



By Nerissa Michaels, Illinois River Biological Station

Water hazard: Silver carp, a variety of Asian carp, can jump up to 10 feet out of the water when disturbed by a passing boat. Boaters and water-skiers on the Illinois River have been injured by the airborne fish.

Invasive carp threatens Great Lakes

By Dennis Cauchon
USA TODAY

Fish and wildlife officials will poison a 6-mile stretch of water near Chicago on Wednesday in a last-ditch effort to keep one of the most dangerous invasive species of fish, the Asian carp, out of the Great Lakes.

The Asian carp, a voracious eater that has no predators and negligible worth as a commercial or sport fish, now dominates the Mississippi and Illinois rivers and their tributaries.

The fish has entered the Chicago Sanitary and Ship Canal — a man-made link between the Mississippi River system and the Great Lakes — and is knocking on the door of Lake Michigan. Once inside a Great Lake, the carp would have free rein in the world's largest freshwater ecosystem, imperiling the native fish of the lakes and a \$7 billion fishing and recreation industry.

"We've got a chance to beat this thing, but we've got to do everything right," says Joel Brammeier, acting president of the Alliance for the Great Lakes, a conservation group.

The poisoning will kill an estimated 100 tons of fish, which will be removed by crane and hauled to a landfill. The five-day fish kill will provide time for the Army Corps of Engi-

Massive fish kill scheduled to protect \$7B fishing and recreation industry



By Martin Levinson, The Star Tribune, via AP

An insatiable invader: Silver carp steal the food supply from other species.



Go to usatoday.com to see video of the problematic Asian carp in action.

neers to perform routine maintenance on an electrical barrier that has been placed in the canal to block Asian carp from entering Lake Michigan.

No Asian carp have been found on the Great Lakes' side of the electrical barrier. However, recent DNA samples taken from water indicate the carp may have gotten past the barrier.

"We feel confident that our barriers repel the fish," says Chuck Shea, the Army Corps of Engineers' project manager. The barrier consists of low voltage sent through steel cables, electrifying the water enough to stop the fish but not enough to kill them or humans.

The Great Lakes have struggled for decades from more than 150 invasive species brought in by ocean-going vessels dumping water from around the world. The Asian carp is the first major threat to come from the other direction, upstream from the Mississippi River.

The results are potentially devastating for the Great Lakes and the rivers that flow into it.

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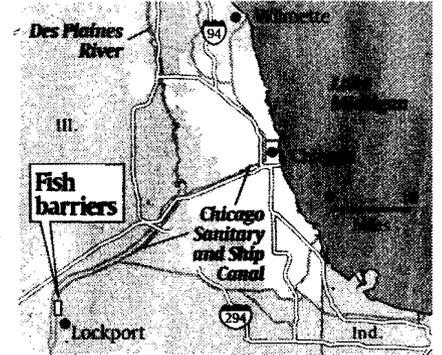


File photo by Matt Buedel, (Peoria, Ill.) Journal Star, via AP

Bighead a big headache: Greg Conover, left, and Nate Caswell, biologists with the U.S. Fish and Wildlife Service out of Marion, Ill., prepare to suture an incision on a bighead carp in 2007. The variation of Asian carp can grow to more than 4 feet long and weigh up to 85 pounds.

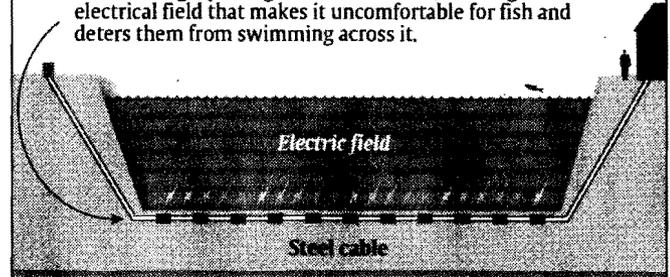
Anti-fish field

Electronic barriers operated by the Army Corps of Engineers are designed to stop Asian carp from passing from the Chicago Sanitary and Ship Canal into Lake Michigan.



How it works

Steel cables secured to the bottom of the canal send out a low-voltage, pulsing electrical current, creating an electrical field that makes it uncomfortable for fish and deters them from swimming across it.



Source: Army Corps of Engineers

By Dave Merrill and Julie Snider, USA TODAY

Asian carp is now a dominating force in many major rivers

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Good intentions gone bad

Asian carp were first brought to Arkansas in 1963 by the U.S. Fish and Wildlife Service, which wanted a natural way to control aquatic weeds, reducing the need for chemicals. Fish farms brought more carp to function as pond cleaners.

