

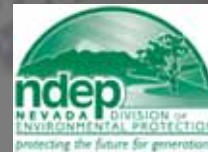


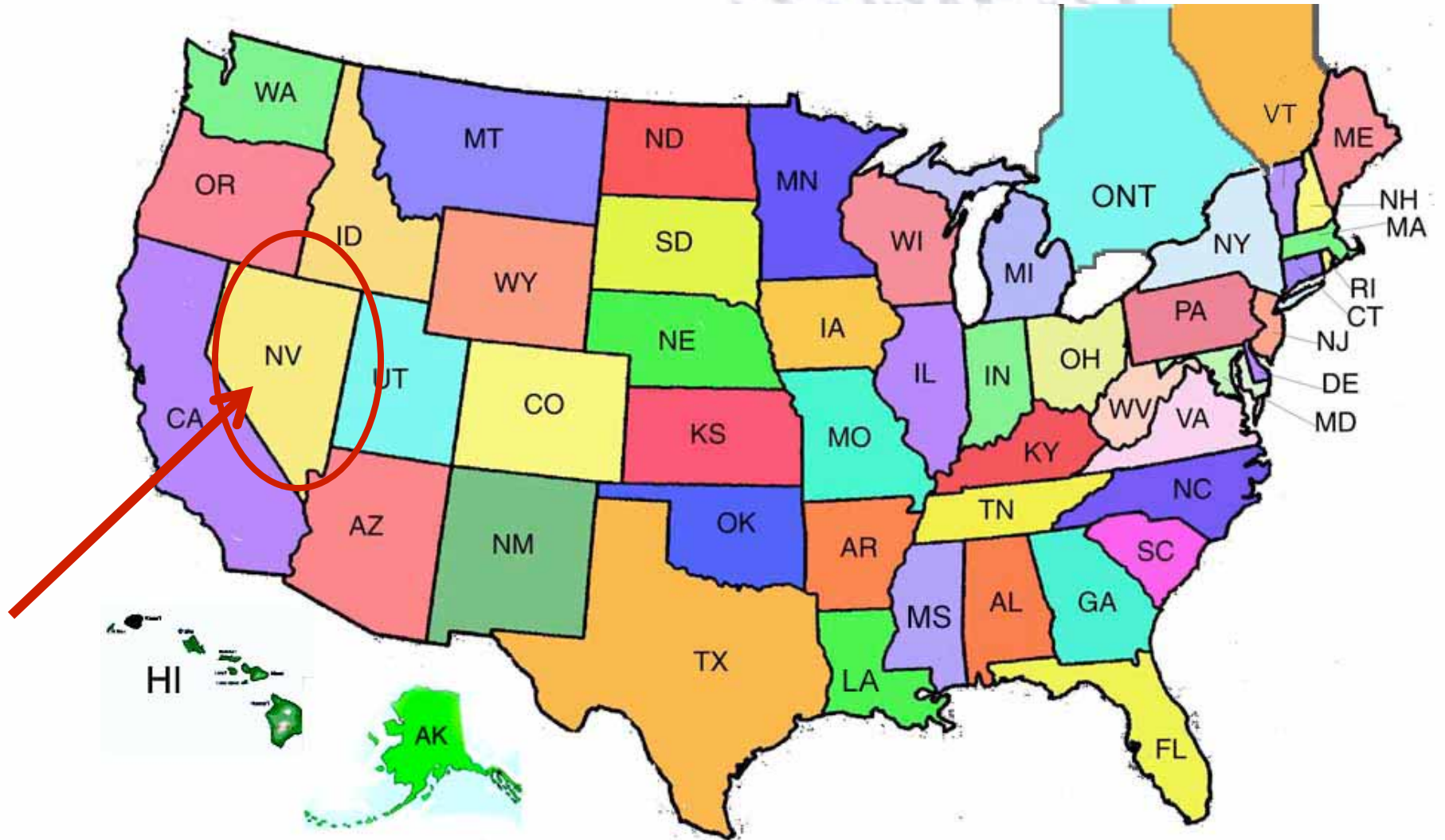
STEALTHY APPROACHES TO BUFFER EDUCATION – WHAT WOULD Q THINK?

