

# LTEEC Summer 2001

Sponsored by University of Nevada Cooperative Extension and University of California Cooperative Extension

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## Lake Tahoe Environmental Education Coalition (LTEEC) Reaches Out to the Public

Did you know that there is now a coalition that supports all kinds of environmental education at Lake Tahoe?

The goal of the Lake Tahoe Environmental Education Coalition (LTEEC) is to help groups and educational organizations work together to educate the public about how to prevent pollution of Lake Tahoe. The Coalition was formed after the Presidential Summit Meeting at Lake Tahoe in 1997. Participants realized that we lacked a coordinated approach to education about the environment at Lake Tahoe, and we needed a comprehensive strategy to build community support for the actions required to solve Lake Tahoe's problems. Pam Drum of the Tahoe Regional Planning Agency emphasizes that "this contact at the 'grass roots level' is hard to accomplish, but critically important to the success of our efforts to preserve the scenic and environmental quality at Lake Tahoe."

### Environmental Improvement Program (EIP)

The involvement of the general public is an important component of TRPA's Environmental Improvement Program (EIP). The EIP provides for an integrated program of restoration projects, research and monitoring to improve the lake's environment, including water and air qual-

ity, soil conservation, vegetation, fisheries, wildlife and scenic resources. While the EIP provides for a lake-wide partnership of federal, state and local entities to accomplish its goals, part of the funding for the \$1.4 billion price tag will have to be provided by home and business owners. Community members need to know why it is important to support this Herculean effort.

### Systems Approach

The EIP is comprehensive in scope and integrated by design. All the parts must work together to achieve the overall environmental improvement goals. For example, Matt Graham of TRPA's Erosion Control Team, stresses the value of the contributions made by the hundreds of home and business owners who install best management practices (BMPs) on their properties each year to prevent polluted runoff from rooftops and driveways from reaching the roadway. "The million dollar road drainage systems that are being installed around the Lake are designed to handle storm runoff from the public streets and highways. It is just as important for home and business owners who want to be part of the solution to use BMPs to control erosion and runoff on their private properties," said Graham.

(Continued on page 4)

Visit the LTEEC Web Site at  
<http://www.lteec.org>

Contact Us:  
Lake Tahoe Environmental Education Coalition  
University of Nevada Cooperative Extension  
Post Office Box 8208  
865 Tahoe Boulevard, Suite 110  
Incline Village, NV 89452-8202

Phone: 775-832-4150  
Fax: 775-832-4139  
Email: [segaleh@unce.unr.edu](mailto:segaleh@unce.unr.edu)



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## Residential Best Management Practices (BMPs)

Each homeowner plays a critical role in reducing the impact of urban runoff resulting from development. Runoff from residential areas transports nutrients and sediment to surface waters, adversely affecting the water quality and clarity of Lake Tahoe. TRPA Regulations require that all property owners implement BMPs to infiltrate the volume of a 20 year/1 hour storm (about 1 inch of water) into the soil within the confines of their property. TRPA recommends that you have your property evaluated for Best Management Practices (BMPs).

BMPs are structural and non-structural practices proven effective in management of surface runoff and other non-point source pollution. Typically, a BMP Retrofit for a residential property entails inexpensive measures such as spreading mulch over exposed soil areas, paving dirt driveways, and in some cases installing infiltration systems under roof drip lines. Call the Tahoe Regional Planning Agency's Erosion Control Team (775-588-4547 ext. 217) or your local Conservation District (California, 530-573-2756 or Nevada, 530-573-2757) to schedule a **free BMP site evaluation**.

### BMP Technology

Best Management Practices, designed to prevent

nutrient and sediment pollution in the Lake, are required on all commercial properties, on public roadways, and around our private residences. Erosion control scientists continue to monitor and re-evaluate the means for controlling storm water runoff, forever in search of even BETTER Best Management Practices. New alternatives to gravel-filled infiltration trenches, which displace less soil, are more effective in controlling storm water runoff, are less labor intensive for installation, and are much easier to maintain, are now available.

The purpose of an infiltration system is to collect and infiltrate runoff from impervious surfaces such as roofs, driveways and parking areas, into the ground. This reduces erosion of the soil surface caused by runoff. Some examples include slotted drains, drywells, and underground infiltration storage units.

