



EASTERN NEVADA LANDSCAPE COALITION

LANDSCAPE NEWS

VOLUME 7, ISSUE 1 SEPTEMBER-OCTOBER 2007

Competitive Interactions Between a Non-native Grass and Mojave Desert Perennials

Dr. Lesley DeFalco U.S. Department of the Interior
 U.S. Geological Survey Publication Briefs online:
<http://www.werc.usgs.gov/pubbriefs/index.html>
 DeFalco, L. A., G. C. J. Fernandez, and R. S. Nowak. 2007.
Variation in the establishment of a non-native annual grass influences competitive interactions with Mojave Desert perennials. Biological Invasions 9:293–307.
 U.S. Department of the Interior - U.S. Geological Survey

Management Implications:

- As red brome continues to integrate into the native flora and to dominate the landscape in the Mojave Desert, the composition of species within these communities, especially the shorter-lived perennial grasses, are subject to change even in the absence of wildfire.
- Future mitigation of the effects of red brome in the Mojave Desert will require an understanding of the environmental cues that drive its establishment and dominance while simultaneously appreciating the interannual variation.

Competition between native and non-native species can change the composition and structure of plant communities, but in deserts, the highly variable timing of winter and spring rainfall also influences non-native plant establishment, thus modulating their effects on native species. Much research has focused on the dramatic impact that the non-native annual grass red brome (*Bromus madritensis* spp. *rubens*) has on desert plant communities by fueling wildfires that injure and kill native plants. A study by scientists of the USGS, Nevada Agricultural Experiment Station, and University of Nevada, Reno, recently published in *Biological Invasions*, highlights red brome's impact on perennial species in undisturbed habitat even before wildfire becomes a problem.

In a field experiment, the researchers varied densities of red brome around individuals of three native Mojave Desert perennials — creosote bush (*Larrea tridentata*), galleta grass (*Pleuraphis rigida*), and Indian rice grass (*Achnatherum hymenoides*) — in either winter or spring. To determine whether native annuals have the same competitive effect as red brome, they prepared additional plots with individuals of the same perennial species and seasons, but with a mixture of native annual species as neighbors. (Continued on: Page 6)

OUR MISSION

The mission of the Eastern Nevada Landscape Coalition is to restore the dynamic and diverse landscapes of the Great Basin for present and future generations through collaborative efforts.

OUR VISION

We envision a future where communities of plants and animals thrive in their Great Basin environment. These healed, diverse landscapes will be a result of restoration achieved and maintained with naturally occurring disturbances such as fire, in combination with other management prescriptions, including traditional uses. The Eastern Nevada Landscape Coalition will be a recognized contributor and leader in this effort for future generations of Americans, both local and national.

INSIDE THIS ISSUE:

THOUGHTS FROM THE BARN	2
SPONSOR THANK YOU	2
ENLC ANNUAL REPORT	4
TRI-COUNTY WEED CONTROL/RELEASES INSECTS	4
LEGISLATION/INVASIVE SPECIES	5
THANK YOU ENLC SUPPORTERS	5
NEVADA WEATHER	6
MEMBERSHIP	7
UPCOMING EVENTS	8

ENLC Officers

John Hiatt, Chairman
Preston Wright Vice Chairman

Trustees

Brent Eldridge
Roberta Moore
Gretchen Baker
Bob Abbey
Keith Carson

Staff

Betsy Macfarlan
Executive Director

Julie Thompson
Ecologist

Desiree Vaught
Judy Wolf

Administrative Assistants

Tempra Board
Grant Specialist

The Landscape News is published four times a year by the Nevada Landscape Coalition.

Issue Date:

September/October 2007

1500 Avenue F

Ely, Nevada 89301

Phone: 775-289-7974

Fax: 775-289-7986

Email:

enlc@shcglobal.net



Thoughts from the Barn

Betsy Macfarlan, Executive Director

Fall is in the air and I owe all of you an apology. Somehow the summer got away from me and I completely dropped the ball on getting the last issue of the newsletter out. So we are combining information from this summer with our first newsletter of the fiscal year.

ENLC had yet another successful meeting and field tour in June. Close to 100 individuals participated in the annual meeting and field tour. The speakers' presentations covered global change and the ecosystems of the Great Basin and current research in the Great Basin. ENLC's staff ecologist Julie Thompson lead the field tour to the Smith Valley project site to review the actions that were taken on the ground during the past year.

ENLC's field crews once again collected reams of data for the watershed assessments in Lincoln and White Pine counties and the emergency, stabilization and rehabilitation monitoring of the 2004, 2005, and 2006 fires.

