

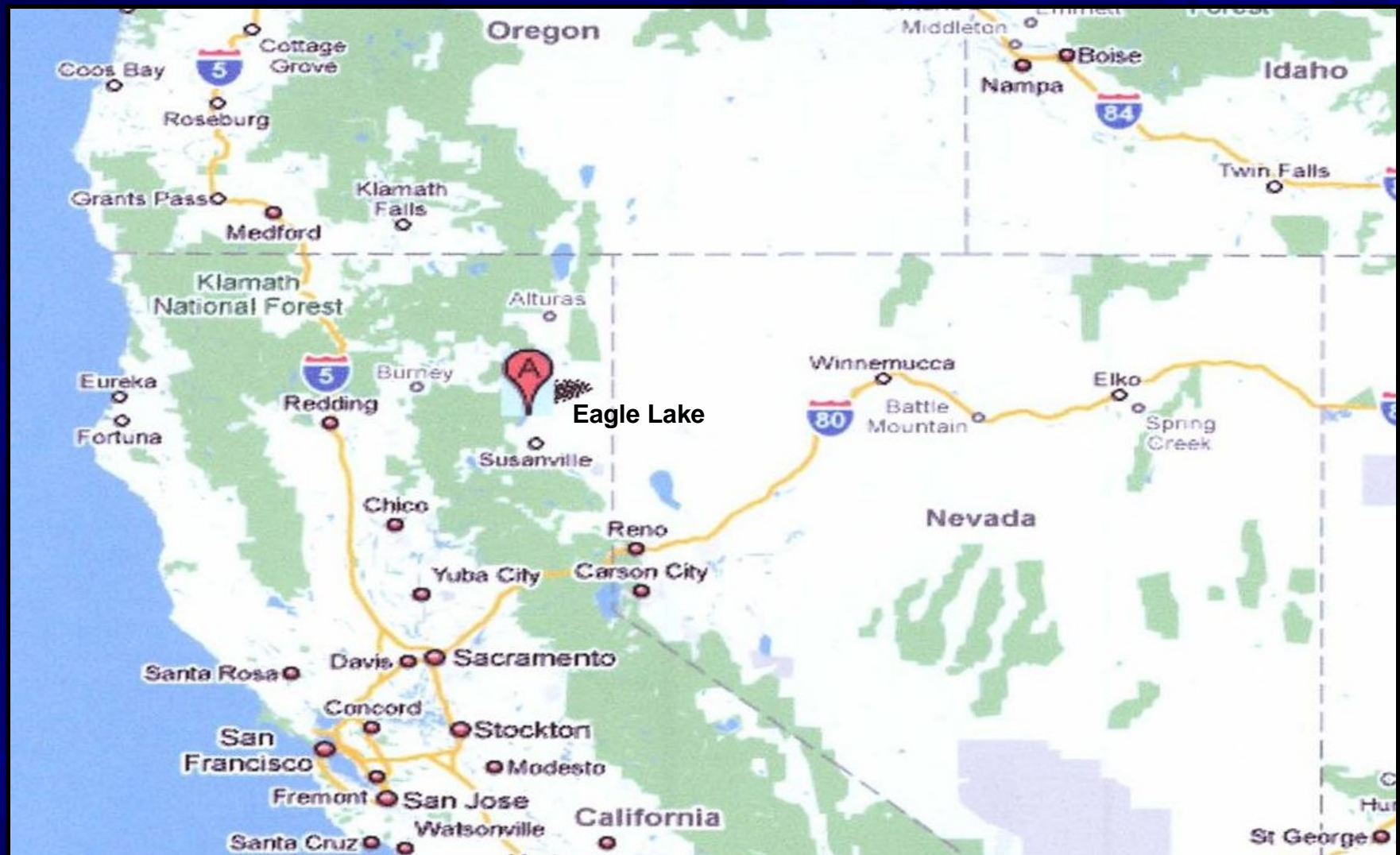
# **Eagle Lake Program**

## **A Success Story**



# Eagle Lake: A Success Story

- **Brief Background of Eagle Lake**
- **About the Eagle Lake trout**
- **Implementation of The Pine Creek Trap**
- **Success of Trap**
- **Benefits of Eagle Lake trout to the Department's statewide stocking program**



- Eagle Lake is located in North Eastern California
- It lies at an elevation of 5,100 feet





- With 25,000 surface acres, it is the second largest natural lake in California
- Basically divided into 3 definite sections
- Northern section is the shallowest
- Middle section is somewhat deeper
- Southern section is the deepest
- Max. depth of 100 ft.



