Society for Range Management

2011 Annual Meeting
Billings, Montana
Feb. 5-11, 2011

Photo by Heidi Crum
Our commitment to the cattle industry is growing.

With a broad portfolio of herbicides available to them, our Range & Pasture Specialists can help you find products to help increase forage production, control brush or create wildlife habitat. These consultants can make recommendations based on your land and your needs.
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New Member Coffee

Date: Monday, February 7, 2011
Time: 7:30 am – 8:30 am
Location: Poolside Terrace in the Holiday Inn Grand

The Society for Range Management would like to invite all new SRM members (or anyone new to the Annual Meeting) to coffee and pastries Monday morning before the Plenary Session. This is an opportunity to meet with SRM president and leadership, and learn how to get the most out of SRM. We will provide tips for maximizing your SRM membership, getting involved in the Society, and information on the Annual Meeting.

This is a free event – please come with your questions and get better acquainted with the Society for Range Management!
IMPORTANT INFORMATION

Daily Trail Boss
The Daily Trail Boss will be available each morning, Sunday through Thursday at strategic locations. Any information that you would like included in the next issue must be submitted by 12:00 noon the previous day to the Daily Trail Boss Office in the Ponderosa room in the Holiday Inn Grand. Program and other timely updates will appear in the Daily Trail Boss and also be available at the information booth near the registration area in the Montana Convention Center.

Messages
Messages may be posted on the Message Board located by the registration Desk in the lobby of the Montana Convention Center.

Speaker Preparation
Technical session papers will be presented within a 20-minute schedule. To allow time for questions, you should plan to present your paper in 15 minutes. Concurrent technical sessions dictate that the time schedule be strictly followed. PowerPoint will be used exclusively to project visual aids for all oral presentations. A Windows PC laptop computer and projector will be provided for each session.

Presentations shall be brought directly to the session on a memory stick half an hour before the session begins for preloading. Presenters should check with their session moderator at least 15 minutes before the start of the session so that they know you are present and can give you any last minute instructions.

Presenters for Symposia or Workshops should also check with their session moderator at least 15 minutes before the start of the session so that they know you are present and can provide any last minute instructions. Concurrent sessions dictate that the time schedules for speakers printed in this Program be strictly followed.
Poster Presentations
Poster Paper authors have been assigned a number and title in this Program corresponding to the number and title on their poster board. Please put your poster up at least 30 minutes before your session starts, and take it down within 30 minutes after your session is over. You should plan on being at your poster for at least 2 hours to answer questions. All poster sessions will be located in the Russel room in the Montana Convention Center. It will be the responsibility of the presenters to bring supplies such as thumbtacks and/or Velcro to put up posters.

Abstracts
Abstracts are available on CD or through download from the SRM web page (www.rangelands.org). Click on SRM Billings Meeting page, then Program, then options to download Abstracts and click on URL.

Food Court
A Food Court will be located in the Russel/ Ralston room in the Montana Convention Center, near the Trade Show and Silent Auction. The Food Court will be open Monday through Thursday from 6:00 am until 2:00 pm for quick breakfasts and lunches.
Welcome to the 2011 Annual Meeting of the Society for Range Management. The Northern Great Plains Section of the Society for Range Management is proud to host this event.

The 2011 SRM Annual Meeting offers you vast educational and social opportunities to increase your knowledge and provide a positive environment to energize all attendees on the importance of rangeland ecology. Our Program includes 40 Symposia, Workshops, Technical Sessions, Poster Sessions and Special Session with over 450 oral presentation and posters, on a wide variety of rangeland related topics.

Our meeting theme is:

Transcending Borders

Landscapes and Legends

In transcending the borders between SRM sections, states, nations and land regions the Northern Great Plains Section has teamed up with members from the International Mountain Section to plan and facilitate this event for you. While at the meeting, look for the blue vests that identify our volunteers. We are here to assist you with everything from getting business done to simply provide you with directions. Please contact us with any particular needs you might have.

While in Billings we encourage you to get out and see the rich diversity of landscapes in the surrounding area.
2011 SRM Annual Meeting Planning Committee

General Meeting Co-Chairs
Tammy DeCock
Todd Yeager

Committee Co-Chairs = CC

Hotel Liaison
John Lane-CC
Megan Dawson -CC
Matt Reeves

Publicity
Paul Nyren-CC
Erin Fryer-CC

Finance
Chris Schauer-CC
Kim Reid-CC

Technical Tours
Keith Bartholomay-CC
Matt Ricketts-CC
Jennifer Woodward

Trade Show/ Sponsorship
Todd Yeager-CC
Kimberly Haile-CC
Steve Saunders-CC

Host Activities
Carla Lawrence-CC
Dean Dolatta-CC
Heidi Crum

Program
Kevin Sedivec-CC
Bret Olson-CC
Mike Schellenberg-CC
Shawn DeKeyser -CC
Jack Norland

Producer Activities
Jeff Printz-CC
Jon Siddoway-CC
Gene Goven-CC
Stan Boltz

Student Activities
Barry Irving-CC
Rebecca Wolenetz-CC

Logistics
Jennifer Muscha-CC
Merrita Franker-Marble-CC
Jodi Mason
Carmen Drieling
Rick Caquelin

Transportation
Larry Holzworth-CC
Susan Winslow-CC
Dan Ogle

Membership Services
Aleta Rudeen
Dear SRM Members and Friends,

Please accept my heartfelt welcome to the 64th Annual Meeting of the Society for Range Management. I am especially pleased to welcome you to Montana, my home, and hope that you will enjoy this year’s meeting in the relaxed, engaging setting that Montana and Billings provide. As the fourth largest U.S. state, but with less than one million residents, Montana truly is much like a small town with very long streets. So much so, in fact, that it is commonplace for fellow Montanans meeting for the first time to find a mutual acquaintance, friend, or distant relative within the first five minutes of conversation. It is my hope that while here you will become part of the extended Montana family.

At the very least I hope you feel comfortable visiting true rangeland country. Rangelands and pasturelands comprise 70% of Montana’s 93 million acres, and rangelands provide much of what makes Montana such a special place, including our clean air and water, scenic open spaces, and abundant wildlife. Rangelands also support our state’s largest industry—range livestock production. Rangelands are indeed a coveted gem of the Treasure State.

I wish to sincerely thank the many volunteers who have dedicated so much time and effort to organizing this Annual Meeting. Special thanks go to the Planning Committee and co-chairs
Tammy Decock and Todd Yeager for their outstanding leadership and commitment. Thank you to everyone involved, and please know that every attendee appreciates all that you have done on our behalf to ensure that we have an enjoyable professional and educational experience.

In closing, I encourage all participants to take full advantage of the wonderful opportunity we have to learn and work together to promote the art and science of rangeland management. Range professionals from across North America and the globe have gathered together here in Billings. Make an effort to meet new people. Go out of your way to extend a personal greeting to new SRM members and first-time attendees at our annual meeting. Enjoy the camaraderie of old friends and colleagues. Recharge your professional batteries, learn new ideas and concepts, and reaffirm your personal commitment to rangelands and their sustainable stewardship.

With Warm Regards,

Jeff Mosley, President
Society for Range Management
2011 TRADE SHOW

MONDAY 8 AM TO 8 PM
TUESDAY 7 AM TO 4:30 PM

New Technology Booths
Industry Booths
Educational Booths
Vegetation Management Booths

OVER 50 EXHIBITORS TO VISIT

2011 TRADE SHOW MIXER
MONDAY 6 -8 PM

COME THE MIXER AND HAVE A FREE APPETIZER WHILE VISITING WITH OLD FRIENDS AND GETTING TO KNOW TO MEET NEW ONES!!
Please thank these sponsors for their financial contributions to this meeting.

**Diamond Sponsorships**
Dow AgroSciences
Natural Resources Conservation Service - Montana

**Platinum Sponsors**
DuPont Crop Protection

**Gold Level Sponsors**
National Park Service
United State Forest Service
North Dakota Grazing Lands Coalition
Society for Range Management

**Silver Level Sponsors**
Montana Grazing Lands Conservation Initiative
Fort Keogh – USDA- ARS

**Bronze Level Sponsors**
South Dakota Grasslands Coalition
Jack Taylor
Ed DeKeyser
Ray Banister
Bureau of Land Management
Natural Resources Conservation Service
Agricultural Research Service
The SRM Endowment Fund Development Committee will be conducting their annual silent auction fund raiser in conjunction with the annual meeting in Billings, MT. Last year, over $6,000 was raised from the sale of the 137 items donated by SRM members. The goal this year is to raise $10,000 through the sale of a greater number of sale items to a greater number of buyers. In addition, Committee members and other supportive SRM members have been selling raffle tickets since mid-summer, 2010.

There are 3 raffle items:

1) Charlie Russell bronze sculpture entitled “Father Ranger” – donated by recent SRM President’s
2) 10X felt cowboy hat - donated by Rand’s Custom Hats, Billings, MT
3) .270 caliber, SRM engraved custom rifle with scope – donated by Sharp Brother’s Seed

Tickets are $5 each or 5 for $20. The raffle drawing will be held on Wednesday evening during the informal “An Evening in Montana” Western BBQ and Social.
Hilton Garden Inn
and
Quality Homestake Park Inn Guests

A shuttle service from these hotels, with intermediate stops at area restaurants, has been arranged for your transportation to and from the meeting facilities at the Holiday Inn Grand and Billings Hotel and Convention Center. The shuttle is free gratis, arranged by the Billings Chamber of Commerce and SRM. Updated shuttle schedule will be posted in the Hotel lobbies. Tentatively, a shuttle pick up will be available on the hour and half-hour according to the following schedule:

**Sunday**
- 6:00 am to 8:00 am; and
- 11:00 am to 2:00 pm; and
- 5:00 pm to 10:00 pm

**Monday**
- 6:00 am to 8:00 am; and
- 11:00 am to 2:00 pm; and
- 5:00 pm to 10:00 pm

**Tuesday**
- 6:00 am to 8:00 am; and
- 11:00 am to 2:00 pm; and
- 5:00 pm to 1:00 am

**Wednesday**
- 6:00 am to 8:00 am; and
- 11:00 am to 2:00 pm; and
- 5:00 pm to 11:00 pm

**Thursday**
- 6:00 am to 8:00 am; and
- 11:00 am to 2:00 pm; and
- 5:00 pm to 10:00 pm

**Friday**
- 6:00 am- to 8:00 am; and
- 5:30 pm to 6:00 pm

**MET TRANSIT System**

The city of Billings has a MET TRANSIT system. Routes, costs and schedules can be obtained from their web site http://ci.billings.mt.us/index.aspx?rid=339. Or you can pick up information at their Kelly Inn stop, directly behind (east) of the Holiday Inn Grand on Midland Road or the local information Booth in the lobby of the Montana Convention Center. Route 12P, will get you into the MET TRANSIT system; it has pickups at the Kelly Inn and transfers to Stewart Park by Rimrock Mall for a $1.25 one-way fare.
<table>
<thead>
<tr>
<th>Saturday</th>
<th>Sunday</th>
<th>Monday</th>
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</thead>
<tbody>
<tr>
<td>February 5</td>
<td>February 6</td>
<td>February 7</td>
</tr>
<tr>
<td>8:00 am - 5:00 pm</td>
<td>7:00 am - 5:30 pm</td>
<td>7:00 am – 7:00 pm</td>
</tr>
<tr>
<td>Board of Directors</td>
<td>Registration</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30 am - 5:00 pm</td>
<td>8:00 am - 12:00 pm</td>
<td>7:30 am - 8:30 am</td>
</tr>
<tr>
<td>Tech Tour 1 Pryor Mtn Horse Range</td>
<td>Committee Meetings</td>
<td>New Members Coffee</td>
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<tr>
<td>8:00 am - 5:00 pm</td>
<td>8:00 am - 4:30 pm</td>
<td>8:00 am - 8:00 pm</td>
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<tr>
<td>Advisory Council</td>
<td>RTEC</td>
<td>Trade Show Silent Auction</td>
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<tr>
<td>10:00 am - 5:00 pm</td>
<td>8:00 am - 12:00 pm</td>
<td>9:00 am - 12:00 pm</td>
</tr>
<tr>
<td>Rangeland Job Fair</td>
<td>URME</td>
<td>Plenary Session</td>
</tr>
<tr>
<td>8am – 10am</td>
<td>8:00 am - 10:00 am</td>
<td>8:00 am - 10:00 am</td>
</tr>
<tr>
<td>Rangeland Job Fair Setup</td>
<td>Career Opportunities Employment Area</td>
<td>URME Viewing</td>
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<tr>
<td>10:00 am - 6:00 pm</td>
<td>10:00 am - 6:00 pm</td>
<td>10:00 am - 6:00 pm</td>
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<tr>
<td>Rangeland Job Fair</td>
<td>Rangeland Job Fair</td>
<td>Agency-On-the-Spot-Hiring</td>
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<tr>
<td>10:00 am – 6:00 pm</td>
<td>11:00 am - 3:00 pm</td>
<td>8:00 am - 8:00 pm</td>
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<tr>
<td>Social Tour 1 Moss Mansion/High Tea</td>
<td>Social Tour 1 Moss Mansion/High Tea</td>
<td>Social Tour 1 Moss Mansion/High Tea</td>
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<tr>
<td>1:00 pm - 5:00 pm</td>
<td>10:00 am - 10:00 pm</td>
<td>8:00 am - 8:00 pm</td>
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<tr>
<td>UG Public Speaking Contest</td>
<td>Career Opportunities Employment Area</td>
<td>Career Opportunities Employment Area</td>
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<tr>
<td>11:00 am - 3:00 pm</td>
<td>8:00 am - 10:00 pm</td>
<td>8:00 am - 8:00 pm</td>
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<tr>
<td>Social Tour 1 Moss Mansion/High Tea</td>
<td>Social Tour 1 Moss Mansion/High Tea</td>
<td>Agency-On-the-Spot-Hiring</td>
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<td>8:00 am - 8:00 pm</td>
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</table>
| Saturday  
February 5 | Sunday  
February 6 | Monday  
February 7 |
|----------------|----------------|----------------|
| 8:00 am - 5:00 pm  
Board of Directors | 1:00 pm - 5:00 pm  
Career Development Workshops | 1:00 pm - 5:00 pm  
Advisory Council |
| 3:00 pm - 7:00 pm  
Registration | 1:00 pm - 4:30 pm  
Advisory Council | 4:00 pm - 5:00 pm  
BOD/Advisory Council |
| 1:00 pm - 5:00 pm  
Committee Meetings | 1:00 pm - 5:00 pm  
RTEC Symposium | 1:00 pm - 5:00 pm  
Symposia Technical Sessions Special Sessions Poster Session A |
| 12 noon - 6:00 pm  
Trade Show Set Up  
Silent Auction Set Up Student Display Set Up | | |
| 6:00 pm - 8:00 pm  
SRM BOD and Committee Chairs | 4:00 pm - 7:00 pm  
SRM Youth Activities Workshop | 5:00 pm - 7:00 pm  
Tapping the Top |
| | 5:00 pm - 6:00 pm  
Student Contest Registration | 6:00 pm - 8:00 pm  
Trade Show Mixer |
| | 5:00 pm - 7:00 pm  
Student Conclave Business Meeting & Mixer | 7:00 pm - 9:00 pm  
YPC Social |
| | 6:00 pm - 10:00 pm  
Agency Family Meetings | |

grey fill indicates student activity
<table>
<thead>
<tr>
<th>Time</th>
<th>Tuesday February 8</th>
<th>Wednesday February 9</th>
<th>Thursday February 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 5:30 pm</td>
<td>Registration</td>
<td>Registration</td>
<td>Registration</td>
</tr>
<tr>
<td>7:00 am - 4:30 pm</td>
<td>Trade Show Silent Auction</td>
<td>7:00 am - 10:00 am Trade Show tear down</td>
<td></td>
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<tr>
<td>8:00 am - 10:00 am</td>
<td>Board of Directors</td>
<td>7:00 am - 12:00 pm Silent Auction</td>
<td>8:00 am - 12:00 pm Symposia Workshops Special Sessions Agency Workshops</td>
</tr>
<tr>
<td>8:00 am - 12 pm</td>
<td>Symposia Tech Sessions Special Sessions Producer’s Forum Poster Session B</td>
<td>8:00 am - 12:00 pm Symposia Tech Sessions UG Technical Papers Poster session D</td>
<td></td>
</tr>
<tr>
<td>8:00 am - 10:00 am</td>
<td>Plant ID Contest</td>
<td>8:00 am - 12:00 pm Tech Tour 2 Pompeys Pillar</td>
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<tr>
<td>10:00 am - 12:00 pm</td>
<td>Plant ID Contest</td>
<td>10:30 am - 3:30 pm Social Tour 3 Shopping at Rimrock Mall</td>
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<tr>
<td></td>
<td>Viewing</td>
<td>10:30 am - 3:30 pm Social Tour 3 Shopping at Rimrock Mall</td>
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<tr>
<td>8:00 am - 12:00 pm</td>
<td>HSYF Speaking Contest</td>
<td>10:30 am - 3:30 pm Social Tour 4 Museums Downtown</td>
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<tr>
<td>8:00 am - 12:00 pm</td>
<td>CPRM Exam</td>
<td>8:00 am - 10:00 pm Career Opportunities Employment Area</td>
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<tr>
<td>10:00 am - 12:00 pm</td>
<td>Social Tour 2a</td>
<td>8:00 am - 10:00 pm Career Opportunities Employment Area</td>
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<tr>
<td></td>
<td>Tour de Chocolate &amp; Coffee</td>
<td>8:00 am - 10:00 pm Career Opportunities Employment Area</td>
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<tr>
<td>10:30 am - 12:00 pm</td>
<td>YPC Business Meeting</td>
<td>8:00 am - 8:00 pm Agency-On-the-Spot-Hiring</td>
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<td>8:00 am - 10:00 pm</td>
<td>Career Opportunities Employment Area</td>
<td>8:00 am - 8:00 pm Agency-On-the-Spot-Hiring</td>
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<td></td>
<td>Agency-On-the-Spot-Hiring</td>
<td>8:00 am - 8:00 pm Agency-On-the-Spot-Hiring</td>
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</table>
**PROGRAM-AT-A-GLANCE (Afternoon)**

<table>
<thead>
<tr>
<th>Tuesday February 8</th>
<th>Wednesday February 9</th>
<th>Thursday February 10</th>
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<tbody>
<tr>
<td>12:00 pm - 2:00 pm</td>
<td>12:00 pm - 2:00 pm</td>
<td>1:00 pm - 5:00 pm</td>
</tr>
<tr>
<td>Student Conclave</td>
<td>Student Conclave</td>
<td>Board of Directors</td>
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<tr>
<td>and HSYF Luncheon</td>
<td>SRM Lunch &amp;</td>
<td>Symposia</td>
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<td></td>
<td>Business Meeting</td>
<td>Special Sessions</td>
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<tr>
<td>1:30 pm - 3:30 pm</td>
<td>12:00 pm - 5:00 pm</td>
<td>Workshops</td>
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<tr>
<td>Social Tour 2b</td>
<td>Silent Auction Closeout</td>
<td>Workshops</td>
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<tr>
<td>Tour de Chocolate</td>
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<tr>
<td>&amp; Coffee</td>
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<tr>
<td>1:00 pm - 5:00 pm</td>
<td>2:15 pm - 5:00 pm</td>
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<tr>
<td>Symposia</td>
<td>SRM Honor &amp;</td>
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<td></td>
<td>Student Awards Ceremony</td>
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<tr>
<td>1:00 pm - 5:00 pm</td>
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<tr>
<td>HSYF Speaking</td>
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<tr>
<td></td>
<td>Contest</td>
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<tr>
<td>4:30 pm - 6:00 pm</td>
<td>5:30 pm - 7:30 pm</td>
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<tr>
<td>Trade Show tear</td>
<td>Wild Women of Range Mixer</td>
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<td>down</td>
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<tr>
<td>6:00 pm - 8:00 pm</td>
<td>6:00 pm - 7:00 pm</td>
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<tr>
<td>Section Mixers</td>
<td>President’s Reception</td>
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<tr>
<td>University Mixers</td>
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<tr>
<td>8:00 pm - 12:00 am</td>
<td>7:00 pm</td>
<td></td>
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<tr>
<td>Dance</td>
<td>An Evening in MT</td>
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<tr>
<td></td>
<td>Event</td>
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<tr>
<td>8:00 am - 4:30 pm</td>
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<tr>
<td>Friday, February 11</td>
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<td></td>
</tr>
<tr>
<td>Tech Tour 3 - Little Bighorn Battle Field</td>
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</table>
### Saturday, February 5, 2011

<table>
<thead>
<tr>
<th>Group</th>
<th>Time</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Annual Meeting Planning Committee</td>
<td>1:00pm-3:30pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>SRM Board of Directors</td>
<td>8:00am-5:00pm</td>
<td>HIG - Bighorn</td>
</tr>
<tr>
<td>SRM BOD w/ Committee Chairs</td>
<td>6:00pm-8:00pm</td>
<td>HIG - Bighorn</td>
</tr>
</tbody>
</table>

### Sunday, February 6, 2011

<table>
<thead>
<tr>
<th>Group</th>
<th>Time</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Annual Meeting Planning Committee</td>
<td>6:30am-8:00am</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>2012 Annual Meeting Planning Committee</td>
<td>5:00pm-8:00pm</td>
<td>HIG - Lewis and Clark</td>
</tr>
<tr>
<td>Accreditation Panel</td>
<td>1:00pm-3:00pm</td>
<td>BHCC - South 40</td>
</tr>
<tr>
<td>Advisory Council</td>
<td>8:00am-4:30pm</td>
<td>BHCC - Homesteader</td>
</tr>
<tr>
<td>Awards Committee</td>
<td>3:00pm-5:00pm</td>
<td>BHCC - Parlor 119</td>
</tr>
<tr>
<td>Certified Range Management Committee</td>
<td>1:00pm-4:00pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>Coordinated Resource Management Committee</td>
<td>1:00pm-4:00pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>CPRM Committee</td>
<td>1:30pm-5:00pm</td>
<td>BHCC - Parlor 109</td>
</tr>
<tr>
<td>Endowment Board of Governors</td>
<td>3:00pm-5:00pm</td>
<td>HIG - Spruce</td>
</tr>
<tr>
<td>Finance Committee</td>
<td>8:00am-3:00pm</td>
<td>HIG - Yellowstone</td>
</tr>
<tr>
<td>GLCI Task Group</td>
<td>3:00pm-5:00pm</td>
<td>BHCC - Ranch</td>
</tr>
<tr>
<td>Government Policy and Programs Committee</td>
<td>8:00am-5:00pm</td>
<td>HIG - Lewis and Clark</td>
</tr>
<tr>
<td>History, Archives &amp; Library Committee</td>
<td>3:00pm-5:00pm</td>
<td>BHCC - Parlor 131</td>
</tr>
<tr>
<td>Information and Education Committee</td>
<td>1:00pm-5:00pm</td>
<td>BHCC - Parlor 118</td>
</tr>
<tr>
<td>International Affairs Committee</td>
<td>1:00pm-5:00pm</td>
<td>BHCC - North 40</td>
</tr>
<tr>
<td>Leadership Development Committee</td>
<td>1:00pm-3:00pm</td>
<td>BHCC - Parlor 131</td>
</tr>
<tr>
<td>Membership Task Force</td>
<td>8:00am-10:00am</td>
<td>BHCC - Parlor 131</td>
</tr>
<tr>
<td>Nominations Committee</td>
<td>8:00am-3:00pm</td>
<td>HIG - Spruce</td>
</tr>
<tr>
<td>Public Affairs Committee</td>
<td>8:00am-5:00pm</td>
<td>HIG - Madison</td>
</tr>
</tbody>
</table>
# BOARD/COUNCIL/COMMITTEE MEETINGS