The fish started to escape as early as 1966, according to a Fish and Wildlife Service history. The Asian carp were spread by Mississippi River floods in the 1990s.

Once released, the insatiable fish quickly conquered local rivers and headed north to spawn and eat. Asian carp now dominate many parts of major rivers, including the Mississippi, Tennessee, Missouri, Ohio, Columbia and Platte rivers. A survey in an offshoot of the Mississippi River near St. Louis found 97% of the fish were Asian carp.

Asian carp consist of four species — bighead, black, grass and silver — native to the rivers of China, Russia and Vietnam. They can consume 40% of their body

weight every day and steal the food supply from other species. With no natural predators or disease found in their native waters, Asian carp quickly become the bulk of the biomass — the size and weight of fish — in American rivers.

The big problems are:

▶ **Bighead carp.** The fish doesn't have a stomach, so it eats constantly. By vacuuming plankton, algae and everything else in its way, the fish can grow to more than 4 feet and 85 pounds. The older and bigger it gets, the more it reproduces.

▶ **Silver carp.** The 50-pound flying fish is a YouTube sensation. It leaps high from the water when disturbed by a passing boat or water-skier. Boaters and jet-skiers have been seriously injured by the airborne fish.

"You don't see people water-skiing or flying down the Illinois River in boats anymore," says Chris McCloud of the Illinois Department of Natural Resources.

Asian carp are still used on some fish farms to keep ponds clean. Some carp are sold, often live, at specialty Asian markets.

But the fish have little commercial value.

"It's full of bones — floating bones in its flesh — that make it objectionable to Americans who want their fish as a filet," says Barry Costa-Pierce, director of the Rhode Island Sea Grant program.

Carp isn't a popular sport fish. But bow hunting for carp is gaining fans. The ultimate bow fishing prize: nailing a silver carp midair.

Perhaps an impossible task

Keeping Asian carp out of the Great Lakes may be impossible because the fish is so common in U.S. rivers, says Ron Kinnunen, a Michigan Sea Grant biologist who works on Lake Superior. "It's hard to stop an invasive species once the genie is out of the bottle. You can only hold them in check," he says.

The Great Lakes' last line of defense is the world's largest electrical fish barrier, constructed in the Chicago Sanitary and Ship Canal. The Army Corps of Engineers has a \$40,000-a-month electricity bill for the barriers.

A demonstration barrier went up in 2002. A second, more powerful barrier was finished in 2006, but the voltage wasn't cranked up until last February. The economic stimulus bill provides money for a third electrical barrier, which should be ready next year.

The barriers need to be turned off every six months or so for maintenance. When the power is off this week, the Illinois Department of Natural Resource will drop 2,300 gallons of rotenone, a fish poison, into the canal.

The fish kill is so large that rotenone's manufacturer couldn't supply enough of the poison. Illinois officials had to get donations from fish and wildlife officials in other states. Rotenone turns off the oxygen function in fish. A crew of 200 will work five days to execute the fish kill.

The fish kill has broad support from fish and wildlife officials, environmental groups and the fishing industry. The Chicago Sanitary and Ship Canal, an industrial waterway, is 70% wastewater from local sewer systems. Fishing is prohibited.

The original barrier will keep working during the fish kill, but it delivers only half the voltage of the newer one and isn't as effective. The new stimulus-funded electrical barrier will let the Army engineers keep one powerful barrier going while the other is repaired.

No long-term answer

The electrical barriers and mass poisoning may not be enough to protect the Great Lakes forever. Several groups are calling for the government to "disconnect" the Chicago Sanitary Canal from the Great Lakes.

The man-made canal is the only link between the basins of the Mississippi River and the Great Lakes. The canal was opened in 1900 for environmental reasons — to stop the dumping of Chicago's raw sewage into Lake Michigan.

The canal reversed the flow of the Chicago River, directing it south to the Des Plaines River rather than north to Lake Michigan. The American Society of Civil Engineers named the canal one

of the greatest engineering feats of the 20th century. The canal remains important for wastewater, flood control and barge traffic.

A century later, the Chicago Sanitary Canal has created another environmental problem. The 200-foot-wide waterway is the sole link between the nation's two most important watersheds and now serves as a pipeline — in both directions — for invasive species.

"We have to take care of this problem permanently," says Marc Gaden of the Great Lakes Fishery Commission, a joint U.S.-Canadian commission that coordinates fisheries management. "We need pure biological separation between the Mississippi River basin and the Great Lakes basin." Congress has ordered the Army Corps of Engineers to study the issue.

Gaden says the Army Corps needs to quickly design a solution to restore the natural separation between the Mississippi River and Great Lakes. "We don't have time to wait," he says. "The electrical barriers are the be-all, end-all. This is an emergency."