

Big trout saved from close call with extinction

May 13 2013, by Tom Knudson

Hour after hour, Brian Dunn lofted his fly line into the turquoise-blue water of this shimmering desert lake north of Reno. Finally, just after lunch, his line straightened and a smile spread on his face. Before long, a 6-pound, 25-inch-long cutthroat trout was splashing in the net.

But what made his catch more special was a yellow ID tag near its dorsal fin, indicating this was no ordinary fish but one scientists once thought was extinct: the Pyramid Lake Lahontan cutthroat, the largest inland trout in North America.

"It's a great day when you can bring back a species from extinction," said Dunn, a technology consultant from Truckee. "It's kind of sad these events are so rare."

What's unfolding here is a regionwide fish story about the one that didn't get away, a tale of loss, discovery and restoration that reaches from Utah across the [Great Basin](#) to Pyramid Lake and up the Truckee River into the snow-clad [Sierra Nevada](#) around Lake Tahoe.

At the center of that story is a torpedo-shaped trout with orange-red cheeks and sequined, rose-pink stripes that grows as large as salmon and inhabited Pyramid Lake when it was part of a much larger body of water called Lake Lahontan tens of thousands of years ago.

From near extinction to stunning recovery, its comeback is a rare win for threatened and endangered species, a decades-long odyssey of biological

risk and [scientific discovery](#) made possible by the uncommon commitment of a fisheries biologist laboring in one of the most remote corners of the West.

Some of the most dramatic chapters are playing out now. At Pyramid Lake, where the fish was reintroduced in 2006, leviathans are being landed in excess of 20 pounds. There is talk that a new world record - the existing one is a 41-pounder caught in 1925 - may be on the horizon.

"It's exciting watching them come back," said Dave Hamel, a Reno fisherman who landed and released a 21-pounder on a fly rod in January. "That's what keeps me coming out here."

Another reintroduction at Fallen Leaf Lake near Lake Tahoe in California in 2002 also is paying dividends: Last year, Lahontan cutthroats spawned there in a tributary for the first time in more than 70 years.

"This is such an exciting story because this was such a unique fish," said Mary Peacock, an associate professor of biology and a genetics expert at the University of Nevada, Reno. "You can see pictures from the early part of the 1900s with people holding really large trout out of Tahoe or Pyramid. We thought those fish were gone.

"This puts this fish back into people's imagination," she added. "I cannot emphasize how important that is."

Almost as improbable is Pyramid Lake itself. Thirty-five miles north of Reno, it is a dazzling inland sea 27 miles long and 4 to 11 miles wide, surrounded by parched, rust-colored hills and mountains.

Nearly every drop of water is a gift of the Sierra: the icy, tinsel snowmelt that whooshes out of the mountains down the Truckee River

into Nevada. Flooded by sunlight, raked by wind, the lake itself changes color often, from deep cerulean blue to sun-spanked silver and gold.

More magic swirls beneath the waves, where for thousands of years the Pyramid Lake Lahontan evolved in isolation from other cutthroats. With a smorgasbord of smaller native fish to feed on, it grew large fast - a tiger of a trout. And with access to the Truckee River, it ranged west into California, including [Lake Tahoe](#) and Donner Lake.

The size of the cutthroats in Pyramid Lake caught the attention of nearly everyone who saw them, including 19th-century explorer John Fremont.

"An Indian brought in a large fish to trade which we had the inexpressible satisfaction to find was a salmon-trout," Fremont wrote in his journal.

"Their flavor was excellent - superior, in fact, to that of any fish I have ever known. They were of extraordinary size - about as large as a Columbia River salmon - generally from two to four feet in length."

By the 1920s and '30s, overfishing was taking a toll but fish remained abundant. An old photo in the Pyramid Lake Paiute Tribe Museum in Nixon shows dozens of large cutthroats hanging on a rack under a sign that says: "The Desert Inn - Pyramid Lake, Nev. - World's Largest Trout."

The mortal blow came from the construction of Derby Dam south of the lake on the Truckee River in 1906, which diverted large amounts of water to farmers near Fallon. The surge of snowmelt that once gushed into Pyramid Lake each spring shrank dramatically. The lake level dropped until, finally, trout no longer could reach their spawning grounds in the Truckee River.

"The last known run left the lake during the high-water year of 1938," wrote fisheries scientists Terry Hickman and Robert Behnke in "The Progressive Fish-Culturist," an academic journal, in 1979. "No water was available in later years and ... this magnificent trout was believed to be extinct."

But they added: "There is the possibility that an introduction of the original Pyramid Lake cutthroat may have persisted in some remote, unknown waters."

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Few streams are more isolated than Morrison Creek, which tumbles 2 to 3 miles off Pilot Peak into the Great Salt Lake desert on the Nevada-Utah border. That's where Don Duff found himself in the mid-1970s.

A federal fisheries biologist at the time, Duff was part of a cadre of anglers and researchers who work to find and restore populations of native cutthroat trout that have been heavily affected by the introduction of non-native trout and habitat loss.

He was searching for a trout native to the Great Salt Lake region: the Bonneville cutthroat. But the scrawny fish he caught in the creek didn't look like a Bonneville.

"It was a snaky-looking, narrow fish," said Duff. "It had sort of a cream-colored yellow, dull coloration. The spots were a little bit different than a Bonneville."