BHCC - Billings Hotel and Convention Center  
HIG - Holiday Inn Grand Montana

## Sunday, February 6, 2011

<table>
<thead>
<tr>
<th>Group</th>
<th>Time</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range Science Education Council</td>
<td>8:00am-12:30pm</td>
<td>BHCC - South 40</td>
</tr>
<tr>
<td>Rangeland Assessment and Monitoring Committee</td>
<td>8:00am-12:30 pm</td>
<td>BHCC - Ranch</td>
</tr>
<tr>
<td>Rangeland Invasive Species Committee</td>
<td>8:00am-12:00pm</td>
<td>BHCC - Parlor 119</td>
</tr>
<tr>
<td>Rangelands Editorial Board</td>
<td>1:00pm-3:00pm</td>
<td>BHCC - Parlor 130</td>
</tr>
<tr>
<td>Rangelands Steering Committee</td>
<td>8:00am-12:00pm</td>
<td>BHCC - Parlor 130</td>
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<tr>
<td>REM Editorial Board and Steering Committee</td>
<td>1:00pm-3:00pm</td>
<td>BHCC - Parlor 119</td>
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<tr>
<td>Remote Sensing and GIS Committee</td>
<td>8:00am-12:00pm</td>
<td>BHCC - Parlor 109</td>
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<tr>
<td>Section Membership Chairs</td>
<td>5:00pm-7:00pm</td>
<td>BHCC - Parlor 109</td>
</tr>
<tr>
<td>Student Activities Committee</td>
<td>9:00am-12:00pm</td>
<td>BHCC - North 40</td>
</tr>
<tr>
<td>Targeted Grazing Committee</td>
<td>3:00pm-5:00pm</td>
<td>BHCC - South 40</td>
</tr>
<tr>
<td>Watershed/Riparian Committee</td>
<td>8:00am-12:00pm</td>
<td>HIG - Bighorn</td>
</tr>
<tr>
<td>Wildlife Habitat Committee</td>
<td>1:00pm-4:00pm</td>
<td>HIG - Bighorn</td>
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## Monday, February 7, 2011

<table>
<thead>
<tr>
<th>Group</th>
<th>Time</th>
<th>Room</th>
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<tbody>
<tr>
<td>2011 Annual Meeting Planning Committee</td>
<td>6:30am-8:00am</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>2012 Annual Meeting Planning Committee</td>
<td>8:00am-10:00am</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>Advisory Council</td>
<td>1:00pm-5:00pm</td>
<td>HIG - Gallatin</td>
</tr>
<tr>
<td>New Members Coffee</td>
<td>7:30am-8:30 am</td>
<td>HIG - Poolside Terrace</td>
</tr>
<tr>
<td>Annual Meeting Handbook Committee</td>
<td>1:00pm-5:00pm</td>
<td>BHCC – Parlor 118</td>
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### Tuesday, February 8, 2011

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>2011 Annual Meeting Planning Committee</td>
<td>6:30am-8:00am</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>CPRM Exam</td>
<td>9:00am-12:00pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>SRM Board of Directors</td>
<td>8:00am-10:00pm</td>
<td>HIG - Lewis and Clark</td>
</tr>
<tr>
<td>Young Professionals Conclave Business Meeting</td>
<td>10:30am-12:00pm</td>
<td>BHCC – Yellowstone</td>
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### Wednesday, February 9, 2011

<table>
<thead>
<tr>
<th>Group</th>
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<tbody>
<tr>
<td>2011 Annual Meeting Planning Committee</td>
<td>6:30am-8:00am</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>2011 &amp; 2012 Annual Meeting Planning Committees</td>
<td>7:30am-9:30am</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>Student Activities Committee</td>
<td>8:00am-10:00am</td>
<td>HIG - Yellowstone</td>
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</table>

### Thursday, February 10, 2011

<table>
<thead>
<tr>
<th>Group</th>
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<tbody>
<tr>
<td>2011 Annual Meeting Planning Committee</td>
<td>6:30am-8:00am</td>
<td>HIG - Aspen</td>
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<tr>
<td>2011 Annual Meeting Planning Committee Social</td>
<td>6:00pm-9:00pm</td>
<td>TBA</td>
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<tr>
<td>2012 Annual Meeting Planning Committee</td>
<td>8:00am-10:00am</td>
<td>HIG - Spruce</td>
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<tr>
<td>Northern Great Plains Section SRM</td>
<td>4:00pm-6:00pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>SRM Board of Directors</td>
<td>3:00pm-7:00pm</td>
<td>HIG - Lewis and Clark</td>
</tr>
<tr>
<td>Student Activities Committee</td>
<td>7:00am-9:00am</td>
<td>offsite - TBA</td>
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</table>
## SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center  
HIG - Holiday Inn Grand Montana  
MCC - Montana Convention Center

<table>
<thead>
<tr>
<th>EVENT/ACTIVITY</th>
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<th>ROOM</th>
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<tbody>
<tr>
<td><strong>Saturday, February 5th</strong></td>
<td></td>
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<tr>
<td>Sustainable Rangelands Roundtable</td>
<td>2:00pm-6:00pm</td>
<td>HIG - Lewis &amp; Clark</td>
</tr>
<tr>
<td>Registration</td>
<td>3:00pm-7:00pm</td>
<td>MCC - Lobby</td>
</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Daily Trail Boss</td>
<td></td>
<td>HIG - Ponderosa</td>
</tr>
<tr>
<td><strong>Sunday, February 6th</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration</td>
<td>7:00am-7:00pm</td>
<td>MCC - Lobby</td>
</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Volunteer Room</td>
<td></td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Daily Trail Boss</td>
<td></td>
<td>HIG - Ponderosa</td>
</tr>
<tr>
<td>NRCS Western Region Grazing Lands Specialists Consortium</td>
<td>7:30am-3:30pm</td>
<td>BHCC - Scout</td>
</tr>
<tr>
<td>Rangeland CEAP</td>
<td>8:00am-12:00pm</td>
<td>BHCC-Parlor 118</td>
</tr>
<tr>
<td>Career Development Workshop</td>
<td>1:00pm-5:00pm</td>
<td>BHCC - Trapper</td>
</tr>
<tr>
<td>GLCI Task Force</td>
<td>3:00pm-5:00pm</td>
<td>BHCC - Ranch</td>
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<tr>
<td>Extension Family Meeting</td>
<td>6:00pm-8:00pm</td>
<td>HIG - Yellowstone</td>
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<tr>
<td>USDA – ARS Scientist Meeting</td>
<td>7:00pm-8:30pm</td>
<td>BHCC - Ranch</td>
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<tr>
<td>USDA – USFS Awards and Family Meeting</td>
<td>7:00pm-10:00pm</td>
<td>HIG - Missouri</td>
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<tr>
<td>USDA – NRCS Family Meeting</td>
<td>7:00pm-10:00pm</td>
<td>HIG - Stillwater &amp; Bitterroot</td>
</tr>
<tr>
<td>USDI – BLM Family Meeting/Reception</td>
<td>7:00pm-10:00pm</td>
<td>HIG - Gallatin</td>
</tr>
<tr>
<td>Trade Show Setup</td>
<td>12:00pm-6:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Student Displays Setup</td>
<td>12:00pm-6:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Silent Auction Setup</td>
<td>12:00pm-6:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Career Opportunities Area</td>
<td>8:00am-10:00pm</td>
<td>HIG - Atrium</td>
</tr>
<tr>
<td>Rangeland Job Fair Setup</td>
<td>8:00am-10:00am</td>
<td>BHCC - Ballroom</td>
</tr>
</tbody>
</table>
## SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center  
HIG - Holiday Inn Grand Montana  
MCC - Montana Convention Center

<table>
<thead>
<tr>
<th>EVENT/ACTIVITY</th>
<th>TIME</th>
<th>ROOM</th>
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<tbody>
<tr>
<td><strong>Monday, February 7th</strong></td>
<td></td>
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</tr>
<tr>
<td>Registration</td>
<td>7:00am-5:30pm</td>
<td>MCC - Lobby</td>
</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Volunteer Room</td>
<td></td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Daily Trail Boss</td>
<td></td>
<td>HIG - Ponderosa</td>
</tr>
<tr>
<td>New Members Coffee</td>
<td>7:30am-8:30am</td>
<td>HIG - Poolside Terrace</td>
</tr>
<tr>
<td>Trade Show</td>
<td>8:00am-8:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Student Displays</td>
<td>8:00am-8:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Silent Auction</td>
<td>8:00am-8:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Plenary Session</td>
<td>9:00am-12:00pm</td>
<td>MCC - Rains</td>
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<tr>
<td>Past Presidents, Founding &amp; Charter</td>
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<tr>
<td>Members Luncheon</td>
<td>12:00pm-2:00pm</td>
<td>HIG - Poolside Terrace</td>
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<tr>
<td>CPRM Review</td>
<td>1:00pm-5:00pm</td>
<td>HIG - Madison</td>
</tr>
<tr>
<td>Tapping The Top</td>
<td>5:00pm-7:00pm</td>
<td>HIG – Poolside Terrace</td>
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<tr>
<td>Trade Show and Mixer</td>
<td>6:00pm-8:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
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<tr>
<td>Career Opportunities Area</td>
<td>8:00am-10:00pm</td>
<td>HIG - Atrium</td>
</tr>
<tr>
<td>BLM Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 131</td>
</tr>
<tr>
<td>USFS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 119</td>
</tr>
<tr>
<td>NRCS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 109</td>
</tr>
<tr>
<td>Rangeland Job Fair</td>
<td>10:00am-6:00pm</td>
<td>BHCC - Ballroom</td>
</tr>
<tr>
<td>EVENT/ACTIVITY</td>
<td>TIME</td>
<td>ROOM</td>
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</tr>
<tr>
<td>Registration</td>
<td>7:00am-5:30pm</td>
<td>MCC - Lobby</td>
</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Volunteer Room</td>
<td></td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Daily Trail Boss</td>
<td></td>
<td>HIG - Ponderosa</td>
</tr>
<tr>
<td>Trade Show</td>
<td>7:00am-4:30pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Student Displays</td>
<td>7:00am-4:30pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Silent Auction</td>
<td>7:00am-5:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
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<tr>
<td>Colorado Section</td>
<td>6:30am-8:30am</td>
<td>HIG - Yellowstone</td>
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<tr>
<td>Breakfast Meeting</td>
<td>6:30am-8:30am</td>
<td>HIG - Yellowstone</td>
</tr>
<tr>
<td>Texas Tech Breakfast</td>
<td>7:00am-9:00am</td>
<td>HIG – Poolside Terrace</td>
</tr>
<tr>
<td>USFS Rangeland Mgt Directors Meeting</td>
<td>8:00am-12:00pm</td>
<td>HIG - Madison</td>
</tr>
<tr>
<td>CPRM Exam</td>
<td>9:00am-12:00pm</td>
<td>HIG Aspen</td>
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<tr>
<td>Chicago Climate</td>
<td>10:00am-3:00pm</td>
<td>BHCC - North 40</td>
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<tr>
<td>Exchange Verifier &amp; Exam</td>
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<td>BHCC - North 40</td>
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<tr>
<td>Association of Univ. Rangeland</td>
<td>1:00pm-3:00pm</td>
<td>HIG - Spruce</td>
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<tr>
<td>Resource Programs</td>
<td></td>
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<tr>
<td>Texas A&amp;M Univ. Alumni Social</td>
<td>6:00pm-8:00pm</td>
<td>HIG - Yellowstone</td>
</tr>
<tr>
<td>Univ. of AZ Alumni and Friends Social</td>
<td>6:00pm-8:00pm</td>
<td>BHCC - South 40</td>
</tr>
<tr>
<td>Utah State Univ. - Wildland Resources</td>
<td>6:00pm-8:00pm</td>
<td>BHCC - Ranch</td>
</tr>
<tr>
<td>Oregon State Univ. Alumni/PNW Section</td>
<td>6:00pm-8:00pm</td>
<td>BHCC - Homesteader</td>
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<tr>
<td>Social</td>
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<tr>
<td>MSU Social</td>
<td>6:00pm-8:00pm</td>
<td>BHCC - Ballroom</td>
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<tr>
<td>CSU Social</td>
<td>6:00pm-8:00pm</td>
<td>BHCC-North 40</td>
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<tr>
<td>Univ. of Wyoming Social</td>
<td>6:00pm-8:00pm</td>
<td>BHCC - Trapper</td>
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<tr>
<td>Oklahoma State Univ. Social</td>
<td>6:00pm-8:00pm</td>
<td>HIG - Madison</td>
</tr>
<tr>
<td>Univ. of Idaho</td>
<td>Off-Site</td>
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<td>Career Opportunities Area</td>
<td>8:00am-10:00pm</td>
<td>HIG - Atrium</td>
</tr>
<tr>
<td>BLM Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 131</td>
</tr>
<tr>
<td>USFS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 119</td>
</tr>
<tr>
<td>NRCS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 109</td>
</tr>
<tr>
<td>Dance</td>
<td>8:00pm-12:00am</td>
<td>MCC - Rains</td>
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</tbody>
</table>
## SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center  
HIG - Holiday Inn Grand Montana  
MCC - Montana Convention Center

<table>
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<tr>
<th>EVENT/ACTIVITY</th>
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</tr>
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<tbody>
<tr>
<td>Registration</td>
<td>7:00am-5:30pm</td>
<td>MCC - Lobby</td>
</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Volunteer Room</td>
<td></td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Daily Trail Boss</td>
<td></td>
<td>HIG - Ponderosa</td>
</tr>
<tr>
<td>Silent Auction</td>
<td>7:00am-12:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
</tr>
<tr>
<td>Silent Auction Closeout</td>
<td>12:00pm-5:00pm</td>
<td>MCC - Russell &amp; Ralston</td>
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<tr>
<td>BLM Agency Workshop</td>
<td>8:00am-12:00pm</td>
<td>HIG - Gallatin</td>
</tr>
<tr>
<td>NIFA Funded Project Directors Meeting</td>
<td>9:00am-11:00am</td>
<td>HIG - Lewis &amp; Clark</td>
</tr>
<tr>
<td>Forest Service NIRM-INFRA and NRIS</td>
<td>8:00am-12:00pm</td>
<td>BHCC - Explorer</td>
</tr>
<tr>
<td>SRM Business Meeting/Luncheon</td>
<td>12:00pm-2:00pm</td>
<td>MCC - Rains</td>
</tr>
<tr>
<td>SRM Honor &amp; Student Awards Ceremony</td>
<td>2:15pm-5:00pm</td>
<td>HIG - Missouri</td>
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<tr>
<td>Wild Women of Range</td>
<td>5:30pm-7:30pm</td>
<td>HIG - Poolside Terrace</td>
</tr>
<tr>
<td>President's Reception</td>
<td>6:00pm-7:00pm</td>
<td>MCC - Rains</td>
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<tr>
<td>An Evening in Montana (non banquet)</td>
<td>7:00pm</td>
<td>MCC - Rains</td>
</tr>
<tr>
<td>Career Opportunities Area</td>
<td>8:00am-10:00pm</td>
<td>HIG - Atrium</td>
</tr>
<tr>
<td>BLM Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 131</td>
</tr>
<tr>
<td>USFS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 119</td>
</tr>
<tr>
<td>NRCS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 109</td>
</tr>
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</table>
## SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center  
HIG - Holiday Inn Grand Montana  
MCC - Montana Convention Center

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<tr>
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</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Volunteer Room</td>
<td></td>
<td>HIG - Cottonwood</td>
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<tr>
<td>Daily Trail Boss</td>
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<td>HIG - Ponderosa</td>
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<tr>
<td>Native Range Working Group</td>
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<tr>
<td>Meeting</td>
<td>8:00am– 5:00pm</td>
<td>BHCC-Prospector</td>
</tr>
<tr>
<td>Forest Service R1 Meeting</td>
<td>1:00pm-5:00pm</td>
<td>HIG - Yellowstone</td>
</tr>
<tr>
<td>NGP Section Meeting</td>
<td>4:00pm-6:00pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>Career Opportunities Area</td>
<td>8:00am-10:00pm</td>
<td>HIG - Atrium</td>
</tr>
<tr>
<td>BLM Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 131</td>
</tr>
<tr>
<td>USFS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 119</td>
</tr>
<tr>
<td>NRCS Interview Room</td>
<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 109</td>
</tr>
</tbody>
</table>

### Thursday, February 10th

<table>
<thead>
<tr>
<th>EVENT/ACTIVITY</th>
<th>TIME</th>
<th>ROOM</th>
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<tbody>
<tr>
<td>Registration</td>
<td>7:00am-12:00pm</td>
<td>MCC - Lobby</td>
</tr>
<tr>
<td>SRM Speaker Prep Room</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>SRM Business Office</td>
<td>7:00am-7:00pm</td>
<td>HIG - Cottonwood</td>
</tr>
<tr>
<td>Volunteer Room</td>
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<td>8:00am-8:00pm</td>
<td>BHCC-Parlor 109</td>
</tr>
</tbody>
</table>
## Student Activities At - A - Glance

**BHCC - Billings Hotel and Convention Center**  
**HIG - Holiday Inn Grand**  
**MCC – Montana Convention Center**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Day</th>
<th>Time</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td><strong>Undergraduate Student Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Conclave Business Meeting and Mixer</td>
<td>Sun</td>
<td>5:00pm-8:00pm</td>
<td>BHCC - Scout</td>
</tr>
<tr>
<td>URME Registration</td>
<td>Sun</td>
<td>5:00pm-6:00pm</td>
<td>BHCC - Scout (Outside)</td>
</tr>
<tr>
<td>Plant ID Registration</td>
<td>Sun</td>
<td>5:00 - 6:00pm</td>
<td>BHCC - Scout (Outside)</td>
</tr>
<tr>
<td>Undergraduate Display Contest</td>
<td>Mon-Tues</td>
<td></td>
<td>Trade Show</td>
</tr>
<tr>
<td>URME Contest</td>
<td>Mon</td>
<td>8:00am-10:00am</td>
<td>HIG - Missouri</td>
</tr>
<tr>
<td>URME Public Viewing</td>
<td>Mon</td>
<td>10:00am-11:00am</td>
<td>HIG - Missouri</td>
</tr>
<tr>
<td>URME Coaches Critique</td>
<td>Mon</td>
<td>11:00am-12:00pm</td>
<td>HIG - Missouri</td>
</tr>
<tr>
<td>URME Grading</td>
<td>Mon</td>
<td>1:00pm-3:00pm</td>
<td>HIG - Aspen</td>
</tr>
<tr>
<td>Tapping The Top</td>
<td>Mon</td>
<td>5:00pm-7:00pm</td>
<td>HIG - Poolside Terrace</td>
</tr>
<tr>
<td>Plant ID Study Room</td>
<td>Sun,Mon</td>
<td>6:00am-10:00pm</td>
<td>BHCC - Explorer</td>
</tr>
<tr>
<td>Plant ID Contest</td>
<td>Tues</td>
<td>8:00am-10:00am</td>
<td>HIG - Missouri</td>
</tr>
<tr>
<td>Plant ID Coaches Workshop</td>
<td>Tues</td>
<td>8:00am-12:00pm</td>
<td>HIG - Spruce</td>
</tr>
<tr>
<td>Plant ID Viewing</td>
<td>Tues</td>
<td>10:00am-2:30pm</td>
<td>HIG - Missouri</td>
</tr>
<tr>
<td>Plant ID Grading</td>
<td>Tues</td>
<td>1:00pm-5:00pm</td>
<td>HIG - Missouri</td>
</tr>
<tr>
<td>Plant ID Coaches Critique</td>
<td>Tues</td>
<td>5:00pm-6:00pm</td>
<td>HIG - Spruce</td>
</tr>
<tr>
<td>Undergraduate Public Speaking Contest</td>
<td>Mon</td>
<td>1:00pm-5:00pm</td>
<td>HIG - Bighorn</td>
</tr>
<tr>
<td>Undergraduate Public Speaking Contest Registration</td>
<td>Sun</td>
<td>5:00pm-6:00pm</td>
<td>BHCC - Scout (Outside)</td>
</tr>
<tr>
<td>Undergraduate Public Speaking Contest Registration, Topic Selection, and Speaker Preparation</td>
<td>Mon</td>
<td>8:00am-5:00pm</td>
<td>HIG - Lewis &amp; Clark</td>
</tr>
<tr>
<td>Undergraduate Public Speaking Contest Late Registration</td>
<td>Mon</td>
<td>8:00am-10:00am</td>
<td>HIG - Lewis &amp; Clark</td>
</tr>
<tr>
<td>Student Conclave Luncheon</td>
<td>Tues</td>
<td>12:00pm-2:00pm</td>
<td>BHCC - Ballroom</td>
</tr>
<tr>
<td>Rangelands Cup</td>
<td>Tues</td>
<td>1:00 pm-5:00pm</td>
<td>Poster Session</td>
</tr>
<tr>
<td>Undergraduate Technical Papers</td>
<td>Wed</td>
<td>8:00am-12:00pm</td>
<td>HIG - Bighorn</td>
</tr>
</tbody>
</table>
# Student Activities At - A - Glance

BHCC - Billings Hotel and Convention Center  
HIG - Holiday Inn Grand  
MCC – Montana Convention Center

<table>
<thead>
<tr>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td><strong>Graduate Student Competitions</strong></td>
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</tr>
<tr>
<td>Graduate Student Paper &amp; Poster Competitions</td>
<td>Mon - Thurs</td>
<td>Imbedded in poster and technical sessions</td>
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</tr>
<tr>
<td><strong>High School Youth Forum</strong></td>
<td></td>
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<tr>
<td>Section Youth Chair Workshop</td>
<td>Sun</td>
<td>4:00pm-7:00pm</td>
<td>HIG - Poolside Terrace</td>
</tr>
<tr>
<td>HSYF Orientation and Social</td>
<td>Sun</td>
<td>7:00pm-10:00pm</td>
<td>BHCC - Trapper</td>
</tr>
<tr>
<td>HSYF Home Room</td>
<td>Sun - Thurs</td>
<td>All Day</td>
<td>BHCC - Centennial</td>
</tr>
<tr>
<td>HSYF Field Tour</td>
<td>Mon</td>
<td>All Day</td>
<td>Field Trip</td>
</tr>
<tr>
<td>HSYF Professional Interaction Dinner</td>
<td>Mon</td>
<td>6:00pm-9:00pm</td>
<td>Offsite</td>
</tr>
<tr>
<td>HSYF Speaking Contest</td>
<td>Tues</td>
<td>8:00am-5:00pm</td>
<td>HIG - Bighorn</td>
</tr>
<tr>
<td>HSYF Judges Tabulation Room</td>
<td>Tues</td>
<td>5:00pm-7:00pm</td>
<td>BHCC - Centennial</td>
</tr>
<tr>
<td>HSYF Workshop</td>
<td>Wed</td>
<td>8:00am-11:00am</td>
<td>BHCC - Centennial</td>
</tr>
<tr>
<td>HSYF Business Meeting</td>
<td>Wed</td>
<td>11:00am-2:00pm</td>
<td>BHCC - Centennial</td>
</tr>
<tr>
<td>HSYF Luncheon with Student Conclave Luncheon</td>
<td>Tues</td>
<td>12:00pm-2:00pm</td>
<td>BHCC - Ballroom</td>
</tr>
<tr>
<td><strong>Student Activities Committee</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SAC Committee Meeting</td>
<td>Sun</td>
<td>9:00am-12:00pm</td>
<td>BHCC - North 40</td>
</tr>
<tr>
<td>SAC Committee Meeting</td>
<td>Wed</td>
<td>8:00am-10:00am</td>
<td>HIG - Yellowstone</td>
</tr>
<tr>
<td>SAC Committee Meeting</td>
<td>Thurs</td>
<td>7:00am-9:00am</td>
<td>Off Site TBA</td>
</tr>
</tbody>
</table>
DANCE
Tuesday night
8:00 pm – 12:00 am
Rains room in the Montana Convention Center

Bucky Beaver Ground Grippers

Dance to the music of “The Bucky Beaver Ground Grippers” (AKA Bucky Beaver). Repeatedly voted Billings’ best country western act over the last decade, Bucky Beaver often performs at the largest events throughout the state. Bucky Beaver performs popular country music and other favorites for dancing. You won’t want to miss this opportunity to cut-a-rug to one of the premiere dance bands in the state. The good times roll when Bucky Beaver hits the stage, “Catch the Beaver Fever” as they say. www.buckybeaverband.com

President’s Reception

Wednesday night
6:00 pm – 7:00 pm
Rains room in the Montana Convention Center

Prior to “An Evening in Montana” Western BBQ and Social, Jeff Mosley, President of SRM and other SRM leadership will receive guests. Don’t miss this opportunity to meet with the leadership and visit with friends, new and old. All attendees are encouraged to stop by, shake hands and get acquainted with SRM members who are the leaders for the Society.
“An Evening in Montana”

Western BBQ and Social

Wednesday night 7:00 pm
Rains room in the Montana Convention Center

In the spirit of the “Non-Banquet” introduced to members during the 2010 SRM conference in Denver, Colorado, the Northern Great Plains Section will follow suit with “An Evening in Montana”, which will feature a Western Roundup Buffet, (Smoked BBQ Beef Brisket, Tender Moist Beer Can Chicken, Grand Montana Scalloped Potatoes, Bourbon Creamed Corn, Tossed Green Salad and Dressings, Vegetable Crudités Tray, Fresh Melon Display, Buttermilk Biscuits w/Honey and Butter Pearls) in a relaxed, western hospitality style, followed by the always entertaining Ringling 5.

