

## 2022 COOPERATIVE SUMMER FELLOWSHIP PROGRAM – PROJECT PROPOSAL

APPLICANT TYPE: ESA;

PROJECT TITLE: DEPLOY AND EVALUATE INNOVATIVE SEA LAMPREY CONTROL TOOLS

Nicholas S. Johnson,

Discipline: Ecology;Field Mapping;Surface Water;

### PROJECT DESCRIPTION

#### BACKGROUND

Invasive sea lamprey populations in the Laurentian Great Lakes have been reduced by up to 90% through the use of selective pesticides (lampricides) and physical sea lamprey barriers that block spawning migrations. Nevertheless, other control methods are needed to achieve integrated pest management objectives, delay biological resistance, and address societal pressure to reduce pesticide use and restore lotic connectivity through dam removals. We developed an adaptive management implementation framework (see publication at <https://www.sciencedirect.com/science/article/pii/S0380133021002094>) and applied it to deploying and evaluating innovative supplemental sea lamprey controls. Therefore, our overall objective is to determine how effects of supplementing lampricide treatments with control tools that reduce sea lamprey reproduction vary among streams and why.

#### INTERN TASKS

- (1) Assist in the deployment of new and emerging supplemental sea lamprey controls including new traps, electrical barriers, and pheromones.
- (2) Assist in the assessment of supplemental sea lamprey controls including trapping adult sea lamprey, electrofishing for larval sea lamprey, and stream habitat sampling.
- (3) Produce written summaries of data and methods used to collect data.

#### BENEFITS TO INTERN

- (1) The intern will work with a multi-agency team consisting of NGOs (Huron Pines), USGS, U.S. Fish and Wildlife Service, State of Michigan, and Fisheries and Oceans Canada.
- (2) The intern will master field skills in fishery science such as trapping, electrofishing, GIS systems, and habitat sampling.
- (3) The intern will take a leadership role in collecting, summarizing, and reporting data.

#### MENTORING PLAN

I will see the intern daily and work directly with the intern in the field and when preparing reports. I will apply skills mastered in USGS Leadership 101.

## ADDITIONAL DETAILS

### STUDENT SKILLS AND INTERESTS

Interest in learning new skills. Willingness to get dirty. Excited to explore remote wilderness streams in northern Michigan. Interest in writing and summarizing biological data.

LOCATION: Millersburg, Michigan

### ACTIVITY LEVEL:

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.

FIELD WORK	50-75%	VIRTUAL?	No
LAB WORK	0-25%		
OFFICE WORK	0-25%		
OTHER	0-25%		

PROJECTED START DATE	5/9/2022
EXPECTED DURATION	16 weeks