Report for 2002NV1B: Identification of Nutrient Rich Groundwater Inflows to Lake Tahoe

There are no reported publications resulting from this project.

Report Follows:

Problem and research objectives:

1) Identify the location of areas in Lake Tahoe that have persistent low water quality.
2) Determine if the clarity loss at Lake Tahoe is caused by organic or inorganic material.
3) Determine the influence that near-shore high-turbidity areas have on the mid-lake clarity of Lake Tahoe.

Methodology:

Spatial and temporal surveys are made of turbidity, temperature, and chlorophyll. Particles in the water are collected and analyzed with a scanning electron microscope. Water movement in the lake is measured with drift buoys.

Principal findings and significance:

Five areas with persistently poor water quality have been identified. Meteorological conditions that lead to degradation of the near-shore water quality have been identified. In summer, most of the clarity loss is due to algae and in many cases is associated with poorly understood nutrient sources. In winter, clarity loss is caused by mineral material in the water and is closely associated with lake level snowmelt. In spring, clarity loss is caused mainly by dissolved organic compounds and is closely associated with stream inflow. We will use 104B funds this summer to determine how much mixing there is between the near-shore and mid-lake waters and how near-shore water quality influences mid-lake water quality.