



# Enviro-News

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901 S. Stewart Street  
Carson City NV

Promoting recycling, watershed education and environmental stewardship for Nevada

A Publication for School and Community educators

## Living With Fire



Lightning-sparked wildfires are frequent occurrences during the dry summer season in Nevada.

**BE AWARE!**

May is **Wildfire Awareness Month** in Nevada, a time when community members, fire and emergency services, and businesses join forces to raise public awareness of wildfires and promote actions that reduce the risks from wildfire to homes, communities and watersheds. Wildfires are usually extensive in size; spread quickly from the original source; change direction unexpectedly; and jump roads, rivers, streams and constructed firebreaks.

In 2014, wildland fires burned almost 60,000 acres in Nevada. From 2005-2014, wildland fires consumed over 4.6 million acres.

### Nevada watersheds are vulnerable to wildfires.

#### Wildfire Negatively Impacts Water Quality

Wildfires can significantly impact water quality, aquatic and wildlife habitat, drinking water supplies, agricultural operations and other economic resources. After a fire, runoff over the landscape usually increases due to loss of vegetation and the development of hydrophobic soil conditions which reduces infiltration into the ground. The runoff carries debris, sediment, nutrients and toxic materials to rivers and streams and negatively affects water quality in a variety of ways.

- Sediment and debris can affect drinking and wastewater facilities resulting in increased treatment costs.
- Debris, sediment and ash from burned landscapes can smother aquatic life habitat and decrease dissolved oxygen levels.
- Burning vegetation releases nutrients stored in the plants to the environment. High concentrations of ammonia (a form of nitrogen) are toxic to aquatic life. High nitrate levels can be dangerous to human health. Increased nutrients may lead to algal blooms which affect dissolved oxygen levels and impact recreation.
- Retardant chemicals used to fight the fires can be toxic to aquatic organisms.

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## Be Fire Smart, Improve Your Odds

Here are a few fire resistant practices you can implement to protect yourself and your neighbors from the threat of wildfire:



- ◆ Move firewood away from the house; create a fuel break around all structures.
- ◆ Dispose of fireplace ashes and charcoal briquettes only after soaking them with water in a metal pail.

- ◆ Store gasoline in approved safety containers away from occupied buildings.
- ◆ Propane tanks should be far enough away from buildings for valves to be shut off in case of fire. Keep area clear of flammable vegetation (cheatgrass and other invasive species).
- ◆ All combustibles such as firewood, picnic tables, boats, etc. should be kept away from structures.
- ◆ Clean roofs and gutters of pine needles, leaves, branches regularly to avoid accumulation of flammable materials. Rake up fallen leaves and needles. Remove dried grass and weeds.
- ◆ Thin dense stands of trees and shrubs; space vegetation so fire cannot be carried to structures.
- ◆ Have fire tools handy: a ladder to reach the roof, shovel, rake and bucket for water.
- ◆ Screen your chimney flue opening with a non-flammable mesh not to exceed 1/2 inch. Remove tree branches within 10 feet of flue opening.
- ◆ Have at least two entrance and exit routes in your home.

## Minimize your losses



August 8, 2012

Sparked by lightning, the Holloway Fire burned 112 mi<sup>2</sup> (291 km<sup>2</sup>) near the Nevada-Oregon border.

[www.livingwithfire.info](http://www.livingwithfire.info)  
For more information contact  
**Sonya Sistare**  
775-336-0271

# Recycling Survey

Nevada Recycles staff is seeking input from school teachers statewide to help direct our education, outreach and technical assistance efforts. Please take a minute to share your view of how well the recycling program at your school is working. Your participation is greatly appreciated! [Recycling Survey](#)

# Your Input is Important!

## Waste-Free Lunch Day

To honor Earth Day, consider designating a waste-free lunch day. It is estimated that a school-age child using a disposable lunch generates on average 67 pounds of food, packaging, and related waste per school year. Along with the environmental benefits, committing to waste-free lunches saves money for parents and schools. A waste-free lunch event is a great way to develop a sense of stewardship in students and to visibly demonstrate the impact of recycling, reducing, and reusing. You can supplement your event with a lesson from [NevadaRecycles.nv.gov](http://NevadaRecycles.nv.gov), Keep Truckee Meadows Beautiful's [Waste Warriors](#) curriculum and video, or a full-blown waste audit. Resources for organizing a waste free lunch day can be found at <http://www.epa.gov/wastes/education/lunch.htm> and <http://www.wastefreelunches.org/>.

