

Tree Management Demonstration Plot

An important step in tree management at Chatfield Storage Reallocation Project was completed in March. The work was done in a 10-acre demonstration plot near Roxborough Cove and Plum Creek Day Use Area in Chatfield State Park. Dead tree, brush and woody debris removal work conducted by the contractor Markit! Forestry Management will help determine best practices to be used for the remaining areas impacted by the reallocation project.

Colorado State Forest Service (CSFS) developed, during 2017, a protocol for evaluating existing trees and the area surrounding them. They first determined that only tree debris two inches or larger would be identified for removal. They used GIS technology to map each of the areas around the Chatfield Reservoir where large stands of trees will be impacted by storing more water in the reservoir periodically. Finally, they conducted an inventory of each of the stands.

They used distinctive blue paint to mark diseased and dead or dying trees.

Chatfield Reservoir Mitigation Company (CRMC) tasked Ron Beane of ERO Resources and Bill Ruzzo, consulting engineer, with overseeing the tree management efforts at Chatfield — with help from a group of other technical experts. The U.S. Army Corps of Engineers (USACE) biologists are also consulting on the project, along with Colorado Parks and Wildlife (CPW).

The Colorado State Forest Service established a 10-acre demonstration plot near Roxborough Cove. CRMC contracted with Market! Forestry to remove blue marked trees and woody debris and to leave healthy trees. They were also tasked with evaluating best methods and cost basis for tree management.

Did the demonstration plot work achieve its objectives?

Bill Ruzzo: Yes, the purpose was to implement the protocols identified by CSFS for removal of diseased, dead and dying trees in the fluctuation zone (the area that will be under water periodically once more water is stored in Chatfield Reservoir). It showed us most efficient ways to carry out the tree management plan within very difficult conditions in the remainder of the project area. It showed us what equipment works and what doesn't work. Forest management equipment was used where possible. Saws worked on the ground, tree by tree. Shrubs and woody debris was taken out and was mulched. In some cases, they had to remove trees using a helicopter. That was expensive but very efficient.

Ron Beane: The contractor did great work. We evaluated the project on a daily basis. It is amazing how many trees are left. We have many large, healthy cottonwoods left in place. Invasive species of trees and shrubs have been removed.

Bill: What do we do next — ERO, Markit! Forestry, CRMC and CSFS will work together to figure out the most efficient methods for each of the remaining tree stands in the fluctuation zone.

Has the plan for managing trees in the areas of Chatfield State Park changed since the Corps of Engineers completed the FR/EIS (and appendices)?

Bill: When the U.S. Army Corps of Engineers and the State of Colorado first developed the mitigation plan for the Chatfield Storage Reallocation Project, they conservatively assumed that the area where additional water will be stored would have to be cleared and grubbed. They thought that was the best way to meet all of their "must do" objectives — dam safety, boating safety, visitor experience and visitor safety. However, through the adaptive management approach, the FR/EIS identified tree removal objectives, uncertainties and contingencies, which permitted many live trees to remain in the fluctuation zone. The success of this approach will be evaluated annually through monitoring and adjustments to the Adaptive Tree Management Plan made when necessary.

Ron: Working with the USACE biologists, CSFS, CDM Smith, ERO Resources and a number of other entities, the CRMC developed a new, less invasive plan. They entered into an agreement with CSFS to evaluate all of the trees two inches in diameter or larger in the fluctuation zone — a huge task — and to mark those that should be removed and to preserve the healthy trees they believe will withstand periodic inundations.



A pre-treatment cottonwood stand in the demo plot indicating downed woody debris and trees marked for removal.

In September 2017, CDM Smith prepared a framework for the Adaptive Tree Management Plan for Chatfield Storage Reallocation Project. This was the result of months of work by USACE, CPW and CRMC. This was not the first, but the sixth, project document addressing tree management and adaptive tree management.

At the time the CDM Smith framework was completed, some activities had already begun, including set up and operation of a Tree Management Team consisting of CRMC, CPW, USACE and ERO Resources and other consultants on the project. At the same time, CSFS was engaged to work on an inventory of trees and debris in the fluctuation zone. They marked the trees to be removed with a blue paint stripe.

Bill: The trees that remain will be healthy and large enough for park visitors and boaters to see them at all times — even when water storage is at its highest storage level of 5444 feet above sea level. In fact, this will be a great area for kayakers, canoeists and stand-up paddleboards who love to explore the shoreline. The CRMC will monitor the remaining trees annually for at least five years after additional water storage is implemented — to be sure the adaptive tree management plan is working properly.

Some of the trees in the fluctuation zone have raptor nests high in their branches. Will those trees be left in place?

Ron: With thousands of years of genetics behind them, the birds know how to select healthy trees when they build their nests. The exceptions are cavity nesters, and we are working now on a portion of the Adaptive Tree Management Plan to address them.

When does CRMC expect the reservoir and surrounding state park will be ready for storage of additional water?

The plan is that the reservoir will be ready to hold additional spring runoff in 2020. However, that means a great deal of work at the park has to be accomplished in the next 24 months.



The work on the demonstration plot was completed in March 2018, and the 10 acres now resembles an urban forest.



Helicopter removal of dead trees and other woody debris.

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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