitable way. The “irrigable lands” could be classified to the largest amount of land possible to redeem through irrigation so that the greatest possible development of this industry could be ensured. The boundaries of such lands were clearly definable and easily fixable, such as with the Utah Territory. According to Powell, agriculture was limited to these lowlands due to its “thermic conditions” as well as inadequate supply of water:

Some of the large streams run in deep gorges so far below the general surface of the country that they cannot be used; for example, the Colorado River runs through the southeastern portion of the Territory and carries a great volume of water, but no portion of it can be utilized within the Territory from the fact that its channel is so much below the adjacent lands.⁵⁵

In general, Powell concluded that the streams in the Territory could be used for agricultural purposes; however, “the lands which might [...] be reclaimed are of greater extent than the amount which the streams can serve.” The extent to which irrigation was a possibility in this region depended on “the volume of water carried by the streams.”⁵⁶ Even when all available streams would be utilized during the irrigating season, it would only be possible to cultivate 2.8 percent of the Utah Territory. The “timber lands” were defined as all “upper regions where conditions of temperature and humidity were favorable to the growth of timber”—

⁵³ Wallace Stegner, introduction in *Report on the Lands of the Arid Region of the United States: With a More Detailed Account on the Lands of Utah* (Cambridge, MA: Harvard University Press, 1962 reprint), xiv.

⁵⁴ Powell, *Report*, 16.

⁵⁵ *Ibid.*, 17.

⁵⁶ *Ibid.*

being about twenty-three percent of the Utah Territory.⁵⁷ Classification was needed in order to “prevent the fraudulent acquirement of these lands as pasturage lands.”⁵⁸ Powell argued that there was plenty of timber in the region and thought that it could be better protected from fire in private rather than in public ownership. The amount of rainfall needed to protect the forests from fire was between twenty and twenty-four inches per year, which was about the same amount necessary for agriculture without irrigation. Powell characterized the “great body of valley, mesa, hill, and low mountain lands” between the low and high lands, or between the irrigable and timber lands, as being the “pasturage lands.”⁵⁹ Such lands often had a “scanty growth” of grasses, which were fertile and valuable for pasturage purposes. The use of these grasses depended on climatic conditions as their abundance depended on latitude and altitude. The lands where grasses were “so scant as to be of no value” were considered as being “true deserts,” which were found in the southern parts of Arizona, California, Nevada, and New Mexico.⁶⁰ Powell recognized the differences in the land of the Southwest, each having its own purpose and each dependent upon the other in receiving the natural distribution of water. This new three-fold system of classifying lands was designed as a means to promote rational land use in the West. Taking this into account, Powell made his recommendations to Congress.

Powell’s ideas on dividing the Western lands were opposite from the then common rectangular system of land surveys. This system found its base in the Homestead Act of 1862, which had paved the way for settlement in the West and promised acres of the public domain to potential settlers. Through this act, 160 acres of unappropriated public lands could be turned over to each settler on the payment of a small registration fee and the assurance that title to the land could be obtained after five years of residence.⁶¹ This expansionist policy encouraged a rush towards the West of settlers in search of new opportunities. However, there

⁵⁷ Ibid., 25, 27.

⁵⁸ Ibid., 56.

⁵⁹ Ibid., 30.

⁶⁰ Ibid.

⁶¹ It was also possible to acquire land after six months of residence at a price of \$1.25 an acre. William deBuys, *Seeing Things Whole: The Essential John Wesley Powell* (Washington, D.C.: Island Press, 2004), 186.

was no consideration of whether or not the lands could accommodate such a massive influx of potential settlers in the way that had happened in the Eastern part of the United States. Powell acknowledged the fact that the existing policies under the Homestead Act worked well in this region. However, these policies of carving up the public lands into standardized 160 acre-parcels of private property were not suitable to the West due to its significant differences with the East. Powell thus believed that this type of land pattern was not appropriate and “insufficient for [...] settlement” in the West, because of the fact that the 160 acre-limit was simply not enough to make a living where water was so scarce.⁶² As an alternative to this approach, Powell advocated the creation of a land system that was specifically designed to take the “wisdom and beneficence of the homestead system [...] and the principles involved” into consideration, while also accommodating the “limited agricultural capacity” of the region and taking the “vital importance of water rights” for the production of crops.⁶³ It was intended that this new system of land classification would make “private entries” possible.⁶⁴ Powell hoped to realize these entries through the proposition of two bills to Congress that would authorize the organization of new, communally-managed irrigation and pasturage districts of homestead settlements.

As an alternative to the existing policies, Powell proposed to reorganize both irrigation and pasturage districts in his *Report*. He recommended that irrigable farmlands should be carved up into smaller, irregularly shaped parcels of eighty acres in order to maximize their access to streams. In the same line, the lands of pasturage farms needed to be at least 2.560 acres to have any practicable value. This amount was the minimum needed for agricultural products to grow and for livestock to graze. Powell believed that settlement had to adapt to the topographical divides and arid conditions of the land, which thus meant that the common

⁶² Powell, *Report*, 39.

⁶³ *Ibid.*, 42; Kirsch, “John Wesley Powell,” 560.

⁶⁴ *Ibid.*, 562.

division lines needed to be revised in order for his recommendations to work. Powell put forth that when

lands are surveyed in regular tracts as square miles or townships, all the water sufficient for a number of pasturage farms may fall entirely within one division. If lands are thus surveyed, only the divisions having water will be taken, and the farmer obtaining title to such a division or farm could practically occupy all the country adjacent by owning the water necessary to its use.⁶⁵

This meant that it became necessary for farms to be “widely scattered” as their lands had to be large. The fencing of these lands was also not practicable due to the space needed for cattle to graze. Additionally, Powell emphasized the importance of grouping residences in order to have “the benefits of local social organizations of civilization.”⁶⁶ In the agricultural model recommended by Powell, the lands of the West needed to be surveyed into watersheds, in which the farmers would govern the agriculture there cooperatively.⁶⁷

Alongside his *Report*, Powell’s propositions were submitted to the House of Representatives on April 1, 1878, and were later referred to the House Committee of Appropriations. Democratic supporters repeated and emphasized both the importance and significance of Powell’s main points in the debates that followed. However, critics, such as Montana delegate Martin Maginnis, insisted that there was “an abundance of good agricultural land left in the public domain” and characterized Powell’s recommendations as an effort of a “new-fledged collegiate” and of “scientific lobbyists” to “shut off the development of the West.”⁶⁸ In the end, these arguments won out, even though the propositions passed the

⁶⁵ Powell, *Report*, 33.

⁶⁶ *Ibid.*, 33-34.

⁶⁷ Powell acquired these ideas while surveying the Colorado River area from the region’s native peoples and Mormon farmers, who worked on irrigated farm plots on a cooperative basis; more information on this cultural aspect can be found in “Cultural Antecedents of J.W. Powell’s Arid Lands Report” by Michael E. Lewis and Craig L. Torbenson, *Journal of Geography* 89 (March-April 1990): 74-80.

⁶⁸ Henry Nash Smith, “Clarence King, John Wesley Powell, and the Establishment of the United States Geological Survey,” *The Mississippi Valley Historical Review* (June 1947): 48; *Congressional Record*, 45th Congress, 3rd Session, 1879, pt. 2, 1202.

House of Representatives at first. The Republican majority in the Senate ultimately blocked the bills.⁶⁹

The object of Powell's recommendation for introducing water rights in the West was to give settlers on pasturage or irrigation farms the assurance that their lands would not be made worthless by having the water diverted to distant lands in adjacent portions of the country.⁷⁰ Powell believed that the owner of any tract of land should also be the owner of the water right. Generally speaking, the lands greatly exceeded the capacities of the streams, which made them invaluable due to their lack of water. Powell put forth that the "magnitude of the interests" must not be overlooked as all the "present and future agriculture" was dependent upon irrigation.⁷¹ He feared that water would become a property separate from the lands and that this property would be secured in a monopoly of a few:

If the water rights fall into the hands of irrigating companies and the lands into the hands of individual farmers, the farmers then will be dependent upon the stock companies, and eventually the monopoly of water rights will be an intolerable burden to the people.⁷²

Simply put, whoever controlled the water thus essentially controlled the land, which opened the doors for land speculators and water monopolies. One solution to this was to acquire water rights by priority of utilization:

The *user right* should attach to the *land* where used, not to the individual or company constructing the canals by which it is used. The right to the water should inhere in the land where it is used; the priority of usage should secure the right.⁷³

It was Powell's belief that a farmer that would settle a small tract of land, to be redeemed by irrigation, should be given a reasonable length of time in order to secure his water right

⁶⁹ Smith, "Clarence King," 52.

⁷⁰ Powell, *Report*, 52.

⁷¹ *Ibid.*, 53.

⁷² *Ibid.*

⁷³ *Ibid.*, 55.

through this utilization, by either directly constructing waterways himself or indirectly by cooperating with his neighbors in constructing systems of waterways.⁷⁴

Powell was given another opportunity to address the issues of water rights and land use with the authorization of the Irrigation Survey in 1888. Lands intended for pasturage required water for irrigation, which meant that large reservoirs needed to be constructed at the head of streams and rivers. Once such sites were identified, they would have to be withdrawn from settlement. Following years of serious droughts and on the recommendation of Powell, Congress authorized the Survey to undertake a study on the arid regions of the United States, with placing a special emphasis on stream capacities and potential sites for dams, reservoirs, ditches, and other irrigation facilities.⁷⁵ The Shoshone Project, under leadership of William F. “Buffalo Bill” Cody, is an example of how Powell’s vision worked in practice. Rights were required from the state of Wyoming in order to appropriate waters from the Shoshone River for irrigating the surrounding lands. With the authorization of the project in 1904 under the Reclamation Act, the area around the new city of Powell became a part of the development in order to create a flood irrigation system, which saw several of Powell’s proposals being put into effect.⁷⁶

The Reclamation Act of 1902 tracked the *Report’s* original proposals in many of its features. The purpose of the Act was to set aside the “proceeds of the disposal of public lands for the purpose of reclaiming the waste areas of the arid West by irrigating lands otherwise worthless, and thus creating new homes upon the land.” These collected proceeds were to be repaid to the government by the settlers and then used again as a sort of “revolving fund continuously available for the work.”⁷⁷ President Roosevelt thus provided for government financing of large scale irrigation projects, such as the Shoshone Project. In fact, in his

⁷⁴ Ibid.; John W. Anderson, Craig W. DeRemer and Radford S. Hall. *Water Use and Management in An Arid Region* (Fort Collins, CO: Colorado State University, 1977).