Since our last news letter ENLC has had several personnel changes. Steve Abel, our wildlife biologist accepted a position with US Fish and Wildlife Service in Reno in July, and Amy Ruhs our range specialist was hired by the Elko BLM office. We also rotated in and out over the summer field season twenty four seasonal employees.

I'm pleased to announce ENLC now has several new permanent employees. Nancy Williams has worked and volunteered for ENLC and the Nature Conservancy on and off over the past six years, but she is now joining the ENLC team on a full time basis as our new wildlife biologist. Judy Wolf has joined the administrative end of the organization and will focus on the book-keeping and assisting Desiree Vaught with other administrative duties. And Shane Trautner is joining ENLC in early October as the new range specialist.

One of the continuing challenges of a growing organization is the personnel changes both on the staff side and the volunteer side. This past month Don Gilbertson of Elko tendered his resignation from the ENLC board due to a recent health diagnosis. We wish Don well with his new challenges. Don served on the ENLC board for four years. We are pleased to welcome Keith Carson, a local business-man to the ENLC board. Keith agreed to join the ENLC board on September 23rd.

I hope you will take few minutes to read this latest issue of Landscape News. In this issue we cover everything from unique Nevada weather facts to research of a fungus that attacks cheatgrass.

Until next time, have a healthy and safe fall.

Betsy Macfarlan

Thank You to the Sponsors of the 2007 Workshop, Field Tour, and Volunteer Day

ENLC would like to extend one final thanks to the businesses and individuals who sponsored the annual meeting, field tour and volunteer day on June 15 and 16. Without your support ENLC would not be able to host this annual meeting. Thank you very much for your continued support of our mission and goals.

Cruise In Car Wash & Lube - D & D Financial
First National Bank of Ely - Gary Back - Hotel Nevada
Louise Herndon - National Mustang Association
Nevada Division of Forestry - Resource Concepts, Inc.
S & S Macfarlan - Southern Nevada Water Authority
SRK Consulting - The Nature Conservancy

ENLC FY2007 Annual Report

This past fiscal year, ENLC and our partners impacted over **2,912,643 acres** through restoration, treatment, inventory and data collection. We have listed a brief summary of our 2007 activities below.

- ◆ Follow-up monitoring of Teburthione (Spike) treatments on private land in Gleason Creek and Sampson Creek to remove decadent sagebrush and release the understory. This was the second season post-treatment and the sagebrush die off is now visible. The project was funded by a US Fish and Wildlife Service (USFWS) grant.
- ◆ Started preliminary work on restoration of a riparian area private land owned by the Smith Creek Ranch. ENLC is partnering with Smith Creek Ranch, USFWS and NDOW on this project.
- ◆ Completed restoration work in Smith Valley using a variety of mechanical means to remove Pinyon and Juniper from sagebrush stands. Finished the treatments on **470 acres** of public land. The project was funded by a 2005 Congressional earmark and BLM research funds.
- ◆ Obtained **\$49,000** in grants from the Nevada Department of Agriculture and BASF for the cooperative weed management areas (CWMA) in White Pine and Lincoln Counties.
- ◆ Was awarded a **\$77,000** Pulling Together grant from the National Fish and Wildlife Foundation. The grant will be used by the CWMA's under ENLC's fiscal stewardship to address invasive specie issues in seven watersheds.
- ◆ Partnered with BLM, Forest Service, Tri-County Weed Project, the Newark Valley CWMA, and numerous volunteers to treat **36.9 acres** of leafy spurge in one three day treatment period.
- ◆ Worked with ENLC member and partner, Tri-County Weed Project to inventory **957,555 acres** for weeds.
- ◆ ENLC was **awarded a \$1.6 million** watershed assessment project in Lincoln County. ENLC will collect vegetative cover data, road and cultural inventories, livestock utilization data, riparian proper functioning condition data, and minerals compliance data on several watersheds in Lincoln County over the next two years.
- ◆ Collected vegetative cover data on **1.2 million acres** in White Pine and Lincoln Counties in the South Spring Valley, Cave Valley, Hamblin Valley Meadow Valley Wash, and Dry Lake Valley watersheds.
- ◆ Inventoried **1033 miles** of road and trail for the BLM in South Spring Valley, North Lake Valley, and Hamlin Valley watersheds and recorded **38** cultural sites. This information is incorporated into the watershed assessments.
- ◆ ENLC employees **inventoried 138 minerals notices** for compliance, restoration, and noxious weed infestations in White Pine and Lincoln Counties. This information is also used by the BLM when developing their watershed assessments.
- ◆ ENLC employees collected vegetative monitoring data on **751,146 acres** that burned during the past three years. These acreages were associated with 61 wildfires.
- ◆ ENLC staff also planted 76 seedlings and 4,450 in some of the planned restoration areas of the fires.
- ◆ ENLC staff also assisted with the development of emergency stabilization and rehabilitation plans on **3 fires** involving **4,656 acres**.
- ◆ ENLC member and partner Tri-County Weed Project treated 3,472.8 acres for weeds.
- ◆ Hosted second annual winter invasive species meeting and had over 100 participants.
- ◆ Hosted eighth annual meeting and field tour for over 100 participants. Workshop was partially funded by a Nevada Division of Forestry grant and numerous corporate sponsors.
- ◆ Hosted fourth annual volunteer day resulting in rerouting a Forest Service trail and repairing a portion of an old fence line.
- ◆ Published three issues of the newsletter