Infiltration systems require maintenance in order to continue to be effective. Accumulated debris within gravel mulch must be removed periodically. Storage units need to be regularly checked and accumulated sediment removed to keep available storage space open. A clean-out port can be used as a means to access storage facilities for easy maintenance.



*Residential BMPs include slotted drains, drywells, retaining walls, and use of native vegetation or mulch to stabilize slopes or eroding areas.*

**Schedule a free site evaluation by calling 775-588-4547 ext. 217, 530-573-2756 or 530-573-2757.**

## Snapshot Day 2001

The Clean Water Team's Snapshot Day took place on Saturday, June 2<sup>nd</sup>, 2001. Snapshot Day is a one-day volunteer-based event to take a look at the Lake Tahoe and Truckee River watersheds at one moment in time. More than 100 volunteers were involved in the first annual citizen monitoring effort here in the Tahoe-Truckee area. Volunteer teams performed visual assessments, took photos, collected water quality measurements, and took samples for analysis at the lab. A final report will be compiled for the data gathered at 36 locations in the Lake Tahoe Basin and 8 locations in the Truckee River Watershed by Fall of 2001.

Across the country, private citizens are learning about water quality issues and helping protect our Nation's water resources by becoming volunteer monitors. Volunteers are analyzing water samples for dissolved oxygen, nutrients, pH,

Special thanks to Mark Palmer of the High Sierra Water Lab for nutrient analysis of the water samples, and to Dr. John Kleppe for his generous equipment donation.

temperature, and a host of other water constituents; evaluating the health of stream habitats and aquatic biological communities; inventorying stream-side conditions and land uses that may affect water quality; cataloging and collecting beach debris, and restoring degraded habitats. State and local agencies may use volunteer data to screen for water quality problems, establish trends in waters that would otherwise be unmonitored, and make planning decisions. Volunteers benefit from learning more about their local water resources, identifying what conditions or activities might be contributing to pollution problems, and working with clubs, environmental groups, and state or local governments to address problem areas.

The Clean Water Team is looking for volunteers to continue to gather water quality samples from the 63 streams which feed into the Lake.

Volunteer to adopt a stream near you and join the Clean Water Team!



*Snapshot Day volunteer collects photographs of General Creek*

## ***LTEEC Guest Lecture Series Presents John Olmsted***

John Olmsted renowned environmental educator and author, presented a two-hour slide show to more than 90 attendees on June 18 at the Incline Middle School. On June 19, more than 40 local educators joined John Olmsted at the Thunderbird Lodge for an outdoor workshop. At these events, Olmsted demonstrated how we can inspire our audiences by creative story-telling and visual explanations of the inner workings of ecological communities.

Once named California's "Volunteer of the Year," Olmsted has four decades of experience in protecting ecologically significant landscapes and creating experiential education techniques. Olmsted

has devoted his career to saving parks between Tahoe and the California coast and developing inspirational teaching techniques about the environment. He is the founder and president of both the California Institute of Man in Nature and the Across California Conservancy, as well as co-author of the book *Adventures Along I-80*. A Botanist and complete naturalist, Olmsted is widely respected as an energetic disciple of John Muir. Olmsted bases his environmental education on the belief that "the land is the teacher."

Olmsted is interested in helping LTEEC develop more interpretive environmental education signs for roadside rest stops



*John Olmsted: Environmental Educator*

around Lake Tahoe. A 25-minute videotape of John's talk at Lake Tahoe is available for viewing, or it may be purchased for \$40.

## ***Landscaping Guide Helps Homeowners Preserve the Lake***

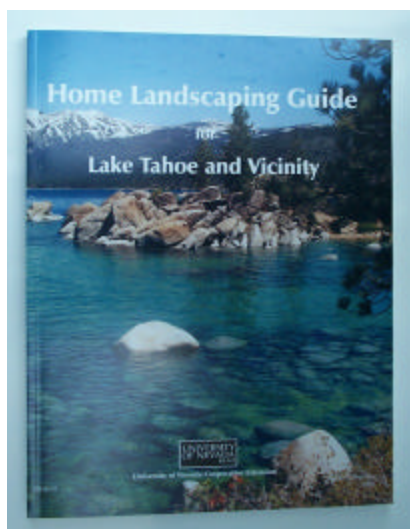
In an effort to get all Lake Tahoe homeowners implementing best management practices (BMPs) on their property, University of Nevada Cooperative Extension educators teamed up with community partners to publish the first comprehensive landscaping manual for area residents.

