Great Basin Consortium (GBC) Conference

Conference Program January 14-16, 2013

Boise State University Student Union Boise, Idaho, USA

Participating Organizations: Great Basin Cooperative Ecosystem Studies Unit (GB-CESU) Great Basin Environmental Program (GB-EP) Great Basin Fire Science Delivery Project (GB-FSD) Great Basin Landscape Conservation Cooperative (GB-LCC) Great Basin Research and Management Partnership (GB-RMP) Great Basin Restoration Initiative (GB-RI)











http://environment.unr.edu/consortium/

TABLE OF CONTENTS

CONFERENCE SCHEDULE
MONDAY, JANUARY 14
WELCOME, KEYNOTE AND ORGANIZATIONAL UPDATES
ORAL PRESENTATIONS: CURRENT AND EMERGING ISSUES
TUESDAY, JANUARY 15
ORAL PRESENTATIONS: PROJECT HIGHLIGHTS
PANEL DISCUSSION – MONITORING FOR CHANGE
PANEL DISCUSSION — THE PATH FORWARD
wednesday, january 166
GENERAL INFORMATION6
REGISTRATION
MEETING LOCATION
FACILITY AMENITIES AND INFORMATION
MEALS AND BREAKS
GETTING TO THE CONFERENCE
CAMPUS PARKING7
LOCAL PUBLIC TRANSPORTATION7
WIRELESS ACCESS
GREAT BASIN CONSORTIUM - PARTICIPATING ORGANIZATIONS8
GREAT BASIN COOPERATIVE ECOSYSTEM STUDIES UNIT (GB-CESU)
GREAT BASIN ENVIRONMENTAL PROGRAM (GB-EP)8
GREAT BASIN FIRE SCIENCE DELIVERY PROJECT (GB-FSD)
GREAT BASIN LANDSCAPE CONSERVATION COOPERATIVE (GB-LCC)
GREAT BASIN RESEARCH AND MANAGEMENT PARTNERSHIP (GB-RMP)9

GREAT BASIN RESTORATION INITIATIVE (GB-RI)9
KEYNOTE SPEAKER: MIKE PELLANT
REFLECTIONS AFTER 30 years of tackling the cheatgrass/wildfire cycle in the great basin10
ABSTRACTS CURRENT AND EMERGING ISSUES
A SAGE-GROUSE'S EYE VIEW OF CURRENT AND FUTURE HABITAT QUALITY - NOT ALL SAGEBRUSH ARE CREATED EQUAL
THE DESTRUCTIVE ROLE OF INVASIVE ALIEN GRASSES: A RECURRING WORLDWIDE CALAMITY
MANAGING FOR RESILIENT ECOSYSTEMS: EXAMINING THE OPTIONS
BLM'S LANDSCAPE APPROACH FOR MANAGING PUBLIC LANDS
A COMPREHENSIVE VISION AND PLAN FOR THE GREAT BASIN
ABSTRACTS PRESENTATION OF PROJECT HIGHLIGHTS
RESULTS FROM THE CENTRAL BASIN AND RANGE RAPID ECOREGIONAL ASSESSMENT
LAND TREATMENT DIGITAL LIBRARY: WHAT HAVE WE LEARNED?
GREAT BASIN NATIVE PLANT SELECTION AND INCREASE PROJECT
BLM INTEGRATED CHEATGRASS DIE-OFF PROJECT14
BOISE STATE UNIVERSITY CAMPUS MAPS15
DOWNTOWN BOISE TRANSIT MAP17
NOTES

CONFERENCE SCHEDULE

MONDAY, JANUARY 14

Boise State University Student Union – Hatch C

10:00 a.m. - 12:00 p.m.GB-CESU business meeting (refreshments provided for partners)
Convener: Mike Collopy, Director, GB-CESU

Student Union – Lookout (3rd Floor) / Hatch A10:00 a.m. – 1:00 p.m.Registration and Poster Setup