Susan Donaldson and Steve Lewis, University of Nevada
Cooperative Extension

Genie Azad, Carson Water Subconservancy District

Mary Kay Wagner, Nevada Division of Environmental
Protection













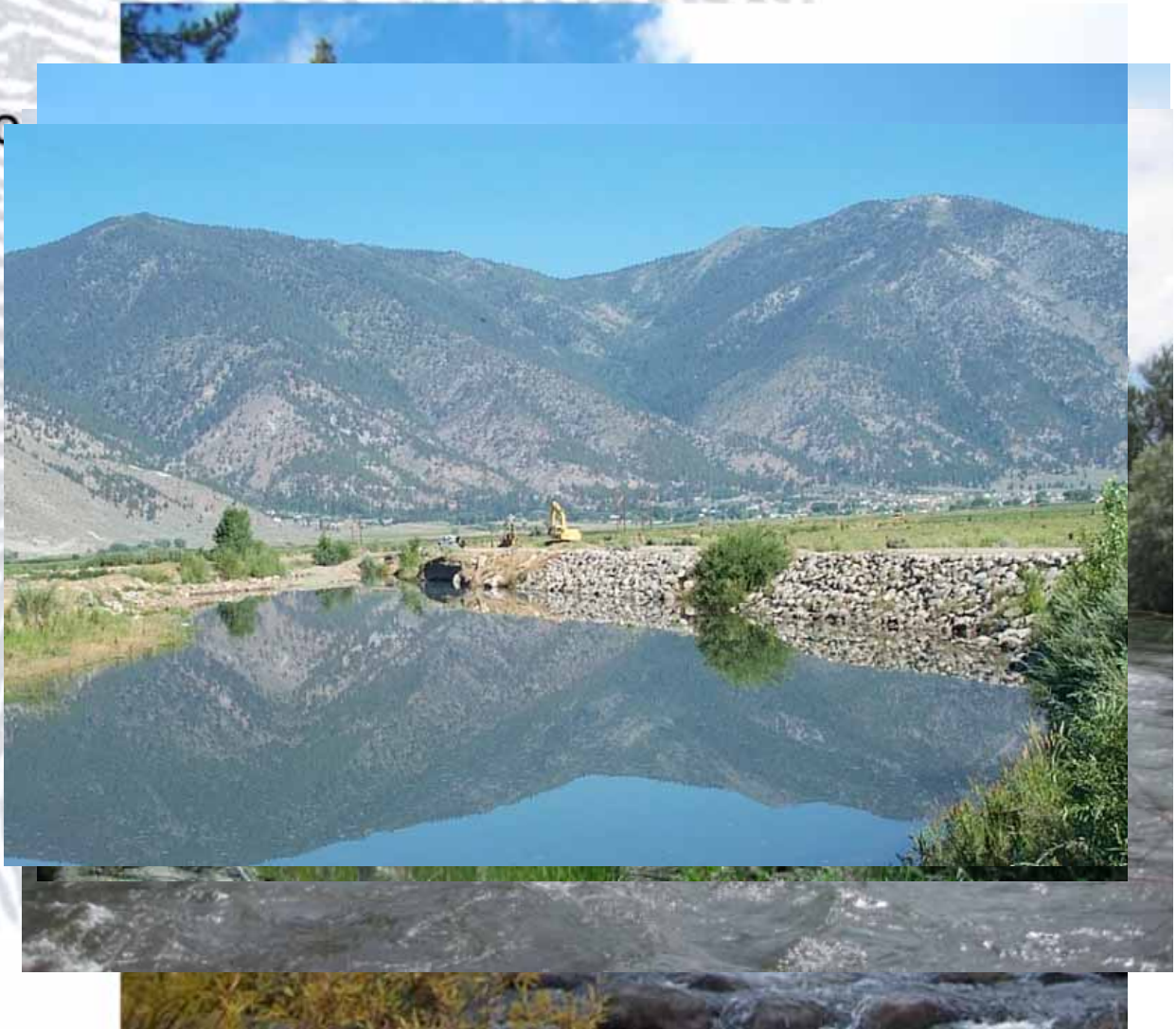
OUR ASSIGNMENT...

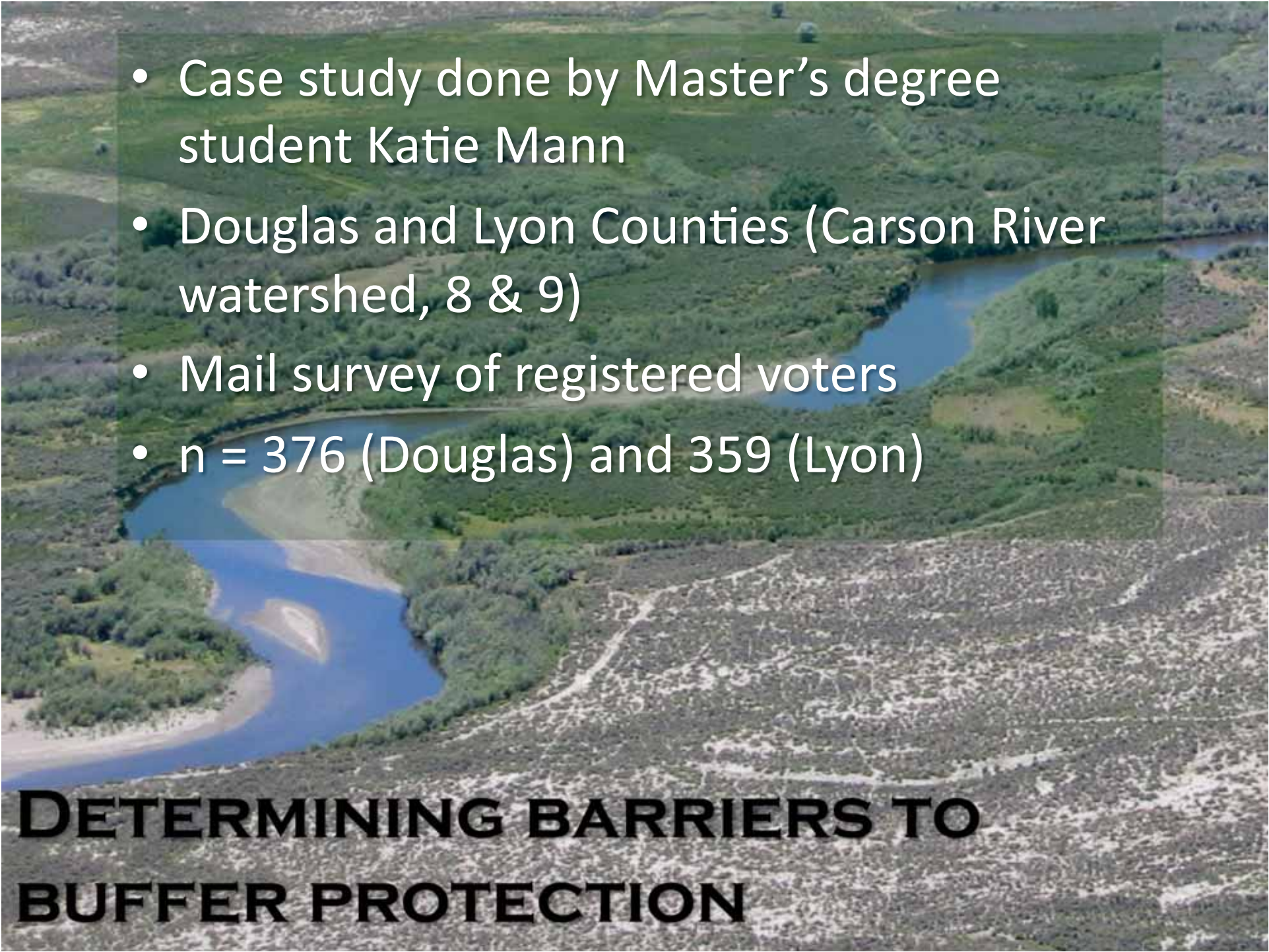
- Analyze barriers to riparian buffer protection
- Infiltrate the Internet and communities with information
- Use social networking and \$\$\$ to intrigue youth
- Ply small groups with food and drink to gauge their interests and values