⁷⁵ U.S. Geological Survey, *John Wesley Powell*.

⁷⁶ The Shoshone Project was one of the first three projects authorized by the new Bureau of Reclamation in the United States.

⁷⁷ Theodore Roosevelt, *An Autobiography* (London: Macmillian, 1913), 257.

autobiography, Roosevelt acknowledged that the first to propose such irrigation in the West was Powell—as a result of his research for the Shoshone Project.⁷⁸

Several of Powell's proposals were put into effect to create a flood irrigation system along the Shoshone River. To obtain maximum benefit from the flow of the river, the construction of a dam upstream the river was recommended. As a result of the construction of the Buffalo Bill Dam, flood waters of the Shoshone River were tamed, thereby providing regulation of stream flow for irrigation purposes, flood control, power generation, recreation objectives, and fish and wildlife propagation. Additionally, several smaller diversions and storage dams were constructed. The flood irrigation system that was created transformed—what is now known as—the Powell Valley from sagebrush flats into irrigated farm ground, which saw settlers homesteading small farms of eighty acres that included water rights. Agriculture became the driving economic force for the city of Powell, as well as for the surrounding towns, with the increased availability of irrigation water for the originally dry farm lands.⁷⁹

Because he advocated an unpopular message, Powell lacked public and political support for his ideas, for example seen during the 1878 Congressional debates. This lack of support was also seen after Senator William Stewart pushed a resolution to authorize the Irrigation Survey in 1888. Together with the Senate Irrigation Committee, Powell tried to gather support for his ideas in new states like North Dakota and Montana. During the constitutional conventions of these states, Powell urged the delegates “to conform their political units to the natural boundaries of the watersheds.”⁸⁰ Powell asserted that there

are waters rolling by you which are quite ample to redeem your land and you must save these waters [...] Don't let these streams get out of the possession of the people [...] Fix

⁷⁸ Ibid., 255.

⁷⁹ Bureau of Reclamation, *Shoshone Project*. Projects and Facilities Database (U.S. Department of the Interior, 2009).

⁸⁰ Thomas, “John Wesley Powell,” 7.

it in your constitution that no corporation—no body of men—no capital can get possession of the right of your waters. Hold the waters in the hands of the people.⁸¹

However, this was a different vision than Stewart had imagined for the Survey as he wanted to map dam sites and irrigable lands before turning them over to private enterprises. It was a direct clash with Powell's ideas, because he did not believe that a monopoly on water rights was the answer. The states eventually ignored the advice given by Powell and the Irrigation Survey struggled to survive due to the growing discontent with—and a lack of support for—Powell. When he appeared before the House of Representatives' Committee of Appropriations in June 1890, Powell was accused by Stewart, among others, of misusing the Survey to fund topographical work. It was also claimed that Powell was “ignoring artesian wells as a viable irrigation source.”⁸² Following these attacks, Congress slashed his budget for the Survey, as well as subsequently cutting the Geological Survey's appropriation by nearly half in 1892.

Powell clashed with the general consensus among the delegates during the second International Irrigation Congress, held in Los Angeles on October 13, 1893. This congress was held to address the problems of irrigating the arid lands of the West due to a number of serious droughts in the 1880s. Powell decided to put his original speech on the technical aspects of irrigation aside as he wanted to address the issues that had come up during the sessions instead.⁸³ The delegates had agreed on a sort of “platform” that would facilitate the establishment of millions of small homesteads in the West, which was in line with the general belief that there were “at least [one hundred] million acres of remaining public domain [that]

⁸¹ *Official Report of the Proceedings and Debates of the First Constitutional Convention of North Dakota, Assembled in the City of Bismarck, July 4-August 17, 1889* (Bismarck, ND: Tribune Star Printers, 1889), 412.

⁸² James M. Aton, *John Wesley Powell* (Boise, ID: Boise State University Printing and Graphic Services, 1994), 26-27.

⁸³ *Official Report of the International Irrigation Congress, Held at Los Angeles, California, October 1893* (Los Angeles: Los Angeles Chamber of Commerce, 1893), 107; the technical paper on waters supplies that Powell initially was going to present at the 1893 International Irrigation Congress was later published as “The Water Supplies in the Arid Region,” *Irrigation Age* 6 (1894): 54-65.

could be reclaimed by irrigation.”⁸⁴ However, there were “simply no additional sources of water to irrigate the present public domain nor was there enough water to reclaim more than a third of the arid lands already in the hands of private parties.”⁸⁵ As Powell put it:

[w]hen all the rivers are used when all the creeks in the ravines, when all the brooks, when all the springs are used, when all the reservoirs along the streams are used, when all the canyon waters are taken up, when all the artesian waters are taken up, when all the wells are sunk or dug that can be dug in all this arid region, there is still not sufficient water to irrigate all this arid region; there is still not sufficient water to irrigate all the land [...] you are piling up a heritage of conflict of all the waters; that is what you are doing. What matters it whether I am popular or unpopular? I tell you, gentlemen, you are piling up a heritage of conflict and litigation over rights, for there is not sufficient water to supply these lands.⁸⁶

These assertions created a sensation among the delegates. In response to Powell, Col. Richard J. Hinton, a delegate from New Mexico, proclaimed that Congress had already decided twice that his argument “should not be the public policy of this land.” Californian delegate William M. Sheldon asserted that there was enough water in the entire country “to irrigate infinitely more than my distinguished friend thinks there is.” William E. Smythe, a delegate from Utah, responded by saying that “the statements made by Maj. Powell in regard to the extent of irrigable water supply [...] is absolutely false.” In a similar fashion, Mr. Merrill, a delegate from Nevada, believed that Powell did “not speak with knowledge.”⁸⁷ Powell felt that his message was unfairly being misinterpreted.⁸⁸ Conflicting interests in respect to water rights can be seen in the responses to his speech; for example, Californian delegate Hiram Kellogg

⁸⁴ Lawrence B. Lee, “William Ellsworth Smythe and the Irrigation Movement: A Reconsideration,” *Pacific Historical Review* 41 (August 1972): 303-304.

⁸⁵ *Ibid.*

⁸⁶ *Official Report of the International Irrigation Congress*, 109, 112.

⁸⁷ *Ibid.*, 113-114, 116.

⁸⁸ *Ibid.*, 116.

suggested not to “frighten any investor.”⁸⁹ In the same line, Mr. Barber, another delegate from California, expressed his concern about water ownership. He felt that precaution was necessary as a “great deal of money” had been invested.⁹⁰ In the end, Powell did not give in to his critics as he believed that the facts as he had “stated them” could not “be successfully challenged.”⁹¹

Through his recommendations of revising the common rectangular system and introducing water rights in the area, Powell conveyed an unpopular message that was in direct opposition with the interests of investors and land speculators. Even though he endured a multitude of setbacks in advocating his vision, time has shown that Powell’s concerns were justified. Powell realized that the region surrounding the Colorado River mainly consisted of desert lands, which meant that irrigation would have to become a necessity in order to create any sort of sustainable society in such an arid climate. His solution of favoring an irrigation system based on small, locally controlled dams is diametrically opposed with what was employed in the first half of the twentieth century—such as the Utah reservoir that ironically bears his name. Powell understood what the West still struggles with today—the insufficiency of regional water for a large population or for large-scale irrigation.

PART II The Politics of Water: Disputes Over Water Rights in the First Half of the Twentieth Century

As noted before, irrigation has been a key formative influence in the American West, from which “an underlying infrastructure out of which social relations grew.”⁹² In this region, a social order was founded on the intensive management of water or, in other words, a “hydraulic society.” It saw the emergence of “the most elaborate hydraulic system in world

⁸⁹ Ibid., 118.

⁹⁰ Ibid., 119.

⁹¹ Ibid., 126.

⁹² Worster, *Under Western Skies*, 54.

history,” which has completely remade the landscape.⁹³ With the recommendations made in his *Report on the Lands of the Arid Region of the United States*, John Wesley Powell predicted that irrigation would bring a new phase in the way Western lands were settled. As Worster argues in his book *Under Western Skies*, Powell believed that

[i]t would domesticate the West for settlement, opening, he hoped, a wide field of opportunity for a nation that was elsewhere drifting toward industrial monopoly. It would also, he promised, establish the foundations for a powerful new economic order, based on corporation and brotherhood rather than on competitive individualism.⁹⁴

In the first part of the twentieth century, however, water became intrinsically connected to economic development as well as becoming a tool for economic progress. In this second part, I will discuss how water increasingly was perceived as a commodity, finding its base in the principle of “prior appropriation.” With this came the emergence of public corporations in large-scale irrigation systems, which was something that Powell did not support, and led to disputes over water rights, such as the ones over the Owens and Hetch Hetchy Valleys in California. Also, it was thought that the Hoover Dam in Nevada would be a solution to the decade-long conflict on water rights in that region. These projects serve as an example of how private interests took priority over local interests and environmental concerns.

