



Promoting recycling, watershed education and environmental stewardship for Nevada

A Publication for School and Community educators

FACTS



The U.S. Environmental Protection Agency (EPA) recently released fact sheets discussing the likely impacts of climate change for every state and territory in the nation. These fact sheets include informative figures and maps, as well as descriptions of projected changes in precipitation patterns. Changes in snowpack and water availability can affect agriculture and ecosystems, which may be stressed to adapt to rapid changes.

What does climate change mean for Nevada?

As the atmosphere warms, evaporation increases; this increases humidity and affects the pattern of annual rainfall. More frequent heavy rainstorms are predicted, along with intensified periods of drought. Both extremes are projected as a result of a warmer atmosphere, and both can cause harm. Increased rainfall intensity produces damaging flash floods, while increasingly severe droughts can threaten water supplies in Nevada and throughout the arid west.

The warming climate affects how annual precipitation occurs (as snow or rain), as well as the timing of snowmelt. In Nevada, and around the world, the warming is causing snow to melt earlier in the spring. Since the 1950s, snowpack has declined in Nevada, and within the Colorado River Basin, in general.

Nevada’s climate has warmed about two degrees Fahrenheit (F) in the last century. Although a warming climate may extend the growing season for forests and farms, it also is likely to increase the need for water, while reducing supply.

To read more about the predicted impacts of climate change in Nevada or read more in other fact sheets, follow the links highlighted: [Climate change in Nevada](#), [What Climate Change Means for Your State](#).

Project WET Activities that focus on Climate Change from Guide 2.0:

(all activities are on the [Educators Portal](#))

Snow and Tell (p. 387) studies the role of “snowpack” on water supply.

8-4-1 One for All (p. 299) considers climate impacts and the 4Rs: Right time, quality, quantity and cost for water user’s.

Blue River (p. 135) studies hydrographs and snow-melt rivers vs rain-fed streams.

Color Me a Watershed (p. 239) focuses on land use changes and impact made by humans. What does a climate overlay or burned watershed look like?

See page 2 for Project WET Activities that focus on Climate Change from Guide 1.0.

What's Inside

Climate Change	1	Role Models Needed	3	Recycled Art Contest	5
Going Deeper into Stormwater	2	Keep Our Waters Clean	3	Upcoming Workshops	6
Down the Drain—Stormwater & You	2	Food: Too Good to Waste	4	Educational Materials	6

Going Deeper into Stormwater

We need your help to make a difference in stormwater pollution! Common pollutants such as oil and sediment from roadways, along with nutrients and toxins from urban and rural areas, combine with stormwater to become “runoff.” This runoff carries pollutants released from cars, excess fertilizer released from residential lawns and farms, and pathogens from human and animal waste. This runoff is called “**nonpoint source**” (NPS) pollution.

The EPA describes NPS pollution as the single largest cause of the nation’s deteriorating water quality. NPS pollution includes pathogens, nutrients, toxic chemicals, trash, sediment, and even thermal pollution.

Pathogens are disease-causing microorganisms, such as bacteria and viruses that come from fecal waste of humans and animals. **Nutrients** such as nitrogen and phosphorus stimulate plant growth. However, improper use of fertilizers and improper disposal of sewage can release these nutrients at such high concentrations that they pose an environmental hazard.

Eroded soils and geologic materials (such as sand and gravel) are transported in stormwater and deposited as **sediments** in streambeds, retention ponds, reservoirs and lakeshores. Large deposits of

only rain
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sediment can alter stream flows and decrease the amount of healthy aquatic habitats.

Toxic chemicals include petroleum products, metals, pesticides, and persistent organic pollutants such as polychlorinated biphenyls (PCBs). These toxins can harm the health of aquatic organisms and human beings. **Trash** constitutes visual pollution that diminishes our enjoyment of natural waters and may also contain toxic chemicals within the debris.

Finally, as runoff moves across paved surfaces and concrete channels, the water absorbs heat, creating **thermal pollution**. Removal of streamside vegetation and riparian habitat eliminates shading of natural waters and can also contribute to thermal pollution.



Conservation District
of Southern Nevada

In conjunction with **Clark County Conservation District’s** promotion of the **2016 Stormwater Pollution Prevention Poster contest**, the District received funding from NDEP to revamp and distribute the “Down the Drain • Stormwater & You” workbook.

This 10-page booklet is a fun, educational review of the water cycle, watersheds, storm drains, and wetlands blended with Word Scramble, a Drain Game, Pollution Puzzler, Word Search and more.



The colorful booklet is available [NDEP’s Environmental Education](#) webpage.

Project WET Activities on Climate Change from Guide 1.0: (activities on the [Educators Portal](#))
House of Seasons gets you thinking about perception vs reality. Keep a weather log.
Piece It Together studies climate impacts from different parts of the world.
Wet Vacation also researches climate conditions around the world.

