U.S. Fish & Wildlife Service

Lower Great Lakes Fish and Wildlife Conservation Office, Aquatic Invasive Species Program

Early Detection and Monitoring Program Implementation Plan, 2022

Aquatic invasive species pose a serious threat to the Great Lakes. That threat has prompted natural resource agencies to examine risks posed by priority species and pathways of introduction. Prevention, early detection, and rapid response provide the most effective and potentially successful means to minimize harm to the environment and costs associated with stopping the spread. The U.S. Fish and Wildlife Service (USFWS) developed the proposed Strategic Framework for the Early Detection of Non-native Fishes and Select Benthic Macroinvertebrates in the Great Lakes identifying early detection as a priority action. The Framework defines how the USFWS will carry out early detection efforts in priority locations selected because of their increased likelihood for invasion.

This report outlines implementation of the field elements of the Framework in Lake Erie and Lake Ontario during FY2022. The work will be carried out by the USFWS' Lower Great Lakes Fish and Wildlife Conservation Office (LGLFWCO).

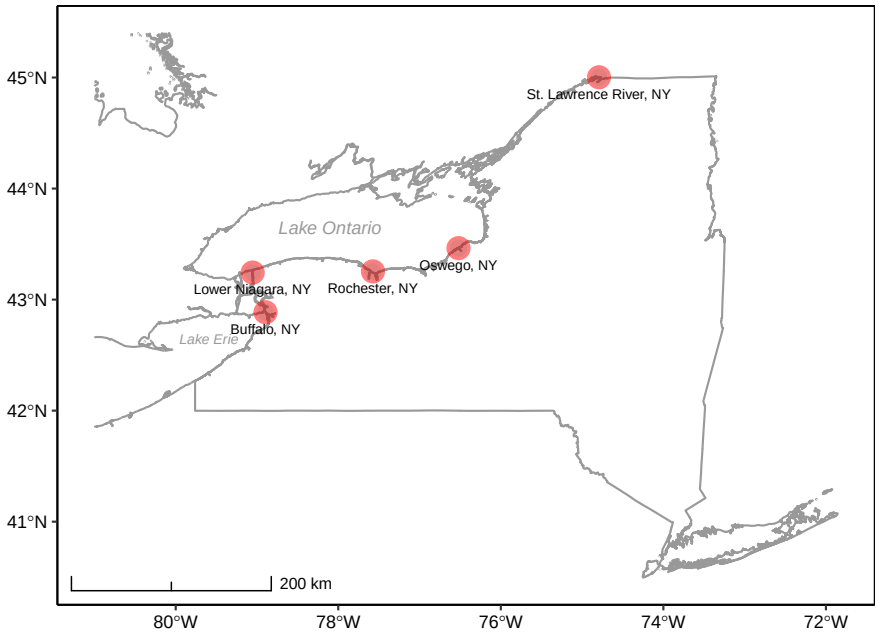

Figure 1: Locations for Juvenile/Adult, Metabarcoding, and Invertebrate sampling for the 2022 field season.

The objective of the Framework is early detection; therefore, sampling strategies are designed to detect rare or low abundance species. Generally, sampling for rare species involves collecting the entire suite of species known to inhabit a location using a variety of gear types that sample multiple habitats and depth strata. The objective of this implementation plan is to execute a multi-gear sampling strategy that maximizes the

potential for detecting a newly introduced fish and benthic macroinvertebrate species in a complex aquatic system while it is still rare and geographically restricted.

During the 2022 field season, the following locations will be sampled (Figure 1): Buffalo, NY; Lewiston, NY (Lower Niagara River), Rochester, NY (Genesee River and Irondequoit Bay), Oswego, NY, and Messina, NY (St. Lawrence River).

Gear selection will be in accordance with habitat and depth alternatives at each site. Gear types for juvenile and adult fish are: boat electrofishing, fyke nets, mini-fyke nets, juvenile seines, gill nets, and bottom trawls. Gear specifically targeting ichthyoplankton is limited to metabarcoding. The following gear types will be utilized for benthic macroinvertebrate sampling specifically targeting crayfish, amphipods, gastropods, and bivalves: rock bags, Hester-Dendys, petite ponars, crayfish seines, crayfish traps, and sweep nets. All gear will be used in accordance with the Recommended Sampling Gear Types and Standard Operating Procedures for the Early Detection of Non-native Fishes and Select Benthic Macroinvertebrates in the Great Lakes.

The total proposed units of effort for juvenile/adult fish, metabarcoding, and benthic invertebrate sampling by each survey location can be found in Table 1.

Questions related to the implementation plan can be directed to Zy Biesinger, Aquatic Invasive Species Program Lead, Lower Great Lakes Fish and Wildlife Conservation Office, Phone: 585-948-7046, Email: zy_biesinger@fws.gov

Table 1: Amount of effort proposed for each location for Juvenile/Adult fish, Metabarcoding, and Benthic Invertebrates.

	Fish Surveys			
Locations	Juvenile/Adult	Metabarcoding	Invertebrates*	Totals
Buffalo, NY	51	0	30	81
Lower Niagara, NY	29	0	30	59
Rochester, NY	51	0	30	81
Oswego, NY	50	30	15	95
St. Lawrence River, NY	53	0	0	53
Total	234	30	105	369

* Invertebrate sampling includes crayfish and expanded marina sampling.