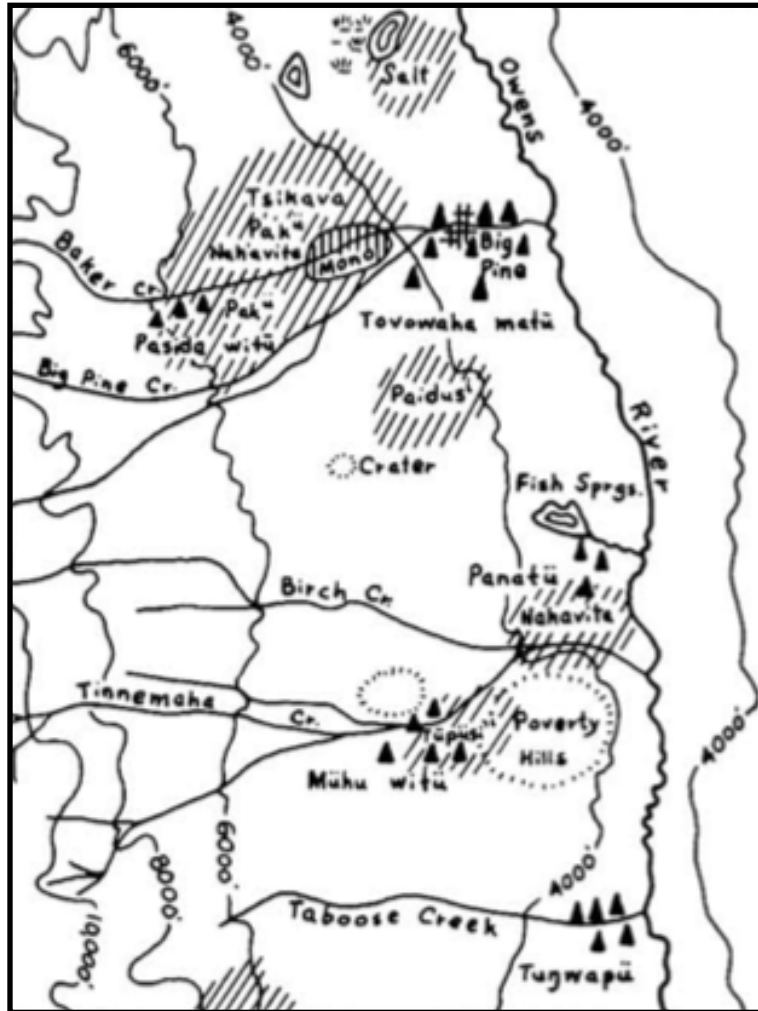


# RECOVERING CULTURAL MEMORY: Irrigation Systems of the Owens Valley Paiute Indians

By Jenna Cavelle



“Location and extent of irrigation on Baker Creek, near Big Pine, as indicated by Steward (1933:Map2). Irrigated land indicated by vertical hachure. Redrawn from Steward (1933:Map2)” (Lawton *et al*, 1974).

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**Introduction:**

The landmark “Owens Valley-Los Angeles Water War” is said to have begun with the completion of Los Angeles Department of Water and Power’s (LADWP) aqueduct in 1913 and the subsequent export of the Owens River across 238 miles of desert (McWilliams, 1949: 298). The events surrounding this engineering spectacle incited a political battle over the appropriation of Owens Valley’s water resources that has reverberated through time into present day, nearly 100 years later. Fascination with this ongoing story has produced a vast collection of literature, film, and media that primarily emphasizes the role of Owens Valley water in state and city building, the making of empire, and political corruption (McWilliams 1949, Polanski 1974, Worster 1985, Reisner 1986). While this paper briefly contextualizes such literature, it does so for the purpose of comparatively highlighting the largely ignored story of the Paiute Indians, whose traditional water management practices were lost during California’s initial “water rush”. Prior to white settlement and even LADWP’s presence in the valley, the Paiute Indians constructed elaborate irrigation systems that were as central to their survival as they were to their social structures. If LADWP was guilty in largely un-making Owens Valley as a place by diverting the Owens River during the 20<sup>th</sup> century, then the Owens Valley white settlers of the 19<sup>th</sup> century are equally culpable for taking over and even destroying Paiute irrigation systems.

