

Invasive Mussels Threaten Native Mussels in Michigan Lakes

The Great Lakes have been fighting the advancement of foreign mussels for decades as the presence of these invasive species threaten lake ecosystems as well as industries that depend on the regions bountiful water. Zebra mussels, native to Eastern Asia as well as the newly introduced quagga mussels have been multiplying in the region since having been brought over by contaminated boats.¹ Mussels attach to hulls and bilge lines, and despite new technology to clean these areas of a boat,² the invasive species use these modes of transportation to move between lakes as well as upstream rivers. The presence of mussels depletes nutrients necessary to the existing ecosystem of a place as well as harm physical structures.

Regarding physical structures, mussels can be harmful in expensive ways. Reported explosions of mussel population in Lake Michigan, before infiltrating many inland lakes, led to millions of dollars in damages in the late 80's and early 90's. Intake pipes of water treatment facilities, power plants, and factories are clogged by the small creatures as their massive numbers attach to these hard surfaces.³ Bodily harm can be done as well, as recreational swimmers are advised to wear shoes, avoiding cuts from the mussels' sharp edges.⁴ Even more susceptible are the fragile ecosystems that these mussels damage.

The presence of invasive mussels harms existing organisms in a few different ways. By filtering nutrients from the water, zebra and quagga mussels compete for the same food sources as native mussels and small fish.⁵ In regards to native mussels specifically, zebra mussels often cluster around their larger shells, keeping them from feeding and breeding. This direct attack on native species has led to their near extinction in many Michigan lakes⁶. Unexpectedly, these mussels have also affected water clarity through their filtering. In massive numbers, mussels resulted in the deeper penetration of light in the Grand Traverse Bay and likewise affected the growth of vegetation.⁷ Increased vegetation, a loss of native mussels, and increased competition for fish can alter a body of water in ways that it may not be able to survive.

Lake Leelanau, a large inland lake located north of Traverse City, first discovered invasive Zebra mussels in 1997 washed ashore on a piece of driftwood.⁸ The lake makes for an interesting area to study in regards to the phenomenon, as it is a large recreational area and drains into Lake Michigan through a dam owned by the Fishtown Preservation Society, a group who

¹ Leslie Mertz. "Michigan Mussels Disappear within a Child's Lifetime," *Great Lakes Echo*, Jan 11, 2013. <http://greatlakesecho.org/2013/01/11/michigan-mussels-disappear-within-a-childs-lifetime/>

² Carol Thompson. "Mobile Decontamination Machine tears into Zebra Mussels," *Great Lakes Echo*, Oct 10, 2011. <http://greatlakesecho.org/2011/10/10/mobile-decontamination-machine-tears-zebra-mussels-a-new-one/>

³ "Zebra Mussels Invade Lake Leelanau." *Ludington Daily News* (Ludington, Mi.), Oct 3, 1997, 3

⁴ Leslie Mertz.

⁵ "Zebra Mussels Invade Lake Leelanau."

⁶ Leslie Mertz. "Michigan Mussels Disappear within a Child's Lifetime," *Great Lakes Echo*, Jan 11, 2013. <http://greatlakesecho.org/2013/01/11/michigan-mussels-disappear-within-a-childs-lifetime/>

⁷ "Zebra Mussels Invade Lake Leelanau." *Ludington Daily News* (Ludington, Mi.), Oct 3, 1997, 3

⁸ *Ibid*

also works to preserve local commercial fishing.⁹ Between the lake's popularity, history with invasive mussels, and present preservation societies, the integrity of the lake is a public concern. Studying how the mussels affected the area, what has been done to limit them, or what has yet to be done all can hold key answers as to preventing the further explosion of invasive mussel populations across the state.

References

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⁹ Eric Freedman. "Commercial fishing decline hits economies, communities," *Great Lakes Echo*, Aug 20, 2013. <http://greatlakesecho.org/2013/08/20/commercial-fishing-decline-hits-economies-communities/>