

Society for
Range Management

2011 ANNUAL MEETING

Billings, Montana

Feb. 5-11, 2011





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.

©™ Trademark of Dow AgroSciences LLC. Label precautions apply to forage treated with Milestone and ForeFront, and to manure from animals that have consumed treated forage within the last three days. Consult the label for full details. Tordon 22K and Surmount are federally Restricted Use Pesticides. Milestone and ForeFront are not for sale, distribution or use in New York state. Consult the label before purchase or use for full details. Always read and follow label directions. R38-000-013 (1/1/10) DAS 010-57042

Our Herbicide Portfolio

Chaparral™ Herbicide
ForeFront® R&P Herbicide
GrazonNext® Herbicide
Milestone® Herbicide
PasturAll® Herbicide
PastureGard® Herbicide
Remedy® Ultra Herbicide
Spike® 20P Herbicide
Surmount® Herbicide
Tordon® 22K Herbicide



Table of Contents

New Member Coffee	3
Important Information	
Daily Trail Boss.....	4
Messages.....	4
Speaker Preparation.....	4
Poster Presentations.....	5
Abstracts	5
Food Court.....	5
Welcome.....	6
2011 Planning Committee	7
SRM President’s Welcome.....	8
Trade Show.....	10
Annual Meeting Sponsors.....	11
Endowment Fund	
Silent Auction & Raffle.....	12
Shuttle to Hilton Garden & Quality Homestake Park Inn.....	13
Met Transportation	13
Program-at-a-Glance	14
Board/Council/ Committees Meetings	18
Special Events-at-a-Glance.....	21
Student Activities-at-a-Glance.....	26
Dance.....	28
President’s Reception	28
An Evening in Montana	
Western BBQ and Social.....	29
Social Activities and Tours.....	30

Table of Contents Continued

Program Schedule	
Sunday Morning	33
Sunday Afternoon.....	34
Plenary Session.....	37
Monday Afternoon	39
Tuesday Morning.....	52
Tuesday Afternoon	65
Wednesday Morning.....	76
Thursday Morning	91
Thursday Afternoon.....	101
Author Index.....	108



DuPont™
Cimarron® MAX
Cimarron® Plus
Cimarron® X-tra
Pastora®
Velpar® L
herbicides

Count on DuPont for more forage production

landmanagement.dupont.com

Always read and follow all label directions and precautions for use.
The DuPont Oval Logo, DuPont™, The miracles of science™,
Cimarron®, Pastora® and Velpar® are trademarks or
registered trademarks of DuPont or its affiliates.
Copyright © 2010 E.I. du Pont de Nemours and Company.
All Rights Reserved. 12/10



The miracles of science™

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

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.

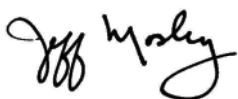
At the very least I hope you feel comfortable visiting true rangeland country. Rangelands and pasturelands comprise 70% of Montana's 93 million acres, and rangelands provide much of what makes Montana such a special place, including our clean air and water, scenic open spaces, and abundant wildlife. 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,

A handwritten signature in black ink that reads "Jeff Mosley". The signature is written in a cursive, flowing style.

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!!**

2011 Annual Meeting Sponsors

**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

SRM 2011 Endowment Fund Silent Auction & Raffle

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.

PROGRAM-AT-A-GLANCE (Morning)

Grey fill indicates student activity		
Saturday February 5	Sunday February 6	Monday February 7
<p>8:00 am - 5:00 pm Board of Directors</p> <p>8:30 am - 5:00 pm Tech Tour 1 Pryor Mtn Horse Range</p>	<p>7:00 am - 5:30 pm Registration</p> <p>8:00 am - 12:00 pm Committee Meetings</p> <p>8:00 am - 4:30 pm Advisory Council</p> <p>10:00 am - 5:00 pm RTEC</p> <p style="text-align: center;">8am – 10am Rangeland Job Fair Setup</p> <p>10:00 am - 10:00 pm Career Opportunities Employment Area</p> <p>10:00 am - 6:00 pm Rangeland Job Fair</p>	<p>7:00 am – 7:00 pm Registration</p> <p>7:30 am - 8:30 am New Members Coffee</p> <p>8:00 am - 8:00 pm Trade Show Silent Auction</p> <p>9:00 am - 12:00 pm Plenary Session</p> <div style="background-color: #cccccc; padding: 2px;"><p>8:00 am - 10:00 am URME</p></div> <div style="background-color: #cccccc; padding: 2px;"><p>10:00 am - 11:00 am URME Viewing</p></div> <div style="background-color: #cccccc; padding: 2px;"><p>1:00 pm - 5:00 pm UG Public Speaking Contest</p></div> <p>11:00 am - 3:00 pm Social Tour 1 Moss Mansion/High Tea</p> <p>8:00 am - 10:00 pm Career Opportunities Employment Area</p> <p>8:00 am - 8:00 pm Agency-On-the-Spot- Hiring</p>

