2006 Fisheries Restoration Project Summary – Lolo NF

State: Montana
National Forest: Lolo National Forest, Ninemile Ranger District
Project Name: Surveyor Creek Fish Passage Project

Project Purpose / Objectives:

The purpose of this project was to improve fish passage for westslope cutthroat and possibly bull trout from the lower end of the North Fork of Surveyor Creek for at least another 1.3 miles into high quality upstream production habitat. In 2000, the Lolo National Forest and Montana Fish Wildlife and Parks cooperated to identify and survey all probable fish passage barriers in the Fish Creek watershed. The intent was to identify and prioritize areas where there are restoration opportunities for aquatic resources through fish passage and travel management improvements. Surveyor Creek, tributary to the South Fork Fish Creek, provides good water temperatures and instream habitat for native fish production. However, four important fish passage barriers were identified in Surveyor Creek. This project represents a fix to the highest priority of these four barriers in this watershed. In addition to providing fish passage, an improved crossing structure at this Surveyor Creek site will reduce the risk of the pipe inlet plugging and potentially overtopping with water during high flow and either partially or completely failing. This would add tons of fine sediment to the both Surveyor and South Fork Fish Creek and close off access to a popular recreation area. At the very least, this remedy will reduce local channel erosion that has occurred over the years from this structure being far undersized.

North Fork Surveyor Creek pipe outlet after replacement, now with a maximum pipe diameter of 12 feet. Note the general pattern of the stream exiting the pipe matches the stream below the pipe.

Work Performed:

Stream surveys were performed to provide data that allowed engineers to design a stream crossing structure for the following purposes: to mimic upstream and downstream channel pattern s and dimensions to allow natural movement stream bed substrate, wood, and high stream flows without extensive stream-bank erosion. Finally it would allow fish to move upstream under most flow conditions.

A medium sized excavator was used to excavate and remove an undersized pipe (4-foot max diameter) and place a new 12 foot diameter corrugated metal squash pipe, 70 feet long. The bottom of the pipe was sunk below stream bed grade by 2-feet to allow for natural scour and deposition process and pool and riffle formation. Work was done in such a way that a new streambed and channel could be simulated and constructed through the new pipe. Large rock bands of boulder sized material were placed throughout the pipe bottom to help hold the smaller sized gravels in the pipe under higher flow conditions.

Expected Benefits:

This project will primarily benefit westslope cutthroat by providing fish passage at all times of the year under most flow conditions. Unimpeded passage for all life stages of fish is important to local fish population maintenance and viability. A larger crossing structure at this site will allow the reconstructed channel to more effectively mimic physical conditions and processes above, through, and below the pipe. If migratory bull trout increase in the middle Clark Fork and the Fish Creek drainage, then the 1.3 miles of Surveyor Creek above this replaced pipe (before the next passage impediment is encountered), could potentially be re-populated. This project will also help add momentum to replacing other important stream crossing and fish passage impediments in the Fish Creek drainage.