The scarcity of water in the West had led to the development of a system of water allocation which was very different from the one that existed in the Eastern part of the United States which had abundant rainfall. The basis of this system meant that water rights were determined by “prior appropriation,” which meant that the first person to come to a stream and claimed its water, or a part of it, had priority to exploit it; he acquired, in other words, a vested right to the water, making it a form of personal property. This doctrine was in contrast with the riparian principle, which was a system governed by English common law and

⁹³ Ibid., 56.

⁹⁴ Ibid., 57.

brought to the West by settlers. It held that “only those people living on the banks of a river could claim its flow” and that “ownership of riparian lands [...] alone could give a water right.”⁹⁵ This principle depended on an abundance of rainfall like in the Eastern part of the United States. However, due to growing populations, it became necessary to divert water for use. The “prior appropriation” doctrine originated from the miners who came during the California Gold Rush in mid-1800. Under this doctrine, it did not matter how far from the river someone lived or how that person diverted the water from its natural course—there was just one rule: “Qui prior est in tempore, potior est in jure,” meaning “he who is first in time is first in right.” This meant that an individual to initially appropriate water would have the first right to its actual use. Being the so-called senior water right holder on a water system, that person would take priority over any other water rights. Additionally, this person also acquired the right to its future use against later users, who had junior holds to water rights. The system meant that, for example, in a year of extensive drought and limited availability of water, those with senior water rights could use the amount of water that went with these rights. Therefore, it was possible for all available water to be used by superior holders of water rights. Along with this was the idea that if a person with these rights did not use their water, then the water would be lost to them as “[t]here was no tolerance under the law for ‘non-use.’”⁹⁶

Under the “prior appropriation” doctrine, there were a number of historic requirements in order for a water right to become valid, which were based on the intention to divert water, the actual diversion of that water, and its “beneficial use.” These requirements meant that if a prospective water right user was to expend the money and labor to create a method to divert the water, then it was thought that they were serious about using the water beneficially. These irrigation canals or ditches also became a means to calculate how much water was being used. Water could only be diverted for its “beneficial use,” which was a requirement that gained

⁹⁵ Worster, *Rivers of Empire*, 88.

⁹⁶ Norman K. Johnson, *The Doctrine of Prior Appropriation and the Changing West: A Report* (Western States Water Council, 1987), 4.

importance when the population of the West expanded significantly at the turn of the century as the interest in diverting and damming rivers and streams grew as well. In order to assure protection of senior holds on water rights and to maximize the use of this scarce and valuable resource, many states adopted detailed schemes for the determination and administration of water rights—such as to what the “beneficial use” of a water right exactly entailed. The meaning of this requirement has various manifestations in different states. For example, in California, “beneficial use” means that “all appropriate proceedings or actions before executive, legislative, or judicial agencies” will be taken in order “to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water in this state.”⁹⁷ In Oregon, it is defined as “the reasonably efficient use of water without waste for a purpose consistent with the laws and the best interests of the people of the state.”⁹⁸ It is interesting to note that once a water right was received, it became a commodity, meaning that the right became a part of someone’s private property and that it, for example, could be sold or traded off.

It has been argued that the intensification of irrigation practices were “driven essentially by production for profit, not profit for use, values.”⁹⁹ Subsequently, the emerging market economy has been “the most powerful determinant of the course taken by the American irrigated agro-ecosystem.”¹⁰⁰ In an increasing manner, water became a commodity to be both mass-produced and mass-consumed at the start of the century. With this was also the emergence of public corporations in irrigation systems as it was deemed “a means of getting more income out of a river without surrendering to urban capitalists.”¹⁰¹ The federal government also played a major role in encouraging the economic growth and settlement of

⁹⁷ CAL Water Code, Section 275.

⁹⁸ OAR Chapter 690, Division 260.

⁹⁹ Worster, *Under Western Skies*, 58.

¹⁰⁰ *Ibid.*, 59.

¹⁰¹ *Ibid.*, 60.

the West, among others, by initiating an act for funding irrigation projects in the Western states.

The Reclamation Act of 1902 initially followed many of the proposals found in Powell's *Report on the Lands of the Arid Region of the United States* in many of its features, which intended to promote settlement within the arid West through the design of extensive irrigation systems. However, in practice, a number of aspects of the act proved unworkable over time and it eventually provided government financing for large-scale irrigation projects, especially in the years of the Great Depression. At the same time, President Theodore Roosevelt wanted to preserve the country's national landmarks. The projects promised irrigation water to convert the arid lands of the West into irrigable farmland, thus facilitating farming and economic development, but also a growing demand for water. This increase in demand also led growing water shortages in the larger cities. City engineers looked for alternative water supplies in order to curtail the demand, shown for example in the construction of the Los Angeles and Hetch Hetchy aqueducts. It can be said, however, that Powell's recommendations were ignored during this time because economic interests and development were more important.

This can be exemplified by looking at how the interests of investors often took priority over the interests of local farmers, as found in the controversy surrounding the Owens Valley. By 1900, the city of Los Angeles had largely exhausted its local sources of water from the Los Angeles River and its tributary groundwater basin, and the local government began looking for alternative methods for securing a steady supply of water to the growing city. Mayor Fred Eaton appointed William Mulholland, who was the superintendent of the Los Angeles Water Company, to be the chief engineer of the newly created Los Angeles Department of Water and Power—and was one of Powell's opponents during the 1893 Irrigation Congress. Together they were responsible for bringing water from the lake found in the Owens Valley, stretching from the Sierra Nevada across the Mojave desert, into arid Los

Angeles. In 1904, it was proclaimed by the department that “the time has come when we shall have to supplement the supply from some other source.”¹⁰² This source was thus found in the valley and its quantities of water were deemed “adequate for any requirement [the city] may ever have.” They began buying up land from the farmers in the Owens Valley, acquiring the water rights in order to bring water into Los Angeles. By 1905, “Eaton and Mulholland had acquired almost all riparian land and water rights in the valley [...] and transferred them to the city.”¹⁰³ Residents in the area were misled by claims that Los Angeles would take water only for domestic purposes, not for irrigation. As described by Reisner, the city “employed chicanery, subterfuge, spies, bribery, a campaign of divide-and-conquer, and a strategy of lied to get the water it needed.”¹⁰⁴

Mulholland and Eaton were speculators who manipulated the geography of an area by diverting water from its natural course rather than following the stream of run-off water. In this case, the water went to Los Angeles instead through a 233-mile aqueduct.¹⁰⁵ Construction of the aqueduct began in 1908, with the first water stemming from the Owens Valley flowing into the San Fernando Valley five years later in November 1913. The city’s population had grown to 500,000 by the end of the decade. By 1930, the Owens Lake was running dry—while it had originally been good land—as Los Angeles had become a city of over 1,2 million inhabitants. Subsequently, the city’s demand for water had also grown significantly and the aqueduct proved not be viable anymore. In order to curtail the growing demand, the city decided to build a new diversion of the aqueduct, extending forty miles north to tap more water sources at tributaries to Mono Lake—this diversion was completed in 1940. With the valley dried out, farmers increasingly acted violently and sabotaged the aqueduct. The

¹⁰² Reisner, *Cadillac Desert*, 62.

¹⁰³ Ellen Hanak et al., “Floods, Droughts, and Lawsuits: A Brief History of California Water Policy,” chapter 1 in *Managing California’s Water: From Conflict to Reconciliation* (San Francisco, CA: Public Policy Institute of California, 2011), 34.

¹⁰⁴ Reisner, *Cadillac Desert*, 62.

¹⁰⁵ Water Resources Collections and Archives, *Liquid Gold: California’s Water*. Exhibit (University of California, 1997).

controversy initiated a decade-dispute over water rights in Southern California and became to be known as one of the fiercest and longest running episodes of the California Water Wars.

Another source of major dispute was the creation of a reservoir in the Hetch Hetchy Valley, situated in the middle of Yosemite National Park, in order to supply the San Francisco Bay Area with water and electricity. The city's chief engineer, Michael Maurice O'Shaughnessy, believed that the Tuolumne River, flowing from the central Sierra Nevada to the San Joaquin River in the Central Valley, would be the ideal source of water for the Bay Area, proposing to construct a dam at the mouth of the river in the Hetch Hetchy Valley. The main issue with the proposal was, however, that the valley had become part of a national park in 1890 and was thus federally protected land. The choice between a reservoir or wilderness was one that placed President Theodore Roosevelt "in an awkward position."¹⁰⁶ Even though he was committed to the preservationist cause, he also placed an importance on water, lumber, and other natural resources to national welfare, and probably political pressure. As President, he felt a responsibility for providing these resources to the country.

Along with conservationist John Muir and the newly formed Sierra Club, farmers in the San Joaquin Valley also opposed the plans as they feared that they would lose their water rights to the city of San Francisco. Mayor James Phelan had begun to privately file for water rights in the valley in 1901. In response to his requests, Congress passed a Right of Way Act in 1901, which provided the legal basis for the city to acquire rights to national park land. Two years later, Phelan transferred his water rights to the city of San Francisco. However, Secretary of the Interior Ethan A. Hitchcock denied his application for reservoir rights at Hetch Hetchy as he preferred the protection of Yosemite's "natural curiosities, or wonders" instead.¹⁰⁷ San Francisco's devastation after the 1906 earthquake and subsequent fires fueled the city's determination to find a dependable water supply. Following a rehearing of San Francisco's application, Roosevelt's second Secretary of the Interior, James R. Garfield,

¹⁰⁶ Roderick Nash, *Wilderness and the American Mind* (New Haven, CT: Yale University Press, 1982), 162.