PROGRAM-AT-A-GLANCE (Afternoon)

grey fill indicates student activity

Saturday February 5	Sunday February 6	Monday February 7
<p>8:00 am - 5:00 pm Board of Directors</p> <p>3:00 pm - 7:00 pm Registration</p>	<p>1:00 pm - 5:00 pm Career Development Workshops</p> <p>1:00 pm - 4:30 pm Advisory Council</p> <p>1:00 pm - 5:00 pm Committee Meetings</p> <p>1:00 pm - 5:00 pm RTEC Symposium</p> <p>12 noon - 6:00 pm Trade Show Set Up Silent Auction Set Up Student Display Set Up</p>	<p>1:00 pm - 5:00 pm Advisory Council</p> <p>4:00 pm - 5:00 pm BOD/Advisory Council</p> <p>1:00 pm - 5:00 pm Symposia Technical Sessions Special Sessions Poster Session A</p>
<p>6:00 pm - 8:00 pm SRM BOD and Committee Chairs</p>	<p>4:00 pm - 7:00 pm SRM Youth Activities Workshop</p> <p>5:00 pm - 6:00 pm Student Contest Registration</p> <p>5:00 pm - 7:00 pm Student Conclave Business Meeting & Mixer</p> <p>6:00 pm - 10:00 pm Agency Family Meetings</p>	<p>5:00 pm - 7:00 pm Tapping the Top</p> <p>6:00 pm - 8:00 pm Trade Show Mixer</p> <p>7:00 pm - 9:00 pm YPC Social</p>

PROGRAM-AT-A-GLANCE (Morning)

grey fill indicates student activity		
Tuesday February 8	Wednesday February 9	Thursday February 10
<p>7:00 am - 5:30 pm Registration</p> <p>7:00 am - 4:30 pm Trade Show Silent Auction</p> <p>8:00 am - 10:00 am Board of Directors</p> <p>8:00 am - 12 pm Symposia Tech Sessions Special Sessions Producer's Forum Poster Session B</p> <p style="background-color: #cccccc;">8:00 am - 10:00 am Plant ID Contest</p> <p style="background-color: #cccccc;">10:00 am - 12:00 pm Plant ID Contest Viewing</p> <p style="background-color: #cccccc;">8:00 am - 12:00 pm HSYF Speaking Contest</p> <p>8:00 am - 12:00 pm CPRM Exam</p> <p>10:00 am - 12:00 pm Social Tour 2a Tour de Chocolate & Coffee</p> <p>10:30 am - 12:00 pm YPC Business Meeting</p> <p>8:00 am - 10:00 pm Career Opportunities Employment Area</p> <p>8:00 am - 8:00 pm Agency-On-the-Spot-Hiring</p>	<p>7:00 am - 5:30 pm Registration</p> <p>7:00 am - 10:00 am Trade Show tear down</p> <p>7:00 am - 12:00 pm Silent Auction</p> <p>8:00 am - 12:00 pm Symposia Tech Sessions UG Technical Papers Poster session D</p> <p style="background-color: #cccccc;">8:00 am - 12:00 pm Tech Tour 2 Pompeys Pillar</p> <p>10:30 am - 3:30 pm Social Tour 3 Shopping at Rimrock Mall</p> <p style="background-color: #cccccc;">10:30 am - 3:30 pm Social Tour 4 Museums Downtown</p> <p>10:30 am - 3:30 pm Social Tour 4 Museums Downtown</p> <p>8:00 am - 10:00 pm Career Opportunities Employment Area</p> <p>8:00 am - 8:00 pm Agency-On-the-Spot-Hiring</p>	<p>7:00 am - 12:00 pm Registration</p> <p>8:00 am - 12:00 pm Symposia Workshops Special Sessions Agency Workshops</p> <p>10:30 am - 3:30 pm Social Tour 3 Shopping at Rimrock Mall</p> <p style="background-color: #cccccc;">10:30 am - 3:30 pm Social Tour 4 Museums Downtown</p> <p>8:00 am - 10:00 pm Career Opportunities Employment Area</p> <p>8:00 am - 8:00 pm Agency-On-the-Spot-Hiring</p>