# Low Impact Development - Landscaping that Works

Throughout the country over the last few decades, low impact development (LID) has emerged as an effective measure to reduce stormwater pollution and protect watersheds and water quality. LID is a community approach to manage and control stormwater using design techniques that detain, retain, infiltrate, filter and evaporate runoff close to its source.

Surface runoff contains pathogens, hydrocarbons, metals, sediment, excess nutrients and other toxins that collect as water washes across **impervious surfaces** during storm events.



Impervious surfaces are hardscapes like asphalt, concrete and rooftops that limit water from soaking into the soil. Photo courtesy of Jay Gan.

Low impact designs minimize impervious hardscapes and mimic the pre-development water cycle of an area by allowing stormwater to infiltrate to groundwater or to evaporate rather than be conveyed to stormdrains, rivers, lakes and streams.

Low impact designs provide for the physical, chemical, and biological removal of contaminants at the source. LID design can be a modest retention basin



Photo courtesy UF IFAS

Rain gardens make a beautiful additions to a home landscape.

or an elaborate series of structural controls to help reduce runoff volume and velocity. A common practice is re-directing runoff from roofs and paved areas to a bioretention area, rain garden or vegetated space.

Small-scale low impact designs do not need to be extensive engineering projects but can be as simple as “plant don’t pave!” Larger projects may involve placement of high-level controls that address specific pollutants, stormwater flow rates and volume issues. Whatever the project size, runoff is reduced and contaminants are removed.

Rain gardens work similarly to vegetated swales and retention ponds in that they temporarily hold rainwater and allow it to soak into the ground. Create and design yours with native plants, shrubs, groundcovers and flowers to provide an attractive area. In a dry climate, supplemental irrigation may be needed to keep vegetation alive.

For more information and examples of local low impact designs, visit <https://www.unce.unr.edu/programs/sites/nemo/lid/>

## Success Is A Small Step Taken Just Now

Jennifer Piccinini, a 4<sup>th</sup> grade teacher at Coral Academy of Science in Reno, facilitates the Project WET Science club that meets Monday afternoons for 45 minutes.

After attending the Nevada Tahoe Teacher STEM Institute, last summer, a week of classroom water activities and study at Lake Tahoe, I was inspired to start a Project WET Science club. I am always looking for new activities to add to my science toolbox and the Project WET Curriculum and Activity Guide is an excellent complement. The Guide offers resources and activities that are clear and understandable for the 4<sup>th</sup> and 5<sup>th</sup> grade students that I work with.

As the school year began last fall, the PWET Science club started with the Blue Planet lesson and looked at water as a global concept, then more specifically as a local issue. Students studied the composition of water and discussed renewable resources. As the school year progressed, the Science Club explored deeper to study and analyze their local watershed. Using the Truckee River watershed maps, students have tracked water processes and systems within their local Truckee Meadows community. The students used their computer skills to access the USEPA's [Surf Your Watershed](#), an interactive website presenting watersheds by counties and to view the local area around them. There is a great activity in the Project WET Guide called **Humpty Dumpty** that presents the challenges of habitat restoration by piecing together puzzles and broken items. Students learn how impactful people are to the environment and how making way for people to live has changed watersheds as well as the forests and wetlands around us.

More recently, the Science Club has been studying drought. After the slight February snowfall, the students investigated how precipitation makes a difference in water levels. We were all surprised to find out that Lake Tahoe water levels came up about 5 inches even with small wet storms. Students have taken a keen interest following the local paper and with the internet research to compare pictures of the Truckee River from mouth to mouth. My students really make the connection of low water supply and drought with current pictures. Currently, the students are engaged with the Project WET activity, **My Water Footprint**, to track their daily use of water and coming up with feasible ways to conserve water.



Jennifer Piccinini in the classroom.

This club has been fun this school year. We have studied and played with water to really look at what water means for us individually, in our state, and globally.



