



Derby Dam

Overview

Derby Dam is a diversion dam on the Truckee River, located about 20 miles east of Reno, Nevada. Completed in 1905, the dam is a component of the Newlands Project and one of Reclamation's oldest facilities. The dam is 31-feet high with a diversion capacity of 1,500 cubic-feet per second; it is operated by the Truckee-Cason Irrigation District and provides irrigation water for 50,000 acres of farmland in western Nevada's Lahontan Valley. The dam was listed on the National Register of Historic Places in 1978 as the "Derby Diversion Dam."

Fish Passage Issues

Diversions in the upper Truckee River, including Derby Dam, one of the largest diversions, reduced flows to Pyramid Lake and strained habitat conditions for the Lahontan cutthroat trout (LCT). Derby Dam and other diversion structures in the lower Truckee River cutoff access to native spawning grounds in the upper portions of the Truckee River. By the mid-1960s, the LCT were eliminated from Pyramid Lake.



Historic photo of the dedication of Derby Dam in 1905

The LCT were listed as an endangered species in 1970 under the federal Endangered Species Act and reclassified as threatened in 1975. Since the trout received federal listing status, Reclamation has worked with U.S. Fish and Wildlife Service, Pyramid Lake Paiute Tribe, and Nevada Department of Wildlife to reestablish a self-sustaining

population of the fish in Pyramid Lake, while also providing reliable water to agricultural and municipal water users.



The threatened Lahontan cutthroat trout. Lake dwellers can weigh 40 pounds and live 5-14 years while stream dwellers weigh ~1 pound and live around 5 years.

In 2001, Reclamation and the Service designed and completed a fish bypass around Derby Dam. However, the lack of a fish screen on the Truckee Canal presented the risk that LCT could be trapped in the canal and unable to return to Pyramid Lake. Since then, Reclamation has been working to add a fish screen to allow LCT movement above Derby Dam and safe return to Pyramid Lake.



Photo of present day Derby Dam.

Derby Dam Fish Screen

In 2018, Reclamation entered into a cooperative agreement with Farmers Conservation Alliance (FCA) to design, construct, and commission a horizontal fish screen. Construction began in September 2019 and was completed in just one year.

The fish screen is a horizontal flat-plate screen provided exclusively by FCA that allows water to be diverted without harming fish or trapping debris. NOAA Fisheries provided criteria specific to a horizontal fish screen for the protection of anadromous salmonids. The fish screen is unique in that it works with the diverted flow of water rather than against it, providing consistent fish protection by allowing fish and debris to move above and over the surface of the screen material.



The horizontal fish screen at Derby Dam is the largest of its kind and allows fish to safely pass around Derby Dam.

As a result, the new fish screen and passage structure allows Pyramid Lake LCT, once thought to be extinct, to complete their natural migration, from Pyramid Lake to their historic spawning grounds above Reno and safely return.

The investment in the fish screen and passage project also improves opportunities for recreation and angling along the Truckee River. Additionally, the project modernizes Derby Dam allowing for automation to adjust flows and regulate diversions; this makes operations more efficient.

This project restores watershed connectivity and supports fish movement along the Truckee River, promoting the recovery of the federally threatened Lahontan Cutthroat Trout and improving fishing and recreation opportunities in Nevada.



Aerial view of the Derby Dam fish screen.

Recognition Awards

In September 2021, Derby Dam Horizontal Fish Screen Project received a 2021 Engineering News-Record Best Project Award of Merit in the Water/Environment category (Southwest Region). As one of commercial construction's most prestigious honors, this award recognized Reclamation, FCA, and its construction partners: McMillen Jacobs and Granite Construction.

In June 2021, this project also received the 2021 International Partnering Institute Partnered Project of the Year Award. The award acknowledged the outstanding collaborative effort by the partners cited in the above award.



The end of the project where the new concrete afterbay transitions to the Truckee Canal.

Additional Information

For more information on the Derby Dam visit: <https://www.usbr.gov/mp/lbao/programs/ddfsp.html>. FCA also has several videos documenting the construction and completion of the project at their website: <https://fcasolutions.org/derby-dam>.