

Report: Fish swim past electric barrier meant to block Asian carp



Journal Sentinel files

An electric barrier in the Chicago Sanitary and Ship Canal southwest of Chicago in Romeoville, Ill., is intended to keep Asian carp from swimming upstream and into Lake Michigan. The barrier is located near the arch just north of the Romeo Road bridge.

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Dec. 23, 2013 | (38) Comments

The electric barrier on the Chicago Sanitary and Ship Canal that is considered the last line of defense to stop an Asian carp invasion of Lake Michigan has a problem: Fish can swim through it.

A new report by the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service reveals that fish can be transported across the electrified swath of canal when they get trapped in the wake of a barge.

Research also shows that the metal barges can essentially suck electricity out of the water as they motor through the barrier zone, creating a moving "bubble" of water that isn't pulsing with the intended electrical current.

The study also revealed that small fish are not always incapacitated by the electrical current in the water. In fact, a sonar camera lowered into the canal at the barrier site regularly captured schools of fish swimming freely through the barrier.

States the report: "Initial findings indicate that vessel-induced residual flows can trap fish and transport them beyond the electrical barriers, and that certain barge configurations may impact barrier electric field strength. Additionally, the preliminary (sonar camera) findings identified the potential for small fish (between 2-4 inches in length) to pass the barrier array in large groups, or schools."

Concerned that the barrier was too weak to repel juvenile fish, in 2011 the Army Corps cranked up its voltage. The agency has since been operating under the assumption that the higher voltage is strong enough to repel all sizes of fish.

The camera told a different story. Crews dropped it in the water on 72 occasions to capture 10 minutes of video each time. Of those 72 samples, entire schools of fish, not believed to be Asian carp, were recorded swimming through the barrier 61% of the time.

Federal officials stress they do not believe Asian carp are yet probing the barrier.

"There is no evidence that Asian carp are bypassing the barriers. Nor is there any indication that Asian carp are in the vicinity of the barriers," states the report. "The closest adult Asian carp found in the Illinois River are about 55 miles from Lake Michigan, and no small Asian carp have been observed closer than 131 miles from Lake Michigan."

Yet water samples taken at the barrier site and in stretches of canal on the Lake Michigan side of the barrier have regularly tested positive for Asian carp DNA during the past four years, and a poisoning of the canal in the area around the barrier in late 2009 yielded the carcass of a single Asian carp.

The new study may prompt changes in the way barges are configured and how the barrier operates. Safety is a big concern; some barges traveling through the electrified section of canal, located about 30 miles downstream from Lake Michigan in suburban Chicago, carry flammable materials, and the threat of sparks flying between barges is real.

"The news is still fairly preliminary," Felicia Y. Kirksey, aquatic invasive species program manager for the Army Corps in Chicago, said of the study. "We're going to do more analysis and work with the barge community and the Coast Guard to see how we can move forward."

The news comes just before the Jan. 6 release of the Army Corps' \$25 million study examining how to re-establish the natural divide between the Great Lakes and Mississippi River basin that the Chicago canal destroyed when it opened over 100 years ago.

The study is expected to have a range of options, but Great Lakes advocates want the canal physically plugged to stop Asian carp and other unwanted species from swimming freely between the Great Lakes and Mississippi basin. Such a project would require dramatic upgrades in Chicago's sewage treatment and storm-water management.

Josh Mogerman, a spokesman for the Natural Resources Defense Council, said news of the electrical barrier problems is further evidence that the federal government has to find a more permanent solution to the Asian carp problem.

"The electric barrier already had a spotty track record, but this report seems to burst any remaining implication it can be considered a solution to the carp invasion," he said. "It reinforces the broadly held belief that a permanent, physical barrier separating the watersheds is the only way to stop the dozens of dangerous critters queued up on both sides."