RINGLING 5

(THERE MAY ACTUALLY BE 7)

Enjoy the music and entertainment of Montana’s own Ringling Five, a group of fun ranchers from the Shields Valley (Livingston). The evening events will take place in the Rains room of the Montana Convention Center.
Social Activities/Tours:

**Historic Moss Mansion Tour and High Tea**

Date: Monday, February 7, 2011

**Leave at 11:00 am – Return at 3:00 pm**

Bus will be departing from the lobby of the Montana Convention Center.

**Cost:** $40 covers transportation, lunch, tour & program

Step back in time and enjoy a guided tour and high tea at the Moss Mansion Historic House Museum. The tour captures early turn-of-the-century life as the Preston Boyd Moss family lived it. Visitors see original draperies, fixtures, furniture, Persian carpets and artifacts displayed in the 1903 red, sandstone structure. In 1901, The Moss Mansion was designed by architect, Henry Janeway Hardenberg, designer of the original Waldorf Astoria Plaza Hotel in New York City. The home is listed on the National Register of Historic Places. Following the tour enjoy high tea of quiche, finger sandwiches, fruits and Mattie Moss sugar cookies, along with the addition of the Mimosa or Sans Wine at www.mossmansion.com

**Shopping At Rimrock Mall**

Date: Wednesday, February 9, 2011 and Thursday, February 10, 2011

**Leave at 10:30 am and 11:00 am each day**

Bus will be departing from the lobby of the Montana Convention Center

**Return at 2:30 pm and 3:30 pm**

Bus will pick up from Rimrock Mall entrance

**Cost:** $10.00 round trip ticket

100 stores – You’ll find brand names, department stores and national retailers!
Tour de Chocolate and Coffee

Date: Tuesday, February 8, 2011
Leave at 10:00 am – Return at 12:00 pm
OR
Leave at 1:30 pm – Return at 3:30 pm
Bus will be departing from the lobby of the Montana Convention Center.
Cost: $20

Here is your opportunity to meet some of the finest candy makers and try to convince them to share their secret recipes! The samples are sure to be a delight! Chocolate covered raisins, cherries, orange slices and strawberries all count as fruit, so eat as many as you want. Then we are off to see the art of roasting coffee beans and experience that great robust smell and taste. Join us on this delightful tour of fun-filled samples.

Museums to Visit (Downtown)

Date: Wednesday, February 9, 2011 and Thursday, February 10, 2011
Leave at 10:30 am and 11:00 am each day
Bus will be departing from the lobby of the Montana Convention Center
Return pickup at 2:30 pm and 3:30 pm each day
Cost: $10.00 round trip ticket

Museums in the Billings Downtown area to visit:

Yellowstone Art Museum
401 N. 27th Street
http://www.artmuseum.org

Heritage Museum
2822 Montana Avenue
http://www.ywhc.org/

Museum of Women’s History
2824 Third Avenue North
http://www.museumofwomenshistory.org/
Have You Herd the News?

2011 Rangeland JOB FAIR
Sunday, Feb 6th
10 am - 6 pm

The 4th Annual RANGELAND JOB FAIR is designed to bring rangeland employers together with enthusiastic candidates in a fun, professional and rewarding setting. 10:00 am - 6:00 pm : BHCC - Ballroom

Additional Programs:
Several Career Development Workshops are also being offered and are designed to help sharpen your skills during the job application and interview process. 1:00 pm - 5:00 pm : BHCC - Trapper

Call Linda Coates-Markle
SRM JOB FAIR Coordinator: 202.306.3282
Sunday Morning

Rangeland Technology and Equipment Workshop: Diversification of Crested Wheatgrass Stands

Workshop: HIG - Stillwater

Chair: Robert Cox, Texas Tech. Univ., Lubbock

10:00 am  Welcome – Robert Cox

10:10 am  An Overview of the Research and Studies on Diversifying Crested Wheatgrass Seedings  
Mike Pellant; Bureau of Land Management, Boise, ID, United States

10:30 am  History of Crested Wheatgrass (Agropyron) in North America  
Kevin Jensen; FRRL, USDA Agricultural Research Service, Logan, UT, United States

10:50 am  Successional Pathways of Wyoming Big Sagebrush Communities Historically Seeded with Crested Wheatgrass  
Tom Monaco, Justin Williams; USDA-ARS, Logan, Utah, United States

11:10 am  Increasing Native Plant Diversity in Crested Wheatgrass Stands: Theory, Practice and Problems  
Val Anderson; Brigham Young University, Provo, Utah, United States
Sunday Afternoon

Rangeland Technology and Equipment Workshop:
Diversification of Crested Wheatgrass Stands

Workshop: HIG - Stillwater

Chair: Robert Cox, Texas Tech Univ., Lubbock

12:40 pm  Crested Wheatgrass Diversification: Practical Experiences  Jerry Benson; BFI Native Seeds, Moses Lake, Washington, United States

1:00 pm  Restoring Native Plants to Crested Wheatgrass Stands  Jane Mangold¹, Valerie Fansler², ¹Montana State University, Bozeman, MT, United States, ²Oregon State University, Corvallis, OR, United States

1:20 pm  Diversifying Crested Wheatgrass Seedings in Northern Nevada  Kent McAdoo¹, John Swanson², Nancy Shaw¹; ¹University of Nevada Cooperative Extension, Elko, NV, United States, ²University of Nevada, Reno, NV, United States

1:40 pm  Increasing Diversity in Crested Wheatgrass Stands in Eastern Idaho  Corey Moffet¹,²; ¹USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID, United States, ²Samuel Roberts Noble Foundation, Ardmore, OK, United States

2:00 pm  Break

2:20 pm  Crested Wheatgrass Control and Native Plant Establishment in Utah  April Hulet¹, Bruce Roundy¹, Brad Jessop¹, Jennifer Rawlins¹; ¹Brigham Young University, Provo, UT, United States, ²Bureau of Land Management, Salt Lake City, UT, United States

2:40 pm  Fire, Herbicide and Disking Effects on Diversifying Crested Wheatgrass Stands in the Northern Great Plains  Lance Vermeire; USDA-ARS, Miles City, MT, United States

3:00 pm  The Diversification of Crested Wheatgrass Experience  Michael Schellenberg; Semiarid Prairie Agricultural Research Centre - AAFC, Swift Current, Saskatchewan, Canada

4:20  RTEC Business Meeting -- Michael Pellant

- 5:00 pm
Sunday Afternoon

Technology Tools for Rangeland Assessment, Monitoring, Management and Restoration

Symposium: BHCC – Prospector

Chair: Rob Roudabush, BLM – Rangeland Resources, Washington D.C.

1:00 pm Tools for Analysis of Very-High Resolution Images
Jason Karl1, Terrance Booth1, Scott Schrader1, Samuel Cox3; 1USDA Agricultural Research Service, Jornada Experimental Range, Las Cruces, NM, United States, 2USDA Agricultural Research Service, High Plains Grassland Research Station, Cheyenne, WY, United States, 3USDA Agricultural Research Service, Floral and Nursery Plants Research Unit, McMinnville, TN, United States

1:30 pm A Rangeland Hydrology and Erosion Model
Mark Nearing1, H. Wei1, J.J. Stone1, F.B. Pierson1, K.E. Spaeth4, M.A. Weltz5, D.C. Flanagan6, M. Hernandez2; 1Southwest Watershed Research Center, USDA Agricultural Research Service, Tucson, AZ, United States, 2University of Arizona, Tucson, AZ, United States, 3Northwest Watershed Research Center, USDA Agricultural Research Service, Boise, ID, United States, 4USDA Natural Resources Conservation Service, Ft. Worth, TX, United States, 5USDA Agricultural Research Service, Reno, NV, United States, 6USDA-ARS National Soil Erosion Research Laboratory, West Lafayette, IN, United States

2:00 pm Web Soil Survey and Ecological Site Interpretations

2:30 pm Standardized BLM and NRCS Inventory and Monitoring Protocols
Carol Spurrier1, Pat Shaver2; 1Bureau of Land Management, Washington, DC, United States, 2National Resources Conservation Service, Portland, OR, United States

3:00 pm Break

3:30 pm PLANTS and VegSpec - Plant Characteristics, Taxonomy, and Restoration Tools
David Pyke; US Geological Survey, Forest & Rangeland Ecosystem Science Center, Corvallis, OR, United States

4:00 pm Database for Inventory, Monitoring and Assessment (DIMA)
Ericha Courtright, Barry Lavine, Jason Karl, Scott Schrader, Brandon Bestelmeyer, Laura Burkett, Jeff Herrick; USDA-ARS Jornada Experimental Range, Las Cruces, United States
4:30 - 5:00 pm  Practical Sample Design and Selection Tools for Rangeland Monitoring and Assessment  Jason Karl; USDA Agricultural Research Service, Jornada Experimental Range, Las Cruces, NM, United States

SRM Section Youth Activities Workshop
Workshop: BHCC - Centennial
Chair: Shelly Taylor

4:00 pm  Welcome – Shelly Taylor
4:10  Program TBA
-7:00 pm
2011 Plenary Session

Monday, February 7, 2011
9:00 am to 12:00 noon
Rains Room

9:00 Presentation of Flags
(US and Canadian Flags)

9:10 Opening Remarks
Master of Ceremonies - Russell Nemetz, Ag Director of the Northern Broadcasting System in Billing, MT. Graduate of Montana State University

9:20 Welcome
Tom Hanel, Mayor of Billings, MT.

9:25 Welcome
Michael P. Schellenberg, PhD is the President of the Northern Great Plains Section of the Society for Range Management. He is a Range and Forage Plant Ecologist at the Semiarid Prairie Agricultural Research Centre – Agriculture and Agri-Food Canada Research Branch in Swift Current, Saskatchewan.

9:30 Opening Remarks
Jeff Mosley, PhD is the President of the Society for Range Management. He is a Professor of Range Science and Extension Range Management Specialist at Montana State University in Bozeman.

9:35 Management Considerations for the Continually Changing Vegetation of the Northern Great Plains
Edward (Shawn) Dekeyser, PhD is an Assistant Professor of the Range Program within the School of Natural Resource Sciences at North Dakota State University. He has conducted and collaborated on research throughout the Northern Great Plains on wetland assessment and ecology, riparian assessment, wetland and prairie restoration, and fire ecology.
9:55  Native American Historical Use of the Northern Great Plains
Paige Baker, PhD retired from the National Park Service as Superintendent of Badlands National Park. He also served as Superintendent of Casa Grande Ruins, Superintendent of the Bureau of Indian Affairs, Director of Extension, University of Minnesota, and worked with the Philip-Stokes Foundation in New York and Washington, D.C.

10:15  Contrasting Lewis and Clark’s Trip through the Great Plains with Present Day
John E. (Jack) Taylor, PhD is a retired professor and emeritus faculty of Montana State University, College of Agriculture and Montana Agricultural Experiment Station. He is a frequent lecturer on Lewis and Clark.

10:35  Historical Changes in Rangeland Management – Traveling the Bozeman Trail (1860) through Today: A Rancher’s Perspective.
Chase Hibbard is an active sheep and cattle rancher. He is the President of the Sieben Live Stock Company and has been recognized as a Sustainable Steward by the Corporation for the Northern Rockies.

11:05  Birds and Bugs, Popular Notions and the Range
John Acorn teaches at the University of Alberta. He is involved in entomological research focusing on biodiversity of various groups of Alberta insects, insects of dune environments and ecology of introduced species. He is best known as the writer and host of the television series “Acorn, The Nature Nut”. He is the author of 17 books and has been recognized for promotion of science with several awards.

11:45  Closing Remarks
Master of Ceremonies - Russell Nemetz
Monday Afternoon

Managing Rangelands for Multiple Ecosystem Services: Opportunities and Tradeoffs

Symposium: HIG – Stillwater

Chair: Peggy Strankman, Environment Manager, Canadian Cattlemen’s Association

1:00 pm  Introduction/Overview of Symposium  Peggy Strankman; Environment Manager, Canadian Cattlemen’s Association

1:15 pm  Managing Rangelands for Multiple Ecosystem Services: Beyond Bement (1969)  Justin Derner; USDA-Agricultural Research Service, Cheyenne, WY, United States

1:30 pm  Managing Rangelands for Greenhouse Gas Mitigation: Opportunities and Tradeoffs  Mark Liebig1, Alan Iwaasa2; 1USDA-ARS, Mandan, North Dakota, United States, 2Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada

2:00 pm  Healthy Rangeland Watersheds and Productive Livestock Enterprises: Why Not?  Kenneth Tate1, Leslie Roche2, Theresa Becchetti2, David Lile2, David Lewis2, Anthony O’Geen1, Randy Dahlgren1, Melvin George1, Edward Atwill1; 1University of California, Davis, CA, United States, 2University of California, Cooperative Extension, United States

2:30 pm  Payments for the Provision of Ecological Goods and Services  Peter Boxall; University of Alberta, Alberta, Canada

3:00 pm  Break

3:15 pm  To Graze or Not to Graze: Managing for Plant Diversity?  Karen Hickman1, Ken Belcher2; 1Oklahoma State University, Stillwater, OK, United States, 2University of Saskatchewan, Saskatoon, Saskatchewan, Canada

3:45 pm  Is Livestock Production for the Birds?: Linking Grazing Management and Grassland Birds in North American Shortgrass Steppe and Mixed-Grass Prairie  Allison Henderson2, David Augustine3, Justin Derner2, Stephen Davis1; 1USDA-ARS, Fort Collins, CO, United States, 2University of Saskatchewan, Saskatoon, SK, Canada, 3Canadian Wildlife Service, Regina, SK, Canada, 4USDA-ARS, Cheyenne, WY, United States
Monday Afternoon

4:15 pm  Multiple Uses and Associated Values on Canadian Publicly Managed Rangeland: A Case Study of the Federal Community Pasture Program  Brant Kirychuk; Agriculture & Agri-Food Canada, Regina, Saskatchewan, Canada

4:45 pm  Wrap up  Karen Haugen; Kozyra, KHK Consulting

- 5:00 pm

Nature’s Engineers - Wildlife as Agents of Ecological Change

Symposium: BHCC – Homesteader

Chair: Wendell Gilgert, USDA-NRCS, Portland, OR

1:00 pm  Overview of the Role of Fish and Wildlife in Determining Plant Succession and Directing Plant Community Phases  Wendell Gilgert, Jeremy Maestas; USDA-NRCS-WNTSC, Portland, Oregon, United States

1:20 pm  Can Insects Direct Plant Succession?  Dan Johnson; University of Lethbridge, Alberta, Canada

1:40 pm  The Role of Beavers as Agents of Ecological Change: Ecosystem Engineering and Herbivory in Lotic and Riparian Ecosystems  Stewart Breck; USDA-WS-National Wildlife Research Center, Fort Collins, CO, United States

2:00 pm  Bird Activities that Expand Existing Plant Community Ranges  Anne Bartuszevige; Playa Lakes Joint Venture, Lafayette, CO, United States

2:20 pm  The Constant Gardener: Ecosystem Effects of Seed Dispersal by Ungulates  Mary Rowland, Catherine Parks, Martin Vavra; Pacific NW Research Station, USDA Forest Service, La Grande, OR, United States

2:40 pm  Break

3:00 pm  Rodents as Agents of Ecological Change  Kent McAdoo1, Bill Longland2; 1University of Nevada Cooperative Extension, Elko, NV, United States, 2USDA Agricultural Research Service, Reno, NV, United States

3:20 pm  Ungulate Herbivory as a Chronic Disturbance to Ecosystems  Marty Vavra1, Bryan Endress2, Michael Wisdom1, Catherine Parks; 1Pacific Northwest Research Station, USFS, La Grande, OR, United States, 2Institute for Conservation Research, Escondido, CA, United States
Monday Afternoon

4:00 pm  I.  Trophic Cascades Involving Large Predators, Wild Ungulates, and Plants in the Western US: Do Large Predators Have a Role?  Robert Beschta, William Ripple; Oregon State University, Corvallis, Oregon, United States

4:20 pm  II.  Impacts to Riparian Biodiversity and Channel Morphology Following Large Predator Loss in Several Ecosystems of the Western US  Robert Beschta, William Ripple; Oregon State University, Corvallis, Oregon, United States

4:40  Panel Discussion

- 5:00 pm

Foraging for Rangeland Information in an Unfamiliar Virtual World

Special Session: BHCC – North 40

Chair: Barb Hutchinson, Univ. of Arizona, Tucson

1:00 pm  Introduction and Welcome - Barb Hutchinson

1:05 pm  A Lifetime of Research and Observations Preserved: The August "Gus" Hormay Collection Available Online  Bonnie McCallum; Montana State University, Bozeman, MT, United States

1:35 pm  The Rangeland Science Database: A Search Engine for Range Professionals  Jason Clark; Montana State University, Bozeman, MT, United States

2:05 pm  Rangelands West Goes International: Introducing Global Rangelands  Barbara Hutchinson; University of Arizona, Tucson, AZ, United States

2:35 pm  Rangelands on eXtension: Compiling the Best of the Best for Rangelands  Rachel Frost¹, John Tanaka², Lovina Roselle³, Mindy Pratt⁴; ¹Montana State University, Bozeman, MT, United States, ²University of Wyoming, Laramie, WY, United States, ³University of Idaho, Moscow, ID, United States, ⁴Utah State University, Logan, UT, United States

3:05 pm  Break

3:20 pm  Internet Technologies for Rangeland Ambassadors  Lovina Roselle¹, Cody Sheehy², Karen Launchbaugh¹; ¹University of Idaho, Moscow, ID, United States, ²University of California, Davis, Davis, CA, United States
Monday Afternoon

3:50 pm  Rangeland Web Resources: Making Your Proposals More Competitive  
   James Dobrowolski; USDA National Institute of Food and Agriculture, Washington, DC, United States

4:20  Round Table Discussion

- 5:00 pm

Economics, Social, Policy and Education
Technical Session: HIG – Bitterroot

Chair: Jack Norland, North Dakota State University, Fargo

1:00 pm  Ecosystem Services: The New Motive for Range Improvements  
   Allen Torell1, Neil Rimbey1, John Tanaka2; 1New Mexico State University, Las Cruces, NM, United States, 2University of Idaho, Caldwell, ID, United States

1:20 pm  Withdrawn

1:40 pm  Social Sciences and Public Rangelands: Perceptions of Bureau of Land Management Employees and Stakeholders  
   Audie Blevins2, Katherine Jensen3, Stephanie Kane4, Neil Rimbey1, John Tanaka1,3, David “Tex” Taylor1, L. Allen Torell4, J.D. Wulfhorst1;  
   1University of Idaho, Moscow, ID, United States, 2University of Wyoming, Laramie, WY, United States, 3Oregon State University, Corvallis, OR, United States, 4New Mexico State University, Las Cruces, NM, United States

2:00 pm  Comparing the Impacts of Water Quality Regulations on Land Use in Two Watersheds: Lake Taupo (NZ) and Tomales Bay, California (USA)  
   Sheila Barry1, Stephanie Larson1, Warren King2, Michael Lennox2;  
   1University of California, California, United States, 2AgResearch, Hamilton, New Zealand

   Michael Taylor, Kimberly Rollins, Laine Christman; University of Nevada, Reno, Reno, NV, United States
Monday Afternoon

2:40 pm  The Economic Consequences of Ecological Thresholds: An Application to Ranching in the Great Basin  Mimako Kobayashi, Kimberly Rollins, Michael Taylor; University of Nevada, Reno, Reno, NV, United States

3:00 pm  Estimating the Cost of Replacing Forage Losses on California Annual Rangeland  Theresa Becchetti¹, Neil McDougald, William Frost, James Sullins; ¹University of California Cooperative Extension, Modesto, CA, United States, ²University of California Cooperative Extension, Madera, CA, United States, ³University of California Cooperative Extension, Davis, CA, United States, ⁴University of California Cooperative Extension, Tulare, CA, United States

3:20 pm  Barriers to Collaborative Grazing Planning across Multiple Ownerships to Maintain Open Space and Wildlife Habitat in Washington Shrub-Steppe Ecosystems  Tipton Hudson; Washington State University, Pullman, WA, United States

3:40 pm  Redefining Large Carnivore-Livestock Management: A Working Model for Reducing Livestock Conflicts on Public and Private Land in the Mountain West  Timmthy Kaminski, Charles Mamo, Joe Englehart, Sarah Dewey; Mountain Livestock Cooperative, Bozeman, Montana, United States

4:00 pm  Non-Fee Grazing Costs: Historical Review and Implications to Public Land Grazing Fees  Neil R. Rimbey¹, L. Allen Torell¹; ¹University of Idaho, Moscow, ID, United States, ²New Mexico State University, Las Cruces, NM, United States

4:20 - 4:40 pm  Recruiting Diverse Range Students for the 21st Century  Susan Edinger-Marshall, Lisa Perry; Humboldt State University, Arcata, CA, United States

Range Ecology

Technical Session: BHCC – Trapper

Chair: John Hendrickson, USDA-ARS, Mandan, ND

1:00 pm  Variability in Light-Use Efficiency for Gross Primary Productivity on Great Plains Grasslands  Wayne Polley, Rebecca Phillips, Albert Frank, James Bradford, Phillip Sims, Jack Morgan, James Kiniry; ¹USDA/Agricultural Research Service, Temple, Texas, United States, ²USDA/Agricultural Research Service, Mandan, North Dakota, United States, ³USDA/Agricultural Research Service, Woodward, Oklahoma, United States, ⁴USDA/Agricultural Research Service, Ft. Collins, Colorado, United States
Monday Afternoon

1:20 pm Plains Prickly Pear: Demography and Response to Grazing on the Shortgrass Steppe  
Lynn M. Moore, William K. Lauenroth; University of Wyoming, Laramie, WY, United States

1:40 pm The Invasion of Smooth Bromegrass and Kentucky Bluegrass in Restored Grasslands as a Function of Species Diversity  
Andrew DiAllesandro, Breanna Paradeis, Mario Biondini; North Dakota State University, Fargo, ND, United States

2:00 pm Cattle Grazing and Yosemite Toad (Bufo canorus Camp) Occupancy across a Hydrologic Gradient of Sierra Nevada Mountain Meadows  
Leslie Roche, Andrew Latimer, Danny Eastburn, Kenneth Tate; Department of Plant Sciences University of California, Davis, Davis, CA, United States

2:20 pm Forecasting Annual Aboveground Net Primary Production in the Intermountain West  
Julie Finzel¹, Mark Weltz², Mark Seyfried³, Jim Kiniry⁴, Karen Launchbaugh¹, ¹University of Idaho, Moscow, Idaho, United States, ²USDA, ARS, Reno, NV, United States, ³USDA, ARS, Boise, ID, United States, ⁴USDA, ARS, Temple, TX, United States

2:40 pm Patterns of Woodland Overstory/Understory Successional Changes over a Central Nevada Elevational Gradient  
Robin Tausch¹, Alicia Reiner²; ¹USDA Forest Service, Reno, NV, United States, ²USDA Forest Service, Sparks, NV, United States

3:00 pm Break

3:20 pm The Effect of Fairy Rings on Soil Aggregation and Rangeland Grasses  
TheCan Caesar, Erin Espeland, Anthony Caesar; USDA-ARS NPARL, Sidney MT, United States

3:40 pm Predicting Potential Soil Aggregate Stability and Understanding Departure from Potential: A Climate-Soil-Vegetation Envelope Model Approach  
Michael Duniway¹, Kenneth Spaeth², Jeffrey Herrick¹; ¹USDA ARS Jornada Experimental Range, Las Cruces, NM, United States, ²USDA NRCS, Fort Worth, TX, United States
Monday Afternoon

**Grazing Ecology/Management I**

Technical Session: BHCC – Prospector

**Chair:** Lance Vermeire, USDA-ARS, Miles City, MT

1:00 pm  **Bison and Cattle: How Different Are They?**  
**Brady Allred**, Samuel Fuhlendorf, Robert Hamilton;  
¹Oklahoma State University, Stillwater, OK, United States, ²The Nature Conservancy, Pawhuska, OK, United States

1:20 pm  **Weather or Not: Changes in Grazed and Ungrazed Great Plains Grassland Plant Communities Associated with Interannual Variability in Weather**  
**Jayne Jonas**, Amy Symstad, Deborah Buhl; ¹IAP Worldwide Services, Brighton, CO, United States, ²US Geological Survey, Hot Springs, SD, United States, ³US Geological Survey, Jamestown, ND, United States

1:40 pm  **Grazing Management Effects on the Soil Health in Mixed-Grass Prairie within the Missouri Coteau Region of North Dakota**  
**Guojie Wang**, Kevin Sedivec; ¹Central Grasslands Research Extension Center, North Dakota State University, Streeter, United States, ²School of Natural Resource Sciences, North Dakota State University, Fargo, United States

2:00 pm  **Forage Production and Quality, Cattle Performance, Economic Return, and Soil Health from Annual Forages Used for Late-Season Grazing in North Dakota**  
**Andrew Fraase**, Bryan Neville, Kevin Sedivec, Dennis Whitted, Paul Nyren, Greg Lardy; ¹North Dakota State University, Fargo, ND, United States, ²School of Natural Resource Sciences, Fargo, ND, United States, ³Department of Animal Sciences, Fargo, ND, United States, ⁴Central Grasslands Research Extension Center, Streeter, ND, United States

2:20 pm  **Range Cattle Winter Water Consumption in Eastern Montana**  
**M. K. Petersen**, Jennifer Muscha, Travis Mulliniks; ¹USDA-ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, United States, ²New Mexico State University, Las Cruces, NM, United States

2:40 pm  **Forage Nutrient Availability and Reproductive Success of Semi-Wild Bison in Western Montana, USA**  
**Kelsey Guffey**, Neto Garcia, Clayton Marlow; ¹McNair Scholars Program, Montana State University, Bozeman, Montana, United States, ²Animal and Range Sciences Department, Montana State University, Bozeman, Montana, United States

3:00 pm  Break
Monday Afternoon

3:20 pm  Selecting for Cattle That Enhance Biodiversity in the Sagebrush Steppe  Charles Petersen¹,², Fredrick Provenza¹, Agee Smith³; ¹Utah State University, Logan, Utah, United States, ²Cottonwood Ranch, Wells, Nevada, United States, ³USDA/NRCS, Elko, Nevada, United States

3:40 pm  Stable Isotope Diet Reconstruction Using Tail Hairs of Feral Horses on the Sheldon National Wildlife Refuge Megan Nordquist¹, Todd Robinson¹, Steve Petersen¹, Gail Collins²; ¹Brigham Young University, Provo, UT, United States, ²USFWS, Lakeview, OR, United States

4:00 pm - 4:20 pm  Genetic and Environmental Influences on Distribution Patterns of Beef Cattle Grazing Foothill Rangeland Derek Bailey¹, Delyn Jensen², Milt Thomas¹, Darrin Boss², Robin Weinmeister¹, Robert Welling¹; ¹New Mexico State University, Las Cruces, NM, United States, ²Montana State University, Havre, MT, United States
Monday Afternoon

**Poster Session A**

February 7, 1:00 - 5:00 pm

MCC - Russel

Number in the left column corresponds to the poster board where the poster will be displayed.