WELCOME, KEYNOTE AND ORGANIZATIONAL UPDATES

Moderator: Penny Mabie Student Union – Lookout (3rd Floor)

1:00 – 1:15 p.m.	Welcome
1:15 – 1:45 p.m.	Keynote
	REFLECTIONS AFTER 30 YEARS OF TACKLING THE CHEATGRASS/WILDFIRE
	CYCLE IN THE GREAT BASIN
	Mike Pellant, Great Basin Restoration Initiative (GB-RI) Coordinator
	Bureau of Land Management, Boise, Idaho
1:45 – 3:00 p.m.	Organizational Updates from the Consortium Members
	Great Basin Cooperative Ecosystem Studies Unit (GB-CESU), Mike Collopy
	Great Basin Environmental Program (GB-EP), Stan Johnson
	Great Basin Fire Science Delivery Project (GB-FSD), Eugènie MontBlanc
	Great Basin Landscape Conservation Cooperative (GB-LCC), Linda Kelly
	Great Basin Research and Management Partnership (GB-RMP), Carol Schuler
	Great Basin Restoration Initiative (GB-RI), Mike Pellant

Student Union – Lookout (3rd Floor) 3:00 – 3:20 p.m. Refresl

Refreshment Break

ORAL PRESENTATIONS: CURRENT AND EMERGING ISSUES

Moderator: Matt Germino Student Union – Lookout (3rd Floor)

3:20 – 3:40 p.m.

A SAGE-GROUSE'S EYE VIEW OF CURRENT AND FUTURE HABITAT QUALITY -NOT ALL SAGEBRUSH ARE CREATED EQUAL Jennifer Forbey, Assistant Professor, Boise State University

3:40 – 4:00 p.m.	THE DESTRUCTIVE ROLE OF INVASIVE ALIEN GRASSES: A RECURRING WORLDWIDE CALAMITY Richard Mack , Professor, Washington State University	
4:00 – 4:20 p.m.	MANAGING FOR RESILIENT ECOSYSTEMS: EXAMINING THE OPTIONS Jeanne Chambers, Research Ecologist, USDA Forest Service, Rocky Mountain Research Station	
4:20 – 4:40 p.m.	BLM'S LANDSCAPE APPROACH FOR MANAGING PUBLIC LANDS John Wilson, Healthy Lands Coordinator, Bureau of Land Management	
4:40 – 5:00 p.m.	A COMPREHENSIVE VISION AND PLAN FOR THE GREAT BASIN Todd Hopkins, Science Coordinator, Great Basin-LCC Linda Kelly, Coordinator, Great Basin-LCC	
Student Union – Hatch A (2 nd Fi	loor)	
5:15 – 7:00 p.m.	Poster Session and Reception Cash bar. Refreshments and hors d'oeuvres provided.	
TUESDAY, JANUARY 15		
Boise State University Student 8:30 – 8:45 a.m.	Union – Lookout (3 rd Floor) Recap Moderator: Matt Germino	
ORAL PRESENTATIONS: PROJECT HIGHLIGHTS		
Moderator: Mike Collopy Student Union – Lookout (3 rd Floor)		

8:45 – 9:00 a.m.	RESULTS FROM THE CENTRAL BASIN AND RANGE RAPID ECOREGIONAL ASSESSMENT Marion Reid , Senior Regional Ecologist, NatureServe
9:00 – 9:15 a.m.	GREAT BASIN NATIVE PLANT SELECTION AND INCREASE PROJECT Nancy Shaw, Research Botanist, USDA Forest Service, Rocky Mountain Research Station
9:15 – 9:30 a.m.	LAND TREATMENT DIGITAL LIBRARY: WHAT HAVE WE LEARNED? David Pilliod, Research Ecologist, USGS Forest and Rangeland Ecosystem Science Center
9:30 – 9:45 a.m.	BLM INTEGRATED CHEATGRASS DIE-OFF PROJECT Don Major , Fire and Landscape Ecologist, Bureau of Land Management
	(4)

