



## QUAGGA MUSSELS

### What are quagga mussels?

The quagga mussel is a close relative of the zebra mussel. They are considered an aquatic invasive species first discovered in the Great Lakes region in September of 1989. However, the distinction of the quagga mussel as a separate species did not happen until 1991. Like zebra mussels, quagga mussels were most likely introduced into the Great Lakes region from ballast water discharge of transoceanic ships.

### What do quagga mussels look like?

Quagga mussels are similar in size to zebra mussels; the shells of quagga mussels are also rounder and without ridges. They have dark concentric rings on the shell and are pale in color near the hinge. In the Great Lakes, quagga mussels are commonly found in waters more than 90 feet deep, while zebra mussels are usually found at depths of 50 feet or shallower.

### Why are quagga mussels a problem?

Quagga mussels appear to tolerate a wider range of extremes in temperature and water depth than the zebra mussel and spawn at colder temperatures. Quagga mussels are extraordinary water filterers, able to remove large amounts of phytoplankton and suspended particulates from lakes and streams. This ability decreases food sources for zooplankton and bottom-dwelling organisms such as *Diporeia*—thereby altering the delicate balance of the aquatic food web.

Additionally, quagga mussels accumulate contaminants within their tissues. This, in turn, increases wildlife exposure to contaminants. Quagga mussels clog water structures such as pipes and screens, which reduces pumping capabilities for water treatment and power plants—creating huge problems for industries and communities burdened with removal and clean-up costs. Recreational activities and industries are also negatively impacted by quagga mussels when docks, buoys, boats, beaches, and breakwalls are heavily colonized by the species.

### What is the habitat and history of the quagga mussel?

The quagga mussel was first sighted in the Great Lakes in September 1989, when one was found near Lake Erie. Quagga mussels are currently found in Lake Michigan, Lake Huron, Lake Erie, Lake Ontario, Lake St. Clair, Saginaw Bay, throughout the St. Lawrence River north to Quebec City, and there are also a few inland occurrences in New York, Ohio, Michigan, and Pennsylvania.

While zebra mussels can colonize any hard object or substrate including hard objects deposited in mud and other soft substrates, quagga mussels are far more versatile. Unlike zebra mussels, quagga mussel can live and thrive directly on a muddy or sandy bottom and are as prolific as zebra mussels. A single mature female mussel can produce more than 1 million eggs in a spawning season.

### How can you help slow the spread of quagga mussels?

- Quagga mussel eggs hatch into a larval form, called veligers, which are free-floating, unlike any of the native mollusks found in the Great Lakes. Hence, their microscopic larvae can be unintentionally transported in the live wells or bilge water of recreational boats, and they easily attach to boat hulls and trailers. To prevent spreading this invasive mussel, boaters should drain water from boat motors, live wells, bilges, and transom wells and any other areas of boats and recreational equipment while on land before leaving a lake or water body.
- Quagga mussels cling to vegetation or any other object taken from water where they are present. Take time to clean vegetation from boats, trailers, and motors, and thoroughly dry all objects including swimsuits and wet suits before entering unfested waters.

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Quagga mussel



Zebra mussel

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