He sent samples to Behnke, the region's top cutthroat expert, who believed after examining physical features and reading historical accounts, that the fish were Lahontan cutthroats from Pyramid Lake. But he couldn't prove it.

"Although there is no possible method of taxonomic comparison to verify Pyramid Lake as the source ... ," he wrote in the paper with Hickman, "the circumstantial evidence is convincing."

"That of course made everybody very excited," said Peacock, the University of Nevada genetics expert. "But it's tough to tell, based on physical characteristics. So people were like: OK, is it or isn't it? How do we know?"

Many also wondered how the trout ended up so far from home. The answer came from old-time biologists who said they were shipped by rail across trout-challenged Nevada in the early 1900s and dumped into whatever creek looked promising.

"Most of those fish didn't survive," said Peacock. "But the fish in the Pilot Peak mountains made it."

The fish's discovery, though, did not ensure its recovery. Fewer than 400 fish were estimated to live in Morrison Creek. Turning them into larger numbers in a hatchery setting was a challenge no agency wanted to embrace.

"It was something that everybody fought, that nobody would believe," said Bryce Nielson, then a fisheries biologist with the Utah Division of Wildlife Resources. "Nobody really wanted to bother with it."

That wasn't good enough for Nielson. He began administering Lahontan life-support on his own. With little official support, he built a rustic fish hatchery at the base of Morrison Creek on a small ranch owned by a fish-friendly landowner. Often, eggs didn't hatch. Those that did seldom survived.

But he, the landowner and another friend kept trying.

"I guess I'm such a stubborn bugger and I saw such huge potential for these fish, I was going to do everything I could, right or wrong, to see them go back to Pyramid Lake," Nielson said.

One advantage was the site's remote location - miles from the nearest paved road and far from any agency headquarters.

"Nobody really took notice of what we were doing," Nielson said. "We were able to work without being encumbered by the federal government or state agencies. You look at all the other (species) recovery programs - they get so encumbered with paperwork.

"If there had been anybody that had said, 'I've got to clear this with the bosses or do this through channels,' the thing would have been dead right there," Nielson said. "It was just a bunch of crazy fish guys that had a dream."

The dream grew larger when he put some cutthroats from the creek, where they had nothing to eat but insects, into a pond stocked with minnowlike speckled dace. Would they feed like Pyramid Lake cutthroats? Did they still have their world-record genes?

"Much to our amazement they started to grow, and grow extremely fast," Nielson said. He repeated the experiment at another pond. "The same thing happened: they started growing like mad."

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In 1995, the first eggs from Nielson's facility were shipped across Nevada to the Lahontan National Fish Hatchery Complex south of Gardnerville, where Pilot Peak cutthroats are now grown in the hundreds of thousands.

"This is a legacy they'll be talking about 200 years from now," said Terry Baird, an angler from Hawaii who also fishes Pyramid Lake. "It goes right back to Bryce. This guy has tremendous love for [cutthroat trout](#). Bryce never gave up."

But was their provenance really Pyramid Lake? Only a DNA test could say for sure. And with the old giants gone from the lake - replaced by a different strain of Lahontan - where would the genetic material come from?

The answer came in the 2000s with a Jurassic Park-like breakthrough that gave researchers a way to extract DNA from museum specimens preserved in formaldehyde.

"Formaldehyde binds to DNA and breaks it up. That was problematic," said Peacock. "We didn't have a way of dealing with bits and pieces of DNA. But now we can."

From the Smithsonian Institution, the California Academy of Sciences and elsewhere, she tracked down tissue samples from the original Pyramid Lake leviathans. She compared their DNA with the DNA of more than four dozen other Lahontan populations in Nevada, California, Oregon and the Pilot Peak cutthroats.

What she discovered rocked the fishing community: No DNA more closely matched the museum samples than the Pilot Peak cutthroat. A lost legend had been found.

"These are the descendants of the original strain," Peacock said.

One quandary remained: After so many years away from the lake, would they behave like their ancestors in the wild?

"Can they still grow to these large sizes? Do they look like the old history-making trout?" said Peacock. "You can't really tell from genes. You have to put them in the water and see what happens."

Seven years after the first fingerlings were planted, answers are beginning to emerge.

They are coming in the form of some uncommonly large fish, ranging from 17 to 24 pounds, that have been landed this year with tags identifying them as Pilot Peak cutthroats.

"It's a very exciting moment," said Lisa Heki, manager of the federal fish hatchery, who hopes the trout one day will be able to surge up the Truckee River to spawn naturally. "From a conservation recovery standpoint, we need to get to the step of natural reproduction, a self-sustaining population."

The Pyramid Lake Paiute Tribe, which derives most of its revenue from fishing, is thrilled, too. "It's a great time for the lake," said tribal Vice Chairman Terrence James.

But few are happier than the anglers catching the fish.

"This is the first year it's kicked in that these fish are here and they're making it," said Rob Anderson, a guide and owner of Bucket List Fly Fishing Adventures.

"There is a resurgence in energy," Anderson said. "This is the busiest spring guiding season I've ever had."

And it will likely get busier. Since 2006, some 900,000 Pilot Peak cutthroats have been returned to Pyramid Lake - and more are on the way.

"Those [fish](#) are getting big quick," Anderson said. "Five or six years from now, this has the chance of being something that's jaw-dropping."

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