

Study validates Asian carp research

January 5 2011

The use of environmental DNA (eDNA) by scientists from the University of Notre Dame and The Nature Conservancy to detect invasive Asian carp in the Chicago-area waterway has been validated in *Conservation Letters*, a new flagship peer-reviewed journal published by the Society for Conservation Biology.

"When you are dealing with cutting-edge research like eDNA, a very important part of the process is getting your science peer-reviewed and published in a well-respected journal," said Professor David Lodge, director of the University of Notre Dame's Environmental Change Initiative. "Given all the attention that the Asian carp issue has received, our team is thrilled to reach this new and important stage in the process."

Last year, working with The Nature Conservancy under a cooperative agreement funded by the U.S. Army Corps of Engineers, the team of researchers used the eDNA technique to discover just how close highly invasive bighead and silver carp were getting to Lake Michigan.

"Critics have questioned whether our research can be trusted, but now that our work has been thoroughly reviewed and published in a scientific journal, hopefully the debate can shift from questioning the science to focusing on policy and management solutions," said Lindsay Chadderton, The Nature Conservancy's Director for Aquatic Invasive Species, and a co-author of the paper.

In particular, the scientists were trying to discover if the two species of Asian carp (bighead and silver) had made it past a pair of underwater

electronic barriers designed to keep exotic [invasive species](#) from moving between the Great Lakes and [Mississippi River](#) watersheds. The team of researchers, which included scientists from The Nature Conservancy and Notre Dame, soon discovered [genetic material](#) from Asian carp in several sections of the Chicago-area waterway system. Many of the detection points suggested that Asian carp were much closer to Lake Michigan than authorities had previously believed. Some carp eDNA was found in Calumet Harbor, a near-shore area of Lake Michigan itself, many miles beyond the electronic underwater barrier.

The announcement led to significant media attention and numerous public policy responses, including a multi-agency government effort in December of 2009 to apply rotenone, a common pesticide used to eradicate fish populations, to some sections of the Chicago-area waterway. In June 2010, when a live bighead carp was found in Chicago's Lake Calumet, concerns about [Asian carp](#) grew higher. Some observers and industry interest groups questioned the validity of eDNA and noted that the research had not been published by a peer-reviewed journal. The criticisms came despite the fact that the research had been examined thoroughly by a special U.S. Environmental Protection Agency peer-review published in February 2010.

"Getting our research published not only helps rebut those criticisms, but it also provides evidence that eDNA is more sensitive than traditional methods," said Christopher Jerde, the paper's lead author. "This is a big new breakthrough in species monitoring and control."

The paper, titled "'Sight-unseen' Detection of Rare Aquatic Species Using Environmental DNA," describes in full for the first time the depth and breadth of the eDNA process used by the Notre Dame and Nature Conservancy team.

Provided by University of Notre Dame

Citation: Study validates Asian carp research (2011, January 5) retrieved 18 April 2024 from <https://phys.org/news/2011-01-validates-asian-carp.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.