- A unique and interesting body of water with p.H. levels varying between 8.4 to 9.7
- Total alkalinity has ranged from 534 ppm to 900 ppm and averages 700 to 800 ppm





- In the 1920's an irrigation project tunneling to Honey Lake Valley was completed
- In 1935 Eagle Lake water levels had dropped 28 feet and the tunnel was no longer usable so the project ceased



- Native fish species included Tui chub, Lahontan Speckled dace, Lahontan Redside shinner, Tahoe sucker, and an endemic salmonid, the Eagle Lake trout
- In 1879 Great Lake whitefish were introduced and soon after Largemouth bass, Mackinaw, crappie, catfish, brown trout, rainbow trout, Silver salmon, Kokanee, and cutthroat trout were tried





- In 1948 California's Department of Fish and Game with funds from the Wildlife Conservation Board undertook a study to determine if the lake would be suitable for trout and especially to re-establish the Eagle Lake trout.
- This early study centered around Pine Creek
- In 1949 a fish trapping weir was constructed in the estuary where Pine Creek enters the lake





- During the next six years 222 adult Eagle Lake trout were counted passing upstream
- 237 fingerlings were counted heading downstream
- An average of 45 fish/year
- Studies were made on the watershed for possibilities of improving and regulating the flow of water through construction of dams



- In 1949 channeling work was done on the upper reaches of Pine Creek, but this was still not enough
- In 1955 the project was reevaluated and it was decided the one remaining approach was an artificial program of producing these fish in a hatchery



# Eagle Lake Rainbow Trout

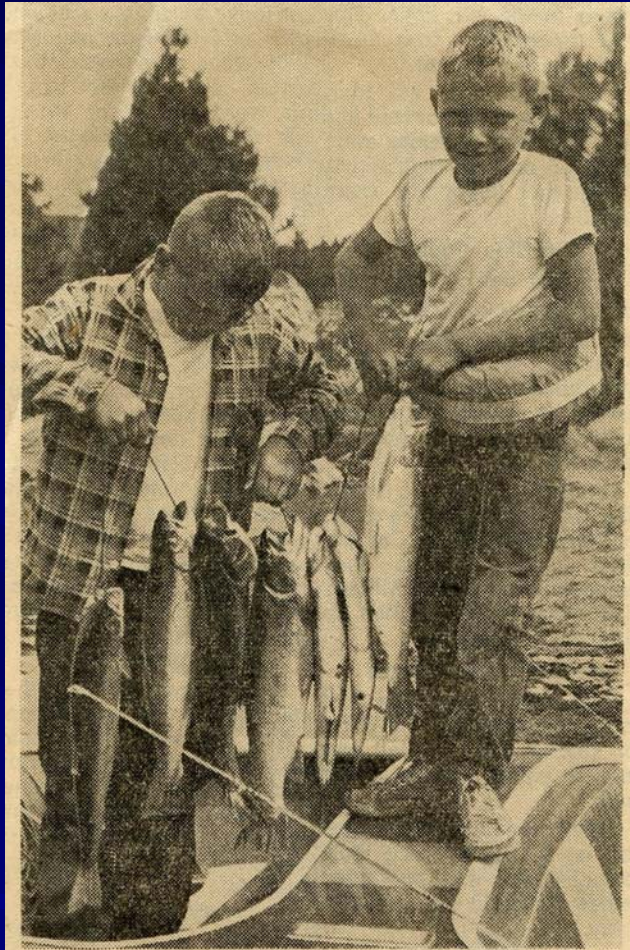
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*Oncorhynchus mykiss aquilarum*



- Because of the high alkalinity in Eagle Lake (p.H. of 8.4 to 9.7) the Eagle Lake trout is the only trout that can survive and are indigenous to the lake
- *Aquilarum* is the Latin name for Eagle

# Eagle Lake Rainbow Trout



LAKE BEAUTIES—The native Eagle Lake trout are biting in Lassen County as evidenced by this string of big ones displayed by Keith Winship, 10, and his brother, Ralph, Jr., 8, both of Susanville. The boys, with their father, Ralph, Sr., trolled the south portion of the lake using an assortment of spoons. Bee Photo

- Some think they derived from rainbow trout of the western slope of the Sierra Nevadas
- Others think they originated from the Lahontan cutthroat a native of the Lahontan drainage which includes Eagle Lake