Student Union – Lookout (3rd Floor)10:00 – 10:30 a.m.Refreshment Break

PANEL DISCUSSION - MONITORING FOR CHANGE

Moderator: Stan Johnson Student Union – Lookout (3rd Floor)

10:30 a.m. – 12:00 p.m.	Nancy Glenn, Research Professor, Idaho State University
	(http://www.idahoepscor.org/)
	Rick Allen, Research Professor, University of Idaho
	(http://www.kimberly.uidaho.edu/~rallen/)
	Nick Lancaster, Research Professor, Desert Research Institute
	(http://epscorspo.nevada.edu/2011/10/national-science-foundation-nevada-
	climate-change/)
	Lynn Fenstermaker, Associate Research Professor, Desert Research Institute
	(http://sensor.nevada.edu), NV Climate Change Portal
	(http://www.wrcc.dri.edu/GBtransect/), WRCC Snake Range Transect
12:00 – 1:00 p.m.	Lunch Break (on your own)
12:00 – 1:00 p.m.	GB-RI business meeting (over lunch)
	Convener: Mike Pellant, Coordinator, GB-RI

PANEL DISCUSSION – THE PATH FORWARD

Moderator: Penny Mabie Student Union – Lookout (3rd Floor)

1:00 – 2:30 p.m.	Todd Hopkins, Science Coordinator, GB-LCC
	(http://www.greatbasinlcc.org)
	Ted Koch, State Supervisor, Nevada Fish and Wildlife Office
	(http://www.fws.gov/nevada/)
	Elizabeth Leger, Associate Professor, University of Nevada, Reno
	(http://www.ag.unr.edu/leger/Leger/Home.html)
	Mark Brunson, Professor, Utah State University
	(http://www.cnr.usu.edu/htm/facstaff/memberID=770)
Student Union – Lookout (3rd F	loor)
2:30 – 3:00 p.m.	Consortium Wrap-up Panel
	Moderator: Penny Mabie
Student Union – Hatch C	
3:00 – 5:30 p.m.	GB-RMP business meeting
	Convener: Carol Schuler, Chair, GB-RMP
	(5)

Student Union – Hatch A **3:00 – 5:30 p.m.**

GB-EP business meeting Convener: Stan Johnson, Director, GB-EP

WEDNESDAY, JANUARY 16

Boise State University Student Union – Lookout (3rd Floor)

9:00 a.m. – 12:00 p.m. GB-LCC Steering Committee meeting Convener: Linda Kelly, Coordinator, GB-LCC

GENERAL INFORMATION

REGISTRATION

Registration will be available on the third floor of the Boise State University Student Union Building at the Lookout on:

Monday, January 14, 2013

10:00 a.m. – 1:00 p.m.

MEETING LOCATION

The conference venue is the Student Union on the campus of Boise State University. The Boise State Student Union serves as the center for campus life providing educational, cultural, social, recreational and leadership programs and services that are integral to the academic experience. The Student Union Building is a sprawling multi-million dollar complex that provides a wide range of services and programs for a diverse student body. The "SUB," so nicknamed by the students, serves as the "living room" of campus, a place where everyone can go for fun, work and opportunity.

FACILITY AMENITIES AND INFORMATION

The Student Union offers a number of retail/food options including: Boise River Café, C3 Convenience Store, Chick-fil-a, La Tapatia, Mai Thai, Moxi Java, and the University Break Company

MEALS AND BREAKS

Refreshment breaks are provided on Monday, January 14 and Tuesday, January 15. Lunch is on your own. There are several eating establishments at the Student Union and near the University campus. The reception on Monday evening will offer appetizers, refreshments and a cash bar.

GETTING TO THE CONFERENCE

CAMPUS PARKING

Up to 120 free parking spaces are reserved for attendees of the conference in the Lincoln Avenue Garage. The garage is located beside the Student Union Building at Belmont Street and Lincoln Avenue.