In an effort to uncover Owens Valley’s pre-history, in this paper I investigate primary source accounts of contact with Paiute irrigation systems from the first known account in 1856 to present day to better understand, document, and legitimize Paiute irrigation history and practices as central to their culture. Additionally, I will review secondary source works that also draw upon available primary source research to illustrate gaps in the literature. Finally, I draw upon interviews I conducted with a Paiute elder whose extensive knowledge of the ancient irrigation networks helps shed light on the role of water in Paiute culture and

history. The results of this paper will be used to design a post-baccalaureate community service project aimed at recovering Paiute irrigation history in the literature and American memory.

### **The Owens Valley-LA Water War: A Brief Literature Review**

The building of empire requires genius, willpower, and water. Water – or more precisely its manipulation – has been central to both the making and unmaking of place as seen in the human transformation of nature, the development of complex societies, and the rise and fall of empires. There are perhaps no American films or pieces of literature more illustrative of this phenomenon in Owens Valley and Los Angeles, than Roman Polanski’s *Chinatown* and Mark Reisner’s *Cadillac Desert*. Even more importantly, these works have been instrumental in crafting the contemporary Owens Valley-LA water history narrative that lives in American memory. However, upon closer analyses of these works, we see that the various dramatizations, poorly conducted research, and missing pieces that have informed the dominant Owens Valley-LA narrative demonstrates erasure of Paiute irrigation practices and culture.

In Reisner’s suspenseful and often inventive book, the “Paiute Indians” are mentioned only once on page 59 in chapter two titled “The Red Queen”. Here, the accuracy of Reisner’s assertion that the Paiute “learned irrigation from the Spanish” is uncertain, as Reisner does not explicitly cite or reference where he obtained this information about the Paiute.

According to his end notes and citations from chapter two, it seems he could have drawn this conclusion from W.A. Chalfant’s *The Story of Inyo*, which was “privately printed” and used as the basis for Julian Steward’s similarly inaccurate 1933 hypothesis that Paiutes practiced “irrigation without agriculture” (Walton: 15, 1992). It should be noted that Chalfant was a “partisan and editor” for the Inyo County Register and publically defended the Owens Valley insurgents during a five-day occupation of the LA aqueduct in November of 1924 (Walton:

165, 1992). As a prominent citizen and a self-proclaimed historian, he collected much of his “historical data” before there were any other sources. Chalfant’s feelings about the Paiute reflected the conventional outlook of the time as evidenced in his 1933 self-published book, which portrays Paiute activities as “pathetic resistance to the inevitable white domination” (Walton: 15-16, 1992, Chalfant: 166, 1933). It is unclear if Reisner’s omission and inaccuracy of Paiute irrigation history is due to poor research, missing or misinterpreted data, or a deliberate attempt to exclude the Paiute from his story as to simplify his Owens Valley-Los Angeles “water war” narrative. Whatever the case, it is outrageous to claim that the Paiute learned irrigation from the Spanish who have never had a presence in the Eastern Sierra region.

In Roman Polanski’s film *Chinatown* (originally titled *Water and Power*), Polanski focuses on the ways in which political power and corruption secure L.A.’s acquisition of water (the implication is Owens Valley water). In considering how *Chinatown* represents ethnic space, we come to understand “Chinatown” as a place in Los Angeles where the “other” lives and thus Gittes and his police buddies shudder at any mention of it. *Chinatown* is filled with stereotypical jokes about Chinamen and scenes such as the one of a Japanese gardener whose pronunciation of “grass” is meant to humor the viewer when it is heard as “glass” (Orr *et al*: 110, 2006). While Polanski never locates the Paiute or any other Indians in the film, his renderings of race and ethnicity demonstrate that aspects of the dominant Owens Valley-LA story are as much about portraying non-whites as alien, as it is about cultural erasure. Sadly, this movie is responsible for misinforming a great number of people who believe it to be a factual representation of the Owens Valley-Los Angeles water history.

