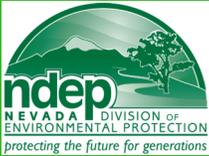


Enviro-News

Promoting recycling practices, watershed education, and environmental stewardship for Nevada.

A Publication for School and Community Educators



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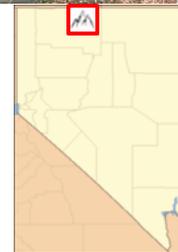
HIGHLIGHT ON THE HUMBOLDT BASIN

What's Inside

Paradise Valley Stewardship Project



The Santa Rosa Mountains looking southwest. (Wikimedia.org)



The spectacular Santa Rosa Mountain Range is situated 30 miles north of Winnemucca off of State Hwy 95 in the larger Humboldt River watershed. The snow capped Santa Rosa, Paradise and Singas peaks stand out against the landscape. The Santa Rosa Range supports diverse wildlife and aquatic ecosystems. Mule deer, mountain lions, bobcats, marmots, mountain and western bluebirds, raptors, sage grouse and chukar inhabit and thrive in this open space. Cold water streams support brook, rainbow and threatened Lahontan cutthroat trout. For more information, check out www.nevadawilderness.org.

A lightning strike in August 2012 kindled a wildfire in the Santa Rosas that devastated several thousand acres of rangeland and riparian habitat in Morey Creek, Singas Creek and the Hanson Creek drainages. 390 acres of private land, 6,856 acres of Bureau of Land Management [BLM] land, and 5,222 acres of United States Forest Service [USFS] land were affected. The fire caused property and resource damage to ranches, power lines and infrastructure, aquatic and wildlife habitat, and the adjacent Wilderness Area in the Humboldt Toiyabe National Forest. Eighty nine percent

of the fire affected sage grouse habitat and crucial winter and summer range for mule deer.

Singas Creek is also identified as a Lahontan cutthroat trout recovery watershed.

Fire rehabilitation efforts are being coordinated between federal, state, and local agencies and organizations including the BLM,

USFS, Nevada Division of Wildlife (NDOW), Nevada Muleys, Nevada Chukar Foundation, Friends of Nevada Wilderness (FNW), Nevada Outdoor School, grazing permittees, Paradise Valley School and many community volunteers. On BLM land, broadcast seeding has been completed on 500 acres of known Medusa-head rye infestation. An additional 6,000 acres were aerially seeded over the winter. Nevada Muleys and Nevada Chukar Foundation were able to provide significant supplemental funding for the purchase of seeds and live plants for revegetation.

Paradise Valley Project	1
Paradise Valley Stewardship	2
Worms, Not Waste	3
Do Mines Recycle?	3
Education Workshops	4
Stewardship Spotlight	5
Noxious Weeds	6
EE Roundtable	7
Next Generation Science Standards	8
Upcoming Events	9
Who We Are	9

CONT. ON PAGE 2

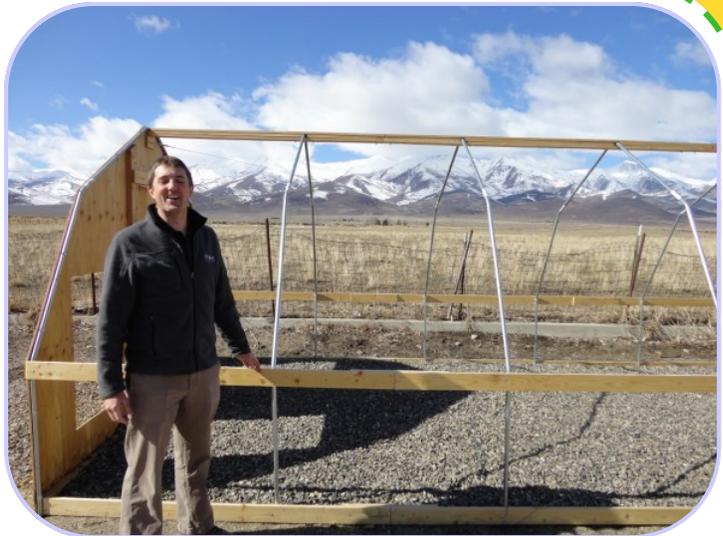
CONT. FROM PAGE 1

Along with plants from NDOW, enough bitterbrush seedlings have been secured to treat significant areas in not only the Hanson Fire area, but other critical habitats as well. This year, FNW and volunteers have planted more than 3,500 seedlings, including over 1,000 with biodegradable cages. With more planting days to come, this number will continue to grow. Other stabilization treatments being implemented by the BLM include placing local boulders and tree skeletons in streams to stabilize the channels and provide habitat for fish.

