

2019 Cooperative Summer Field Training Program

Project Title: Great Lakes' Cladophora growth study

Project Scientists: Mary Anne Evans

USGS Center: Great Lakes Science Center

Location: Ann Arbor, MI

Project Description:

Background Information:

Excessive growth of Cladophora in the Great Lakes has led to binational interest in determining the factors that limit this nuisance alga. Considerable work has been conducted to evaluate the impact of phosphorus loading, including advanced models for algal growth. However, significant questions remain about the level of phosphorus needed to reduce Cladophora to acceptable levels and even if Cladophora can be effectively managed by phosphorus reduction in certain environments. To provide observational data for validating and expanding existing models and to test the feasibility of phosphorus-based Cladophora management, we are conducting comprehensive data collection in Lakes Michigan, Erie, Ontario, and Huron.

Objectives:

1. Produce consistent high-quality data on Cladophora growth-related physical, chemical, and biological factors for use in Cladophora modeling.
2. Assess if Cladophora can be effectively managed by phosphorus reduction and if this differs among locations

Intern Tasks:

Study algal dynamics in the Great Lakes! Intern will conduct field studies and lab analysis of water quality, benthic Cladophora, and dreissenid mussels including boat surveys, sample collection and processing, and data management and analysis; with the potential to participate in writing and presenting results. Position will require frequent travel (4-7 day duration potentially multiple times per month) throughout the Great Lakes' basin.

Expected Outcomes:

Intern will gain real life experience with aquatic ecology field and lab methods including deployment and retrieval of moored instrument packages, deployment of electronic instruments from a boat, water sampling and sample processing, boat operation, supporting SCUBA science divers, making and recording field observations, etc.). Intern will gain experience in study design and field-based decision making when

weather or other conditions require plan changes. Intern will gain experience in data handling, quality assurance, and analysis. Intern will be strongly encouraged to network with other scientists at the Great Lakes Science Center and will have the opportunity to participate in field or lab work with other research teams. Intern will have the opportunity to present study results in lab and center settings and will be mentored in making scientific presentations.

Details for Matching:

Type of Project: Field Work, Lab Work

Project Discipline: Ecology, Surface Water

Project Start Date: Mon May 06 2019 00:00:00 GMT-0400 (EDT)

Project Duration: 3 months, can be extended

Level of Physical Demand: Level 8-2: The work requires some physical exertion such as long periods of standing, walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; or recurring lifting of moderately heavy items. The work may require specific, but common, physical characteristics and abilities such as above-average agility and dexterity.

GIS Training: ESA

Special Skills and Interests: Interest and experience in aquatic ecology or limnology, boat experience preferred but not required, ability to follow detailed lab protocols, ability to work as part of a team and contribute positively to team culture.