A-1

A-2  **Cheatgrass Dead Zones in Northern Nevada**  Tye Morgan, Robert Blank, Charles Clements; USDA-ARS, Reno, NV, United States

A-3  **Reducing Cholla Infestation in SE New Mexico, USA**  Braden Johns, Robert Cox; Texas Tech University, Lubbock, Texas, United States

A-4  **Ten-Year Invasive Vegetation Changes on a South Texas Range**  Aaron Tjelmeland, J. Alfonso Ortega-S., Jorge Molina, Kevin Porter, Laura Bush, Forrest Smith, Marc Bartoskewitz, Fred C. Bryant; 1Texas A&M University-Kingsville, Kingsville, Texas, United States, 2King Ranch, Kingsville, Texas, United States

A-5  **Assessment and Demonstration of Ecologically-Based Medusahead and Cheatgrass Management in Jordan Valley, Oregon**  Edward Vasquez, Anna-Marie Chamberlain, Brenda Smith, Roger Sheley; 1Wyoming Wildlife Consultants, LLC, Laramie, WY, United States, 2Oreson State Extension, Ontario, OR, United States, 3Eastern Oregon Agricultural Research Center, Burns, OR, United States

A-6  **Ecologically-Based Land Management on Bromus tectorum Invaded Great Basin Shrublands: An Ecosystem Assessment**  Beth Fowers, Merilynn Hirsch, Thomas Monaco, Chris Call; 1Utah State University, Logan, UT, United States, 2USDA-ARS Forest and Range research lab, Utah State University, Logan, UT, United States
A-7 Land-Use Legacies Affect Species Performance Nearly a Century after Cultivation

Lesley Morris1,2, Thomas Monaco1,2, Robert Blank3, Elizabeth Leger4, Roger Sheley5, Tye Morgan6; 1USDA-Agricultural Research Service, Logan, Utah, United States, 2Utah State University, Logan, Utah, United States, 3USDA-Agricultural Research Service, Reno, Nevada, United States, 4University of Nevada Reno, Reno, Nevada, United States, 5USDA-Agricultural Research Service, Burns, Oregon, United States

A-8 Rehabilitation of Medusahead and Cheatgrass Dominated Rangelands in the Boise Foothills. An Ecologically-Based Invasive Plant Management (EBIPM) Program Research and Demonstration Project

Stuart Hardegree, Jaepil Cho; USDA ARS Northwest Watershed Research Center, Boise, ID, United States

A-9 Restoration of Downy Brome Infested Rangelands with Glyphosate and Transplanting Wyoming Big Sagebrush to Increase Diversity

Kent McAdoo1, Earl Creech2, Chad Boyd4; 1University of Nevada Cooperative Extension, Elko, NV, United States, 2Utah State University, Logan, UT, United States, 4USDA Agricultural Research Service, Burns, OR, United States

A-10 Hydrologic Vulnerability of Great Basin Sagebrush-Steppe Following Pinyon and Juniper Encroachment

C. Jason Williams1,3, Frederick B. Pierson1, Patrick R. Kormos2, Stuart P. Hardegree1, Patrick E. Clark1, Osama Z. Al-Hamdan1,3; 1USDA-ARS Northwest Watershed Research Center, Boise, Idaho, United States, 2Boise State University, Boise, Idaho, United States, 3University of Idaho, Moscow, Idaho, United States

A-11 Nutritive Value of Pasture Weeds in Oregon

Amy Peters4, Shelby Filley5, Andrew Hulting3; 4Oregon State University, Myrtle Point, OR, United States, 5Oregon State University, Roseburg, OR, United States, 3Oregon State University, Corvallis, OR, United States

A-12 Establishment of Invasive Species in Post-Fire Seeding Treatments

Megan M. Taylor4, Ann L. Hild5, Nancy L. Shaw6, Erin K. Denney7; 4University of Wyoming, Department of Renewable Resources, Laramie, WY, United States, 5USDA Forest Service, Rocky Mountain Research Station, Boise, ID, United States

A-13 Will Super Juniper-Eating Sires Produce Super Juniper-Eating Offspring?

Kendall Tidwell1, Cody Scott1, Charles Taylor2, John Walker2, Dan Waldron2, Corey Owens3, Micheal Salisbury2, 1Angelo State University, San Angelo, Texas, United States, 2Texas AgriLife Research Center, San Angelo, Texas, United States, 3Texas AgriLife Research Center, Sonora, Texas, United States
A-14 Mesquite Seedling Disappearance Under Goat Browsing
Landon Pyle, Cody Scott, Corey Owens
Angelo State University, San Angelo, Texas, United States

A-15 Understanding Priority Effects May Help Improve
Restoration Outcomes and Establishment of Artemisia
tridentata spp. wyomingensis
Kurt Reinhart, Cheryl Murphy; USDA-ARS, Miles City, MT, United States

A-16 The Impact of Livestock Grazing at State and National Scales on US Dryland Productivity at 1-km and 8-km Resolution from 1981 to 2009
Robert A. Washington-Allen1, R. Wasantha Kulawardhana1, Matt C. Reeves2,, John E. Mitchell3; 1Dept. Ecosystem Science & Management, Texas A&M University, College Station, TX, United States, 2USDA-Forest Service Rocky Mountain Research Station, Forestry Sciences Laboratory, Missoula, MT, United States, 3USDA-Forest Service Rocky Mountain Research Station, Fort Collins, CO, United States

A-17 Controlling Japanese Brome with Grazing Management in Judith Basin County, Montana
Rick Caquelin; USDA-NRCS, Stanford, MT, United States

A-18 Estimating Prickly Pear (Opuntia) Pad Density by Line Intercept, Belt Transect, and Quadrat Methods
David Barre1, Kurt Huffman1, Dale Rollins2, Dean Ransom, Jr; 1Rolling Plains Quail Research Ranch, Texas AgriLife Research and Extension Center, San Angelo, TX 76901, United States, 2Texas AgriLife Research and Extension Center, San Angelo, TX 76901, United States, 3Department of Ecosystem Sciences and Management, Texas A&M University, College Station, TX 77843, United States

A-19 Assessing Climate Change Effects with Indicators for Rangeland Ecosystem Goods, Services and Core Processes
Kristie Maczko1, Daniel W. McCollum2, Jack A. Morgan3, Clifford S. Duke4, William E. Fox5, Lori Hidinger6, Urs Kreuter7, John E. Mitchell8, John A. Tanaka9; 1Sustainable Rangelands Roundtable - University of Wyoming, Laramie, WY, United States, 2Rocky Mountain Research Station - USDA Forest Service, Fort Collins, CO, United States, 3Rangeland Resources Research Unit, USDA-ARS, Fort Collins, CO, United States, 4Science Programs, Ecological Society of America, Washington DC, United States, 5Texas AgriLife Research, Texas A&M University, Temple, TX, United States, 6Consortium for Science, Policy and Outcomes, Arizona State University, Tempe, AZ, United States, 7Department of Ecosystem Science and Management, Texas A&M University, College Station, TX, United States, 8Department of Renewable Resources, University of Wyoming, Laramie, WY, United States
A-20 Monitoring Shrub Canopy Cover Using Vegetation Charting Technique  
Mounir Louhaichi¹, Hani Al-Homsh¹, Fahim Ghassali¹, Osama Shalouf¹, Douglas E. Johnson²; ¹International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syrian Arab Republic, ²Department of Rangeland Ecology and Management, Oregon State University, Corvallis, OR, United States

A-21 Feature Mapping on Extensive Landscapes Using GPS-Enabled Computers  
Stephen K. Ndzeidze¹, Craig A. Carr², Adele L. Woerz³, Mounir Louhaichi⁴, Patrick E. Clark⁵, Douglas E. Johnson¹; ¹Dept. of Rangeland Ecology & Management, Oregon State University, Corvallis, OR, United States, ²Crooked River Watershed Council, Prineville, OR, United States, ³Global Geomatic Solutions, Oviedo, FL, United States, ⁴International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syrian Arab Republic, ⁵USDA/ARS Northwest Watershed Research Center, Boise, ID, United States

A-22 Withdrawn

A-23 Conservation of Draba in the Intermountain West: The importance of hybridization, ploidy, breeding system, endemism and biogeography.  
Loreen Allphin¹, Michael Windham²; ¹Brigham Young University, Provo, UT, United States, ²Duke University, Durham, NC, United States

A-24 Locating Monitoring Sites in a Mixed Ownership Landscape  
Edward Petersen; USDA - NRCS, Ontario, Oregon, United States

A-25 Evaluation and Use of Sunn Hemp (Crotalaria juncea L.) at the Manhattan Plant Materials Center (PMC),  
Manhattan, Kansas  
P. Allen Casey, Richard L. Wynia, John M. Row; USDA NRCS Plant Materials Center, Manhattan, Kansas, United States

A-26 Nutritional Composition of Carex sprengeii in North Dakota  
Miranda Meehan, Edward DeKeyser, Kevin Sedivec, Jack Norland; North Dakota State University, Fargo, ND, United States

A-27 Cottonwood Seedling Demography along the Upper Missouri River  
Gregor Auble¹, Michael Scott¹, Michael Merigliano², Chad Krause¹; ¹U.S. Geological Survey, Fort Collins, CO, United States, ²University of Montana, Missoula, MT, United States, ³Bureau of Land Management, Lewistown, MT, United States

A-28 A Conservation Partnership at Work in Western South Dakota  
Matt Stoltenberg; RESPEC Consulting, Rapid City, SD, United States
Monday Afternoon

A-29  A Comparison of Stream Morphology and Vegetation of Cottonwood-Dominated and Open Reaches within a Riparian Ecological Site in NW Colorado  Kira Puntenney, Emily Kachergis, Maria Fernandez-Gimenez; Colorado State University, Fort Collins, CO, United States

A-30  Yield Response of Summer-Dormant and -Active Tall Fescue to Stockpiling  James Rogers, Carolyn Young, Jagadeesh Mosali, Shawn Norton; The Samuel Roberts Noble Foundation, Ardmore, OK, United States
Tuesday Morning

Producer’s Forum: The Art of Grazing Management

BHCC – Prospector
Chair: Dennis Thompson, NRCS National Range and Grazing Lands Ecologist

9:00 am  How Did We Get Here and Where Do We Go  Bob Budd; Lander, WY, United States

9:20 am  The Benefits of Grazing Systems on the Daybreak Ranch  Jim Faulstich; Highmore, SD, United States

10:00 am  My Journey from High Tech, High Input to Low Input Sustainable Agriculture  Blain Hjerdas; Redvers, SK, Canada

10:40 am  A Montana Producer’s Experience and Observations Regarding Continuous Vs. Rotational Grazing  Chase Hibbard; Cascade, MT, United States

11:20 - 11:45 am  Panel Question and Answer

Agency Accomplishments – Making a Difference on the Ground

Special Session: BHCC - Stillwater
Chair: Washington Office Agency Leadership

8:00 am  Managing Fire and Fuels in the Northeast Mojave Desert: The Mojave Desert Initiative  Scott Florence; US Bureau of Land Management, St George, Utah, United States

8:20 am  Research to Practical Use: On-the-Ground Successes  Charlie Clements, James Young, Dan Harmon, Mark Weltz; USDA-ARS, Reno, NV, United States

8:40 am  Forest Service and Defenders of Wildlife Team Up to Implement Non-Lethal Control of Prairie Dogs  Randall L. Griebel, Shelly L. Gerhart, Terri Harris; US Forest Service Wall RD, Wall, SD, United States

9:00 am  Federal Agencies and Ranchers Working Together - Keys to a Successful Partnership  TJ Mabey¹, Gracian Uhalde²; “Bureau of Land Management, Ely, NV, United States, “Gracian Uhalde and Company, Ely, NV, United States

9:20 am  Owl Mountain Partnership  Peter Torma; BLM, Kremmling, CO, United States

9:40 am  Questions and Discussion
Tuesday Morning

9:50 am  Break

10:10 am  Great Basin Native Plant Selection and Increase Project: A Science/Management Success  Mike Pellant¹; Nancy Shaw²; ¹Bureau of Land Management, Boise, Idaho, United States, ²USFS Rocky Mountain Research Station, Boise, Idaho, United States

10:30 am  Using Low-Stress, Pressure-and-Release Tactics and Attractants to Move Producers to a Better Place in the NRCS  Tim Steffens, Sarah Hanlon, Joel Moffett, Michael Casper, Ed Kilpatrick, Tom Werner; USDA-NRCS, Colorado, United States

10:50 am  Success Using an Interdisciplinary Approach for Watershed-Scale Land Health Assessments and Subsequent Project Implementation  Pat Fosse, Brian Thrift, Ryan Martin; Bureau of Land Management, Dillon, Montana, United States

11:10 am  Government Success in Partnerships: The USDA-ARS Area-Wide Ecologically-Based Invasive Annual Grass Management Program  Brenda Smith, Roger Sheley; Eastern Oregon Agricultural Research Center, Burns, OR, United States


11:50 am  Questions and Discussion

- 12:00 pm

New Paradigms for Collaborative Research and Management in the Great Basin

Symposium: BHCC – Scout

Chair: Stuart Hardegree, USDA – ARS, Boise, ID

8:15 am  New Paradigms for Collaborative Research and Management in the Great Basin  Stuart Hardegree; USDA ARS Northwest Watershed Management Research Center, Boise, ID, United States

8:30 am  What Makes for Effective Collaboration?  Nat Frazer; Utah State University, Logan, UT, United States

9:00 am  Research and Management Priorities and Strategies for Sustaining Great Basin Ecosystems  Jeanne Chambers; USDA Forest Service, Rocky Mountain Research Station, Reno, NV, United States
Tuesday Morning

9:30 am  The Great Basin Research and Management Partnership: Facilitating Collaborative Solutions  
*Stuart Hardegree*; USDA-ARS-NWRC, Boise, ID, United States

10:00 am  Break

10:15 am  Information Technology for Regional Collaboration in the Great Basin  
*Sean Finn¹, Thomas Zarriello¹, Linda Schueck¹, Ruth Jacobs², ³*  
¹USGS Forest and Rangeland Ecosystem Science Center, Boise, ID, United States, ²USGS Forest and Rangeland Ecosystem Science Center, Corvallis, OR, United States

10:45 am  The New Integrated Paradigm for Research, Education and Extension  
*James Dobrowolski*; USDA National Institute for Food and Agriculture, Washington, DC, United States

11:15 am  The Great Basin Landscape Conservation Cooperative: Building on Existing Collaborative Programs  
*Mike Pellant*; Bureau of Land Management, Boise, ID, United States

11:45 am  Questions for the morning speakers

- 12:00 pm

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**Expiration CRP: Alternative Management Systems to Sustain Wildlife Habitat Values**

**Symposium: BHCC - Explorer**

**Chair:** Jeremy Maestas, USDA – NRCS – WNTSC, Portland, OR

8:00 am  Introduction

8:10 am  CRP...A Duck's Best Friend  
*Bob Sanders*; Ducks Unlimited, Montana, United States

8:45 am  Managing CRP Grasslands: Short- and Long-Term Effects of Haying on Breeding Bird Populations in CRP Grasslands in the Northern Great Plains  
*Lawrence Igl¹, Douglas Johnson², ³*  
¹U.S. Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, ND, United States, ²U.S. Geological Survey, Northern Prairie Wildlife Research Center, Saint Paul, MN, United States
Tuesday Morning

9:20 am  Preserving CRP Grassland Benefits in Western Nebraska  
Kristin L. Miller¹, Jerrold R Spiker², Galen Wittrock³, Emily Munter¹; ¹USDA-Natural Resources Conservation Service, Sidney, NE, United States, ²South Platte Natural Resources District, Sidney, NE, United States, ³Nebraska Game and Parks Commission, Alliance, NE, United States

9:55 am  Break

10:05 am  The Evaluation of Ring-Necked Pheasant and Duck Production on a Multiple Land Use Management System on Post-Contract Conservation Reserve Program Grasslands  
Benjamin Geaumont⁴, Kevin Sedivec⁵, Christopher Schauer⁶; ⁴Hettinger Research Extension Center, Hettinger, North Dakota, United States, ⁵School of Natural Resource Sciences - Range Program, Fargo, North Dakota, United States

10:40 am  Regional Economic Implications of Post-CRP Land Use  
Dean Bangsund, Larry Leistritz, Nancy Hodur; North Dakota State University, Fargo, North Dakota, United States

11:15 am  Alternative Uses of CRP Lands: The Use of Livestock Grazing to Enhance Vegetation and Wildlife Biodiversity  
Timothy DelCurto; Eastern Oregon Agricultural Research Center, Oregon State University, Union, Oregon, United States

11:50 am  Questions and Comment

- 12:00 pm

Grazing Ecology/Management II

Technical Session: HIG - Trapper

Chair: Bob Patton, North Dakota State University, Central Grasslands Research and Extension Center, Streeter

8:00 am  Multiple-Paddock Planned Grazing Distributes Utilization across a Heterogeneous Landscape  
Matt Barnes⁴, Jim Howell⁵; ⁴Shining Horizons Land Management, Cimarron, Colorado, United States, ⁵The Howell Ranch, Cimarron, Colorado, United States

8:20 am  Estimating Influence of Stocking Regimes on Livestock Grazing Distributions  
Matthew Rinella⁶, Marty Vavra⁵; ⁶USDA-ARS, Miles City, MT, United States, ⁵USDA-FS, La Grande, OR, United States
Tuesday Morning

8:40 am  Graze Period Stocking Rate, Stock Density Affect Dietary Intake Independently  
Tim J. Steffens¹, Matt K. Barnes², Larry R. Rittenhouse³; ¹USDA-NRCS, Springfield, CO, United States, ²Shining Horizons Land Management LLC, Cimarron, CO, United States, ³Colorado State University (ret), Ft. Collins, CO, United States

9:00 am  Accuracy of Cattle Grazing Distribution Patterns Recorded by Horseback Visual Observers During the Early Morning  
Steven Lunt, Derek Bailey, Adrienne Lipka, Milt Thomas, Morgan Russell; New Mexico State University, Las Cruces, NM, United States

9:20 am  Pasture and Grazing Management in the Northwest: A New Guidebook  
Glenn Shewmaker¹, Mylen Bohle²; ¹University of Idaho, Twin Falls, ID, United States, ²Oregon State University, Prineville, OR, United States

9:40 am  Withdrawn

10:00 am  Break

10:20 am  Rangelands Use Efficiency and Wool Production in the Arid Environment of Uzbekistan  
E. Mamedov; Uzbek Research Institute of Karakul Sheep Breeding and Desert Ecology, Samarkand, Uzbekistan

10:40 am  Farmers’ Perception about Voisin Management Intensive Grazing and Ecosystem Services  
Juan P. Alvez¹, Abdon Schmitt², Joshua Farley¹; ¹University of Vermont, Burlington VT, United States, ²Universidade Federal de Santa Catarina, Florianopolis, SC, Brazil

11:00 am  Grazing Distribution Patterns of Beef Bulls and Cows During the Breeding Season in Central New Mexico  
Adrienne Lipka, Derek Bailey, Steven Lunt, Milt Thomas, Morgan Russell, Shad Cox, Richard Dunlap; New Mexico State University, Las Cruces, NM, United States

11:20 am - 11:40 am  Pyric Herbivory in Action on Boreal Rangelands? The Fire-Grazing Interaction of Wood Bison in Northeast British Columbia, Canada  
Sonja Leverkus¹,², Sam Fuhlendorf³; ¹Oklahoma State University, Stillwater, Oklahoma, United States, ²Ministry of Forests and Range, Fort Nelson, British Columbia, Canada
Vegetation Management and Restoration I

Technical Session: HIG – Bitterroot

Chair: Jane Mangold, Montana State University, Bozeman

8:00 am  Long Term Effects of Aeration and Fire on Invasion of Exotic Grasses in Mixed Brush Plant Communities as Affected by a Wildfire  Felix Ayala-A.¹, J. Alfonso Ortega-S.¹, Timothy E. Fulbright¹, G. Allen Rasmussen², D. Lynn Drawe¹, David R. Synatzske², Andrea R. Litt¹; ¹Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, Texas, United States, ²Texas Parks and Wildlife Department, Artesia Wells, Texas, United States

8:20 am  Mechanically Shredding Utah Juniper  Kert Young, Bruce Roundy; Brigham Young University, Provo, UT, United States

8:40 am  Rainfall Interception and Partitioning by Pinus monophylla and Juniperus osteosperma  Samuel Lossing¹, Tamzen Stringham¹, Mark Weltz²; ¹University of Nevada, Reno, Reno, Nevada, United States, ²USDA Agriculture Research Service, Reno, Nevada, United States

9:00 am  Establishment and Persistence of Native Grass in Wyoming’s High Desert  Susan R. Winslow², Karen J. Clause¹, James S. Jacobs³; ¹USDA NRCS Plant Materials Center, Bridger, MT, United States, ²USDA NRCS, Pinedale, WY, United States, ³USDA NRCS, Bozeman, MT, United States

9:20 am  Comparing Seed Mixes and Seeding Techniques for Restoring Plant Communities in Wyoming’s High Desert  Karen J. Clause¹, Susan R. Winslow², James S. Jacobs³; ¹USDA NRCS, Pinedale, WY, United States, ²USDA NRCS Plant Materials Center, Bridger, MT, United States, ³USDA NRCS, Bozeman, MT, United States

9:40 am  Herbivore Impacts on Life-Stage Transitions of an Endangered Orchid, Spiranthes parkssii Correll  Carissa L. Wonkka, William E. Rogers, Fred E. Smeins, Dirac Twidwell; Texas A&M University, Texas, United States
Tuesday Morning

