



Scientists Begin Removal of Invasive Species From Historic Lake George

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In August 2010, scientists at the Rensselaer Darrin Fresh Water Institute (DFWI) on Lake George found an unwanted resident in the beautiful lake waters. A new invasive species had entered the historic lake with the potential to quickly wreck havoc on the all-important natural resources of the water body. The DFWI had discovered Asian clams in Lake George.

DFWI scientists immediately came together with regulatory agencies, fellow scientists, and community and environmental organizations from throughout the area to form the Lake George Asian Clam Rapid Response Task Force. The task force developed a comprehensive plan to determine the extent of the infestation and to devise effective ways to eradicate the small, green-hued clams from the lake.

The species, *Corbicula fluminea*, is an invasive clam from Asia, capable of self-fertilization and achieving densities of thousands per square meter. The small triangular clam can survive in fresh and brackish waters and has been found in 40 U.S. states. If it is allowed unfettered access to reproduce it can quickly grow to levels that are unsustainable to the ecosystem, spewing huge amounts of nutrients into the water in their excretions. This glut of nutrients spurs the development of large plumes of algae that feed off the nutrients, quickly turning clear lake water to a sludgy green and killing many of the native plants and animals beneath.

Scientists at the DFWI have played a vital role in the project since the discovery of the first clams. Once the clams were discovered, they quickly went to work with members of the task force to determine how widespread the invasive clam was. They found that the clams had likely been in the lake for two to three years and had the densest populations in a 4.8-acre area directly off shore of the lake.

Removal of the thousands of clams that had already taken up residence in the sediments of the lake is not an easy task, according to Sandra Nierzwicki-Bauer, director of DFWI and professor of biology. The area in question not only has important ecological and recreational uses, it also has great historical significance. The area is close to the site of Fort Ticonderoga, which played an important role in battles of the French and Indian Revolutionary wars. The lake bottom in that area is the permanent resting place of multiple battleships. These concerns needed to be taken into consideration when choosing a method to eradicate the clams.

To develop the best possible plan of attack, DFWI scientists did a successful pilot study on a small section of infected area last fall. And on April 25, the task force began implementing this method on a six-acre swath of the lake bottom where the most dense populations of clams were found. The chosen method involves the placement of large mats over the sediments of the lake that the clams live in. The mats, known as benthic barriers, are anchored down over an infested area for 45 days to smother the clams underneath, and prevent them from beginning their next reproductive cycles. The mats cause limited disturbance to the lake bottom.

Following the 45-day period, the mats will be taken up and scientists from DFWI will take a new round of sediment samples to determine the overall success of the project.

Scientists are hopeful that the plan will be successful. Despite the significant number of clams, the infestation was caught early and appears limited. But, as with any invasive species, complete eradication can be difficult or easily reset by a careless boater or fisherman. Continued monitoring, study, and outreach will be essential, according to Nierzwicki-Bauer.



Darrin Fresh Water Institute scientists are playing a key role in the effort to remove the unwanted Asian clams found in Lake George.

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