**Mapping the Spread Teacher Key: Eurasian Ruffe**

Directions: Choose an invasive species in your region and research how and where it was introduced into North America and the Great Lakes basin. Use a map to follow the path of how it spread throughout the Great Lakes region.

1. What is the species? (Include both common name and *scientific name*.)

Eurasian ruffe*; Gymnocephalus cernua*

1. Where is the species’ native range?

Found in temperate regions of Europe and northern Asia

1. Why is the species a problem in the Great Lakes region?

The Eurasian ruffe eats eggs of other fish species and competes for food resources with native fish. It can survive in a wide range of environments and has a high reproductive rate.

1. How does the species expand its range (move to new locations)?

The Eurasian ruffe moves to new locations through ballast water, live wells in boats, and connecting water bodies.

1. If not originally from North America, where was the species introduced into North America? **(Mark this location on the map)**

St. Louis River in 1986

1. How was the species first introduced in the Great Lakes region?

Ballast water from the shipping industry

1. Where was the species first documented in the Great Lakes Region? **(Mark this location on the map)**

Western Lake Superior in 1986

1. Where was the species first documented in Michigan? **(Mark this location on the map)**

Lake Superior, 1986

1. List all the other places in Michigan this invasive species has spread in-order of year it was found. **(Mark these locations on the map.)** (<https://theeurasianruffe.weebly.com/problems.html>)

Some answers are below:

* Ontonagon, 1994
* Alpena, Lake Huron, 1995
* Delta, Lake Michigan, 2002
* Houghton Keweenaw, 2002
* Marquette Harbor, 2004
* Luce, Betsy-Chocolay, 2006
* Cheboygan, 2011
* Chippewa, Waiska, 2015
* St. Marys River 2019
* Tahquamenon River, 2022

1. What patterns did you notice in the spread of this invasive species?

From its first sighting in Western Lake Superior (1986), it was identified in Lake Huron (1995) and Lake Michigan (2002) before being noticed in a number of other areas along the Southern Lake Superior shoreline (such as Marquette, Luce, and Chippewa Counties).

1. What might be the cause of the patterns you noticed?

It’s possible that boaters transported the fish to Lake Huron and Lake Michigan when they moved their boat by trailer to other southern locations. It is also possible that no one was looking for Eurasian ruffe along the southern shore of Lake Superior so they didn’t notice them earlier. If people aren’t aware that there is a species of concern to watch out for, they may not notice it.

1. What could have stopped or slowed the spread of this invasive species?

Better shipping/ ballast water regulations and people cleaning their boats (draining their live wells\*) prior to moving them to a new location maybe would have stopped (or slowed) the Eurasion ruffe from moving very far from their original location. \*A reminder to never dump bait in the water; dispose of it in the trash.