10:00 am  Collaborative Partnerships for Grassland and Prairie Habitat Restoration Projects with Aminopyralid
Byron Sleugh1, Mary Halstvedt1, Vanelle Peterson1, D. Chad Cummings1, Dean Gaiser2, Jerry Benson2, Mike Finch3, Robert Wilson3, Scott Nissen4, Roger Becker5, Mike Moechnig6, Mark Renz7; 1Dow AgroSciences, Indiana, United States, 2Eco-Logical Management, Washington, United States, 3BFI Native Seeds, Washington, United States, 4Washington Dept. of Fish and Wildlife, Washington, United States, 5University of Nebraska, Nebraska, United States, 6Colorado State University, Colorado, United States, 7University of Minnesota, Minnesota, United States, 8South Dakota State University, South Dakota, United States, 9University of Wisconsin, Wisconsin, United States

10:20 am  Do Cultivation Land-Use Legacies Affect Rangeland Seeding Success?
Lesley Morris1,2, Thomas Monaco1,2, Roger Sheley3, Justin Williams1; 1USDA-Agricultural Research Service, Logan, Utah, United States, 2Utah State University, Logan, Utah, United States, 3USDA-Agricultural Research Service, Burns, Oregon, United States

10:40 am  No-Till Interseeding Yellow-Flowered Alfalfa (Medicago sativa subsp. falcata) into Crested Wheatgrass (Agropyron cristatum) Stands: Initial Establishment
Christopher Misar1, Lan Xu1, Roger Gates3, Arvid Boe3, Patricia Johnson2, Christopher Schauer3; 1South Dakota State University, Brookings, SD, United States, 2South Dakota State University West River Ag Center, Rapid City, SD, United States, 3North Dakota State University Hettinger Research Extension Center, Hettinger, ND, United States

11:00 am  Experimental Comparison of Pre-Emergence Herbicides for Reducing Annual Grass Emergence in Two Great Basin, USA Soils
Merilynn Hirsch1, Thomas Monaco2, Corey Ransom1, Christopher Call1; 1Utah State University, Logan, UT, United States, 2USDA-ARS, Logan, UT, United States

11:20 am  Tebuthiuron Role in Rangeland Restoration Programs
Robert Masters, Byron Sleugh, Chad Cummings, Greg Alpers, John Jachetta, Vernon Langston; Dow AgroSciences, Indianapolis, United States

11:40 am  Pastures of Deserted Animal Industries of Uzbekistan
T. Mukimov, R. Haiitbaev, Sh. Sindarov; Uzbek Research Institute of Karakul Sheep Breeding and Desert Ecology, Samarkand, Uzbekistan
Tuesday Morning

Invasive Species/Weed Management I

Technical Session: HIG – Gallatin

Chair: John Walker, Texas AgriLife Research & Extension Center, San Angelo, TX

8:00 am  A Quantitative Protocol to Assess the Invasive Potential of a Plant Species into a Rangeland Ecosystem Using Camelina sativa (Gold of Pleasure, Large-seeded False Flax) as a Model  Phillip Davis, Fabian Menalled, Bruce Maxwell; Montana State University, Bozeman, MT, United States

8:20 am  Rangeland and Pasture Weed Control with Aminopyralid + 2,4-D  Vernon Langston, Chad Cummings, Byron Sleugh, Pat Burch, Bill Kline; Dow AgroSciences LLC, Indianapolis, IN, United States

8:40 am  Native and Shrub Tolerance to Aminopyralid (Milestone® Herbicide) Applications for Invasive Species Control  Mary Halstvedt¹, K. George Beck², Roger Becker³, Celestine Duncan⁴, Rodney Lym⁵, Peter Rice⁶; ¹Dow AgroSciences, Billings, MT, United States, ²Colorado State University, Fort Collins, CO, United States, ³University of Minnesota, St Paul, MN, United States, ⁴Weed Management Services, Helena, MT, United States, ⁵North Dakota State University, Fargo, ND, United States, ⁶University of Montana, Missoula, MT, United States

9:00 am  Crested Wheatgrass Impedes the Spread of an Exotic Annual Grass  Aleta Nafus, Kirk W. Davies, Roger Sheley; USDA-ARS, Burns, OR, United States

9:20 am  Monitoring the Efficacy of Biocontrol on Diffuse Knapweed (Centaurea diffusa) in British Columbia's Southern Interior  Don Gayton¹, Val Miller²; ¹FORREX, Summerland, British Columbia, Canada, ²British Columbia Ministry of Forests and Range, Nelson, British Columbia, Canada

9:40 am  Environmental Influences on Structural Characteristics of Cheatgrass (Bromus tectorum)  Charles Sloane, Clayton B. Marlow; Montana State University, Bozeman, Montana, United States

10:00 am  Break

10:20 am  Plant and Animal Responses to Targeted Grazing of White Locoweed in New Mexico  Laura Jacobson, Andres Cibils, David Graham, Lyndi Owensby, Wendy Taylor, Kirk McDaniel; New Mexico State University, Las Cruces, NM, United States
10:40 am  Can Targeted Sheep Grazing or Mowing Suppress Sulfur Cinquefoil (*Potentilla recta*) on Rangeland?  
*Rachel Frost, Jeffrey Mosley, Brent Roeder, Rodney Kott, Duane Griffith; Montana State University, Bozeman, MT, United States*

11:00 - 11:20 am  Impact of Sheep Grazing on Demographic Parameters of Cheatgrass (*Bromus tectorum*) and Wild Oat (*Avena fatua*) in Three Common Montana Agricultural Systems  
*Melissa Graves, Jane Mangold, Hayes Goosey, Patrick Hatfield, Fabian Menalled; Montana State University, Bozeman, Montana, United States*
Tuesday Morning

Poster Session B

February 8, 8:00 am - 12:00 pm
MCC - Russel

Number in the left column corresponds to the poster board where the poster will be displayed.

B-1

B-2 Cheatgrass Biomass and Competition: Is a Greenhouse Fight a Fair Fight? Dan Harmon, Charlie Clements; USDA-ARS, Reno, NV, United States

B-3 Look Closer: Time Sequence Photography of Roosters Comb in the Sheep Creek Range Tye Morgan, Robert Blank; USDA-ARS, Reno, NV, United States

B-4 Density of Crested Wheatgrass and Native Perennial Bunchgrasses 12-Years after Co-Planting Aleta Nafus, Kirk W. Davies; USDA-ARS, Burns, Oregon, United States

B-5 Community Responses to Climate Variability Over 50 Years in a Subalpine Rangeland Lofe Conner, Richard Gill; Brigham Young University, Provo, Utah, United States

B-6 Effects of Prescribed Burning and Litter Type on Litter Decomposition and Nutrient Release in Mixed-Grass Prairie in Eastern Montana Kurt Reinhart, Aaron Roth, Lance Vermeire; USDA-ARS, Miles City, MT, United States

B-7 Effects of Patch Burning and Livestock Grazing on Grasshopper Populations in Northern Mixed Prairie in Eastern Montana David Branson, Lance Vermeire; USDA, Agricultural Research Service, Sidney, MT, United States, USDA, Agricultural Research Service, Miles City, MT, United States

B-8 Effect of Landform Position on Mesquite Growth Patterns Fredrich Schrank, Roger Wittie, Carol Thompson; R. J. Ansley; Tarleton State University, Stephenville, Texas, United States, Texas A&M AgriLife Research & Extension, Vernon, Texas, United States

B-9 Recovery of Intermountain Grasslands with Fall Grazing or Rest Donald Thompson; Agriculture and Agri-Food Canada, Kamloops/BC, Canada
Tuesday Morning

B-10 Geographic Variation in Crown Structure and Foliage Biomass of Woodland Trees across the Great Basin
Robin Tauch\textsuperscript{1}, Neil Frakes\textsuperscript{2}, Richard Miller\textsuperscript{2}, Bruce Roundy\textsuperscript{3}; \textsuperscript{1}USDA Forest Service, Reno, NV, United States, \textsuperscript{2}Oregon State Univ., Corvallis, OR, United States, \textsuperscript{3}Brigham Young Univ., Provo, UT, United States

B-11 Climatic Control of Sagebrush Survival in Semi-Arid Ecosystems of Nevada
Erin Hourihan, Barry Perryman; University of Nevada, Reno, Reno, NV, United States

B-12 Differential Responses of Poa pratensis and Festuca campestris to Defoliation and Microenvironment
Steven Tannas\textsuperscript{3}, Edward Bork\textsuperscript{1}, Walter Willms\textsuperscript{2}; \textsuperscript{1}University of Alberta, Edmonton, Alberta, Canada, \textsuperscript{2}Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada

B-13 Sagebrush (Artemisia tridentata ssp Wyomingensis) Regeneration 23 Years Following Removal in South Central Wyoming
Michael Smith, Calvin Strom, Diane Fiedler; University of Wyoming, Laramie, WY, United States

B-14 Efficient and Effective Methods for Monitoring Ecological Integrity on Grazed Lands
Laura Applegate, Linda Hardesty; Washington State University, Pullman, WA, PNW, United States

B-15 A Historical Perspective on the Development of the Ecological Site Concept
Joel Brown\textsuperscript{1}, Jack Alexander\textsuperscript{2}, Justin Derner\textsuperscript{3}; \textsuperscript{1}USDA NRCS, Las Cruces NM, United States, \textsuperscript{2}Synergy Resources, Bozeman MT, United States, \textsuperscript{3}USDA ARS, Cheyenne WY, United States

B-16 Ecological Sites: Organizational Tool for Outcome-Based Land Management
Justin Derner\textsuperscript{1}, Joel Brown\textsuperscript{2}, Jack Alexander\textsuperscript{3}; \textsuperscript{1}USDA-Agricultural Research Service, Cheyenne, WY, United States, \textsuperscript{2}USDA-NRCS Jornada Experimental Range, Las Cruces, NM, United States, \textsuperscript{3}Synergy Resource Solutions, Inc, Belgrade, MT, United States

B-17 Using Similarity Indices as a Tool for Characterizing and Monitoring Vegetation within Prairie Dog Colonies in Southwestern South Dakota
Eric Boyda\textsuperscript{1}, Jack Butler\textsuperscript{2}, Lan Xu\textsuperscript{1}; \textsuperscript{1}Department of Biology and Microbiology, South Dakota State University, Brookings, SD, United States, \textsuperscript{2}US Forest Service, Rocky Mountain Research Station, Rapid City, SD, United States

B-18 Home Range, Habitat Selection, and Survival of Greater Roadrunners
Dean Ransom, Jr.; Rolling Plains Quail Research Ranch, Texas Agrilife Research and Extension Center, San Angelo, TX 76901, United States
B-19 Food Habits and Diet Quality of Mule Deer Wintering on the North Kaibab Plateau of Arizona  
Matthew Acton, William Miller, Ann Steffler; Arizona State University - Polytechnic, Mesa, Arizona, United States

B-20 Characterization of Forage Availability and Use by Feral Horses across Diverse Habitats in SW Alberta  
Tisa Girard1, Edward Bork2, Mike Alexander3; 1University of Alberta, Edmonton, Alberta, Canada, 2Alberta Sustainable Resources Development, Pincher Creek, Alberta, Canada

B-21 Effects of Changing Spatial and Thematic Scale for Mapping Greater Sage-Grouse Habitat  
Virginia Harris1, Eva Strand2, Jocelyn Aycrigg1,2; 1University of Idaho, Moscow, ID, United States, 2National Gap Analysis Program, Moscow, ID, United States

B-22 Effects of Off-Road Vehicles on Rodents in Sonoran Desert Rangelands  
Simon Reid, Ward Brady; Arizona State University, Mesa, Arizona, United States

B-23 Vegetation Structure and Composition at Greater Prairie-Chicken Nest and Brood Sites: Drivers for Success?  
Lars Anderson1, Walter Schacht2, Larkin Powell2, Jeffery Lusk2; 1University of Nebraska-Lincoln, Lincoln, NE, United States, 2Nebraska Game and Parks Commission, Lincoln, NE, United States

B-24 Deleterious Composition and Quality of Pronghorn Diets in Southern Arizona  
Clare Mix, William Miller; Arizona State University, Mesa, Arizona, United States

B-25 Integration of Herbicides into Wildlife Habitat Restoration Programs in Southwestern Rangelands  
Chad Cummings, Robert Masters, Greg Alpers, Vernon Langston; Dow AgroSciences LLC, Indianapolis, IN, United States

B-26 Clover Seeding for Sage-Grouse Habitat and Forage Production on Mountain Meadows  
Matt Barnes, Joe Brummer, Lars Santana, John Scott, Mark Volt; USDA-NRCS, Colorado, United States

B-27 Sentinel Plants: Diagnostic Guides for Adaptive Management  
Robert Skinner1, Sam Fuhlendorf1; 1U.S. Fish & Wildlife Service, Lewistown, Montana, United States, 2Oklahoma State University, Stillwater, Oklahoma, United States

B-28 Conifer and Abiotic Factors Influence on Big Sagebrush Cover  
Karen Kitchen, Brittany Mendelsohn, Michael Frisina, Bok Sowell; Montana State University, Bozeman, Montana, United States

B-29 Crossings, Corridors and Trophic Cascades: Wolves and Woody Vegetation in Banff National Park  
Cliff White; Parks Canada, Banff, Alberta, Canada

Tuesday Morning
Using the Environmental Quality Incentives Program to Address Rangeland Drought and Grazing Land Management in South Dakota  

Mitch Faulkner, Shane Deranleau, Stan Boltz; USDA-NRCS, South Dakota, United States
Tuesday Afternoon

Producer’s Forum: The Art of Grazing Management

BHCC – Prospector

Chair: Dr. Fee Busby, Utah State University

1:00 pm  Adapting to Change with Rotational Grazing  
Ray Banister; Wibaux, MT, United States

1:40 pm  Lessons Learned in 30 Years of Cross Fencing  
Gene Goven; Turtle Lake, ND, United States

2:20 pm  Grazing Club Success and Ranching in Manitoba  
Tim Clarke; Ashern, MB, Canada

3:00 pm  The Last Lecture: A Grazier’s Story – Lessons Learned Since 1955  
Wayne Berry; Williston, ND, United States

3:40 pm  - 4:30 pm  Panel Question and Answer

Agency Accomplishments – Making a Difference on the Ground

Special Session: BHCC - Stillwater

Chair: Washington Office Agency Leadership

1:00 pm  BLM and the Pollinator Partnership  
Laurie Davies-Adams¹, Carol Spurrier²; ¹Bureau of Land Management, Washington DC, United States, ²Pollinator Partnership, San Francisco CA, United States

1:20 am  Assessing the Success of the Utah PCD Watershed Restoration Initiative  
Curtis Warrick; Bureau of Land Management, Salt Lake City, Utah, United States

1:40 am  Interagency Creeks and Communities Strategy  
Laura Van Riper; National Riparian Service Team, Bureau of Land Management, Prineville, OR, United States

2:00 pm  How Developing and Following Through with a Resource Management Plan Has Improved the Range and Relationships with Ranchers in the Cody Wyoming Bureau of Land Management Office  
Dallen Smith, Jack Mononi, Mike Smith; University of Wyoming, Laramie, Wyoming, United States

2:20 pm  National Estimates of Soil Loss on Rangelands  
Mark Weltz¹, Leonard Jolley², Ken Speath³; ¹USDA - ARS, Reno, Nevada, United States, ²USDA - NRCS, Beltsville, MD, United States, ³USDA - NRCS, Ft. Worth, Texas, United States
Tuesday Afternoon

2:40 pm  Questions and Discussion

2:50 pm  Break

3:10 pm  Development of a Fungal Seed Bank Pathogen for Cheatgrass Biocontrol on Intermountain Rangelands
Susan E Meyer¹, Julie Beckstead², Phil S Allen¹; ¹US Forest Service, Rocky Mountain Research Station, Shrub Sciences Laboratory, Provo, Utah, United States, ²Gonzaga University, Spokane, Washington, United States, ³Brigham Young University, Provo, Utah, United States

3:30 pm  Is Rehabilitation of Non-Forestlands after Wildfires Effective? - A Systematic Literature Review
David A. Pykçe¹, Jan L. Beyers², Troy A. Wirth¹; ¹U.S. Geological Survey, Forest & Rangeland Ecosystem Science Center, Corvallis, OR, United States, ²USDA Forest Service, Pacific Southwest Research Station, Riverside, CA, United States

3:50 pm  Texas GLCI - Growing Partnerships in Texas
Mark Moseley; NRCS, Boerne, Texas, United States

4:10 pm  BLM New Mexico: Fostering Successful Partnerships to Restore New Mexico’s Enchanting Landscapes
Amelia Underwood, Steven Torrez; BLM, Las Cruces, NM, United States

4:30 pm  89 Years of Photo Monitoring of Resources in the Gravelly Mountains of Southwest Montana
Arthur Hall; Beaverhead Deerlodge NF, Madison RD, Sheridan, MT, United States

4:50 pm  Questions and Discussion

- 5:00 pm

New Paradigms for Collaborative Research and Management in the Great Basin

Regional Cooperation and Collaborations

Symposium: BHCC – Scout

Chair: Nat Frazer, Utah State Univ., Logan

1:00 pm  The Great Basin Native Plant Selection and Increase Project - Linking Research, Management and the Native Seed Industry
Nancy Shaw¹, Mike Pellan²; ¹USDA Forest Service, Rocky Mountain Research Station, Boise, Idaho, United States, ²USDI Bureau of Land Management, Idaho State Office, Boise, Idaho, United States
Tuesday Afternoon

1:30 pm  Inter and Intra-State Cooperation: Nevada Partners for Conservation and Development  Lee Turner; Nevada Department of Wildlife, Reno, United States

2:00 pm  Optimizing Regional Collaborative Efforts to Achieve Long-Term Discipline-Specific Objectives  Frederick B. Pierson¹, Peter R. Robichaud², Kenneth E. Spaeth³, C. Jason Williams⁴, Osama Z. Al-Hamdan⁵, 6; ¹ USDA-ARS Northwest Watershed Research Center, Boise, Idaho, United States, ² USDA-USFS Rocky Mountain Research Station, Moscow, Idaho, United States, ³ USDA-NRCS Central National Technology Support Center, Fort Worth, Texas, United States, ⁴ University of Idaho - Department of Biological & Agricultural Engineering, Moscow, Idaho, United States

2:30 pm  Break

2:45 pm  Regional Research and Management: Sagebrush Steppe Treatment Evaluation Project  James McIver; Oregon State University, Union, Oregon, United States

3:15 pm  Landowner, NGO and Local Government Cooperation: The Owyhee Initiative  Chad Gibson; Private Consultant, Owyhee County, Idaho, United States

3:45 pm  Regional Research, Demonstration and Extension: The ARS Area-Wide Ecologically Based Invasive Plant Management Project  Brenda Smith, Roger Sheley; Eastern Oregon Agricultural Research Center, Burns, OR, United States

4:15 pm  Panel Discussion

- 4:45 pm  Mechanisms for increasing communication and collaboration for more effective regional strategic planning and project implementation

The Ecology of Seeding Establishment on Rangeland

Symposium: BHCC – Explorer

Chair: Jeremy James, USDA – ARS, Burns, OR

1:00 pm  Arguments for a Major Research Focus on Seedling Establishment and Recruitment on Rangelands  Tony Svejcar; USDA-ARS, Burns, OR, United States

1:20 pm  Grass Seedling Demography in the Great Basin: Implications for Restoration  Jeremy James³, Tony Svejcar³, Matt Rinella²; ¹ USDA-ARS, Burns, OR, United States, ² USDA-ARS, Miles City, MT, United States
1:40 pm  **Field Establishment of Perennial Grass Seedlings in Cheatgrass Invaded Systems** Elizabeth Leger¹, Erin Goergen¹, Courtney Rowe¹²; ¹University of Nevada, Reno, Reno, NV, United States, ²US Forest Service, Quincy, CA, United States

2:00 pm  **Planting Date Influences Germination and Seedling Demography of Bluebunch Wheatgrass** Chad Boyd, Jeremy James; USDA-ARS, Burns, Oregon, United States

2:20 pm  **Hydrothermal Indices for Classification of Seedbed Microclimate** Stuart Hardegree¹, Jaepil Cho¹, Bruce Roundy², Corey Moffet³, Thomas Jones⁴, Jeremy James⁵, Nancy Shaw⁶, Robert Cox⁷; USDA ARS Northwest Watershed Research Center, Boise, ID, United States, ³Brigham Young University, Department of Plant and Wildlife Sciences, Provo, UT, United States, ⁴The Noble Foundation, Ardmore, OK, United States, ⁵USDA ARS Forage and Range Research Laboratory, Logan, UT, United States, ⁶USDA Forest Service, Rocky Mountain Research Station, Boise, ID, United States, ⁷Texas Tech University, Department of Natural Resources Management, Lubbock, TX, United States, ⁸USDA ARS Eastern Oregon Agricultural Research Center, Burns, OR, United States

2:40 pm  Break

3:00 pm  **Seedlings: From Seed to Establishment** Charlie Clements, Dan Harmon, Mark Weltz; USDA-ARS, Reno, NV, United States

3:20 pm  **Use of Seed Agglomeration Technology for Enhancing Seedling Emergence in the Presence of Physical Soil Crust** Matthew Madsen¹, Kirk Davies¹, Tony Svejcar⁷, Jason Williams⁸; ¹Agricultural Research Service, Burns, OR, United States, ⁷Agricultural Research Service, Boise, ID, United States

3:40 pm  **Seedling Emergence of Diverse Seed Mixes in Post-Wildfire Rangelands** Robert Cox¹, Nancy Shaw², Mike Pellant³; ¹Texas Tech University, Lubbock, Texas, United States, ²Rocky Mountain Research Station, Boise, Idaho, United States, ³Bureau of Land Management, Boise, Idaho, United States

4:00 pm  **Germination Prediction from Soil Moisture and Temperature Data across the Great Basin** Nathan Cline¹, Bruce Roundy¹, Stuart Hardegree¹, ¹Brigham Young University, Provo, UT, United States, ²USDA-ARS Northwest Watershed Research Center, Boise, ID, United States
Tuesday Afternoon

4:20 - 4:40 pm Impacts of Native and Exotic Grasses on Forb Seedling Growth and Establishment Hilary Parkinson¹, Cathy Zabinksi², Nancy Shaw haystack; ¹Montana State University, Bozeman, MT, United States, ²Rocky Mountain Research Station, Boise, ID, United States

Riparian Systems – Water

Technical Session: HIG - Trapper

Chair: Clayton Marlow, Montana State University, Bozeman

1:00 pm Riparian Forest Regeneration in the Middle Sheyenne River Watershed of North Dakota, USA Sarah Braaten, Edward (Shawn) DeKeyser, Joseph Zeleznik; North Dakota State University, Fargo, ND, United States

1:20 pm Development of a State-and-Transition Model for the Middle Sheyenne River Miranda Meehan¹, Jeff Repp¹, Edward DeKeyser¹, Kevin Sedivec¹, Joseph Zeleznik¹, Jack Norland¹; ¹North Dakota State University, Fargo, ND, United States, ²NRCS West National Technology Support Center, Portland, OR, United States

1:40 pm How Water Development can Increase the Carrying Capacity of the Land and Improve Riparian Areas Dallen Smith, Dee Hillberry, Mike Smith; University of Wyoming, Laramie, Wyoming, United States

2:00 pm Fine-Scale Observations of Soil Properties in Hummocks and Adjacent Interspaces Paul Meiman¹, Mae Smith¹, Joe Brummer¹, Terrance Booth¹, Larry Griffith¹; ¹Colorado State University, Fort Collins, CO, United States, ²USDA ARS, Cheyenne, WY, United States

2:20 pm Evaluation of Freeze-Thaw Dynamics in Hummocked Wetlands Mae Smith¹, Paul Meiman¹, Joe Brummer¹; Colorado State University, Fort Collins, CO, United States

2:40 pm Effects of a Single Grazing Event by Cattle on Terrestrial Invertebrates Falling Into Streams and Trout Populations: Results of a Field Experiment W. Carl Saunders², Kurt D. Fausch¹; ¹Utah State University, Logan, Utah, United States, ²Colorado State University, Fort Collins, Colorado, United States
Remote Sensing and Technology

Technical Session: HIG – Bitterroot

Chair: Matt Reeves, USDA – Forest Service, Florence, MT

1:00 pm  Remote Sensing of Plant Community Dynamics in a Sandhills Blowout  Barbara Kagima, James Stubbendieck; University of Nebraska-Lincoln, Lincoln, United States

