**Early Detection and Monitoring of Non-Native Fishes in Lake Erie, 2018**

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 in Lake Erie, 2018.*

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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 in an effort to eradicate or control the species from further spread. Furthermore, continuous monitoring also allows resource managers to document the baseline community, look at historical data, and assess the impact of future invasions (Trebitz et al. 2009).

This report summarizes the 2018 efforts for early detection of non-native fishes in Lake Erie as implemented by the U.S. Fish and Wildlife Service (USFWS), Alpena Fish and Wildlife Conservation Office and the Lower Great Lakes Fish and Wildlife Conservation Office. Multiple sampling locations in Lake Erie were selected due to their high likelihood of new non-native species introductions as suggested by a risk based vector analysis completed as part of a regional surveillance plan for the U.S. waters of the Laurentian Great Lakes (Chadderton et al. 2016). Lake Erie sampling locations included Buffalo/upper Niagara (NY), Presque Isle Bay (PA), Cleveland Harbor (OH), Sandusky Bay (OH), Maumee Bay (OH/MI), Detroit River (MI), and Lake St. Clair (MI). Sample sites were both randomly selected and also chosen by biologists while in the field (USFWS 2017). Gear used to target juvenile and adult fish at the locations sampled included day/night electrofishing, gill nets, juvenile seine, minnow traps, bottom trawling, and fyke nets.

During adult/juvenile fish monitoring efforts conducted in 2018, surveillance crews captured a total of 4,245 fish representing 51 species in Buffalo/upper Niagara, a total of 17,057 fish representing 38 species in Presque Isle Bay, a total of 2,394 fish representing 29 species in Cleveland Harbor, a total of 15,876 fish representing 40 species in Maumee Bay, a total of 5,416 fish representing 38 species in Sandusky Bay, a total of 4,712 fish representing 43 species in the Detroit River, and a total of 9,190 fish representing 21 species in Lake St. Clair. Previously established invasive species were captured often during sampling (e.g., Alewife *Alosa pseudoharengus*, Common Carp *Cyprinus carpio*, Goldfish *Carassius auratus*, Rainbow Smelt *Osmerus mordax*, Round Goby *Neogobius melanostomus*, and White Perch *Morone americana*).

In 2018, no new non-native species were detected in the Lake Erie sampling locations. However, the threat of invasion remains high, such as the observed range expansion of Asian Carp *Hypophthalmichthys Spp.* in the Chicago Area Waterway System. This reinforces the critical nature of an annual early detection and monitoring program as an essential part of non-native and invasive species management for Lake Erie.

References:

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