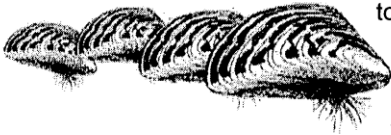


Zebra Mussel (*Dreissena polymorpha*)

General Description

Zebra mussels are small, "D" shaped, freshwater clams, about the size of your thumbnail. They are the only mussel species found in Wisconsin that have "byssal threads" that allow them to attach firmly to any available surface. These animals live in large colonies that can wreak havoc in any environment they settle. Once attached, the only means to remove them are to physically scrape or power blast them off.



It was once believed that zebra mussels could only thrive in environments with certain definable conditions (i.e. certain ranges of pH, water temperature, etc.). But we now understand that zebra mussel populations are quite genetically diverse, allowing them to stretch their optimum range of habitat conditions. In other words, once introduced to a new environment, zebra mussels can adapt to a wide variety of physical conditions.

Lifecycle & Mechanism of Spread

One mature female zebra mussel can produce anywhere from 30,000 to 1 million eggs per year. Given the correct water temperatures and other physical environmental cues, egg and sperm production and spawning may occur almost continuously throughout a season. A fertilized egg is dispersed within the water column, develops into the larval stage (*veliger stage*), and remains free-floating in the water column for about 3 weeks. When young veliger larvae have formed byssal threads, they are able to "settle in" and stick to most surfaces. The lifespan of an individual mussel is highly variable and can range from 3 – 10 years.

"Zebra mussels can spread to other inland waters either as veligers transported in water or as adults attached to boat hulls, engines, aquatic plants, or other surfaces" (*Zebra Mussels in North America: The invasion and its implications*. Ohio Sea Grant, publication FS-045, 1994). And, once introduced into a new aquatic environment, zebra mussels can produce offspring in a very short time span.

Potential Impacts to Ecosystem

Zebra mussels pose a serious threat to native clam populations by competing for living space and food resources. Competition is such that native mussel populations cannot be sustained, and eventually die out. Zebra mussels feed by filtering large quantities of water filled with phytoplankton (tiny algae) and zooplankton (tiny invertebrates). Plankton, which represents the very basis of the aquatic food chain, is quickly depleted. This in turn can cause a negative "domino effect" by causing damages to the food chain of an otherwise balanced ecosystem. "Increasing water clarity that results from zebra mussels filtering the water may be perceived as a benefit, but there is a downside. Sunlight can penetrate deeper, creating more places for algae to grow and reach nuisance levels" ("Hitching a ride," *Wisconsin Natural Resources Magazine*, June 2005).

Potential negative impacts from zebra mussel colonies may also include physical damage to property. Damage to watercraft can occur simply by being moored in the water for extended periods. Colonies may become so encrusted on the surfaces of boat hulls or motors as to render them unusable. Private piers or inlet pipes have often been suitable surfaces for zebra mussel colonies to settle, and adjacent beach areas can become all but impossible to enjoy. Millions of sharp-sided mussel shells litter these areas which become dangerous and offensive, consequently reducing the real estate values of all adjacent properties.

Identification Tips

One thing to look for when identifying a zebra mussel is the definite "D" shaped bivalve shell. It ranges from 1/8 to 2 inches long and has distinctive "zebra-like" stripes. Unlike other mussels, zebra mussels settle in large colonies. Where there is one, there are probably several more in the immediate adjacent areas. A final tip for identifying zebra mussels is to look for visible "thread-like" growths (*byssal threads*). Byssal threads are distinctive to zebra mussels, and allow them to firmly attach to a variety of surfaces.