Sacramento Bee Sept. 1960

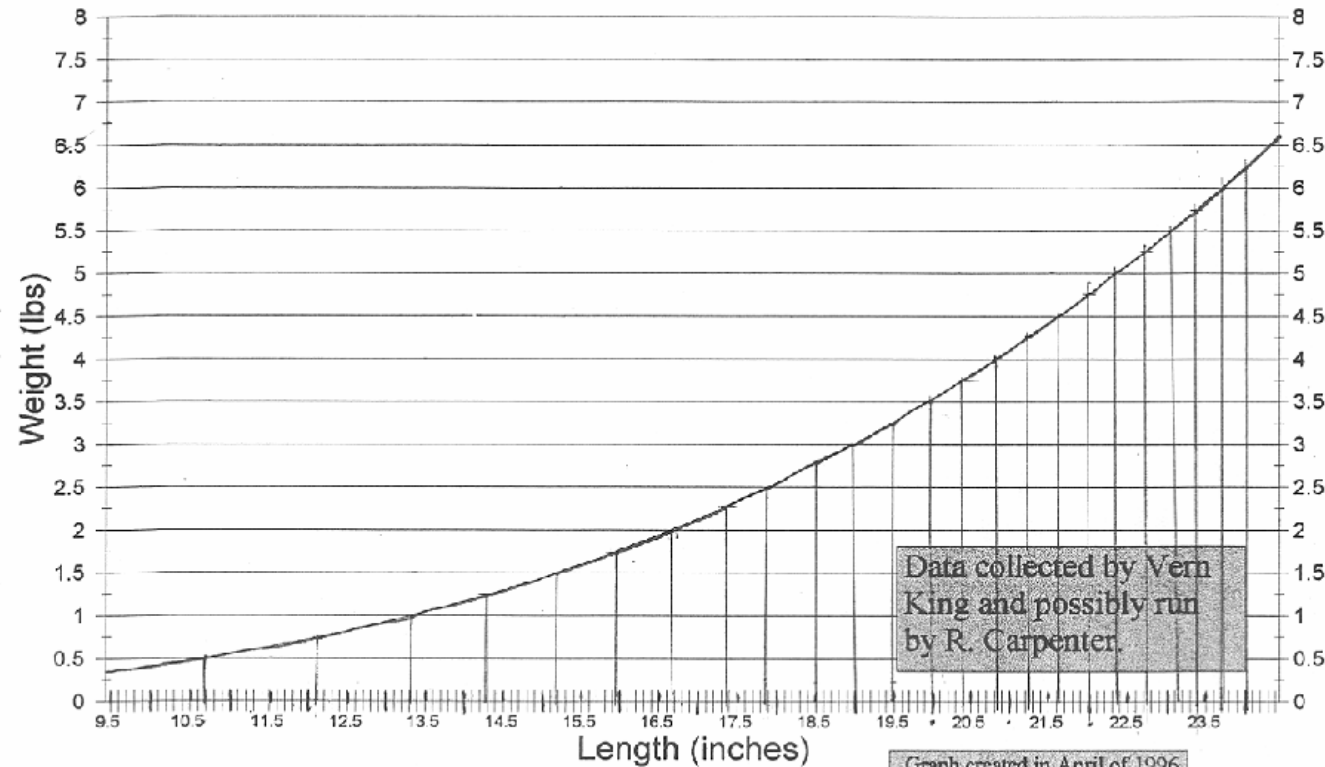




- Is known to live at least 11 years and have been reported to reach sizes over 10 pounds
- Their diet consist of aquatic insects, shrimp, snails, and Tui chubs
- Fast growing, reaching sizes of 17-18 inches in their first year

## Relationship between Length and Weight

Eagle Lake data run of 06/01/76



- Fish 17 to 18 inches can weigh 3 pounds
- Fish 22 to 25 inches can weigh 5 pounds
- Fish 27 inches can weigh up to 7 pounds



# The Pine Creek Trap



- Located on Pine Creek, tributary to Eagle Lake, approximately 1 mile from Spalding
- Only significant tributary to Eagle Lake
- Usually starts flowing sometime in March or April only reaching the lake for a few days or up to a few weeks



- In 1958 the Wildlife Conservation Board allocated \$38,810 to assist in the rehabilitation of the species
- In 1959 construction of a fish trapping facility was completed and “The Pine Creek Trap” was placed in operation



