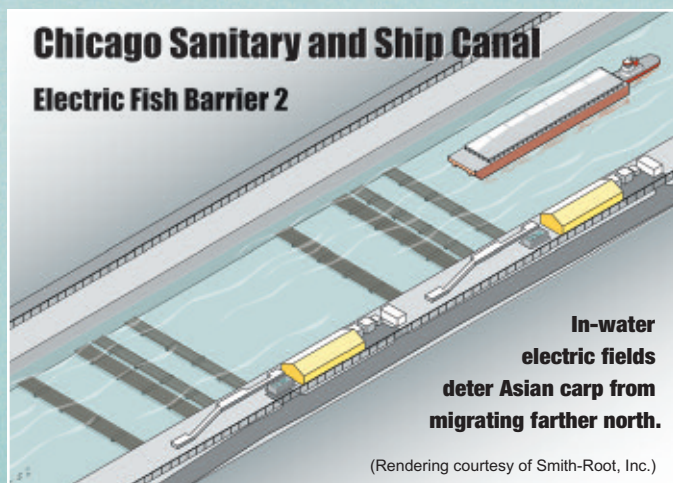


Scientists plan to keep Lake Michigan from becoming one large carp pond with construction of a new electric barrier.

# Giving Invaders a Jolt

Story By Kathy Andrews



**D**ark waters and a steady stream flow can't deter these finned invaders, but a current of another nature can.

"With an ability to travel up to 60 miles per month, Asian carp could soon make an assault on Lake Michigan and the impact on Lake Michigan's economy and ecology could be frightening," said Steve Shults, aquatic nuisance species program manager with the Department of Natural Resources (DNR). "The Great Lakes sport fishery could be destroyed—estimated to be a \$4.6 billion annual industry—and that is just the beginning."

Thanks to funding from the Great Lakes states and federal government, a new aquatic nuisance species dispersal barrier has been constructed near Romeoville. The Chicago Sanitary and Ship Canal, a manmade canal joining the Chicago and Des Plaines rivers, creates a connection between Lake Michigan and the Mississippi River basin, and a perfect travel corridor for marauding aliens.


"Although DNR is the primary nonfederal sponsor of the project, the seven other Great Lakes states recognize the severity Asian carp could have on the ecology of waters we share," Joel Brunsvold, DNR director said. "The level of regional cooperation for this project has been incredible."

The new dispersal barrier shores up a temporary demonstration barrier constructed in 2002. Designed and constructed by Smith-Root, Inc. and the U.S. Army Corps of Engineers (COE), the barrier covers a larger area, have a longer service life and include design improvements. The second barrier is expected to be operational this spring.

The implications of alien carp gaining a foothold in Lake Michigan are enormous and far-reaching. The Barrier Advisory Panel—created by COE to solicit input from stakeholders—now consists of more than 50 different international, federal, state, regional, municipal, academic, environmental and commercial entities, including DNR, City of Chicago, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency and Illinois-Indiana Sea Grant program.

"The barrier is similar to techniques used for electrofishing," Shults explained. "Rails running along the bottom of the canal carry a current. When a fish enters the electric field it feels discomfort from the current passing through its body and it turns rapidly, swimming away."

The new barrier consists of two fields approximately 130 feet long and covering the entire water column (surface to bottom) and provides a graduated pulsed voltage field meaning that when a fish enters the field, it feels a small amount of voltage, usually enough to encourage a hasty retreat. The farther a fish continues the more voltage it feels.

Movement of native species could be altered by the current barrier design, but biologists are not concerned as the most abundant species in the canal are gizzard shad and common carp. Scientists are optimistic the barrier will have additional benefits—minimizing further infiltration of round gobies into the river system and impeding attempts by future aquatic invaders. 

**F**or updated information on the demonstration or new barrier, visit [www.seagrant.wisc.edu/AIS/Default.aspx?tabid=393](http://www.seagrant.wisc.edu/AIS/Default.aspx?tabid=393).

(Photo By Traci Barkley, University of Illinois at Champaign.)



**The Chicago Sanitary and Ship Canal joins the Chicago and Des Plaines rivers and creates a connection between Lake Michigan and the Mississippi River.**