PROGRAM-AT-A-GLANCE (Afternoon)

grey fill indicates student activity

Tuesday February 8	Wednesday February 9	Thursday February 10
<p>12:00 pm - 2:00 pm Student Conclave and HSYF Luncheon</p> <p>1:30 pm - 3:30 pm Social Tour 2b Tour de Chocolate & Coffee</p> <p>1:00 pm - 5:00 pm Symposia Technical Sessions Producer's Forum Special Sessions Poster Session C Excellence in Rng Mgt Posters</p> <p style="background-color: #cccccc;">Rangeland Cup Posters</p> <p>1:00 pm - 5:00 pm HSYF Speaking Contest</p>	<p>12:00 pm - 2:00 pm SRM Lunch & Business Meeting</p> <p>12:00 pm - 5:00 pm Silent Auction Closeout</p> <p>2:15 pm - 5:00 pm SRM Honor & Student Awards Ceremony</p>	<p>1:00 pm - 5:00 pm Board of Directors</p> <p>1:00 pm - 5:00 pm Symposia Special Sessions Workshops Agency Workshops</p>
<p>4:30 pm - 6:00 pm Trade Show tear down</p> <p>6:00 pm - 8:00 pm Section Mixers University Mixers</p> <p>8:00 pm - 12:00 am Dance</p>	<p>5:30 pm - 7:30 pm Wild Women of Range Mixer</p> <p>6:00 pm - 7:00 pm President's Reception</p> <p>7:00 pm An Evening in MT Event</p>	

Friday, February 11

8:00 am - 4:30 pm Tech Tour 3 - Little Bighorn Battle Field

BOARD/COUNCIL/COMMITTEE MEETINGS

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

Saturday, February 5, 2011

Group	Time	Room
2011 Annual Meeting Planning Committee	1:00pm-3:30pm	HIG - Aspen
SRM Board of Directors	8:00am-5:00pm	HIG - Bighorn
SRM BOD w/ Committee Chairs	6:00pm-8:00pm	HIG - Bighorn

Sunday, February 6, 2011

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

BOARD/COUNCIL/COMMITTEE MEETINGS

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

Sunday, February 6, 2011 continued

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

Monday, February 7, 2011

Group	Time	Room
2011 Annual Meeting Planning Committee	6:30am-8:00am	HIG - Aspen
2012 Annual Meeting Planning Committee	8:00am-10:00am	HIG - Aspen
Advisory Council	1:00pm-5:00pm	HIG - Gallatin
New Members Coffee	7:30am-8:30 am	HIG - Poolside Terrace
Annual Meeting Handbook Committee	1:00pm-5:00pm	BHCC – Parlor 118

BOARD/COUNCIL/COMMITTEE MEETINGS

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

Tuesday, February 8, 2011

Group	Time	Room
2011 Annual Meeting Planning Committee	6:30am-8:00am	HIG - Aspen
CPRM Exam	9:00am-12:00pm	HIG - Aspen
SRM Board of Directors	8:00am-10:00pm	HIG - Lewis and Clark
Young Professionals Conclave Business Meeting	10:30am-12:00pm	BHCC – Ranch/South 40

Wednesday, February 9, 2011

Group	Time	Room
2011 Annual Meeting Planning Committee	6:30am-8:00am	HIG - Aspen
2011 & 2012 Annual Meeting Planning Committees	7:30am-9:30am	HIG - Aspen
Student Activities Committee	8:00am-10:00am	HIG - Yellowstone

Thursday, February 10, 2011

Group	Time	Room
2011 Annual Meeting Planning Committee	6:30am-8:00am	HIG - Aspen
2011 Annual Meeting Planning Committee Social	6:00pm-9:00pm	TBA
2012 Annual Meeting Planning Committee	8:00am-10:00am	HIG - Spruce
Northern Great Plains Section SRM	4:00pm-6:00pm	HIG - Aspen
SRM Board of Directors	3:00pm-7:00pm	HIG - Lewis and Clark
Student Activities Committee	7:00am-9:00am	offsite - TBA

SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

MCC - Montana Convention Center

EVENT/ACTIVITY	TIME	ROOM
----------------	------	------

Saturday, February 5th

Sustainable Rangelands Roundtable	2:00pm-6:00pm	HIG - Lewis & Clark
Registration	3:00pm-7:00pm	MCC - Lobby
SRM Speaker Prep Room	7:00am-7:00pm	HIG - Cottonwood
SRM Business Office	7:00am-7:00pm	HIG - Cottonwood
Daily Trail Boss		HIG - Ponderosa

Sunday, February 6th

Registration	7:00am-7:00pm	MCC - Lobby
SRM Speaker Prep Room	7:00am-7:00pm	HIG - Cottonwood
SRM Business Office	7:00am-7:00pm	HIG - Cottonwood
Volunteer Room		HIG - Cottonwood
Daily Trail Boss		HIG - Ponderosa
NRCS Western Region Grazing Lands Specialists Consortium	7:30am-3:30pm	BHCC - Scout
Rangeland CEAP	8:00am-12:00pm	BHCC-Parlor 118
Career Development Workshop	1:00pm-5:00pm	BHCC - Trapper
GLCI Task Force	3:00pm-5:00pm	BHCC - Ranch
Extension Family Meeting	6:00pm-8:00pm	HIG - Yellowstone
USDA – ARS Scientist Meeting	7:00pm-8:30pm	BHCC - Ranch
USDA – USFS Awards and Family Meeting	7:00pm-10:00pm	HIG - Missouri
USDA – NRCS Family Meeting	7:00pm-10:00pm	HIG - Stillwater & Bitterroot
USDI – BLM Family Meeting/Reception	7:00pm-10:00pm	HIG - Gallatin
Trade Show Setup	12:00pm-6:00pm	MCC - Russell & Ralston
Student Displays Setup	12:00pm-6:00pm	MCC - Russell & Ralston
Silent Auction Setup	12:00pm-6:00pm	MCC - Russell & Ralston
Career Opportunities Area	8:00am-10:00pm	HIG - Atrium
Rangeland Job Fair Setup	8:00am-10:00am	BHCC - Ballroom

SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

MCC - Montana Convention Center

EVENT/ACTIVITY	TIME	ROOM
----------------	------	------

Monday, February 7th

Registration	7:00am-5:30pm	MCC - Lobby
SRM Speaker Prep Room	7:00am-7:00pm	HIG - Cottonwood
SRM Business Office	7:00am-7:00pm	HIG - Cottonwood
Volunteer Room		HIG - Cottonwood
Daily Trail Boss		HIG - Ponderosa
New Members Coffee	7:30am-8:30am	HIG - Poolside Terrace
Trade Show	8:00am-8:00pm	MCC - Russell & Ralston
Student Displays	8:00am-8:00pm	MCC - Russell & Ralston
Silent Auction	8:00am-8:00pm	MCC - Russell & Ralston
Plenary Session	9:00am-12:00pm	MCC - Rains
Past Presidents, Founding & Charter Members Luncheon	12:00pm-2:00pm	HIG - Poolside Terrace
CPRM Review	1:00pm-5:00pm	HIG - Madison
Tapping The Top	5:00pm-7:00pm	HIG - Poolside Terrace
Trade Show and Mixer	6:00pm-8:00pm	MCC - Russell & Ralston
Career Opportunities Area	8:00am-10:00pm	HIG - Atrium
BLM Interview Room	8:00am-8:00pm	BHCC-Parlor 131
USFS Interview Room	8:00am-8:00pm	BHCC-Parlor 119
NRCS Interview Room	8:00am-8:00pm	BHCC-Parlor 109
Rangeland Job Fair	10:00am-6:00pm	BHCC - Ballroom

SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

MCC - Montana Convention Center

EVENT/ACTIVITY	TIME	ROOM
----------------	------	------

Tuesday, February 8th

Registration	7:00am-5:30pm	MCC - Lobby
SRM Speaker Prep Room	7:00am-7:00pm	HIG - Cottonwood
SRM Business Office	7:00am-7:00pm	HIG - Cottonwood
Volunteer Room		HIG - Cottonwood
Daily Trail Boss		HIG - Ponderosa
Trade Show	7:00am-4:30pm	MCC - Russell & Ralston
Student Displays	7:00am-4:30pm	MCC - Russell & Ralston
Silent Auction	7:00am- 5:00pm	MCC - Russell & Ralston
Colorado Section Breakfast Meeting	6:30am-8:30am	HIG - Yellowstone
Texas Tech Breakfast	7:00am-9:00am	HIG – Poolside Terrace
USFS Rangeland Mgt Directors Meeting	8:00am-12:00pm	HIG - Madison
CPRM Exam	9:00am-12:00pm	HIG Aspen
Chicago Climate Exchange Verifier Review & Exam	10:00am-3:00pm	BHCC - North 40
Association of Univ. Rangeland Resource Programs	1:00pm-3:00pm	HIG - Spruce
Texas A&M Univ. Alumni Social	6:00pm-8:00pm	HIG - Yellowstone
Univ. of AZ Alumni and Friends Social	6:00pm-8:00pm	BHCC - South 40
Utah State Univ. - Wildland Resources Dept. Social	6:00pm-8:00pm	BHCC - Ranch
Oregon State Univ. Alumni/PNW Section Social	6:00pm-8:00pm	BHCC - Homesteader
MSU Social	6:00pm-8:00pm	BHCC - Ballroom
CSU Social	6:00pm-8:00pm	BHCC-North 40
Univ. of Wyoming Social	6:00pm-8:00pm	BHCC - Trapper
Oklahoma State Univ. Social	6:00pm-8:00pm	HIG - Madison
Univ. of Idaho	Off-Site	TBA
Career Opportunities Area	8:00am-10:00pm	HIG - Atrium
BLM Interview Room	8:00am-8:00pm	BHCC-Parlor 131
USFS Interview Room	8:00am-8:00pm	BHCC-Parlor 119
NRCS Interview Room	8:00am-8:00pm	BHCC-Parlor 109
Dance	8:00pm-12:00am	MCC - Rains

SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

MCC - Montana Convention Center

EVENT/ACTIVITY	TIME	ROOM
----------------	------	------

Wednesday, February 9th

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

SPECIAL EVENTS AT-A-GLANCE

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand Montana

MCC - Montana Convention Center

EVENT/ACTIVITY	TIME	ROOM
----------------	------	------

Thursday, February 10th

Registration	7:00am-12:00pm	MCC - Lobby
SRM Speaker Prep Room	7:00am-7:00pm	HIG - Cottonwood
SRM Business Office	7:00am-7:00pm	HIG - Cottonwood
Volunteer Room		HIG - Cottonwood
Daily Trail Boss		HIG - Ponderosa
Native Range Working Group Meeting	8:00am- 5:00pm	BHCC-Prospector
Forest Service R1 Meeting	1:00pm-5:00pm	HIG - Yellowstone
NGP Section Meeting	4:00pm-6:00pm	HIG - Aspen
Career Opportunities Area	8:00am-10:00pm	HIG - Atrium
BLM Interview Room	8:00am-8:00pm	BHCC-Parlor 131
USFS Interview Room	8:00am-8:00pm	BHCC-Parlor 119
NRCS Interview Room	8:00am-8:00pm	BHCC-Parlor 109

Student Activities At - A - Glance

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand

MCC – Montana Convention Center

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

Student Activities At - A - Glance

BHCC - Billings Hotel and Convention Center

HIG - Holiday Inn Grand

MCC – Montana Convention Center

Activity	Day	Time	Room
Graduate Student Competitions			
Graduate Student Paper & Poster Competitions	Mon - Thurs		Imbedded in poster and technical sessions
High School Youth Forum			
Section Youth Chair Workshop	Sun	4:00pm-7:00pm	HIG - Poolside Terrace
HSYF Orientation and Social	Sun	7:00pm-10:00pm	BHCC - Trapper
HSYF Home Room	Sun - Thurs	All Day	BHCC - Centennial
HSYF Field Tour	Mon	All Day	Field Trip
HSYF Professional Interaction Dinner	Mon	6:00pm-9:00pm	Offsite
HSYF Speaking Contest	Tues	8:00am-5:00pm	HIG - Bighorn
HSYF Judges Tabulation Room	Tues	5:00pm-7:00pm	BHCC - Centennial
HSYF Workshop	Wed	8:00am-11:00am	BHCC - Centennial
HSYF Business Meeting	Wed	11:00am-2:00pm	BHCC - Centennial
HSYF Luncheon with Student Conclave Luncheon	Tues	12:00pm-2:00pm	BHCC - Ballroom
Student Activities Committee			
SAC Committee Meeting	Sun	9:00am-12:00pm	BHCC - North 40
SAC Committee Meeting	Wed	8:00am-10:00am	HIG - Yellowstone
SAC Committee Meeting	Thurs	7:00am-9:00am	Off Site TBA