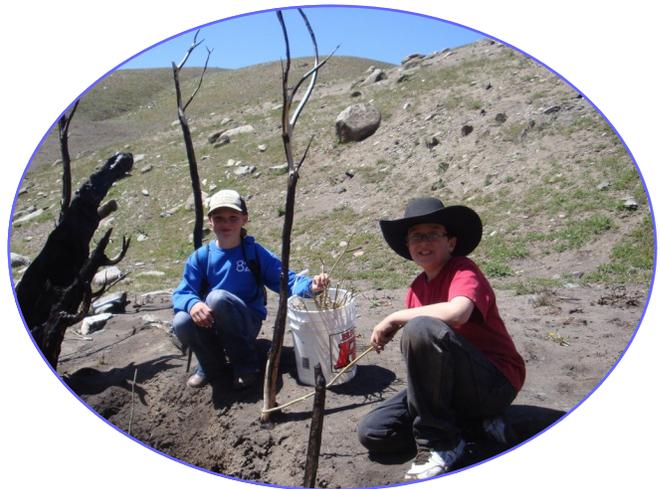
PVS Students Support Revegetation Project

Nevada Outdoor School (NOS), a non-profit outdoor education program based in Winnemucca, conducts class visits and restoration work with educators and students in the Paradise Valley ranching community directly east of the Santa Rosa Range. As part of a watershed stewardship program, NOS installed a greenhouse on the **Paradise Valley School (PVS)** campus to grow bitterbrush and other native plant seedlings for the restoration of Singas Creek. This spring and fall, PVS students will plant willow stakes and bitterbrush seedlings, and lay mulch to reduce erosion and enhance seed germination.

The BLM will provide penstemon, flax and other wildflower seed for the youth to spread by hand. The re-vegetation work is critical for wildlife and riparian habitat and will reduce Nonpoint Source pollution from sediment and soil erosion.



"I realize our stewardship component with PVS at Singas Creek is small, but the educational value is large," says **Andy Hart, NOS Director**. The program will impart an understanding of the function and benefits of watersheds to communities, how natural and man-made "systems" in a watershed are connected, why clean water is important, and how individual choices impact the future health of our water.



NOS inspires exploration of the natural world, responsible stewardship of our habitat and dedication to community.

Teachers!! Project this newsletter on **Smartboard** to **read and review** its content and engage with students.



Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it's the only thing that ever has.

~ Margaret Mead
1901-1978

Worms, Not Waste

In a small, rural community, like northern Nevada's Paradise Valley, it can be difficult to find local recycling opportunities. One solution is to do it yourself by composting. NDEP's Northern Nevada Recycling Coordinator, **Nicole Goehring**, worked with Nevada Outdoor School, based in Winnemucca, to teach Paradise Valley School's 30 K-8 students and several community members about vermicomposting. Yes, that means composting with worms!

The best kind of worm to use is called the red wiggler.

Students got a close-up look at these little red squirming composting machines. They can eat up to twice their body weight each day! With a few sim-



ple steps the group constructed new vermicompost bins out of plastic tubs. The addition of shredded newspaper and water provided the worms with everything they needed in their new home: air, water, and food. One bin was kept by the school and the other went home with a community member, complete with a batch of worms to get started. The end product of the composting process is a ready-to-use, nutrient-rich soil amendment that garden or house plants will greatly appreciate. If you are interested in a vermicomposting presentation or workshop, contact **Nicole Goehring** at (775) 687-9466.



A free vermicomposting guide is posted on the homepage of www.NevadaRecycles.gov.

FAQ: Do mines recycle?



A haul truck tire converted to a water trough can hold up to 2,000 gallons for use by livestock and wildlife! Photo Credit: ww.WesternTireRecyclers.com

A: Yes! Many Nevada mines participate in recycling practices.

The mining process requires the use of many different resources and materials. Water can be recycled, as can solid wastes including metals, plastics (tarps, pipes, etc), cardboard, tires, and various fluids such as motor oil. By recycling, a mine extends the life of its landfill and saves resources. Some mines have found local markets for certain materials. However, many other materials are transported out of state for recycling.

Latest Buzz:

Education Workshops

The Nevada Outdoor School (NOS) hosted and led a dynamic Project WET training in Winnemucca last quarter. Trainer-type workshops encourage participants to improve, implement, and sometimes refashion aspects of their teaching or personal practices.

The goal of the Project WET training program is to grow a network of impassioned facilitators who want to inspire water education in Nevada using the Project WET curriculum. Friday evening, a small group of prospective facilitators received their introduction to

Project WET. They shared ideas for serving Nevada communities and classrooms with education on important water topics. As a result, three new facilitators were trained to assist in rural Nevada: **Teresa Taylor**, NV Rural Water Association, **Andi Porrecca**, Humboldt Watershed Cooperative Weed Management Assoc., and **Steve Thompson**, Nevada Outdoor School. Steve said, *"I'm here to gain experience collaborating with my peers, learn techniques for teaching teachers, and to actively become more familiar with new lessons in the WET Guide."*

Early Saturday morning, additional school and community educators joined the workshop setting at the Humboldt County School District office. The previous evening's participants mixed with new recruits from Grass Valley Elementary, Winnemucca Community Gardens, Barrick Mining and Newmont Mining. We commenced with 12 participants to explore the realm of watersheds!

Jessica Snamen, NOS Director of Programming, tailored the syllabus with various lessons and activities for Teach-back lessons focused on



defining and understanding watershed benefits and boundaries, water use, and water resource management.

Pass the Jug distinguishes the difference between Western water rights and the Common-Law Doctrine typically followed east of the Mississippi. Generally, water law in the western United States, and Nevada specifically, allocates water under the doctrine of prior appropriations. This means that older water permits with a senior priority date have a first right to water use before a permit with a newer date.

8, 4, 1, One for All allowed participants, representing various water users, to encounter shared economic and community challenges such as floods, drought, pollution impacts, and endangered species. It was recognized that communication, teamwork, and cooperation are important to address these concerns when a community water supply and demand are out of balance.

CONT. ON PAGE 8

Participant Feedback: "I feel comfortable with a wide array of lessons from the Guide and the review through the Guide was terrific. I LOVED that materials were provided for participants to make their own supplies for some of the lessons that were done. This was great encouragement and I'm excited to have those resources available."

We Are the Stewards

submitted by *Matt Zietlow*

Stewardship Spotlight features individuals and organizations that strive to make a difference. This issue features **Matt Zietlow**, Environmental Manager for Marigold Mine (Humboldt County, NV).

The Marigold Mine is located in the southeastern portion of Humboldt County, about three miles south of Valmy. The bulk of my work centers on managing the extensive environmental compliance programs, permits, and regulatory affairs for the Marigold Mine. This spans a very wide breadth of subjects such as surface water, groundwater, air, land reclamation, wildlife/botany, waste management, cultural resources, and numerous others, as well as extensive field studies, monitoring, and reporting programs. I also oversee the Land Management and Corporate Social Responsibility programs at Marigold, and am also currently serving as Chairman of the Nevada Mining Association Environmental Committee.

I'm fortunate to be married to the most beautiful girl I've ever met, Jackie (who incidentally grew up in Austin, NV), and we have four children. We are absolutely an outdoors family and are nearly always out camping, fishing, hunting, or ATV riding.

I grew up in central Wisconsin, and came out west at the age of 18 while serving in the U.S. Air Force as an Environmental Specialist. After 4 years of active duty, I knew I wanted to advance my career as an environmental professional, so I completed my degree in Environmental Engineering from Montana Tech (aka Montana School of Mines) in Butte. I have been working in mining as an environmental professional for about 20 years now, primarily in Nevada and Montana.

Given that I grew up in the rural, farming lifestyle of the upper Midwest, you might say I was born into environmental stewardship. I have always been an avid outdoorsman, as was my father. Some of my earliest memories are fishing and hunting trips we'd take in the backwoods of Wisconsin. As for my stewardship practices, little things come to mind such as recycling, efficient lawn watering, growing a garden, energy efficient fixtures, and volunteering for environmental education and conservation groups. But I think the efforts I'm most proud of are my work as an environmental professional to balance the realities of humans and natural resource needs with responsible and creative environmental programs and restoration efforts.

If I could change or enhance one thing in our education programs, it would be to get students out of the classroom more to see how science and life work in nature. As humans, we have a significant impact on our environment just by being here – clothing, roads, bridges, houses, cars, computers, electricity, gas and food all come from somewhere and all require natural resource use, including water. We need to manage our needs and then use the required natural resources responsibly; this is the key to environmental stewardship. Water needs to be carefully managed and conserved whenever possible. Whether we're talking mine water, irrigation water, water for thousands of hotel guests in our major cities, or the water each of us use every day in our personal life, we all have an impact on our limited water resource and it's all our responsibility to not be careless with that.



Matt Zietlow's second home is outdoors on the water.