Tri-County Weed Control Releases Insects to Combat Invasive Plants

Tri-County Weed Control in Ely recently released insects to assist in the control of an invasive weed known as spotted knapweed. Control of certain invasive weeds is mandated in the Nevada Revised Statutes, and a designation of those weeds is listed in the Nevada Administrative Code at §555.010. Tri-County Weed Control released beetles called *Cyphocleonus achates* ("C.achates") at two sites on private property in Ruth. Ruth has a severe spotted knapweed problem throughout the town, and the strategy is to begin releasing beetles to complement the herbicide control program of the local Cooperative Weed Management Area. Most invasive weeds require an integrated weed management approach that considers all forms of control methods, then control methods are selected which are most effective, especially in combination with each other. The release of *C.achates* to control spotted knapweed demonstrates the local concern for effective integrated weed management.

Spotted knapweed (*Centaurea biebersteinii*, formerly *Centaurea maculosa*) is native to eastern Europe and has

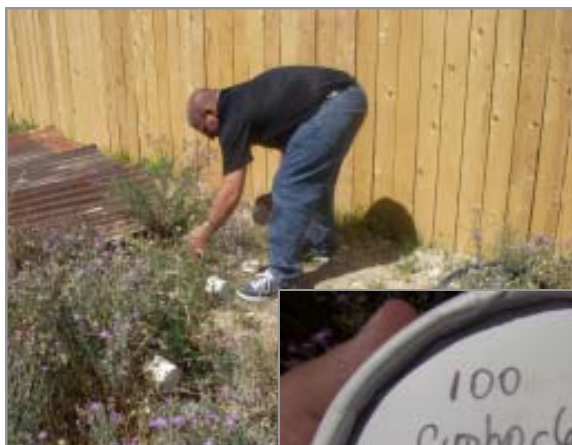
spread to many western states in the U.S. It can be controlled by herbicides but in some areas, where the terrain is too rugged or where it is growing in sensitive areas such as water-ways or around sensitive species, biological control agents like insects are the most effective way to combat the plant. So far *C.achates* have been released in Arizona, California, Colorado, Idaho, Minnesota, Montana, Nebraska, Nevada, Oregon, South Dakota, Utah, Washington, and Wyoming as part of a program to control spotted and diffuse knapweed.

The *C.achates* beetles are root boring insects that severely injure the plants. The beetles lay their eggs just below the soil surface on the roots. When the larvae hatch, they bore into the roots as they feed helping to destroy the tap root. This opens up the root to bacteria and fungus that invade and cause further damage to the plant. The beetles will lay eggs many times during the summer and early fall, creating more larvae to feed on the roots throughout the growing season. According to Ronald Lang, USDA APHIS in Montana, before the first beetle release in 1987, *C.achates* were extensively tested on 71 plant species and found to be host-specific to spotted and diffuse knapweed.

Many variables can influence the effectiveness of biological control agents such as insects. Each species has specific habitat needs, life cycle distinctions, and express requirements such as temperature, soil conditions, and/or moisture or precipitation, to be successful in inhabiting a new area and then controlling the targeted invasive plant. Many times it takes years for control insects to become established and prove effective.

Several entities were involved in the release of the 500 *C.achates* beetles. Tom Barbouletos of the U. S. Forest Service, Forest Health Protection, provided the beetles to Tri-County Weed Control through the Nevada Department of Agriculture. Tri-County Weed Control worked with the Steptoe Valley Cooperative Weed Management Area to identify appropriate sites to release the insects. For more information concerning weed management or the Steptoe Valley CWMA, contact either Ron Oxborrow, chairman of the Steptoe Valley CWMA, or Tri-County Weed Control in Ely.

