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STATEMENT OF PURPOSE:

Harmful Algal Blooms, HAB, are an unpredictable global ubiquitous nuisance and present a significant public and ecological health risk. HAB are large accumulations of micro-organism called cyanobacteria which have the potential to produce toxins that are harmful to humans and wildlife. Because of HAB transient nature, prediction tools must incorporate holistic monitoring, in order to, capture complex HAB dynamics in relation to environmental drivers. The goal of this project is to demonstrate how lake parameters work together to drive cyanobacteria temporal and spatial distributions in a hyper-eutrophic lake by incorporating high frequency seasonal monitoring of diverse parameters; including: meteorological, physical, chemical and biological. These data sets work together to tell a story of the evolution of HAB, both temporarily and spatially, in the context of lake dynamics to inform predictions strategies to mitigate the risk of contamination of toxic HAB to public and ecosystem health. Through the presentation we can observe the development of this accumulation of HAB synchronized with meteorological and temperature conditions. Also highlighted in this presentation is how remote sensing observations via true color satellite images can detect horizontal transport of HAB accumulated at the research station and how HAB vertical stratification effects remote sensing detection capabilities.

DESCRIPTION OF DATA SETS:

The data sets used in this project are sourced from a research station developed and managed by the University of Minnesota St Anthony Falls Laboratory funded by the Legislative-Citizen Commission on Minnesota Resources.