

## Paiute Cutthroat Trout (*Oncorhynchus clarki seleniris*)

**Data: Revised Recovery Plan for the Paiute Cutthroat Trout, 2004**

**Partners: CA, FWS, FS**

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### Status of the Paiute Cutthroat Trout:

The Paiute cutthroat trout (PCT) was originally listed as endangered on March 11, 1967 (U.S. Fish and Wildlife Service 1967) under the Endangered Species Preservation Act of 1966. On July 16, 1975, the Paiute cutthroat was reclassified as threatened under the Endangered Species Act of 1973 (U.S. Fish and Wildlife Service 1975) to facilitate management and allow regulated angling. California lists the Paiute cutthroat as a Wild and Heritage Trout.

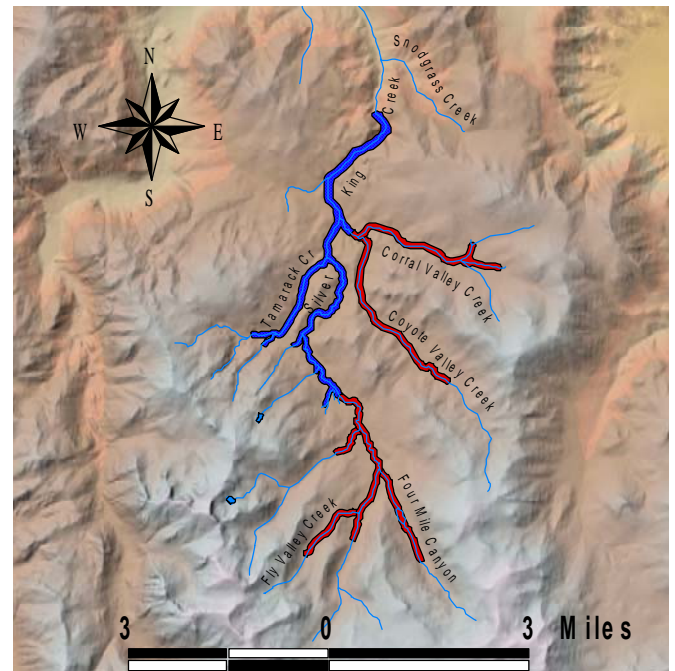
### Sportfishing Status of the Paiute Cutthroat Trout:

Paiute cutthroat trout are managed by the State of California under the 4(d) rule published in 1975, which states that Paiute cutthroat trout can be taken in accordance with applicable State law and that violation of State law will also be a violation of the Endangered Species Act (Code of Federal Regulations Title 50, Section 17.44). Silver King Creek and its tributaries above Llewellyn Falls are closed to angling. Additionally, fishing in Silver King Creek from Llewellyn Falls downstream to the confluence of Tamarack Lake Creek has recently (2006) been closed to reduce the threat of unintentional movement of non-native salmonids above Llewellyn Falls into occupied habitat [Section 7.50(b)(178), Title 14, California Code of Regulations]. Angling closures have also been established to protect the populations in Coyote Valley Creek, Corral Valley Creek, and North Fork Cottonwood Creek. Stairway Creek, Cabin Creek, and Sharktooth Creek are all relatively inaccessible and lightly used, and therefore are managed as wild trout fisheries without special protective regulations. The California Department of Fish and Game and the U.S. Forest Service have periodically maintained a stream guard in upper Silver King Creek to enforce the angling closure above Llewellyn Falls.

### Distribution of the Paiute Cutthroat Trout:

Silver King Creek basin, in the Carson-Iceberg Wilderness Area in Alpine County, CA is the native range of the Paiute cutthroat trout.

