

RESPONSES OF MICROBIAL COMMUNITIES TO HEAVY METAL CONTAMINATIONS IN LAKE TALQUIN

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Contamination of community water with heavy metals is a major public health issue because the high concentration of these contaminants is detrimental to the aquatic ecosystem, humans, and livestock whose livelihood depends on a continuous supply of quality water. Mercury (Hg) contamination has been the primary pollutant in Lake Talquin, and the 2021 advisory recommendation by the Florida Department of Health limits the number of fish consumed from the lake. To provide a comprehensive assessment of Hg and other heavy contaminants in the lake, we investigated how season and habitat section, and conditions influence heavy metal concentrations and how microbial communities respond to these factors. Our current results showed higher and significant differences in the pH ($P < 0.0001$), total Kjeldahl nitrogen (TKN) ($P < 0.0001$), and ammonium hydroxide (NH₄) ($P < 0.0001$) between the upper and lower sections of the lake. Likewise, concentrations of Al ($P < 0.0001$), Mg ($P < 0.0001$), and Fe ($P < 0.001$) are significantly different. Interestingly, Hg concentration differed significantly in Bluegill and largemouth bass tissues ($P < 0.005$). Our study confirms the presence of heavy metal contaminants, particularly Hg, in Lake Talquin. Information about how the contaminants influence the microbiota will be presented.

PRESENTER BIO: Jade Chery is a graduate student in the Department of Biology. She finished her undergraduate degree in Biology from FSU in 2019. She is currently working on her master's degree under Drs. Latinwo and Betiku. Jade is planning to pursue a medical degree after graduation.