Photos show student work with Project WET activities, **Color Me A Watershed** and **H2O Olympics**.

# Take Care of Lake Tahoe

This summer the [Lake Tahoe Outreach Committee](#), in partnership with the Tahoe Fund, will launch a regional stewardship campaign in the greater Tahoe Region to motivate residents and visitors to reduce their impact on the natural environment. The intent of "Take Care." is to present a unified message that will elevate the level of stewardship in the region and change behaviors.

The campaign will initially focus on decreasing litter on trails, beaches and public areas; reducing dog waste left on trails, parks and beaches; reducing incidents with bears; encouraging greater adoption of the "clean, drain and dry" message for all watercraft entering the watershed; and encouraging greater adoption of fire-safety measures.



Lake Tahoe's [Take Care. Campaign](#) will launch this summer. Be on the lookout!



Take Care. is a campaign for people of all ages, but with a special emphasis on the people who don't get it; those people who quickly dismiss traditional messages and disregard stewardship practices. The campaign utilizes humor and joy to get everyone's attention and get the point across. In the real world of interwoven ecosystems, the value of stewardship is evident, not just for oneself but for others.

Example headlines include:

Dog Waste: If it's your dog then it's your doody.

Litter: There is a better place to hide your trash.

Like a trash can.

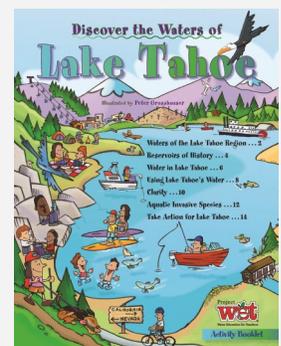
Aquatic Invasive Species: We would love to check your bottom.

The Lake Tahoe Outreach Committee is developing a digital toolkit of materials to be shared (free) with organizations and businesses in the region for use in their public outreach. There are plans to produce a video for the social media component of the campaign in time for a summer 2015 launch.

## NEW EDUCATIONAL RESOURCE

A new resource is available to help kids ages eight to twelve learn about the unique alpine ecosystem of the Lake Tahoe watershed. "[Discover the Waters of Lake Tahoe](#)" is an interactive, hands-on activity booklet correlated to Next Generation Science Standards and Nevada Academic Content Standards.

Topics include the Tahoe Basin and Truckee River Watershed, the human history of the Tahoe Basin, climate change and Lake Tahoe's clarity, the many uses of Lake Tahoe's waters, aquatic invasive species and actions YOU can take to protect Lake Tahoe's waters. "[Discover the Waters of Lake Tahoe](#)" was created by the Project WET Foundation, a world leader in water education, and funded by the Nevada Division of Environmental Protection.



Request your copy, contact [Mary Kay Wagner](#)  
775-687-9454

## Connecting Hands: Offering Lifelong Learning Adventures



Participants ready themselves to engage in a trust building and communication activity. Informal science educators are not classroom teachers but those who work in or have developed a compatible setting for science communication—e.g., museums, [Outside Las Vegas](#), [Lake Mead National Recreation Area](#), [Springs Preserve](#), [Sharks Reef](#) and other science-rich institutions or media.

# CHOLLA

[CHOLLA](#) is a southern Nevada based consortium comprised of agencies and programs that strive to provide opportunities for connecting and extending classroom learning to the outdoors. In February, CHOLLA put on a symposium at the Clark County Wetlands Park in Las Vegas entitled “Embracing Change: Building Bridges to our Future.” Informal science educators came together to explore and discuss informal STEM learning in education, technology and interpretation through the lens of Next Generation Science Standards (NGSS) .

### Lessons Learned About Informal Education

Keynote speaker Dr. Theresa Coble (Stephen F. Austin State University) emphasized that as informal educators, our role in STEM is to facilitate learners’ meaningful experiences *in place*. Over the course of a person’s life, learning in non-school settings such as museums, hiking trails, camp, schoolyard habitat, or even the family dinner table, contributes hugely to a person’s overall education. The non-traditional classroom that surrounds us fosters a wealth of valuable learning experiences, whether or not they are tied to classroom-tested standards.

