

Project aims to reduce Mysis shrimp at Tahoe



Mysis shrimp were introduced to Lake Tahoe in the 1960s. Photo/Robin Li/ Seamor Marine Ltd.

By Tom Lotshaw

A UC Davis research team led by civil and environmental engineering professors Geoff Schladow and Alex Forrest, along with environmental science and policy Professor Steve Sadro, is working on a pilot project to test and optimize a strategy to reduce Mysis shrimp populations in Emerald Bay and Lake Tahoe.

Working with the UC Davis Tahoe Environmental Research Center, the team aims to reduce the abundance of Mysis shrimp, one of Tahoe's most ubiquitous invasive species, to levels where they no longer impact the ecosystem of the lake.

Mysis shrimp were deliberately introduced into Tahoe in the 1960s to provide a food source for lake trout and kokanee salmon, popular sport fish that had also been introduced.

“The Lake Tahoe ecosystem has changed dramatically in the last 50 years, and the importance of restoring ecological function of the lake’s native species in place of the invasive Mysis shrimp cannot be overstated,” Schladow said. “Our findings in Emerald Bay will be critical in developing a plan and strategy for Lake Tahoe.”

If the number of Mysis shrimp can be reduced, native zooplankton species like daphnia, which play a critical role in eating other, smaller native zooplankton species that can reduce lake clarity, will be able to recover to levels not seen since Mysis shrimp were established in the lake. That could lead to a significant improvement in water clarity—one of the long-term restoration goals for Lake Tahoe.

The research team is using real-time, remote sensing technologies to locate high-density patches of Mysis shrimp and map out the natural variability in the distribution and migration of these organisms throughout Emerald Bay. If successful, the technology and tools developed through this pilot project will be used to provide guidance for harvesting Mysis shrimp in the rest of the lake.

The use of underwater remote sensing draws on Forrest’s research experience with autonomous underwater vehicles as data collection platforms. If this pilot project is successful, the team will use similar platforms in the future in other parts of Lake Tahoe that can’t be surveyed using boat-based techniques.

“Applying emerging technologies and untethered, autonomous robotics enables an understanding of aquatic habitat and ecosystem assessment not available today,” Forrest said.

The California Tahoe Conservancy contributed \$390,000 in

Proposition 1 funding and Nevada Division of State Lands provided \$60,000 in federal funds through the Clean Water Act for this project.

*Tom Lotshaw is the public information officer at TRPA. This was first published in the **summer 2018 Tahoe In Depth.***