WHAT'S THE DEAL WITH WESTERN RIPARIAN AREAS?

- Big watersheds
- Different geomorphology
- Different vegetation
- Different climate
- Different flows
- Different capabilities

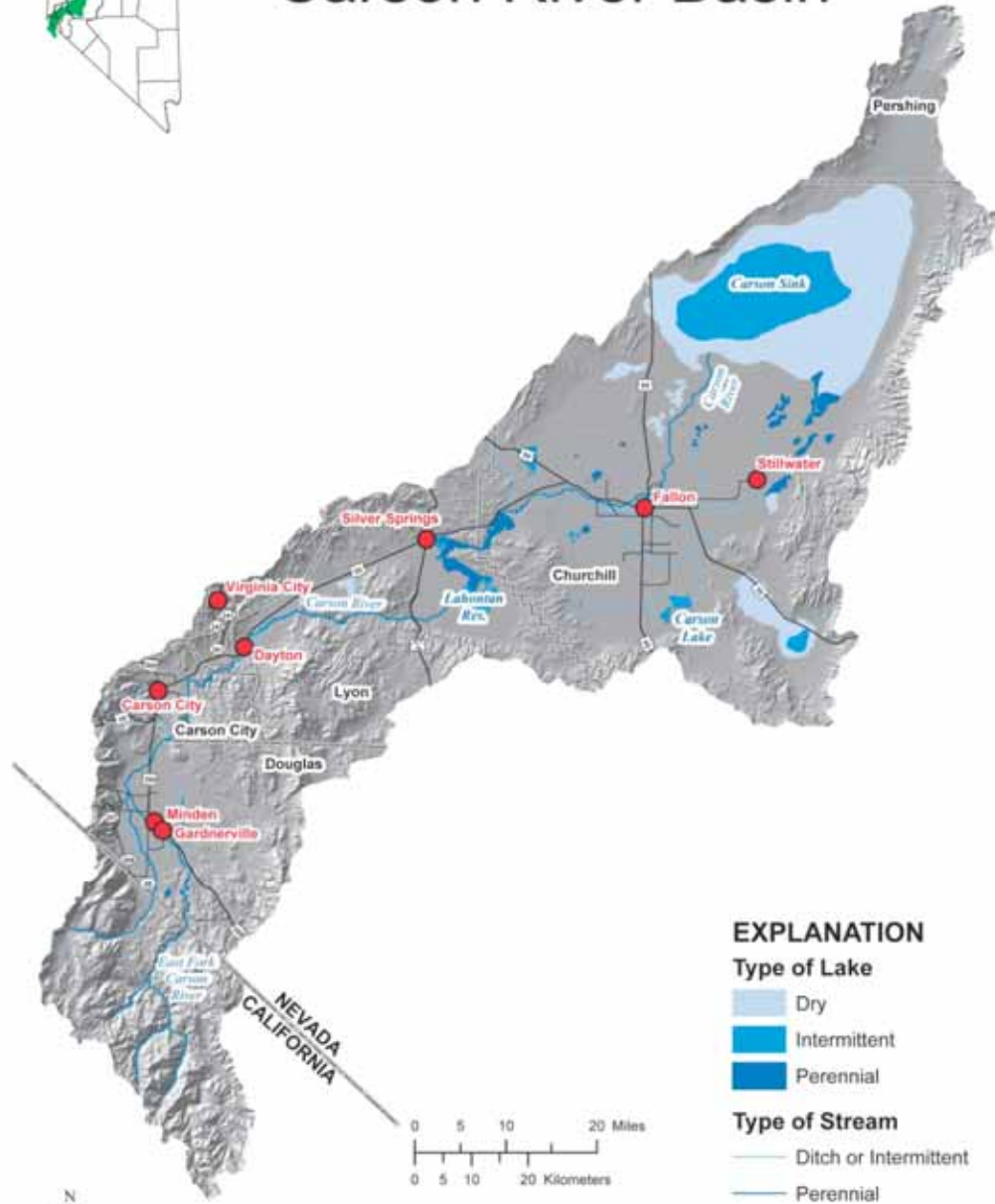


- 
- Case study done by Master's degree student Katie Mann
 - Douglas and Lyon Counties (Carson River watershed, 8 & 9)
 - Mail survey of registered voters
 - $n = 376$ (Douglas) and 359 (Lyon)

DETERMINING BARRIERS TO BUFFER PROTECTION



Carson River Basin



WHAT DID WE LEARN

- Most respondents consider urban development a threat to river and its riparian resources
- Residents support agricultural land preservation
- Values:
 - Recreation (62-85%)
 - Water quality (77%)
 - Water for ecosystem health (60%) and wildlife habitats (59%)



- 
- A photograph of a riverbank with trees and a sandy area, overlaid with text. The river is in the background, and the foreground is a mix of sand, dirt, and rocks. The text is overlaid on the left side of the image.
- Floodplain development restrictions were considered beneficial by >55% of respondents for:
 - Potential open space
 - Protection of wildlife habitats
 - Scenic and amenity values
 - Desirable quality of life
 - Protection of water quality

02/15/2007

BUT...



