

QUAGGA MUSSELS HAVE EXPLOSIVE POPULATIONS THAT CAN CHANGE WATER QUALITY

QUAGGA MUSSEL

The quagga mussel (*Dreissena bugensis*) was first noticed in 1989 in the Great Lakes. The establishment of a new population there is believed to be the result of discharge of ballast water by transoceanic vessels in the Great Lakes and the St. Lawrence Seaway. Today, quagga mussels inhabit regions inland from major ports, with established populations making inroads in all states bordering the infested Great Lakes, along the Gulf of Mexico, and in the west where quagga mussels have spread from California ports.

The mussels attach themselves to various fixtures beneath the water surface and can live in sandy substrates of a lake bottom. Large colonies cause a nuisance for industrial and water intake and discharge pipes and screens. In residential settings they can overwhelm dock and boathouse areas. Beach areas can also become heavily populated and unusable from all the shells. Its explosive population can foul natural areas. A



A female quagga mussel can produce one million veligers annually. Quagga mussel populations are known to expand rapidly and overwhelm natural areas.

mature female can release one million veligers each year.

Quagga mussels spread by attaching themselves to the bottom of boats. They are also transported as microscopic veligers and juvenile mussels in live wells, bait buckets, or in ballast, bilge, or engine cooling waters. As veligers they are highly mobile in the water column for 3-4 months.

Quagga mussels filter phytoplankton (microscopic plants) and

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Quagga Mussel

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particulates from the water. They are highly efficient feeders and easily outcompete native zooplankton (microscopic animals that feed on phytoplankton). In doing this, quagga mussels start a chain of events that can change the ecology of a lake. Voracious filtering can raise water clarity due to the lower levels of phytoplankton and zooplankton. Increased water clarity results in more sunlight filtering through the water, which stimulates greater aquatic plant growth. Increased plant growth and subsequent death and decay creates higher rates of decomposition, which can limit dissolved oxygen supplies. Quagga mussels also pollute the water through high volumes of feces released into the water body.

The quagga mussel is an aquatic bivalve mollusk and its appearance can have many variations. They can live 3 - 5 years and they adapt to a number of environments. They have been found to survive in waters at depths of over 100 feet and survive in much colder temperatures than their relative the zebra mussel (*Dreissena polymorpha*). The quagga mussel is a small, striped mussel whose stripes fade out about $\frac{3}{4}$ of the way down its shell. The quagga mussel's stripe pattern is similar to that of the now extinct Quagga Zebra (*Equus quagga quagga*) where it gets its name.



Quagga mussels must be stopped before they reach Lake George. It's important that all boats entering the lake are dried and all engine and ballast waters fully flushed.

the spread and infestation of quagga mussels to Lake George:

- Clean, drain and dry boats and all equipment before moving from one lake to another. Quagga mussels can live 3-5 days out of water and even survive for weeks if moist and cool.
- Do not release fish, animals or plants into the lake. Do not bring live bait or bait buckets from outside Lake George area. All outside bait and bucket water should be disposed.

Here are the best ways to help prevent **We need your help to protect Lake George from invasive species.**

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