



SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES

GRADUATE EXIT SEMINAR

RYAN WAGNER

Tale of Two Mudpuppy Populations: Impacts of TFM on Ohio's Second Largest Salamander



Bycatch is one of the leading threats facing aquatic organisms, worldwide. Pesticide bycatch can occur when nontarget species are incidentally killed during chemical application targeting noxious species. The common mudpuppy (*Necturus maculosus*) is a declining, river-dwelling salamander that is susceptible to bycatch from 3-trifluoromethyl-4-nitrophenol or TFM applications. TFM is used to control the invasive sea lamprey (*Petromyzon marinus*) and is responsible for large scale die-offs of common mudpuppies in the Great Lakes region, but the long-term consequences of these die-offs are not well understood. Matson (1990) found a 29% decline in the mudpuppy population in Ohio's Grand River following a TFM application and predicted that the population could decline by 75% if subjected to four applications in twelve to twenty years. We returned to Matson (1990)'s study site in the Grand River, Ohio to conduct a capture-mark-recapture study to estimate current mudpuppy population size, survival, growth rates, and population demographics in 2021 and 2022. To compare results with a mudpuppy population unexposed to TFM, we conducted a mark-recapture study in Alum Creek, Ohio from 2020 to 2023. We used Population Viability Analysis to reveal potential impacts of TFM application on the Grand River population under plausible bycatch scenarios.

Advisor: Dr. Bill Peterman

Thursday, April 13, 2023
10:00 A.M.

Location: Kottman Hall 333

Join the seminar via Zoom:

<https://osu.zoom.us/j/97459759481?pwd=eUpYV3dVTElIS2dFK3dsSkVONGgxQT09>

Meeting ID: 974 5975 9481

Password: 235521

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