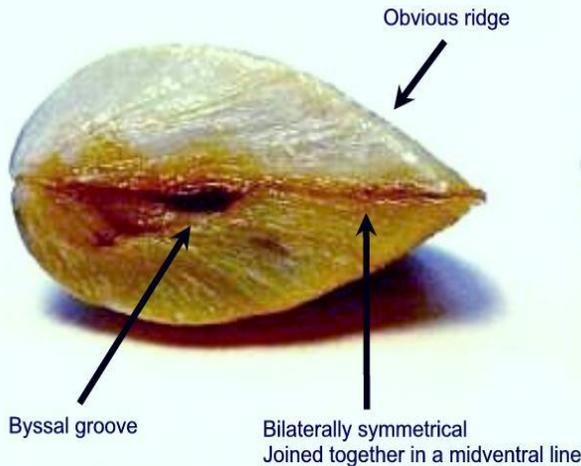


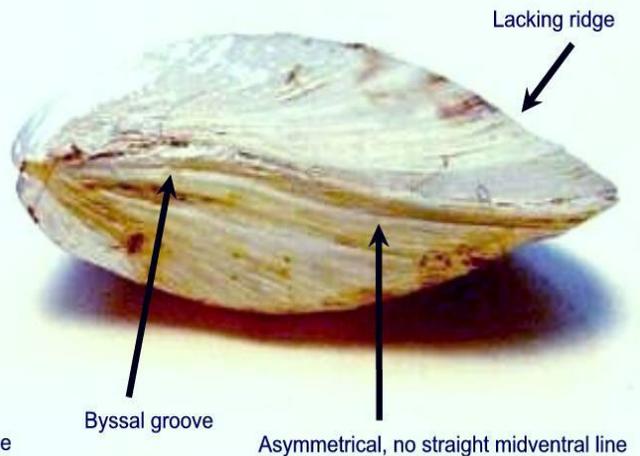
# Zebra and Quagga Mussels

*Dreissena polymorpha* and *Dreissena rostriformis bugensis*

*Dreissena polymorpha*



*Dreissena rostriformis bugensis*



U.S. Geological Survey



## What is it and Why is it a Problem?

Zebra and Quagga Mussels are freshwater bivalves that can colonize and take over a variety of hard surfaces in lakes, including rocks, docks, boats, retaining walls and beaches. Although they filter and clean the water, they tend to “over-clean” it by removing too much phytoplankton (a food source for many aquatic organisms) and allowing sunlight to penetrate deeper which encourages algae growth, specifically toxic algal blooms which harm fish and wildlife. In large enough colonies, fish spawning grounds can become covered and thus interfere with the survival of fish eggs. They are also known to cause Botulism Type E outbreaks which have killed thousands of fish and birds, clog intake structures for lakeside properties, interfere with power plants and water treatment plants, and negatively impact recreational activities such as swimming (swimmers can cut their feet on them). Quagga Mussels are concentrated in the Great Lakes whereas Zebra Mussels have been found more wide-spread.



## What Does it Look Like?

- Zebra Mussels: around 2 - 2.5 cm long (but sometimes up to 4 cm), triangular in shape, black-brown with white-yellow “zebra stripes” (although colour patterns can vary), and have a flat underside
- Quagga Mussels: generally larger (around 2 - 3 cm long), round in shape (does not have a flat underside), has dark concentric rings and a lighter white-yellow colouring near the hinge



## How Can it be Managed?

- Report sightings of any invasive species online through [EDDMapS Ontario](#), a web-based mapping system which also has an app, or through the [Invasive Species in Ontario](#) project on [iNaturalist.org](#).

- Learn how to identify it so you can avoid accidentally spreading it with your fishing gear and equipment. Inspect your boat, trailer and fishing gear before leaving a fishing spot and before heading to a new one to remove any mud, plant fragments and animals. Dispose of any animal and plant matter in the garbage. You should clean your boat and equipment with a high power pressure wash using hot water OR leave it to sit in the sun for a minimum of 5 days. Refer to the [OMNRF's Boater's Action Plan](#) for more information on cleaning your boat and gear.
- Release water from your motor, live well, bilge and transom wells once on land.
- If you happen to catch a Zebra or Quagga Mussel, you must destroy it to prevent further growth and reproduction - do not put it back into the water.
- Do not release live bait into the water body - it is illegal to release live baitfish! Instead, you can freeze or salt your live bait to save for another use. If you are not going to use it again, you can throw it in the garbage. Also avoid dumping the contents of worm containers in the lake.
- Note that possession or transportation of Zebra or Quagga Mussels is illegal in many jurisdictions - if you wish to control or eradicate an invasive species, you could require a permit under the Invasive Species Act. Also, ensure that you are following federal rules under the Fisheries Act. For more information, refer to [OMNRF's rules](#) regarding removing invasive species. You can contact [invasive.species@ontario.ca](mailto:invasive.species@ontario.ca) for more information on obtaining authorization.

- Do not release aquarium or pond contents into water bodies. Oftentimes invasive aquatic animals end up reaching water bodies when people dispose of them in lakes and rivers.



## References

[Great Lakes Nonindigenous Species Information System](#), produced by the National Oceanic and Atmospheric Administration

[Ontario Invading Species Awareness Program](#), developed by the Ontario Ministry of Natural Resources and Forestry (MNRF), and the Ontario Federation of Anglers and Hunters (OFAH).

[Zebra Mussel Fact Sheet](#), produced by the Ontario Federation of Anglers and Hunters

*Dreissena polymorpha*  
(Actual size is 15 mm)



Sits flat on ventral side  
Triangular in shape  
Color patterns vary

*Dreissena bugensis*  
(Actual size is 20 mm)



Topples over; will not sit flat on ventral side  
Rounder in shape  
Usually have dark concentric rings on shell  
Paler in color near the hinge