

# Goldman: Climate change hurting Lake Tahoe

By Kathryn Reed

If treated wastewater weren't pumped out of the Lake Tahoe Basin, the clarity of the lake would be much different than it is today.

That was one of the messages delivered Aug. 21 by Charles Goldman during the South Lake Tahoe Public Utility District board meeting. The 83-year-old renowned limnologist has been studying Lake Tahoe for more than 50 years. While he has retired from teaching at UC Davis, he is still actively involved in what is going on with and at Lake Tahoe.

"This organization probably has had more to do with keeping Lake Tahoe blue than any other organization," Goldman said of the utility district.



Charles Goldman talks about climate change on Aug. 21 in South Lake Tahoe.  
Photo/Kathryn Reed

He said helping to get sewage out of the basin may be his most important achievement.

Treated wastewater from STPUD is pumped over Luther Pass where it is then used as irrigation water for Carson Valley ranchers.

He is against any reclaimed water being used in the basin because of the energy it takes to make it useable, the air pollutants associated with the process and that phosphorous would reach the lake.

Goldman said if the wastewater stayed here the lake would likely be green by now.

This has a lot to do with climate change. The warming surface water of the lake and the increase in phosphorous are already altering how the lake looks and functions.

The fact that it doesn't get as cold at night as it used to in Tahoe contributes to a warmer lake, which in turn means the lake water is not mixing as often. Warm water is harder to mix than cold. All of this then can affect oxygen levels at the bottom of the lake. A warmer lake is contributing to more algae growing near the shoreline.

Algal growth increases at a rate of about 5½ percent each year at Lake Tahoe, according to Goldman.

He said if the amount of nutrients reaching Lake Tahoe is not reduced, things will worsen. Nutrients can produce neurotoxins, which are known to kill people and cows.

"That is one reason to keep nutrients out of Tahoe," Goldman said.

A picture of the United States proved how much of the country has already sustained unprecedented increases in warming.

The carbon dioxide level acceleration is rising at a level that he called "dire."

"It's strictly the result of burning fossil fuels of all

kinds," Goldman said.

His idea of bringing a monorail to the basin has fallen on deaf ears for 52 years. It would get people out of their cars and reduce air pollution – a significant contributor to problems with Lake Tahoe.

Predictions are that by mid-century 65 percent of China's more than 46,000 glaciers will have disappeared, with all of them being gone at the next turn of the century.

The North Pole has already melted at times to where there is water standing on top of the ice. This in turn melts the ice faster because the water is warmer than ice, plus it doesn't reflect back to the atmosphere.

Climate change, Goldman said, is the largest threat to humanity since the Black Plague.