

Zebra Mussel

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Dreissena polymorpha

Kingdom	Animalia
Phylum	Mollusca
Class	Bivalvia
Subclass	Heterodonta
Order	Veneroida
Subfamily	Dreissenoidea
Genus	Dreissena

The **Zebra mussel** (*Dreissena polymorpha*) is a bivalve mussel native to freshwater lakes of southeast Russia. Zebra mussels get their name from the striped pattern on their shells, though not all shells bear this pattern. They are usually about the size of a fingernail, but can grow to a maximum length of nearly two inches.

It's native to the Black and Caspian Seas. Zebra mussels are considered an invasive species in North America and in most of Europe.



In the United States, they were first detected in the Great Lakes in 1988. It is believed they were inadvertently introduced into the lakes in the ballast water of ocean-going ships traversing the St. Lawrence Seaway. Some people believe

that they were attached on anchors and chains. Since adult zebra mussels can survive out of water for several days or weeks if temperature is low and humidity is high, chain lockers provide temporary refuge for clusters of adult mussel that could easily be released when transoceanic ships drop anchor in freshwater ports.

Ecology

Zebra mussels and the closely related and ecologically similar quagga mussel are filter-feeding organisms. They remove particles from the water, increasing water clarity and reducing pollution. Some particles are consumed as food and feces are deposited on the lake floor. Non-food particles are combined with mucus and deposited on the lake floor, providing nutrients for aquatic plant life.

Anatomy

Zebra mussels are relatively small in size, adults range from 1/4 to 1 1/2 inches long. They have tiny stripes down their shells, hence the name Zebra Mussels. Zebra Mussels have a D-shaped shell. They attach to things with strings coming out of their dorsal surface (side with the hinge). These strings are called abysal threads and make it very hard to remove the zebra mussel from the area it is attached to.

Predators of Zebra Mussels

There are a number of natural predators of zebra mussel. Zebra mussels have high nutritional value and are consumed in large quantities by crayfish, waterfowl and in smaller quantities by muskrats.

Crayfish could have a significant impact on the densities of 1 to 5 mm long zebra mussels. An adult crayfish consumes an average of nearly 105 zebra mussels every day or in all about 6000 mussels in a season. Predation rates are significantly reduced at cooler water temperatures.

Zebra mussels and other non-native species are credited with the increased population and size of smallmouth and largemouth bass in Lake Erie. They also cleanse the waters of inland lakes, resulting in increased sunlight penetration and growth of native algae at greater depths. This can prove beneficial for fish.

Since no North American predator or combination of predators has been shown to significantly reduce zebra mussel numbers, such spread would most likely result in permanent establishment of zebra mussels in many North America waterways.

Effects of Zebra Mussels

Zebra mussels are filter feeders. When they are in the water, they open up their shells to let debris in.

Zebra mussels are a great nuisance to many people. Since they have colonized the Great Lakes, they have covered undersides of docks, boats, and anchors. They have also spread into streams and rivers across the country. In some areas they completely cover the other freshwater mussels. They can also grow so close together that they block off pipelines, impacting water intake pipes used by cities for their water supply, or by hydroelectric companies for power generation.

Zebra mussels have a razor-sharp dorsal edge which can easily slice close to 1" deep into human skin. The scalpel-like shell can leave long incisions which are so fine; the victim may not initially realize they have been cut, particularly on the feet or hands. It is therefore recommended that one wear water shoes and avoid grabbing blindly onto underwater structures, such as dock posts and mooring lines, in infested waters.

A common inference made by scientists predicts that the zebra mussel will continue spreading passively, by ship and by pleasure craft, to more rivers in North America. Trailered boat traffic is the most likely vector for the invasion into local rivers and lakes. Some are saying that the Zebra Mussel is here to stay and that government needs to except that and prepare pipelines, water intakes on municipal water supplies and hydroelectric plants.

Scientist say a spread can be slowed down if boaters would take time to thoroughly clean and dry their boats and associated equipment, washing off the microscopic larvae, before transporting these to new water bodies. It would be impossible to clean off all larvae and small zebra mussels.

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January, 2008