

CASE STUDY - THE TRUCKEE CANAL: A TRANSBASIN DIVERSION FROM THE TRUCKEE RIVER BASIN TO THE CARSON RIVER BASIN

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ABSTRACT

The Truckee Canal, which diverts water from the Truckee River basin to the Carson River basin in Nevada, was constructed in 1905 by the Reclamation Service as a part of the Truckee-Carson Project. The Reclamation Service was the predecessor of today's United States Bureau of Reclamation. The development of a water supply for the Truckee-Carson Project and the operation of the Truckee River system and the Truckee Canal have resulted in almost one hundred years of controversy and litigation.

The Truckee-Carson Project was one of the first projects authorized by the United States government under the 1902 Reclamation Act. At the time of authorization, it was envisioned that 300,000 acres of desert land could be brought under irrigation with the water supply coming from both the Truckee and Carson Rivers. The attempt to develop a water supply for the Truckee-Carson Project and to satisfy the water rights of users upstream of the Truckee Canal diversion has been extremely controversial. Both of the rivers originate in California and flow into Nevada, introducing interstate issues. To further complicate matters, the Truckee River terminates in Pyramid Lake, the home of the Cui-Ui sucker fish, a federally listed endangered species. Pyramid Lake is fully contained within the Pyramid Lake Paiute Indian Reservation. The Truckee River is the primary water supply source for the cities of Reno and Sparks, two rapidly growing cities.

This case study traces the actions taken in the Truckee River basin to meet the Project demand and the resulting impacts on the entire Truckee River system. The demands placed on the Truckee River system have resulted in one of the most litigated and complex operations of any river system in the United States.

INTRODUCTION

The Truckee Canal, completed in 1905, diverts water from the Truckee River basin to the neighboring Carson River basin in the State of Nevada as shown in Figure 1. The Truckee Canal is part of the Truckee-Carson Project, one of the

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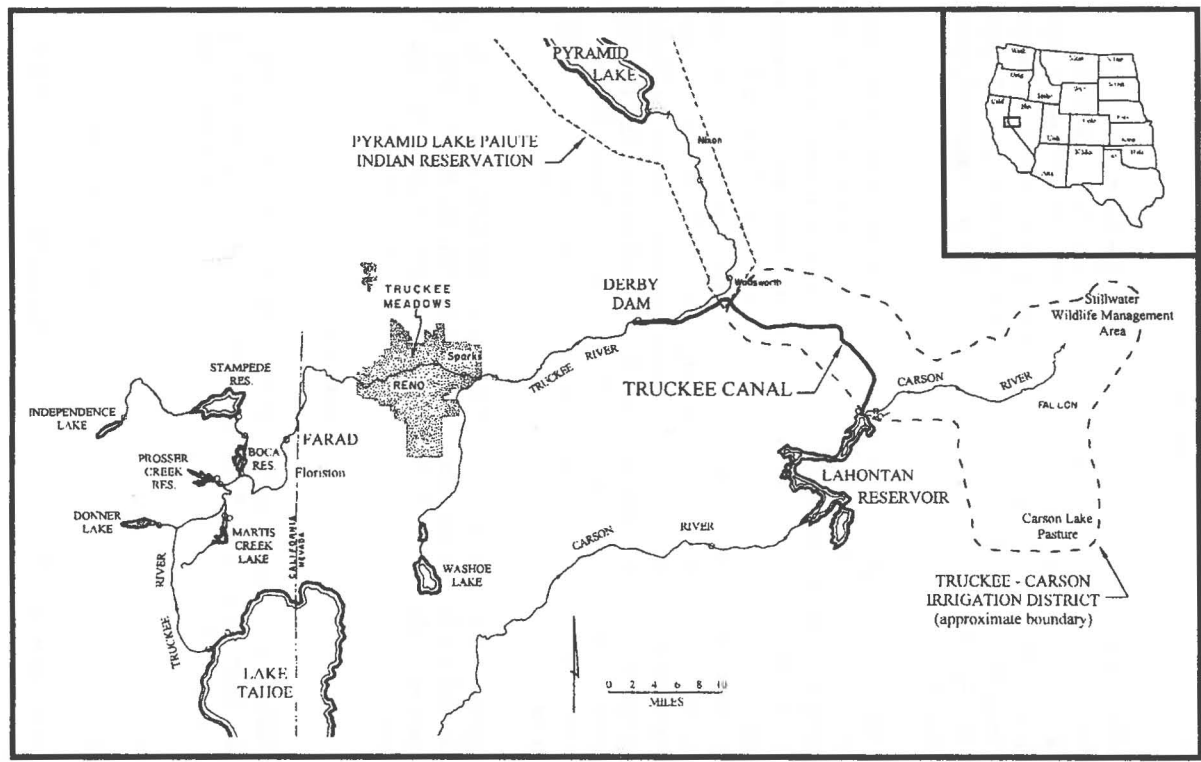