In Carey Williams’ 100-year examination of California’s development in his book titled, *California: The Great Exception*, he discusses how the perceived “Indian problem” and the human manipulation of water both shaped and was shaped by California state making. A

major contribution to California's history, and quite critical for the time, Williams' book still falls short as it fails to mention the Owens Valley Paiute's role in California's water history even once. Donald Worster's *Rivers of Empire* borrows from Chalfant's and Julian Steward's claim that the Paiute practiced irrigation without agriculture. Somewhat less neglectful of Paiute irrigation history than Reisner and Williams, Worster gives a full paragraph to Paiute irrigation practices on page 32, although it is greatly lacking in detail and length. Worster does not mention the Owens Valley Paiute anywhere else in his critically acclaimed book.

A remarkable departure from the previous mentioned literature, John Walton's *Western Times and Water Wars* gives an entire chapter to the pre-history of the Owens Valley-LA water war including vast and detailed accounts of Paiute culture and irrigation practices. Walton's text is meticulously cited and his claims are verifiably accurate. Similarly, in Julian Steward's 1933 book, *Ethnography of the Owens Valley Paiute*, in just three brief pages, he provides significant insight into Paiute irrigation practices including sketches of their ancient irrigation ditch networks. However, his hypothesis that Paiute "practiced irrigation without agriculture" has dominated academic debate around Paiute culture for decades. This hypothesis spawned an additional body of literature that refutes Steward's hypothesis on the one hand, but also reveals new insights into the complexity of Paiute irrigation systems. For example, in Wilke and Lawton's *Agriculture Among the Owens Valley Paiute*, the authors match 1856 maps produced by surveyor A.W. Von Schmidt to Steward's 1933 ethnographic maps, thus confirming the presence of extensive irrigation ditch networks engineered by the Paiute prior to white settlement. Before discussing my findings from the early expeditions of surveyors, explorers, and naturalists beginning in 1833, I will touch on Julian Steward's ethnography from 1933.

### **Julian Steward: An Ethnographic Account of Paiute Irrigation**

Julian Steward's ethnographic accounts of the Paiute's elaborate irrigation practices detail a system of indigenous water management informed by a complex hierarchical social structure. The Paiute system of irrigation management featured a dam along Bishop creek canyon with one ditch per plot of land to be irrigated. In 1933, Steward claimed that a ditch known colloquially as the "Paiute ditch" was visible and could be traced from the dam at Bishop creek canyon all the way across the valley (Steward, 1933: 247-250). In speaking to Harry Williams, a Paiute elder and self-proclaimed water activist currently living on the Bishop Paiute Reservation, I learned that remnants of the dam and Paiute ditch Steward speaks of are still present in modern day Bishop (Williams, 2011).

Turning to the socio-cultural aspects of traditional water management by the Paiute, we learn through Steward's ethnography that there was a "position of irrigator" known as "*tuvaiju*". The *tuvaiju* was an elected position carried out each spring and the commencement of irrigation was declared by the "district head man" and approved by tribe members. The story follows that about twenty-five men assisted the *tuvaiju* to construct a dam consisting of boulders, brush, sticks, and mud. Once the water was released into the ditch, the *tuvaiju* watered the plot using small ditches and dams consisting of mud, sod, and brush. Steward's mention of an irrigating tool known as a *pavado*, or a pole 8 feet in length by 4 inches in diameter, suggests that the *tuvaiju* utilized this instrument in some way to direct the water into the ditch network. Once the watering began, it required little attention and water soon overflowed, irrigating land that featured staple plants in the Paiute diet (Steward, 1933: 247-248). Annually, the northern and southern plots were alternated to either conserve soil fertility or as a process of natural seeding. In the spring, while one plot (maybe the northern plot) was watered, tribe members quickly retrieved fish in the creek bed as it now contained less water. During harvest, the dam was destroyed so that the water could flow once again down the main creek channel. Now that the ditches were empty, fish left behind were

retrieved as done previously in the dry creek bed. The next year, the Paiute did not irrigate the same plot; rather they irrigated the other plot (maybe the southern plot), allowing the first plot to recover (Steward, 1933: 249).