1:20 pm  Comparing Grazed Allotments in Arizona on Their Ability to Convert Precipitation to Vegetation  Philip Heilman1, Stephen Hagen1; 1USDA-ARS SWRC, Tucson, AZ, United States

1:40 pm  Mapping Cheatgrass in the Great Basin Using 250-Meter eMODIS NDVI  Stephen P. Boyte1, Bruce K. Wylie2, Collin G. Homer2, Donald J. Major3; 1SGT, Inc.(Contract G10PC00044) USGS EROS Data Center, Sioux Falls, SD, United States, 2USGS EROS Data Center, Sioux Falls, SD, United States, 3BLM NIFC-Great Basin Restoration Initiative, Boise, ID, United States

2:00 pm  Variation among SamplePoint Users with Respect to Shadows and Other Variables  Amanda L. Gearhart1,2, Christopher S. Schauer2, D. Terrance Booth2, Kevin K. Sedivec2; 1North Dakota State University, School of Natural Resource Sciences, Fargo, ND, United States, 2North Dakota State University, Hettinger Research Extension Center, Hettinger, ND, United States

2:20 pm  Object-Oriented Segmentation and Classification of High Resolution Imagery Evaluating Fire-Carrying Fuel Variables of Pinyon-Juniper Woodlands in the Great Basin  April Hulet1, Bruce Roundy1, Steve Petersen2, Stephen Bunting2, Ryan Jensen1; 1Brigham Young University, Provo, UT, United States, 2University of Idaho, Moscow, ID, United States
Tuesday Afternoon

Invasive Species/Weed Management II

Technical Session: HIG – Gallatin

Chair: Rachel Frost, Montana State University, Bozeman

1:00 pm  Aminocyclopyrachlor: A New Herbicide for Pasture and Rangeland Weed Control  
Craig Alford, Jeff Meredith, Eric Castner, Michael Edwards, Susan Rick, James Harbour; DuPont Crop Protection, Lakewood, CO, United States

1:20 pm  Weed and Brush Management in Pasture and Rangeland with Aminocyclopyrachlor  
James Harbour, Jeff Meredith, Eric Castner, Michael Edwards, Susan Rick, Craig Alford; DuPont Crop Protection, Lincoln, NE, United States

1:40 pm  Alfalfa Hay Supplementation Increases Ponderosa Pine Browsing by Goats in Winter  
Brent Roeder¹, Jeffrey Mosley², Rachel Frost³, Tracy Mosley⁴; ¹Montana State University, Bozeman, MT, United States, ²Montana State University, Livingston, MT, United States

2:00 pm  Novel Herbivores and Disturbance, Biotic Resistance, Community Structure, and Environmental Factors: Multi-Process Control over the Invasibility of North America’s Endangered Wyoming Big Sagebrush Ecosystems  
Michael Reisner¹, James Grace³, David Pyke², Paul Doescher¹; ¹Oregon State University, Department of Forest Ecosystems and Society, Corvallis, OR, United States, ²United States Geological Survey, Forest and Rangeland Ecosystem Science Center, Corvallis, OR, United States, ³USGS National Wetlands Research Center, Lafayette, LA, United States

2:20 pm  Grasshoppers! Grasshoppers! Grasshoppers!  
Linden Greenhalgh; Utah State University, Tooele, Utah, United States

2:40 pm - 3:00 pm New Rangeland and Pasture Herbicide Product Formulations from Dow AgroSciences LLC  
Vernon Langston, Pat Burch, Chad Cummings, Bill Kline, Byron Sleugh, Mary Halstvedt, Vanelle Peterson; Dow AgroSciences LLC, Indianapolis, IN, United States
Tuesday Afternoon

**Weed Biology and Ecology**

Technical Session: HIG – Gallatin

Chair: Don Kirby, North Dakota State University, Fargo

3:20 pm  Examining Disturbance and Environmental Mechanisms Regulating Plant Species Dynamics in Native *Festuca campestris* Grassyland  
Steven Tannas¹, Edward Bork¹, Walter Willms²; ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, Canada

3:40 pm  Competition of Native Grasses from Invasion Transplanted into Russian Knapweed and Canada Thistle  
Brian Sebade¹, Ann Hild¹, Brian Mealor¹, Thomas Smith²; ¹University of Wyoming, Laramie, WY, United States, ²U.S. Army Corps of Engineers ERDC-CERL, Champaign, IL, United States

4:00 pm  The Role of Relative Size and Nitrogen (N) Availability in Competitive Interactions between Cheatgrass (*Bromus tectorum*) and Bluebunch Wheatgrass (*Pseudoroegneria spicata*)  
Noelle Orloff, Jane Mangold, Fabian Menalled, Zach Miller; Montana State University, Bozeman, MT, United States

4:20 - 4:40 pm  Effects of Weed Induced Alteration of Plant Composition on Patterns of Vegetation Recovery Following Herbicide Control of Leafy Spurge  
Stefanie Wacker, Jack Butler; Rocky Mountain Research Station, Rapid City, South Dakota, United States
Poster Session C

February 8, 1:00 - 5:00 pm

MCC - Russel

Number in the left column corresponds to the poster board where the poster will be displayed.

C-1 Preliminary Results for Rapid Determination of Sagebrush Using DNA Recovered from Cattle Feces 

Jose Alberto Perez-Amaro1, Ricardo Mata-Gonzalez1, Tim DelCurto2, David Bohnert3, Oscar Riera-Lizarazu4, Chad Boyd2, Jeff Leonard1; 1Oregon State University, Corvallis, OR, United States, 2Eastern Oregon Agricultural Research Center, Union, OR, United States, 3Eastern Oregon Agricultural Research Center, Burns, OR, United States, 4U.S.D.A.-ARS, Eastern Oregon Agricultural Research Center, Burns, OR, United States

C-2 Patch Size Controls Selectivity of Sheep Grazing Grass-Clover Grasslands

Emilio Laca1, Cristina Genro2, Carolina Bremm3, Jairo Genro4, Craig Schriefer; 1University of California, Davis, California, United States, 2EMBRAPA South Animal Husbandry & Sheep, Bage, RS, Brazil, 3Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil, 4Universidade Federal de Santa Maria, Santa Maria, Brazil

C-3 Changes of Some Elements in Three Species of Artemisia sieberi, Salsola rigida, and Stipa barbata within and out of Enclosure in Two Seasons (Summer and Autumn) in Rude Shur Saveh Rangelands

Maryam Saffariah, Hosein Azarnivand, Ali Tavili; Tehran University, Tehran, Iran, Islamic Republic of

C-4 Changes of Some Elements in Soil of Three Species of Artemisia sieberi, Salsola rigida, and Stipa barbata within and out of Enclosure in Rude Shur Saveh Rangelands

Maryam Saffariah, Hosein Azarnivand, Ali Tavili; Tehran University, Tehran, Iran, Islamic Republic of

C-5 Forage Quality Dynamics of Warm Season Grasses During the Growing Season in West-Central Texas

Joel Douglas1, Homer Sanchez2, George Peacock1, Kenneth Spaeth1, Gary Rea2, James Muir; 1USDA-NRCS, Fort Worth, TX, United States, 2AgriLife, Stephenville, TX, United States
C-6 Evaluation of the Tenderness, Size, and Marbling of Forage-Finished Ribeye Steaks Produced in Kauai County, Hawaii Matthew Stevenson, Yong Soo Kim, Glen Fukumoto; 1 University of Hawaii at Manoa Cooperative Extension Service, Lihue, HI, United States, 2 University of Hawaii at Manoa, Honolulu, HI, United States, 3 University of Hawaii at Manoa Cooperative Extension Service, Kealakekua, HI, United States

C-7 Proper Grazing Management During Drought: The Difference between Making a Profit and Losing Your Herd Carlos Gonzalez, Alfonso Ortega-S., Steven Lukefahr; Texas A&M University-Kingsville, Kingsville, Texas, United States

C-8 Harvest Efficiency of High Stocking Density Grazing Alexander Smart, Jerry Volesky, Sara Winterholler, Walter Schacht, Eric Mousse, Jordan Johnson, Robert Valvala, John Madison; 1 SDSU, Brookings, SD, United States, 2 UNL, North Platte, NE, United States, 3 UNL, Lincoln, NE, United States

C-9 Contribution of Warm and Cool Season Grasses to Seasonal Herbage Availability in Loamy and Sandy Mixed Prairie Range Sites of Alberta Edward Bork, Barry Irving, Tanner Broadbent; University of Alberta, Edmonton, Alberta, Canada

C-10 Monitoring of Livestock Grazing Effects on Bureau of Land Management Land Victoria Schell, Eric Mouse, Alexander Smart; South Dakota State University, Brookings, SD, United States

C-11 Restoring Native Tallgrass Prairie and Improving Profitability on Eastern South Dakota Grasslands with Intensive Early Stocking Kyle Schell, Eric Mouse, Alexander Smart; South Dakota State University, Brookings, SD, United States

C-12 Characterization of the Thermal Environment of Rangeland Pastures with Heterogeneous Vegetation Vanessa Prioleson, Andres Cibils, Wendy Taylor, Richard Dunlap, Shad Cox, Miguel Brizuela, Silvia Cid; 1 New Mexico State University, Las Cruces, NM, United States, 2 NMSU-CRLRC, Corona, NM, United States, 3 Universidad Nacional de Mar del Plata, Balcarce, Bs. As., Argentina, 4 CONICET, Bs. As., Argentina, 5 CIC, Bs. As., Argentina

C-13 Effects of Bitterweed Ingestion on Reproduction in Rambouillet Rams Derrick Fuchs, Cody Scott, Micheal Salisbury, Corey Owens; Angelo State University, San Angelo, Texas, United States
## Tuesday Afternoon

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<td>John Hendrickson; Northern Great Plains Research Laboratory USDA-ARS, Mandan, North Dakota, United States</td>
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<td>Response of Juniper Woodland-Fuel Loading to Mechanical and Prescribed Fire Treatment</td>
<td>Christopher Bernau, Stephen Bunting; University of Idaho, Moscow, ID, United States</td>
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<td>Post-Fire Soil Water Repellency, a Preliminary Report: Extent and Characteristics within the Pinyon-Juniper Woodlands of the Eastern Great Basin</td>
<td>Matthew Madsen, Bruce Roundy; Brigham Young University, Provo, UT, United States</td>
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<td>Pyric Herbivory in Central Montana Sagebrush Communities: Contrasting Domestic and Native Herbivores</td>
<td>Ilana Bloom-Cornelius, Samuel D. Fuhlendorf; Oklahoma State University, Stillwater, Oklahoma, United States</td>
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<td>C-18</td>
<td>The Williamson Cattle Company - Florida Environmental Stewardship Award Winner 2010</td>
<td>Chad George¹, Brandee Williams²</td>
<td>USDA - Natural Resources Conservation Service, Okeechobee, FL, United States, USDA - Natural Resources Conservation Service, Palmetto, FL, United States</td>
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<td>C-19</td>
<td>Effects of Fire and Herbivory on Sentinel Species across the Landscape of Northeastern Montana</td>
<td>Angela Reid¹, Samuel Fuhlendorf²</td>
<td>Tall Timbers Research Station, Tallahassee, FL, United States, Oklahoma State University, Stillwater, OK, United States</td>
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Range Cup Posters TBA

Excellence in Range Management Posters TBA
Wednesday Morning

A Focus on Lentic Riparian/Wetland Ecosystems

Symposium: BHCC – Scout

Chair: Mary Manning, USDA – Forest Service, Missoula, MT

8:00 am An Overview of Lentic Wetlands Mary Manning; US Forest Service, Missoula, MT/Northern Region, United States

8:30 am Classification of Lentic Riparian Areas: Challenges and Opportunities Linda Vance; University of Montana, Helena, Montana, United States

9:00 am Revelations in Lentic Soils: Deciphering System Processes and Resource Conditions from Mud, Muck, and Peat Mark A. Gonzalez; Bureau of Land Management, Prineville, OR, United States

9:30 am Break

10:00 am Peatlands: Ecology and Conservation Steve Shelly; USDA Forest Service, Missoula, Montana, United States

10:30 am Identification of Plant Functional Groups as Indicators of Ecological Condition in Wet Meadows (Lentic Sites) of the Sierra Nevada, California Dave Weixelman; US Forest Service, Nevada City, CA, United States

11:00 am Status and Management of Amphibians on Montana Rangelands Bryce Maxell; Montana Natural Heritage Program, Helena, MT, United States

11:30 am Wrap up Mary Manning

- 12:00 pm

Very-High Resolution Imaging for Resources Monitoring

Session I: Keynote Session

Symposium: BHCC – Trapper

Chair: Terry Booth, ARS, Cheyenne, WY

8:00 am Welcome Terry Booth

8:05 am Rangelands in Large-Scale: History and Future Paul Tueller; University of Nevada Reno, Reno, Nevada, United States

8:30 am Resource Monitoring Challenges and Technological Needs for the BLM Robert Bolton; Bureau of Land Management, Washington D.C., United States
Wednesday Morning

Session II: Image Acquisition

Chair: Jim Cagney, BLM, Lander, WY

8:55 am  Digital Charting Technologies and their Applications on Rangelands  
Patrick Clark¹, Douglas Johnson², Michael Johnson³, Mounir Louhaichi⁴; ¹USDA Agricultural Research Service, Boise, ID, United States, ²Oregon State University, Corvallis, OR, United States, ³University of California, Santa Barbara, United States, ⁴International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syrian Arab Republic

9:15 am  Comparing the SamplePoint and Point Intercept Monitoring Methods  
Jim Cagney¹, Terry Booth², Samuel Cox²; ¹Bureau of Land Management, Cheyenne, WY, United States, ²USDA-ARS High Plains Grasslands Research Station, Cheyenne, WY, United States

9:35 am  Comparison of the Effects of Fire on Sagebrush Steppe 3-Dimensional Structure and Biomass using Fusion of Terrestrial Scanning Laser and Airborne Digital Photography  
Robert A. Washington-Allen¹, Vincent Mendieta¹, D. Terrance Booth³, W. Eric Limbach³, Sorin Popescu¹; ¹Dept. Ecosystem Science & Management, Texas A&M University, College Station, TX, United States, ²USDA-ARS High Plains Grasslands Research Station, Cheyenne, WY, United States, ³USDI-Bureau of Land Management, Pocatello Field Office, Pocatello, ID, United States

9:55 am  Break

10:15 am  Seeing into Shadows in Resource Monitoring Images  
Samuel E. Cox², D. Terrance Booth³; ²USDA Agricultural Research Service, McMinnville, TN, United States, ³USDA Agricultural Research Service, Cheyenne, WY, United States

10:35 am  Monitoring Rangelands with Very-Large Scale Aerial Surveys: Advantages and Limitations  
D. Terrance Booth³, Samuel E. Cox²; ²USDA-ARS, Cheyenne, Wyoming, United States, ³USDA-ARS, McMinnville, Tennessee, United States

10:55 am  The DF1 Tip Jet Personal Helicopter: An Innovative Platform for Obtaining Very-High Resolution Aerial Images  
Ricardo Cavalcanti; Avimech International Aircraft, Inc., Tucson, AZ, United States
Wednesday Morning

11:15 am  Collection of Very-High-Resolution Images from a Remotely Piloted Rotary Wing Vehicle: Applications in Utah Rangeland Monitoring  
D. Bracken Davis¹, Scott Heath¹, Jan Knerr¹, Mark C. Quilter¹; ¹Utah Department of Agriculture and Food, Salt Lake City, UT, United States, ²Lepton Industrial Robotic Helicopters, Inc, Ogden, UT, United States

11:35 am  Low-Cost Camera Modifications and Methodologies for Very-High-Resolution Digital Images  
E. Raymond Hunt¹, James Carr¹, W. Dean Hively³; ¹USDA-ARS, Beltsville, MD, United States, ²FalconScan LLC, Greenbelt, MD, United States, ³USGS, Reston, VA, United States

Fire Ecology and Management

Technical Session: HIG – Missouri

Chair: Kurt Reinhart, USDA-ARS, Miles City

8:20 am  Effects of Fuel Load, Heterogeneity, and Environmental Conditions on Fire Behavior in Grasslands - Results from a Physics Based Process Model  
Eva Strand, Chad Hoffman, Stephen Bunting; University of Idaho, Moscow, Idaho, United States

8:40 am  Attitudes and Perceptions on Fire Policy and Burn Bans in Texas; A Working Model for Meeting Today's Complex Fire Management Challenges  
Mark Moseley¹, Brian Hays², Amy Hays²; ¹Natural Resources Conservation Service, Texas, United States, ²Texas AgriLife Extension Service, Texas, United States

9:00 am  Fire Rehabilitation Decision Making  
Bruce Roundy¹, April Hulet¹, Nathan Cline¹, Lean Crook¹, Kert Young¹, Matthew Madsen²; ¹Brigham Young University, Provo, Utah, United States, ²USDA/ARS, Burns, Oregon, United States

9:20 am  Predicting Direct Fire-Induced Mortality of Four Prominent Rangeland Graminoids  
Kimberly Haile¹, Lance Vereire², Clayton Marlow¹; ¹Montana State University, Bozeman, Montana, United States, ²USDA-ARS, Miles City, United States

9:40 am  Withdrawn

10:00 am  Break
Moving Beyond the Myths and Traditions of Fire Behavior in Rangelands

Dirac Twidwell¹, William Rogers¹, Samuel Fuhlendorf², Charles Taylor, Jr.³, David Engle⁴; ¹Texas A&M University, College Station, TX, United States, ²Oklahoma State University, Stillwater, OK, United States, ³Texas AgriLife Research Center, Sonora, TX, United States

Wildlife Habitat and Management

Technical Session: HIG – Stillwater
Chair: Benjamin Geaumont, North Dakota State University, Hettinger Research Extension Center

Evaluation of Sand Sagebrush Control in a Southern Mixed Prairie: Implications for Lesser Prairie Chicken Habitat Management
Eric Thacker¹, Robert Gillen², Stacey Gunter³, Tim Springer⁴; ¹USDA-ARS Southern Plains Range Research Station, Woodward, Oklahoma, United States, ²Western Kansas Agricultural Center, Kansas State University, Hays, Kansas, United States

Evaluation of Habitat Use by Sharp-Tailed Grouse on the Grand River National Grasslands in Northwest South Dakota
Dean Houchen¹², Benjamin Geaumont², Christopher Schauer³, Kevin Sedivec¹; ¹North Dakota State University, Fargo, ND, United States, ²Hettinger Research Extension Center, Hettinger, ND, United States

Survival and Habitat Selection of Ring-Necked Pheasant Broods in Southwest North Dakota
Kristine Larson¹², Benjamin Geaumont², Christopher Schauer², Kevin Sedivec¹; ¹School of Natural Resource Sciences - Range Program, North Dakota State University, Fargo, ND 58103, United States, ²Hettinger Research Extension Center, North Dakota State University, Hettinger, ND 58639, United States

Development of a Habitat Appraisal Guide for Rio Grande Wild Turkeys in South Texas
Chase Currie, Alfonso Ortega, William Kuvlesky Jr., Leonard Brennan, Stephen DeMaso; CKWRI, Kingsville, Texas, United States

Habitat Selection by Free Ranging Feral Horses in the Alberta Foothills
Tisa Girard¹, Edward Bork¹, Mike Alexander², Craig Demaere²; ¹University of Alberta, Edmonton, Alberta, Canada, ²Alberta Sustainable Resources Management, Pincher Creek, Alberta, Canada
9:40 am  Distribution of a Rare Sand Dune Legume Limited by Deer Herbivory at Multiple Scales  Darcey Henderson,1 Sarah Lowe2, Christiane Catellier2, Eric Lamb2, Xulin Guo2; 1Canadian Wildlife Service, Saskatoon, Saskatchewan, Canada, 2University of Saskatchewan, Saskatoon, Saskatchewan, Canada

10:00 am  Variation in Plasma Metabolic Indicators of Mule Deer Does on a Low Quality Winter Diet on the North Kaibab Plateau of Arizona  Matthew Acton, William Miller, Ann Steffler; Arizona State University - Polytechnic, Mesa, Arizona, United States

10:20 am  Vegetative Variation between Nesting and Winter Habitat of the Greater Sage-Grouse  Cheryl Mandich; University of Wyoming, Laramie, WY, United States

10:40 am  Developing and Implementing a Strategy for the Conservation of Shrub Steppe/Rangelands in South Central Washington  Julie Conley; South Central Washington Shrub Steppe/Rangeland Partnership, Yakima, WA, United States

11:00 am  Ten Year Assessment of a Tebuthiuron Treatment of Shinnery Oak to Enhance Grassland in Eastern New Mexico: What Did We Learn?  Charles E. Dixon; Wildlife Plus Consulting, Alto, NM, United States

11:20 am  Quantifying Wildlife Habitat for State and Transition Models Developed in the Sagebrush-Steppe of Northwest Colorado  Willow Hibbs, Roy Roath, Maria Fernandez-Gimenez; Colorado State University, Fort Collins, Colorado, United States

11:40 am - 12:00 pm  Spatial Movement of Free-Roaming Cattle (Bos taurus) When in Proximity to Wolves (Canis lupus)  John Williams,1 Patrick E. Clark2, D. Joseph Chigbrow3, Kelly K. Crane4, Larry Larson5, Douglas E. Johnson6; 1Oregon State University, Enterprise, OR, United States, 2USDA/ARS Northwest Watershed Research Center, Boise, ID, United States, 3University of Idaho, Moscow, ID, United States, 4University of Idaho, Twin Falls Research & Extension Center, Twin Falls, ID, United States, 5OSU Ag. Program, Eastern Oregon University, LaGrande, OR, United States, 6Oregon State University, Corvallis, OR, United States
Wednesday Morning

Ecological Sites and Thresholds
Technical Session: BHCC – Homesteader

Chair: Jeff Printz, USDA-NRCS, Bismarck, ND

8:00 am
An Assessment of Plant Community Structure, Herbivory, Soils, and State-and-Transition Theory on a Winterfat (Krascheninnikovia lanata [Pursh]) Ecological Site Casey Matney, Tamzen Stringham; Colorado State University, Fort Collins, CO, United States, University of Nevada, Reno, Reno, NV, United States

8:20 am

8:40 am
Using Plant Functional Groups to Create Data-Driven State-and-Transition Models Emily Kachergis, Maria Fernandez-Gimenez, Monique Rocca; Colorado State University, Fort Collins, CO, United States

9:00 am
Improving the Credibility of State-and-Transition Models Jamin Johanson, Christopher Call; Department of Wildland Resources, Utah State University, Logan, UT, United States, USDA-NRCS, UT, United States

9:20 am
Improvement in Ecological Status with Grazing Management and Range Chiseling Matthew J. Ricketts, Jim Jacobs, Keith Schott, Sonny Smith; USDA-NRCS, Bozeman, MT, United States, Rancher, Broadview, MT, United States, Rancher, Cameron, MT, United States

9:40 am
Changes in Relic Plant Communities in Utah over 60 Years Shane Green; USDA NRCS, Salt Lake City, UT, United States, Great Basin Consulting, Utah, United States

- 10:00 am
Wednesday Morning

Inventory, Monitoring and Assessment

Technical Session: HIG – Bitterroot

Chair: Mark Peterson, USDA-ARS, Miles City

8:00 am  Modifying the USDA-NRCS Pasture Condition Score System to Include Weighted Indicators  
Matt Sanderson; USDA-ARS, University Park, PA, United States

8:20 am  The Ecological Reserve El Uno - Strategies for Integral Range Management in Short Grass Prairie in the Northwest Chihuahua, Mexico  
Pedro Angel Calderón-Domínguez, Carlos Ortega-Ochoa; Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico

8:40 am  Change on the Range: Ten Years of Rangeland Monitoring on the Tonto National Forest  
Jim Sprinkle, George Ruyle, Michael Crimmins; University of Arizona, Tucson, Arizona, United States

9:00 am  Monitoring Plant Species Richness When it Won’t Sit Still: Handling Temporal Variability in Vegetation Monitoring  
Amy Symstad\textsuperscript{1}, Robert Gitzen\textsuperscript{1}, Jayne Jonas\textsuperscript{1}; \textsuperscript{1}U.S. Geological Survey, Hot Springs, SD, United States, \textsuperscript{2}University of Missouri, Columbia, MO, United States, \textsuperscript{3}IAP World Services, Brighton, CO, United States

9:20 am  Field Test of Digital Photography Biomass Estimation Technique in Tallgrass Prairie  
Sherry Leis\textsuperscript{1,2}, Lloyd Morrison\textsuperscript{3}; \textsuperscript{1}Missouri State University, Springfield, MO, United States, \textsuperscript{2}Heartland I&M Network, Republic, MO, United States