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

6:00pm – 7:00pm

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 Shaw³; ¹University of Nevada Cooperative Extension, Elko, NV, United States, ²University of Nevada, Reno, NV, United States, ³USFS Rocky Mountain Research Station, Boise, ID, United States
- 1:40 pm **Increasing Diversity in Crested Wheatgrass Stands in Eastern Idaho** Corey Moffet^{1,2}; 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 Jessop², 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 Booth², 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. Wei², J.J. Stone¹, F.B. Pierson³, 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*

Sunday Afternoon

4:30 **Practical Sample Design and Selection Tools for**
- 5:00 pm **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 Billings, 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** *Peagy 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 Liebig*¹, *Alan Iwaasa*²; ¹*USDA-ARS, Mandan, North Dakota, United States*, ²*Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada*
- 2:00 pm **Healthy Rangeland Watersheds and Productive Livestock Enterprises: Why Not?** *Kenneth Tate*¹, *Leslie Roche*¹, *Theresa Becchetti*², *David Lile*², *David Lewis*², *Anthony O'Geen*¹, *Randy Dahlgren*¹, *Melvin George*¹, *Edward Atwill*¹; ¹*University of California, Davis, CA, United States*, ²*University 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 Hickman*¹, *Ken Belcher*²; ¹*Oklahoma State University, Stillwater, OK, United States*, ²*University 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 Henderson*², *David Augustine*¹, *Justin Derner*⁴, *Stephen Davis*³; ¹*USDA-ARS, Fort Collins, CO, United States*, ²*University of Saskatchewan, Saskatoon, SK, Canada*, ³*Canadian Wildlife Service, Regina, SK, Canada*, ⁴*USDA-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 **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; ¹*University of Nevada Cooperative Extension, Elko, NV, United States*, ²*USDA 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 Parks¹; ¹*Pacific Northwest Research Station, USFS, La Grande, OR, United States*, ²*Institute 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 Rimbey², John Tanaka³*; ¹New Mexico State University, Las Cruces, NM, United States, ²University of Idaho, Caldwell, ID, United States, ³University of Wyoming, Laramie, WY, 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 Jensen², Stephanie Kane¹, Neil Rimbey¹, John Tanaka^{2,3}, David "Tex" Taylor², 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 Lennox¹*; ¹University of California, California, United States, ²AgResearch, Hamilton, New Zealand
- 2:20 pm **Economic Flow-Model for Western Rangelands: Using Economic Principles to Guide the Allocation of Conservation Resources** *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 McDougald², William Frost³, James Sullins⁴; 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** *Timothy 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. Rimbe¹, 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 Polley¹, Rebecca Phillips², Albert Frank², James Bradford³, Phillip Sims³, Jack Morgan⁴, James Kiniry¹; 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 - 4:00 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 Allred¹, Samuel Fuhlendorf¹, Robert Hamilton²; 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 Jonas¹, Amy Symstad², Deborah Buhl³; 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 Wang¹, Kevin Sedivec², Paul Nyren¹, Anne Nyren¹; 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^{1,2}, Bryan Neville^{1,3}, Kevin Sedivec^{1,2}, Dennis Whitted^{1,2}, Paul Nyren^{1,4}, Greg Lardy^{1,3}; 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. Petersen¹, Jennifer Muscha¹, Travis Mulliniks²; 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 Guffey¹, Neto Garcia², Clayton Marlow²; 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 Petersen^{1,3}, Fredrick Provenza¹, Agee Smith²; 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 - 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 Tjelmeland¹, J. Alfonso Ortega-S.¹, Jorge Molina¹, Kevin Porter², Laura Bush¹, Forrest Smith¹, Marc Bartoskewitz², Fred C. Bryant¹; 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 Vasquez¹, Anna-Marie Chamberlain², Brenda Smith³, