

# Eagle Lake Rainbow Trout

*Oncorhynchus mykiss aquilarum*

chances for survival:  
*poor*

2

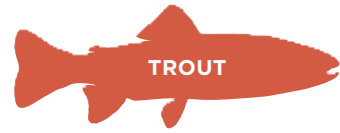


PHOTO: KAREN VANDERSALL

**E**agle Lake rainbow trout are the only rainbow trout native to the eastern Sierra Mountains and are endemic to Eagle Lake in northeastern California. Eagle Lake is a large terminal lake that becomes extremely alkaline during periods of drought. The trout are predators of other native fish and invertebrates.

Historically, their life history was to migrate into tributaries, principally Pine Creek, during the spring and spawn in the headwaters. The young reared in the creek for one to two years before migrating back to the lake. Eagle Lake rainbow trout do not mature until they are at least two years old. Adults quickly grow to a size of 17 to 18 inches in three years and can live for up to 11 years. These trout were once so abundant that there was a commercial fishery for them in the late 19th century. At the same time, extensive logging and heavy livestock grazing caused Pine Creek to change from a permanent to an intermittent stream in its lower reaches. In the early 1950s, the California Department

of Fish and Game rescued the few remaining Eagle Lake rainbow trout at the mouth of Pine Creek and began a hatchery program to maintain the species and the sport fishery. Today, the trophy fishery is supported entirely by hatchery production.

**DISTRIBUTION:** Eagle Lake rainbow trout are native solely to Eagle Lake and its tributary streams, which include Pine, Papoose, and Merrill Creeks. A domestic strain of the trout is maintained at the Mt. Shasta Hatchery for planting in reservoirs and as a source for brood stock for other hatcheries.

**ABUNDANCE:** In 1950, six trout were captured from Pine Creek and about 2,000 fertilized eggs taken to the Crystal Springs Hatchery. The 600 trout that grew to adults were then used for brood stock. Regular trapping operations began in 1959 when 16 trout were captured and spawned. In the next five years, the numbers of Eagle Lake trout captured varied from 45 to 391. At the present time, about 150,000 to 200,000 trout are planted in the lake each year. These are first generation fish derived from adults captured at the mouth of Pine Creek in order to support a major sport fishery.

**FACTORS AFFECTING STATUS:** Eagle Lake rainbow trout continue to thrive in Eagle Lake, although the degradation of spawning streams has led to dependence on hatchery production. Due to extensive restoration, Pine Creek has been recovering its ability to hold water and fish, but few fish are allowed to spawn naturally. A second management challenge is controlling a large population of non-native brook trout in Pine Creek that limit natural production of Eagle Lake rainbow trout due to competition and predation.

**STATUS 2:** Eagle Lake rainbow trout are no longer a naturally self-sustaining species and their ability to exist as a wild population diminishes each year they remain completely dependent on hatcheries for production. The trout are currently listed as a species of special concern and a Heritage Trout Species by the Department of Fish and Game, and as a sensitive species by the U.S. Forest Service. Although major efforts have been made in recent years to address passage problems in Pine Creek, meadows along the lower creek are still heavily grazed by cattle and the creek below Highway 44 is generally dry by May or June. During some wet years, trout can make it up to spawning areas and spawn successfully. In August 2007, Bogard Spring Creek, a tributary to Pine Creek, was electrofished to remove brook trout. Nearly

5,000 brook trout were removed from the nearly two mile long creek. During the removal, 170 yearlings and two older rainbow trout were also captured and returned to the creek. The presence of these fish indicated that a wild spawning population of Eagle Lake rainbow trout can be reestablished, although restoration may require trapping and trucking fish in both directions for some years. Their restoration will also require eradication of brook trout from the Pine Creek watershed.

**CONSERVATION RECOMMENDATIONS:** Because these trout have gone through more than 55 years of selection for life under hatchery conditions, actions which support natural migration, spawning and rearing are needed. Eliminating passage problems to spawning areas, reducing cattle grazing, eradicating non-native brook trout, and reducing water diversions will help to make Pine Creek able to support spawning and rearing of Eagle Lake rainbow trout. Annual trapping and trucking operations should begin immediately to jump start the migration process.



Eagle Lake. PHOTO: PETER MOYLE



Eagle Lake Rainbow Trout Distribution



Present



## California Trout is There for the Fish!

Almost two decades ago, California Trout partnered with local agency representatives and cattlemen's groups to enhance riparian ecosystems in order to restore healthy and stable populations of Eagle Lake rainbow trout to Eagle Lake.

| CATEGORY           | SCORE | EXPLANATION  |
|--------------------|-------|--|
| Range              | 1     | Lives in only one watershed  |
| Population size    | 4     | Includes hatchery fish; if only wild fish included the score would be "1"                            |
| Intervention needs | 2     | Survival depends on trapping wild fish for hatchery spawning and rearing                             |
| Tolerance          | 4     | One of the most tolerant, long-lived kinds of trout  |
| Genetic risk       | 3     | Hatchery rearing presumably has changed genetics and accidental hybridization in hatcheries possible |
| Climate change     | 1     | Reduced stream flows or increased alkalinity of lake could endanger the fish further                 |
| Overall status     | 2     |  |
| Reliability        | 3     | Well documented in the scientific literature   |