Role Models Needed for Water Quality

With all that you know and all that you teach, don't be afraid to flaunt your best practices and to encourage others to do so. Stewardship of our environment and our water resources is a gift we give to ourselves and to future generations. Stormwater runoff contributes as a nonpoint source of pollutants to our surface waters, and each of us can make a difference by practicing some best management practices to prevent water pollution:

- I. Control soil erosion on your property.
 - Direct roof drains to permeable surfaces.
 - Plant ground cover and stabilize erosion-prone areas.
 - Apply yard chemicals sparingly and follow directions.
- II. Keep litter, pet wastes, leaves, and trash out of gutters and storm drains; these drain directly to lakes, streams, rivers, and wetlands.
- III. Dispose of household chemicals (oil, antifreeze, paints, batteries, etc.) properly, not in storm sewers or drains. Check NevadaRecycles.nv.gov for communities programs in your area.
 - Don't hose chemicals to the street where they eventually reach our waterways.
 - Only rain in the storm drains.
- IV. Wash your car at a car wash where road grime and soapy water are captured and treated, or at minimum wash your car on a permeable surface.
- V. Septic systems need to be inspected and pumped, at minimum every 3-5 years, to ensure they operate properly.
- VI. Purchase low-Phosphorous household detergents and cleaners to reduce the amount of nutrients discharged into treatment facilities and back to the waterways.
- VII. Use planned grazing practices on pasture and rangeland; manage animal waste to minimize contamination of surface water and ground water.

Keep Our Waters Clean

We all love our pets, but did you know that dog waste is one of the largest contributors of bacterial pollution in urban watersheds? The average dog produces about $\frac{3}{4}$ pounds of poop per day; that means that 1,000 dogs will produce about 750 pounds of poo per week! These statistics may seem amusing, but the consequences are serious:

- Dog feces can contain fecal coliform bacteria, which can spread diseases like Giardia, Salmonella, and Campylobacter. All of these diseases can be transmitted to humans and other animals, causing serious illness.
- Dog poop is high in nitrogen and phosphorus. In excess, these nutrients deplete the oxygen in water and thereby harm fish and wildlife.
- Roundworms and hookworms deposited by infected dogs can live in the soil for long periods of time and be transmitted to humans and other animals.

- Poop from wild animals, like ducks and geese, contains less E. coli than poop from dogs. E coli is one of the most heavily regulated pollutants in the U.S.

The problem of dog poop has an easy solution: Be a responsible owner and bag it! Many city and county parks offer free bags for dog waste, so get good "poop karma" and pick up after your pet! Bag it and toss it in a trash can; the environment will thank you.



Upcoming Events

2016 NEVADA RECYCLED ART CONTEST

Categories

- Kindergarten - Grade 5
- Grades 6 - 8
- Grades 9 - 12
- Class Project
- Adult

Prizes-in each category

- 1st place: \$250
- 2nd place: \$100
- 3rd place: \$50
- Class Project: \$200

Rules

- Must be a Nevada Resident.
- Project must be constructed of used, recyclable materials such as: Tires, electronics, plastic, cardboard, aluminium cans, newspaper, magazines, etc. For more ideas, visit NevadaRecycles.nv.gov.
- Fastening materials may include tape, glue, and/or string.
- Fill out entry form at NevadaRecycles.nv.gov and attach up to two photos of your artwork.
- Winners will be selected by a panel and announced on or before America Recycles Day, November 15, 2016.

Submissions due by October 23rd, 2016

For more information, contact us at:

Northern Nevada Recycling Coordinator: Patty Moen 775 687-9466

Southern Nevada Recycling Coordinator: Rachel Lewison 702 486-2850 x268

Presented by Nevada Recycles and the Las Vegas Sands Corp.



Nevada Recycles



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Upcoming Events

FORCE OF WATER: UNDERSTANDING TERMINAL WATERSHEDS

October 22 8 a.m. - 4:30 p.m.

Desert Research Institute | 755 E. Flamingo Rd., Las Vegas



Nevada Project WET and DRI's GreenPower Program invite educators to explore and learn about terminal watersheds, NPS pollution impact on water quality, the effects of flooding and the history of water in Nevada.

Participants will learn how to check out the new Force of Water Green Box. You will receive a Project WET Curriculum Guide and resources to implement lessons in your classroom. **Receive ½ in-service Nevada Department of Education credit.**

Grant funding through Nevada Division of Environmental Protection supports this FREE Teacher Training.

Lunch is provided!

To register, please visit GreenPower.dri.edu

SOUTHERN NEVADA

Contact Craig Rosen, 775-687-9454, <http://ndep.nv.gov/edu/index.htm>

Educational materials address prevention of mosquito-borne viruses.

The Project WET Foundation is trying to raise awareness for the prevention of mosquito-borne illnesses such as the West Nile and Zika virus. The materials were created for use in Rio de Janeiro during the 2016 Olympic Games to address the prevention of mosquito-borne illnesses such as the Zika virus. The Project WET Foundation is offering a [downloadable educational module](#) that includes practical lessons to encourage healthy habits to prevent mosquito-borne illnesses.

Materials are available in English and Portuguese.



Nevada Recycles
Nevada Division of Environmental Protection

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- Creative ways to reuse, reduce, and recycle
- Local and global waste reduction efforts and issues



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

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Waste Management Recycling Hotline
p: 1-800-597-5865



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www.ndep.nv.gov/edu



For information on **Discover a Watershed: the Colorado River** and **PWET Workshops** in Clark County contact: Heather Whitesides, Aquatic Invasive Species Education Specialist, Lake Mead National Recreation Area, 702-293-8659, heather_whitesides@nps.gov