Perhaps most significant in terms of the socio-cultural structure of Paiute irrigation practices is that they were communal. Even as traditional Paiute management practices were quite effective because they were communal (Ostrom, 1990, 1993, 1994, 2006), a discourse that indigenous peoples are “incapable of managing their own resources” is nevertheless promulgated by academics like Garret Harden in his famous Science article, *Tragedy of the Commons* (Harden, 1968). Such myths about communal management of resources by indigenous peoples continue into present day and can be invalidated by continuing to research and document such effective systems of management as those performed by the Paiute. In this way, this paper also seeks to challenge those dominant discourses and their attendant technocratic approaches that have informed widespread cultural and social erasure of traditional water management practices such as those practiced by the Paiute.

### **Early Expeditions and Non-Indian Contact: Joseph Reddeford Walker, A.W. Von Schmidt, J.W. Davidson, and John Muir**

Turning to Harry Lawton and Philip Wilke’s counter-argument that irrigation was probably tied to Paiute agricultural practices, we are presented with a fair amount of 19<sup>th</sup> century non-Indian observation of Paiute irrigation in their article titled *Agriculture Among the Paiute of Owens Valley* (Lawton *et al*, 1974). The authors determine that Joseph Reddeford Walker conducted the earliest known expedition to Owens Valley. According to the authors however, Walker appears to have kept no diaries. After doing an extensive search on potential Walker manuscripts, I turned up only second hand accounts of Walker’s life and expeditions, as primary sources seem to have either been lost or never existed to begin with. In searching for other primary source accounts of Paiute irrigation, I turned to A.W. Von

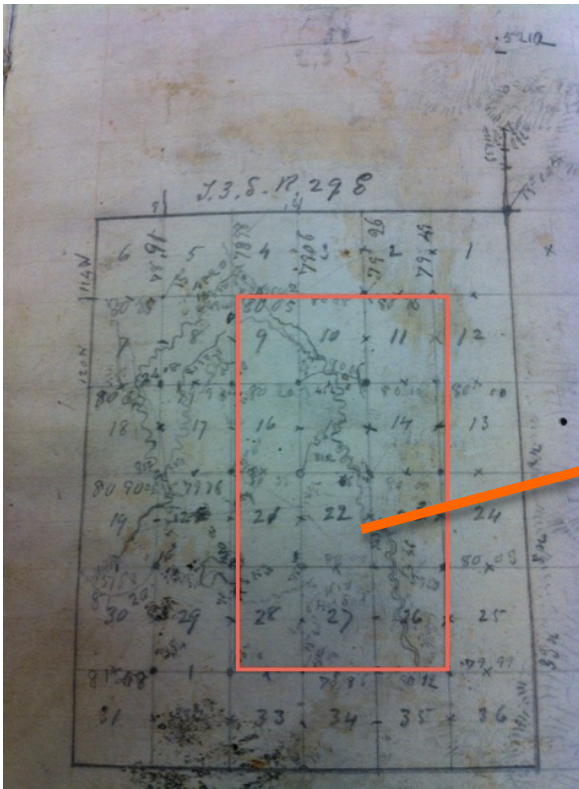
Schmidt, a surveyor hired by the U.S. government to map Owens Valley and who receives a fair amount of coverage by Lawton and Wilke.