(All photos courtesy of Tri-County Weed Control, Ely, NV)



Reid Introduces Legislation To Combat Invasive Species

Bill to help battle Quagga Mussels and Invasive Plants across Nevada

Washington, DC — U.S. Senator Harry Reid of Nevada introduced a bill to establish a 100th Meridian Invasive Species State Revolving Loan Fund to protect the West from non-native invasive species. The uncontrolled spread of invasive species throughout the West is depleting water and out-competing beneficial native vegetation that, if unchecked, provide significant fuel for wildfires.

“The quagga mussels, in addition to other non-native species, pose a threat to Southern Nevada,” said Reid. “As the mussels cling to the walls and water intake pipes in Lake Mead, they clog the flow of fresh water and degrade the ability of the Lake to support wildlife. Meanwhile, other invasive species exacerbate wildfires, displace native species, and degrade Nevada’s diverse ecosystems. This legislation addresses the issue head-on by working collaboratively with all parties to eliminate invasive species from Nevada and help prevent the spread of the invasive species from occurring in the future.”

“Along with global climate change, invasive species present, perhaps, the most serious threat to our natural world and all that we value and gain from it,” said Rob Mrowka, Manager, Environmental Division of the Clark County Department of Air Quality & Environmental Management. “Invasive species affect us all, in many ways, and that is why this legislation is so very important to we Westerners.”

“The Eastern Nevada Landscape Coalition realizes invasive species are an important issue challenging all of our lands today. The 100th Meridian Invasive Bill is a major step forward to involve all impacted parties (private land owners, states, and federal land managers) in addressing this issue,” said Betsy Macfarlan, Executive Director of the Eastern Nevada Landscape Coalition.

Reid has long supported efforts across Nevada to avert the spread of invasive species by supporting the efforts of the Nevada Arid Rangelands Initiative through the University of Nevada, Reno. Reid has also worked to ensure that Federal land management agencies work cooperatively

with volunteer organizations that restore and rehabilitate Nevada’s unique ecosystems.

The 100th Meridian Invasive Species State Revolving Loan Fund bill is similar to the popular state drinking water and clean water revolving funds. The 100th Meridian fund would place the Secretary of the Interior in charge of approving disbursements from the revolving fund, but before receiving a loan, cities and other qualified organization will first submit an application to the Governor’s office for its review and approval.

The legislation is being cosponsored by Senators Ron Wyden (D-OR) and Larry Craig (R-ID), the Chairman and Ranking Member of the Senate Energy and Natural Resources Subcommittee on Public Lands and Forests, as well as Senator Pete Domenici (R-NM). Congresswoman Shelley Berkley (D-NV) will be introducing the companion measure in the House of Representatives.

Thank You ENLC Supporters

ENLC extends its thanks to the following individuals and businesses for renewing their membership with ENLC or joining ENLC for the first time since April 27, 2007. (new members are in bold) If you have joined or renewed your membership during this time period and you do not find your name listed below please contact us immediately and we will figure out what happened.

Bob Abbey, Reno, NV

Tony Grossman, Reno, NV

Curt Leet, Ely, NV

Jerry Meyer, Ely, NV

Sharon Paris, Boise, ID

Bob Pohlman, Minden, NV

Sherman Swanson, Reno, NV

V.J. Brown, Salt Lake City, UT

Dan Hathaway, Baker, NV

Robert Hopper, Portland, OR

Nevada Farm Bureau, Sparks, NV

Mike Pellant, Boise, ID

Amy Ruhs, Ely, NV

Dale Watt, Redding CA

Sherburne & Susan Macfarlan, Boulder, CO.

10 Things You Might Not Know About Nevada Weather

by Jeff Underwood, Nevada State Climatologist and UNR Assistant Professor of Geography.