- Respondents tended to be:
 - Middle-aged (mean age 56)
 - Landowners (90%)
 - Educated with at least some college
 - Long-term county residents (10+ years)
- What about everyone else???



INFILTRATE THE WEB & COMMUNITIES

- Buffer website
- Searchable plants database
- Resources and model ordinances
- Presentations at planning commissions, river groups



NEMO NEVADA
Protecting water quality through community planning

Low Impact Development in Northern Nevada: An Introduction

By Susan Davidson Water Quality Education Specialist
Marilyn Hetherington Water Quality Program Assistant
Susan Davidson Water Quality Education Specialist
Marilyn Hetherington Water Quality Program Assistant

Benefits of LID

- Reduce and control runoff
- Reduce erosion
- Reduce impacts of flooding and contribute to stream bank stability

What is Low Impact Development?

Low Impact Development (LID) is a land use planning approach that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff. LID is a multi-step process that involves planning, design, and construction. It is a sustainable approach to managing stormwater runoff that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff. LID is a multi-step process that involves planning, design, and construction. It is a sustainable approach to managing stormwater runoff that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff.

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NEMO NEVADA
Protecting water quality through community planning

Low Impact Development in Northern Nevada: Plant Materials

By Suzanne Smith Extension Educator
John Vandewater Landscape Designer, Inc.
Marilyn Hetherington Water Quality Program Assistant
Susan Davidson Water Quality Education Specialist
Marilyn Hetherington Water Quality Program Assistant

Benefits of Proper Plant Selection

- Filter and reduce runoff
- Reduce erosion
- Reduce impacts of flooding and contribute to stream bank stability

Low Impact Development (LID) is a sustainable approach to managing stormwater runoff that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff. LID is a multi-step process that involves planning, design, and construction. It is a sustainable approach to managing stormwater runoff that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff.

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NEMO NEVADA
Protecting water quality through community planning

Low Impact Development in Northern Nevada: Soil Considerations

By Susan Davidson Water Quality Education Specialist
Marilyn Hetherington Water Quality Program Assistant
Susan Davidson Water Quality Education Specialist
Marilyn Hetherington Water Quality Program Assistant

Benefits of good soil

- Reduce erosion
- Reduce impacts of flooding and contribute to stream bank stability

Low Impact Development (LID) is a sustainable approach to managing stormwater runoff that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff. LID is a multi-step process that involves planning, design, and construction. It is a sustainable approach to managing stormwater runoff that seeks to reduce runoff, erosion, and sedimentation by using permeable surfaces, vegetative cover, and other techniques to manage stormwater runoff.

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- Quick Links:**
- Video Contest
 - Workshops
 - Upcoming Events
 - Partners
 - Photo Gallery
 - Local Low Impact Development Features
 - Low Impact Development Plant Database
 - Publications
 - Riparian Buffers
 - Resources and Links
 - Seminars
 - Tip Sheets
 - Contact Us
 - Nemo Home

Riparian Buffers

www.unce.unr.edu/nemo

What is a buffer?

A buffer is a transition zone between two very different land types or land uses. A riparian buffer located along the margins of a river, stream or other water body, separates human-focused land uses, such as agriculture or development, from the water body. Riparian vegetation thrives on the abundant water near the channel and provides habitat for wildlife. Lush riparian vegetation and open space help make buffers tough and effective.

Prior to settlement, cottonwood trees, willows or sedges thrived along flowing waters in the Great Basin. The vegetation protected banks from erosion and caused flows to slow down, allowing floodwaters to soak into the soil, recharge aquifers and reduce downstream floods. The vegetation also shades the water, helping to keep it cool. Well-vegetated channels remain narrow and clean, providing a variety of fish habitats, high-quality water and a place of stability and beauty.



A healthy riparian buffer has water-loving plants like these willows. AUG 10 2005

- Why protect riparian buffers?
- How do buffers help protect communities?
- How wide should a buffer be?
- What benefits do wider



Apache plume

Botanical Name: *Fallugia paradoxa*

Can be used in these types of LID features:

- ⊘ Vegetated swales and large-scale features - YES
- ⊘ Bioretention cells/ rain gardens/small-scale features - YES
- ⊘ Green roofs - YES

Location in feature: Upland, Slope

Plant characteristics:

- ⊘ Native Status: Native
- ⊘ Height: 2-6' shrub
- ⊘ Mature shape or form: Open, rounded
- ⊘ Flowering time: Late Spring to Summer
- ⊘ Flower color: White
- ⊘ High potential to be weedy or invasive
- ⊘ Poor commercial availability

Water issues:

- ⊘ Annual water requirement (in inches): 4-20
- ⊘ Drainage requirement: Requires moderate drainage
- ⊘ Poor tolerance of prolonged saturation
- ⊘ Poor tolerance of periodic flooding

Soil texture adaptation:

- ⊘ Poorly adapted to clay or fine-textured soils
- ⊘ Highly adapted to medium-textured soils
- ⊘ Highly adapted to coarse-textured soils

Other tolerances:

- ⊘ High drought tolerance



Click on photos to enlarge

Photos: Photos © Al Schneider,
www.swcoloradowildflowers.com



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City garden cuts pollutants to the river.

CityofReno

211 videos

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0:02 / 2:22 360p CC [Copy] [Share] [Fullscreen]

CityofReno

June 10, 2010

The City completed a rain garden at the McKinley Arts and Culture Center that...



100

views



Riverfront Buffers

The talk show circuit...

When is that doctor's appointment?

Yak, yak, yak...

I'm just not buying it...is it lunch time yet?