¹⁰⁷ *Yellowstone National Park Act of 1872*, S. 392, *U.S. Statutes at Large* 17 (1873): 33.

granted San Francisco reservoir sites and rights of Hetch Hetchy in 1908 as its arguments for using the valley as a reservoir prevailed. Garfield rationalized his decision to give national park land away by proclaiming that flooding the Hetch Hetchy Valley would not “make it any less beautiful than it now is” and that the Bay Area would have “one of the finest and purest water supplies in the world.”¹⁰⁸ It was, for example, also proclaimed that “the advantages to the public from the change are many and great:”

the City would have a cheap and bountiful supply of electric energy for pumping its water supply and lighting the City and its municipal buildings; the public would have a highway at its disposal to reach this beautiful region of the Park heretofore practically inaccessible; [...] the City has options on land held in private ownership within the Yosemite National Park, and would purchase this land and make it available to the public for camping purposes; [...] and further the City in protecting its water supply would furnish to the public a patrol to save this part of the park from destructive and disfiguring forest fires.¹⁰⁹

Garfield’s decision and Roosevelt’s endorsement were also influenced by Gifford Pinchot, Chief Forester in the Department of Agriculture and longtime confidant and adviser to the President. In 1913, Congress finally passed the Raker Act, which was necessary since the valley was situated in the middle of a national park and authorized its flooding.¹¹⁰ Subsequently, the construction of the O’Shaughnessy Dam, completed in 1938, created the reservoir that ensured a stable water supply for the Bay Area through a 160-mile system of aqueducts and dams.¹¹¹

The decade-long dispute that followed San Francisco’s proposal to dam the valley in 1903 was epitomized by, on the one hand, Muir and the Sierra Club and, on the other hand,

¹⁰⁸ C.E. Grunsky and Marsden Manson, *Reports on the Water Supply of San Francisco, California, 1900 to 1908, Inclusive* (San Francisco, CA: Board of Supervisors, 1908), 117.

¹⁰⁹ *Ibid.*, 219-220.

¹¹⁰ Tuolumne County Historical Society, *Hetch Hetchy Water and Power System* (Landmarks: Landmarks Committee, 2009).

¹¹¹ Hetch Hetchy Water & Power, *Hetch Hetchy Water and Power. Projects* (San Francisco Public Utilities Commission, 2011).

Pinchot. Roosevelt placed a lot of trust in Pinchot, going so far as to declare that “in all forest matters I have put my conscience in the keeping of Gifford Pinchot.”¹¹² In the case of the Hetch Hetchy controversy, Pinchot favored converting the valley into a reservoir. However, Roosevelt admired Muir as well. In a 1907 letter, Muir reminded the President of their 1903 trip to Yosemite and expressed his desire that the region “be saved from all sorts of commercialism and marks of man’s works.”¹¹³ Even though Muir did acknowledge the fact that there was a need for an adequate water supply, he proclaimed that this could be regulated outside “our wild mountain parks.” Before making a decision on the matter, Roosevelt sought advice from engineers about possible alternatives.¹¹⁴ It turned out, however, that a Hetch Hetchy reservoir would offer the only viable and practical solution to San Francisco’s problem. So even though Roosevelt

assur[ed] Muir that he would do everything possible to protect the national parks, the President reminded him that if these reservations ‘interfere with the permanent material development of the State instead of helping [...] the result will be bad.’

In this letter to Muir, Roosevelt also expressed that he was doubtful that the “great majority would take the side of wilderness in a showdown with the material needs of an expanding civilization.”¹¹⁵ Pinchot expressed his sympathies to Muir in a 1907 letter to Roosevelt, proclaiming that he understood

the desire of [...] Mr. Muir to protect the Yosemite National Park, but I believe that the highest possible use which could be made of it would be to supply pure water to a great center of population.¹¹⁶

¹¹² Nash, *Wilderness and the American Mind*, 163.

¹¹³ Letter from John Muir to Roosevelt, September 9, 1907; also quoted in Nash, *Wilderness and the American Mind*, 163.

¹¹⁴ Letter from Roosevelt to James R. Garfield, August 6, 1907; also quoted in Nash, *Wilderness and the American Mind*, 163.

¹¹⁵ Nash, *Wilderness and the American Mind*, 164.

¹¹⁶ Letter from Gifford Pinchot to Roosevelt, October 11, 1907; also quoted in Nash, *Wilderness and the American Mind*, 164.

On the other hand, Muir still believed that he could spark national protest and wanted to show “federal authorities that Roosevelt was mistaken in his judgment about the lack of public sentiment for keeping Hetch Hetchy wild.”¹¹⁷ Roosevelt, in fact, was never at ease with his decision regarding the Hetch Hetchy Valley. As he expressed later on, it was “one of those cases where I was extremely doubtful.”¹¹⁸

The Hoover Dam in Nevada was created and later promoted as being the solution to the decade-long conflict on water rights and was intended to be of great benefit for the Southwest, even though it majorly impacted the surrounding lands and the Colorado River that it tamed. When it was completed in 1935, the dam was considered to be the most massive structure of its kind in the world and “[i]t introduced a new era of building high-rise dams in country after country, remaking the face of the earth and altering the distribution of social and economic power on it.”¹¹⁹ The dam also became a symbol of how nature was conquered, how a “new power [was] unleashed in human life, quite like anything before it, a mechanical power that acknowledged no limits and would seek to remake the whole world in its own image.”¹²⁰ This new power, and what it generated, however, “came to rest in fewer and fewer hands as centralized, bureaucratized structures of wealth and authority took command.” Worster noted that, in essence, the construction of the Hoover Dam and all that it represented came down to the following assertion:

Surround that dam and river with an immense arid landscape, use the water and energy from them to conquer that landscape and create a urban civilization, an agribusiness empire, and you have the makings for an unrivaled study in the modern domination of nature and its consequences.¹²¹

¹¹⁷ Nash, *Wilderness and the American Mind*, 164.

¹¹⁸ Letter from Roosevelt to Robert Underwood Johnson, December 17, 1908; also quoted in Nash, *Wilderness and the American Mind*, 164.

¹¹⁹ Worster, *Under Western Skies*, 64.

¹²⁰ *Ibid.*, 65-66.

¹²¹ *Ibid.*

Fifty years after Powell's expeditions along the Colorado River, states in the American West signed a compact dividing the river among themselves in 1922, opening it for development. Then, in 1928, the Boulder Canyon Act was passed by Congress, which authorized the construction of a dam and was the first major step in controlling the river.

These actions were put ahead after an increasing demand to tame the Colorado River, coming from three different sources. The first one came from a westward-moving population into the state of California, seen in the increasing population numbers in Los Angeles. Diverting water from the Owens Valley into the greater city in order to meet growing water demands turned out to be a short-term solution. The city government began looking at the Colorado River as a source of water. It has been argued that this demand was "the deliberate strategy of a group of urban entrepreneurs to *induce* a migration boom," which implies that this "need" for water was one constructed as part of the Western imagination.¹²² However, as declared by William Mulholland in 1907, "[w]e have got to have water or quit growing."¹²³ A second demand came from, what Worster calls, "agricultural capitalists" in California's Imperial Valley, located north of the Mexican border.¹²⁴ They needed the water from the Colorado River as a source for irrigation. Taming the river would also put a halt to flooding and enhance the yearly flow. And thirdly, the idea for a dam and reservoir was supported by the Bureau of Reclamation, which was established under the 1902 Reclamation Act to assign developing irrigation projects in the Western states. After numerous smaller scale projects, "the Bureau was itching to get its hands on something big, something monumental"—such as then director Arthur Powell Davis, a nephew of John Wesley Powell, who believed strongly in the idea behind building the Hoover Dam. He proclaimed that he "considered problems in all of the Western States," but that there was "none which [...] excited my interest and

¹²² Ibid., 68.

¹²³ William Kahrl, *Water and Power: The Conflict Over Los Angeles' Water Supply in the Owens Valley* (Berkeley, CA: University of California Press, 1983), 157.

¹²⁴ Worster, *Under Western Skies*, 69.

imagination so much as the development of the Colorado River basin.”¹²⁵ These three voices had one thing in common: they “all wanted, with a desire that knew no bounds, to dominate nature. Only a river as wild and full of life as the Colorado could satisfy their desire.”¹²⁶ The interest in building such a massive dam along the mighty Colorado River was thus based on a will to conquer and exert power over nature. It can be said that “[t]he chief political lesson of the Hoover Dam then is [...] a new concentration of economic, social, and political power is the outcome of the domination of nature.”¹²⁷

The Hoover Dam was considered to have sole advantages to the cities in the Southwestern region of the United States. The project not only provided jobs during the Great Depression, but, when completed, also provided irrigation water, electricity, and drinking water to Southern California, Arizona, and Nevada.¹²⁸ The construction of the Hoover Dam also sparked debate regarding the use of dams to tame rivers. In general, dams were propagated as having only advantages, for example in that the dams could be used as reservoirs in times of drought, use of water for irrigation, and as a source for electricity. The promise of abundant water and power catapulted the growth of major cities, encouraged farmers to plant the most water-thirsty crops, and gave the impression that lawns could be watered every day without worrying about waste and run-off. However, there is not enough water in the Colorado River to serve all the demands placed on it—and there never was, as Powell had cautioned. The Hoover Dam failed to put an end to fifty years of conflict over the water of the Colorado.¹²⁹

Projects such as the Hoover Dam serve as an example of how private interests took priority over local interests and environmental concerns. Because of such conflicting interests,

¹²⁵ Ibid.

¹²⁶ Ibid., 70.

¹²⁷ Ibid., 73.

¹²⁸ Bureau of Reclamation, *The Colorado River and Hoover Dam*. Facts and Figures (U.S. Department of the Interior, 2005).