### Range (red) - of the Paiute cutthroat trout in historic (blue) habitat.



The only populations of Paiute trout in the Silver King Creek basin now exist upstream of their native range, isolated from non-native trout by barrier waterfalls. Chemical treatments using rotenone, conducted over the past 4 decades by the California Department of Fish and Game, have successfully restored populations of Paiute cutthroat trout to the headwaters of Silver King Creek by removing the influence of non-native trout. Paiute cutthroat trout currently occupy 18.6 km (11.5 miles) of stream habitat in Silver King Creek and five other tributaries in the drainage. The historic distribution of Paiute cutthroat trout within the Silver King Creek drainage is

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limited to the reach of Silver King Creek between Llewellyn Falls and a presumed historic barrier in Silver King Canyon, and all accessible tributaries within this reach. This range constitutes about 14.7 kilometers (9.1 miles) of stream habitat. PCT transplants have been introduced into several other lakes and streams in California and at least four self-sustaining populations have become established outside the historic drainage.

The four out-of-basin populations occur in North Fork Cottonwood Creek and Cabin Creek (Inyo National Forest, Mono County, California), Sharktooth Creek (Sierra National Forest, Fresno County, California), and Stairway Creek (Sierra National Forest, Madera County, California).

### **Habitat Requirements of the Paiute Cutthroat Trout:**

The life history and habitat requirements for Paiute cutthroat trout 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. Paiute cutthroat trout can survive in lakes, but there is no evidence that they ever occurred naturally in any of the lakes within the Silver King basin. To spawn successfully, they must have access to flowing waters with clean gravel substrates.

### **Concerns, Issues, or Obstacles relative to the Conservation and Improvement of the status of Paiute Cutthroat Trout:**

#### **Population Viability Concerns:**

The extremely limited native range of the Paiute cutthroat trout, approximately 14.7 kilometers (9.1 miles) of stream habitat within a single watershed, is the primary factor in

identifying recovery tasks. If the Paiute cutthroat trout occurred only in its currently occupied habitat, it would be highly vulnerable to extinction because: 1) genetic diversity could be dramatically reduced by a catastrophic event within any of the five drainages it currently occupies, 2) populations could become quickly introgressed (lose their distinctiveness due to introduction of genes from another population into the gene pool) as the result of an unauthorized introduction of other salmonids, and, 3) genetic diversity could be subjected to additional severe bottlenecks due to inadequate population size. However, reintroduction of Paiute cutthroat trout to historic habitat, in combination with populations existing upstream of Llewellyn Falls and out-of-basin, will substantially reduce these extinction threats.

#### ***Consideration of other candidate species:***

In addition to Paiute cutthroat trout, two amphibian species that are candidates for listing, the mountain yellow-legged frog (*Rana muscosa*) and Yosemite toad (*Bufo canorus*), are known to occur in the Silver King Creek drainage. Recovery actions for PCT will have to consider impacts on these two species.

#### **Introduced Non-native fish concerns:**

Due to the proximity of nonnative fish below Llewellyn Falls, the threat of an unauthorized introduction of fish from below this area will remain until nonnative fish are removed and Paiute cutthroat trout are reestablished below the falls.

#### **Habitat Degradation concerns:**

Beaver (*Castor canadensis*) are not native to the eastern Sierra Nevada. Beaver control and habitat restoration were accomplished during the early to mid- 1980's in the Silver King Creek drainage above Llewellyn Falls and in

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North Fork Cottonwood Creek. Beavers have been extirpated in the vicinity of the confluence of Fly Valley Creek with Silver King Creek and also in Four Mile Canyon Creek.

Potential habitat degradation could still occur if beaver are re-established in extirpated drainages, or there is extensive public use that damages stream banks.

Cattle last grazed the Silver King Basin during the summer of 1994. On March 31, 1995, all authorized grazing on the Silver King Allotment was placed under administrative rest and the allotment is currently vacant. It will remain vacant unless appealed and upheld under the administrative appeal process.

### **Opportunities to improve the status of the Paiute Cutthroat trout:**

Previous management efforts to protect and restore the Paiute cutthroat trout have primarily involved: 1) mechanical and chemical treatments to remove competing or introgressed fish; 2) transplants to restore fish populations in fishless waters; 3) land exchanges to secure essential habitat; 4) fishing closures; 5) fish habitat restoration projects; and 6) grazing closures.

