



**Title:** Lake Tahoe Annual "Snapshot Day" Citizen Monitoring Event

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**Organization:** University of Nevada Cooperative Extension

**State:** NV

**Region:** Southwest States and Pacific Islands

**Year of Funding:**

**Theme:** Pollution Assessment and Prevention

**Situation:** Lake Tahoe is losing clarity at a rate of more than one foot per year. In order to get citizens involved in efforts to slow this human-induced eutrophication, efforts aimed at outreach, education and stewardship are underway by a coalition of 30 local agencies. One such effort includes promoting an annual stewardship opportunity called "Snapshot Day." Snapshot Day, sponsored by the Tahoe-Truckee Clean Water Team – a working group of the Lake Tahoe Environmental Education Coalition (LTEEC), is designed to get community volunteers involved in monitoring the water moving through the Lake Tahoe and Truckee River watersheds. Monitoring locations included tributaries to Lake Tahoe, shoreline and sites within Lake Tahoe, and the Truckee River and its tributaries from Tahoe City to Pyramid Lake near Reno.

**Objectives:** Across the country, volunteers monitor the condition of streams, rivers, lakes, reservoirs, estuaries, coastal waters, wetlands, and wells. They do this because they want to help protect a stream, lake, bay or wetland near where they live, work, or play. Their efforts are of particular value in providing quality data and building stewardship of local waters. The purpose of the Snapshot Day effort is two-fold: 1) to promote environmental education and stewardship, and 2) to collect valuable water quality information. While there is a great deal of high quality agency and research monitoring taking place in the region, there is still insufficient information to adequately assess the status of some of the aquatic resources in the Truckee River and Lake Tahoe Basin watersheds. With proper training and quality assurance, community volunteers can help fill this void by providing valuable information for watershed management and pollution prevention. Specifically, this year volunteers in the Lake Tahoe watershed also participated in collecting much needed data for the Lake Tahoe TMDL.

**Methods:** Water samples are taken in order to develop a picture of water quality and watershed health at a single point in time. The volunteer monitoring teams, led by Team Leaders who are trained by project staff, professionals and other guest presenters prior to Snapshot Day, test streams for dissolved oxygen, conductivity, pH and temperature. These teams also conduct a visual assessment of weather, water clarity, in-stream flow, streamside vegetation (including mapping presence of invasive weeds) and land use, stream channel modifications, site and type of discharges to stream, presence of algae, litter, foam or oils, erosion, and water color and odor. Finally, each team collects grab samples and takes photos at their monitoring site(s). Water samples are taken back to central meeting locations and measured for sediment particle size, turbidity, nutrients and fecal coliform bacteria. Sponsoring agencies provide all the sampling and monitoring equipment. Written methods have been developed for each of the parameters and the program operates using a state-approved quality assurance project plan. In addition, a written guidance document has been prepared for the Team Leaders, explaining goals of the program, responsibilities of the leaders, and specific instructions for methods and for filling in the data sheets properly. A volunteer appreciation dinner party is in the fall each year and results and data are presented in a final report at that time. (Total products include Team Leader Training Handbook and multiple training presentations, Visual Assessment Data Sheet, Field Data Sheet, Quality Assurance Project Plan, and Snapshot Day Final Report.)

**Partnerships:** This event is organized and supported by a partnership formed for this purpose. Snapshot Day 2003 sponsors included the California State Water Resource Control Board, Lahontan Regional Water Quality Control Board, Lake Tahoe Community College, Lake Tahoe Environmental, Education Coalition (LTEEC), Nevada Division of Environmental Protection, Pyramid Lake Paiute Tribe, Sierra Nevada College, Tahoe Basin AmeriCorps, Tahoe Regional Planning Agency, Tahoe Research Group, Tahoe Resource Conservation District, Truckee River Watershed Council, University of California Cooperative Extension, University of Nevada Cooperative Extension, University of Nevada Reno Electrical Engineering Department, USDA Forest Service, Washoe Storey Conservation District, Waste Not, and the Incline Village General Improvement District.

**Research:** As an important component of the overall outreach and education strategy, this project serves two needs: 1) outreach and education of the public, and 2) collection of necessary research data. In fact, this year volunteers in the Tahoe watershed participated in collecting much needed data for the Lake Tahoe TMDL Project and the UC Davis Lake Tahoe Clarity Model. Water samples were gathered from the mouths of all 63 tributaries in order to analyze the sediment content. Researcher Geoff Schladow from UC Davis will take the samples collected and study the quantity and size of sediment particles in the spring runoff from the tributaries entering Lake Tahoe.

**Resources:** Sponsoring partners all contributed time and funding in order to make this event a success.

**Results:** Snapshot Day 2003 was the third annual one-day citizen volunteer stream monitoring event for the Lake Tahoe and Truckee River watershed. Through this event: 250 adult volunteers collected water quality data at 125 distinct monitoring sites. Volunteers learned about their watershed, water quality issues, how streams function, and how to assess stream health. In both long and short term, these volunteers became an extra set of eyes and ears that government agencies can count on to ensure that local streams and watersheds are looked after on a regular basis. Monitoring data will be used in the Lake Tahoe TMDL Project and UC Davis Lake Tahoe Clarity Model and may impact decision-making and policy formation. Monitoring data will serve as the basis for determining problem areas (potential "hot spots"), protecting local streams, or restoring streams if already degraded. By learning more and helping to promote environmental stewardship, volunteers create an informed public voice that collectively can influence decisions that affect our environment, and subsequently our water resources.



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