¹²⁹ Michael Hiltzik, “Hoover Dam never had ability to solve all Colorado River conflicts,” *The Arizona Republic*, August 22, 2010: viewpoints.

the consequences for the lands surrounding the dams were never deliberated upon. All lands down the Colorado River were affected when the reservoir behind the dam, known as Lake Mead, was filled, which essentially caused the other side of the river to dry up. There were also disputes on the question of who actually owned the water and who would control the spill ways. The quality of the water enhanced the problem because of the evaporation of the reservoir waters, which was a development Powell had also warned for. Because the water was also used for irrigation purposes, salinity levels increased as well. This meant that the water would eventually become poisonous to plant and fish life and would cause a disruption of the natural processes of the river. The proponents did not weigh the benefits against the drawbacks, with their perspectives often being based on short-term gain. The combination of drought and overuse had caused the reservoir to be currently half empty, which has left a 136 foot-high “bathtub ring” around Lake Mead.¹³⁰

PART III “Whoever Controls Water, Has Power:” Views On Water and Issues Over Privatization in American Culture

When one thinks about the West, images of a cowboy life come to mind, which is rooted in a common imagination. As noted before, there has been a continuing drive to conquer and control nature as well as following a quest for unlimited abundance. Part of this story is its lack of water—one must consider what the impact of the scarcity of such “a vital natural resource [...] had on the habits, institutions, modes of producing a living, values and identities of the people who have taken possession of this land.”¹³¹ In other words, the “lack of water is the central fact of existence, and a whole culture and set of values have grown up around it.”¹³² The West’s relationship with both aridity and water is one that continues to play a role

¹³⁰ Strassmann, “America’s Dwindling Water Supply.”

¹³¹ Worster, *Under Western Skies*, 82.

¹³² Reisner, *Cadillac Desert*, 12.

to this day. Because it plays an important role in the social life of communities, water has historically been imbued with cultural values, which comes to fore in the fact that it is a theme that runs through all forms of popular culture—whether in song or poem, film or novel, water often plays a key part in creative endeavors.

Water disputes and conflicts over water rights are topics that have been included in a surprising number of popular movies. Also, in the last decade, numerous documentaries have been made that have placed water back into the foreground—relating mostly to the increasing global trend of water supplies being privatized and seen, for example, in the continual periods of extreme drought in east Africa that has brought the extreme threats of life to global attention. One way of looking at how the discussed issues and conflicts in regards to water have impacted contemporary American culture is by looking at how these take on different roles in contemporary feature films, which I will be discussing in this third part. The examples that will be analyzed revolve around three subjects: reviving historical disputes over water rights, the consequences of privatizing municipal water supplies, and the impact of the bottled-water industry. Documentaries such as *Thirst* (2004) and *Flow: For Love Of Water* (2008) attempt to answer questions that revolve around the dichotomy of water being either part of a basic human right or whether it is a commodity to be bought, sold, and traded in a global marketplace. These documentaries acknowledge that water is rapidly becoming the most valuable global resource due to drought and overuse in upcoming decades. This is the reason why current problems are best understood when looking at their history, as put forth in the previous two parts.

Thirst is a non-narrated documentary that targets the issues revolving water privatization by major players around the world.¹³³ The documentary shows that this privatization had a direct link to issues in regards to, for example, human rights and government corruption. *Thirst* delves deeper into these issues by showing the incentive of

¹³³ *Thirst*, 2004 documentary. Directed by Alan Snitow and Deborah Kaufman, 62 min., Bullfrog Films.

corporations to, essentially, control and profit from the world's water. This is shown by concentrating mainly on three communities from around the world that had to deal with these issues—Cochabamba in Bolivia, Rajasthan in India, and Stockton in the United States. One of the questions that is dealt with is whether politics should be a determining force in the privatization of water and if it should be allowed for water rights to be sold to companies in order to make a profit. *Thirst* also tells the story of how American cities and towns continue to be a staging ground for power plays over who controls the supply of water. Back in 2004, eighty-five percent of U.S. municipal water systems were publicly owned, while the other fifteen percent were in the hands of corporations. It is shown that local governments are in the grips of greater lobby campaigns pressuring them to turn over their water supply to multinational companies—such as the U.S. subsidiary of Suez Water which took control of Atlanta's water in 1999. One of the main incentives for local governments to pass over their water rights is the significant cost of replacing all aging pipes and improving the condition of public water plants—it is argued that these costs can best be dealt with through privatization.

This point is exemplified in the documentary by analyzing the situation in Stockton, California. Its municipal water services were privatized for a period of two decades after a 600 million dollar-contract with water companies Thames and OWI was set up by the city council in 2003. Despite opposition, the agreement was signed on behalf of Stockton's citizens. General consensus was ignored by the city council, which led to a public hearing on the issues involved. During the public testimonies, it became clear that the major reason for withdrawing the agreement was the fact that the residents were given no choice in the matter, their freedom of choice was taken away from them:

City Council members, by signing this contract without the vote of the people, you will be betraying the people you supposedly represent. Water is life. This company, OMI/Thames, wants to profit from our water. Water for life, not for profit.

Another resident testified that she felt

ashamed that we've followed this path and have gone down the road at making something happen that was not consensus building, not citizen-involved. It was basically handed down as a dictate. This is not the principle of an All-America City.

The city's water resources were privatized despite broad opposition to the agreement made. However, the continuing opposition did prove successful in the long run. In March 2007, the city council decided to reverse its decision with water becoming a free, equally accessible resource again.

On the one hand, stories of issues of water in the documentary *Flow* are told from the perspective of poorer countries, such as the lack of safe drinking water and the polarizing privatization of water supplies. On the other hand, these stories are told from the outlook of wealthier countries such as the United States, where water is becoming increasingly scarce and where there are growing problems in regard to regulation and environmental concerns in particularly the bottled-water industry.¹³⁴ Examples given in this documentary are the disputes from a Michigan community with a water-bottling corporation, the massive protests of the Bolivian people against water privatization, and the new technologies that are implemented in India in order to cope with water shortages. The disputes in Michigan are illustrative for other communities within the United States. Back in 2000, the Nestlé Corporation announced its plans to build a water-bottling plant in Mecosta County to bottle water pumped from nearby rivers and aquifers. In essence, the water gets bottled by Nestlé, after which it get shipped across the United States, and sells it back to Michigan residents. The Michigan Citizens for Water Conservation (MCWC) brought on a law suit against Nestlé in order to shut its practices down. Their central argument was the fact that these practices were not founded in the "reasonable use" of the water, which essentially violated both state and federal regulation in respect to water rights. It is shown in the documentary of how lowered lake levels are the

¹³⁴ *Flow: For Love Of Water*, 2008 documentary. Directed by Irena Salina, 84 min., Oscilloscope Laboratories.

result of a company selling drinking water back to the people who have already paid for it. After reviewing the damage caused by the pumping of water, U.S. District Court Judge Lawrence Root ordered Nestlé to cease its practices immediately. Ultimately, the Michigan Supreme Court decided in favor of Nestlé during its appeal, arguing that citizens did not have the right to put the case before a judge unless land ownership was in question. This is just one example from the documentary illustrating its argument that global corporations, such as Nestlé, have a primary interest in profit, not in ensuring safe and affordable access to water for all.

An example of privatization of municipal water systems which comes back in both *Thirst* and *Flow* are the water wars in Cochabamba, Bolivia. These wars began when the World Bank “refuse[d] to guarantee a US\$25 million loan to refinance water services in the city of Cochabamba unless the local government sold its public water utility to the private sector and passed on the costs to consumers.”¹³⁵ Bolivia complied, giving control of the region’s water resources to Aguas del Tunari, which was a newly formed subsidiary of the major U.S. corporation Bechtel. Water prices in the Cochabamba region soon increased by almost thirty-five percent—“[f]amilies with monthly incomes of around \$100 have seen their water bills jump to \$20 per month—more than they spend on food.”¹³⁶ The local community responded with widespread protests that finally reversed the privatization in 2000. To defend the contract during riots, the government put thousands of police and military into the street, with hundreds wounded and one, seventeen year-old Víctor Hugo Daza, killed. After a week of protests, the Bolivian government broke its contract with Bechtel.

The plot of the 2008 James Bond movie *Quantum of Solace* is loosely based on these real life events against the privatization of water supplies in Bolivia.¹³⁷ The villain, named Dominic Greene, conspires to seize control of Bolivia’s water supply for profit as well as

¹³⁵ Maude Barlow and Tony Clarke, *Blue Gold: The Battle Against Corporate Theft of the World’s Water* (London, UK: Earthscan, 2003), 154.

¹³⁶ *Ibid.*, 155.

¹³⁷ *Quantum of Solace*, 2008 movie. Directed by Mark Forster, 106 min., MGM-Columbia Pictures.

monopoly rights to corner, ultimately, the entire water market in South America. The issues that come to fore are thus mainly concerned with the power of those controlling water as a resource. It is thus an example of how water is seen as a means to more power, which sometimes goes hand in hand with corruption. As the villain proclaims: water “is the most valuable resource in the world and we need to control as much of it as we can.” In this movie, issues of corruption also come to the foreground when the U.S. Ambassador proclaims that “we do nothing to stop a coup,” and, in exchange, Greene will “give us a lease to any oil” that might get found. It is also said that “[i]f we refused to do business with villains, we’d have almost no one to trade with.” The movie can thus be seen as an allegory for seeing water as purely a commodity and a source for making profit.

Another movie in which water is constructed as a commodity to be either bought and sold or stolen is the 2011 military science fiction war film *Battle: Los Angeles*, which depicts the aftermath of an alien invasion of earth.¹³⁸ It is theorized within the film that the goal of the alien invasion is earth’s liquid water. Scientists are depicted being interviewed who argue that “the leading hypothesis is that their target is our water”—it should be noted that there is an emphasis on the water being “liquid” as this is apparently a scarce commodity. With the premise of the aliens being after the earth’s water as a fuel source, it can be said that the movie’s narrative could be seen as a analogy for corporations that seek to “colonize” the world’s natural resources and that this “invasion” is taking place around the world, seen in documentaries such as *Thirst* and *Flow*.

