

Independence Lake, California

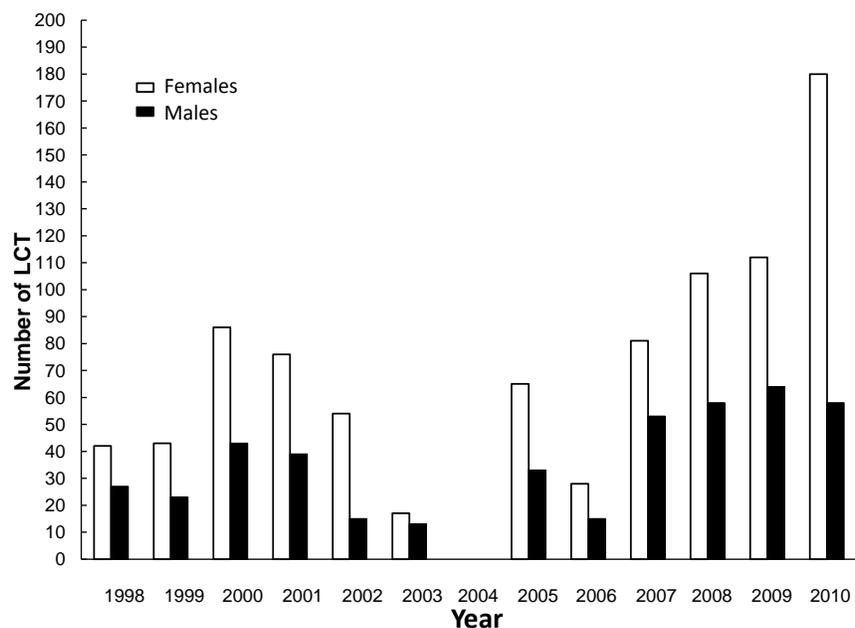
USGS spotlights a growing population of Lahontan cutthroat trout

Independence Lake is a small montane lake in the northeastern Sierra Nevada Mountains and is part of the Truckee River watershed (see map on next page). Independence Lake is the only place in the Truckee River watershed where Lahontan cutthroat trout (LCT) *Oncorhynchus clarkii henshawi* have never been completely extirpated and have maintained a self-reproducing population. LCT throughout the watershed have been impacted by invasive species, water diversion, habitat fragmentation, dam construction, and overfishing. Non-native brook trout *Salvelinus fontinalis*, brown trout *Salmo trutta*, and kokanee salmon *Oncorhynchus nerka* are present in the system and may impact LCT populations through competition and predation. Brook trout are primarily found in Independence Creek, where LCT spawn. Gut analysis has identified brook trout as a major predator for LCT fry. In an effort to control the brook trout population, USGS WRFC Reno began electrofishing Independence Creek in 2005. Since brook trout removal began, LCT fry survival has increased. In addition, LCT juveniles have established residency in the stream and the number of spawning adult LCT has increased.

In 2010, the Nature Conservancy acquired the land around Independence Lake where they've been dedicated to preserving the pristine nature of Independence Lake as habitat for fish and wildlife. USGS has been PIT (Passive Integrated Transponder) tagging juvenile and adult LCT. PIT tags allow biologists to identify individuals and track the population dynamics of the LCT.

