

## **IRON: A LIMITING NUTRIENT FOR BENTHIC MACROALGAE IN FLORIDA SPRINGS?**

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Elevated nitrate concentrations have often been attributed to the proliferation of benthic macroalgae within Florida's spring-fed rivers. However, this paradigm does not always reflect the apparent biogeochemistry of these systems. More recent studies have indicated that other factors, including micronutrients such as iron, may play a more critical role in the benthic macroalgal coverage than previously thought. This study investigated whether there was a correlation between benthic macroalgae and iron concentrations in Rainbow River (Marion County, FL, USA) to determine if iron was a potential driver of benthic macroalgal coverage. Both porewater and water column iron concentrations were used to determine potential impacts to benthic macroalgal coverage and thickness. Porewater typically had higher concentrations of iron compared to the water column, likely due to the presence of clay sediments. A correlation between porewater iron concentrations and macroalgal coverage was confirmed through statistical analyses. Since algal demand for iron is an order of magnitude greater than vascular plants, iron availability may allow for the proliferation of benthic macroalgae. Understanding the effects of iron on benthic macroalgae will be useful in understanding the submerged aquatic vegetation dynamics in Florida's spring systems.

PRESENTER BIO: Dr. Madison Trowbridge is the Springs Scientist and the Springs Team Lead for the Southwest Florida Water Management District. She holds a Ph.D. in Cell and Molecular Biology from the University of South Florida and her doctoral research focused on groundwater microbial ecology.