

## Report: Asian Carp May Have Reached Great Lakes

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### Report: Some Asian carp likely in Great Lakes, but there's time to stop them from spreading

#### The Associated Press

At least some Asian carp probably have found their way into the Great Lakes, but there's still time to stop the dreaded invaders from becoming established and unraveling food chains that support a \$7 billion fishing industry and sensitive ecosystems, according to a scientific report released Thursday.

Written by experts who pioneered use of genetic data to search for the aggressive fish, the paper disagrees with government scientists who say many of the positive Asian carp DNA hits recorded in or near the lakes in recent years could have come from other sources, such as excrement from birds that fed on carp in distant rivers.

"The most plausible explanation is still that there are some carp out there," Christopher Jerde of the University of Notre Dame, the lead author, told The Associated Press in a telephone interview. "We can be cautiously optimistic ... that we're not at the point where they'll start reproducing, spreading further and doing serious damage."

The paper summarizes findings by Jerde and other scientists from Notre Dame, The Nature Conservancy and Central Michigan University during two years of searching the Great Lakes basin for Asian carp. The fish have migrated northward in the Mississippi River and many tributaries since escaping from Deep South ponds in the 1970s. Scientists fear they will out-compete prized sport and commercial species.

Of particular concern are silver and bighead carp, which gorge on plankton — microscopic plants and animals that virtually all fish eat at some point. The carp reproduce prolifically, and the biggest can reach 100 pounds.

Between September 2009 and October 2011, Jerde and his colleagues collected more than 2,800 water samples from parts of the Great Lakes and tributary rivers. The samples were poured through microfiber filters to extract DNA, which fish shed in their excrement, scales and body slime. It's known as environmental DNA, or "eDNA."

Laboratory analysis turned up 58 positive hits for bighead or silver carp in the Chicago Area Waterway System — a network of rivers and canals linked directly to Lake Michigan — and six in western Lake Erie. Some of the Chicago DNA was found in Lake Calumet, where a live bighead carp was caught in 2010.

"I would say there's at least some evidence for Asian carp being present in southern Lake Michigan," Jerde said. "The question is how many."

More recently, sampling by the U.S. Army Corps of Engineers and other federal agencies also yielded positive results in the Chicago waterways. But while the government team acknowledges the presence of Asian carp genetic fingerprints, it disagrees that they necessarily signal the presence of live fish.

The issue is significant because it could influence the debate over whether to seal off Lake Michigan from the Chicago waterways, a mammoth engineering task that would cost billions of dollars and take years to complete. Five states sought that step in a lawsuit dismissed by a federal judge last December. Under pressure from Congress, the Army Corps of Engineers has pledged to offer options for preventing species migrations between the Great Lakes and the Mississippi River watershed later this year.

The Army Corps contends an electric barrier in a canal 37 miles from Chicago is preventing the carp from getting through, even though their DNA has turned up repeatedly on the other side. In a February report, federal agencies said the genetic material could have been transported by bird feces, fish sampling gear, barges and storm sewers.

But the Jerde team's paper, published online Thursday by the Canadian Journal of Fisheries and Aquatic Sciences, argues that the likeliest explanation remains the presence of live Asian carp. It's probably no coincidence that many of the positive samples have come from Chicago's Lake Calumet and western Lake Erie, where three bigheads were snagged in 1995 and 2000, the paper says.

It says the scientists found no signs of the carp in Chicago locations where they should have been abundant, such as sewer outfalls, if the alternative explanations were accurate.

The secondary alternatives are even less plausible for Lake Erie, the paper says. The DNA that was found there was more than 100 miles from waterways infested with Asian carp. So if birds were the source, it seemingly would mean they feasted on carp, flew a long distance and excreted feces within a few hours of when the researchers collected water samples.

"You're requiring all kinds of random events to happen simultaneously," said Lindsay Chadderton of The Nature Conservancy, who contributed to the paper. "It's possible, but highly unlikely."

Kelly Baerwaldt, a fisheries biologist and Asian carp program manager for the Army Corps who supports the alternative-source theory, said the new report didn't change her mind. Fish-gobbling birds such as cormorants often range over hundreds of miles, she said. And if live carp are the only source of the DNA in Chicago, why has just one been found beyond the electric barrier? (Jerde says they're notoriously hard to catch.)

"Sure, it could be live fish and it also could be these other things, because we tested them and looked at the evidence," Baerwaldt said.

The Army Corps, the U.S. Fish and Wildlife Service and the U.S. Geological Survey continue to study the issue and hope within a couple of years to refine methods of determining the likely source of a particular DNA sample, she said.

"The bottom line is there's just a lot we don't know about eDNA," she said.

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