

# GRADUATE EXIT SEMINAR

**MACKENZIE MILLER**

## The Future is Female: Increasing efficiency of Yellow perch aquaculture through production of all-female stocks

Production challenges of Yellow perch aquaculture in the Great Lakes region have limited further expansion of this species over the last 20 years. A significant challenge to perch production is slower growth rate, shorter lifespan, and earlier sexual maturation of male perch compared to females, leading to higher production costs and longer time to marketable size. Production of all-female Yellow perch stocks would alleviate these issues, as all-female perch would reach market size faster than traditional mixed sex stocks, decreasing associated costs and increasing profits. The aim of this work was to increase production efficiency of Yellow perch aquaculture through development of techniques to produce all-female stocks that can be directly implemented by industry. This work focuses on use of polyploidy and gynogenesis, and evaluates effects of high temperature exposure on sex differentiation (masculinization). In addition, I evaluate performance of monosex and mixed sex progenies to further define advantages of monosex culture and optimized simple sperm cryopreservation techniques for this species. This collection of studies provides an integrated, comprehensive approach to production of all-female Yellow perch stocks and provides novel information to industry, opening new avenues for increasing production in Ohio and beyond.



Advisor: Dr. Konrad Dabrowski

**FRIDAY, NOVEMBER 20, 2020, 9:00 A.M.**

Join the seminar via Zoom:

<https://osu.zoom.us/j/92521135899?pwd=WlcvOHREOFZlaziMTTJ0RVFERGE3UT09>**senr.osu.edu****THE OHIO STATE UNIVERSITY**COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES*— We Sustain Life —*

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit [cfaesdiversity.osu.edu](http://cfaesdiversity.osu.edu). For an accessible format of this publication, visit [cfaes.osu.edu/accessibility](http://cfaes.osu.edu/accessibility).