

New Research Underway on Cisco in Crystal Lake, Pennsylvania

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Fishery researchers from the US Geological Survey, Great Lakes Fishery Commission, and Pennsylvania Boat and Fish Commission are proposing to study the Cisco population of Crystal Lake during 2021-2022. This population is thought to have originated from Lake Erie. During the 1800s and early 1900s, Cisco eggs from Lake Erie were reared at the State Fish Hatchery in Erie, Pennsylvania, and stocked back into Lake Erie to enhance the population. The availability of Cisco eggs also led to transplantation into inland lakes. Many of these inland transplants were successful, but almost all of the resulting populations eventually died out owing to introduced species and excessive shoreline development. Crystal Lake supports the last known transplanted population of Cisco, making it of considerable interest—the Cisco population of Lake Erie has been lost. The research in Crystal Lake is aimed at answering this question: “What is the feasibility of initiating reintroduction of Cisco in Lake Erie using a hatchery broodstock created from Crystal Lake eggs.”

Before reintroduction of Cisco in Lake Erie can be considered, four questions need to be answered by the research team:

1. Did the founding population in Crystal Lake actually originate from Lake Erie? The State Fish Hatchery at times borrowed Cisco eggs originating from Lake Ontario.
2. Does the Cisco of Crystal Lake retain the traits of the former Lake Erie population? These traits may have been lost during decades of adaptation to Crystal Lake.
3. How big is the spawning population in Crystal Lake—could it safely support establishment of a hatchery brood stock?
4. Is the Crystal Lake population inbred? If the population originated from only a few founders, it may be genetically unsuitable as a brood stock.

The fieldwork will involve sampling for Ciscos around late November-December when Cisco spawn. Sampling will involve several types of nets and electrofishing. About 20 Ciscos will be retained for morphological and genetic assessment.

The lake trout in Crystal Lake are also of interest and if captured several will be retained for genetic testing.

A report of the research findings will be presented to the owners of Crystal Lake. If establishment of a broodstock is determined to be feasible, permission from the owners to take a predetermined number of eggs will be sought. Then, if the owners approve, the fish-management arms of the US states that border Lake Erie and the Province of Ontario will decide whether to initiate reintroduction of Cisco. These agencies, working under the aegis of the Great Lakes Fishery Commission, will consult with experts and stakeholders before making a decision on whether to proceed with reintroduction.

The potential benefits of restoring the Lake Erie Cisco are considerable. Lake Erie once supported the largest freshwater fishery in the world, yielding in its heyday 20-35 million pounds of Cisco annually. A restored Cisco population could support sport and commercial fisheries and provide food for top predators like Walleye and Lake Trout. Recent research has shown that Lake Erie is environmentally suitable for Cisco. A restored population is an alluring goal and would be a direct benefit from the massive investment made to clean up the lake.

If you have any questions regarding the research, please contact...

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