

Eradication of colonizing populations of zebra mussels (*Dreissena polymorpha*) by early detection and SCUBA removal: Lake George, NY

Authors: John Wimbush, Marc E. Frischer, Joseph W. Zarzynski And Sandra A. Nierzwicki-Bauer.

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Abstract:

1. Since their introduction to North America, zebra mussels (*Dreissena polymorpha*) and quagga mussels (*Dreissena rostriformis bugensis*) have rapidly colonized North American fresh waters. Strategies for limiting the economic and ecological impacts of zebra mussels exist, but there are few examples where once zebra mussels have invaded a natural body of water they have been removed or managed without the use of ecologically destructive methods. The first successful attempt to eradicate a colonizing population of zebra mussels using SCUBA is reported here. Studies were conducted in Lake George, NY.

2. Since zebra mussel larvae had been detected prior to the discovery of adults in Lake George, a comprehensive management programme for zebra mussels was in place when mussels were found in 1999, at a single location in the southern part of the Lake (Lake George Village site). Efforts were quickly launched to remove as many mussels as possible by SCUBA with the intent of minimizing the risk of the population reproducing and establishing a permanent presence in the Lake.

3. Population size at the discovery site was initially estimated at fewer than 30 000 animals. Between 1999 and 2007 more than 21 000 animals were removed from the site, over 90% of them shortly after the colony was discovered. Continued monitoring of the site for larvae, recruitment, and growth suggests that the animals have not successfully reproduced since the project began. Since detection at the Lake George Village site, six separate colonizing populations at other locations in the lake were found and similar removal efforts appear to be having comparable success.

4. This study demonstrates that the combination of early detection, suboptimal habitat, proactive establishment of a rapid response and management plan, and cooperation of a comprehensive network of stakeholders can prevent a successful zebra mussel

The full article can be found at: <http://dx.doi.org/doi:10.1002/aqc.1052>