9:40 am  Pinus ponderosa: An Examination into its Past, Present, and Future Suitable Habitat in Arizona  
Matthew P. Peters, Ward W. Brady; Arizona State University, Mesa, AZ, United States

10:00 am  Break

10:20 am  Applications of Molecular Tools for Rangeland Ecology and Management  
Melanie Murphy\textsuperscript{1}, Chris Funk\textsuperscript{2}; \textsuperscript{1}University of Wyoming, Laramie, Wyoming, United States, \textsuperscript{2}Colorado State University, Fort Collins, Colorado, United States
Wednesday Morning

10:40 am  Uses and Benefits of Consistent Indicators and Scalable, Integrated Sample Design for BLM Local-to-National Data Needs  Gordon Toevs, Jason Karl, Jason Taylor, Matthew Bobo, Jeffrey Herrick, Carrol Spurrier; USDA Agricultural Research Service, Jornada Experimental Range, Las Cruces, NM, United States, 2 Bureau of Land Management, Division of Rangeland Resources, Washington, DC, United States, 3 Bureau of Land Management - NOC, Branch of Assessment and Monitoring, Denver, CO, United States, 4 Bureau of Land Management, National Riparian Lead, Washington, DC, United States

11:00 am  Rangelands of the Wakhan Corridor: Description, Issues, and Concerns  Don Bedunah; University of Montana, Missoula, Montana, United States

11:20 am  The US Rangeland Base: A Comprehensive Geographic Analysis of the Extent of Coterminous US Rangelands  Matt Reeves; USDA, Forest Service, Rocky Mountain Research Station, Missoula, MT, United States

11:40 am - 12:00 pm  Highlights of the 2010 RPA Rangeland Assessment  Matt Reeves, John E. Mitchell (Emeritus); USDA, Forest Service, Rocky Mountain Research Station, Missoula, MT, United States, 2 USDA, Forest Service, Rocky Mountain Research Station, Ft. Collins, CO, United States

Rangelands Carbon Sequestration/Plant Physiology

Technical Session: BHCC – Prospector

Chair: Christina Hargiss, North Dakota State University, Fargo

8:20 am  Effects of Climate/Vegetation and Level of Herbivory on Soil Carbon and Nitrogen in Semi-Arid Rangelands  Doug Tolleson, John Kava; The University of Arizona, V Bar V Ranch, Cottonwood, Arizona, United States
Wednesday Morning

8:40 am  Carbon Offsets for Utah Cattle Ranchers? Sequestration Potential of Deeded Lands and Implications for Policy and Management  
D. Layne Coppock¹, Zhao Ma¹, Thomas Monaco², Donald Snyder³, Helga Van Miegroet³, Grant Cardon¹; ¹Dept. Environment & Society, Utah State University, Logan, Utah, United States, ²USDA-ARS Forage and Range Research Laboratory, Logan, Utah, United States, ³Dept. Applied Economics, Utah State University, Logan, Utah, United States, ⁴Dept. Wildland Resources, Utah State University, Logan, Utah, United States, ⁵Dept. Plants, Soils & Climate, Utah State University, Logan, Utah, United States

9:00 am  Effects of High-Density, Short-Duration Planned Livestock Grazing on Soil Carbon Sequestration Potentials in a Coastal California Mixed Grassland  
Kristina Wolf¹,², Brent Hallock¹, Robert Rutherford¹, Marc Horney¹, Anthony O’Geen²,², Royce Larsen²; ¹California Polytechnic State University, San Luis Obispo, United States, ²University of California, Davis, United States, ³University of California Cooperative Extension, Templeton, United States

9:20 am  Ability to Extract Soil N at High Temperatures Allows Cheatgrass to Exclude Perennial Grasses  
A. Joshua Leffler¹, Thomas Monaco¹, Jeremy James²; ¹Forage and Range Research Laboratory, USDA-ARS, Logan, UT, United States, ²Eastern Oregon Agriculture Research Center, USDA-ARS, Burns, OR, United States

9:40 am  Growth Dynamics of Hesperostipa comata and Pascopyrum smithii in Alberta Dry Mixedgrass Prairie  
Tanner Broadbent¹, Edward Bork¹, Walter Willms²; ¹University of Alberta, Edmonton, Canada, ²Agriculture and Agri-food Canada, Lethbridge, Canada

10:00 am  Break

10:20 am  Water Requirements of Common Plant Species in the Owens Valley, CA  
Tracie Evans⁵, Ricardo Mata-Gonzalez⁵, David Martin⁵, Terry McLendon⁵; ¹Oregon State University, Corvallis, OR, United States, ²Los Angeles Department of Water and Power, Bishop, CA, United States, ³Ecological Consultant, Fort Collins, CO, United States

10:40 am - 11:00 am  Ecophysiological Role of Leadplant (Amorpha canescens) in the Semi-Arid Grasslands of the Nebraska Sandhills  
Jessica Milby, Adam Yarina, Walter Schacht, Tala Awada; University of Nebraska-Lincoln, Lincoln, NE, United States
Wednesday Morning

Undergraduate Papers

Technical Session: HIG – Big Horn
Chair:

8:20  Competitive Effects of Canada Goldenrod on Grass Production in the Northern Tallgrass Priaire  
Benjamin Lardy, Alexander Smart  
South Dakota State University, Brookings, SD, United States

8:40  Improving Grass Establishment on Disturbed Sites Using Mycorrhizae  
Ben Beckman¹, Jonathan Soper¹, Walter Schacht¹, Ali Koc², Carol Weinhold²; ¹University of Nebraska-Lincoln, Lincoln, NE, United States, ²Nebraska Department of Roads, Lincoln, NE, United States

9:00  Modeling Seedling Root Growth in Relation to Temperature for Fire Rehabilitation Species  
Darrell Roundy, Kert Young, Bruce Roundy  
Brigham Young University, Provo, Utah, United States

9:20  Calibrating Grid Sample Size and Comparison of Sagebrush Rangeland Cover from Aerial and Ground Images in SamplePoint  
Jordan Wambeke¹, Jeffrey Beck¹, D. Terrance Booth²; ¹University of Wyoming, Laramie, WY, United States, ²USDA Agricultural Research Service, High Plains Grassland Research Station, Cheyenne, WY, United States

9:40  Birdsfoot Trefoil a Non-Bloating Legume and Average Daily Gain in Cattle  
Lance Pitcher  
Utah State University, Logan, Utah, United States

10:00  Composition and Quality of Diets of Sheep Grazing Sulfur Cinquefoil Infested Rangeland in Western Montana  
Charles Glenn, Rachel Frost, Jeffrey Mosley, Brent Roeder, Rodney Kott, Duane Griffith; Montana State University, Bozeman, MT, United States

10:20 - 10:40 am  Achieving Optimal Rooting Depth of Buffalo Grass Sod in the Northern Panhandle of Nebraska  
Michelle Miller, Charles Butterfield  
Chadron State College, Chadron, NB, United States
D-1 Factors Limiting Use of Drought Mitigation Tactics among Utah Cattle Ranchers D. Layne Coppock; Dept. Environment & Society, Utah State University, Logan, Utah, United States

D-2 Grazingland and Economic Sustainability: The Balancing Act Jeff Goodwin; USDA-NRCS, Cleburne, Texas, United States

D-3 Dryness and Desperate Measures: A Political Ecology of Ranching in the Rocky Mountain West Kristin Gangwer, William R. Travis; University of Colorado - Boulder, Boulder, CO, United States

D-4 Perceptions of Targeted Grazing in the Desert Southwest Corrine Knapp1,2, Maria Fernandez-Gimenez2, Retta Bruegger3, Larry Howery4, Allen Torell5, Derek Bailey6; 1University of Alaska, Fairbanks, CO, United States, 2Colorado State University, Fort Collins, CO, United States, 3New Mexico State University, Las Cruces, NM, United States, 4University of Arizona, Tucson, AZ, United States

D-5 The Power of Personal Stories to Educate Holly George, jesikah maria ross; University of California, Davis, CA, United States

D-6 Extension Outreach in Tropical Range and Livestock Management for Pacific Islanders Mark Thorne1, Jonathan Deenik3, Robert Godfrey2, Glen Fukumoto4, John Powley5, Matthew Stevenson6, Lawrence Duponcheel7, Alejandro Badilles8; 1University of Hawaii at Manoa, Honolulu, Hawaii, United States, 2University of the Virgin Islands, Kingshill, Virgin Islands, United States, 3Northern Marianas College, Saipan, MP, Northern Mariana Islands

D-7 Range Camp on the Western Fringe - California-Pacific Section Julie Finzel1,2, Marc Horney1, Cece Dahlstrom1,2; 1California Polytechnic State University, San Luis Obispo, CA, United States, 2US Navy NAVFAC SW, San Diego, CA, United States, 3University of Idaho, Moscow, ID, United States
D-8 GIS Tools, Courses, and Learning Pathways Offered by The National Interagency Fuels, Fire, and Vegetation Technology Transfer (NIFTT) Eva Strand1, Kathy Schon2, Jeff Jones3; 1University of Idaho, Moscow, Idaho, United States, 2USDA Forest Service, McCall, Idaho, United States, 3USDA Forest Service, Whitefish, Montana, United States

D-9 Fostering Healthy Lands for Small Acreage Success in South Dakota Dusty Jager, Penny Nester, Mindy Huberty, Roger Gates, Rebecca Bott; South Dakota State University, Brookings, South Dakota, United States

D-10 Using Social Media (BLOGS, Facebook, & Twitter) for Extending Range Livestock Information John Harper; University of California, Davis, Davis, California, United States

D-11 Effects of Liquid Smoke on Seed Germination of Shortgrass Prairie Plant Species Yifang Chou, Robert Cox; Texas Tech University, Lubbock, TX, United States

D-12 Mechanisms Responsible for Enhancing the Restoration of Festuca campestris into a Phleum pratense Dominated Plant Community on a Pipeline RoW Steven Tannas1, Doug Clark2; 1Eastern Slopes Rangeland Seeds Ltd., Cremona, Alberta, Canada, 2TransCanada Pipelines, Warburg, Alberta, Canada

D-13 Native Grasses Evaluation for Reseedings in Northeast Mexico Eduardo A. Gonzalez-V.1, J. Miguel Avila-C.1, J. Alfonso Ortega-S.1, 2; 1Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias (INIFAP), Tamaulipas, Mexico, 2Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Texas, United States

D-14 Effect of a Wildfire on Old Aerated and Prescribed Burned Sites: Vegetation Diversity and Exotic Grasses Felix Ayala-A., J. Alfonso Ortega-S., Timothy E. Fulbright1, G. Allen Rasmussen1, D. Lynn Drawe1, David R. Synatszke2, Andrea R. Litt1; 1Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, Texas, United States, 2Texas Parks and Wildlife Department, Artesia Wells, Texas, United States

D-15 Artemisia Population Dynamics Under Different Climate Change Scenarios Sarah Swope, Sabrina McCue; ARS, Reno, NV, United States

D-16 Weather and Climate Applications for Rangeland Restoration Planning Jaepil Cho1, Stuart Hardegree1, Jeanne Schneider2; 1USDA ARS Northwest Watershed Research Center, Boise, ID, United States, 2USDA ARS Great Plains Agroclimate and Natural Resources Research Unit, Boise, ID, United States
Wednesday Morning

D-17 Survival and Growth of 8 Shrubs Transplanted into Amended Fluvial Mine Tailings  Joe Brummer, Paul Meiman, Natasha Davis; Colorado State University, Fort Collins, CO, United States

D-18 Using Cattle Supplementation to Enhance Range Wetland Condition  Tara Luna¹, Robert Welling²; ¹Montana Natural Heritage, Helena Montana, United States, ²Ridley Supplements, Inc, Conrad Montana, United States

D-19 Analyzing the Effect of Slope Aspect and Phenology on Biomass Production in Western South Dakota Grasslands Using MODIS NDVI  Matthew Rigge¹, Alexander Smart², Bruce Wylie³; ¹South Dakota State University, Brookings, SD, United States, ²EROS Data Center, Sioux Falls, SD, United States

D-20 Effect of Management Practices on Spatial Utilization by Cattle (Bos spp.) on Rangeland in South Florida  Brandee Williams¹, MI Williams¹; ¹USDA - Natural Resources Conservation Service, Palmetto, FL, United States, ²USDA - Natural Resources Conservation Service, Gainesville, FL, United States

D-21 Classification and Expansion Detection of Western Juniper Using Historical Aerial Imagery  Nathan Cline¹, Timothy Deboobt², Micheal Fisher³, Steven Petersen¹; ¹Brigham Young University, Provo, UT, United States, ²Oregon State University, Crook Extension Service, Prineville, OR, United States, ³Central Oregon Community College, Bend, OR, United States

D-22 Estimating Desert Rangelands Forage Production with High Spatial Resolution Satellite Imagery and Vegetation Indices  Ahmed Mohamed, Jerry Holechek, Derek Bailey; New Mexico State University, Las Cruces, NM, United States


D-24 Development of Most Similar Neighbor (MSN) Polygons for use with the Burning Risk Advisory Support System (BRASS) on Fort Hood, Texas  Edward Rhodes¹, William Shaw¹, R. Loren Naylor¹, Timothy Brown¹, Wayne Hamilton¹, J. Richard Conner², Jason Jones³, Jay Angerer¹; ¹Texas AgriLife Research, Temple, TX, United States, ²Department of Ecosystem Science & Management, College Station, TX, United States, ³Jones-Heroy & Associates, Inc., Lampasas, TX, United States
D-25 Understory Responses to a Mixed-Severity Wildfire in Ponderosa Pine Forests of the Black Hills, USA Mandi Robertson, Paul Meiman, Frederick Smith, Tara Keyser; Colorado State University, Fort Collins, CO, United States

D-26 Soil Salinity and CRP in South Dakota Stan Boltz, Jeff Hemenway; USDA NRCS, Huron, SD, United States

D-27 Predicting the Spread of Invasive Plant Species Under a Rangeland Climate Change Scenario Robbie Lee, Gary Bradfield, Maja Krzic, Reg Newman, Brian Wallace; University of British Columbia, Vancouver, BC, Canada, B.C. Ministry of Forests and Range, Kamloops, BC, Canada

D-28 Transcending Communication Borders in Range Management Cristina Francois, Abe Clark, Del Despain, Don McClure, Rob Grumbles; University of Arizona, Mohave County Cooperative Extension, Kingman, AZ, United States, Bureau of Land Management, Kingman, AZ, United States

D-29 Investigating the Soil Microbial Community Structure Under Reclaimed Roads in North Dakota Eric Viall, Laura Overstreet, David Hopkins; North Dakota State University, Fargo, ND, United States

D-30 The Socioeconomic Impact of Climate Change on Ranching in BC Mercedes Cox; Thompson Rivers University, Kamloops, BC, Canada

D-31 Hope On The Range: A Great Basin Educational Project Gary McCuin, Steve Foster, Kent McAdoo; Nevada Cooperative Extension, Nevada, United States, Nevada Cattlemen’s Association, Elko, Nevada, United States, Sustainable Grazing Coalition, Elko, Nevada, United States, NV Section Society for Range Management, Eureka, Nevada, United States

D-32 Estimating Seed Production and Plant Age of Mountain Big Sagebrush (Artemisia tridentata ssp. vaseyana) Melissa L. Landeen, Steven L. Petersen, Stanley G. Kitchen, Peter J. Weisberg, Brian A. Reeves, Kevin A. Costa; Brigham Young University - Department of Plant and Wildlife Sciences, Provo, UT, United States, Rocky Mountain Research Station - Shrub Sciences Lab, Provo, UT, United States, University of Nevada Reno - Department of Natural Resources and Environmental Science, Reno, NV, United States
Wednesday Morning

D-33 Using the $^{15}$N Natural Abundance Method to Determine N$_2$-fixation in Russet Buffaloberry in Colorado
Zoe Miller, Mark Paschke
Colorado State University, Fort Collins, CO, United States

D-34 Forage Kochia (Kochia prostrata): Rangeland Rehabilitator or Exotic Invader?
Erin C. Gray, Patricia S. Muir
Oregon State University, Corvallis, OR, United States

D-35 Ecology of Biotic Soil Crust Lichens of Oregon’s Sagebrush Steppe
Heather Root
Oregon State University, Corvallis, OR, United States

D-36 The Importance of Education in Managing Invasive Plant Species
Steve Young¹, Roger Sheley², Brenda Smith², Larry Howery³, Sandra McDonald⁴, Randy Westbrooks⁵, Becky Westbrooks⁵, Erik Lehnhoff⁶
¹University of Nebraska-Lincoln, Nebraska, United States, ²USDA-ARS, Oregon, United States, ³University of Arizona, Arizona, United States, ⁴Private Consultant, Colorado, United States, ⁵Southeastern Community College, North Carolina, United States, ⁶Montana State University, Montana, United States

D-37 A Comparison of Vegetative Responses to Prescribed Fire in Grazed and Ungrazed Tobosagrass Flats in the Northern Chihuahuan Desert, Texas
Laura A. Schnapp, Bonnie J. Warnock
Sul Ross State University, Alpine, TX, United States
Thursday Morning

A Focus on Lentic Riparian/Wetland Ecosystems II

Symposium: HIG – Stillwater

Chair: Mike Philbin, BLM, Billings, MT

8:00 am Landscape Associations, Water Chemistry, Human Use, and Characteristics of Great Basin Spring-Fed Aquatic and Riparian Communities Donald Sada; Desert Research Institute, Reno, NV, United States

8:30 am Monitoring Groundwater-Dependent Ecosystems on National Forest Service Lands Kathleen Dwire, Joseph Gurrieri, Christopher Carlson, Marc Coles-Ritchie, Stephen Solem, Allison Aldous, Devendra Amatya, Trish Carroll, Barry Johnston, Linda Spencer; 1 USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO, United States, 2 USDA Forest Service, Geology and Groundwater Programs, Golden, CO, United States, 3 USDA Forest Service, National Groundwater Program, Arlington, VA, United States, 4 METI Inc, Salt Lake City, UT, United States, 5 METI Inc, Missoula, MT, United States, 6 The Nature Conservancy, Portland, OR, United States, 7 USDA Forest Service, Southern Research Station, Cordesville, SC, United States, 8 USDA Forest Service, Pacific Northwest Regional Office, Portland, OR, United States, 9 USDA Forest Service, Grand Mesa-Uncompahgre-Gunnison National Forest, Gunnison, CO, United States, 10 USDA Forest Service, Ecosystem Management Coordination, Billings, MT, United States

9:00 am Wetland Resources and Issues in the Prairie Pothole Region of the Northern Great Plains Shawn DeKeyser; North Dakota State University, Fargo, ND, United States

9:30 am Break

10:00 am Prairie Pothole Wetlands: Characteristics, Functions, and Values Brian Tangen; U.S. Geological Survey, Jamestown, ND, United States

10:30 am Biological Assessment and Monitoring of Wetlands in the Prairie Pothole Region Christina Hargiss; North Dakota State University, Fargo, ND, United States
Thursday Morning

11:00 am  Impact of Wetland Restoration on Forage Productivity of Prairie Pothole Wetlands  
Etienne Soulodre; Saskatchewan Watershed Authority, Regina, Saskatchewan, Canada

11:30 am  Discussion / Wrap up -- Mike Philbin

- 12:00 pm

Very-High Resolution Imaging for Resources Monitoring

Session III: More Image Acquisition, Statistics, and Image Manipulation

Symposium: HIG – Bitterroot

Chair: Ray Hunt, USDA-ARS, Beltsville, MD

8:15 am  Using Small Unmanned Aerial Systems to Collect High Resolution Imagery for Site Specific Land Management Applications  
Thomas Zajkowski;  RedCastle Resources, US Forest Service, Salt Lake City, UT, United States

8:35 am  Capabilities, Challenges, and Cost of Using Unmanned Aerial Vehicles for Natural Resources Monitoring  
Albert Rango, Andrea Laliberte; USDA-ARS Jornada Experimental Range, Las Cruces, NM, United States

8:55 am  Spatial Autocorrelation in Modeling with Very-High Resolution Imagery and Alternative Modeling Approaches  
Rick Lawrence; Montana State University, Bozeman, Montana, United States

9:15 am  Using VHR Imagery for Rangeland Monitoring and Assessment: Some Statistical Considerations  
Jason Karl, Jean Opsomer, Sarah Nusser, Andrea Laliberte, Michael Duniway, Robert Unnasch;  USDA Agricultural Research Service, Jornada Experimental Range, Las Cruces, NM, United States, 2Department of Statistics, Center for Survey Statistics & Methodology, Iowa State University, Ames, IA, United States, 3Department of Statistics, Colorado State University, Fort Collins, CO, United States, 4The Nature Conservancy, Idaho Chapter, Boise, ID, United States

9:35 am  Comparing Methods of Rangeland Measurements: Proper Design and Statistical Analysis  
Corey Moffet;  USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID, United States, 1Noble Foundation, Ardmore, OK, United States

9:55 am  Break
Thursday Morning

10:15 am  Optimized Plant Frequency as a Surrogate Measure for Species Abundance - Potential Applications to VHR Image  
Michael DeBacker, John Heywood;  
¹National Park Service, Heartland Inventory and Monitoring Network, Republic, MO, United States,  
²Missouri State University, Springfield, MO, United States

10:35 am  Automated Generation of Very-High Resolution Orthomosaics and 3D Models in support of Fine Scale National Resource Applications  
Matthew Bobo, Tom Noble; Bureau of Land Management, Denver, CO, United States

10:55 am  Very-High Resolution Image Registration and Mosaic Creation  
James Carr¹,²; ¹Falcon Scan, Greenbelt, MD, United States, ²Carr Astronautics Corp., Greenbelt, MD, United States

11:15 am  An Algorithm for Approximate Rectification of Digital Aerial Images  
Stephen K. Ndeziedze¹, Kipp E. Johnson¹, Michael D. Johnson², Mounir Louhaichi³, Patrick E. Clark⁴, Douglas E. Johnson⁵; ¹Department of Rangeland Ecology & Management, Oregon State University, Corvallis, OR, United States, ²Department of Physics, University of California/Santa Barbara, Santa Barbara, CA, United States, ³ICARDA, P.O. Box 5466, Aleppo, Syrian Arab Republic, ⁴USDA/ARS Northwest Watershed Research Center, Boise, ID, United States

11:35 am  Orthorectification, Mosaicking, and Analysis of Sub-Decimeter Resolution UAV Imagery for Rangeland Monitoring  
Andrea Laliberte, Craig Winters, Albert Rango; USDA ARS Jornada Experimental Range, Las Cruces, NM, United States

12:00 am  Demonstration and Discussion Sessions  
The Use of SamplePoint  
Sam Cox

- 1:30 pm  Mosaic Creation  
Jim Carr

Communicating Effectively With Livestock Producers

Symposium: BHCC – Homesteader

Chair: Jon Siddoway, USDA-NRCS, Bozeman, Montana

8:00 am  Introduction  
Jon Siddoway

8:15 am  Communicating Effectively with Livestock Producers  
Fee Busby; Utah State University, Logan, Utah, United States
Thursday Morning

8:45 am  Making Good Things Happen - Working on the Ground with the Landowner  *Steve Hedstrom*, 1 Rancher, Raynesford, Montana, United States, 2 USDA-NRCS, Stanford, Montana, United States

9:15 am  Selling Conservation to Get Producer Buy-In  *Justin Meissner*, USDA-NRCS, Townsend, Montana, United States

9:45 am  Break

10:15 am  Watershed Restoration Committee for the Upper Clark Fork River  *John Hollenback*, Rancher, Gold Creek, Montana, United States

10:45 am  Question and Answer Session with Presenters and Audience

11:30 am  Summation and Final Comments  *Joyce Swartzendruber*, State Conservationist, USDA - NRCS, Bozeman, Montana, United States

- 12:00 pm  

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**Sustainable Ranch Management through Business Planning and Rangeland Monitoring**

Only those registered for this workshop may attend

Workshop: BHCC - Explorer

Chair: John Tanaka, University of Wyoming

8:00 am  Registration, Coffee, and Welcome

8:10 am  Sustainable Rangelands Roundtable (SRR) Overview  *Kristie Maczko*, 1 John Tanaka*, 2 Stanley F. Hamilton*; 1 Sustainable Rangelands Roundtable - University of Wyoming, Laramie, WY, United States, 2 Department of Renewable Resources, University of Wyoming, Laramie, WY, United States