Figure 1. Location Map

first projects constructed by the United States Reclamation Service³, and has spawned nearly 100 years of litigation, water rights challenges, interstate interaction, endangered species challenges, Indian water rights claims, and congressional involvement on the Truckee and Carson Rivers. In 1990, the Truckee-Carson-Pyramid Lake Water Settlement Act (Settlement Act) was passed by the United States Congress to “resolve” the many Truckee-Carson interbasin and California-Nevada interstate issues. The Settlement Act is still in the implementation phase and appears to be several years away from finalization.

The Truckee River originates at Lake Tahoe in California and flows northeasterly to the California-Nevada border and continues to its terminus in Pyramid Lake, which is fully contained within the reservation of the Pyramid Lake Paiute Tribe. The Carson River originates in California on the eastern slope of the Sierra Nevada south of Lake Tahoe and flows northeasterly to its terminus in the Carson Sink. The Truckee Canal diverts water from the Truckee River at Derby Dam just upstream from the Pyramid Lake Paiute Indian Reservation and delivers that water to adjacent lands and to the Lahontan Reservoir on the Carson River.

The diversion from the Truckee River was one element in a complicated and ongoing saga involving the Truckee River in California and Nevada and the Carson River in Nevada. This case study outlines the historical sequence of events that has resulted in the Truckee River being perhaps the most litigated, contentious and complex water challenge in the United States.

THE TRUCKEE-CARSON PROJECT

The Federal Reclamation Act of 1902 authorized the withdrawal of public lands in Nevada for the Truckee-Carson Project (Project). The Project was subsequently renamed the Newlands Project. In 1902 it was envisioned that an additional 300,000 acres of desert land could be irrigated by the waters of the Truckee and Carson Rivers. However, as of today, the Project, operated by the Truckee-Carson Irrigation District (TCID), has only 73,700 acres of water righted lands of which approximately 65,000 acres have been irrigated. Water is delivered directly from the Truckee Canal in the Truckee Division of the TCID and from Lahontan Dam and the Carson River in the Carson Division of the TCID. The Project has about 326 miles of canals. The Fallon Paiute-Shosone Indian Reservation near Fallon contains about 8,000 acres and is supplied irrigation water from the Project. The Carson River and tail-water from the Carson Division flow into two wetland areas: Carson Lake Pasture and the Stillwater Wildlife Management Area.

³ In 1923 the Reclamation Service became the United States Bureau of Reclamation.

When the Project was authorized, Reclamation Service engineers recognized that stored water in Lake Tahoe would be required for the Project. The upper seven feet of Lake Tahoe was regulated by a log crib dam at its outlet to the Truckee River, creating over 800,000 acre-feet of usable storage. The dam was owned and operated by the Donner Boom and Logging Company primarily for regulating the flow of the Truckee River to transport logs to downstream saw mills. In 1903 the Reclamation Service posted a notice at the dam claiming a right to store and release 3,000 cubic feet per second (cfs) from Lake Tahoe. In an effort to secure control of the outlet from Lake Tahoe, Reclamation Service purchased 64 acres of land south of the existing dam and in 1905 awarded a contract for the construction of new outlet works. Subsequent litigation by the owners of the dam and others resulted in the cancellation of the construction contract.