Important: You may park on any floor, but need to make note of the parking stall number. This number is painted on the ground at the back end of the parking stall.

The Coupon Code is: 20127501



After parking your vehicle and noting your parking space number, proceed to one of the parking payment machines located on the ground floor, or just outside each level of the northwest stairwell. A campus map is included in the back of the program.

LOCAL PUBLIC TRANSPORTATION

Valley Ride bus transportation is the regional public transportation authority (http://www.valleyride.org/). There are multiple routes that go to BSU. One way rides are \$1.00 and day passes can be purchased on the bus for \$2.00. Exact change is required. Attendees can catch the No. 40 from Broadway and Park North (near Courtyard Marriot) to University Drive and Lincoln Avenue (across the street from Student Union Building). From University and Capitol West (near Residence Inn), take the No. 1 to University Drive and Lincoln Avenue. The Downtown Boise Transit Map is included in the back of the program.

WIRELESS ACCESS

Wireless Internet access is available in the Student Union. Attendees need to use the Bronco-Guest network (no password required); do not use Bronco-Wireless, as it requires credentials for access.

GREAT BASIN CONSORTIUM - PARTICIPATING ORGANIZATIONS

GREAT BASIN COOPERATIVE ECOSYSTEM STUDIES UNIT (GB-CESU)

Mission Statement: The GB-CESU is a partnership for research, technical assistance and education to enhance understanding and management of natural and cultural resources of the Great Basin.

Unique Role: Part of a national program that provides a funding mechanism for transferring funds from federal partners to universities to conduct projects.

Partners/Collaborators: Universities and federal agencies.

Initiating Organization: Department of the Interior.

Funding/Support: Projects funded with federal agency funds through a cooperative agreement.

GREAT BASIN ENVIRONMENTAL PROGRAM (GB-EP)

Mission Statement: To develop funding for on-the-ground projects and related research and outreach education to improve the Great Basin environment.

Unique Role: Develop funding from public and private sources to facilitate landscape-scale, on-the-ground projects by engaging NGOs, state agencies and their coalitions, and the private sector in collaboration with universities and federal agency partners.

Partners/Collaborators: Universities, federal agencies, state agencies and coalitions, and NGOs.

Initiating Organization: Land grant universities in the Great Basin.

Funding/Support: Federal, state and private.

GREAT BASIN FIRE SCIENCE DELIVERY PROJECT (GB-FSD)

Mission Statement: The Great Basin Fire Science Delivery Project serves to: 1) provide a forum where Great Basin land managers can identify their technical needs with respect to fire, fuels, and post-fire vegetation management; 2) develop/synthesize the necessary information and technical tools to meet these needs; and 3) provide the necessary information and tools through venues most preferred by field staff, field office managers, and higher administrative levels, respectively.

Unique Role: The Great Basin Fire Science Delivery Project is the Joint Fire Science Program's Regional Knowledge Exchange Consortium for the Great Basin. Our unique role is to provide Great Basin land managers with faster access to applicable fire and fuels science information and to develop direct knowledge exchange between managers and scientists in the Great Basin.

Partners: Federal, State, Tribal, NGO, and Private fire and fuels land managers.

Initiating Organization: The Joint Fire Science Program implemented this project in 2010. The Joint Fire Science Program is funded by the Departments of Interior and Agriculture and was initiated in 1998.

Funding/Support: This project is funded by the Joint Fire Science Program through a Great Basin Cooperative Ecosystem Studies Unit agreement with the Nevada State Bureau of Land Management.

GREAT BASIN LANDSCAPE CONSERVATION COOPERATIVE (GB-LCC)

Mission Statement: The Great Basin Landscape Conservation Cooperative enhances understanding of the effects of changing climate and other natural and human impacts across the region and promotes the coordination of science-based actions to enable human and natural communities to respond and/or adapt to those conditions. *Unique Role:* DOI initiative working with stakeholders to develop landscape-scale tools and monitoring to address climate change and other regional stressors.