The authors claim that Von Schmidt's diaries and journals contain the oldest records of contact with Paiute irrigation. When a review of Lawton and Wilke's bibliography of citations did not turn up a traceable source for the Von Schmidt papers, I searched the Online Archives of California and located his manuscripts in the Bancroft. In examining Von Schmidt's diaries, I found that he referenced Paiute irrigation minimally. However, his diaries do provide a first hand account of how Von Schmidt viewed the Paiute and for this reason I've included the account below in its entirety. Perhaps what is most odd about this entry is that it contradicts later accounts of the Paiute made during the J.W. Davidson expedition just three years later. This entry was found in a leather bound notebook containing survey notes from the 1856 trip across the Sierras as follows:

"On the evening of the 10<sup>th</sup> day [September], we made a rally on the east side of the slope of the Sierra and on one of the south forks of Walker River. Which rally is about 8x10 miles in area has fine [grass] and well watered, with some timber on the main rim. As we were looking out...we saw right ahead of us about 30 Indians, all armed with their bows and arrows and walking in single file with a quick step, coming right on to us. I thought that we were to have a fight at once so I brought the men in a circle and Mr. Whitney and myself stepped out in front with our rifles to give them a warm reception, but I had unfortunately lost my revolver, which gave me but one shot. Mr. Herbert, who had my double-barreled shotgun, was off some distance hunting sage hens. The Indians soon came up and I was glad to be able to recognize two or three of them that I had formally knew. I found that they had been out on a hunting excursion and had killed two antelope and I traded with them for a half of one for which I gave them a saddle, and blanket, and they all went off. We kept a good look out for them during the night. Early in the morning they again came into camp in great force to the number of 40, with the bows, strings, and the carrier full of sharp pointed arrows. This I did not like to see, we were but six in all and in case of a general fight, I counted on three of us, the Mexican I concluded would be of little service in a fight. These Indians, which are the "Pyutes", are known to be a thieving bit of rascals. I watched them very closely and when I found that this was good reason to be on guard from them, I got Whitney his rifle and I told Mr. Herbert to stand by with the double-barreled shotgun loaded with buckshot. When the Indians saw this they try withdraw from among us, and sat down at a little distance off. They keep up a constant talking. We finally succeeded in getting the animals all packed. I was glad to be able to leave the government where this very business was quite sufficient to kill every man of us" (Von Schmidt, 1856).



In keeping with Lawton and Wilke's findings, I located several maps drawn by Von Schmidt that are featured in their article. I have provided a photograph of one such map as it appears in his journal in Figure 1.1 and have also provided Lawton and Wilke's reproduction of the same map for comparison in Figure 1.2. Additionally, I have included Figure 1.3, which shows an extensive irrigation network drawn by Von Schmidt, with some of his accompanying notes. Figure 1.4 is a close-up of figure 1.3 and explains the map using Von Schmidt's journal entry.

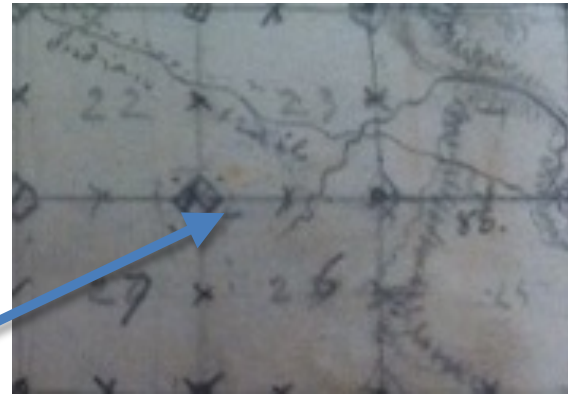
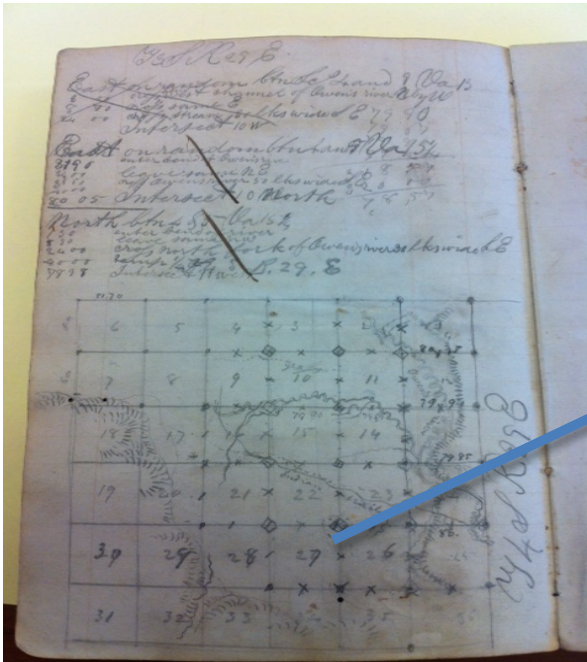