Susan Dona



University of Nevada
Cooperative Extension

LET'S TRY SOMETHING NEW! CAN WE REACH TEENS USING SOCIAL NETWORKING?

- Carson River Video Contest 2009

See www.unce.unr.edu/nemo for contest rules!

Carson River 2009 Video Contest—win **\$500!**



Winning individual and team entries each will receive \$500!

Entries will be shown at a film festival in January, 2010.

**Individual/Team entries sought for the
2009 Carson River Video Contest!**

- Who's eligible: Open to Carson and Douglas High School students and 9th graders from Carson Valley and Pau-Wa-Lu Middle Schools, either individuals or teams
- The challenge: Create a 1- to 3-minute informational video or animated slide show based on one or more of the values of riparian (streamside) areas, and upload the video to YouTube
- Deadline: December 11, 2009
- Entry rules and forms: www.unce.unr.edu/nemo
- School contacts:

Carson High: Adrienne Garbriel, agarbriel@carson.k12.nv.us, 283-1600 x1720
Douglas High: Karen Heine, kheine@dsd.k12.nv.us, 782-5136 x1415



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NEMO NEVADA

Quick Links:

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Keep Streamsidess Greener, Keep Water Cleaner

2010 Carson River Video Contest

The Theme: How Carson River riparian areas benefit you and your community, and how to get people involved in riparian area preservation.

The Challenge: Create a 1- to 3-minute informational video based on one or more of the values of riparian (streamside) areas. Creatively show us how you would help people in your community understand why riparian areas are important to protect, and what they can do to help. The video must focus specifically on the Carson River and must include an "action" message that urges people to do something to help preserve, protect or restore riparian areas.

Who's Eligible: The contest is open to middle school, high school and community college students from a school located in the Carson River Watershed. Homeschoolers are also welcome to enter. You may enter as an individual, a team of 2 to 4 students, or a class. See the contest rules for a list of eligible schools.



View the 2009 video contest entries at www.youtube.com/group/CarsonRiver2009

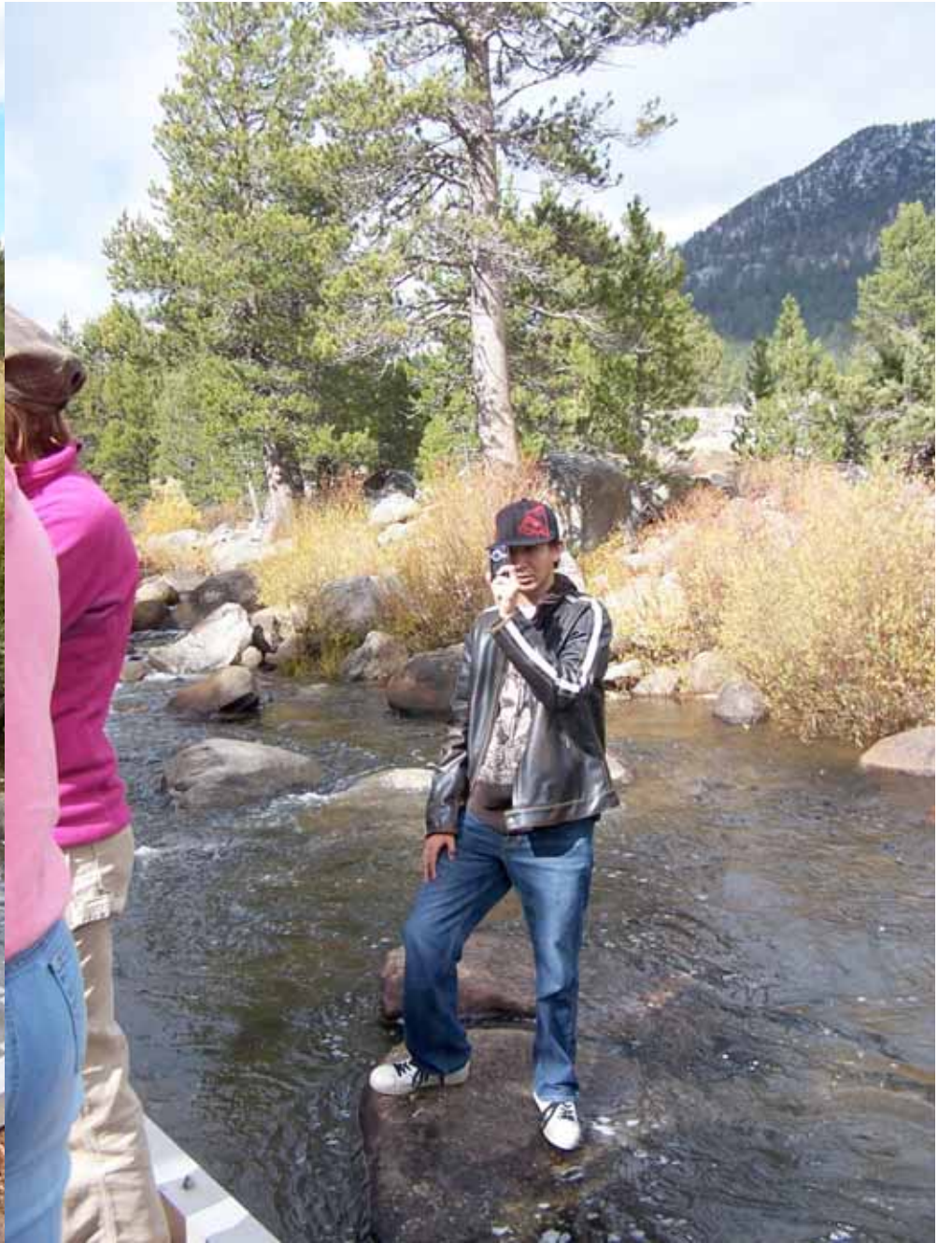
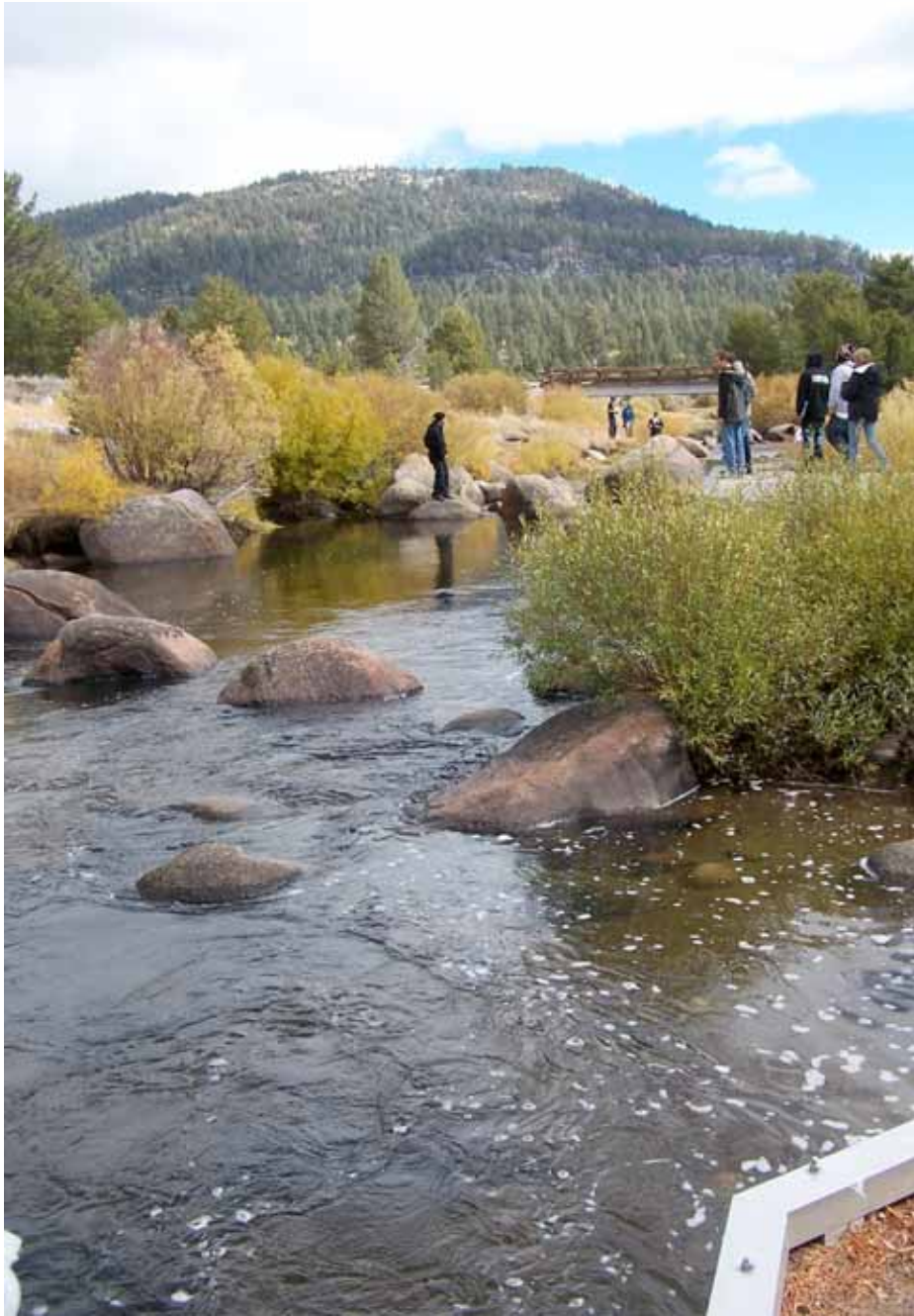
Entry Materials















