

# Intruders at the gate

## Invader species threaten to further shake Lake Michigan's sensitive ecosystem

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*Third of three parts*

The more Dan Thomas learns about the bighead carp swimming toward the Great Lakes, the more the avid salmon fisherman fears for the future of Lake Michigan.

The monstrous fish, brought from Asia to North America by Southern fish farmers in the 1970s, are believed to have escaped on floodwaters into the Mississippi River more than a decade ago. They have been migrating north ever since. Bighead and their cousins, silver carp, are now believed to be within 50 miles of the Chicago shoreline.

The fish may share the same last name with common carp, but that's about it.

Common carp, brought to North America in the 1800s by Europeans who valued their firm white flesh, feed mostly on tiny critters that dwell on lake and river bottoms. They have prospered in the Great Lakes, but after more than 100 years they haven't overwhelmed them.

Bighead and the slightly smaller silver carp are entirely different beasts.

Bighead can grow bigger than an Olympic gymnast. They don't have teeth and can't be caught by hook and line, but they've got mouths so big and round they could gobble a softball whole. The biggest can weigh more than 100 pounds and suck up to 40 pounds of plankton per day - food upon which nearly all other fish species in the Great Lakes directly or indirectly depend.

They've been called the 100-pound zebra mussel, and commercial fishermen along stretches of the Illinois River that have been infested by these "Asian carp" have one simple message for Great Lakes lovers: Fear these fish.

In just a decade, bigheads and silver overwhelmed the river to the point that today fishermen can find their nets so thick with thrashing and gasping carp that they sometimes can't even hoist them from the water.

"There is no way they can get rid of them without destroying the river," says Gary Bahl, a part-time commercial fisherman from Havana, Ill., on the Illinois River. "They multiply so fast . . . there's millions and millions of them."

Few doubt these fish would thrive in the bays, harbors and tributaries of the Great Lakes.

What worries salmon anglers such as Thomas most is a map of the Asian carp's native range. Stretch the latitudinal lines across the globe from Asia, says the president of the Great Lakes Sport Fishing Council, and it is apparent the fish are a perfect fit for the Great Lakes, the world's largest freshwater system, and the biggest home these big fish could ever hope to find.

"It just makes you want to cry," he says.

If bighead carp make their way into the lakes, says Dennis Schornack, President Bush's handpicked person for U.S.-Canadian Great Lakes issues, "then it is just a matter of time before we end up with a carp pond."

### **Political inertia**

#### *Sense of urgency doubted over vulnerability of lakes*

The current tally of foreign invaders in the Great Lakes is now at least 180, and that number grows each year. Politicians like to bark about the need to slam the door shut to Great Lakes invasive species, but their efforts so far have been largely toothless.

Bighead and silver carp were proposed for listing as an "injurious species" under the Lacey Act in summer 2003. Such a move would make it illegal to transport live fish across state lines. No decision has been made.

Meanwhile, legislation to require ocean freighters traveling to the upper Great Lakes via the St. Lawrence Seaway's Welland Canal to stop spilling ballast water contaminated with foreign organisms was introduced in Congress in early 2003. It has gotten nowhere.

"We haven't done anything," says Gary Fahnenstiel, a senior ecologist with the National Oceanic and Atmospheric Administration. "It's all been rhetoric by politicians. I'll be among the first scientists to say: Let's close the Welland Canal. Let's start there. This is ridiculous."

Canada has been similarly slow in taking steps to protect the lakes.

Schornack, for example, appeared before the Canadian Parliament's Standing Committee on Fisheries and Oceans in Ottawa last year with a guest of dubious honor - a bighead carp he purchased just a few blocks away at a fish market.

Bighead are a popular food in some Asian cultures, and the worry is someone will buy their favorite fish and drop it in open water instead of a fryer.

"Only my good conscience and knowledge - no rule, no regulation, no ordinance, no anything stops me from putting this . . . fish into the river," Schornack told the committee.

Canada finally will adopt a national law early next year that will ban the transport and possession of live bighead carp.

With the U.S. federal government moving even more slowly, the threat of store-bought carp infesting public waters is real. In the summer of 2003 a 38-pound bighead was caught in a man-made pond at a Chicago park just a few miles from the shore of Lake Michigan. A year later, a 45-pounder was pulled from the same landlocked pond.

Great Lakes advocates who had to scramble to find \$9 million to build a carp barrier on the Chicago Sanitary and Ship Canal - which links the Illinois River with Lake Michigan - are baffled as to why the government would risk leaving wide open another door to invasions.