**Figure 1.1** From Von Schmidt's diary. The area contained within the red box is reproduced by Lawton and Wilke in Figure 1.2 (Von Schmidt, 1856).



**Fig. 9.** Paiute irrigation system at *panatü*, near Tinnemaha Creek, Owens Valley, California. Unknowingly mapped by A. W. Von Schmidt, 1856.

**Figure 1.2** Reproduction of Figure 1.1 by Lawton and Wilke in *Agriculture Among the Paiute of Owens Valley* (Lawton et al, 1974).



**Figure 1.4, close-up of Figure 1.3 as described by Von Schmidt as “North between 26 and 27, a creek crosses 2 links wide.” The blue arrow points to the small creek Von Schmidt refers to and the lands surrounding this creek are reportedly irrigated by the Paiute (Von Schmidt, 1856).**

**Figure 1.3 Von Schmidt titles this “Map T4 SR29E” and describes it as “North between 26 and 27”, “x creek [crosses] 2 links wide NE”, “This line runs on a strip of grass”, “Land about inches wide irrigated from a creek.”**

The rare book by Wilke and Lawton, *The Expedition of Captain JW Davidson From Fort Tejon to the Owens Valley in 1859*, narrates the Davidson expedition and clearly draws from an archival collection of Davidson’s papers however the whereabouts of such documents are not cited anywhere in the bibliography of their book (Wilke *et al*, 1976). According to the authors, Davidson was hired by the United States government to “apprehend Indians who had stolen livestock in the vicinity of Mission San Fernando.” The report created by Davidson during his expedition suggests that the expedition was launched specifically against the “Indians of Owens Valley” also known as the Paiute. The authors further state that during Davidson’s expedition to Owens Lake he reported, “[the] Indians peaceable and reliable” (Wilke *et al*, 1976). This conflicts with Von Schmidt’s observation of the Paiute as “a thieving bit of rascals”, raising concern about the accuracy of accounts made by both Von Schmidt and Davidson. Who was it then that accurately observed the Paiute and their irrigation systems?

Wilke and Lawton provide some insight into this question when they reference a journalist who had been travelling for two weeks on the Davidson expedition.

A newspaper correspondent for the Los Angeles Star, who intentionally went by an alias “Quis” (although it is not clear why), confirmed Davidson’s observations that the Indians of Owens Valley were “peaceful, loyal, and virtuous.” Quis, in observing Paiute homelands and practices, further reported that “Whole fields of this grass, a tuber of a series of nutritious grass of which our horses were very fond, miles in extent, are irrigated with great care, yielding an abundant harvest of what is on of their [Indians] principal articles of food” (Wilke *et al*, 1976). According to the authors’ account of Davidson’s expedition, he made no significant reports of Paiute irrigation and if it weren’t for Quis’s article that appeared in the Los Angeles Star on August 27, 1859, the next known documentation of Paiute irrigation practices would not have surfaced until Steward’s famous ethnographic account in 1933, so far as I know.