In 1905 the Reclamation Service completed the Truckee River Diversion Dam (Derby Dam) and the Truckee Canal to transport Truckee River water 31 miles to the Carson River. In 1915, the 162 foot high Lahontan Dam, which forms the 317,000 acre foot Lahontan Reservoir, was completed at the terminus of the Truckee Canal on the Carson River. The Canal has a capacity of 900 cfs but the Project has the right to discharge from Lake Tahoe an amount of water sufficient to deliver to the head of the Canal, after transportation losses, 1,500 cfs.

LITIGATION AND NEGOTIATION

Without the benefit of stored water, the Project farmers were struggling to survive with an inadequate water supply. In 1908, The Truckee River General Electric Company (TRGEC) purchased the Lake Tahoe Dam and the adjacent 14 acres from the Floriston Land and Power Company and Floriston Pulp and Paper Company. The TRGEC was the predecessor of the current Sierra Pacific Power Company (SPPCo), the current purveyor of water in the Reno-Sparks metropolitan area⁴. In 1909, the Reclamation Service and the TRGEC jointly initiated reconstruction of the dam and by 1913 the dam, which is in place today, was completed. The dam regulates 6.1 feet of water in Lake Tahoe providing 720,000 acre feet of storage. In the 1908 purchase agreement, the TRGEC agreed to release stored water to maintain Truckee River flows of either 500 cfs or 400 cfs, depending on the time of year, as measured at the Farad Gage near Floriston at the California-Nevada state line. This flow requirement is referred to as the Floriston Rates. The Floriston Rates flow provided power for the pulp and paper company and water for four run-of-the-river power plants owned by the TRGEC. The Floriston Rates requirement also ensured water would be released for

⁴ Sierra Pacific Power Company's interest as purveyor of municipal water in Nevada has been purchased by the Cities of Reno and Sparks and Washoe County and will be managed by the Truckee Meadows Water Authority.

downstream uses and became the cornerstone and the key to potentially settling Truckee River water problems almost 100 years later.

Unable to consummate an operating agreement for the Lake Tahoe dam, the Reclamation Service took two significant steps to ensure a water supply for the Project. In 1913, the United States brought an action in federal court (*The United States of America vs. Orr Water Ditch Company, et al.*) to adjudicate the upstream water rights in Nevada in order to protect the Project's water rights with a priority of 1902. This action was not completed, as will be discussed later, until 1983. The other significant step was taken in 1915 when the United States brought a condemnation suit (*United States of America vs. The Truckee River General Electric Company*) for control of the Lake Tahoe Dam. The suit resulted in a stipulated decree that granted the United States an easement to use the outlet controlling works and the adjacent 14 acres at a cost of \$139,500. In this stipulated decree, the United States agreed to meet the aforementioned Floriston Rates requirement. The TRGEC retained ownership of the dam and surrounding land.

In the Orr Water Ditch Company adjudication, a Special Master for the federal court submitted his findings as to the owners of Truckee River water rights in Nevada which were approved by the Court in a "Temporary Restraining Order" in February 1926. At this time, the United States transferred the care, operation and maintenance of Lake Tahoe Dam to the Truckee-Carson Irrigation District. Although the Restraining Order dealt only with water rights in Nevada, there was concern by Lake Tahoe shore owners about how Lake Tahoe was to be operated, primarily in regards to high water levels. The problems between the States and the federal government were compounded by a severe drought in the early 1930s which lowered the level of Lake Tahoe below its natural rim resulting in limited water supplies for all Truckee River water right holders, including the Project, and severely limiting boating access to piers in Lake Tahoe.