Identifying and Eliminating a Noxious Weed

submitted by *Andi Porreca*, Humboldt Watershed Cooperative Weed Management Area (HWCWMA) Habitat & Water Quality Improvement Coordinator

Nevada Revised Statutes (NRS) define a noxious weed as "any species of plant which is, or likely to be, detrimental or destructive and difficult to control or eradicate." (NRS 555.130)

One of Nevada's most noxious weeds is Perennial Pepperweed (*Lepidium latifolium*) also known as tall whitetop. This invasive plant can establish quickly and has adapted to a wide range of local habitats. It will infest pastures, riparian areas, roadsides, rangelands and crop fields. For livestock, it's difficult to digest, lowers the protein content of hay and inhibits grazing. The weed also degrades nesting habitat for wildlife and displaces desirable species.

Perennial Pepperweed typically grows 1' - 3' tall, but can reach up to 6 ft. in height. It has many stems that emerge from a somewhat woody root crown with alternate, waxy leaves that have smooth or toothed edges and a prominent, whitish mid-vein. Lower leaves are larger than upper leaves; they are attached by a stalk, and they do not clasp the stem. Perennial Pepperweed's small white flowers are arranged in dense clusters at the tips of stems that flower from



rosette stage



flowering stage

June through September. It spreads through prolific seed production. Perennial Pepperweed have small (1/16") round or egg-shaped seed pods, and creeping roots.

Mechanical control (like mowing or plowing) is usually not an effective form of eradication because any remaining roots will sprout into more Perennial Pepperweed. Small infestations may be hand-pulled, but weeders should remove as much of the root as possible. Repeated hand-pulling for up to five years may be necessary to eradicate all the roots.



An infestation of Perennial Pepperweed

Chemical control of Perennial Pepperweed is best achieved by repeated herbicide applications to starve the root system. To successfully destroy Perennial Pepperweed with chemicals, competitive vegetation must be established immediately after its control to prevent reinvasion. Please notify Andi Porreca at 775-762-2636, aporreca@humboldtweedfree.org; or HWCWMA, www.HumboldtWeedFree.org, for questions regarding chemical controls or if you see invasive species growing in the Humboldt Basin.

HWCWMA is a group of private land owners, ranchers, and state and federal employees who have joined together to stop the rapid spread of noxious weeds in the Humboldt Basin. HWCWMA can provide site-specific advice on how best to address noxious weeds. The group is working to eradicate noxious weeds from taking permanent residence anywhere within the 16,843 mi² of the Humboldt River watershed. HWCWMA maps all known locations of regulated noxious weeds and coordinates treatment on approximately 2,500 acres in the Humboldt Watershed each year.

Noxious weed infestations anywhere in Nevada, can be reported to the Nevada Department of Agriculture Noxious Weed Program at <http://agri.nv.gov/Plant/NoxiousWeeds/NoxiousWeedsComplaintForm/> or by contacting Robert Little, Noxious Weeds Coordinator, at 775-353-3673.

Invasive and Noxious Weed publications can also be downloaded at <http://agri.nv.gov/Plant/NoxiousWeeds/NoxiousWeedsHome/>.



Environmental Education Roundtable

By Steve Lewis, Extension Educator
University of Nevada Cooperative Extension



How successful are you as an environmental educator? What difference are your programs making? Are people changing as a result of your programs, in what they know and how they behave? And, ultimately, has your programming improved environmental conditions? These are fundamental questions all those in environmental education ask and find creative ways to answer. It all comes down to accountability to funders, participants, and us – the individual educators.

The Carson River Coalition (CRC) Education Working Group found themselves asking these questions and designed a day-long workshop on February 6th in the beautiful Old Assembly Chambers at the State Capitol to help others improve their program evaluation skills. **Dr. Sue Donaldson**, Water Quality Specialist at the University of Nevada Cooperative Extension (UNCE), delivered the keynote presentation entitled “Moving Beyond Awareness: The ‘So What’ Factor.” Successful program evaluation begins with planning followed by program implementation. Sue shared a Logic Model on the Nonpoint Source Education for Municipal Officials (NEMO) program and talked about how planning established a firm foundation for program evaluation as well as implementation.

Roundtable participants broke into seven small groups and worked on evaluation components for existing environmental education programs. The “guinea pig” programs included Sierra Nevada Journeys Watershed Education, Nevada Recycles, Schoolyard Habitats, Eagles & Agriculture, Explore Your Watershed Conservation Tours, Project Wet, and the Alpine Watershed Group Citizen’s Monitoring. The first breakout session was to write program outcomes, describing learning, action, and conditions as a result of the program. Next, participants practiced writing SMART (specific, measurable, attainable, relevant, time-bound) goals. Completing the participation, activities and program investments was the work of the third breakout session. Finally, the small groups developed strategies to measure and convey program results.



