DRIVERS OF PROTISTAN DIVERSITY IN THE OLIGOTROPHIC LAKE TOHOPEKALIGA

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Lake Tohopekaliga is an oligotrophic shallow lake within the Upper Kissimmee River Basin in central Florida, which is dominated by aquatic macrophytes such as Hydrilla (*Hydrilla verticillata*) and some locations by water hyacinth (*Eichornia crassipes*). Therefore, mechanical and chemical control of these aquatic weeds is prevalent in the lake. Water samples were taken from pre-determined plots in Lake Tohopekaliga that were either treated by application of aquatic herbicide or via mechanical harvesting. Sampling occurred 1-2 weeks before the mechanical harvest or chemical spray, in addition to monthly or bimonthly sampling. The protistan community was highly diverse with a few dominant classes including Bioeceae, Chlorophyceae, Cryptophyceae, Oligohymenophorea, and Spirotricheae. These classes are comprised of both heterotrophic and photosynthetic protists which indicates a balanced community structure among heterotrophs and autotrophs along space and time. A principal coordinate analysis (PCoA) indicated that diversity of protists was driven by 8 environmental factors. Some of these factors are dependent on seasonality such as photic depth, water temperature, and turbidity. Others, such as concentration of aluminum (Al), sodium (Na), chlorophyll a, conductivity, and phycocyanin, are driven by both biotic and abiotic factors. A redundancy analysis (RDA) showed clustering along dates, which indicates that protistan community structure are largely similar along a temporal scale instead of a spatial scale. This indicates that protistan community structure is driven by seasonality instead of locality and that different treatment methods do not significantly affect potistan community structure.

PRESENTER BIO: Max Barbosa is a third year PhD student with extensive experience in algal biology and ecology. His work encompasses tropical and subtropical lake ecology in with a concentration on environmental drivers of cyanobacterial and protistan diversity.