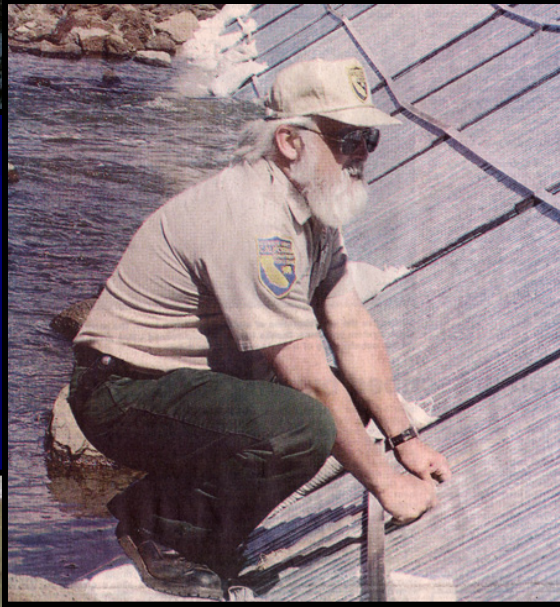


- In 1959, 16 Eagle Lake trout were taken
- In 1960, 134 Eagle Lake trout were taken
- In 1961, 394 Eagle Lake trout were taken and of these 144 females were spawned producing 455,000 eggs
- Now, fish are no longer taken, all fish are spawned at the trap



- Some years Pine Creek doesn't flow enough for fish to enter the trap
- Some years it only flows for days





- Insufficient runoff caused returning fish to get caught in Pine Creeks margins
- This instigated the installation of a weir
- Now fish are forced to use the thalweg of the creek
- This weir has also been very beneficial when egg take numbers have been reached
- The weir can be closed so more fish don't migrate upstream and get stranded when Pine Creek begins to dry up



- In the 1980's DFG employees had to seine the marina and set a Lake Oneida trap to catch enough fish to spawn
- In 1998 DFG employees tried electro-fishing the marina with no success





Darrah Springs Hatchery



Mount Shasta Hatchery

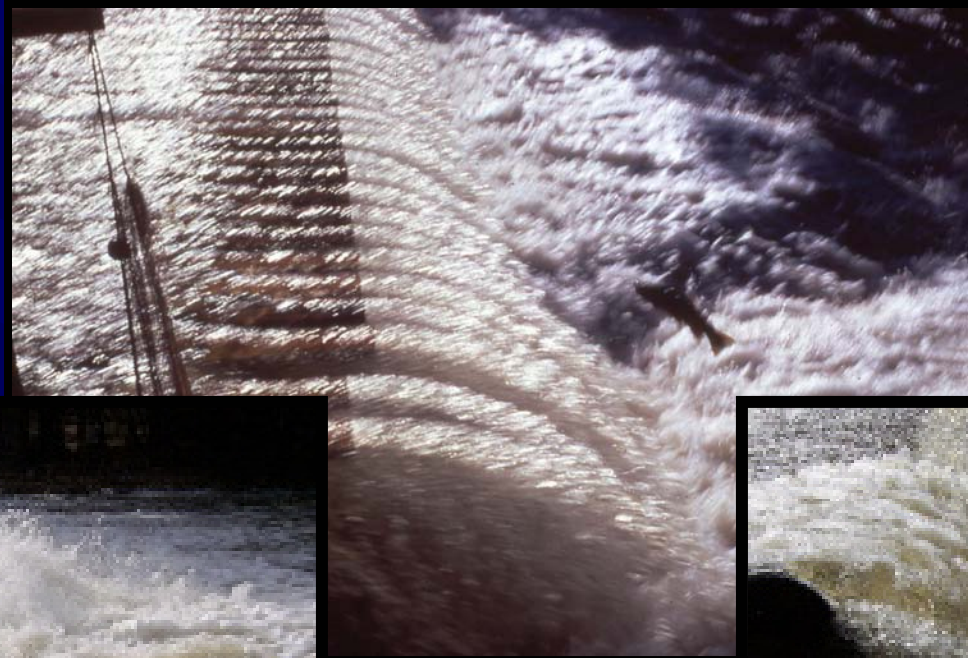
- As kind of an insurance policy, broodstock is maintained at our Darrah Springs and Mt. Shasta Hatcheries
- Eagle Lake trout “Hatchery Strain” are spawned at Mt. Shasta Hatchery and eggs are shipped to hatcheries throughout the state



■ This year Pine Creek ran long enough that Crystal Lake Hatchery employees had plenty of time to take as many eggs they needed







