



Great Lakes Protection Fund

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Funded Project

Early Detection of Ship-Mediated Invasive Species through eDNA Detection

Project No.	1197
Timeline	2018 – Active
Award Amount	\$178,000
Team Leader	Pennsylvania State University

This is a project design grant that will reduce the spread of aquatic invasive species (AIS). Spread of AIS is often well underway, and practically impossible to contain, by the time the Great Lakes region becomes aware of it. One promising, underutilized AIS management tool is environmental DNA, or eDNA. EDNA is the identification of an organism by finding its genetic material in the environment without any obvious signs of the organism being present.

What does it mean when a signal is detected? Currently the presence of eDNA may or may not signal the presence of live organisms, in real time or in the past, depending on how long that eDNA persists in the environment. For eDNA to have relevance as a management tool, an understanding of how recently a specimen may have been alive is critical.

In this project design grant, the team will: 1) build a regional network of advisors and customers that will work together to advance the use of eDNA as a Great Lakes AIS prevention and management tool; 2) develop a scientific method for determining eDNA extinction rates for Great Lakes relevant AIS; 3) conduct a set of experiments determining the rates of eDNA extinction for at least one and up to three Great Lakes–relevant invertebrate AIS; and 4) develop a Go-Forward plan and a proposal for a larger implementation project.