1. There are locations in the state of Nevada where two points separated by very little distance receive vastly different amounts of precipitation. For example Mt. Rose and Reno in Northern Nevada are separated by less than 20 miles—Mt. Rose however receives more than 25 inches of precipitation (rainfall equivalent) per year compared to Reno at less than seven inches.
2. Nevada is a great place to observe dust devils. Dust devils are tightly swilling winds created by extreme surface heating. During the summer months across Nevada soil temperatures can rise well above 120°F while the air above the soil is cooler (90-100°F). This difference in temperature can spawn a dust devil which under ideal conditions can produce wind speeds of more than 60 mph.
3. Many places in Nevada experience daily temperature ranges (day-time high – nighttime low temperature) that are nearly unbelievable to observers in other regions of the country. For example a normal July day in Washington, DC consists of a high temperature at 89°F with a low of 71°F, a daily range of 18°F. Compare this to Elko where a normal July day will see a high temperature of 91°F and a low of 48°F, a daily range of 43°F.
4. Northern Nevada is the best location in North America to observe stationary lenticularis clouds. These lens shaped clouds form on the down-wind side of the Sierra Nevada and appear to hover in one location. Often times lenticular clouds form in rows with a single large lens shaped cloud followed by many smaller stationary clouds. Since this formation of gleaming saucer-like clouds linger in the same location for long periods, many UFO and flying saucer reports of a have in fact turned out to be stationary lenticularis clouds.
5. Nevada is considered the driest state in the US. When averaging precipitation totals from all of the reporting stations across the state, the statewide average is around seven inches per year.
6. According to the US Historical Climatology Network, Nevada has the fewest weather observation stations of any state in the US. Nevada does however have three National Weather Service Forecast Offices (Reno, Elko, and Las Vegas) and is one of 36 states to have an Association of American State Climatologist (AASC) recognized State Climate Office.
7. Although the driest state in the country many parts of Nevada are prone to flooding. The Truckee, Carson, and Humboldt rivers flood during heavy winter season rainfall or rain-on-snow episodes, while washes, roadways, and streets in the southern portion of the state are at risk for flash-flooding during summer season thunderstorms.
8. During the heatwave of 2005 the city of Las Vegas set two temperature records. The first was a new record high temperature of 117°F. The second was the highest recorded nighttime low temperature, 96°F. Both of these records were set on July 19 2005. It was so hot in fact that during the afternoon of July 19 many aircraft at McCarran International Airport could not take off because the extremely hot air was not dense enough to allow lift off.
9. During a period from March 1928 through January 1929 the town of Mina went for 312 consecutive days without recording a drop of precipitation. This is the state record for duration of a rainless period.
10. Drought and wildfire are the most costly weather-related hazards facing the state. During 1994 for the costs associated with wildfire and drought in Nevada were in excess of 1 billion dollars.

(Continued from Page 1)

High densities of the non-native annual grass red brome establish beneath perennial plants in response to winter rainfall and before perennials are active. Its early establishment places native perennial species at a disadvantage. Photo: L. DeFalco.

Management Implications:

- As red brome continues to integrate into the native flora and to dominate the landscape in the Mojave Desert, the composition of species within these communities, especially the



Las Vegas Field Station, USGS Western Ecological Research Center, 160 N. Stephanie, Henderson, NV 89074

shorter-lived perennial grasses, are subject to change even in the absence of wildfire.

- Future mitigation of the effects of red brome in the Mojave Desert will require an understanding of the environmental cues that drive its establishment and dominance while simultaneously appreciating the interannual variation controlling these factors.

MEMBERSHIP FORM

NAME _____

**BUSINESS/
ORGANIZATION** _____

ADDRESS _____

CITY _____ **STATE** _____ **ZIP CODE** _____

PHONE _____ **FAX** _____

CELLUAR _____ **EMAIL** _____

WEBSITE ADDRESS _____

MEMBERSHIP LEVEL: _____

<i>Student (enrolled in school)</i>	\$15	_____
-------------------------------------	-------------	-------

<i>Individual</i>	\$25	_____
-------------------	-------------	-------

<i>Associate Restoration Partner and/or Nonprofit Organization</i>	\$100-999	_____
--	------------------	-------

<i>Corporate</i>	\$250	_____
------------------	--------------	-------

<i>Lifetime Restoration Partner</i>	\$1,000 and above	_____
-------------------------------------	--------------------------	-------

Total _____

Lifetime Restoration Partners, please indicate if you would like to be recognized on a specific project.

Yes, I would like to be recognized on a specific project.
Please contact me to discuss the current projects. _____

No, I do not wish to be recognized on a specific project. _____



**EASTERN NEVADA
LANDSCAPE COALITION**

P.O. Box 150266
Ely, Nevada 89315
Phone: 775-289-7974
Email: enlc@sbcglobal.net



**USING THE USES FOR
MANAGEMENT.**

ENLC UPCOMING EVENTS

ENLC Calendar of Events

October 30	Panaca CWMA Meeting
November 7-9	Nevada Cattlemen's Convention, Sparks
November 15-16	Nevada Farm Bureau Meeting, Mesquite
December 7	White Pine Co. CRM Committee Meeting
January 5, 2008	ENLC Board of Trustees Meeting
April 5	ENLC Board of Trustees Meeting
June 13	ENLC Annual Meeting and Barbecue
June 14	ENLC 4th Annual Volunteer Day
June 14	ENLC Board of Trustees Meeting
October 4	ENLC Board of Trustees Meeting