Partners/Collaborators: Inclusive. All agencies (federal, state and local), Tribes, NGO's, public, etc. No restrictions on participation via the LCC Forum.

Initiating Organization: Initiated by Department of Interior in 2009 by Secretary Executive Order. *Funding/Support:* Funding is committed to three positions (BLM, US F&WS, and USGS) with associated support funding for each position.

GREAT BASIN RESEARCH AND MANAGEMENT PARTNERSHIP (GB-RMP)

Mission Statement: The GB-RMP promotes comprehensive and complementary research and management collaborations to sustain ecosystems, resources and communities across the Great Basin.

Unique Role: Grassroots organization that provides a web-based clearinghouse of information for the Great Basin and mobilizes teams of researchers and managers to fund and implement projects that address priority science needs.

Partners/Collaborators: All Great Basin organizations—federal and state research labs and management agencies, universities, local agencies, tribal governments, NGOs, and collaboration developed to address regional and local needs.

Initiating Organization: Research agencies and universities.

Funding/Support: Member agencies and grants.

GREAT BASIN RESTORATION INITIATIVE (GB-RI)

Mission Statement: To maintain and/or restore public lands in the Great Basin using science-based strategies supported by stakeholders.

Unique Role: Maintain or improve the health of public lands by reducing the impacts of wildfires and invasive species.

Partners: USGS, Forest Service, ARS, and other research agencies, State management agencies, and larger NGO's (for example TNC).

Initiating Organization: Initiated by BLM (Nevada State Office and the National Interagency Fire Center) in 1999 to address the large wildfires in the Great Basin.

Funding/Support: A permanent full-time Coordinator is funded for GBRI. The other main funding source is the BLM's Native Plant Initiative that provides \$800,000 per year for native plant development and application research.

KEYNOTE SPEAKER

REFLECTIONS AFTER 30 YEARS OF TACKLING THE CHEATGRASS/WILDFIRE CYCLE IN THE GREAT BASIN



Mike Pellant, Great Basin Restoration Initiative Coordinator (Bureau of Land Management, Boise ID)

http://www.blm.gov/pgdata/content/id/en/environmental_education/science-research/gbri.html

Since 1981, my career has been intractably linked to cheatgrass (and invasive plants), the increase in wildfires, and loss of native rangelands. Wildfires are increasing at an accelerating rate with 3.2 million acres burned in the Great Basin in the 2012 fire season. Climate change threatens to (or already is) altering wildfire characteristics by increasing cheatgrass fuel loads in the Great Basin and possibly fire behavior and size. The scale of disturbances, especially the mega-

fires that we are seeing now, will require new approaches to fuels management, fire rehabilitation, and strategically selecting and implementing restoration practices. "New" invasive species are encroaching on the range of the "old" invasive species creating the potential for novel environments where the past will not help predict the future. I will draw on my 30 years of experience in the Great Basin to address these issues by discussing 1) Post-fire rehabilitation, 2) Fuels management using greenstripping and/or targeted livestock grazing, and 3) Restoration with native species in a complicated environment (invasive species, wildfires, and climate change). My goal is to share with you lessons learned tempered with the challenges that the present and future hold. We must view the challenges ahead of us as "insurmountable opportunities" (Pogo) and avoid the "hopeless attitude" of the public in the 1940's as cheatgrass was expanding in the West (Aldo Leopold essay, Cheat Takes Over, in the 1949 Sand County Almanac).