After years of negotiations, the United States, TCID, Washoe County Water Conservation District (Reno-Sparks area), SPPCo and "Other Users of the Waters of the Truckee River" signed the Truckee River Agreement in June 1935. This was in effect an operating agreement, although not signed by California interests, which provided for stabilizing the mean elevation and limiting the maximum elevation of Lake Tahoe, provided for additional storage facilities to benefit the Washoe County Water Conservation District, reduced the flow of winter draft from Lake Tahoe, and served as the basis for entering a final decree in the Truckee River Adjudication suit. The Agreement required that a storage facility of at least 40,000 acre foot be constructed and operated in conformance with this agreement before a final decree could be entered. Boca Reservoir with a capacity of 40,800 acre feet was completed in 1939 and the final decree was entered in 1944. The final decree was challenged by the Pyramid Lake Paiute Tribe in 1975 (United

States of America and Pyramid Lake Paiute Tribe of Indians vs. Truckee-Carson Irrigation District, et al.) but the decree was upheld in 1983 by the United States Supreme Court. The Orr Ditch Decree allocated 30,000 acre feet of water for irrigation on the Pyramid Lake Indian Reservation but allocated no water to sustain the fishery or level of Pyramid Lake.

Throughout these years, the maximum amount of water possible was being diverted from the Truckee River at Derby Dam, not only for irrigation in the Project but also for single purpose power generation in Project facilities. These diversions had disastrous effects on Pyramid Lake as is shown on Figure 2. By the 1940s the lake level had dropped 60 feet and the world famous Lahontan Cutthroat Trout became extinct due to a combination of overfishing and the inability of the fish to migrate upstream to spawn. In 1970, the Cui-Ui, a sucker fish found only in Pyramid Lake and a cultural centerpiece to the Pyramid Lake Paiute Tribe, was designated an endangered species. A reintroduced strain of Lahontan Cutthroat Trout in Pyramid Lake has been listed as a threatened species.

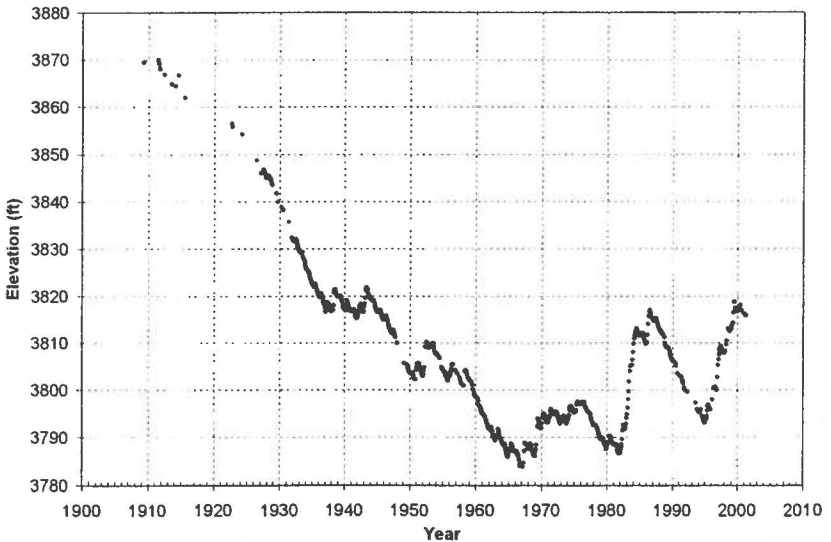


Figure 2. Historical Pyramid Lake Water Surface Elevation

If the water supply for Nevada interests, including the Project, was to be protected, it was imperative that California and Nevada reach agreement on the division of water in Lake Tahoe and the Truckee River Basin. The two states initiated negotiations in the 1950s to develop a compact on the division of the water. By 1970, after 15 years of negotiations, the two state legislatures approved the compact; however, the United States Congress refused to ratify the bi-state

agreement because of objections by the Pyramid Lake Paiute Tribe.

As the Pyramid Lake level continued to drop, litigation increased. In November 1972, and supplemented in 1973, the United States District Court, District of Columbia issued a ruling in Pyramid Lake Paiute Tribe of Indians vs. Rogers C. B. Morton, Secretary of the Interior finding that the Operating Criteria and Procedures (OCAP) for the Truckee and Carson Rivers, which would permit the diversion of 378,000 acre feet of water from the Truckee River at Derby Dam, were arbitrary and not based on the sound exercise of discretion. As a result of this ruling, the diversion in 1974 was not to exceed 288,000 acre feet. Additionally, detailed criteria defining when and how much water could be diverted were spelled out, checks on individual water rights were required, and actions to minimize waste were to be implemented. This action resulted in additional litigation when TCID, which was not a party in the aforementioned action, did not reduce their diversions or implement the court's order resulting in a 1979 order by the court for TCID to "repay" 1,050,000 acre feet to Pyramid Lake. As of this date, the repayment has not been initiated.