The *Home Landscaping Guide for Lake Tahoe and Vicinity* is the result of two years of collaboration between Cooperative Extension, the Tahoe Regional Planning Agency, the Natural Resource Conservation Service, the Resource Conservation Districts and others. The book helps homeowners design landscapes, control erosion, maintain

native vegetation and wildlife habitat, improve soil and irrigate efficiently. It contains suggested plant lists, pest-management tips and defensible space practices to protect homes from wildfire. The book is the central textbook for LTEEC's Home Landscaping and Backyard Conservation Working Group.

"We hope this guide helps homeowners achieve their individual landscape goals, while encouraging them to implement appropriate landscape practices that preserve the lake's unique environment," said John Cobourn, principal author and water resource specialist with University of Nevada Cooperative Extension.

For a copy of the *Home Landscaping Guide for Lake Tahoe and Vicinity*, call University of Nevada Cooperative Extension at 775-832-4150.



### ***Landscape Guide Chapters***

Preface: Develop Great Landscapes and Improve Water Quality

1. Design According to Your Property's Natural Potential
2. Design for Function and Ease of Maintenance
3. Control Erosion and Protect Stream Environment Zones
4. Use Irrigation Methods That Protect Water Resources
5. Defensible Space: Landscape to Reduce the Wildfire Threat
6. Maintain Natural Areas Through Backyard Forestry
7. Use Plants for an Integrated Landscape
8. Use Proven Planting Techniques to Ensure Success
9. Conserve and Improve Your Soils
10. Control Pests Without Harming the Environment
11. Other Ways You Can Prevent Lake Pollution
12. Seasonal Maintenance for Lake Tahoe Landscapes

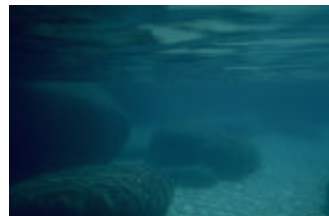
## Lake Tahoe is Losing Water Clarity

Lake Tahoe waters have been losing transparency at an average of about one foot each year since the late 1960s.

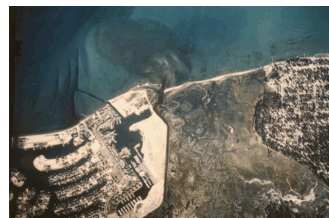
Lake Tahoe's exceptional clarity is a result of the absence of suspended sediment and free-floating, single-celled algae in the water. Given undisturbed conditions, the lake's water quality would change so slowly that the changes would be undetectable over a human lifetime. Human settlements and logging activities that began in the late 1880s have contributed to the rapidly declining clarity. Lake Tahoe's clarity has decreased by more than 33 percent since the 1960s and is steadily declining at the rate of

one foot a year. Scientists say that the rate of water quality deterioration at Lake Tahoe has been steady for so long that it may become irreversible in 10 years.

Lake Tahoe's water quality problems are not caused by industry or by wastewater treatment plants. The causes of water pollution are the daily activities of the thousands of residents and visitors in the Lake Tahoe watershed. (See box below.) We all need to learn to reduce our impact on the environment—impacts like erosion, over-fertilization, spills, leaks, and misuse of pesticides.



*Underwater Lake Tahoe  
Photograph by Larry Prossor*



*Storm run off at Tahoe Keys*

## LTEEC Reaches Out to Public

*(Continued from page 1)*

### **Home Landscaping/Backyard Conservation Working Group**

LTEEC's Home Landscaping/Backyard Conservation Working Group was formed in January of 2000 to help homeowners install BMP's. Comprised of representatives from TRPA, the Natural Resources Conservation Service, the Tahoe Resource Conservation District, the Nevada Tahoe Conservation District, IVGID's Waste Not Program and the University of Nevada Cooperative Extension, this group provides information on good landscape management techniques and conducts free BMP site evaluations for homeowners (see BMP article, page 2). The fifteen members of this Working Group have been very busy. Besides distributing more than 8,000 Home Landscaping Guides, they have provided workshops to more than 100 contractors and 500 residents, and conducted BMP site evaluations at 500 homes by mid-season this year (compared to 628 homes during the entire 2000 field season).

