

Understanding panfish trends and responses to angling and predator populations in Wisconsin lakes

This study assesses trends in Wisconsin's panfish populations and their responses to angler exploitation and predator management to quantify their impacts on panfish abundance and size structure.

TIMELINE

Launch: July, 2019

Completion: June, 2022

FUNDING

Federal Aid in Sportfish
Restoration

DNR PARTNER BUREAU

Fisheries Management

EXTERNAL STAKEHOLDERS

Great Lakes Indian Fish and
Wildlife Commission
USGS

Panfish are some of Wisconsin's most abundant and popular sport fish. Bluegill, pumpkinseed, black crappie and yellow perch comprised 75% of the total fish harvested from Wisconsin lakes in the past decade.

Currently, panfish management is complicated by unexplored relationships between population characteristics (abundance, size structure), anglers, predators and environmental influences. This project seeks to disentangle these issues by comprehensively characterizing panfish populations, their responses to panfish and gamefish management, and angler exploitation.

We will use a combination of standardized survey data and angler creel data to examine trends in population abundances, catch rates, and harvest rates, and test for relationships with angler behavior or predator abundance and management practices. Our results will be used to offer suggestions to address management issues. Additionally, this study will expand upon an experimental regulations project currently underway to understand how exploitation affects panfish populations, helping managers to implement appropriate regulations to promote fishery quality and sustainability into the future.



Key Points

- » Significant knowledge gaps exist in our understanding of how panfish populations respond to regulation changes, panfish removals or promotion of predators. This project aims to fill in those gaps using population surveys, angler creels, and experimental field studies.
- » We expect that population trends will vary among panfish species (e.g., bluegill and black crappie populations will be stable, while yellow perch populations decline).
- » We hypothesize that panfish anglers will maintain catch and harvest rates across large gradients in panfish abundance (i.e., will be hyperstable), and that anglers will be selective for larger panfish when fishing lakes with smaller bag limits.
- » This project will also analyze environmental variables like water temperature, lake size, and water clarity on yellow perch recruitment, offering predictions for their future sustainability.
- » We predict that predator management (e.g., walleye stocking, largemouth bass regulations) will be related to panfish size structure and abundance under some conditions and will evaluate how predator management could be effectively used to promote robust and resilient panfish populations.

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