

# Upper Truckee River channel project close to completion

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Water now moving through new channels





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A major restoration project of the Upper Truckee River channel and surrounding meadows is about to be completed, three years and \$7 million later. Known as Reach 5, the U.S. Forest Service project is improving the river channel stability and aquatic habitat along 1.2 miles of the river adjacent to the Lake Tahoe Airport.

Another goal of the project is to restore surface and subsurface channel connectivity to 120 acres of floodplain, increasing deposition of fine sediments and nutrient uptake on the floodplains as well as raising the ground water levels in the meadow.

To meet these goals, USFS crews have created a brand new river channel that is more meandering, one that has a slower water flow, more conducive to healthier plant life and a meadow full of nutrients and home to a healthy animal habitat.

The Upper Truckee is the largest tributary into Lake Tahoe which means it brings in more sediment than any other source and it is one of three watershed focuses for USFS.

Funding for the project came from the Southern Nevada Public Land Management Act (SNPLMA), which sells public lands in Southern Nevada to fund, among others, Lake Tahoe restoration projects.

Originally budgeted at \$4.5M, extra costs were covered by extended SNPLMA funding. Theresa Cody, Project Manager for USFS, said their original budget was created in 2010, and costs for the seasonal bridge and an extra river diversion came in much higher than planned.

Crews used the old Sunset Stables as a staging ground for the last four years. They first installed an approximately two acre aggregate base pad, which is designed to prevent the spread of noxious weeds into the project area. Rocks and dirt removed from the Upper Truckee River and meadow were kept here, then put back into the new river bed, thus keeping transportation costs down and keeping the fill natural to the environment. A removable bridge was installed annually from the stable area to the river project area to transport the dirt and rocks.

As of September 29, water has been diverted into the lower channel. The newly created banks are already healthy with vegetation and the river bed is full of gravel, giving it the look that it's been there for years. Theresa Cody, USFS hydrologist and lead on the project, said evidence of the dozens of heavy equipment that have been in the area over the last four years will disappear within two years. Some portions of the 1.2 miles of the new channel were revegetated two years ago, while others are just now having plants added.

"By next spring this will all look more natural," said Cody. "Ecosystems are very resilient to change."

### **River Diversion**

Years of human intervention in the area created a need to craft a river channel without high banks to encourage flooding, a more stable riverbed, a healthier aquatic environment and reduce the sediment getting into the lake.

Tons of dirt have been removed from the meadow to create the new river channel, with that dirt now filling the old river channel. Water had been diverted through an extensive pipe system as crew members prepare the new river bed ready to be filled.

The Federal Aviation Administration (FAA) had to be involved with the dirt that came back into the meadow and river. They needed to do a wildlife hazard assessment to make sure an increased number of birds weren't attracted to the area adjacent to the Lake Tahoe Airport.

After the new river flows, the rate the water will move will be about 375 cubic feet per second. Before the project was started it ran about 700 to 1000 cubic feet per second. The old river had very few areas of shade for fish, and the new river has old trees, roots and other "natural" features to give lots of shade.

Cody said it will take about two more weeks to complete the channel connections, and about one more week after that to do the final tie-in and put the diverted water into the new channel. She said they'll pull out and the public will be welcome to come back in around October 19/20. They don't plan on any construction next year unless heavy snow prevents them from finishing this year, but that isn't expected.

### **Rafting**

The river rafting season this year was shortened due to construction in the area, but rafters should see great results next summer.

"This project should improve rafting conditions," said Theresa Cody, Project Manager for USFS. "It might push the start of the season to a later start date, but the project should result in a much longer rafting season."

The later start would be due to overbanking, a desired result of all the work done on the river channels. It will depend on snowfall and spring runoff as to when rafting seasons can start.

### **Western Pearlshell Mussels**

14,000 mussels have been relocated since the project began in 2014, a much higher number than originally planned. It turned out that Reach 5 had the largest population of the mussel in the Lake Tahoe Basin an unknown fact when they began. [That first year was an experimental one when 925 mussels were tagged, weighed, measured, and relocated](#) to 37 plots in eight reaches of the Upper Truckee River, Trout Creek and the Truckee River. Relocation has been successful though two of the mussels died.

It was found that the mussels thrived in areas of lower cover of aquatic vegetation, lower elevation, and lower minimum and maximum water depth.

The removed mussels will not be coming back, and nature will take care of repopulating them into the river. They reproduce on the gills of fish and are deposited into the river as they swim by.

### **Flooding/Overbanking**

Historically, water from the Upper Truckee River went over the banks every one-to-two years. The meadow was flooded, keeping it green and healthy.

Cody said the new channel will now be conducive to flooding. The overbanking causing deposition of fine sediments and nutrient on the floodplains as well as raising the ground water levels in the meadow.

### **History**

Man was the cause of the Upper Truckee River Reach 5 needing to be rerouted. Farming, grazing, an old gravel pit all led to the decline of the riverbed, but the main cause was the Lake Tahoe Airport. When it was built over 50 years ago, much wasn't known about sediments entering the lake. The river was straightened due to runways being built along the meadow, and it was lined with large rocks on the banks. This caused a larger flow of water, reduced chances of overbanking and hardening of the ground.