### **Working Group Structure**

From the start, the Lake Tahoe Environmental Education Coalition set up eight

## Non-Point Source Pollution

The Federal Clean Water Act divided all water pollution into two categories: point and non-point source pollution. Point sources were easily identified causes of pollution such as the waste discharge pipes of factories. There are no point sources of pollution at Lake Tahoe.

All of the other small, diffuse sources of pollution were named **non-point sources**. These are the sources of Tahoe's troubles, and they include soil erosion, agricultural and logging pollution, disturbance of riparian or stream environment zones, and polluted runoff from streets and parking areas.



*Storm erosion carrying  
sediment and nutrients*

distinct working groups to reach out to important audiences at the lake. Dividing the larger task of environmental education outreach into separate topics and audiences allows each group to focus on its priority. The K-12 group reaches school children by working with teachers and in the classrooms; the Volunteer Center helps citizens to get involved in restoration and education efforts; the Clean Water Team organizes water quality monitoring events; and the Citizens Restoration Working Group recruits citizens to help revegetate bare slopes. Most of LTEEC's educational impact will be created at the Working Group level. Citizens who seek to make a difference for the lake's envi-

ronment are encouraged to call LTEEC and join a working group.

The Lake Tahoe Environmental Education Coalition received a boost in the year 2001 when both University of Nevada Cooperative Extension and University of California Cooperative Extension agreed to fund an Environmental Education Coordinator position for a two-year period. This is the first bi-state position ever funded by the two Cooperative Extension organizations. In April of 2001, Heather Segale was hired as LTEEC's Environmental Education Coordinator to work with the eight working groups to reach all audiences in the Lake Tahoe community.

## Environmental Education Calendar of Events

### August

**August 3:** 2001 Children's Environmental Science Day at Sand Harbor State Park. A free community event for children that includes hands-on science activities designed to create an awareness of the unique ecology of Lake Tahoe. Join us from 10 am – 2:30 pm. Includes boat ride on the Paradise Horn Blower. Call 775-831-5828 for enrollment.

**August 16:** Tahoe Area Sierra Club Meeting (held the third Thursday of each month). Contact Michael Donahoe at 775-588-5466 for more information.

**August 18-19:** McKinney-Rubicon Springs Road Erosion Control Work Weekend. Volunteer are needed to implement erosion control measures on the McKinney Rubicon Trail. Contact Rebecca Bond, Placer County DPW at 530-889-7615 for information.

### September

**September 8 and 29:** Forest Stewardship Day provides an opportunity for people to participate in important hands-on forest restoration activities that will help improve the health of Tahoe's forests. Contact Dan Sussman at the League To Save Lake Tahoe at 530-541-5388 for more information.

**September 15:** Beach Clean Up in South Shore. Contact the League To Save Lake Tahoe at 530-541-5388 for more information.

**Submit environmental education events for inclusion in the calendar of events. Updates are available at <http://www.lteec.org>**

**September 20:** Tahoe Area Sierra Club Meeting. Contact Michael Donahoe at 775-588-5466 for more information.

**September 21-23:** Tahoe Rim Trail Grand Opening Weekend. After 20 years of work, the Tahoe Rim Trail, a 150-mile loop trail that runs along the ridges and the mountaintops circling Lake Tahoe, will officially open in September. To celebrate, the Tahoe Rim Trail Association is hosting the 150-Mile Celebration on September 21-23, 2001. The three day celebration will include guided trail hikes, mountain bike tours, horseback rides, sternwheeler cruise and an evening reception. An official grand opening ceremony will take place September 22 on the North Shore of Lake Tahoe. Key Nevada and California dignitaries, the trail founder, Lake Tahoe tourism representatives and volunteers instrumental in the development of the trail plan to attend. Please contact the Tahoe Rim Trail Association at 775-588-0686 for more information.

## Spring/Summer Events in Review

**Snapshot Day:** LTEEC's Clean Water Team held the first annual Snapshot Day in Tahoe and Truckee on June 2. Volunteers performed stream walks, took photos, gathered field data and water quality samples (see page 2).

