



## Angora Creek Stream and Floodplain Restoration



In 2014 and 2015, the USFS implemented a stream channel/floodplain restoration project on Angora Creek and its tributaries, located upstream of the Lake Tahoe Boulevard stream crossing. The Angora Fire of 2007 had stripped large wood from the channel and adjacent riparian zone. In addition, a legacy man-made pond disrupted historic flow paths from one of the tributaries, and had become a breeding ground for invasive bullfrogs. And finally a section of channel was incised due to past urban development.

In 2014, restoration actions included the strategic placement of large wood along 2 miles of head water tributary channels. Large wood was placed to restore fish habitat and encourage sediment storage and sorting. In 2015, 750 feet of new channel was constructed to replace a section of incised channel in the main stem of Angora Creek, and additional strategic placement of large wood was installed for 1000 feet above the newly constructed channel. A total of 208 individual multi-log structures were installed, over the two years. Also in 2015, the legacy Seneca Pond was decommissioned through regrading to restore historic flow paths and topography, converting this 5 acre site to wet meadow habitat.

Restoration was designed to achieve the following two objectives:

- 1) Restore historic stream flow patterns and geomorphology.
- 2) Restore in-channel large wood to provide cover for aquatic organisms, structural components for channel stability, and promote sediment storage and sorting.



**South Fork of Angora Creek, prior to installation of large wood**



**Same location on South Fork of Angora Creek, after placement of large wood**



**Incised Angora Creek channel above Lake Tahoe Boulevard, prior to restoration, 2013**



**Flooding of meadow adjacent to Angora Creek February, 2016**



**New channel construction, 2015**



**Reconstructed Angora Creek Channel, May 2016**

### **POST PROJECT RESPONSE**

Several moderate floods occurred during the winter of 2015-16. A storm in February resulted in flows spreading over the entire meadow near Lake Tahoe Boulevard, resulting in some flooding of the roadway. However beaver dams just upstream of the restored reach are thought to be the main cause of enhanced lateral spread of flood flows. The Forest Service will continue to monitor this situation, and work with El Dorado County to determine if any modification of the placed wood structures is needed to reduce future potential for roadway flooding. As of May 2016, all restored sites are stable and functioning as expected. Revegetation through sod plugs and willow planting at the Seneca Pond site will be completed in June of 2016, which will complete planned restoration actions for this project.