



Aquatic Invasive Species Quick Guide



Golden Sands
Resource Conservation
& Development Council, Inc.

Zebra Mussel (*Dreissena polymorpha* Pallas)

Description: The zebra mussel is a small mollusk in the family Dreissenidae. It grows up to about 1.25 inches long. The shells are flat on the hinged side (D-shaped). Zebra mussels have tiny threads that anchor themselves to various firm surfaces like rocks, logs, plants, trash—even other animals. Shells are typically light brown to white, with brown-black stripes. These colors may be faint if the shells have been exposed to prolonged direct sunlight. The related quagga mussel looks similar, but their shells are not flat on the hinged side.



Zebra mussels have D-shaped shells with brown-black stripes. 4X typical size.

North American Distribution: Zebra mussels are abundant in the Great Lakes, and are scattered in inland waters in the eastern and central United States. They have recently been introduced to the western U.S.



Zebra mussels will colonize any firm surface, even this old tennis ball.

Dispersal Vectors: Zebra mussels were first documented in Michigan's Lake St. Clair in 1988, probably arriving from the Black or Caspian Sea via ballast water of ocean-going ships. Each female can produce up to a million eggs each year, which hatch into free-floating larvae. These microscopic larvae can be transported between water bodies in live wells, bait buckets, or motors. Adult zebra mussels can also attach to plants, and can be transported by boats that aren't cleaned properly after use. Female zebra mussels can reproduce at two years old.

Ecological Impacts: Zebra mussels are filter-feeders, consuming tiny food particles that are the base of the aquatic food web. This removal of food particles results in less food available for other animals like zooplankton, native mussels, and fishes. In many cases, the clearer water caused by the zebra mussels has resulted in severe blooms of filamentous algae. These blooms washing up on shore provide ideal conditions for *Clostridium botulinum*, the bacteria responsible for killing birds through avian botulism. The sharp shells can cut the feet of people enjoying beaches, and can result in various infections.

Control options: Manual removal of zebra mussels is easy, but impractical due to their sheer abundance. Zebra mussels are occasionally removed from inside water intake pipes with chisels or high-pressure water jets.

No chemical control agent is known to kill zebra mussels without seriously harming other aquatic life or water quality. A 2% chlorine bleach solution is effective at killing zebra mussels when cleaning boating equipment or other gear away from waterbodies.

A bacterial formulation is currently being researched, which uses a native soil bacterium to kill zebra mussels without causing other damage to the ecosystem. This formulation is not approved for widespread use at this time.

Additional information:

United States Geological Survey. *Dreissena polymorpha*. <http://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=5>

Photo credit: Paul Skawinski



These zebra mussels are attached to a fragment of Eurasian watermilfoil.

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