ABSTRACTS | CURRENT AND EMERGING ISSUES

A SAGE-GROUSE'S EYE VIEW OF CURRENT AND FUTURE HABITAT QUALITY - NOT ALL SAGEBRUSH ARE CREATED EQUAL



Jennifer Forbey, Assistant Professor (Boise State University, Boise ID), Graham Frye (Boise State University, Boise ID), Kristina Gehlken (Boise State University, Boise ID), John Connelly (Idaho Department of Fish and Game, Blackfoot ID) http://biology.boisestate.edu/faculty-and-staff/faculty/jennifer-forbey/

The toxic consequences of defensive chemicals in plants can constrain diet selection and habitat use by herbivores. Moreover, increases in fire, drought, and CO² can increase chemical defenses in plants and herbivores may be less tolerant to those chemicals as temperatures rise. Herbivores that specialize on chemically defended plants for food may be particularly sensitive to variation in

plant chemistry and changes in climate. Sagebrush contains many toxic compounds (e.g. monoterpenes), yet is the primary diet of Greater sage-grouse (*Centrocercus urophasianus*) throughout much of the year. We investigated how sagebrush chemistry influenced the behavior of greater sage-grouse and suggest how climate change may alter grouse-sagebrush interactions. We found that concentrations of chemical defenses influenced habitat use by sage-grouse on multiple spatial scales. We describe why understanding plant chemistry can benefit the conservation and management of sage-grouse and other herbivores in the Great Basin. Specifically, we describe how remote sensing could be used to map the distribution of palatable plants to better predict quality habitats for sage-grouse. In addition, we offer an overview of how climate change may alter the chemical interactions between herbivores and sagebrush in the future.

THE DESTRUCTIVE ROLE OF INVASIVE ALIEN GRASSES: A RECURRING WORLDWIDE CALAMITY



Richard Mack, Professor (Washington State University, Pullman WA) http://sbs.wsu.edu/mack/mack.htm

The annual habit expressed in many grasses has given rise to some of the world's worst invasive species; unfortunately for the United States it harbors one of the worst – *Bromus tectorum* (cheatgrass). I will briefly illustrate that the ability to reliably produce annual seed crops, coupled with annual fuel among these species is not a phenomenon restricted to cheatgrass in North America. Curiously, these same annual species, which cause such havoc in new ranges, are often common but hardly abundant in their native ranges. This contrast may form the basis for comprehensive exploration of limitations (the proverbial

"Achilles Heel") in these species that could be exploited for their eventual control in their invaded ranges.

MANAGING FOR RESILIENT ECOSYSTEMS: EXAMINING THE OPTIONS



Jeanne Chambers, Research Ecologist (USDA Forest Service, Rocky Mountain Research Station, Reno NV)

http://www.fs.fed.us/rmrs/profiles/?last=Chambers&first=Jeanne+C

Many Great Basin ecosystems are exhibiting rapid and often irreversible changes due to stressors like climate change, rising CO_2 and invasive species and disturbances like overgrazing by livestock and altered fire regimes. Because Great Basin ecosystems occur over strong environmental gradients (desert to alpine), they differ significantly in resilience to stress and disturbance at landscape scales. Managing for the sustainability of these diverse ecosystems requires an understanding of (1) the types and magnitudes of change, (2) ecosystem

resilience to stress and disturbance and resistance to invasive species, and (3) management options. This broader understanding can be used to determine priority management areas and appropriate management activities at landscape scales. Overarching strategies for decreasing the deleterious effects of stress and disturbance and maintaining or increasing ecosystem resilience and resistance are protection, prevention, and restoration.

BLM'S LANDSCAPE APPROACH FOR MANAGING PUBLIC LANDS



John Wilson, Healthy Lands Coordinator (Bureau of Land Management, Reno NV) http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html

Management of public lands has never been more challenging. Many offices are conducting large-scale resource assessments, planning across watersheds and jurisdictions, and working with partners to address landscape-scale restoration needs. These efforts recognize that landscapes are being affected by complex influences that transcend traditional management boundaries. Effectively addressing this increasingly variable situation will require us to improve our ability to evaluate and respond to land health concerns on multiple scales and across programmatic, organizational, land ownership, and political boundaries.

