

UNIVERSITY *of* NEVADA, RENO
AND THE ACADEMY FOR THE ENVIRONMENT

TAHOE SUMMIT



1997-2007
LAKE TAHOE FEDERAL EVENT

— 10 YEARS OF UNR DELIVERABLES —

COMPILED BY: B. BERGER, W.W. MILLER, AND M.W. COLLOPY

AUGUST 17, 2007



SUMMARY *of* 10-YEARS OF UNR RESEARCH IN SUPPORT OF THE CONSERVATION AND RESTORATION OF LAKE TAHOE

IN 1997, the Lake Tahoe Presidential Forum gave unprecedented worldwide and national exposure to Lake Tahoe. The forum, which was attended by President Bill Clinton, Vice President Al Gore, four Cabinet Secretaries and was organized by Nevada U.S. Sen. Harry Reid, promoted a collaborative effort to protect Lake Tahoe, which had seen its legendary clarity reduce at startling levels over the previous two decades. The 1997 Lake Tahoe Presidential Forum resulted in a pledge of \$50 million in federal spending for the basin's troubled environment by President Clinton. In a ceremony on an Incline Village beach, Clinton signed an executive order that declared Lake Tahoe an area of national concern, citing the basin's extraordinary natural, recreational and ecological resources. Clinton's pledge was the kick-start to funding for the Tahoe Regional Planning Agency's Environmental Improvement Program, which eventually resulted in the federal government and California and Nevada committing to each paying a share of the \$900 million environmental plan. Said President Clinton: "We cannot divide our quest for prosperity from our obligation to hand nature – God's great gift to us – on down through the generations."

Since the Clinton visit, the forum has become an annual event, with elected officials, federal and state management agencies, scientists from academic institutions, as well as members of key Tahoe stakeholders' groups meeting to report on the lake. The forum has focused on improvements in lake clarity, increased environmental restoration around the lake, improved transportation and its impacts on the lake, and the overall effort of all involved to collaborate more closely in achieving these common goals. The 10th Anniversary Forum is scheduled to be held on Aug. 17. In order to commemorate this important

anniversary, the University of Nevada, Reno's Academy for the Environment has endeavored to compile a listing of research accomplishments in the Tahoe Basin, "10 Years of UNR Deliverables." This publication is an effort to catalogue and compile all of the University of Nevada's research efforts over the past decade.

A review of this document demonstrates that the University of Nevada's work at Lake Tahoe from 1997-2007 has been substantial and effective, focusing on many of Lake Tahoe's most critical ecological aspects, including the water and, perhaps just as importantly, the air and upper watershed.

A sampling of this work includes:

NUTRIENT TRANSPORT AND WATER QUALITY
AND PRESCRIBED FIRE

The University's research in this area has been broad and substantive. Beginning in 1997 with a study on moist- and dry-season nitrogen transport in Sierra soils under forested and meadow conditions, the University's efforts have grown through the years to now include studies that address forest floor nutrient losses due to fire and fire management and quantification of upper watershed erosion following wildfire.

The University's research agenda in the area of wildfire, and its impact on the Tahoe Basin, is also comprehensive, and includes wildfire and prescribed fire effects on forest carbon and nutrient budgets, wildfire effects on soil nutrients and leaching and runoff water quality in the Tahoe Basin watersheds. Studies in this area include a key investigation conducted by University researchers in 2006 involving nutrient flow from runoff at a burned forest



site in the Lake Tahoe Basin from the Gondola Wildfire earlier this decade. Other studies include fire effects on stable isotope signatures in soils, surface runoff streamflow and potential food web impacts of Tahoe; characterization of flow and transport processes in soils at different scales relating to forest health, soil productivity and water quality; thinning and prescribed fire effects on forest floor fuels of Jeffrey pine.

FOREST HEALTH

Several studies have focused on bark beetle infestation, a major problem plaguing many western forests. University researchers have conducted research on the implications that bark beetle infestation has had on the Tahoe Basin, including what can be done to mitigate this problem. In particular, methods supplied by University scientists have been developed to inhibit/interfere with activities of enzymes of bark beetles. An additional University study from 2007 has delved into changes in biotic interactions and climate and how such processes as global climate change has affected the ecology of Jeffrey pine. Cooperative Extension educators continue to play a key role in educating the public in issues from water use to precision methods to control the invasion of noxious weeds.

AIR QUALITY

Work in this area continues to produce a number of important findings. A 2005 study conducted by a team of Desert Research Institute and University researchers modeled inputs of atmospheric nitrogen to the Lake Tahoe Basin due to gaseous pollutant deposition through the use of a number of research collection spots located around Lake Tahoe.

FISH AND WILDLIFE

Nevada scientists have been at the forefront of gaining a better understanding of re-introduction strategies of native fish at Lake Tahoe and its tributaries. Studies include historical food web structure and restoration of native fish communities in the Tahoe Basin; evaluation of the re-introduction of Native Lahontan Cutthroat Trout in Fallen Leaf Lake as well as development of management strategies for recovery of this historically relevant fish; ongoing studies of the Lake Tahoe and Truckee River food webs and its place in the implementation of successful re-introduction plans of the future.

TAHOE SEISMOLOGY

University researchers have earned national and worldwide recognition through several important studies that have added greatly to the knowledge of Lake Tahoe's seismology. Studies have included the potential hazard for Lake Tahoe from tsunami and Seiche Waves generated by future large earthquakes within the Tahoe Basin; tsunami-generated boulder ridges in Lake Tahoe; Tahoe active faults and landslides; and the implications of these findings on Tahoe's shore-based communities.

THE HUMANITIES

Award-winning photographer Peter Goin, a professor of art at the University, has eloquently captured Lake Tahoe's past and present through "Lake Tahoe: A Visual History." The Reynolds School of Journalism's ourtahoe.org is an effort by graduate students and RSJ faculty in interactive and environmental journalism to create a marketplace of ideas regarding Tahoe environmental issues, ranging from fire suppression to affordable housing.