**Watershed Fair:** Sierra Watershed Education Partnerships and the Tahoe Truckee Unified School District held the 5th Annual Watershed Fair at Common's Beach in Tahoe City on June 2. Activities included interactive watershed displays, student project presentations, resource study demonstrations, arts and crafts and tours on the Tahoe Research Group boat.

**Erosion Control Training Workshop:** LTEEC's Citizen Restoration Working Group hosted the Third Annual Erosion Control, Revegetation and Restoration Training Workshop June 6-8 (see page 6).

**John Olmsted Guest Lecture:** LTEEC hosted John Olmsted for a slide show June 18 and

an outdoor event at the Thunderbird Lodge June 19 (see page 3). LTEEC plans to bring guest lecturers to the area throughout the year.

Researchers from the University of Nevada, Reno, University of California, Davis and the Desert Research Institute toured restoration and research sites around Lake Tahoe on July 5. LTEEC's Research and Higher Education Working Group seeks to increase communication between researchers working at the lake and the public.

**Wildflower hikes** hosted by the California Native Plant Society and the League to Save Lake Tahoe are held throughout the summer.

**Natural History of Lake Tahoe** is a three credit Lake Tahoe Community College course taught annually by instructor John Roos. This course was held on July 21, 22, 28, 29.

**North Lake Tahoe Demonstration Garden Green Thumb Gardener Classes:** Held Thursday evenings at 6 pm throughout the summer. Recent topics have included Tahoe Native Wildflowers, Natives You Can Buy Locally, Concepts of an Integrated Landscape, and Drip Irrigation. Call 775-831-8603 for details.

**Lake Tahoe Storm Drain Stenciling Program:** Volunteers assist in public education by labeling storm drains throughout the Tahoe Basin with the message NO DUMPING—DRAINS TO LAKE. Call 530-584-1660 for details.

**Adopt-A-Watershed Leadership Institute:** Members of the K-12 Working Group attended the Adopt-A-Watershed Leadership Institute in Bend, Oregon. The goals of Adopt-A-Watershed are to enhance K-12 science education and encourage watershed stewardship. Adopt-A-Watershed teacher training workshops will be held throughout the 2001-2002 school year.

## ***Erosion Control, Revegetation and Restoration Training Workshop***

The *Third Annual Erosion Control, Revegetation and Restoration Training Workshop* was held June 6-8 in South Lake Tahoe. This workshop presented principles and methods of erosion control, revegetation, and stream and wetland restoration. With mornings in the classroom and afternoons in the field, more than 40 participants received hands-on experience revegetating an erosion site and stabilizing a streambank with biotechnical techniques.

Training workshops are taught by Steve Goldman and Michael Hogan and are sponsored by the California Conservation Corps and the Packard Foundation. LTEEC's Citizen Restoration Working Group hopes to continue holding workshops annually and may expand the program to include sites in both California and Nevada.



*Volunteers revegetate an eroded streambank*



*Volunteers revegetate a roadside slope*



*Michael Hogan, Instructor  
Integrated Environmental*



*Steve Goldman, Instructor  
California Tahoe Conservancy*



*Tiffany Hayes teaches third graders*

## ***Volunteers Needed: Get Involved With LTEEC***

Improving environmental education in the Tahoe Basin will require the work of many diligent volunteers and a coordinated effort among agencies working together on programs and projects.

There are many ways to get involved. A few examples include: environmental education events, K-12 programs, stream monitoring, restoration projects, backyard conservation, storm drain stenciling, forest stewardship days, and beach clean-up days.

Currently, "Neighborhood Leaders" are needed to help share information with local residents about Best Management Practices and erosion control. Training will provide valuable information about landscaping in the Tahoe Basin, erosion prevention, managing runoff, fertilizer use, recycling, composting and defensible space.

Other jobs open to volunteers include organizing block parties, making phone calls, distributing door hangers, entering computer data, or actual physical labor.

Call Heather Segale at the University of Nevada Cooperative Extension office (775-832-4150) if you are interested in volunteer programs or if you would like to tie your organization into these regional environmental education efforts.



