

2026 Lake Tahoe Water Monitoring and Research Activities

For decades, the U.S. Geological Survey (USGS) has been a leader in a wide range of scientific research and monitoring activities in the Lake Tahoe Basin. The USGS monitoring and research programs help Lake Tahoe thrive, now and into the future.

Monitoring

Several decades ago, deteriorating water quality and clarity in Lake Tahoe prompted the initiation of environmental programs in the Lake Tahoe basin. Data on seasonal nutrient and sediment concentrations from tributary streams and discharging groundwater quality were needed to document the causes of deterioration of Lake Tahoe. USGS data are used by local and with California and Nevada water-quality management programs.

The Lake Tahoe Interagency Monitoring Program

USGS scientists are collecting streamflow and water-quality data at Lake Tahoe tributaries as part of the Lake Tahoe Interagency Monitoring Program's (LTIMP) is to provide long-term, consistent, reliable, and accessible data. Together with the University of California, Davis, USGS has collected critical tributary nutrient and sediment data since 1988.

Funding: Tahoe Regional Planning Agency, Lahontan Regional Water Quality Control Board, Nevada Department of Environment Protection, and California Tahoe Conservancy
<https://www.usgs.gov/centers/nv-water/science/lake-tahoe-tributary-monitoring>

Caldor Fire Impact Monitoring and Analysis

More than 10,000 acres were burned in the Upper Truckee and Trout Creek Watersheds during the Caldor Fire in 2021. Additional funding is being used to increase the number of storm samples collected, and to add analyses of dissolved organic carbon, ammonium, and stable isotopes to fingerprint fire-retardant compounds. The expanded monitoring will be used with a nutrient and sediment loading model to quantify impacts to water quality. A planned report to summarize findings will be published in 2027.

Funding: Lahontan Regional Water Quality Control Board and Tahoe Regional Planning Agency



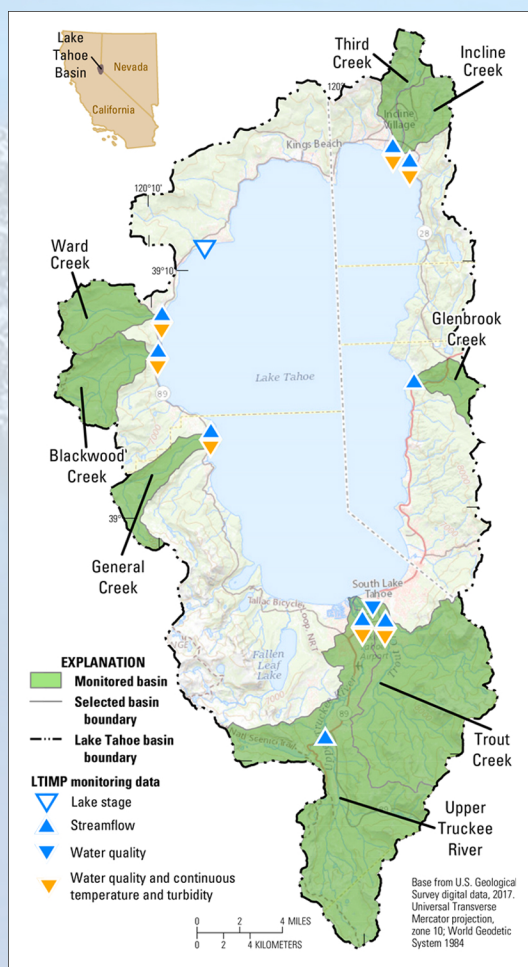
Regrowth of vegetation on hillslopes 5 years after the Caldor Fire, Trout Creek watershed. Photo taken in 7/16/2026

Lake Tahoe Hydro Mapper

The Lake Tahoe Hydro Mapper is a web application that synthesizes, visualizes, and delivers USGS and interagency hydrologic data for the Lake Tahoe Basin in real time.

Funding: U.S. Forest Service

<https://webapps.usgs.gov/laketahoemap/>



Research

During the past twenty years, the USGS has made significant advances in understanding the sediment and nutrient sources contributing to water-quality and clarity problems. These advances provided regulators with information needed to mitigate water-quality issues and decision tools to manage water resources in the Lake Tahoe Basin.

Tributary Nutrient and Sediment Loads, Trends, and Impacts to Clarity in Lake Tahoe

Water resource managers need assessments of annual loads and long-term trends of nutrients, sediment, and fine sediment particles (FSP) to evaluate the effectiveness of management actions. This report will document nutrient and sediment concentrations and loads, and flow-normalized trends for seven primary tributaries in the Lake Tahoe Basin.

Funding: Nevada Division of Environmental Protection, Lahontan Regional Water Quality Control Board

Real-time Stream Nutrient and Sediment Loads

Real-time streamflow, turbidity, and temperature multiregression analysis will be used to estimate fine sediment, suspended sediment, and nutrient loads at LTIMP-monitored streams. These estimates will be provided in real-time to track responses from storms or disturbances from wildfires.

Funding: Tahoe Regional Planning Agency



Photograph of fine sediments deposited on Ward Creek streambed after a 7/14/2026 storm event. Photo taken 7/24/2026.

Effects of Road Salts on Water Quality

Road de-icing compounds (road salts) are used to keep highways entering the Lake Tahoe Basin open and safe. However, impacts on tributary streams may be long lasting. The USGS investigated the contributions of road salts to stream and groundwater salinity during 2023 and 2024. This report was completed and is under review.

Funding: Southern Nevada Public Land Management Act (SNPLMA) Round 18

Data Visualization

Lake Tahoe Hydro Mapper now displays real-time soil moisture and vegetative indices along with graphic displays of lake stage, lake clarity, streamflow, sediments and nutrients.

Funding: SNPLMA Round 18

Assessment of Nutrient Sources

The USGS is researching the sources of nitrogen and phosphorus nutrients in groundwater and in lake periphyton.

Funding: Lahontan Regional Water Quality Control Board

<https://www.usgs.gov/centers/nv-water/science/nutrientsource-identification-groundwater-and-periphyton-alongnearshore>

Data mining and machine learning to investigate fine sediment and nutrient loads

New methods are being applied by the USGS to better understand how watershed process such as snowmelt and runoff affect seasonal timing and loads of fine sediment and nutrients to Lake Tahoe.

Funding: US Forest Service

<https://www.usgs.gov/centers/nevada-water-science-center/science/quantifying-watershed-controls-fine-sedimentparticles>

Tahoe Science Advisory Council (TSAC)

The USGS is actively participating in the multi-agency, bistate Tahoe Science Advisory Council (TSAC) by providing peer review and feedback on management issues pertaining to lake ecosystem health. The USGS is involved in council activities to guide agency decisions on science support activities.

Assessment of Cyanobacteria and Cyanotoxins in the Nearshore of Lake Tahoe

The USGS Toxins and Harmful Algal Blooms Research Team is conducting a study on the presence of cyanobacteria and cyanotoxins at the nearshore of Lake Tahoe. The study collected lake samples from the mouth of select south shore streams and the Tahoe Keys for water quality parameters, nutrients, and algal sampling.

Funding: USGS Ecosystems Mission Area, Environmental Health Program



Photograph of Burke Creek flowing towards Lake Tahoe near Nevada Beach taken on 07/10/2024.

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