Additionally, I reviewed a portion of the John Muir collection at the Bancroft hoping to uncover references to the Paiute. I determined that Muir had made an expedition to the Owens Valley in September of 1875 and during this time he made many drawings of “ancient river beds” and produced journal entries indicating a significant presence of water and vegetation but I did not find any references to the Paiute or Indians more generally. It should be noted however that Muir’s penmanship is notoriously poor and a closer textual analysis at a later date could prove otherwise (Muir, 1875).

Next, I consider the role of water rights in possibly restoring the ancient irrigation ditch networks as part of Paiute indigenous water management practices. Along these lines, I briefly present a similar case in the Mediterranean Rim where ancient water supply networks called “*khattaras*” revealed themselves just a few months ago, when water returned to the Sahara desert. In thinking about the *khattaras* case, I posit some tangible ideas for building

awareness and preserving traditional Paiute irrigation practices that were erased when the white settlers colonized Paiute territory.

**In Conclusion: Preserving Indigenous Water Management Practices, the Oasis Inhabitants of the Mediterranean Rim, and the Owens Valley Paiute**

In the same way that William Mullholland's Los Angeles Aqueduct "still sucks the Owen's Valley Dry" (a phrase made popular by the famous bumper sticker) so too has the modernization of water works throughout the Mediterranean Rim weakened a system of ancient *khettaras* water tunnels that have experienced a recent rejuvenation due to the return of rain in the drought prone Sahara desert. According to a recent report by *Science Daily*, these networks are renewing ancient agricultural and irrigation practices in that,

"These communities are now reinvesting in the maintenance of *khettaras* and in agriculture, especially young people returning to rural environments after experiencing unemployment in towns and cities. This is a risk owing to the uncertainties of climate, but fully assumed to revive collective action and to reappropriate the rules governing water-supply access, indeed in anticipation of possible new shortages in the years to come.

The ancestral hydraulic heritage which exists all around the Mediterranean Basin is finding renewed life. Over the past five years, the return of water is bringing back the old water supply amenities to their former status. An IRD research team and its partners have shown that the local communities are reinvesting these networks, abandoned during several years of drought.

The most typical, original and sophisticated examples of this revival are the underground infiltration galleries, tunnels known since Antiquity as *khettaras* in Morocco, *qanât* in Iran, *foggaras* in Algeria. These water mines are the result of a traditional technology, developed on a grand scale from the XII<sup>th</sup> Century in North-West Africa to create artificial oases in the Sahara" (Science Daily, 2011).

I find this phenomenon to be encouraging for the Paiute Indians of Owens Valley given that an application listing the *khettaras* as "material and nonmaterial World Heritage assets" was made to UNESCO on "Water and Culture Day" on December 9<sup>th</sup> of 2010 (Science Daily, 2011). Could the ancient irrigation ditch networks of the Paiute be restored using water provided by the reclaiming of Prior Appropriation, Riparian, or Pueblo Water Rights? Currently, water rights promised by LADWP during a 1937 land

exchange with the Paiute have not been honored and the tribe is engaged in ongoing litigation to obtain these inherent rights (Jackson, 2011).

A further analysis of this water rights portfolio, which largely determines the “right to water” as a “first in time, first in line”, may reveal favorable results for Owens Valley Paiute. Drawing upon evidence presented by Von Schmidt, Davidson, Steward, Wilke and Lawton, and Walton it has been demonstrated that Paiute ditch networks were an integral part of their culture and survival. Restoration of these networks would return a stolen water source to the Paiute and also commemorate a part of Native American history that has been largely forgotten. I recommend that the remnant ditch networks be mapped using Geographical Information Systems (GIS) and Global Positioning Systems (GPS) technologies as to provide current, defensible evidence of the networks in the landscape. I further recommend an extensive investigation into Paiute Indian water rights to determine if these networks would provide them with “first user” rights. It is my hope that the Paiute indigenous water management systems not fade from American memory. Perhaps this research inquiry combined with the post baccalaureate project I am currently designing will serve to reconstruct a remarkable piece of history that was wrongly erased once upon a long time ago.

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