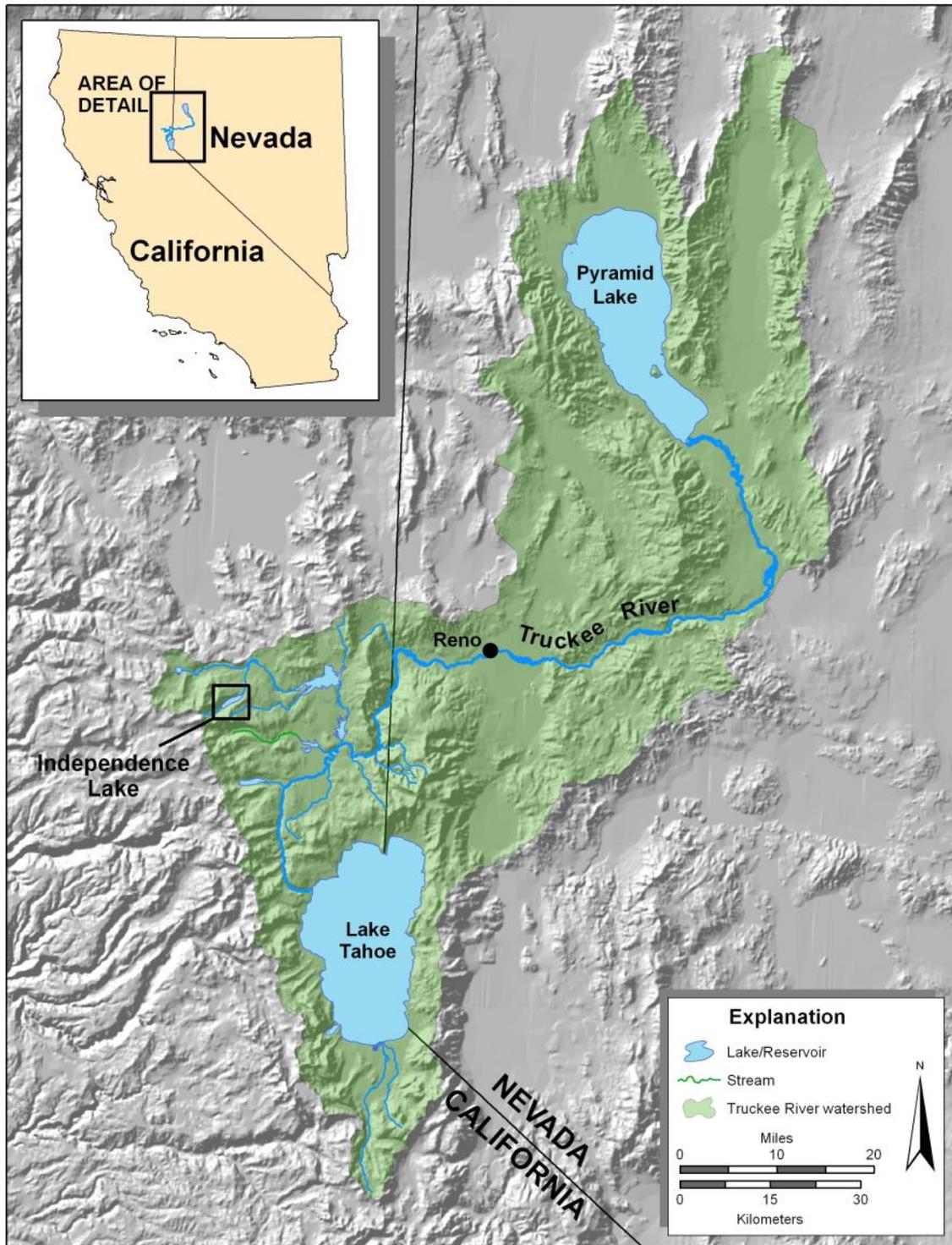


An adult male Lahontan cutthroat trout in Independence Creek, CA.
Photograph by Mark E. Hereford, USGS.



Number of female and male Lahontan cutthroat trout spawners entering weir 1998-2010. No weir was in place in 2004. For more information see Scoppettone et al. 2012. *N. Am. J. Fish. Manage.* 32(3): 586-596.

The Truckee River watershed



Runoff from the Sierra Nevada mountain range feeds the streams, lakes and rivers that make up the Truckee River watershed. The Truckee river terminates in Pyramid Lake. Independence Lake is on the western edge of the Truckee River watershed.

Independence Lake has maintained its native assemblage of fishes!



Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*



Tui chub *Siphateles bicolor*



Lahontan redbside *Richardsonius egregius*



Speckled dace *Rhinichthys osculus*



Tahoe sucker *Catostomus tahoensis*



Paiute sculpin *Cottus beldingi*



Mountain whitefish *Prosopium williamsoni*

Native species help ecosystems maintain a healthy balance!

LCT life stages



Fry



Yearling



Young Adult– spawner

Collaborators

The Nature Conservancy

*California Department of Fish and
Wildlife*

U.S. Forest Service

Truckee River Watershed Council

U.S. Fish and Wildlife Service

U.S. Bureau of Reclamation

Cal Trout

Truckee Meadows Water Authority

Trout Unlimited

NV Energy

Bella Vista Foundation

Desert Terminal Lakes Program

Additional information on

Native– Non-native interactions in
Independence Lake can be found at
the website:

[http://wfrc.usgs.gov/projects/9388
BQM/9/](http://wfrc.usgs.gov/projects/9388
BQM/9/)

USGS - WFRM Reno Field Station

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Produced by: Danielle Johnson
All photos by USGS



Independence Lake looking East. Photograph by Pete Rissler, USGS

Non-Native Fishes in Independence



Brook Trout *Salvelinus fontinalis*



Brown Trout *Salmo trutta*



Kokanee Salmon *Oncorhynchus nerka*