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Asian carp may be back in Lake Erie, scientists fear

DNA from Asian carp species has been found in the waters of Lake Erie, leading scientists to worry that the invasive fish, which are capable of seriously damaging fragile ecosystems, are back in the Great Lake.



RICK EGLINTON / TORONTO STAR FILE PHOTO

Asian carp are caught in the Illinois River for use by scientists studying the large, invasive fish. Scientists and officials worry what will happen to Lake Erie if the carp get established in it.

By: **Raveena Aulakh** Environment, Published on Tue Mar 26 2013

Is the dreaded Asian carp swimming in Lake Erie again?

It's a mystery as big as the lake.

The question terrifies several agencies in the U.S. and Canada, but one scientist says there is a strong likelihood it is back.

"We have evidence that suggests the most likely explanation (about) how its environmental DNA got there (in Lake Erie) is because of the presence of live Asian carp," said David Lodge, director of Notre Dame University's Environmental Change Initiative in Indiana.

Lodge said the area where positive samples of Asian carp were found, in the lake's western basin, is where the last live fish was captured in 2000.

"There are other explanations ... for how the DNA could have got there," said Lodge. "They are possible, but not plausible."

According to Notre Dame's Center for Aquatic Conservation, plants and animals shed cellular material (like traces of DNA) into their surrounding environment, and this material can be collected and analyzed. Environmental DNA extracted from water samples can be used to determine if a target species has been in the vicinity.

If [toxic blue-green algae are the biggest threat to the lake's survival](#), Asian carp are a close second.

Asian carp are a group of highly invasive bottom feeders that have infiltrated the waterways of the American Midwest. The fear is they could disrupt Lake Erie's ecology if they increase to large numbers.

Two of the most-feared Asian carp are bighead carp and jumping silver carp. They [compete with native fish like trout and pickerel for food such as perch](#). These native species support a multi-billion-dollar sport and commercial fishery in the United States and Canada.

Asian carp have no natural predators and have an explosive breeding capacity. They consume as much as 40 per cent of their body weight daily and monopolize food sources of other fish and marine life.

They can grow up to 1.2 metres long and weigh 45 kilograms.

[Asian carp are prohibited inside Ontario's borders unless they are dead.](#)

“You can well imagine why we are so worried,” said Mark Burrows, a Canadian scientist who works with the International Joint Commission, a binational organization.

“We have enough [challenges in Lake Erie](#) already.”

About a year ago, scientists who were analyzing samples from Lake Erie discovered environmental DNA of the Asian carp. The researchers, led by Lodge, found genetic material at two locations: at the mouth of Maumee Bay in Michigan, and in Sandusky Bay in Ohio.

For several months, agencies in the U.S. and Canada increased surveillance, took additional samples and involved commercial fishermen, but no further evidence of the presence of Asian carp was found.

So where in Lake Erie are the Asian carp hiding?

Lodge says there is a chance that there aren't too many Asian carp in the lake right now. “Given the intense (search) efforts, perhaps not too many have a self-sustaining population.”

The discovery of the environmental DNA is disconcerting, says Tammy Newcomb, a senior water policy analyst with Michigan's department of natural resources.

It could have come from dead fish, from the digestive system of a bird, or a rotting fish, say researchers

“But the best presumption to take is that there is live fish,” she said.

It's tough to find live Asian carp, though.

Newcomb said looking for the invasive fish is like hunting for a flea in a 75-litre aquarium where “you have a net the size of a quarter of a teaspoon and you are also blindfolded.”

But no one is giving up.

When positive DNA was confirmed last year, Ontario, too, took multiple samples from its side of the lake, said Eric Boysen, director of the biodiversity branch with the provincial Ministry of Natural Resources

None of the samples came back positive and no trace of live fish was found.

“I don't know if there (are) any live Asian carp ... the DNA could have come through a number of sources,” said Boysen. But it's had us look very carefully,” said Boysen.

“We are continuing with surveillance,” he said. “We don't want to see Asian carp in Lake Erie.”

The fishy facts

Asian carp species, native to China, were brought to the U.S. in the 1970s to control algae problems in Arkansas aquaculture ponds. But there was flooding, says Burrows, and many escaped and started reproducing in the Mississippi River. They have since been working their way up north.

Asian carp could find enough food and breeding areas to reach all five of the Great Lakes within 20 years if allowed to gain a foothold, said a report released in the summer of 2012.

The analysis by U.S. and Canadian researchers said as few as 10 mature females and even fewer males could establish a population in the lakes if they find rivers suitable for spawning.

Officials said previously that it would take hundreds of the carp for a successful invasion.