"It's clear-cut to me. It's clear-cut to all of us working night and day to get the (carp) barrier built," says Marc Gaden, spokesman for the Great Lakes Fishery Commission, which helps coordinate fishery management decisions across the region. "If I sound incredulous, it's because I am."

A likely reason for the holdup is political pressure from the Southern fish-farming industry, which uses one type of Asian carp to control parasite-carrying snails in their fishery operations. Fish farmers also raise bighead to sell to Asian fish markets in places such as Illinois and Canada.

Mike Freeze, a fish farmer and vice chairman of the Arkansas Game and Fish Commission, says the federal government has to share some responsibility for the problem because years ago it encouraged fish farmers to pursue Asian carp as a crop.

"When these fish were brought into the U.S., they were brought in with the full knowledge and assistance of the federal government," he says.

Freeze contends that a federal injurious species listing is unnecessary because states can act on their own to block the importation of any species. But he says any state that makes such a decision should at least give fish farmers time to sell their current crops of carp. Otherwise, Freeze says, a fish farmer may respond by dumping the fish as cheaply as possible - into rivers and streams.

It's not something he condones, but it is something he understands.

"When you back someone financially up against the wall, sometimes they do things that they shouldn't do, and that may not be legal," he says.

### **Clock ticking**

***Governments reluctant to pick up the bill***

Scientists installed a temporary \$1.5 million electric barrier on the canal south of Chicago in April 2002 with the hopes that it would buy time before a more permanent fish-zapping device could be installed.

Asian carp have been found within 22 miles of the temporary barrier, which itself is about 25 miles southwest of Lake Michigan. The temporary barrier has already lost power once, and the cables that pump the electrical current into the water are starting to disintegrate. Scientists predict it could be useless by spring.

The plan had been to construct a more powerful and durable barrier last spring, but then the U.S. Army Corps of Engineers balked at orders to begin construction, saying it did not have the funds for what was then a \$6 million project.

At a congressional hearing in February, Michigan Congressman Vernon J. Ehlers told the Corps' assistant secretary for civil works that his "head would be on a platter" if his agency didn't act to stop the carp migration.

The Corps hopped to it and found the money. A groundbreaking ceremony replete with politicians in hard hats took place this spring. Then the press left. Then . . . nothing.

Construction costs had jumped by more than \$2 million, and the governors of the eight Great Lakes states declined to help make up the shortfall.

"It is clearly a federal responsibility," Jessica Erickson, a spokeswoman for Wisconsin Gov. Jim Doyle, co-chairman of the Council of Great Lakes Governors, said last summer.

Yet the clock was ticking on the construction season and quick federal funding wasn't there. Four months later, in October, Congress came up with \$1.8 million and the Great Lakes governors agreed to find the remaining \$600,000.

Now, with winter at hand and the temporary barrier steadily disintegrating, construction workers' backs are against the wall to get the job done before the temporary barrier fails.

Cameron Davis, executive director of the Lake Michigan Federation, can only shake his head. The stakes are so high and the issue so clear, he says. The barrier funding should have been a slam-dunk, not a close call.

"If we had a problem with this, it shows we're going to need to get more serious about dealing with protection measures that are even more complex," he says

### **How invaders get in** *Organisms hitch ride in freighter ballast water*

Contaminated ballast water is just such a problem.

The water is carried in the bowels of cargo-less vessels to keep them from bobbing like corks in open water.

The problem is ballast water is taken on in foreign freshwater ports whose waters may be teeming with life. When the ships arrive in the Great Lakes, that water is dumped in exchange for payloads such as coal, grain and ore. This is how zebra mussels are believed to have arrived in the Great Lakes in the late '80s.

In response, the U.S. government in 1990 asked shippers to voluntarily exchange their ballast water in the open ocean for saltwater before arriving in the Great Lakes.

The theory is that the open ocean would contain fewer critters, and those species that do get scooped up would be saltwater organisms that would have trouble surviving in the fresh water of the Great Lakes.

In 1993, the United States passed a law making such exchanges mandatory.

But the ballast-water invasions haven't slowed.

The reason: an Edmund Fitzgerald-sized loophole in the law. About nine out of 10 ships arriving from foreign ports are laden with cargo and don't carry ballast water. They are consequently exempt from the ballast exchange requirements.

However, those "empty" ballast tanks still carry loads of sludge and permanent pools of residual ballast water. Studies have shown that both harbor organisms.

The ships arrive and unload their cargo at their first port of call in the Great Lakes. Then they're likely to take on ballast water before steaming toward another Great Lakes port to pick up more cargo.

Invasive species can jump when that water gets dumped in exchange for cargo.

