DNA evidence of Asian carp above electric barrier grows

Journal Sentinel files

An electric barrier in the Des Plaines River southwest of Chicago in Romeoville, Ill., is in place to keep Asian carp from swimming upstream and into Lake Michigan. The barrier is located under the arch just north of the Romeo Road bridge.

By Dan Egan of the Journal Sentinel

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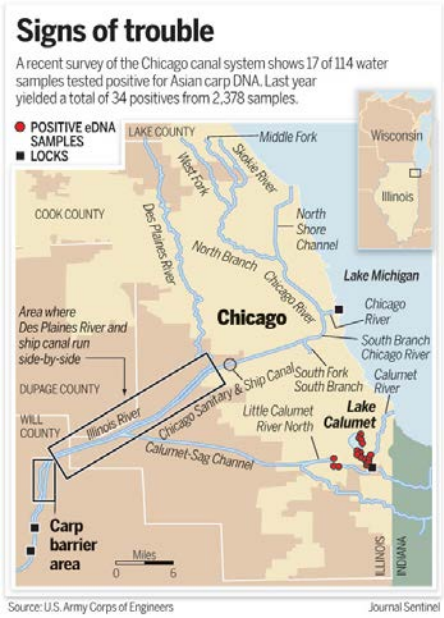

Great Lakes Coverage

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While it's been nearly two years since crews landed the only live Asian carp specimen above an electric barrier on the Chicago Sanitary and Ship Canal, DNA evidence of the jumbo carp continues to come in - and the percentage of DNA-positive water samples taken above the barrier this year appears to have grown tenfold over last year.

The Army Corps of Engineers reported that of the 2,378 water samples taken throughout 2011 in the canal system above the electric barrier, a total of 34 samples were positive. This year, after just one day of sampling the waters above the barrier, the Army Corps reports it landed 17 positive results from 114 water samples. In other words, the percentage of samples that tested positive for Asian carp DNA last year was about 1.5%. This year, so far, it has jumped to almost 15%.

The information is posted on the Army Corps website.

The electric barrier is about 30 miles downstream from the Lake Michigan shoreline, and 25 miles downstream from that barrier the waters are known to be home to a robust population of two species of Asian carp, bighead and silver. All of the positive samples taken above the barrier for 2011 and so far this year have been for silver carp.

The Army Corps maintains that a positive sample doesn't necessarily mean evidence of live fish above the barrier. Efforts to contact agency officials on Monday were unsuccessful, but in the past they have speculated that the DNA material, mere molecules, could be coming from barges carrying contaminated bilge water past the barrier, or from a fish that flopped onto a barge deck and was then carried through the barrier, or from the feathers or excrement of birds, or from restaurants in the Chicago area that serve Asian carp raised or caught in waters outside the Great Lakes basin.

"We can't tell if it's from live or dead fish, but we take it very seriously because we don't know," said Kevin Irons of the Illinois Department of Natural Resources, which is working with the Army Corps to track the advance of Asian carp up the Mississippi River system toward Lake Michigan. Irons also said a jump in positive samples does not necessarily mean there are more fish - live or dead - above the barrier.

"We don't know what that number of positives means," Irons said.

"A fish floating around may ooze this DNA for a long time," he added.

He said the positive results triggered two days of intense netting and electroshocking in nearby waters last week, and that "phenomenal effort" yielded zero Asian carp. He said crews also took another 45 water samples on June 11, but the results of those DNA tests won't be known for a couple of weeks.

The University of Notre Dame researchers who helped pioneer the DNA sampling agree that some Asian carp DNA likely has gotten beyond the barrier by means other than a live fish, but

they say the overall pattern of positive samples during the three years of testing the canal waters is powerful evidence that at least some live fish are now swimming above the barrier.

Most of the recent positive samples were taken from Lake Calumet, a water body about six miles south of Lake Michigan but one with a direct hydrologic connection to the big lake.

"Whoa," said Thom Cmar, an attorney with the Natural Resources Defense Council, when shown the number of positive hits taken from the May 22 sampling trip.

The Army Corps acknowledges that Asian carp pose a significant threat to the ecology of the Great Lakes, the world's largest freshwater system that is home to an estimated $7 billion fishery and is a drinking water source for some 40 million people. The Army Corps is looking at what it will take to permanently separate Lake Michigan from the Asian carp-infested Mississippi River basin as part of a multiyear study that isn't scheduled to be complete until 2015. But in the meantime the agency maintains that its electric barrier continues to provide adequate defense for the lakes. Conservation groups and Illinois' neighboring states, five of which have sued the Army Corps to force it to do more to stop the fish, remain dubious.

"This is the third summer we've seen positive eDNA hits in Chicago, and the third summer that the Corps says it needs more time to act. A real solution has to move faster than the carp," Cmar said. "Seventeen eDNA hits in one day suggests that isn't happening."