Grizzly Gulch Mining Area Restoration Project

General Description and Concept for Remediation

Location:
Grizzly Gulch, a tributary to the upper mainstem of Clear Creek is located by Bakerville, Colorado. The stream runs along Forest Road 189.1E which dead ends by Kelso Ridge, a popular back country recreation area used for accessing Grays and Torreys peaks. Grizzly Gulch is a portion of a larger historic mining area that encompasses Grizzly Gulch, Stevens Gulch, and Quayle Creek.

It is believed, based on visual site inspection (pictures included in project packet), the mining sediment entering Grizzly Gulch waters may not be originating from the Southern area mining claims, but instead is seeping into the water from springs entering from the east where historic mining activity took place between Grizzly Gulch and Stevens Gulch’s.

The project area includes two separate crossings where FR 189.1E crosses Grizzly Gulch Creek. The general project area is located at N 39 degree 39' 54” and W 105 degree 48’ 58” identified on the Grizzly Gulch Project Area Map.

Purpose:
The project area is located within or adjacent to a portion of Forest Service Road 189.1E. It is a riparian area along the Grizzly Gulch Creek where historic mining and recent activity is causing significant erosion and damage to the site. Restoration and repair will provide benefits to sensitive riparian areas along the stream and reduce introduction of sediment derived from historic mining activity from entering the stream and affecting the water quality in an area under consideration for greenback cutthroat trout re-introduction.

Concept Plan:

Activity 1: Temporary Road Closure

Temporarily close approximately 1.0 mile of road where 4-wheel drive pioneering is causing resource damage in a valuable riparian area and adding sediment directly into Grizzley Gulch.

Activity 2: Restoration

Repair of stream crossing on FR 189.1E and wetland restoration.

This activity includes the rehabilitation of the upper stream crossing as well as restoration of the damaged wetland in the adjacent riparian area. The streambanks and stream channel have been severely degraded at this crossing. The streambanks are completely collapsed and void of vegetation. In addition to the streambank damage, the channel has widened to 30 feet vs. the original 6 feet and needs to be rebuilt/re-contoured utilizing mechanical equipment as well as by hand with rock and log placement to create pools for fish habitat.
This stream is slated for potential greenback cutthroat trout re-introduction and this crossing is currently contributing large amounts of sediment to sensitive habitat that would likely include spawning gravels. The stream bank restoration area needs pre-work by mechanical machine to facilitate hand labor in bank stabilization through willow plantings, riprap placement, and seeding.

The wetland on the north side of the crossing has also been damaged by motorized vehicle use. Deep ruts and loss of willows and other riparian plant species is evident. Motorized vehicles have created multiple routes through the wetland that has left degraded riparian area that is directly contributing sediment to Grizzly Gulch. Re-contouring the damaged wetland area and then planting willows and other native riparian species is needed to restore the area.

After project completion, a gate and/or large boulders may be installed across the entrance of the road into the riparian area to temporarily close the road to off road vehicles to allow for the wetland to reestablish itself. In addition, approximately 1000 feet of buck-and-rail fence will be constructed along the streambank and adjacent meadow to eliminate motorized recreation from entering the restored area. Parking and access to the hiking trail will be provided adjacent to the buck-and-rail fenced area.

**Activity 3: Erosion Control Installation**

The lower stream crossing is currently in poor condition and is contributing excessive sediment into Grizzly Gulch. The streambanks are severely eroded and have left a very steep crossing that is difficult to traverse. In addition, the vegetation on both sides of the stream has been lost further contributing to sediment to the stream. To address this, the bank will be armored with riprap. A backhoe will need to be utilized in order to properly excavate to the appropriate depth and move large boulders into place.

The stream channel downstream of the riprap area will need manipulation to construct pools to facilitate future fish passage. Large boulders will need to be moved mechanically with a bucket and finger grabber. Fish habitat will be created via small boulder placement by ground labor. Ground labor will also plant willows and other native riparian plant species on the exposed streambanks.

**Activity 4: Fish Habitat Installation**

Adjacent to the riprap area is an avalanche shute that has deposited large woody debris into the stream. This area is ideal for potential fish habitat and will require the installation of 12 or more instream log structures (or similar fish habitat structures) using a backhoe or similar mechanical equipment to set the logs into position. Hand labor will be used to secure the log structures through rebar anchors and cable placement.

**Concept of Operation:**

**General: Volunteer Labor**
The focus of efforts is directed toward a volunteer work day/finish work, Saturday, August 22, 2009 in Grizzly Gulch.

**Participants:**

United States Forest Service

National Friend’s of the Forest Foundation

Clear Creek Watershed Foundation

Molson-Coors