

LAKE TAHOE ASIAN CLAM WORKING GROUP

# NEWS RELEASE

## AGGRESSIVE ASIAN CLAM CONTROL PROJECT AT LAKE TAHOE

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**Lake Tahoe, CA/NV** – Lake Tahoe agencies are launching an attack on aquatic invasive species July 9 with the first phase of a large-scale Asian clam removal project.

Researchers discovered the Asian clam in Lake Tahoe in 2002 and over the last two years the population has exploded. The clams need to be controlled because they are associated with algal blooms and can cause harm to the lake's fragile ecosystem, according to agency officials.

The project involves laying up to an acre of thin rubber matting on the lake's bottom at two sites in the southeast region of Lake Tahoe in order to kill the clams by starving them of oxygen. The project is part of a \$1.4 million effort by a collaboration of federal, state and local agencies called the Lake Tahoe Asian Clam Working Group to eradicate the Asian Clam, of which the California State Water Board is providing \$700,000.

More broadly, the collaboration is also working to keep invasive species, such as quagga and zebra mussels, out of Lake Tahoe, according to working group officials. In addition to impacting Lake Tahoe's native ecosystem, the presence of the clams could make the lake more hospitable to the quagga mussel, which agencies are working diligently to prevent from being introduced at Lake Tahoe.

One project site is near Lakeside Marina near the south shore state line area and the other is also on the south shore at the southern end of Marla Bay, Nevada.

The mats, which are typically used to line manmade ponds, will remain in place until October to ensure the clams are dead. Once in place, the mats will not pose a navigational hazard. The Tahoe Resource Conservation District (TRCD) is managing the project.

"Aquatic invasive species pose a serious threat to Lake Tahoe and this project is part of the multi-agency effort to protect the Lake's delicate ecosystem," TRCD Aquatic Invasive Species Program Manager Kim Boyd said. "This project is a crucial step in taking control of the Asian clam infestation that we have watched spread recently and projects of this scale hold promise for controlling other invasive species like pondweed and milfoil."

### Working Group Members

Tahoe Resource  
Conservation District

University of California at  
Davis, Tahoe  
Environmental Research  
Center

University of Nevada, Reno

Tahoe Regional Planning  
Agency

U.S. Fish and Wildlife  
Service

Lahontan Regional Water  
Quality Control Board

California Department of  
Parks and Recreation

Nevada Division of State  
Lands

Nevada Division of  
Environmental Protection

Round Hill General  
Improvement District

Tahoe Water Suppliers  
Association

## 2-2-2 Clam Removal

The working group is starting to control the Asian clam population throughout the southeast region of the Lake, where infestation is highest, and in places such as Emerald Bay where the Asian clam has recently been spotted. The estimated cost for treating and monitoring the two, half-acre sites is \$648,000, which is being funded by the U.S. Fish and Wildlife Service, the Nevada Division of State Lands and funds from the Southern Nevada Public Land Management Act. The group plans to expand work into Emerald Bay in 2011.

“Protecting Lake Tahoe from aquatic invasive species is both a local and national priority and the collaboration between agencies reflects the importance of this project,” Tahoe Regional Planning Agency External Affairs Chief Julie Regan said.

The growth and expansion of the non-native Asian clam population in Lake Tahoe in 2008 initiated a coordinated, basin-wide effort to control the species. The working group was formed as a collaboration of regional agencies to implement control projects and address ecological and economic issues associated with the Asian clam expansion.

For additional information, contact Jeff Cowen, Tahoe Regional Planning Agency Communications Representative, at 775-589-5278 or by email to [jcowen@trpa.org](mailto:jcowen@trpa.org).

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## **Project Information and Lake Tahoe Asian Clam Background**

The invasive freshwater bivalve Asian clam (*Corbicula fluminea*) is currently established in Lake Tahoe. Since its initial introduction in Washington State along the Columbia River in the late 1930s, the spread of Asian clam in the United States has been both rapid and extensive – it now is found in water bodies in 38 states. Because of its economic and ecologic effects, it is considered to be the most important non-native aquatic animal in North America. For example, the Asian clam is the most abundant bivalve in the Sacramento-San Joaquin Delta, where it consistently out competes many native clam species for food and space and fouls manmade infrastructure by clogging water intake pipes, affecting power, water, and other industries.

The Asian clam was first observed at Lake Tahoe in very low numbers in 2002, but its population has increased to a level where it is now having noticeable, localized environmental impacts. For example, the Asian clam excretes elevated levels of nitrogen and phosphorus into the water and bottom sediments, which in turn stimulates that growth of certain algae. Large nuisance blooms of bright-green algae linked to the Asian clam beds were seen on the southeast shores of Lake Tahoe last year. The alga was a detriment to water quality and clarity and also impacted the recreational experience of beach visitors and boaters throughout the summer season.

The clam also filters extremely high volumes of water, removing nutrients and food sources necessary for water quality and affecting pelagic communities including Lake Tahoe sport fisheries. Additionally, the existence of the Asian clam could facilitate quagga mussels, a highly dangerous invasive species that is not in Lake Tahoe, by creating localized high calcium environments as their dead shells leach the calcium that invasive mussels could use if they were introduced. The availability of calcium is a favorable factor for quagga and zebra mussel infestations. The clam also competes with Tahoe native benthic species such as the montane pea clam (*Pisidium spp.*) and the ramshorn snail (*Planorbidae*).

Scientists from the University of California, at Davis and the University of Nevada, Reno conducted a series of experiments in the summer of 2008 that demonstrated a likely link to the large blooms of green algae observed on the southeast shores of Lake Tahoe. Its current known distribution (area ~1 million square meters) is patchy along the southeast shore from Zephyr Cove, Nevada to El Dorado Beach, California. This distribution is changing due to the clam's rapid growth rate and ability to colonize in the abundant sandy bottom. Asian clam has both pelagic and benthic life stages, enabling it to spread long distances by boat and lake currents and locally by diffusive growth.

The Asian Clam was introduced before mandatory watercraft inspections were implemented in 2008 to keep aquatic invasive species such as the quagga mussel out of the pristine subalpine lake. Efforts to control and possibly eradicate Asian clam populations in Tahoe have been moving forward rapidly since 2008 when dramatic increases in their population sizes and densities were tracked.

Each project site is in about 15 feet of water, one near Lakeside Marina near the south shore state line area and the other at the southern end of Marla Bay, Nevada. During the first two days of the project, a work barge will lower rolls of rubber matting to the bottom where divers will begin unrolling the sheets and overlapping them to form a half-acre treatment area at each site. Dive teams may take up to a week to complete the underwater work, according to the working group.

#### 4-4-4 Clam Removal

The goals of the project are to attack the clams with a scaled up version of the application of rubber mats to understand the impacts to Asian clam, native macroinvertebrates, and the feasibility of treatment in the lake using this method. UC Davis and UN Reno will monitor the experimental plots for a period of 1 year after the removal of the barriers to look at impacts to the nearshore zone as well as recolonization rates of both the invasive Asian clam and native species, according to UC Davis researcher Dr. Marion Wittmann. This project will also serve to assess the economic and ecological costs associated with this experimental method

Asian clam control projects are planned for 2011 in areas such as Emerald Bay, where the invasive species had begun colonizing but remains relatively small in numbers. The clam species may be spreading on lake currents or surface currents created by motorized boat traffic. The oxygen barrier method, if shown to be effective at eradication and cost control, could be utilized around the Tahoe region to control non-native animals as well as aquatic weeds such as the Eurasian watermilfoil and curlyleaf pondweed.

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