

# Bait Dumping Offers Invaders Path to Great Lakes

JOHN FLESHER, AP Environmental Writer



In this July 16, 2014 photo, plant manager Peter Allen flushes out a bin from which he had fed Asian carp onto a conveyer belt at the American Heartland Fish Products carp-processing plant near Grafton, Ill., north of St. Louis. The fledgling plant, which converts the nuisance fish into everything from animal feed to fish oil, joins a growing number of U.S. ventures hoping to profit by ridding the nation's biggest waterways of the species now threatening the Great Lakes. (AP Photo/Jim Suhr)

TRAVERSE CITY, Mich. (AP) — Inadequate regulation of the bait fish trade and carelessness on the part of anglers may be allowing invasive species — including widely feared Asian carp — to reach the Great Lakes and inland waterways, according to a scientific paper released Thursday.

Researchers with Central Michigan University and the University of Notre Dame said they tested water samples from tanks containing small fish for sale as bait at more than 500 shops across the eight states on the lakes and found that 27 tested positive for invasive species' DNA. Positive hits for silver carp, one of the Asian varieties threatening to reach the Great Lakes, were recorded in three water samples from shops along the Lake Erie shore in Ohio.

The team also detected genetic material from round goby, tubenose goby and Eurasian rudd, which are already in the Great Lakes although authorities hope to prevent them from reaching inland lakes and other waters. They also found traces of goldfish, which are classified as an invasive foreign species despite being widely available for purchase at pet stores.

"While overall only a small percentage of bait shops had evidence of invasive species, it is nevertheless alarming that at least some invaders are being spread by anglers, the very group of people that value the Great Lakes fishery the most," said

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Andrew Mahon, one of the paper's co-authors and a molecular ecologist at Central Michigan's Institute for Great Lakes Research. The report was being published in the journal *Conservation Biology*.

Many states urge anglers to not dump unused bait into the water but not everyone obeys, Notre Dame scientist Christopher Jerde said. A study in Canada found that over 30 percent of anglers were releasing unwanted minnows into waterways instead of discarding them in trash cans or freezing them for future use.

The scientists described their study as the first systematic effort to document the presence of invasive species in bait supplies using the tool known as "environmental DNA," in which water samples are examined in a laboratory for signs of genetic fingerprints from particular fish.

It's a more effective detection strategy than simply examining containers of live fish, Jerde said. The typical bait tank contains tens of thousands of minnows, and at that early stage of life many invasive species are barely distinguishable from native ones. Additionally, DNA analysis of a water sample reveals a better snapshot of the variety of species in a tank than a few scoops of fish removed for visual inspection.

The DNA method is also used in the hunt for Asian bighead and silver carp in waterways around Chicago that are considered the likeliest routes for those large, voracious invaders to reach the Great Lakes. Experts fear the invasive species could disrupt aquatic food chains and out-compete native species.

While the debate over shielding the lakes from Asian carp has focused largely on how to seal off potential entry points, the scientists said bait also represents a serious threat.

"If we ignore this pathway for spread of invasives, then we will likely be too late to prevent the damages they could ultimately cause," said Lucas Nathan, a Central Michigan biologist and the paper's lead writer.

The scientists said members of their team visited 525 retail bait shops in 2012 and 2013, buying buckets of minnows from each. They analyzed 576 DNA samples from the water. The 27 positive hits represented 4.7 percent of all samples.

Michigan had the highest number of positives with 13, including seven for round goby, three for tubenose goby, one for Eurasian rudd and two for goldfish. Each state except Minnesota and Wisconsin had at least one positive reading.

The silver carp DNA in Ohio came from the western Lake Erie basin around Sandusky Bay, where Asian carp DNA has been detected previously. Each of the shops where it turned up had dealt with the same wholesaler, Jerde said.

Bait policies vary widely between the Great Lakes states, the paper said, urging more consistency.

"You could have really tight regulations in one state but if the state next door does

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not and they're basically an open system for moving bait around, they become a potential source for invasives being introduced," Jerde said.

Nick Popoff, a fisheries regulator with the Michigan Department of Natural Resources, said the state prohibits use of invasive fish as bait and will conduct its own studies. DNR law enforcement units monitor more than 500 licensed dealers, he said.

The study doesn't prove that invasive fish are being transferred between waterways through bait dumping but raises concerns, Popoff said.

"It does mean we should ... be vigilant on the movement of bait and recognize it is a pathway," he said.

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