8:20 am  SRR Sustainable Ranch Management Assessment Project - Concepts, Goals, and Objectives  *Stanley F. Hamilton*, 1 Dick Loper*; 1 Idaho Department of Lands (retired), Boise, ID, United States, 2 Wyoming State Grazing Board and Public Lands Council, Lander, WY, United States

8:35 am  NRCS Conservation Planning and Use of Monitoring and Business Planning Information  *Gene Fults*, 1 Chuck Stanley*; 1 Natural Resources Conservation Service, Portland, Oregon, United States, 2 Natural Resources Conservation Service, Ft. Worth, Texas
Thursday Morning

9:00 am  USDA NRCS Conservation Program Financial and Technical Assistance to Support Producers in Conservation, Assessment, and Business Planning  
Mark Parson, Dennis Thompson; USDA Natural Resources Conservation Service, Washington, DC, United States

9:30 am  Use of Monitoring and Business Planning in the Context of Joint Cooperative Monitoring and Federal Grazing Allotments  
Chuck Quimby, Doug Powell; 1 Bureau of Land Management, Washington DC, United States, 2 USDA Forest Service, Denver, CO, United States

10:00 am  Break

10:20 am  SRR Ecological Assessment Indicators: Selection and Monitoring Techniques  
Michael Smith, John Mitchell; 1 University of Wyoming, Laramie, WY, United States, 2 USDA Forest Service, Ft. Collins, CO, United States

11:40 am  SRR Rangeland Ecosystem Services Assessment Framework  
John Tanaka; University of Wyoming, Laramie, WY 82071, United States

Developing Native Plant Materials and Applying Management Practices to Repair Disturbed Landscapes

Symposium: BHCC – Trapper

Chair: Jack Staub, USDA – ARS, Logan, UT

8:00 am  A Historical Perspective of Native Plants for the Restoration of Disturbed Landscapes  
John M. Englert, Jack R. Carlson, W. Curtis Sharp, Douglas Helms; 1 USDA-NRCS, Washington, D.C., United States, 2 USDA-NRCS (Retired), Fort Collins, CO, United States, 3 USDA-NRCS (Retired), Harpers Ferry, WV, United States

8:20 am  The Ecology of Disturbed Ecosystems  
Tom Monaco; USDA-ARS, Logan, Utah, United States

8:40 am  Functional Traits and Their Use in Plant Improvement  
Jeremy James, Tom Jones; 1 USDA-ARS, Burns, OR, United States, 2 USDA-ARS, Logan, UT, United States

9:00 am  Breeding Strategies for the Development of Native Grasses  
Kevin Jensen, Joseph Robins, Blair Waldron, Steve Larson; FRRL, USDA-ARS, Logan, UT, United States
Thursday Morning

9:20 am  Potential Use of Molecular Markers for Development of Native Plants  Steven Larson; USDA-ARS, Logan, UT, United States

9:40 am  Break

10:00 am  Artificial Selection as a Tool to Develop Native Plant Materials for Novel Ecosystems  Thomas Jones; USDA-ARS, Logan, UT, United States

10:20 am  Plant Selection Strategies for Improved Plant Establishment in Saline Environments  John Lloyd-Reilley; USDA-NRCS, Kingsville, TX, United States

10:40 am  Breeding Strategies for the Development of Bluebunch Wheatgrass for the Great Basin  Blair Waldron, Steve Larson; USDA-ARS, Logan, Utah, United States

11:00 am  Plant Materials Development for Disturbed Southwestern Landscapes  Gregory Fenchel, Joe Aragon, David Dreesen, Danny Goodson, Keith White; USDA-NRCS Los Lunas Plant Materials Center, Los Lunas, New Mexico, United States

11:20 am  Improvement of Seed Production in Utah Sweetvetch  Michael Peel, Ivan Mott; USDA, ARS Forage and Range Research Lab., Logan, Utah, United States

11:40 am  Plant Materials Development in the Southern Rocky Mountains  Steve Parr; Plant Materials Program - NRCS, Meeker, Colorado, United States

12:00 pm  Group Discussion

- 12:20 pm

The Role of Fire in Sustainable Rangeland Ecosystems

Special Session: BHCC – Ranch, North 40, South 40

Chair: Ryan Limb, Eastern Oregon Univ., LaGrande

8:00 am  Historical Global Fire Context: Linking Landscapes and Ecosystems  Ryan Limb; Oklahoma State University, Stillwater, OK, United States

8:20 am  "Burn early, burn often" - Contrasting Aboriginal Versus Modern North American Fire Management Regimes  Cliff White; Parks Canada, Banff, Alberta, Canada

8:40 am  Aboriginal Burning and Keystone Predation: A New Paradigm for Range Management  Charles Kay; Utah State University, Logan, UT, United States
Thursday Morning

9:00 am  The Importance of a Long-Term View of Rangeland/Fire Interactions  Tony Svejcar; USDA-ARS, Burns, OR, United States

9:20 am  LANDFIRE Tools and Data Useful for Range Management: Explore the Past, Plan for the Future  Randy Swaty, Jim Smith, Sarah Hagan, Jeannie Patton, Kori Blankenship; The Nature Conservancy, Marquette, MI, United States

9:40 am  Fire in the Sagebrush Biome: An Inherent Process versus Management Tool  Richard Miller; Oregon State University, Corvallis, OR, United States

10:00 am  Break

10:20 am  Cheatgrass Invasion Increases Wildfire Frequency and Size by Altering Fuel Characteristics  Kirk Davies; USDA - Agricultural Research Service - Burns, Burns, OR, United States

10:40 am  An Invasive Grass Alters Tallgrass Prairie Fuelbed Characteristics and Reduces Burn Probability  Devon McGranahan¹, David Engle²; ¹Iowa State University, Ames, IA, United States, ²Oklahoma State University, Stillwater, OK, United States

11:00 am  Wildfire as a Process in Riparian Recovery and Stability  Clayton B. Marlow; Montana State University, Bozeman, MT, United States

11:20 am  Woody Plant Encroachment Following Fire Suppression in the Kansas Flint Hills  Thomas Bragg; University of Nebraska at Omaha, Omaha, Nebraska, United States

11:40 am  Relationships of Fire to North American Grouse  - 12:00 pm  Dwayne Elmore¹, Samuel Fuhlendorf¹, Eric Thacker²; ¹Oklahoma State University, Stillwater, Oklahoma, United States, ²Agricultural Research Service, Woodward, Oklahoma, United States
Thursday Morning

**Wolves on the Landscape**

**Symposium: HIG – Missouri**

**Chair:** Kevin France, Sustainable Resource Development, Alberta Govt., Lethbridge, Alberta

8:00 am  *Predicting Wolf (Canis lupus)-Cattle (Bos taurus) Encounters and Consequential Effects on Cattle Resource Selection Patterns*  
Patrick Clark¹, D. Joseph Chigbrow², Kelly Crane², John Williams³, Larry Larson⁴, Douglas Johnson⁵; ¹USDA Agricultural Research Service, Boise, ID, United States, ²University of Idaho, Moscow, ID, United States, ³Oregon State University, Enterprise, OR, United States, ⁴Oregon State University, La Grande, OR, United States, ⁵Oregon State University, Corvallis, OR, United States

8:30 am  *Wolf Diets and Depredation Patterns in Southwestern Alberta*  
Andrea Morehouse; University of Alberta, Edmonton, Alberta, Canada

9:00 am  *Wolf Reintroduction: A Montana Perspective*  
Jaala Wickman; Montana Sportsmen for Fish and Wildlife, Missoula, Montana, United States

9:30 am  *Alberta’s Wolf Report: Quantifying the Impacts*  
Callum Sears; Flying E Ranch, Stavely, Alberta, Canada

10:00 am  *Break*

10:30 am  *Ranch-Level Economic Impacts of Predation in a Range Livestock System*  
Benjamin S. Rashford, Thomas Foulke, David T. Taylor; Department of Agriculture & Applied Economics, University of Wyoming, Laramie, Wyoming, United States

11:00 am  *Wolf Damage Management in Minnesota*  
John Hart; USDA-APHIS-Wildlife Services, Grand Rapids, Minnesota, United States

11:30 am  *Crossings, Corridors and Trophic Cascades: Wolves and Woody Vegetation in Banff National Park*  
Clifford A. White; Scientist Emeritus, Parks Canada, Banff, Alberta, Canada

- 12:00 pm
Thursday Morning

Working with Private Landowners to Recover Sage-Grouse Habitat and Improve Ranching Sustainability

Symposium: BHCC – Scout

Chair: Pete Husby, State Biologist, USDA-NRCS, Bozeman, MT

8:00 am  Introduction- NRCS Chief (invited)

8:15 am  The Right Conservation in the Right Places: Using Sage-Grouse Core Areas to Target SGI Resources  
Dave Naugle¹, Kevin Doerty², Jason Tack², Jeff Evans⁴;  
¹University of Montana, Missoula, MT, United States, ²USFWS, Bismarck, ND, United States, ³University of Montana, Missoula, MT, United States, ⁴TNC, Boulder, CO, United States

9:15 am  NRCS Sage-Grouse Initiative: Overview and Structure  
Tim Griffiths; NRCS, Bozeman, Montana, United States

9:35 am  Using Ecological Site Descriptions to Guide Sage Grouse Conservation  
Wendell Gilgert, Pat Shaver; USDA-NRCS, Portland, Oregon, United States

10:00 am  Break

10:20 am  Selling Conservation to Get Producer Buy-In  
Justin Meissner; NRCS, Townsend, MT, United States

10:40 am  Pick the Low-Hanging Fruit First: Oregon’s Strategy to Benefit Sage-Grouse by Removing Juniper  
Jeremy Maestas; NRCS, Redmond, OR, United States

11:00 am  Sage Grouse Initiative - NRCS, Washington State  
Tim Dring; NRCS, Washington State, United States

11:20 am  Using the Sage-Grouse Initiative, Conservation Easements, and State Regulations to Address Threats to Sage-Grouse Habitat in Wyoming  
Gerald Jasmer¹, Thomas Christiansen²; ¹NRCS, Casper, WY, United States, ²Wyoming Game and Fish Department, Green River, WY, United States

11:50 am  Working with California and Nevada Ranchers in a Coordinated Effort to Recover the Sage Grouse  
Tom Moore; NRCS, Davis, CA, United States

12:10 pm  - Closing
Thursday Morning

ESD Development Technical Workshop

Part I: ESD Implementation and Development

Workshop: BHCC - Ballroom

Chair: Joel Brown, USDA – NRCS, Las Cruces, NM

8:00 am  Welcome and Introduction
          Joel Brown
          USDA-NRCS, Las Cruces, NM, United States

8:10 am   National Implementation of Ecological Site Descriptions
          Mike Hubbs
          Director, Ecological Science Division, USDA-NRCS,
          Washington D.C., United States

8:30 am   Coordinating an ESD Development Effort
          Homer Sanchez
          USDA-NRCS, Fort Worth, TX, United States

9:00 am   Interstate Correlations of Ecological Sites
          Pat Shaver
          USDA-NRCS, Portland, OR, United States

9:30 am   ESD Leadership Panel Q & A
          Mike Hubbs, Homer Sanchez & Pat Shaver

10:00 am  Break

Part II: ESD Development Tools

10:20 am  Ecological Site Mapping
          Steve Campbell
          NRCS, Portland, OR, United States

10:40 am  Collecting and Interpreting Soil and Physiographic Information
          Justin Clary
          NRCS, Temple, TX, United States

11:10 am  Collecting and Interpreting Climate Data
          Sarah Quistberg
          NRCS, Ogden, UT, United States

11:30 am  PRISM Climate Summarizer Tool
          Jamin Johanson
          NRCS- Richfield, UT, United States

11:45 am  GAP Photo Queries for STM Enhancement
          Jacob Owens
          NRCS- Richfield, UT, United States

12:00     Review and Discussion about Mapping, Soils, and Climate Tools

- 12:30 pm
Thursday Afternoon

Very-High Resolution Imaging for Resources Monitoring

Session IV: Image Analyses and Data Application

Symposium: HIG – Bitterroot

Chair: Matt Reeves, USDA-Forest Service, Missoula, MT

1:35 pm  Stocking Rate Effects on Spatial Heterogeneity in Vegetation Cover in a Grazing-Resistant Grassland
          David Augustine¹, Terrance Booth², Samuel Cox³, Justin Derner⁴; ¹USDA-ARS, Fort Collins, CO, United States,
          ²USDA-ARS, Cheyenne, WY, United States

1:55 pm  Assessing Sagebrush Steppe Rangelands with VLSA Imagery
          Corey Moffet¹,², J. Bret Taylor¹, D. Terrance Booth³; ¹USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID, United States,
          ²Samuel Roberts Noble Foundation, Ardmore, OK, United States, ³USDA-ARS, High Plains Grasslands Research Station, Cheyenne,
          WY, United States

2:15 pm  Comparing Two Ground-Cover Measurement Methodologies for Semiarid Rangelands
          Keith Weber¹, Fang Chen¹, D. T. Booth³, Mansoor Raza¹, Kindra Serr¹, Bhushan Gokhale¹; ¹ISU GIS Center, Pocatello, ID, United States,
          ²USDA Agricultural Research Service, Cheyenne, WY, United States

2:35 pm  Using Images to Evaluate the Relationship Between Habitat Characteristics and Sage-Grouse Lek Counts
          Jeffrey Beck¹, D. Terrance Booth²; ¹University of Wyoming, Laramie, Wyoming, United States, ²USDA-ARS, Cheyenne, Wyoming, United States

2:55 pm  Understory Cover in Relation to One Seed Juniper Sapling Stand Structure at a Site in New Mexico
          Andres Cibils¹,², Terrance Booth¹,², Samuel Cox¹,², Brad Cooper¹, Richard Dunlap³, Shad Cox², David Borland¹; ¹New Mexico State University, Las Cruces,
          NM, United States, ²USDA-ARS High Plains Grasslands Research Station, Cheyenne, WY, United States, ³USDA Forest Service, Tallahassee, FL, United States
Thursday Afternoon

3:15 pm  Use of Direct and Indirect Estimates of Crown Dimensions to Predict One Seed Juniper Woody Biomass Yield for Alternative Energy Uses  Santiago Utsumi¹, Andres Cibils¹, Brent Racher², David Borland³, Terrance Booth¹, Matthew Bobo¹, Samuel Cox², Shad Cox³, Richard Dunlap³, Al Sandoval³, Kent Reid⁵; ¹Department of Animal and Range Science, New Mexico State University, Las Cruces, NM, United States, ²Restoration Solutions, LLC, Corona, NM, United States, ³USDI-Bureau of Land Management, Santa Fe, NM, United States, ⁴USDA-ARS High Plains Grasslands Research Station, Cheyenne, WY, United States, ⁵Corona Range and Livestock Research Center, New Mexico State University, Corona, NM, United States, ⁶New Mexico Forest and Watershed Restoration Institute, Las Vegas, NM, United States

3:35 pm  Use and Effectiveness of VLSA Imagery for Invasive Weed Monitoring in Rangelands  Brian Mealer¹, Dana Blumenthal²; ¹University of Wyoming, Dept. of Plant Sciences, Laramie, WY, United States, ²USDA-ARS, High Plains Grassland Research Station, Cheyenne, WY, United States

3:55 pm  Break

4:15 pm  Mapping Leafy Spurge Density in Madison Country, Montana, with Hyper-Spectral-Spatial-Temporal Imagery  Rick Lawrence, Steven Jay, Kevin Repasky, Lisa Rew; Montana State University, Bozeman, Montana, United States

4:35 pm  Assessing Riparian and Aquatic Habitat Using Very-High Resolution Imagery  D. Terrance Booth¹, Samuel E. Cox²; ¹USDA-ARS, Cheyenne, Wyoming, United States, ²USDA-ARS, McMinnville, Tennessee, United States

4:55 pm  Applications to Current Monitoring Programs  Gregg Simonds; Open Range Consulting, Park City, Utah, United States

5:05 pm  Implications for Future Research  James Dobrowolski; National Institute of Food and Agriculture, Washington, DC, United States

- 5:15 pm  

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Thursday Afternoon

Sustainable Ranch Management through Business Planning and Rangeland Monitoring

Only those registered for this workshop may attend

Workshop: BHCC - Explorer

Chair: John Tanaka, University of Wyoming

1:20 pm  SRR Socio-Economic Assessment Indicators John Tanaka; University of Wyoming, Laramie, WY, United States

2:00 pm  SRR Legal, Educational and Institutional Assessment Indicators Stanley F. Hamilton; Idaho Department of Lands (retired), Boise, ID, United States

2:15 pm  Business Planning Concepts and Methods - How Does it Work? Cindy Garretson-Weibel; Wyoming Business Council, Cheyenne, Wyoming, United States

3:00 pm  Break

3:20 pm  The Business Planning Process and Incorporation of Monitoring Information Cindy Garretson-Weibel; Wyoming Business Council, Cheyenne, Wyoming, United States

4:50 pm  Questions and Discussion

- 5:00 pm  Led by John Tanaka; University of Wyoming

Developing Native Plant Materials and Applying Management Practices to Repair Disturbed Landscapes

Production and Management Practices for Use in the Repair of Disturbed Landscapes

Symposium: BHCC – Trapper

Chair: Jack Staub, USDA – USDA, Logan, UT

1:20 pm  Thirty-Year Persistence of 17 Plant Species in a Low Precipitation Zone Mark Stannard, Clarence Kelley, Wayne Crowder; USDA Plant Materials, Pullman, WA, United States

1:40 pm  Seed Production of Native Plants in the Intermountain West Loren St. John; USDA-NRCS, Aberdeen, Idaho, United States
2:00 pm Demonstration of Restoration Approaches on a Wetland Reserve Project Kathy Pendergrass1, Dean Moberg1, Joe Williams2; 1USDA-NRCS, Portland, Oregon, United States, 2USDA-NRCS Corvallis Plant Materials Center, Corvallis, Oregon, United States

2:20 pm Potential Native Species for Mitigating Fire and Weed Invasion Christine Taliga; USDA NRCS, Denver, Colorado, United States

2:40 pm Plant Materials Establishment and Performance on Gas Well Pads James Jacobs1, Karen Clause2, Susan Winslow3; 1USDA - NRCS, Bozeman, Montana, United States, 2USDA - NRCS, Pinedale, Wyoming, United States, 3USDA - NRCS, Bridger, Montana, United States

3:00 pm Seed Mixes for Diversifying South Texas Rangelands Forrest Smith1, John Lloyd-Reilley2; 1Texas A&M-Kingsville, Kingsville, TX, United States, 2USDA-NRCS, Kingsville, TX, United States

3:20 - 4:00 pm Group Discussion

The Role of Fire in Sustainable Rangeland Ecosystems

Special Session: BHCC – Ranch, North 40, South 40

Chair: Ryan Limb, Eastern Oregon Univ., LaGrande

1:00 pm A Matter of Ecological Context: The Response of Tallgrass Prairie Butterflies to Fire Ray Moranz1, Diane Debinski1, David Engle2, Sam Fuhlendorf3, James Miller4; 1Iowa State University, Ames, Iowa, United States, 2Oklahoma State University, Stillwater, Oklahoma, United States, 3University of Illinois, Urbana-Champaign, Illinois, United States

1:20 pm Multi-Scale Mechanisms and Effects of Fire Grazing Interactions Brady Allred, Samuel Fuhlendorf; Oklahoma State University, Stillwater, OK, United States

1:40 pm Role of Fire and Grazing in Conserving Grassland and Shrubland Birds in the Southern Great Plains Craig Davis; Oklahoma State University, Stillwater, OK, United States

2:00 pm Fire and Post-fire Soil Erosion Lance Vermeire1, Corey Moffet2; 1USDA-ARS, Miles City, MT, United States, 2Noble Foundation, Ardmore, OK, USA
**Thursday Afternoon**

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| 2:20 pm    | **Fire Effects on Global CO₂ Emissions and Soil Carbon**  
*Jim Ansley; Texas AgriLife Research, Vernon, TX, United States* |
| 2:40 pm    | **Downwind Rangeland Smoke: Flint Hills Case Study**  
*Brian Obermeyer¹, Kristen Hase²; ¹The Nature Conservancy, Cottonwood Falls, KS, United States, ²National Park Service, Cottonwood Falls, KS, United States* |
| 3:00 pm    | **USDA-Natural Resources Conservation Service and Prescribed Burning on Non-Federal Lands**  
*Patrick Shaver; USDA-Natural Resources Conservation Service, Portland, OR, United States* |
| 3:20 pm    | **Break**                                                                                                                                |
| 3:40 pm    | **Conquering Social and Ecological Fire Thresholds to Empower and Equip Ranchers to Manage Rangelands**  
*Charles Taylor⁴, Dirac Twidwell⁵, William Rogers⁶; ⁴Texas AgriLife Research, Sonora, TX, United States, ⁵Texas A&M University, College Station, TX, United States* |
| 4:00 pm    | **Prescribed Burn Associations: Getting Landowners to Use Prescribed Fire**  
*John Weir; Oklahoma State University, Stillwater, OK, United States* |
| 4:20 pm - 4:40 pm | **Reintroducing Fire into Rangeland Ecosystems: Ecological Adaptations vs. Social Constraints**  
*Samuel Fuhlendorf, Ryan Limb; Oklahoma State University, Stillwater, United States* |

**Wolves on the Landscape**

**Symposium: HIG – Missouri**

Chair: Kevin France, Sustainable Resource Development, Alberta Govt, Lethbridge, Alberta

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| 1:00 pm    | **Wolf Management in Alberta, Canada**  
*Mark Boyce; University of Alberta, Edmonton, Alberta, Canada* |
| 1:30 pm    | **The Rise and Fall of Western USA’s Great Elk Herds**  
*David Allen; Rocky Mountain Elk Foundation, Montana, United States* |
| 2:00 pm    | **Wolves & The Natural Law**  
*Jim Beers; Jim Beers, Eagan, Minnesota, United States* |
Thursday Afternoon

2:30 pm  Wolf Recovery: An Independent Analysis  
          Charles E. Kay; Utah State University, Logan, Utah, United States

3:00  Panel Discussion

- 4:00 pm

Working with Private Landowners to Recover Sage-Grouse Habitat and Improve Ranching Sustainability

Symposium: BHCC – Scout

Chair: Pete Husby, State Biologist, USDA-NRCS, Bozeman, MT

1:10 pm  NRCS Sage-Grouse Initiative: Montana Example  Joe Fidel; NRCS, Montana, Bozeman Area, United States

1:30 pm  Working with Private Landowners to Recover Sage Grouse Habitat and Improve Ranching Sustainability in Nevada  Jamie Jasmine; NRCS, Elko, NV, United States

1:50 pm  Setting the Bar High: Using Science to Evaluate SGI Conservation Outcomes  Dave Naugle¹, Tim Griffiths²; ¹University of Montana, Missoula, MT, United States, ²USDA-NRCS Bozeman, MT United States

2:15 pm  Benefits of Fence Marking for Sage-Grouse  Bryan Stevens¹, Kerry Reese², Jack Connelly³; ¹University of Idaho, Moscow, ID, United States, ²University of Idaho, Moscow, ID, United States, ³Idaho Department of Fish and Game, Pocatello, ID, United States

2:35  NRCS - USFWS Conference Report  Terrell Erickson

- 2:55 pm  NRCS, National Office, United States
Thursday Afternoon

ESD Development Technical Workshop

Part III: Integrating Information to Enhance ESDs

Workshop: BHCC - Ballroom

Chair: Joel Brown, USDA – NRCS, Las Cruces, NM

1:30 pm  Plant Growth Curve Simulation Tool
          Gale Dunn
          ARS, Fort Collins, CO, United States

2:00 pm  Organizing and Interpreting Plant Community Data
          Kendra Moseley
          NRCS, Davis, CA, United States

2:30 pm  Considerations and Development of the Hydrologic Function Section in Rangeland ESDs
          Ken Spaeth
          USDA-NRCS, Fort Worth, TX, United States

3:10 pm  Break

3:30 pm  Developing Ecological Site Keys
          Jon Siddoway, Kirt Walstad
          NRCS, Bozeman, MT, United States

4:00 pm  Remote Sensing for ESD development
          Doug Ramsey
          Utah State University, Logan, UT, United States

4:20 pm  Remote Sensing for STM development
          Alex Hernandez
          Utah State University, Logan, UT, United States

4:40 pm - 5:00 pm  Additional Review, Discussion and Questionnaire
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We see a natural treasure.

(And we’re working to keep it healthy and productive.)

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