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Students enter videos into watershed contest

Posted 12/18/2009

The public is invited to go online to view and rate student multimedia projects that explore how Carson River riparian areas benefit the community and need to be protected by the public.

The video and slide-show projects are contestants in the Carson River Coalition Education Working Group's "Keep Streamsidess Greener, Keep Water Cleaner" contest, which will award a prize of \$500 in each of four categories.

The contest was open to students in the ninth through 12th grades of Carson and Douglas high schools and Carson Valley and Pau-Wa-Lu middle schools. The entries had to be one to three minutes long.

Although the award winners will be selected privately by a panel of judges, the public is welcome to watch and rate the entries at www.youtube.com/channel/CarsonRiver2009. Winners will be announced in January 2010.

The working group includes the Carson Water Subconservancy District, the Nevada Division of Environmental Protection, University of Nevada Cooperative Extension and River Wranglers. Prizes will be awarded to the best individual video, team video, individual animated slide show and team animated slide show. Also, each winning entry's sponsoring teacher will earn \$100.

Although each entrant or team had a sponsoring teacher to encourage participation and provide general guidance, students developed their own concepts and entries.

Dr. Susan Donaldson, a water quality expert with Cooperative Extension and a contest organizer, said the contest gives students an appreciation of how riparian areas provide important wildlife habitat and help keep the river clean by filtering runoff.

"Healthy, diverse riparian areas store water and help reduce floods, filter water and keep it cool and provide a place for recreation," said Donaldson, who takes field trips to the river with certain classes. "This adds to our quality of life."



Film festival to feature 13 student watershed projects

Posted 1/12/2010

Winners of the Carson River Coalition Education Working Group's "Keep Streamsidess Greener, Keep Water Cleaner" contest will be announced at the Carson River Film Festival 6:30-8:30 p.m. Jan. 28 at the Carson City Sheriff's Building at 911 E. Musser St.

