

Scientists worry about long-term effects of changing levels of algae, oxygen in Lake Tahoe

By Kathryn Reed

INCLINE VILLAGE – In the last four years the amount of algae found in Lake Tahoe has dramatically increased.

Why?

Scientists are still trying to figure that out.

Cells that are 5, 6, 7 microns in size that were not detected a decade ago are here.

“For some reason they have exploded,” Geoff Schladow, director of the Tahoe Environmental Research Center on the Sierra Nevada College campus, said during the Dec. 13 State of the Lake report.



Asian clams in Lake Tahoe create algae blooms as seen in the top right of this photo. Photo/LTN

The data pertains to 2011. These reports began in 2007, though issues surrounding Lake Tahoe's clarity have been studied since the 1800s.

Algae blooms are also related to the growing Asian clam population. While these creatures have not been found throughout the lake, pockets of them are on the southern end. The algae they produce washes ashore and contributes to the degradation of the beach experience because the pristine waters are anything but that in some areas.

Divers the first week of December finished laying 5 acres of organic material at the mouth of Emerald Bay in an attempt to smother the clams at that location.

One thing scientists are still trying to figure out is why lake clarity improved by 4½ feet in 2011 when it was one of the wettest winters on record. Normally wet years bring more sediment via runoff into the lake. Conversely, it's drought years that are usually good for lake clarity because fine particles are staying on land.

Climate change is something those who study Tahoe know is taking a toll. Each year the flow of stormwater runoff is measured.

"The peak has advanced two weeks," Schladow told the group of nearly 60 people. This means there is less snow in the mountains.

Records of air temperature also point to climate change, Schladow said.

Another measurement scientists look at is how often the lake mixes – as in the water at the bottom comes to the top and vice versa.

"As we go through the next century we will run out of oxygen at the bottom of the lake," Schladow said. "Less oxygen at the

bottom changes the chemistry at the bottom. ”

This could lead to more phosphorous and nitrogen being created. Those elements contribute to the decline of the lake's clarity.

A cable is used to measure oxygen at the surface down to the bottom. Water temperature is measured, too.

“We are seeing how mixing changes oxygen (levels). Oxygen is the key variable for climate change,” Schladow said.

He is a believer that the lake needs to continue to be studied and monitored.

“If you don't measure it, you can't manage it,” Schladow said in regards to needing to make sure the funding is in place to study the lake and then take the corrective measures to ensure its health.