

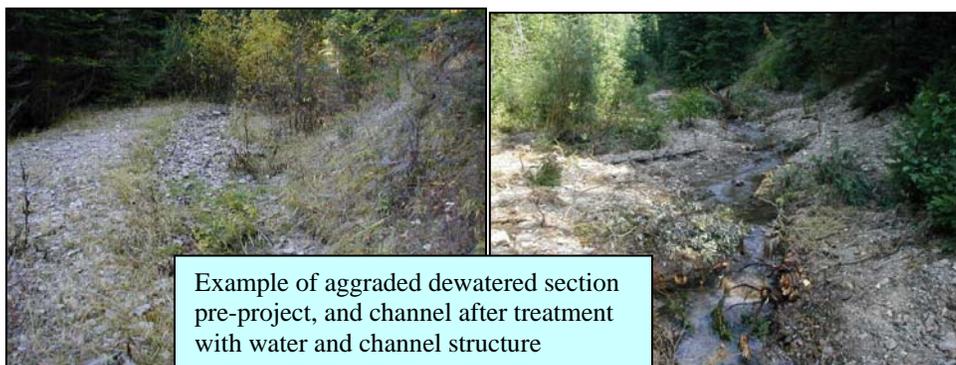
2006 Fisheries Restoration Project Summary – Lolo NF

State: Montana
National Forest: Lolo National Forest, Ninemile Ranger Dist.
Project Name: Eustache Creek Abandoned Mine Rehabilitation

Project Partners
Trout Unlimited, Westslope Chapter and National Future Fisheries, State of MT
National Forest Foundation
Region 1 Minerals Program

Project Purpose / Objectives:

Remnant placer mining disturbances in over a mile of Eustache Creek include large piles of infertile mine waste along stream margins that constrict the stream, prevent streamside vegetation development, straightened and shallow stream channels with little large wood necessary for instream fish habitat, and in-channel pits that allow water to slow, spread out, and heat up. Some spoil piles are actively eroding into the stream which affects local fish production in Eustache Creek and downstream in upper Ninemile Creek. A channel, floodplain, and re-vegetation strategy was designed to re-create a stream setting that is more stable, can accommodate a range of hydrologic conditions without excessive sediment generation and downstream pollution, able to develop in a manner that native fish habitat and production should be improved. This will protect and maintain existing populations of westslope cutthroat trout and possibly recreate conditions hospitable for the threatened bull trout, once resident to the upper Ninemile watershed. A complete design document is available (scottspaulding@fs.fed.us) that outlines the design strategy.



Example of aggraded dewatered section pre-project, and channel after treatment with water and channel structure

Work Performed:

In 2005, Trout Unlimited (TU) and Forest personnel collected native seed stock from the project area to be used in re-vegetation efforts after channel and floodplain reconstruction. Seeds from dogwood and alder, and cuttings of willow were collected and taken to the nursery in preparation for re-vegetation. In

2006 an excavator knocked down confining mine spoils and removed aggraded material (excess gravels that the stream cannot transport out) to recreate low flow, bankfull and floodprone channels that conforms to the existing flow and sediment regime. Large wood from nearby valley slopes was recruited and used for pool and bank stabilization structures. In over-aggraded sections of channel that lose surface water in late summer, a new technology of low permeability filter fabric was used to construct ground water retention sills. Straw mulch and a sterile rye grass were spread throughout the site on disturbed surfaces and in some places coarse organic material (1/4 – 1 inch) was used to help amend the reworked mine spoils and prepare the site for re-vegetation. In the late

spring of 2007, TU volunteers and Forest personnel will finish reconstruction efforts by planting the native hardwoods collected two years prior.

Expected Benefits:

The upper Ninemile including Devils Creek (non-mined stream that joins Eustache to form the upper Ninemile Creek) is one of the remaining strongholds for native westslope cutthroat trout production, and with remnant resident bull trout production. Eustache reconstruction is expected to



Example of reclaimed abandoned mine spoil piles on left and pre condition on right

produce a stream channel with much more complex habitat including large wood, increased pool quantity and quality, reduced hillslope instability fine sediment recruitment, all expected to favor increased native fish production. Two years of fish, aquatic invertebrate, temperature, and channel (pool, wood, fine sediment) and floodplain (cross sections and longitudinal profiles) data have been collected and continued monitoring efforts will continue to track benefits of this project. TU volunteers have been instrumental in the collection of these data.