

11TH U.S. SYMPOSIUM ON HARMFUL ALGAE

GREAT LAKES CLADOPHORA COMMUNITY ASSESSMENT

Benthic algae, often but not always dominated by the green algae *Cladophora*, can bloom to nuisance and harmful levels in multiple parts of the Great Lakes nearshore. This overgrowth and accompanying shoreline fouling with bacterial growth has been historically associated with elevated nutrient loading but is now reported even in low nutrient areas. *Cladophora* overgrowth has previously been successfully managed through phosphorus reductions. However, ecosystem engineering by invasive dreissenid mussels has increased both phosphorus and light availability, casting doubt on the potential for effective management through phosphorus reductions. Our project is assessing *Cladophora* community abundance, growth, and the drivers of that growth using a sentinel site approach with two transects in each of the lower four Great Lakes (Michigan, Huron, Erie, and Ontario). Scuba diver observations and benthic samples are combined with water column measurements and deployed instrument time-series to quantify benthic algal abundance, species composition, and multiple potential growth limiting factors including nutrients, light, and dreissenid abundance. Preliminary results show the strongest associations of *Cladophora* community biomass with light and water column transparency variables, compared to nutrient or dreissenid associated variables, across the range of sites.

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