Even though *Chinatown* (1974) is not a feature film from the last decade, it still should be discussed as it is one of the most well-known and notable examples of how the issue of water rights is grounded in environmental history.¹³⁹ Because of its significance in popular culture, I will discuss this movie in greater detail. By linking it to a more contemporary example such as *Rango* (2011), another narrative can be presented of the continuing issues

¹³⁸ *Battle: Los Angeles*, 2011 movie. Directed by Jonathan Liebesman, 116 min., Columbia Pictures.

¹³⁹ *Chinatown*, 1974 movie. Directed by Roman Polanski, 131 min., Paramount Pictures.

that are related to water.¹⁴⁰ Although these stories find their ground more “forcefully in dry regions of western states, it has been invoked throughout the country as a warning to rural communities faced with burgeoning urban populations whose expanding demand for water exceeds available supplies.”¹⁴¹ *Chinatown* and *Rango* are examples of movies that connect the issue of water with power and corruption. It has been argued that the storylines, based on the dispute over the Owens Valley, take “liberties with the city’s legitimate development efforts” as they are “supported by a distorted version of history.”¹⁴² Their significance, however,

is that, despite factual inconsistencies, it captured the deeper truth of the rebellion. Metropolitan interests appropriated the Owens Valley for their own expansionist purposes through the use of blunt political power.

A movie like *Chinatown* actually “refueled popular interpretation and energized protest that returned to the valley in the 1970s.”¹⁴³ By referring to this classic, *Rango* somehow makes something new out of old issues and maybe it has put the continuing issue of water rights back in the mainstream.

Chinatown was inspired by the California Water Wars during the 1910s and 1920s, in which William Mulholland acted on behalf of the city of Los Angeles in order to secure water rights in the Owens Valley. The movie is set in Los Angeles during the time of the Great Depression. The cynical private detective J.J. “Jake” Gittes is hired by a certain Mrs. Mulwray to investigate her husband’s presumed infidelity, who is the chief engineer of the Los Angeles Department of Water and Power. Hollis Mulwray resisted efforts to build an unsafe dam to provide more drinking water, even though the city was in the midst of a serious drought. After the ensuing scandal breaks in the press, Mulwray is found dead in a reservoir, having apparently drowned after an accidental or suicidal fall. This leads Mulwray’s real wife

¹⁴⁰ *Rango*, 2011 movie. Directed by Gore Verbinski, 107 min., Paramount Pictures.

¹⁴¹ Gary D. Libecap, “Chinatown Revisited,” *Hoover Digest 2* (2005).

¹⁴² John Walton, “Film Mystery as Urban Mystery: The Case of Chinatown,” chapter 4 in *Cinema and the City: Film and Urban Societies in a Global Context* (Hoboken, NJ: John Wiley & Sons, 2011).

¹⁴³ *Ibid.*

Evelyn to commission Gittes to examine the circumstances of his death, who quickly learns of a complex web of conspiracy and corruption related to the city's water rights and water supply. Gittes discovers that the drought was contrived—thousands of gallons of water have been drained off into the ocean each night, and Mulwray realized this just before he died. Gittes finds that much of the “drought stricken” land in the valley has recently been bought by three or four people, masterminded by the wealthy Noah Cross, Mulwray's father-in-law and ex-partner. As the movie progresses, pieces of the puzzle begin to unravel more clearly. Not only does Gittes discover widespread political corruption in a scheme headed by Cross, he also becomes aware of a second scandal involving the personal lives of Evelyn, her father, and the mysterious young lady he saw with Mulwray.

The extensive land development schemes in order to redirect the flow of water take on a center role in the film. These have caused lands to become unfertile due the manipulations of rich and powerful businessmen and shows that the days of abundant water are in the past. There are several parallels with history in the movie: Gittes starts closely examining the Mulwray case by first listening in during the public hearings for a newly to build dam and reservoir in the area. Proponents and opponents of the dam present their cases at the city council meeting; the mayor proclaiming in his speech that “Los Angeles is a desert community” and needs irrigation projects that must be paid for by a public bond. When Mulwray is called out to speak, he rebukes these projects that would give the desert area in the San Fernando Valley irrigation water. He uses the Van der Lip Dam disaster as an argument against construction, which references directly to when the Mulholland-designed St. Francis Dam collapsed in 1928:

And now you propose yet another dirt-banked terminus dam, with slopes of two and one-half to one, 112 feet high and a 12,000 acre water surface. Well, it won't hold. I won't build it, it's that simple. I'm not going to make the same mistake twice.

An angry farmer from the dried up valley then interrupts the hearing by leading his sheep down the aisle, demanding answers from Mulwray. He accuses Mulwray of being paid off to divert water from the farms in the valley by saying: “You steal water from the valley. Ruin their grazing. Starve the livestock. Who’s paying you to do that, Mr. Mulwray? That’s what I want to know.”

Gittes discovers clues that sections of the city’s water supply have been dumped into run-off channels overnight. In this way, claims could be made of a drought, which would help the case for the construction of a new reservoir. A couple of days later, he revisits the office of Mulwray, which now had been taken over by Russ Yelburton. Gittes suggest to him the possibility of Mulwray being murdered as he contested the construction of a new dam:

Gittes: Well, let’s look at it this way. Mulwray didn’t want to build a dam. He had a reputation that was hard to get around. You decided to ruin it. Then he found out you were dumping water at night. Then he was, uh, drowned.

Yelburton: Mr. Gittes, that’s an outrageous accusation. I don’t know what you’re talking about.

Gittes: Well, Whitey Mareholz over at *The Times* will. Dumpin’ thousands of gallons of water down the toilet in the middle of a drought—that’s, uh, news!

Yelburton appears to be offended by this “outrageous accusation,” but backs off and admits that water was indeed secretly diverted to the orange groves in the San Fernando Valley, which is outside the city’s limits, to help the farmers there:

We’re not anxious for this to get around but we have been diverting a little water to irrigate orange groves in the Northwest Valley. As you know, the farmers out there have no legal right to our water. We’ve been trying to help some of them out. Keep them from going under. Naturally when you divert water, there’s a little run-off.

During his visit, Gittes is astonished to realize that Cross “owned the entire water supply for the city.” Mulwray “felt the public should own the water” and convinced Cross to give it back to the public—which can be considered to be a possible motive for his death. Gittes realizes now what the reasons are for the farmers to defend themselves. Irrigation water has been diverted by corrupt water official, which caused droughts in some parts of the valley. Farmers has been forced out of these areas in order for their lands to be bought up at reduced prices and to irrigate selectively. This fictionalized account related to the dispute over the Owens Valley “built on this myth” of alleged conspiracies involving water and land speculation, which got dramatized and eventually added to the story’s notoriety.¹⁴⁴

Another example of where the dispute over water rights in the Southwest takes center stage is in the animated feature *Rango*. In the grip of an identity crisis, a sheltered chameleon accidentally winds up as the sheriff of Dirt, a town in the Mojave Desert, where the water has mysteriously gone scarce. The mayor is the richest person in town, who seemingly has an infinite supply of water and, together with Rattlesnake Jake, keeps the town’s citizens under his control. One of Rango’s first tasks as the new sheriff is to figure out what has happened to the water. He follows the trail until he finds out who benefits from stealing all the water—it is the city of Las Vegas.

The movie closely follows the story of water acquisition in Los Angeles at the beginning of the twentieth century. The mayor of the town seems to be a mixture of William Mulholland and Fred Eaton, the mayor of Los Angeles at the time. It can said that the townspeople symbolize the water-starved people of the Owens Valley. They go on to sabotage the aqueduct just as the farmers in the Owens Valley did to the Los Angeles aqueduct. However, in the film, the water is being taken to Las Vegas, not Los Angeles. Also, the dispute over water evokes much of the history of the Owens Valley by way of multiple allusions to *Chinatown*. Plot wise, it can thus be said that *Rango* takes much of its conflict

¹⁴⁴ Ibid.

straight from *Chinatown*, right down to the idea that whoever controls the water has the power. One example is the commonality seen between the mayor character and Noah Cross. There are also similarities in dialogue: in *Chinatown*, for example, Cross proclaimed: “Either you bring the water to L.A., or you bring L.A. to the water;” in *Rango*, the mayor notes: “Control the water, and you control everything.” Parallels are also seen with the ruthless nature of water management in the region. In *Chinatown*, for example, a water commissioner was drowned at the beach by fresh water. In a similar fashion, the same happened in *Rango* to the water banker in the middle of the desert. The diversion and dumping of water in order to persuade land sales is thus a common theme in the movies.

Another theme that increasingly comes to the foreground are problems that are related to the bottled-water industry. The 2002 action comedy *The Tuxedo* involves a plot of poisoning the world’s water supply, thereby driving up the demand of the villain’s own product of bottled water.¹⁴⁵ Documentaries such as *Tapped* (2009) illustrate some of the negative consequences associated with turning water into a product or commodity.¹⁴⁶ Basically, the premise of the documentary is that when water is constructed as such, “we end up with corporate control and thirty-nine billion bottles of water per year in the United States alone.” The role of the industry and its effects are examined, focusing mostly on the issues within the United States with the big three bottled-water companies Nestlé, Coke, and Pepsi, and their relationship with the International Bottled Water Association and the U.S. Food and Drug Administration (FDA). Examples are given on the difficulties for small towns to battle against large corporations over water, such as in Fryeburg, Maine where the arrival of Nestlé caused the town’s drinking water to be in jeopardy. In the state of Maine, the “rule of absolute dominion,” which is based on the “prior appropriation” doctrine, is followed, meaning, simply put, that the biggest pump takes the most water. Groundwater is placed under this rule and is therefore not controlled like it is with surface water. Nestlé bought land in places where it was

¹⁴⁵ *The Tuxedo*, 2002 movie. Directed by Kevin Donovan, 98 min., Dream Works.

