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Southern Illinois University Latest to Use BioSonics DT-X in War on Asian Carp

Scientists Generate "Amazing" Results from Scientific Sonar

Carbondale - Illinois has become "ground zero" in the fight against the Asian carp invasion, where these fishes have adapted so successfully that the greatest wild densities of bighead and silver carp in the world are now found in the lower three reaches of the Illinois River. The life history characteristics of Asian carp have led to exponential population growth of Asian carp in the Illinois River since 2000 and Asian carp are now poised to invade the Great Lakes from the Illinois River via the Chicago Sanitary and Ship Canal. The potential environmental and economic implications from such an invasion could be devastating.

An intense commercial fishing operation in the Illinois River system is being initiated to control the spread of Asian carp and reduce their impacts on the native fish community. Determining the standing stock of Asian carp in the Illinois River is a critical initial step in determining the efficacy of controlling these populations with commercial fishing, as well as to determine the potential to meet demands from various markets.



Asian carp - Photo credit: [Kate Gardiner](#)

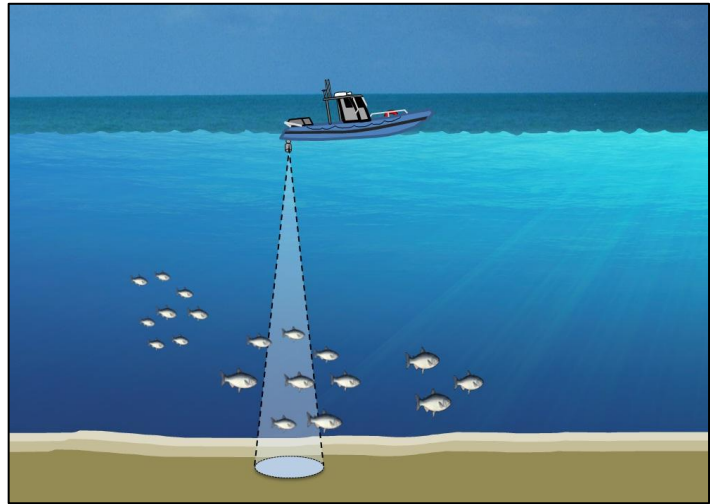
With this in mind, researchers are now investigating the efficacy of a large-scale removal of Asian carp from the Illinois River. To estimate the density, size distribution, and biomass of Asian carp among the five lower reaches of the Illinois River, Southern Illinois University (SIU) researchers, Jim Garvey and David Glover, are conducting hydroacoustic surveys using a BioSonics DT-X split-beam echosounder. To date, they have completed transects along more than 270 total river miles. Garvey and Glover are developing species-specific relationships between acoustic target strength and body size, which will facilitate in processing acoustic data to determine species composition and size distribution. As Glover explained, the initial results from the DT-X are very encouraging; "The spatial distribution we are seeing confirms everything in the literature. We have been amazed at the results from the hydroacoustic data." The SIU team joins Illinois Natural History Survey, USGS, and many other state and provincial agencies in using BioSonics DT-X technology for fisheries research in and around the Great Lakes region.

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The information will be incorporated into GIS to create maps showing biomass and distribution of Asian carp overlaid onto depth contours and substrate classifications. These data will help to identify hotspots for focusing commercial fishing efforts.

Data from the hydroacoustic surveys will be studied along with data from netting, tagging and tracking, and otolith studies to better understand the immigration and emigration patterns of Asian carp. Other researchers hope to use the data to



Surveying with a Mobile Scientific Echosounder

develop a model that can be used to predict how much fishing effort would be required to keep Asian carp abundances low in perpetuity. Ultimately, it is hoped that this effort will improve conditions of the Illinois River and prevent range expansions of Asian carp to Lake Michigan and other uninvaded systems.

About SIU

The SIU Fisheries and Illinois Aquaculture Center is a research center for both freshwater and marine fisheries science in the Graduate School & Office of the Vice Chancellor for Research at Southern Illinois University Carbondale. The Center serves the university, region, state, and nation as a teaching and research facility with fish ecologists, geneticists, culturists, toxicologists, and physiologists among their ranks. All faculty have joint appointments in either the Department of Zoology in the College of Science or the Department of Animal Science, Food and Nutrition in the College of Agriculture Sciences.

About BioSonics

BioSonics is a manufacturing, consulting, and engineering firm specializing in the application of hydroacoustic (sonar) technology for monitoring and assessment of aquatic biological resources. For over thirty years, BioSonics scientific echosounders have been used for accurate assessment of fish abundance, distribution and behavior. Versatile and rugged design allow for installation in every aquatic environment imaginable. BioSonics offers a range of technical services including survey design, installation, data collection, environmental monitoring, data processing, analysis and reporting.

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