**Early Detection and Monitoring of Non-Native Fishes and Benthic Macroinvertebrates in Lake Erie, 2022**

Below is a summary of the USFWS-Alpena Fish and Wildlife Conservation Office’s Aquatic Invasive Species Program report titled *Early Detection and Monitoring of Non-Native Fishes and Benthic Macroinvertebrates in Lake Erie, 2022*.

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Summary:

The Laurentian Great Lakes have encountered numerous aquatic non-native and invasive species introductions since Europeans settled in North America (Mills et al. 1994). The impact of aquatic invasive species (AIS) on the Great Lakes has been widely documented by the scientific community (Leung et al. 2002, Mills et al. 1994, Rosaen et al. 2012). Despite increasing regulations aimed at reducing the likelihood of the introduction and spread of AIS into the Great Lakes, there remains a need to monitor for and detect new species before they become established. This is especially true given the costs and difficulty of attempting to control or eradicate a non-native species once it is established (Trebitz et al. 2009). If a non-native species is detected prior to becoming well established, rapid response decisions can be made to eradicate or control the species from further spread.

This report summarizes the 2022 efforts for early detection of non-native juvenile and adult fishes and benthic macroinvertebrates in Lake Erie as implemented by the U. S. Fish and Wildlife Service (USFWS) Alpena Fish and Wildlife Conservation Office (FWCO) Early Detection and Monitoring (EDM) Program. The Alpena FWCO selected 15 locations across Lake Erie to sample for new non-native species due to the high likelihood of introduction in these areas (Tucker et al. 2020). Gear used to target juvenile and adult fish included bottom trawls, electrofishing, gill nets, minnow traps, and fyke nets. Gear used to target benthic macroinvertebrates included sweep nets and rock bags.

In 2022, surveillance crews captured a total of 136,723 fish representing 90 different species in Lake Erie. The Alpena FWCO captured 79%, 75%, 67%, and 63% of contemporary (established) species in Lake Erie, the Huron-Erie Corridor, Western Basin, and Central Basin respectively, which fall under Alpena FWCO jurisdiction. In 2022, the Alpena FWCO captured 79%, 75%, 67%, and 63% of rare fish species previously captured in Lake Erie, Huron-Erie Corridor, Western Basin, and Central Basin, respectively, exceeding the goal of 50% of rare species captured for the whole lake and each basin.

The Alpena FWCO EDM program screened a total of 11,811 macroinvertebrates captured in 112 samples. There were no target high-risk non-native macroinvertebrates identified.

The threat of invasion from new non-native species remains high. **While the Alpena FWCO did not catch any new non-native species in 2022, 15 fish species new to the EDM program were detected.** This demonstrates the program’s capacity to improve efficiency and increase confidence in the ability to successfully detect and monitor Lake Erie for new AIS.

References:

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Trebitz, A. S., J. R. Kelly, J. C. Hoffman, G. S. Peterson, and C. W. West. 2009. Exploiting habitat and gear patterns for efficient detection of rare and non-native benthos and fish in Great Lakes coastal ecosystems. Aquatic Invasions 4:651–667.