

Client: Environmental Studies Department, UC Davis
Project: Video Proposal for Tahoe Research Group Lab

PROPOSAL: PROMOTIONAL VIDEO FOR A NEW TRG LAB AT LAKE TAHOE

The film opens with shots of the mountains and forests that surround the Lake Tahoe basin accompanied by an acoustic guitar. Narration begins after a beat, telling the audience that Lake Tahoe is 11,000 years old, and was once the summer fishing grounds of the Paiute Indians. Tahoe remained pristine for decades until the forests were heavily logged in the late 1800's. Then people came to live at the lake year-round.

Narration continues to explain that along with people came the growth of algae, resulting in loss of clarity in Tahoe's crystal clear blue water. And along with people came cars that caused a rapid decline in air quality, as shown in footage from "*Tahoe: Two Decades of Change*". The first attempt to stop the deteriorating water quality was to ship sewage out of the basin. But it wasn't enough, and more and more people kept coming to visit and live at Tahoe.

In the early 1970's, a group of limnological students from U.C. Davis became interested in what was happening to the water of Lake Tahoe. Under the leadership of Dr. Charles Goldman, a professor at U.C. Davis who was largely responsible for getting the sewage shipped out of the basin, they began to conduct research projects at lake. They managed to procure grants from NSF and EPA, and found space in an old fish hatchery, then a Coast Guard station, to build a lab. The Tahoe Research Group (TRG) was born.

Sampling the lake for water clarity and algae growth required that these students spend long days out on the lake, and even longer nights running and evaluating their data back at the lab. The small

space in the old hatchery wasn't well insulated and was often cold and damp. The students needed to make regular and frequent trips between Davis and Tahoe, find housing in Tahoe during the summer, and continually look for funding to keep their research alive. Footage from "*Tahoe: Two Decades of Change*" and "*Tahoe: Moving Beyond the Conflict*" document their pioneering research conducted on the physics, chemistry, and biology of Lake Tahoe's water. The numbers of faculty and students from Davis grew, and then others from UC and CSU campuses began to visit and do their research at Tahoe. Today, scientists from all over the United States and the world come to Tahoe to study, utilizing the facilities and resources of the TRG lab.

The results of their research were clear, man's activities at Lake Tahoe are directly responsible for the demise of the air and water quality of the Lake Tahoe Basin. Secchi readings provided evidence of declining water clarity, and the steady growth of algae attached to rocks and piers could be finally be measured along with population growth rates. Nutrient loading of the lake from land disturbance, erosion, loss of wetland habitat, traffic, and smog are caused by the increasing numbers of people who visit and come to live at Lake Tahoe.

Presenting their findings was an even bigger hurdle for the TRG to cross. Their discoveries were not what development interests wanted to hear. Footage from "*Tahoe: Beyond the Conflict*" illustrates the efforts to come to terms with both the scientific evidence and the various local interests who disputed their findings. Ultimately, several organizations were formed subsequent to the research, including The League to Save Lake Tahoe, The California Tahoe Conservancy, Lahontan Water Quality Control Board, Tahoe Regional Planning Agency, The Lake Tahoe Interagency Monitoring Program, and the Tahoe-Baikal Institute. Thresholds were set for the use of the lake, land, and air, and restoration programs were begun that are still in progress today.

Interviews with local agencies responsible for setting and enforcing development thresholds, and those conducting various restoration projects within the basin, exemplify how the research conducted by scientists working at the TRG lab is continuously being applied to the environmental problems of Lake Tahoe. Tahoe Keys is an example of a project that wouldn't have been approved by today's standards, and that has required extensive restoration. The need for continued and long term monitoring is stressed in interviews with both researchers and those who utilize their data. An example is made in reference to the \$30 million dollars that has already been spent on erosion control in the basin, but to date no evaluation of the impact of these structures is in progress. It is also pointed out that natural occurrences, such as drought, or the impact of fires in or around the basin, are events that have had a huge impact on the lake and need to be included in long-term data collection.

Education has been a key contribution of the TRG and its research lab at Lake Tahoe. The group has provided numerous opportunities for children to learn about the lake and it's watershed, and many more possibilities exist for expanding into a children's educational day camp and workshops about the lake's ecology. Russian students and scientists visiting through the exchange program of the Tahoe-Baikal Institute provide a look at the exciting potential for bio-manipulation and bio-control by using crayfish to curb the growth of Asian milfoil.

Lakes have been described as "Reservoir's of History", and as we look at old growth forests that have burned and are now underwater at Tahoe, narration asks what better place to educate our children and scientists about the ecology of lakes and our environment? And, as the TRG has proven, what better investment could we make in protecting the increasingly limited supply of fresh water on our planet than by supporting a permanent lab and program that insures long term monitoring and evaluation of restoration and protection measures for one of the world's most beautiful and valuable lakes?

The final sequence of the film returns to shots of the students from the early days of the TRG conducting their research on Tahoe and working together in the fish hatchery turned lab. Superimposed

KATHLEEN WRITES

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over these shots are their names, and what they are doing today. A few are still in Tahoe, many have earned national and international recognition, are active in the business and university communities, and have received some of the world's highest honors for their research and public service.