*Volunteers calibrate water quality monitoring equipment*



*Michael Hogan provides classroom presentations*

**Special thanks to all the volunteers that work with LTEEC to promote environmental stewardship at Lake Tahoe.**

## About the Lake Tahoe Environmental Education Coalition (LTEEC)

LTEEC is sponsored by the University of Nevada Cooperative Extension and the University of California Cooperative Extension.

**Goal:** To help groups and educational organizations work together to educate the public about how to prevent pollution of Lake Tahoe.

**Objectives:** To enable the many education providers to coordinate planning for environmental and experiential education. To encourage groups with similar educational priorities to cooperate and collaborate rather than trying to plan educational programs in a vacuum.



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## Participating Partners

- California Conservation Corps
- California State Water Resources Control Board
- California Tahoe Conservancy
- Desert Research Institute
- Lahontan Regional Water Quality Control Board
- Lahontan Audubon Society
- League to Save Lake Tahoe
- Nevada Conservation Corps
- Nevada Division of Environmental Protection
- Nevada State Parks
- Nevada Tahoe Conservation District
- Parasol Foundation
- Sierra Watershed Education Partnerships
- Tahoe Americorps Group
- Tahoe Area Sierra Club
- Tahoe-Baikal Institute
- Tahoe Regional Planning Agency
- Tahoe Regreen
- Tahoe Resource Conservation District
- U.S. Forest Service
- U.S.D.A. Natural Resources Conservation Service
- University of California, Davis, Tahoe Research Group
- University of Nevada, Reno
- Waste Not, Incline Village General Improvement District

## LTEEC Working Groups

There are eight distinct working groups. Each group is led by one or two individuals with a passion for the group's task.

### Home Landscaping and Backyard Conservation

Assist homeowners in controlling erosion and runoff from landscapes.

### Volunteer Center

Engage citizens in volunteer conservation and environmental education efforts.

### Citizens Restoration

Educate and involve citizens in actual environmental restoration projects.

### K-12 Watershed Education

Help teachers and schools integrate environmental education into the classroom.

### Higher Education and Research

Work with researchers to disseminate information about the research projects conducted within the Lake Tahoe Region.

### Business and Tourism

Educate visitors and engage businesses in solutions to Lake Tahoe's unique environmental problems.

### Citizen Monitoring: The Clean Water Team

Engage citizens in watershed stewardship and monitoring of environmental indicators.

### Forest Health and Fire Prevention

Work with fire prevention agencies to ensure dissemination of consistent firescaping message in the community.

Produced quarterly by the Lake Tahoe Environmental Education Coalition (LTEEC). Send event listings, letters or comments to:

Heather Segale  
Lake Tahoe Environmental Education Coalition  
University of Nevada Cooperative Extension  
P. O. Box 8208  
865 Tahoe Blvd. #110  
Incline Village, NV 89452-8202  
Phone: 775-832-4150  
Fax: 775-832-4139  
Email: segaleh@unce.unr.edu  
Web Site: www.lteec.org

## Lake Tahoe Environmental Education Coalition

*University of Nevada Cooperative Extension*

*Post Office Box 8208*

*865 Tahoe Boulevard, Suite 110*

*Incline Village, NV 89452-8208*

*Phone: 775-832-4150*

*Fax: 775-832-4139*

*Email: [segaleh@unce.unr.edu](mailto:segaleh@unce.unr.edu)*

WE'RE ON THE WEB  
WWW.LTEEC.ORG

Special thanks to Smith-Jones, Inc. for web design assistance.

## *Other Ideas for Environmental Education*

Everyone involved with LTEEC has been brainstorming the possibilities... and we have come up with a "wish list" of ideas we would like to see implemented. Let us know of any other creative ideas you have come up with or how you can help us bring our wish list alive:

- Community Nature Centers
- Additional interpretive signs around Lake Tahoe
- Recorded interpretive tape for visitors (by roadside milepost)
- Signs for stream crossings at the 63 watersheds that feed the Lake
- Phosphorous-free lake-friendly fertilizer
- Environmental Education curriculum for every grade level
- Environmental information brochures for visitors at every lodging facility in the Tahoe Basin

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Lake Tahoe Environmental Education Coalition  
University of Nevada Cooperative Extension  
P. O. Box 8208  
Incline Village, NV 89452-8208

