

## Trail Creek Cedron Bridge Fish Barrier Removal

The Teton River is one of a handful of large rivers nationwide that contains primarily native cutthroat. The Teton contains two life history patterns of Yellowstone cutthroat trout resident and fluvial. Resident cutthroat trout complete their entire life cycle within the Teton River. Fluvial cutthroat are dependent on tributaries for spawning and rearing. Cutthroat trout are spring spawners and spawn as spring run-off declines which for the Teton streams is likely to occur during June for most years.

The U.S. Fish and Wildlife Service was petitioned to list Yellowstone cutthroat trout in August 1998 under the endangered species act. In February 2001, the agency finalized their finding on the petition to list Yellowstone cutthroat trout. They indicated the petition did not provide substantial information to indicate listing was warranted. It was our intent with this project to continue to enhance Yellowstone cutthroat populations to preclude listing of the species either through the courts or by petition.

In 2000 most streams flowing into the Teton River that originate on Forest Service lands were surveyed. This survey found the highest quality-spawning habitat within Forest Service administered lands in Trail Creek. Trail Creek flows parallel to the Teton Pass Road and through the town of Victor and is a tributary to the Teton River. Other tributaries outside of the Forest especially the many spring streams provide valuable spawning habitat.

The Teton River proper contains very little spawning habitat. By providing access to Trail Creek more spawning habitat will be provided for Teton River cutthroat, which will hopefully provide more fish to the Teton River. In recent years the number of small fish in the river has declined although the overall biomass has stayed constant since the remaining fish are larger. This shift in sizes may be due to changes in fishing regulations whirling disease, or other factors. The silty nature of Teton River makes it susceptible to whirling disease that primarily targets young salmonids. The cleaner Trail Creek should be less susceptible to whirling disease and able to raise fish up past the stage they are most vulnerable to whirling disease.

The Lower reach of Trail Creek often goes dry during the summer. However, other spawning runs of Yellowstone cutthroat are maintained under similar circumstances on Canyon and Moody Creeks. It is believed that Trail Creek will be similar.

Two barriers for fish migrating from the Teton River to Trail Creek have been identified. One barrier is at the Irrigation diversion for the Trail Creek Sprinkler Company. In cooperation with the sprinkler company this migration issue appears to have been resolved. The other migration barrier is an irrigation diversion at the Cedron Bridge that is no longer used. The barrier consists of two parts, one is a velocity barrier and the other is a vertical barrier.

The concrete sill that is 2 foot in height 8 feet deep and 24 feet wide and forms the vertical barrier and the velocity barrier is formed by a 78 foot long smooth concrete flume (lining) on the stream bottom with a 2 foot drop within that 78 foot length and a 3 foot drop from the flume end to the stream bottom.

A few fish have been observed attempting to swim up the concrete flume but without a resting and jumping pool below the concrete sill it is virtually impossible for fluvial cutthroat to make it past this barrier.

Correcting these barriers and allowing fluvial fish to migrate and spawn in Trail Creek is one step towards increasing the numbers of cutthroat in Teton River.

The current sill is not used as a diversion structure since the water has been placed in a pipeline to provide pressurized irrigation. The flume however was poured over the Trail Creek Sprinkler Company's pipe to protect it and to protect the bridge. The concrete flume needs to be maintained in place to protect the pipe and bridge.

The project to remove the fish barrier on lower trail Creek at the Cedron Bridge was completed on September 25. This was a cooperative effort between many groups ( Idaho Fish and Game, Friends of The Teton River, Teton Valley Trout Unlimited, Onefly, Natural Resource Conservation Service, Teton County, Trail Creek Sprinkler Company, Terry Johnson and the US Forest Service). Onefly, Teton Valley Trout Unlimited, Friends of the Teton River, and the Eastern Idaho Regional Advisory Committee provided funding.

Project consisted of the removal of the concrete sill, the machine placement of 140 cubic yards of large rock, excavation of 80 cubic yards of stream bottom upstream of the sill with this material being placed downstream between the four weirs. Two weirs were constructed upstream to stabilize the stream grade and four weirs were constructed downstream to dissipate stream energy, provide resting pools, and back water onto the concrete flume. Vertical banks were also sloped back to encourage cottonwood establishment. (See photos of project below)



Upstream Barrier before removal



Vertical barrier has been removed. Edges of removed sill and stream bottom were armored with rock. Two rock weirs were constructed one is visible in middle of photo and the other is buried level with present stream bottom. Complete sloping of bank done.



Vertical bank was sloped back at bankfull level and seeded to encourage cottonwood establishment.



Two upstream barbs were placed per desires of the county. These were placed as an addition to the stream alteration permit based on a phone conversation I had with the army corp. of engineers. The intent of these barbs is to remove forces from the outer banks and decrease erosion and long-term threat to the road.



Lower channel pre-project.



Lower channel pre-project



Lower Channel – mid construction.



Lower channel post construction of 4 weirs