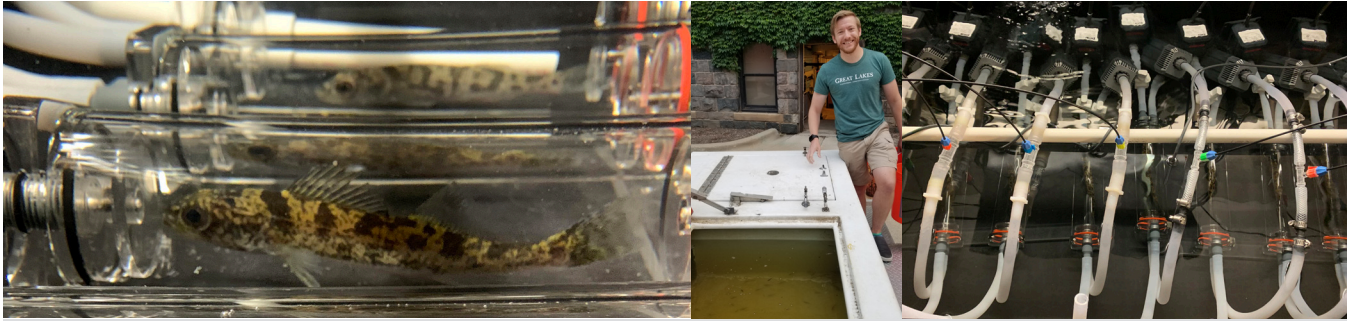


Variation among walleye populations may affect how they respond to climate change



CORE QUESTION:

How does variation among individuals and populations of walleye and other fish species affect how they are responding to climate change?

A POPULAR FISH

Walleye have long been stocked in Michigan's inland lakes, but juvenile survival rates and adult population sizes are declining, which has been, in part, attributed to changing temperatures. However, some populations may be more resilient than others because of differences in their storage and use of energy. In Michigan, walleye are both an important predator and a driving factor for attracting anglers with 47% of licensed anglers targeting the species. Understanding what drives the differences in walleye's vulnerability to climate change will improve the ability of agencies to manage and conserve not only walleye populations, but other species of fish as well.

ADAPTING TO CHANGES

Scott Jackson, a PhD candidate in Karen Alof's lab at the University of Michigan, will work with the Michigan DNR to test the impacts of increasing temperatures on walleye from two populations that serve as the broodstock source for all stocked walleye in Michigan. Young-of-the-year fish from both populations will be raised in rearing ponds around the state, then tested in a variety of ways to learn how their metabolic rate, gene expression, and body composition differ when exposed to increased temperatures. This information will help the Michigan DNR better understand differences in walleye stocking success and its causes, so that they can make

any necessary changes to rearing and stocking strategies to maintain and improve Michigan's walleye populations.

This fellowship will allow Jackson to work directly with Michigan DNR scientists on a project with clear value to Michigan's fishery. After completing graduate school, Jackson hopes to work with agencies on similar projects with applied management implications.

This project will help the MDNR and other natural resource managers determine whether changing their management approaches will better protect fish populations to adjust for changing warming water temperatures. Results from this project will not only benefit walleye stocking and management by the MDNR but will also provide a foundation for assessing the vulnerability of other fish species to climate change.

CONTACT

GRADUATE STUDENT FELLOW

Scott Jackson

PhD candidate

School for Environment and Sustainability,
University of Michigan

sajacks@umich.edu

michiganseagrant.org/research



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