Dr. Coble’s presentation opened with stories of her days as a guide for canoe trips with students in northern Minnesota. The sense of excitement she portrayed tied into keynote speaker Dr. Beth Barrie’s (UNLV) presentation, which highlighted six strands of informal science learning that can help educators facilitate the ability for people to learn.

**Six Strands for Learning Science Beyond the Schoolhouse:** [Based on the work of [Drs. Philip Bell and Bruce Lewenstein](#) states that people of all ages and backgrounds engage in activities that can support science learning in the course of daily life.]

1. When **learners are motivated**, they experience excitement, interest, and curiosity to learn about phenomena in the natural and physical world.
2. **Learners receive** content and explanations to develop a **conceptual understanding** and knowledge of scientific processes and links to other information, phenomena and practices related to science.
3. **Learners engage in** discovery through **active inquiry**, develop personal explanations and can

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## Connecting Hands: Lifelong Learning

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- begin to develop a deeper understanding of the natural and physical world. Active inquiry includes asking questions, handling materials, testing hypotheses, as well as observation through stillness.
4. Creating and delivering opportunities for participants to **assume the role of a scientist** helps learners **to reflect on science as a way of knowing**. The practice of science is a dynamic process with ongoing evaluation of new evidence and the assessment of acquired data. Scientists continually modify their view of the world searching for explanations of an event or phenomena.
  5. Learners **engaging in scientific practices, using the tools and language of science**, develop a greater appreciation of how achievement is made within the scientific community, refine their mastery of science, and begin to gain entry into the culture of the scientific community.

6. Learners begin to **see themselves as scientists**, too. Learners identify with the scientific enterprise as someone who knows about, uses, and sometimes contributes to science. Youth may begin to think seriously about a career in a science, engineering, or research.

As we discussed each of the strands and how they relate to our programs, we realized that some of them are quite complex and that the strands intertwine. We were able to link many of our programs' activities and teaching experiences to these strands, affirming that the experiences we facilitate do indeed contribute to learning. Keeping these strands in mind as we develop, carry out, and evaluate activities will help us facilitate high quality learning experiences that complement classroom learning goals.

If you are interested in reading about the six strands, Bell and Lewenstein's book, [Learning Science in Informal Environments](#), can be downloaded.

# Earth Day Events

### SOUTHERN NEVADA

April 22 5:30—8:30 p.m.  
GREENfest [VIP Reception](#)  
\$20 prepaid, \$25 at door  
Downtown Summerlin



April 25: 10 a.m.—5 p.m.  
[GREENfest Event](#) **FREE**  
Downtown Summerlin

April 24—May 2 Las Vegas Science & Technology Festival. Visit [LasVegasScienceFestival.com](http://LasVegasScienceFestival.com)

April 25 [Pahrump Earth Day](#) 10—3 p.m., Ian Deutch Memorial Park



### NORTHERN NEVADA

April 25 Elko Take Pride Event  
April 25 10 a.m.—4 p.m.  
Fallon Earth Day at Oats Park  
April 25 9 a.m.—3 p.m.  
Hawthorne Earth Day  
Veterans Park  
May 16 11 a.m.—2 p.m.  
Washoe Tribe Earth Day at Woodfords



April 26 10 a.m.—6 p.m.

April 18 9 a.m.—2 p.m.  
E-Waste Recycling Event  
Park Lane Mall, Reno  
(Plum & Virginia)

Details <http://new2ucomputers.org/>



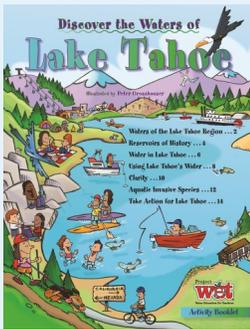
### OTHER EVENTS

May 15 9 a.m.—12 p.m. Lower Truckee River Snapshot Day

June 13  
Carson River Festival  
[Oodles of Noodles](#)  
Old Town Dayton



# Upcoming Events



## Waters of Lake Tahoe Workshop

Enjoy the workshop in the beauty of the Tahoe Basin. Experience fun, hands-on Project WET (Water Education for Teachers) activities to support teaching of Next Generation Science Standards. Use resources to integrate Tahoe ecosystems and watershed processes in your classroom. Walk away with classroom ready content and skill development to study water in the Tahoe Basin, drought, water conservation and the new standards.