Proposed actions to protect and secure long-term population viability will include:

- Remove non-native fish and prevent re-introduction through the placement of fish barriers
- Re-establish PCT populations with genetically appropriate fish
- Maintain appropriate fishing regulations and closures
- Protect and enhance PCT that are in non-historical habitat
- Develop a multi-agency conservation strategy agreement to guide future PCT actions

### **Removal of non-native fish**

The primary threat to the Paiute cutthroat trout is hybridization with nonnative trout, compounded by its extremely limited distribution (making it vulnerable to catastrophic events). It is critical to remove non-native trout from the historic range downstream of Llewellyn Falls and re-establish Paiute cutthroat trout populations.

#### **Key actions include:**

Secure approval to renovate Silver King Creek below Llewellyn Falls and complete the project
Reintroduce PCT to the renovated Silver King stream sections
Monitor and evaluate reintroduction success

### **Install and maintain Fish Barriers**

Effective fish barriers are needed to keep other trout from invading Paiute cutthroat trout waters. This action will isolate Paiute cutthroat trout within the Silver King Basin because the Silver King Canyon contains several barriers that will prevent salmonids from migrating upstream.

#### **Key actions include:**

Prevent invasion of non-natives by maintaining or establishing in-stream barriers as needed in North Fork Cottonwood Creek
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### **Maintenance of quality habitat for PCT**

Potential habitat degradation should be addressed by appropriate fish habitat improvement actions, including management of recreational access and grazing, and control of beaver populations as necessary.

#### **Key actions include:**

Identify and baseline existing habitat conditions using a standard protocol
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Control beaver in the event of re-introduction
Develop BMPs for grazing control in the Cabin Creek drainage to reduce impacts
Manage human impacts through appropriate fishing regulations and control of public access

### **Protect PCT in non-historical habitats**

To protect against a catastrophic event that could affect the entire Silver King Creek gene pool, populations in Corral Valley and Coyote Valley Creeks, and the four out-of-basin populations must be maintained as Paiute cutthroat trout refugia.

#### **Key actions include:**

Monitor the genetic diversity, basic population viability standards, and population donor sources for re-introductions.
Adjust conservation actions according to updated science

### **Highest Priority Actions for PCT protection and de-listing:**

#### **1. Development of a long-term Conservation strategy and agreement between involved agencies**

The purpose of the conservation plan is to ensure that adequate regulatory mechanisms and management programs remain in existence after delisting to ensure that all populations of Paiute cutthroat trout and their habitat are maintained.

#### **Key actions include:**

Define the role of the management agencies and to document their commitment to implementing the conservation plan
approval and implementation by all responsible agencies

### **2. Habitat and Population projects**

- a) All nonnative salmonids are removed from Silver King Creek and its tributaries down-stream of Llewellyn Falls to fish barriers in Silver King Canyon;
- b) A viable population occupies all historic habitat in Silver King Creek and its tributaries downstream of Llewellyn Falls to fish barriers in Silver King Canyon;
- c) Paiute cutthroat trout habitat is maintained in all occupied streams;
- d) The refuge populations in Corral and Coyote Creeks, Silver King Creek and tributaries above Llewellyn Falls as well as out-of-basin populations are maintained as refugia and are secured from the introduction of other salmonid species;
- e) A long-term conservation plan and conservation agreement are developed, which will be the guiding management documents once Paiute cutthroat trout are delisted.

### **Estimated Cost of Recovery**

The total estimated cost of recovering Paiute cutthroat trout is \$558,450, plus additional costs that cannot be estimated at this time.

### **References:**

1. **Revised Recovery Plan for the Paiute Cutthroat Trout 2004 FWS**
2. **California Wild and Heritage Trout Paiute Cutthroat Information Leaflet. CDFG 2003.**