The film festival is free and will feature an awards ceremony for the students who entered videos and slide shows. The short, student-made videos show why riparian areas are important to protect and what residents can do to help protect them. First place cash prizes of \$500 will be awarded to student films in each of four categories. The event will also feature a film on stream restoration.

The contest was open to students in the ninth through 12th grades of Carson and Douglas high schools and Carson Valley and Pau-Wa-Lu middle schools. The entries had to be one to three minutes long.

Although the award winners are being selected privately by a panel of judges, the public is welcome to watch and rate the entries at www.youtube.com/channel/CarsonRiver2009.

The working group includes the Carson Water Subconservancy District, the Nevada Division of Environmental Protection, University of Nevada Cooperative Extension and River Wranglers.



A couple of Carson High students take a sample of Carson River water while studying the river ecosystem last year.

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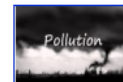
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Carson River Contest 2.flv

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Carson River Contest 6.flv

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Carson River Contest 7.flv

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Carson River Contest 9.flv

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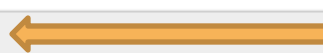
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The Carson River #13.wmv

susangdonaldson

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susangdonaldson — March 30, 2010 — This video received the first-place award in the 2009 Carson River Video Contest, animated slide show category.

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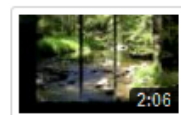
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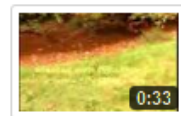
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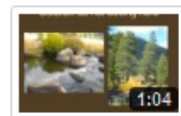
Streamside Forest Buffers
Preserving Water Quality
676 views
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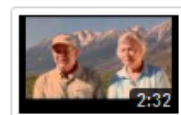
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Restoration
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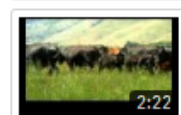
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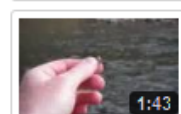
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The Carson River Project
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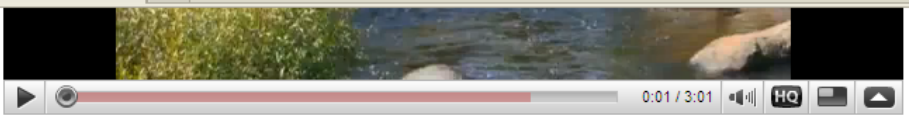
Sustainable Ranching in the
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Crossing the Carson River

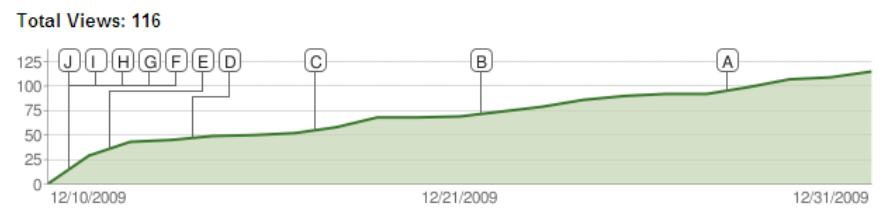


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Links

Date	Link	Views
A Dec 27, 2009	First referral from YouTube - /user/susangdonaldson	1
B Dec 21, 2009	First referral from related video - Carson River Video Contest 2009	1
C Dec 17, 2009	First referral from YouTube search - carson river contest 13	4
D Dec 14, 2009	Other / Viral	3
E Dec 12, 2009	First referral from YouTube search - carson river contest	8
F Dec 11, 2009	First view on a channel page	44
G Dec 11, 2009	First referral from YouTube search - carson river 13	23
H Dec 11, 2009	First embedded on - www.facebook.com	11
I Dec 11, 2009	First view from a mobile device	5
J Dec 11, 2009	First referral from - www.facebook.com	2

Audiences

- Carson River Contest 1.flv 98 views susangdonaldson 2:17
- Carson River Contest 3.flv 74 views susangdonaldson 2:13
- Diamond Peak Ski Resort Lake Tahoe Feb 12, 2009 85 views skidiamondpeak 4:42
- I'm Shipping Up To Boston - Dropkick Murphys 8,443,776 views BlackHigginsClan 2:44
- Carson high students doing wild thing 3,244 views candyman420dk 7:18
- All 4 Kids Chant 97 views UNRExtension 1:14
- Carson River Contest 2.flv 52 views susanodonaldson

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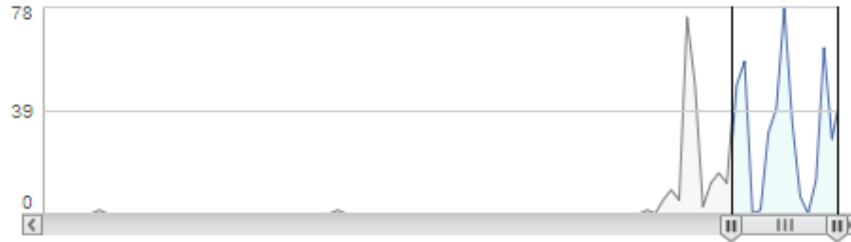
- The i Slate: What Apple doesn't 113,602 views SoldierKnowsBest 4:41
- the game 3,527 views roccobotte 6:04
- Iodine (new) - Periodic Table 8,855 views periodicvideos 5:57