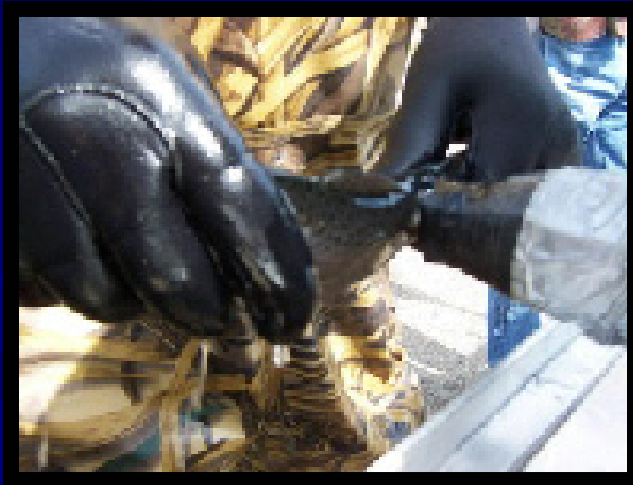
- In 2009, a total of 3,785 Adults returned to the trap
- 1,737 females were spawned

# Success of Pine Creek Trap



- From these females a total of 5,985,880 eggs were taken





- To maintain proper genetic diversity, fish are marked prior to being released into Eagle Lake
- 40,000 fish are freeze branded each year
- 20,000 freeze branded fish are released in the spring and the remaining 20,000 in the fall
- Depending on mark location, biologists can determine year class and hatchery designation



- This adult Eagle Lake trout was freeze branded at Crystal Lake Hatchery in an odd year
- Freeze Brands provide vital information so Department Fisheries Biologist can help maintain a healthy fishery



# Eagle Lake Trout Stocking



- Between 1956 and 1960 a total of 23,800 yearling fish were planted into Eagle Lake
- In 1961, 125,969 yearling fish were planted
- In 2008, 180,000 catchables or 2 fish/lb. and 5,000 lbs. of "Trophy" fish 2.5 to 4 pounds each were released into Eagle Lake
- These numbers will be the same in 2009



**It's Raining  
BABY TROUT**



- Many are used for stocking High Mountain Lakes
- This is done by airplane and horses





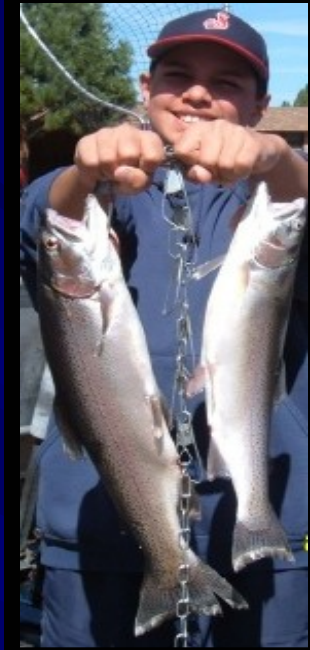
- In 2008, 1,517,600 Eagle Lake trout were stocked statewide
- Comprise 11% of California's statewide stocking program



A wide-angle landscape photograph showing a large, calm lake in the middle ground. In the background, there are rolling hills and mountains under a clear sky. The foreground features a green field with a line of tall, thin trees and several small, rustic wooden buildings. The text "Now what is Eagle Lake known for?" is overlaid in the center of the image.

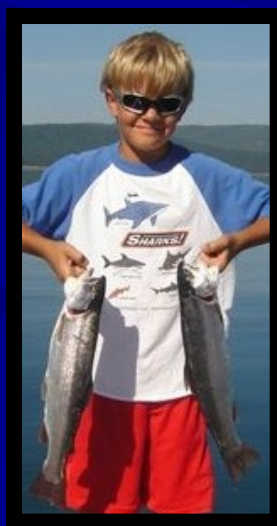
**Now what is Eagle Lake known for?**





## Eagle Lake is known for:

- Large trout, great fishing, and lots of smiles!!





*...and I mean lots of smiles!!*





A wide-angle photograph of a sunset over a calm body of water. The sun is a bright, glowing orb on the right side of the horizon, partially obscured by clouds. The sky is filled with soft, wispy clouds in shades of orange, pink, and blue. The water in the foreground is dark with gentle ripples, reflecting the light from the sun. In the distance, a range of dark, silhouetted mountains stretches across the horizon. The overall mood is peaceful and serene.

*Any Questions?*