The development of stormwater infrastructure causes an increase in available aquatic habitat for mosquito breeding and larval development, posing drastic human health consequences. It has been observed that a diverse community of predators have been found to decrease mosquito abundance\(^1\). Multiple species coexisting with mosquitoes was found to decrease the percentage of mosquitoes in wet water communities, strongly highlighting the role that zooplankton play in the assembly of aquatic communities\(^2\). Studying stormwater communities will help determine the main contributors to why mosquitoes oviposit in certain urban stormwater ponds.

**Background**

**Hypotheses**

- If zooplankton compete and prey on larval mosquitoes, then we predict that an increase in zooplankton abundance will result in a decrease of larval mosquito abundance.
- If chlorophyll a, a proxy for measuring algal biomass, determines the amount of available resources for larval mosquitoes, then we predict that chlorophyll a concentrations will be positively correlated with mosquito abundance.
- If retention ponds are designed to hold rainwater runoffs permanently, then we predict that it will have higher concentrations of chlorophyll a.

**Results**

**Methods**

Stormwater ponds were categorized as either detention ponds, retention ponds, or drainage ditches in the Champaign-Urbana area. Zooplankton and insects were collected, preserved in 95% EtOH, and later counted and identified. Measurements of Chlorophyll a (Chl a) was taken for each pond.

**Discussion**

- Potentially decreasing the abundance of mosquito further decreasing the spread of disease
- Ecological cost of decreasing mosquito abundance
- Pesticides vs. zooplankton
- Understanding aquatic community assembly

**Future Directions**

- In the future, this project will continue to sample ponds for zooplankton abundance and insect communities. Chlorophyll a abundance will continue to be measured.
- There will be a focus on land use (roads, agriculture, residential) surrounding stormwater ponds and their effects on community assembly.
- Experimental mesocosms will be set up to test the effects of nutrients on the assembly dynamics of zooplankton and mosquito communities.

**Acknowledgments**

Special thanks to Dr. Carla Cáceres, Christopher Holmes, Sana Khadri, Lynette Strickland, Cáceres Lab, SROP, grants from the Department of Animal Biology, and (Odum-Kendeigh and Banks Memorial) awarded to CJH.

**References**


