



## More cutthroat counted, more lake trout netted this summer at Yellowstone Lake



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Yellowstone National Park's fisheries staff has seen a "big spike" in the number of two key year classes of cutthroat trout in Yellowstone Lake this summer, while also netting a record number of invasive lake trout.

Todd Koel, Yellowstone's supervisory fisheries biologist, said the numbers are proof that the park's aggressive methods are showing returns.

"Age 2 and age 3 fish represent a large percentage of the cutthroat population, which we haven't seen in around a decade," he said. The fish spawn when

3 to 4 years old. "We haven't necessarily won the battle, but it's a good sign."

The netting operations this summer have so far removed 275,000 lake trout from Yellowstone Lake with another three weeks of work yet to go. That compares to 224,000 netted last year and 150,000 in 2010.

Although the catch rates of lake trout have gone up year to year, mainly because of more intensive netting efforts, Koel said he thinks the numbers may finally be ready to crash.

"We killed a greater number of lake trout this year than recruited to the fishable population," he said. "That's what we need to get to, and the modeling suggests that's where we're at. If we repeat that year after year, you suppress them."

### Nonnative

Lake trout, which were illegally planted into Yellowstone Lake and were first detected in 1994, are responsible, along with drought and whirling disease, for a catastrophic decline in what was once the Yellowstone cutthroat trout's stronghold. The population of native cutthroat is estimated to have once numbered around 4 million. Large spawning runs of the fish in spring fed bears, raptors and other animals in the ecosystem.

The decline was noted at the park's monitoring station on Clear Creek, a favored spawning tributary, which saw cutthroat numbers plummet from almost 55,000 fish in 1988 to barely more than 500 in 2007.

Flooding in 2008 took out the fish weir and trap at Clear Creek, which this summer was replaced with a new sonar-imaging system similar to those used to count salmon in Alaskan streams. A nearby building will contain the solar-powered batteries and computer from which the data can be downloaded.

### Tracking trout

The imaging system isn't the only new high-tech weapon in the Park Service's arsenal. They are also tracking 200 tagged lake trout from 50 receivers set up on buoys across the lake to find new areas where the fish may be hiding out.

"It's interesting to see how far an individual lake trout will move in a day – sometimes 20 miles in a day," he said.

The tags also record the fish's depth and the temperature of the water at that depth.

This winter, the park is hoping to hire an analyst to crunch the data from the transmitters to help the fisheries staff understand the fishes' movements to guide netting operations next spring.

The tags were first implanted last August. From a sample of information collected, Koel said half of the fish went to Carrington Island in the fall. Lake trout spawn on rocky shoals in October, and Carrington Island seems to be a favored spot for lake trout in Yellowstone Lake.

"We're looking to apply some new technology to that island," Koel said.

A mesh would be lowered over the spawning site, which he said is no larger than a football field. The mesh can then be electrified to kill any eggs that spawning lake trout deposit.

"So over time that whole population should be gone," Koel said. "That's the idea long term to avoid gill netting forever."

More nets

Until then, the Park Service plans to beef up its netting operations next year with the addition of another boat from their contractor, Hickey Brothers Fisheries of Bailey Harbor, Wis. That will raise the number of boats to four — three running gill nets and the fourth overseeing the trap nets set up in shallower water to live-trap bigger fish.

Koel praised the Yellowstone Park Foundation for helping fund the additional work and gadgets that the fisheries staff has deployed in the past year. The foundation matched \$1 million put up by the park for its native fisheries program.

"It's really the reason we're able to implement this high level of activity," he said. "It wouldn't happen without it."

## Checking whirling disease infestation

Only one of the 22 streams around Yellowstone Lake that were checked for whirling disease this summer tested positive.

"It's great news to receive back," said Todd Koel, Yellowstone's supervisory fisheries biologist. "It was only found in Pelican Creek, where we had seen it severe and were expecting it to be really hot.

"Other than that, the system for all intents and purposes is whirling disease free," he added.

Cages containing cutthroat trout fry were placed in the streams in July. After the fry were retrieved, they were frozen and sent to a laboratory for testing.

Whirling disease is passed to young fish via a worm and often proves fatal or makes the fish more susceptible to predators. The disease has been implicated as one of the causes of the Yellowstone cutthroat trout's decline.

There's no way to rid the stream of the infection. The hope is that fish that avoid infection return to the stream to spawn to repopulate the fishery.

Volunteers who fished the creek this year found lots of juvenile cutthroat and some adults, which Koel called encouraging.

The other key is having good water years that keep the feeder streams connected to the lake. Without that connection, the fish can't move between the spawning streams and the lake.