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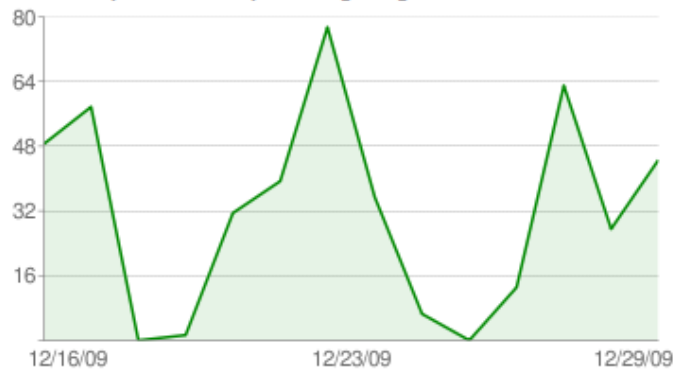
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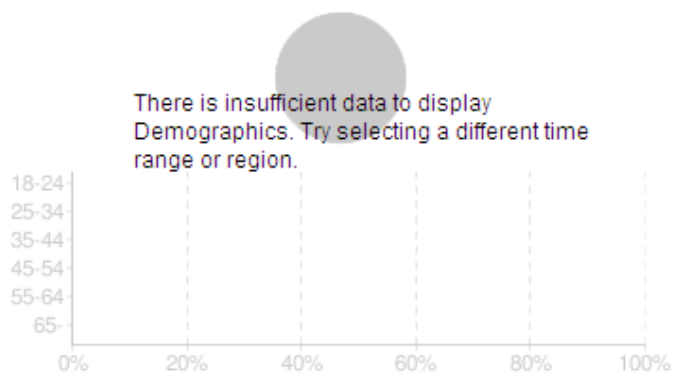


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Carson River Contest 3.flv	9.7	
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Carson River Contest 7.flv	7.0	
Carson River Contest 4.wmv	6.5	
Carson River Contest 10.flv	6.5	
Carson River Contest 6.flv	6.3	
Carson River Contest 12.flv	6.3	
Carson River Contest 9.flv	5.2	

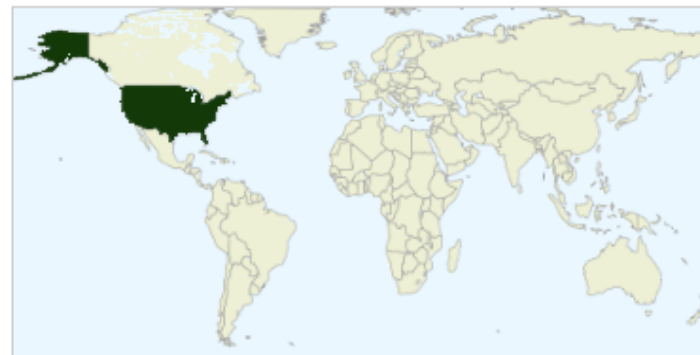
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UNRExtension

Students enter videos into watershed contest. Read more @ <http://bit.ly/5FdZrb>
about 18 hours ago from TweetDeck

Reminder: All UNCE offices will be closed Friday, December 25.
10:15 AM Dec 24th from CoTweet

Marketing workshop offered to Nevada farmers, growers – Read more @ <http://www.unce.unr.edu/news/article.asp?ID=1425>
2:14 PM Dec 23rd from web

New publication online! Attracting Vendors and Customers to Rural Farmers Markets. View @ <http://bit.ly/5cS19e>
12:15 PM Dec 22nd from CoTweet

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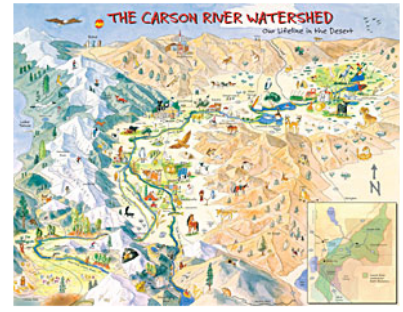
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 - China Dialogue
 - China Digital Times
 - China Environmental Law
 - Amazônia (Portuguese)
 - Circle of Blue

Home

Young River Protectors Video Contest

Wed, 01/06/2010 - 1:13pm



Today I received an email asking to use our video [We All Live Downstream](#) as the opening video for a University of Nevada sponsored youth video contest -- of course I said yes. The contest entrants are in the age range from 7th to 12th grade, and their short videos feature the Carson River Watershed.

As International Rivers has come to use video and other multimedia more in recent years, it is nice to see the next generation of river protectors taking up the cause.

Take a look at a few of their videos and I like [this one](#), it is more informative than the rest. Though the music is a little dated, I still think it communicates the message well.

vote on your favorite. The winner gets five hundred dollars, not a bad prize for a high school student!

[Ian Elwood's blog](#) [Login or register to post comments](#)

Comments

Wed, 01/06/2010 - 2:16pm — Ian Elwood

This one

I like [this one](#), it is more informative than the rest. Though the music is a little dated, I still think it communicates the message well.

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Wed, 01/06/2010 - 2:40pm — Katy Yan

THE FILM FESTIVAL





WHAT WORKED

- Students were engaged, some visiting the river for the first time
- 13 videos were submitted
- The film festival was a huge success
- Publicity was good
- Funder was happy
- We have money to do it again this year!



WHAT DIDN'T WORK

- Not as many submissions as we'd hoped
- Quality was highly variable since it became a class requirement
- Teacher had to help make PowerPoints into videos and post them to YouTube
- None of the videos really included an effective action message



ASSESSING ATTITUDES AND VALUES

- Focus groups ongoing, September through November
- Questions:
 - When you hear the words “riparian buffer” what comes to mind?
 - Do you think that property adjacent to the river should be used differently than property not adjacent?
 - What do you value about river front property?
 - What would you like to know about river front lands?
 - What should we try to accomplish in managing river front lands?
 - What keeps us from accomplishing these things?
 - What would you like river front lands within the Carson Valley to look like when your great-grandchildren live here?
 - Are river front lands valuable to the local or regional community? If so, how and if not, why not?



NEXT STEPS

- Watershed-wide video contest
- Conduct focus groups and analyze content
- Design and deliver (hopefully) effective programs about riparian buffers
- Keep trying to protect our remaining buffers and floodplain areas

MAY 16 2005