The BLM is developing a national landscape approach for managing public lands. It consists of a suite of components that, taken together, will provide a consistent, science-based, adaptive management framework for integrating broad-scale and local-scale resource management information. A landscape approach uses a broad ecological assessment, such as the Great Basin Rapid Ecoregional Assessment, to discern ecological values, patterns of environmental change, and management opportunities that may not be evident when managing smaller land areas. We then use this information to inform and plan long-term conservation, restoration, and development efforts. A landscape approach offers the perspective and tools needed to address the unique ecological issues and public land management challenges of the 21st Century.

A COMPREHENSIVE VISION AND PLAN FOR THE GREAT BASIN



Todd Hopkins, Science Coordinator (Great Basin Landscape Conservation Cooperative, Reno NV) **Linda Kelly**, Coordinator (Great Basin Landscape Conservation Cooperative, Reno NV) http://www.greatbasinlcc.org

The Great Basin ecosystem is nationally significant and a unique natural resource treasure for the world. Several organizations have compiled science needs, provided a variety of networking forums, and created databases for expertise and organizations working in this iconic

geography of the West. There is a growing acknowledgement however, of the need for a comprehensive vision and plan for Great Basin. By creating a stakeholder-based comprehensive plan, the multitude of interdisciplinary programs in the Great Basin can collectively work to reverse the decline of this treasured ecosystem by ensuring their efforts flow upward toward the collective goals of the plan.

ABSTRACTS | PRESENTATION OF PROJECT HIGHLIGHTS

RESULTS FROM THE CENTRAL BASIN AND RANGE RAPID ECOREGIONAL ASSESSMENT



Marion Reid, Senior Regional Ecologist (NatureServe, Boulder CO) Pat Comer (NatureServe), Patrick Crist (NatureServe), Jon Hak (NatureServe), Healy Hamilton (California Academy of Sciences), David Braun (Sound Science LLC), Gwen Kittel (NatureServe), Ian Varley (NatureServe), Bob Unnasch (Sound Science LLC), Stephanie Auer (California Academy of Sciences), Megan Creutzburg (Sound Science LLC), Dave Theobald (Colorado State University), Lynn Kutner (NatureServe)

http://www.natureserve.org/

Working with agency partners, BLM is conducting rapid ecoregional assessments (REAs) covering approximately 450 million acres of public and non-public lands in

ten ecoregions and combinations of ecoregions in the American West. The goal of the REAs is to identify ecological resource status, potential to change from a landscape viewpoint, and potential priority areas for conservation, restoration, and development. NatureServe and partners conducted the Central Basin & Range (CBR) REA over the past 2 years. The basis of the assessment work in an REA is to answer management

questions; for CBR 62 management questions were assessed. A key component is "conservation elements" representing ecosystems (35), species (28), and sensitive soils (7) of management interest. Change agents are those features or phenomena that have the potential to affect the size, condition and landscape context of conservation elements. Four classes of change agents were included in the assessment: wildfire, development, invasive species, and climate change. Results will be presented showing distributions of conservation elements and change agents, current ecological conditions in the ecoregion, and projected future conditions.

LAND TREATMENT DIGITAL LIBRARY: WHAT HAVE WE LEARNED?



David Pilliod, Research Ecologist (USGS Forest and Rangeland Ecosystem Science Center, Boise ID)

http://fresc.usgs.gov/staff/profile.asp?Emp_ID=875

The Land Treatment Digital Library (LTDL) was created by the U.S. Geological Survey (USGS) and Bureau of Land Management (BLM) to catalog information about legacy land treatments on Interior lands in the western United States. Land treatments include activities such as removal or alteration of plant biomass, seeding burned areas, and herbicide applications. The LTDL currently houses >20,000 land treatments from 32 BLM field offices in nine states. Land treatment data from remaining BLM field offices will be entered and verified over the next

two years. The LTDL can be used to respond to information requests, conduct analyses and other forms of information syntheses, produce maps, and generate reports for DOI managers and scientists and other authorized users.