¹⁴⁶ *Tapped*, 2009 documentary. Directed by Stephanie Soechtig, 76 min., Atlas Films.

thought there was water and started pumping, refusing to pay taxes for the use of wells. Because of the “rule of absolute dominion,” Nestlé has precedence over the town, even if aquifers that supply the town’s drinking water are at risk.

Bottled Life (2012) is the newest documentary revolving around the bottled-water industry, focusing specifically on Nestlé.¹⁴⁷ As shown in *Flow* and *Tapped*, this major corporation had transformed water into a commodity, in a desirable product due to advertising tactics, causing disputes over water rights in communities across the United States as well as the world. In essence, *Bottled Life* investigated how Nestlé turned ordinary water into a billion dollar business, showing the impact on communities when this corporation takes control of the water supply—often causing local residents to dig deeper for any non-polluted water or pay Nestlé’s higher price to get their water back. The documentary also explores the industry’s use of advertising, focusing on their seductive tactics to get people to buy bottles of water when most can get it almost for free from the tap. In reality, this covers up the impact of environmental waste as a result of the industry.

Simply said, the examples given from the documentaries revolve around three subjects: reviving historical disputes over water rights, the consequences of privatizing municipal water supplies, and the impact of the bottled-water industry. They illustrate the power of water as a commodity and its connection to popular culture. The issues put forth center around one dichotomy: viewing water as either a market commodity or as a human right. One side of the issue of privatization is seen as an instrument for economic development and progress. It has been considered a means in order to protect water resources from neglect of failing municipal water supplies. On the other side, there is a concern that privatization limits the access of water resources. As shown in the documentaries, privatization allows global corporations to benefit from local water resources, while there is lack for adequate water supplies in the

¹⁴⁷ *Bottled Life*, 2012 documentary. Directed by Urs Schnell, 90 min., DokLab.

world. Because “[w]hen water is viewed as a private good it is developed, used, traded, and sold for economic and financial gain.”¹⁴⁸

Because water resources are becoming increasingly privatized, there has been a renewed interest over the years of internationally recognizing water as a basic human right. The U.N. World Water Report of 2006 noted that “[t]here is enough water for everyone.”¹⁴⁹ However, these “water resources [...] are limited and unevenly distributed” as well as wasted and polluted.¹⁵⁰ The “global crisis” is thus not due to a lack of water, but to a lack of water management. The scarcity of water is a relevant problem faced by many countries today. The use of water “has been growing at more than twice the rate of population increase in the last century, and [...] an increasing number of regions are chronically short of water.”¹⁵¹ According to the United Nations, thirty-five percent of the world’s population currently do not have access to safe drinking water and sanitation and it is estimated that by 2030, fifty percent of the global population will be living in water-stressed regions. Many countries around the world are thus faced with increasing demands on insufficient water supplies, which are also related to issues such as the growing demands on the world’s arable land due to increased urbanization.

The U.S. “water market for water supply and treatment, estimated at \$90 billion, is the largest in the world.”¹⁵² Because of the extent of this market, there is a monetary interest that corporations for the development of water supplies have and a reason why states would want to reduce their direct cost of managing water resources. According to Indian activist Vandana Shiva, such privatization practices are rooted in the “prior appropriation” doctrine: “It was in the mining camps of the American West that the cowboy notion of private property and the

¹⁴⁸ Thomas V. Cech, *Principles of Water Resources: History, Development, Management, and Policy* (Hoboken: NJ: Wiley, 2005), 384.

¹⁴⁹ UN-Water, *Water: A Shared Responsibility—The United Nations World Water Development Report 2* (March 2006), 3.

¹⁵⁰ *Ibid.*, 12.

¹⁵¹ International Decade for Action ‘Water For Life’ 2005-2015, *Water Scarcity. Focus Areas* (United Nations Department of Economic and Social Affairs, 2012).

¹⁵² Vandana Shiva, *Water Wars: Privatization, Pollution, and Profit* (New York, NY: South End Press, 2002), 98.

rule of appropriation [...] first emerged.”¹⁵³ She relates this doctrine to many cultural changes in the use and distribution of water resources, including a mentality rooted in so-called “cowboy economics.” This theory is based upon the sense that

if you get somewhere first you have absolute rights to rape, plunder, pollute. You have no responsibility for neighbors, for those who came before you, the inhabitants who were there, or those who have to come after you [...] Cowboy economics takes no one else into account—just the cowboy. The cowboy and his gun.¹⁵⁴

This can be used as an overarching theme for the documentaries and movies discussed and in order to find a possible reason and understanding for current privatization efforts around the world. The “current push to privatize common water sources” thus finds “its foundation in cowboy economics.”¹⁵⁵

The pattern of increasing privatization, which started in the beginning of the twentieth century, made water a scarce resource as “the rich and powerful use the state to appropriate water from nature and people.”¹⁵⁶ This has been exemplified by huge water projects like the Hoover Dam that were built under pressure from private interests that wanted water to be the foundation for major corporations in, for example, Southern California. Currently, however, due to drought and overuse, the Colorado River cannot continue to sustain a supply of water to the Western region as a whole because of the increasing demands placed upon it, seen in the more extensive development of irrigated lands, the industrialization and growth of cities, and escalating population. The state of California comprises less than two percent of the Colorado River Basin, but it now uses a quarter of the basin’s water. The idea of “cowboy economics” illustrates the very notion that current issues with water rights and privatization find their grounding in history.

¹⁵³ Ibid., 22.

¹⁵⁴ Vandana Shiva, interview by Nic Paget-Clarke. *In Motion Magazine*, March 6, 2003.

¹⁵⁵ Shiva, *Water Wars*, 23.

¹⁵⁶ Ibid., 24.

Conclusion

The purpose of this thesis is to shed light on the fact of how current problems regarding water in the American West have stemmed from decisions made in the first half of the twentieth century—a time in which economic development and progress were deemed more important than the sustainable management of the arid lands, something that John Wesley Powell had warned against. His unpopular message was in direct opposition with the interests of investors and land speculators. Even though he endured a multitude of setbacks in advocating his vision, time has shown that Powell's concerns were justified. His solution of favoring an irrigation system based on small, locally controlled dams in the arid lands is diametrically opposed with what was employed in the first half of the twentieth century. The Reclamation Act of 1902 paved the way for big-scale irrigation projects, which was in direct opposition with the views put forth by Powell. He understood that regional water resources would be insufficient for a large population or for large-scale irrigation, which is something that the West still continues to struggle with today.

Water became an intrinsic part of economic development and was a tool for economic progress in the first part of the twentieth century. Increasingly, people in the West needed dependable water sources in order to secure water for crops, cattle, and mining activities. There was also a will to conquer and exert power over nature, that sometimes went hand in hand with corruption. The controversies surrounding the Owens and Hetch Hetchy Valleys in California as well as the Hoover Dam in Nevada are examples of how private interests took priority over local interests and environmental concerns. The proponents of such projects did not weigh the benefits against the drawbacks, with their perspectives often being based on short-term gain.

The West's relationship with aridity and water is one that continues to play a role to this day. Historically, this relationship has been reflected in popular culture. Water issues take on different roles in contemporary documentaries and feature films, either reviving historical

disputes over water rights, discussing the consequences of privatizing municipal water supplies, or illustrating the impact of the bottled-water industry. With water rapidly becoming the most valuable global resource due to drought and overuse in upcoming decades, it is also becoming more important to look at where these effects have stemmed from in the first place. The overarching theme in the current discussion on water rights and privatization is whether water should be viewed as a market commodity or as a human right. It is important to shed light on such issues discussed in the documentaries, relating them back to a historical context in which they can best be understood.

Discussing a short history on water raises many questions about the relationships between water, culture, and power in the American West. Farmers, cities, industries, and consumers have benefited enormously from the water systems that were put in place in the first half of the twentieth century. It poses questions on the nature of water and the relationship between humans and the landscape in the region; a reexamination of cultural values and power relations could thus be part of further research. In her article “The Politics of Water Scarcity in the Western States,” political scientist Sandra Davis analyzed competing values in respect to water and related these to Western water law and policymaking. She argues that Americans “hold multiple water values such as economic development and the protection of wild life which are often contradictory.”¹⁵⁷ It would be interesting to examine from where such opposing values originated. The scarcity of water and the aridity of the lands are at the heart of the Western story. Another interesting addition would thus be centered around a more closely-examined look at how this has impacted its culture as a whole, using a report like *Water and People: Challenges at the Interface of Symbolic and Utilitarian Values*, which examines the symbolic values related to water and water use in contemporary American society; or a book such as *Water, Culture, and Power: Local Struggles in a Global*

¹⁵⁷ Sandra K. Davis, “The Politics of Water Scarcity in the Western States,” *The Social Science Journal* 38 (2001): 527.

Context, which analyzes different cultural meanings of water and its influence on the political process of water projects.

Because the United States is such an immense country with such vast specific characteristics, it is actually impossible to describe what is inherently American. One needs to delve deeper into their history and seek out a general theme therein. Looking in a larger perspective, the discussed issues with water can serve as such a theme. The ambition, enthusiasm and altruistic characteristics can be found in a figure like Powell, while that same ambition and the belief that anything was possible, together with a sense of greed, corruption, and callousness, can be found in the figures of businessmen and politicians, such as Mulholland and O'Shaughnessy. Large-scale irrigation projects embodied a sense of optimism and national pride that came with raising such structures in inhospitable conditions as well as serving as symbols of American ingenuity, resilience, and optimism in a time when people desperately needed work. Taming the unpredictable and destructive Colorado River, the Hoover Dam was not only built in spite of enormous economic challenges, but also served as a means of overcoming it. However, such projects have also become symbols of the far reaching effects of engineering on rivers, the dependence of Americans on them, and its corporate misuse. The qualities of trying to identify and correct past decisions as well as resistance to the political and economic establishment can mainly be seen in the documentaries.

