



## National Treasure

### Working to protect Lake Tahoe's famed clarity

It was a dry, 90-degree day when fire broke out near Angora Lake, southwest of Lake Tahoe. The wind-driven flames raged in some

of the most severe fire conditions the area had endured in 20 years. Residents of nearby neighborhoods had 5 minutes to evacuate.

When the June 24, 2007 Angora Fire was finally contained, more

than \$141 million in damage had occurred, 254 homes were destroyed and 3,100 acres

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scorched, placing the blaze among the top half-dozen most costly fires in the U.S. Losses to the tourist-driven economy were estimated at \$1 billion, but the increased erosion from loss of vegetation and falling ash and debris threatened Lake Tahoe's fragile ecosystem and water clarity.

"There is no doubt this devastating fire was a wake-up call to Tahoe residents, businesses and agencies," said Frank Flavin, University of Nevada Cooperative Extension western area director.

Since the late 1980s, Cooperative Extension has conducted educational and research programs to help stakeholders manage their properties in a way that protects Tahoe's environment and water quality, but that also sustains a viable community with economic and social considerations.

"After Angora," added Flavin, "we intensified the coordination of our Tahoe programs both within the college and with our multiple collaborating partners, bringing groups together to address issues."



Photos Courtesy of USFS-TIBMU

TOP: A view of the Angora Fire from a Lake Tahoe vista. INSET: This home was destroyed during the Angora Fire when burning embers landed on something ignitable on or near the home.

### Adapting fire programs to new agency recommendations

The Angora Fire prompted national attention to wildfire issues in the Tahoe region and significant changes to land-management policies. Cooperative Extension's Living With Fire program—helping Nevadans live more safely with the threat of wildfire—quickly responded to the new recommendations by revising existing educational materials and creating new ones.

The Tahoe version of the popular *Living With Fire—A Guide for the Homeowner* was

revised, printed and distributed within weeks of the new recommendations. *Living With Fire in the Lake Tahoe Basin*, a 30-minute DVD featuring the integration of wildfire-threat reduction techniques and water-quality protection practices, was released together with the Tahoe Living With Fire Web site.

“Our model has been to standardize the message, develop the needed educational materials and get them to our partners to disseminate to target audiences,” said Ed Smith, Cooperative Extension natural resources specialist and Living With Fire creator. “We have a good working relationship with fire-fighting agencies and with the Nevada Fire Safe Council, which has acquired millions of dollars for projects implemented through 44 community chapters at Tahoe.”

The issue of landscape mulches surfaced following the Angora Fire. Mulches play an important role in reducing soil erosion from residential landscapes. Unfortunately, they can be combustible and aren’t good choices for high fire-hazard areas. Cooperative Extension and other collaborators conducted an evaluation of the hazard associated with eight popular mulch products used in the Tahoe basin. The findings from this applied research project had considerable influence on how landscapes are managed in the region.

In 2008, the governors released their Joint California-Nevada Tahoe Fire Commission report concerning measures needed to reduce the wildfire threat. “The governors should support and enhance the existing fire-prevention education program, Living With Fire,” the report stated.

## Integrating defensible space with other ‘best management practices’

Public reaction to the Angora Fire revealed an urgent need for improved communication to homeowners about combining defensible space techniques and “best management practices” (BMPs) to protect the lake’s water quality.

“We had a teachable moment where we could drive home our messages to property owners about clearing brush and trees around their homes and requiring methods that prevent soil erosion and promote the infiltration of roof and driveway runoff into

the ground,” said John Cobourn, Cooperative Extension water resource specialist.

The installation of BMPs on all private properties at Tahoe is the largest project of the Lake Tahoe Environmental Improvement Program, endorsed by all local, state and federal agencies as the indispensable restoration plan for the lake. Recent research reveals that 72 percent of Tahoe’s worst pollutant (fine sediment) comes from urban runoff, and about half of that sediment emanates from private properties in need of BMPs, Cobourn added.

After the Tahoe Regional Planning Agency (TRPA) adopted new guidelines for property owners, Cobourn updated the Home Landscaping Guide for Lake Tahoe, now in its third printing. More than 100 contractors attended a 2008 BMP workshop, and for the first time at the lake, a program was established to educate Spanish-speaking workers. Nearly 1,600 BMP certificates of completion were awarded that year by TRPA. They have issued more than 10,200 certificates since the BMP program began.

## Preventing invasive plant species from degrading Tahoe’s environment

Invading mussels, which could cost Tahoe’s economy \$22 million a year, captured headlines during the summer of 2009, calling attention to the dangers posed by invasive species. The threat is not limited to aquatic species, however. Terrestrial invasive weeds replace native vegetation, degrading the lake’s sensitive ecology, its diverse wildlife and increasing incidents of wildfire. But their biggest threat is the tendency to increase soil erosion and stream sedimentation, which can damage Tahoe’s clear water.

“For weed management efforts to be successful, a coordinated, integrated, watershed-wide approach is necessary,” said Susan Donaldson, Cooperative Extension water quality specialist.

After Angora, response teams contacted the Lake Tahoe Basin Weed Coordinating

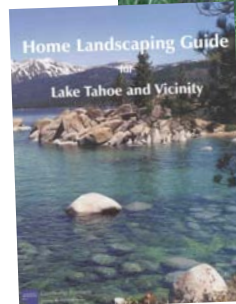


Photo by Wendy West

TOP: A detection and treatment crew member of the El Dorado County Agriculture Department removes a roadside knapweed plant in the Tahoe area. LEFT: Cover of the Home Landscaping Guide for Lake Tahoe and Vicinity, co-authored by Cooperative Extension’s John Cobourn.

Group, a diverse partnership of agencies and community members that was positioned to help the fire victims. The weed group, led by Donaldson and the University of California Cooperative Extension’s Wendy West, provided homeowner consultations and community workshops, followed by surveys and treatments in the burn areas.

“These programs allowed us to effectively apply early detection, mapping and rapid response strategies during the first critical growing season after the fire,” Donaldson said.

Other recent accomplishments of the basinwide weed coalition are:

- Assistance in developing a network to address the quagga mussel invasion of Lake Tahoe;
- Eradication of the noxious weed, yellow starthistle, from the basin;
- Annual basinwide weed monitoring and control accomplished using grant funds totaling nearly \$500,000 since 2002.

“The University of Nevada, Reno, has provided important outreach materials for homeowners and the general public looking for technical information about erosion-control requirements, fire defensible space guidelines and proper landscaping,” said TRPA’s Dennis Oliver. “In particular, John Cobourn’s work with the BMP program, Sue Donaldson’s help on invasive weeds and Ed Smith’s *Living With Fire* document have been profoundly helpful.” [N](#)

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