

The Restoration of Plum Creek

Plum Creek is one of two primary tributaries that feeds into Chatfield Reservoir. Not only does Plum Creek represent a source of water supply, it also provides a rich riparian zone, wetlands, and Preble's Meadow Jumping Mouse (PMJM) habitat. With its headwaters located near Castle Rock, Colorado, Plum Creek encompasses 317-square miles of drainage area, much of it along US 85.

Before the environmental mitigation aspect of the Chatfield Storage Reallocation Project (CSR) began, Plum Creek was suffering from severe stream erosion and degradation, as well as increased levels of sediment deposition from increasing urban development upstream. These factors had a detrimental impact to the wetlands, PMJM habitat area, and vegetation health. Along Plum Creek, erosion dramatically lowered the water table by numerous feet. Early in the CSR's planning and development, Plum Creek was identified as a critical environmental mitigation priority.



Widespread erosion was evident on Plum Creek throughout the Chatfield State Park reach prior to the implementation of this project.

In November of 2017, following the thorough vetting of the design plans prepared by Muller Engineering, Inc., Concrete Express, Inc. (CEI), along with its sub-contractor Western States Reclamation, Inc. (WSRI), were brought on board to construct the Plum Creek On-Site Environmental Mitigation Project, within Chatfield State Park.

Included in the civil work performed by CEI, Plum Creek's main channel was relocated back to its historic location. Several riffle-drop rock structures were installed to control longitudinal grade and to prevent head-cutting erosion and channel degradation. To protect the main channel should there be future flood events, secondary overflow channels and bank control structures were built within the floodplain.



Aerial view of the completed Plum Creek main channel work showing several riffle-drop rock structures installed to eliminate erosion and channel degradation.

Upon completion of the civil work, WSRI planted over 54,000 native trees and shrubs, along with seeding and hydro-mulching of nearly 100 acres. Approximately 63,000 square yards of coir mat (a woven natural fiber blanket) was also installed as bank protection, which will greatly reduce erosion along stream banks. A team of ecologists carefully analyzed plant species, locations and depths within various hydrologic zones to ensure the highest level of survival and creation of a diversified, sustainable environment.



Installation of native trees and shrubs required application of seeding and hydro-mulching and daily hands-on watering.

In addition to the civil work and revegetation efforts, Markit! Forestry, with the help of Colorado State Forest Service and ecological oversight, thinned and removed standing dead timber, masticated the forest floor, chipped and hauled woody debris material to be repurposed as mulch and compost, and seeded disturbed areas.

In under two years, positive results of the mitigation and revegetation work are already showing. With the use of monitoring wells along the Plum Creek corridor, evidence of a higher water table has been measured. With the higher water table, a greater percentage of planted trees and shrubs are expected to survive with reduced supplemental watering needed. Once the new vegetation becomes established, it will create a diversified habitat for wildlife.

The Plum Creek Trail, which includes a new bridge crossing, has been constructed within the Plum Creek Nature Area. Through a partnership with Centennial Water and Sanitation District, CSRP was able to complete a new trail connection from the Dam Trail to the new Plum Creek trail system, providing cyclists and recreators the ability to loop around Chatfield Reservoir for the first time. While the new trail system is open from the Dam Trail side, access to the Plum Creek Nature Area from Park's south side won't be established until July 2019.



Downstream view of the new Plum Creek Trail connection that provides for the first time a new loop around Chatfield Reservoir.

The Plum Creek On-Site Environmental Mitigation Project is already garnering accolades. A 2018 H2O Project Award from the Colorado Contractors Association was presented to CEI, Muller Engineering, and the Chatfield Reservoir Mitigation Company for their work on this stream restoration project.



Plum Creek On-Site Environmental Mitigation Project (CSRP) was awarded the 2018 H2O Project Award by the Colorado Contractors Association

FOR MORE INFORMATION

For questions contact us at info@chatfieldreallocation.org.

For detailed information on the Chatfield Storage Reallocation Project, or to view the project video, please go to our website www.chatfieldreallocation.org.

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