GREAT BASIN NATIVE PLANT SELECTION AND INCREASE PROJECT



Nancy Shaw, Research Botanist (USDA Forest Service, Rocky Mountain Research Station, Boise ID)

http://www.fs.fed.us/rm/boise/research/shrub/greatbasin.shtml

This collaborative research project, sponsored by the US Department of the Interior, Bureau of Land Management's (BLM) National Native Plant Materials Development Program, was initiated in 2001 by BLM's Great Basin Restoration Initiative and the US Forest Service, Rocky Mountain Research Station. Objectives are to improve the availability of native plant materials and to develop the knowledge base and technology required for ecological restoration of disturbed rangelands in the 55 million hectare floristic Great Basin. Specific goals

are to: 1) examine the genetic diversity of major restoration species and their potential response to climate change, 2) establish dynamic species-specific and provisional seed zones and increase seed supplies for these zones, 3) develop seed technology and cultural practices to improve seed production by private growers, 4) elucidate the principles, strategies and technologies essential for ecological restoration in the Great Basin, including consideration of exotic invasives and climate change, and 5) expedite science delivery through the use of websites, workshops, symposia, and field tours. To meet the challenges posed by these objectives, the initial collaboration has expanded to include more than 20 researchers in disciplines ranging from genetics to agronomy, entomology, seed technology, climate change, restoration ecology, and equipment development. State seed regulatory agencies have aided by addressing issues relative to seed testing and certification. This partnership has strengthened collaboration among scientists, land managers, and the native seed industry by providing science-based restoration strategies and native plant materials for Great Basin rangelands.

BLM INTEGRATED CHEATGRASS DIE-OFF PROJECT



Don Major, Fire and Landscape Ecologist (Bureau of Land Management, Boise ID), Stephen Boyte (SGT, Inc. contractor to the USGS EROS Center), Bruce Wylie (USGS EROS Center), Susan Meyer (US Forest Service, Rocky Mountain Research Station, Fort Collins CO), Brad Geary, Zach Aanderud, (Brigham Young University, Provo UT); Peter Weisberg, Elizabeth Leger (University of Nevada Reno, Reno NV); Julie Beckstead (Gonzaga University, Spokane WA) http://www.blm.gov/id/st/en/prog/gbri.html

Cheatgrass (*Bromus tectorum*) invasion and expansion in sagebrush ecosystems of the Great Basin has been well documented. Currently, cheatgrass dominated rangelands cover approximately 10 million acres in the Great Basin, USA. Since

2003, the Winnemucca District (BLM NV) has been experiencing landscape scale vegetation changes resulting from the "die-off" (i.e, partial/complete stand failure) of cheatgrass within Wyoming Big Sagebrush ecological sites. A similar phenomenon has also been reported in the Salt Desert shrub systems of central/southern Utah, and in Wyoming Big and Basin Big Sagebrush sites in the Snake River Plain Idaho. Initial estimates of "die-off" areas include greater than a half million acres. Once void of cheatgrass, these sites are exposed to accelerated soil erosion, invasion by new weed species, loss of spring livestock and wildlife forage, and further degradation requiring additional management attention.

In late 2010, members of BLM's Great Basin Restoration Initiative identified the need to develop a more formalized strategy to inform BLM managers on the magnitude of the die-off phenomena and engage the science community to examine potential causal mechanisms. The combined result was the development of the Integrated Cheatgrass Die-off Project. The primary objectives of this project are to (1) Identify/evaluate methods to characterize current cheatgrass and CGDO occurrence and spatial extent with remotely sensed imagery, and (2) implement an integrated science research project to examine the potential causal factor(s) responsible for these die-offs. We will highlight the various collaborator efforts and associated project accomplishments in 2012.

BOISE STATE UNIVERSITY CAMPUS MAPS





DOWNTOWN BOISE TRANSIT MAP



Attendees can catch the No. 40 from Broadway and Park North (Near Courtyard Marriot) to University Drive and Lincoln Ave (across the street from Student Union Building). From University and Capitol West (near Residence Inn), take the No. 1 to University Drive and Lincoln Ave.

NOTES

