

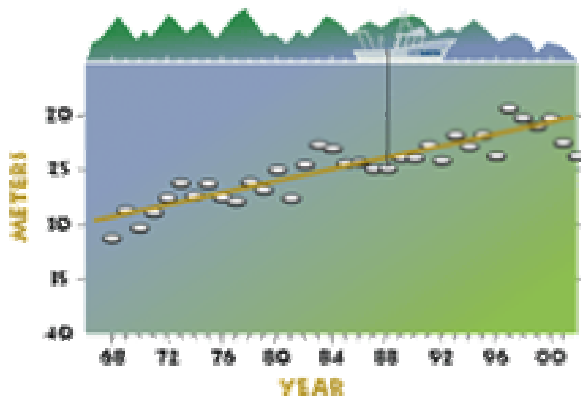
Why Measure Water Quality at Lake Tahoe?

By John Cobourn, Water Resource Specialist, and
Heather Segale, Environmental Education Coordinator
University of Nevada Cooperative Extension

Date: Feb. 14, 2003

Scientists have been measuring water clarity in Lake Tahoe continuously since mid-1967. A simple measurement of how far down into a lake a white Secchi Disk can be seen tells lake specialists, called limnologists, a great deal about a lake's ecological condition.

Charles Goldman, Ph.D., founder of the UC Davis Tahoe Research Group, is the limnologist who had the foresight to begin scientifically accurate measurements of Lake Tahoe's clarity 35 years ago. Because of this, we know that the Lake's clarity has decreased at an average rate of more than a foot a year, declining from a clarity of approximately 105 feet in 1968 to a clarity of only about 70 feet in 2001. These measurements are summarized in the Lake Tahoe Secchi Depth chart, as shown.



Unlike most graphs, this chart shows the measurements reading down from the top. This corresponds with the fact that water clarity is measured by how far down into the lake the disk can be seen by Bob Richards, UC Davis researcher, from the deck of the John LeConte, the UC Davis research vessel. Note that while the Secchi depth fluctuates depending on the weather, storm patterns and amount of precipitation each year, the trend is unmistakably toward lower clarity over the years. The rising trend line indicates decreasing Secchi depth, or water clarity.

Water clarity is an indicator of the ecological condition of a lake. When Mark Twain spoke of his amazement at seeing objects clearly on the bottom of Lake Tahoe in over a hundred feet of water, he was describing what a rare circumstance it was even 130 years ago to encounter a lake this clear. The lake was then, as it is now, an "oligotrophic" lake. That means it is exceptionally clear because there is very little suspended sediment and suspended algae in the water. Such lakes tend to be naturally clear, because their watersheds are relatively small compared to the volume of water in the lake.

The Secchi chart is telling us that we are destroying the Lake's natural clarity. Our urbanization of Tahoe's watershed and our pollution of the air

(Continued on page 2)



Lake Tahoe Environmental Education Coalition

tahoe.com

UCDAVIS



COOPERATIVE
EXTENSION
Bringing the University to You



Watch for "The Lake Tahoe Report" each week and tune in to KOLO-TV News Channel 8 Tuesdays at 5 p.m. "The Lake Tahoe Report" is a collaborative effort of the Lake Tahoe Environmental Education Coalition, University of Nevada Cooperative Extension, UC Davis and the USDA Forest Service. For more information, contact Heather Segale, University of Nevada Cooperative Extension, (775) 832-4138, or logon to www.lteec.org.

The Lake Tahoe Report

(Continued from page 1)

quality over the lake have created millions of small human impacts that have added up over time. These cumulative impacts have caused more nutrients to enter the Lake and feed the free-floating algae, and more small soil particles to become suspended in the water.

Goldman is still working on Lake Tahoe. He is telling us that the water quality may move from spectacular to merely average in our lifetimes, with the color changing from blue to green. Restoration of our air quality and watershed is the only likely means to prevent this decline.

Preventing further deterioration is not just important for aesthetic reasons, but it is also important for Tahoe's recreation-based economy, property values and the quality of our drinking water.