"The law as we know it today is not totally protecting the Great Lakes from invaders," says Cornell University biology professor Ed Mills.

"It's good that they're doing it (the ballast exchange requirement), but it's not by any means reliable," says Allegra Cangelosi, senior policy analyst for the Northeast-Midwest Institute, a Washington, D.C.-based research organization that focuses on the Great Lakes region's economic and environmental issues.

Cornell's Mills says, in fact, that new organisms colonize the Great Lakes at a rate of about one every eight months.

Congress is mulling a bill calling for tougher regulations that would close the ballast-water loophole by forcing the sludge to be sterilized. The National Aquatic Invasive

Species Act also would provide funding to combat future invasions, but action on it has been stalled for more than a year.

The shipping industry acknowledges there is a ballast-water problem, but some worry about the cost and effectiveness of emerging technologies to sterilize the sludge.

France's Jean-Claude Sainlos of the United Nations' International Maritime Organization told a group of invasive-species experts at a meeting in Ireland earlier this fall that more is at stake than just the environment. The IMO has agreed to stiffen ballast-water regulations, but the new rules, which must still be ratified by at least 30 nations, won't kick in for existing ships until 2014 at the earliest.

Shipping, Sainlos reminded the group, is the world's business, "carrying more than 90% of global trade."

"As such, it underpins the continued economic development of human society and is a vital force for the delivery of improved living conditions through trade and commerce," he said at the Ireland conference. "This highlights the need to balance environmental concerns with economic considerations of world trade."

### **The zebra mussel lesson**

#### ***U.S., Canada now pay for ignoring warnings***

Others contend that in the case of invasive species, environmental and economic concerns are one and the same.

"Are invasive species less dangerous than other pollutants that foul our air or contaminate our water? No." says Ehlers, a sponsor of the invasive species legislation. "If we spend millions preventing aquatic invasive species from entering our waters, we can avoid spending billions trying to control and manage them once they are here."

The zebra mussel illustrates Ehlers' point.

The freighter-borne invasion of the 1980s continues to cost municipalities and industries that draw water from the lakes millions to keep mussel-clogged pipelines clear. The voracious filter feeders are also taking a toll on native fish species in the lakes and have been linked to an increase in dangerous algae blooms across the region and to the noxious sludge buildup on beaches up and down Wisconsin's Lake Michigan shoreline.

The General Accounting Office predicted in 2002 that the cost of the invasion over the next decade could total \$3.1 billion.

And it didn't have to happen.

In the early 1980s, the Canadian and U.S. governments had "full and fair warning" that harmful creatures, specifically zebra mussels, had the potential to invade the Great Lakes

via ballast water of Great Lakes freighters, says Dave Dempsey, a former member of the Great Lakes Fishery Commission.

A 1981 report, commissioned by the Canadian government to analyze the potential perils of ballast water, stated that research "clearly indicate(s) that non-indigenous and non-endemic aquatic species are being imported into the Great Lakes system," and specifically points to the pipe-clogging zebra mussels - which at the time were plaguing Britain and Russia - as a species particularly adept at surviving an ocean journey in a ship's ballast tanks.

Neither the Canadians nor the Americans opted to do anything about the warning, says Dempsey, who documented the governments' botch in his 2004 book "On the Brink - the Great Lakes in the 21st Century."

"It's pretty apparent that pressure from shipping and import lobbies outweighed any concern about a possible threat," Dempsey says. "The burden is always on the person who wants to protect something to show the need for control, instead of the burden being on industry to show its practices are safe. That's the whole problem with Great Lakes management . . . . We wait until harm is demonstrated before we act."

Dempsey agrees with the scientists that it likely is only a matter of time until the next zebra mussel arrives.

"It could happen again. I don't see that the government has learned. Eighteen years after the zebra entered the Great Lakes, we still have no effective ballast water control," he says. "What does that say? It says we can't even close the barn door after the horse gets out."

Conservationists predict public outrage, but worry that it won't come until the lakes are too far gone.

"There has been no Cuyahoga River that has caught on fire. There has been no Exxon Valdez oil spill. This is a silent problem," says Jordan Lubetkin of the National Wildlife Federation. "While the Great Lakes have mounted comebacks from toxic pollutants and overfishing, they're really facing their greatest threat yet."

Some see the stakes as higher than the international controversy over pumping Great Lakes water to parched areas outside the region.

"We're so worried about somebody taking a gallon of water from the Great Lakes, but we'll pollute them to the point that nobody wants that gallon," says Fahnenstiel, the ecologist. "That's what we're going to do with these invasive species."