

Frequently Asked Questions

Restoration of Paiute Cutthroat Trout in Silver King Creek

Q. What is Paiute Cutthroat Trout?

A. Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*) is one of the rarest forms of trout with a native range of a single stream, Silver King Creek. Paiute cutthroat trout are closely related to the Lahontan cutthroat trout, (*Oncorhynchus clarkii henshawi*), and are distinguished by their almost complete lack of body spotting and an iridescent purplish hue body coloration. It is the only western trout that consistently has no obvious spots on the body. Paiute cutthroat trout are protected as a threatened species under the Endangered Species Act (ESA) and are among the first animals listed under the ESA.

Its life history and habitat requirements are similar to those reported for other western stream-dwelling salmonids. All life stages require cool, well-oxygenated waters. Adult fish prefer stream pool habitat in low gradient meadows with undercut or overhanging banks and abundant riparian vegetation. Pools are important rearing habitat for juveniles and act as refuge areas during winter. During the winter months, trout move into pools to avoid physical damage from ice scouring and to conserve energy. As with other salmonids, suitable winter habitat may be more restrictive than summer habitat.

The historic distribution of the Paiute cutthroat trout is thought to have been limited to 14.7 kilometers (9.1 miles) of habitat in Silver King Creek from Llewellyn Falls downstream to Silver King Canyon as well as the accessible reaches of three small named tributaries: Tamarack Creek, Tamarack Lake Creek and the lower reaches of Coyote Valley Creek downstream of barrier falls. This watershed is entirely within the boundaries of the Humboldt-Toiyabe National Forest, specifically the Carson-Iceberg Wilderness

In the early part of the 20th century they were eliminated from this habitat though interbreeding with hybridized rainbow trout. Their range was extended into the upper reaches of Silver King Creek and its tributaries by one or more unofficial transplants of the fish above Llewellyn Falls starting in 1912.

Q. Please describe the restoration project.

A. The partner agencies will chemically treat 11 stream miles in Silver King Creek and its tributaries from Llewellyn Falls downstream to Silver King Canyon using rotenone, a fish toxicant. The lower reaches of three small tributaries will also be treated: Tamarack Creek, Tamarack Lake Creek and Coyote Valley Creek. The rotenone will be neutralized in Silver King Creek near Snodgrass Creek to keep it from affecting downstream habitat.

Q. Why are agencies implementing this project?

A. Removal of non-native fish is essential to the reestablishment and recovery of this rare fish. Once Paiute cutthroat trout are restored and a self-sustaining population has been established, the species can be considered for removal from protection under the ESA.

Q. What are the chemicals you will use to eradicate the non-native fish?

A. Rotenone is a restricted-use pesticide that is toxic to aquatic gill-breathing animals. Potassium permanganate is an oxidizing agent that neutralizes the toxicity of rotenone through chemical processes. We will apply the substances according to the U.S. Environmental Protection Agency label instructions for application techniques and concentrations.

Q. How will you control the chemicals?

A. The rotenone will be applied in carefully measured doses relative to measured stream flows. Treatment will have the highest levels of quality assurance and control to ensure that the right amount of chemical is added and that the neutralizing agent is below chronic toxicity levels. Permanganate monitoring will help us adjust application levels and effectively neutralize the rotenone. Operational water quality monitoring will employ laboratory standards to ensure that levels remain below known toxicity values. Independent water quality monitoring will be conducted by the Lahontan Regional Water Quality Control Board to ensure compliance with the National Pollutant Discharge Elimination System permit. Sentinel fish will also be used as biological indicators that we are, in fact, below the acute/chronic toxicity values. Water quality testing will confirm that no rotenone has passed outside the project area.

Q. How many applications of the treatment will be done, and when?

A. We anticipate it will take two, possibly three treatments to be completely effective. Therefore, treatments will be carried out in 2013, 2014 and possibly 2015.

Q. How long will it take for the Paiute cutthroat trout to reestablish its historic habitat after treatment?

A. There are many variables that will influence the restoration of the fish in Silver King Creek such as severe water years with either unusually high or low stream flows, but it will likely take five to eight years, possibly longer. Pure Paiute cutthroat trout will be taken from several source populations to restock the treatment area once it has been proven to be free of hybridized fish. The goal is to have a self-sustaining population with multiple age classes of fish and a population size greater than 2,500 individuals. Fish population geneticists consider this population size adequate for long-term survival of the Paiute cutthroat trout.

Q. Is there an alternative method that could be utilized?

A. No. Chemical treatment is the only proven method to remove fish in a stream system as complex and as large as Silver King Creek.

Q. Are there special fishing regulations?

A. Yes. Anglers may catch and keep 10 fish per day in Silver King Creek from the Tamarack Lake Outlet Creek to Silver King Gorge. The purpose of this special regulation is to allow anglers to catch more fish in the project area prior to the treatment than would be allowed under general trout regulations. Anglers should check for changes to the California Freshwater Sportfishing Regulations before going there.

The agencies ask that anglers avoid this reach of stream from the time the project is physically started until late September. It won't be closed right away, but the California Department of Fish and Wildlife (CDFW) will seek to officially close Silver King Creek from Llewellyn Falls to the Snodgrass Creek starting in 2014 and keep it closed until the treatment is complete and further evaluations of the species status, recovery criteria and angling feasibility are completed.

Q. Are there other places to fish for trout, nearby?

A. Yes! In Alpine County anglers can fish the east and west forks of the Carson River, Silver Creek and Wolf Creek. In nearby Mono County, anglers can fish Wolf Creek, a tributary of the West Walker River, for the rare Lahontan cutthroat trout using artificial flies with barbless

hooks. Please see California Freshwater Sport Fishing Regulations Chapter 3 for special regulations to preserve the species.

Q. What steps are CDFW, U.S. Fish and Wildlife Service and U.S. Forest Service taking to prevent a reoccurrence of hybridized and/or non-native fish?

A. The agencies are posting signage to educate the public about the importance of this fish and will continue law enforcement patrols to discourage illegal fishing activities. Restocking will only be done with pure Paiute cutthroat as identified in the genetics evaluation performed by UC Davis.

Once the chemical treatment project is complete and Paiute cutthroat trout are reestablished in the basin, they will be effectively isolated from illegal reintroductions of fish due to the rugged terrain within the basin. Historic introductions of non-native fish into the basin were conducted with fish transported by horse and mule pack-trains.

Q. What are the likely effects of this project on other species?

A. Sierra mountain yellow-legged frog and Yosemite toad surveys have been conducted from 2001 thru 2005 and again during 2008 to 2012. None have been found in the project area. Surveys will be conducted again prior to the actual chemical treatments being carried out. Should any Sierra mountain yellow-legged frogs be found, they will be relocated to appropriate habitats upstream of Llewellyn Falls.

Short term changes to aquatic macroinvertebrate abundance and distribution are anticipated. These organisms have rapid dispersal powers and will quickly recolonize from untreated stream reaches.

Q. When will the project begin?

A. The project is scheduled to begin in August 2013.

For more information or to read associated environmental documents, please visit www.dfg.ca.gov/fish/Resources/WildTrout/WT_Paiute/WT_PaiuteCutRestor.asp or www.fws.gov/nevada/protected_species/fish/species/pct.html or www.fs.usda.gov/htnf.