



## Upper Truckee River Reach 5 Restoration and Utility Relocation Project



Eroding bank on UTR in Reach 5 - 2013



Completed Reach 5 channel



In 2013, the USFS LTBMU began implementation of a river channel/floodplain restoration project along the Upper Truckee River (UTR) in Reach 5, located adjacent to the Lake Tahoe Airport just south of South Lake Tahoe, CA in El Dorado County. The project is located on both LTBMU and California Tahoe Conservancy lands.

The UTR watershed is the largest watershed in the Lake Tahoe Basin and has the highest annual sediment loads of all the tributaries to Lake Tahoe.

The existing channel became incised as a result of urban development, grazing, road building, airport construction, logging, and gravel mining, as illustrated by the bare stream banks shown in the picture on the upper left.

Restoration activities included the construction of approximately 7,340 feet of new river channel to replace the existing incised and eroding channel, relocation of buried utility lines where they cross the new channel, and grading and revegetating approximately 5.6 acres of floodplain near the transition to the downstream reach. The project resulted in 120 acres of restored and reactivated floodplain.

This restoration project was designed to achieve the following objectives:

- 1) Restore river geomorphic function in terms of channel stability and aquatic habitat features.
- 2) Restore surface and subsurface channel-floodplain connectivity by increasing the frequency, duration and extent of floodplain inundation so that; river flows frequently flood the meadow surface resulting in the deposition of fine sediments on the floodplain and increased nutrient uptake, and seasonal ground water levels are increased in the floodplain meadow to support the growth of wet meadow vegetation during late summer.



Four years of project implementation between 2013 and 2016 resulted in the completed project pictured above. Immediately following project completion, heavy rain events resulted in project-wide flooding in December of 2016.

Before the project was completed, overbank flows occurred in this project area approximately every 5 years (at flows of 800 cfs or larger) and groundwater was between 4 and 7 feet beneath the meadow surface during summer months (July-September). Now that the restoration project is completed, the channel will overbank onto the adjacent floodplain every 1-2 years (at 375 cfs flows) and groundwater elevation will be increased to approximately 2-3 feet below the meadow surface during summer months.

Other project benefits include:

- Increased groundwater elevation and increased plant available water late in the growing season to support a conversion to wet meadow vegetation on the floodplain which provides desired habitat for several terrestrial wildlife species.
- Improved aquatic habitat conditions from increased pool depth during base flow conditions, increased pool frequency, and increased streambank vegetation and stream shade.
- Increased streambank stability due to increased vegetation on the banks and less bank erosion.

More information on this project can be found on the LTBMU website:  
<http://www.fs.usda.gov/goto/lbmu/UpperTruckeeRestoration>