Receive *Discover the Waters of Lake Tahoe* and the *Project WET Guide 2.0!*

Thursday, May 7, 2015  
8:00 a.m.—3:00 p.m.  
U.C. Davis Tahoe Center  
for Environmental Sciences  
291 Country Club Drive,  
Incline Village

To Register:  
contact Joy Barney  
(530) 543-2685  
[jbarney@fs.fed.us](mailto:jbarney@fs.fed.us)

## Get on Board: The Sustainability and Recycling Tour



SOUTHERN NEVADA

5:00—8:00 p.m. May 15  
AND  
8:00—4:30 p.m. May 16  
DRI—Las Vegas Campus  
Rooms 181 & 182  
755 E. Flamingo Rd.

**Teacher Training:** Begin Friday evening with dinner and discovery at Desert Research Institute’s Las Vegas Campus. Saturday morning: depart from the Palazzo Hotel on a Natural Gas Powered RTC bus and visit the Republic Services Recycling Center, Transfer Station, and Apex Landfill. Return to the Palazzo to enjoy lunch and a Sustainability Tour of the property. Sign up at <https://www.dri.edu/greenpower/workshops-and-training>

## Waters of the Western Great Basin

Join NDEP and Project WET facilitators for two days of discovery!

**Day 1** Tour the Peppermill’s Geothermal Power Plant and learn about the geothermal system used to heat and cool the resort’s buildings. Presentations on the *Tahoe Basin Watershed*, the *Truckee River Watershed* and *Pyramid Lake* will address water quality, water management and impacts to downstream users, communities and wildlife.

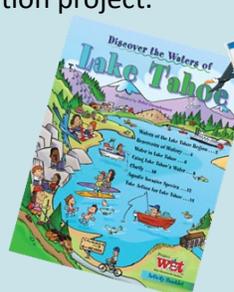
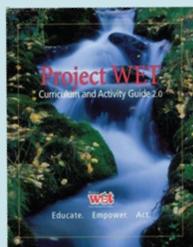
**Day 2** Sessions on the *Carson River Watershed* and *Walker River Watershed* will address inter-basin transfers, drought conditions and invasive species. After a picnic lunch at the McKinley Arts & Cultural Center investigate macro-invertebrates that inhabit the nearby Truckee River and tour the Center’s Low Impact Development (LID) demonstration project.

8:00 A.M – 5:00 p.m.  
June 16—17, 2015  
Reno Peppermill Resort

\$20.00 Registration includes snacks, lunches, educational resources and Dept. of Education In-service credit.

Limited space  
[Register here](#)  
Questions? Contact  
Mary Kay Wagner  
(775) 687-9454

Participants receive:



... and more!

The Nevada Division of Environmental Protection (NDEP) provides resources and funding for educational and outreach programs throughout Nevada. NDEP sponsors and endorses Project WET and Recycling programs and curriculum through two Bureaus: Water Quality Planning and Waste Management.

Nicole Goehring ([ngoehring@ndep.nv.gov](mailto:ngoehring@ndep.nv.gov))  
Northern Nevada Recycling Coordinator  
Rachel Lewison ([rlewison@ndep.nv.gov](mailto:rlewison@ndep.nv.gov))  
Southern Nevada Recycling Coordinator  
Bureau of Waste Management  
p: 1-800-597-5865 (Recycling Hotline)  
[NevadaRecycles.nv.gov](http://NevadaRecycles.nv.gov)



Mary Kay Wagner ([mkwagner@ndep.nv.gov](mailto:mkwagner@ndep.nv.gov))  
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p: 775-687-9454  
[www.ndep.nv.gov/edu](http://www.ndep.nv.gov/edu)



For information on **Discover a Watershed: the Colorado River** and **PWET Workshops** in Clark County contact: Amanda j. D. Rowland, Education & Outreach Specialist  
Lake Mead National Recreation Area, 702-277-2770 [amanda\\_rowland@nps.gov](mailto:amanda_rowland@nps.gov)