Andre DeLeon, Nevada Department of Education, talked about the Next Generation Science Standards and **Sonya Sistare**, UNCE, shared evaluation approaches used to measure the Living With Fire Program. Throughout the day, participants were asked to contribute feedback via handheld devices known as clickers. These devices helped demonstrate the value and utility of immediate program evaluation. For instance, 90% of the attendees indicated by clicker feedback they would change the way they evaluate their program(s) as a result of what they learned at the Roundtable. A follow-up survey will be conducted in 3 months to determine longer-term impacts. Networking opportunities abounded by way of breaks, display sharing and a flash drive giveaway with detailed information on environmental education programs throughout the Carson River Watershed.

CONT. FROM PAGE 4



Participants learn that what happens to our water during the lesson, Sum of the Parts.

Seeing Watersheds and **Sum of The Parts** were other featured lessons to teach the importance of our watershed with how we live, work, and recreate in our local community.

Additionally, the workshop included essential water science discussions on hydrology, global water supply, and use of the PWET Educator’s Portal.



Trash Timeline – How long does Trash Last? Find this lesson at www.NevadaRecycles.gov

Nicole Goehring, Recycling Coordinator for the Nevada Division of Environmental Protection, presented “Waste and Recycling Concerns in Rural areas of Nevada” and provided educational resources from the **Nevada Recycles** program. Participants also had the opportunity to make and take their own “activity tool boxes” for teaching lessons.

Next Generation Science Standards Released
WASHINGTON

On Tuesday, April 9, [Next Generation Science Standards](#) (NGSS), a new set of voluntary, benchmarked standards for K-12 science education, were released by the National Research Council (NRC).

About NGSS

The NGSS are based on the *Framework for K-12 Science Education* developed by the NRC. Through a collaborative, state-led process, new K-12 science standards were developed that are rich in content and practice. NGSS are arranged in a coherent manner across disciplines and grades to provide all students an internationally benchmarked science education.

NDEP and Northwest Regional Professional Development staff will offer a workshop June 11 and 12 to assist with aligning environmental education curriculum with the NGSS. Call Lou Loftin for information: 775-722-8606.

WORD SCRAMBLER

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Answers on page 9

UPCOMING

Mark Your Calendars EVENTS

K-2 WORKSHOP Join Project WET and Project Learning Tree for the Early Years.

Dates and Times: May 21 and 23; 4:00 – 8:00 pm

Location: Dilworth Middle School in Sparks

- ❖ Explore lessons that capture teachable experiences provided by the natural world to complement the learning in your classroom
- ❖ Use Mother Nature to enhance math and ELA concepts—through the window of science
- ❖ Incorporate STEM into your curriculum
- ❖ Receive the Project WET 2.0 and PLT PreK-8 Curriculum and Activity Guide.
- ❖ Earn 0.5 CEUs (Must attend both sessions)



Cost: \$20.00

Contact: Laurie Grey 775-232-1634

laurie@sierranevadajourneys.org

Carson River Festival at Oodles of Noodles, June 22nd
in Old Town Dayton

Family-friendly Water Workshop for Educators Crystal Peak Park in Verdi on the Truckee River and the Verdi Nature Center

1/2 unit credit for teachers + nature activities for teachers' kids
Saturday, June 29 9 AM until 5:30 PM

Register: Nancy Lowe, outreach@greatbasin-os.org
Email your name, phone numbers, school or organization, grade levels. **Early registration \$20 before May 15; \$25 after, space available;** kids ½ price.

Details & Directions:
<http://greatbasin-os.org/teachers/pd>

Questions? Contact Sue Jacox
775-849-1890
suejacox@nvcbell.net



Please let us know how you like this publication. Also feel free to contribute your thoughts and stories for possible inclusion in upcoming newsletters.

ANSWERS: 1. vegetation 2. wildfire 3. invasive
4. conservation 5. fieldtrips 6. engineering
7. responsibility 8. mining 9. restoration
10. environmental

Are you passionate about the environment? Do you want to improve your teaching skills, enjoy an opportunity to network with colleagues and earn professional development credit? Our workshops will provide YOU with the resources and confidence to conduct water education in your classroom and for your community.

If you are interested in learning more about workshops or want help with lesson plans, contact Mary Kay Wagner at 775-687-9454.

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

Nicole Goehring and Emily Champie
(ngoehring@ndep.nv.gov, echampie@ndep.nv.gov)
Northern and Southern Nevada Recycling Coordinators
Bureau of Waste Management
p: 1-800-597-5865 (Recycling Hotline)
NevadaRecycles.gov



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