The enactment of the Endangered Species Act in 1969, the need to develop a secure water supply for the rapidly growing Reno-Sparks metropolitan area, litigation involving water quality issues, pressure to reduce the dependency of the Project on the Truckee River, and the imperative that California and Nevada reach a Congressionally approved bi-state agreement on the division of waters of Lake Tahoe and the Truckee River, came together with new urgency in the 1970s. Negotiations among the stakeholders resulted in failed attempts to get federal legislation to solve this myriad of outstanding problems.

A breakthrough in solving the impasse came when the President of SPPCo and the Chairman of the Pyramid Lake Paiute Tribe, met in 1988 and concluded that they held the key to providing a basis for settlement of these many issues. The key was the Floriston Rates. SPPCo would agree to forego the requirement that Floriston Rate flows be met at the run-of-the-river power generation plants when all the water was not needed by downstream water right holders. If the water saved by reducing Floriston Rates flow could be held back in upstream reservoirs, it could be stored as an emergency drought supply for the Reno-Sparks metropolitan area. Water stored in excess of the metropolitan area drought needs could be made available for release for fishery purposes when that water would be most beneficial for the endangered and threatened fish in Pyramid Lake. This concept was developed and incorporated into a Preliminary Settlement Agreement signed by Pyramid Lake Paiute Tribe and SPPCo in 1989.

Using the Preliminary Settlement Agreement as a foundation, California, Nevada, SPPCo, the Pyramid Lake Paiute Tribe, the Fallon Paiute Shoshone Indian Tribes and the TCID, under the sponsorship of Nevada's United States Senator Harry

Reid, developed the Negotiated Settlement Act which was adopted into law in 1990 in Public Law 101-618.

The Settlement Act apportions the waters of Lake Tahoe and the Truckee River between California and Nevada; authorizes the coordinated operation of all Truckee Basin Reservoirs and Lake Tahoe to enhance fish and wildlife, recreation and water supply benefits; authorizes the acquisition of water rights for additional water supply to wetlands and wildlife management areas; settles long standing litigation and claims between the stakeholders; provides funds to fulfill the Federal trust obligations to Indian tribes; fulfills the goals of the Endangered Species Act by promoting the enhancement and recovery of the endangered Cui-Ui and threatened Lahontan Cutthroat Trout; and protects significant wetlands from further degradation and enhances the habitat of many species of wildlife which depend on those wetlands.

Today diversion from the Truckee River, limited by the current OCAP and by acquisition of agricultural water rights for use in instream flow enhancement and for water quality improvement and protection of the endangered species, has resulted in reversing the decline in Pyramid Lake levels. With a repeat of the hydrology of the last 100 years and the implementation of the Negotiated Settlement, it is estimated that Pyramid Lake will rise over 60 feet.

To implement the Settlement Act, a Truckee River Operating Agreement (TROA) was to be negotiated for the operation of the Truckee River System. Although the Settlement Act was specific in many areas, the very detailed operating criteria required to carry out the mandate to coordinate the operation of all the Truckee River Reservoirs, to protect the existing water right holders and to meet newly defined environmental objectives, has resulted in eleven years of negotiations. These eleven years have demonstrated the axiom that the "devil is in the details". It is anticipated, or hoped, that the TROA will be signed this year and that the environmental documentation will be completed in two years. Subsequently, federal courts in Nevada and California will have to approve required modifications to the Orr Ditch Decree and the 1915 Lake Tahoe Decree.

CONCLUSION

It will have been just over 100 years since the Truckee River transbasin diversion was implemented that the repercussions of that diversion may yet be "settled". However, that is dependent on the TROA being completed and signed by all necessary parties. If not, the litigation and/or negotiations may still go on - for another 100 years? Perhaps.

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