Lake trout are a cultural and ecological emblem of Lake Michigan. The lake once held the largest population of lake trout in the world, fished by tribal groups and commercial fishermen. The species is also the lake’s rightful top predator; its Native American name, namaycush, means “tyrant of the lakes.”

About 50 years ago, natural populations of lake trout disappeared from Lake Michigan. The species was devastated by over-fishing and predation by the sea lamprey, an end-like invasive species that swam in from the Atlantic with the expansion of shipping canals. Today, scientists and fisheries managers are still working to reestablish lake trout populations.

So, in 1889, the lake trout began their unlikely journey. From northern Lake Michigan they were shipped by railcar to Wyoming. They were then transferred into milk cans and carried down the Sheridan Trail into Yellowstone by pack mules.

Binkowski recalls spreading gill nets in a meadow near the lake to record length, size, and gut contents of the day’s catch, all the while looking over his shoulder to watch for grizzlies.

As Jordan predicted, lake trout (and sport fishing) came to thrive in the cold, mountain lakes. But Jordan couldn’t have known that the Wyoming lakes would also safeguard the remnants of Lake Michigan trout.

Lewis Lake Trout

Nearly a century later, Great Lakes WATER Institute scientists Fred Binkowski and Jerry Kaster began studying Lake Michigan’s lost lake trout in Lewis Lake. Their work was in cooperation with the National Parks Service and the U.S. Fish and Wildlife Service, which was considering stocking the fish in Lake Michigan. The scientists set gill nets in various areas of the lake to determine the fish’s preferred spawning habitat, and used underwater video to record spawning behaviors.

Binkowski recalls spreading gill nets in a meadow near the lake to record length, size, and gut contents of the day’s catch, all the while looking over his shoulder to watch for grizzlies.

The Lewis Lake project was one of many at the Great Lakes WATER Institute that has intersected with fish rearing techniques and innovative field studies on the Lake Michigan ecosystem.

In the late 80s, some of the descendents of those stocked trout found their way back to their ancestral home. Binkowski brought trout eggs back from Lewis Lake to his Milwaukee lab, where he incubated and raised them to determine their survival in captivity.

Over two million lake trout are stocked in Lake Michigan each year, but naturally reproducing populations have not been restored.

Binkowski’s research helped lay the groundwork for federal hatcheries to stock the Lewis Lake strain in Lake Michigan. Although the U.S. Fish and Wildlife Service had been stocking lake trout since 1965, the fish were nearly all from Lake Superior strains. Today, the Lewis Lake strain, likely the most similar to native lake trout, is one of four varieties that a new federal plan recommends stocking in Lake Michigan.

In search of successful lake trout reproduction, WATER Institute scientist John Janssen is using an ROV (Remotely Operated Vehicle) to look for eggs and larvae at one refuge called the Mid-lake Reef, a cluster of underwater ridges 40 miles offshore and 40 meters deep. The Great Lakes WATER Institute (Wisconsin Aquatic Technology and Environmental Research) Institute is the largest freshwater academic research institute in the Great Lakes region. Its mission is to further the understanding of freshwater resources with multidisciplinary research, education, and outreach. The Institute is based at 600 E. Greenfield Ave. For more information, go to glwri.uwm.edu.

Fred Binkowski is a senior scientist at the Great Lakes WATER Institute. His major research areas are fisheries biology, ecology, and aquaculture.

Casey Tswana is a communications specialist at the Great Lakes WATER Institute.