It is important to shed a light on such developments, relating them back to a historical context in which they can best be understood. The West is on a brink of a major disaster due to thirty years of drought and overpopulation as a result of more than a century of greed, corruption, and power plays over water rights in the region. The situation has become untenable not only due to droughts, but also to a fragile ecological system that is overtaxed by an unprecedented explosion in population, seen in the massive centers of urbanization that dominate the Western landscape, which cannot be sustained in the present circumstances. It

will take just a couple of dry winters for such major cities in the West to face historic water shortages; yet, demands on water continue to grow.

BIBLIOGRAPHY

- “American Plenty.” October 10, 2008 episode of *The American Future: A History*. Directed by Sam Hobkinson and Ricardo Pollack. 60 min., BBC: documentary series.
- Anderson, John W., Craig W. DeRemer, and Radford S. Hall. *Water Use and Management in An Arid Region*. Fort Collins, CO: Colorado State University, 1977.
- Aton, James M. *John Wesley Powell*. Boise, ID: Boise State University Printing and Graphic Services, 1994.
- Barlow, Maude and Tony Clarke. *Blue Gold: The Battle Against Corporate Theft of the World's Water*. London, UK: Earthscan, 2003.
- Barnett, Tim P. and David W. Pierce. “When Will Lake Mead Go Dry?” *Water Resources Research* 44 (2008).
- Battle: Los Angeles*. 2011 movie. Directed by Jonathan Liebesman. 116 min., Columbia Pictures.
- Bottled Life*. 2012 documentary. Directed by Urs Schnell. 90 min., DokLab.
- Bureau of Reclamation. *Shoshone Project*. Projects and Facilities Database: U.S. Department of the Interior, 2009.
- . *The Colorado River and Hoover Dam*. Facts and Figures: U.S. Department of the Interior, 2005.
- Cech, Thomas V. *Principles of Water Resources: History, Development, Management, and Policy*. Hoboken: NJ: Wiley, 2005.
- Chinatown*. 1974 movie. Directed by Roman Polanski. 131 min., Paramount Pictures.
- Congressional Record*. 45th Congress, 3rd Session. 1879. pt. 2.
- Davis, Sandra K. “The Politics of Water Scarcity in the Western States.” *The Social Science Journal* 38 (2001): 527-542.
- deBuys, William. *Seeing Things Whole: The Essential John Wesley Powell*. Washington, D.C.: Island Press, 2004.

- Didion, Joan. "Holy Water." In *The White Album*. New York, NY: Simon & Schuster, 1979.
- Donahue, John M. and Barbara Rose Johnston. *Water, Culture, and Power: Local Struggles in a Global Context*. Washington, D.C.: Island Press, 1998.
- Flow: For Love Of Water*. 2008 documentary. Directed by Irena Salina. 84 min., Oscilloscope Laboratories.
- Gaines, Anne. *John Wesley Powell and the Great Surveys of the American West*. New York, NY: Chelsea House Publishers.
- Grunsky, C.E. and Marsden Manson. *Reports on the Water Supply of San Francisco, California, 1900 to 1908, Inclusive*. San Francisco, CA: Board of Supervisors, 1908.
- Hanak, Ellen et al. "Floods, Droughts, and Lawsuits: A Brief History of California Water Policy." In *Managing California's Water: From Conflict to Reconciliation, 19-70*. San Francisco, CA: Public Policy Institute of California, 2011.
- Hazen, William B. *Our Barren Lands: The Interior of the United States West of the 100th Meridian and East of the Sierra Nevadas*. Cincinnati, OH: R. Clarke & Co., 1875.
- "The Great Middle Region of the United States, and Its Limited Space of Arable Land." *North American Review* 120 (January 1875): 1-34.
- Hetch Hetchy Water & Power. *Hetch Hetchy Water and Power*. Projects: San Francisco Public Utilities Commission, 2011.
- Hiltzik, Michael. "Hoover Dam never had ability to solve all Colorado River conflicts." *The Arizona Republic*. August 22, 2010: viewpoints.
- Hutchinson, Charles F. "John Wesley Powell and the New West." *Cosmos Journal* (2002).
- International Decade for Action 'Water For Life' 2005-2015. *Water Scarcity*. Focus Areas: United Nations Department of Economic and Social Affairs, 2012.
- Johnson, Norman K. *The Doctrine of Prior Appropriation and the Changing West: A Report*. Western States Water Council, 1987.
- Kahrl, William. *Water and Power: The Conflict Over Los Angeles' Water Supply in the*

- Owens Valley*. Berkeley, CA: University of California Press, 1983.
- Kirsch, Scott. "John Wesley Powell and the Mapping of the Colorado Plateau, 1869–1879: Survey Science, Geographical Solutions, and the Economy of Environmental Values." *Annals of the Association of American Geographers* 92 (2002): 548-572.
- Krall, Lisi. "US Land Policy and the Commodification of Arid Land (1862-1920)." *Journal of Economic Issues* 35 (September 2001): 657-674.
- Lee, Lawrence B. "William Ellsworth Smythe and the Irrigation Movement: A Reconsideration." *Pacific Historical Review* 41 (August 1972): 289-311.
- Libecap, Gary D. "Chinatown Revisited." *Hoover Digest* 2 (2005).
- McCool, Stephen F., Roger N. Clark, and George H. Stankey (eds.) *Water and People: Challenges at the Interface of Symbolic and Utilitarian Values*. Portland, OR: U.S. Department of Agriculture, 2008.
- Nash, Roderick. *Wilderness and the American Mind*. New Haven, CT: Yale University Press, 1982.
- Official Report of the International Irrigation Congress, Held at Los Angeles, California, October 1893*. Los Angeles: Los Angeles Chamber of Commerce, 1893.
- Official Report of the Proceedings and Debates of the First Constitutional Convention of North Dakota, Assembled in the City of Bismarck, July 4-August 17, 1889*. Bismarck, ND: Tribune Star Printers, 1889.
- Powell, John Wesley. *Report on the Lands of the Arid Region of the United States: With a More Detailed Account on the Lands of Utah*. Cambridge, MA: Harvard University Press, 1962 reprint.
- . *The Exploration of the Colorado River and its Canyons*. New York, NY: Penguin Group, 2003 reprint.
- Quantum of Solace*. 2008 movie. Directed by Mark Forster. 106 min., MGM-Columbia Pictures.

- Rango*. 2011 movie. Directed by Gore Verbinski. 107 min., Paramount Pictures.
- Reisner, Marc. *Cadillac Desert: The American West and Its Disappearing Water*. New York, NY: Penguin Books, 1993.
- Roosevelt, Theodore. *An Autobiography*. London: Macmillan, 1913.
- Schama, Simon. *The American Future: A History*. London: Random House, 2008.
- Shiva, Vandana. Interview by Nic Paget-Clarke. *In Motion Magazine*. March 6, 2003.
- . *Water Wars: Privatization, Pollution, and Profit*. New York, NY: South End Press, 2002.
- Smith, Henry Nash. “Clarence King, John Wesley Powell, and the Establishment of the United States Geological Survey.” *The Mississippi Valley Historical Review* (June 1947): 37-58.
- . *Virgin Land: The American West as Symbol and Myth*. Cambridge, MA: Harvard University Press, 1971.
- Stegner, Wallace. *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West*. Lincoln, NE: University of Nebraska Press, 1982.
- Strassmann, Mark. “America’s Dwindling Water Supply.” *CBS News*. January 8, 2010: CBS Reports: Where America Stands.
- Tapped*. 2009 documentary. Directed by Stephanie Soechtig. 76 min., Atlas Films.
- “The 100 Greatest Adventure Books of All Time.” *National Geographic’s Adventure Magazine*, May 2004.
- Thirst*. 2004 documentary. Directed by Alan Snitow and Deborah Kaufman. 62 min., Bullfrog Films.
- The Tuxedo*. 2002 movie. Directed by Kevin Donovan. 98 min., Dream Works.
- Thomas, Marcia L. “John Wesley Powell: White Water to White City.” *Scholarly Publications* 5 (2007).
- Tuolumne County Historical Society. *Hetch Hetchy Water and Power System*. Landmarks:

- Landmarks Committee, 2009.
- UN-Water. *Water: A Shared Responsibility—The United Nations World Water Development Report 2* (March 2006).
- U.S. Geological Survey. *John Wesley Powell: Soldier, Explorer, Scientist*. Geological Survey Information 74-24: U.S. Department of the Interior, 1976.
- Walton, John. "Film Mystery as Urban Mystery: The Case of Chinatown." In *Cinema and the City: Film and Urban Societies in a Global Context*, edited by Mark Shiel and Tony Fitzmaurice. Hoboken, NJ: John Wiley & Sons, 2011.
- Water Resources Collections and Archives. *Liquid Gold: California's Water*. Exhibit: University of California, 1997.
- Wittfogel, Karl. *Oriental Despotism: A Comparative Study of Total Power*. New York, NY: Vintage Books, 1981.
- Worster, Donald. "A River Running West: Reflections on John Wesley Powell." *Journal of Cultural Geography* 26 (June 2009): 113-126.
- . *Rivers of Empire: Water, Aridity, and the Growth of the American West*. New York, NY: Oxford University Press, 1985.
- . *Under Western Skies: Nature and History in the American West*. New York, NY: Oxford University Press, 1992.
- Wrobel, David M. "The Closing Gates of Democracy: Frontier Anxiety Before the Official End of the Frontier." *American Studies* 32 (Spring 1991): 49-66.
- Yellowstone National Park Act of 1872*. S. 392. *U.S. Statutes at Large* 17 (1873).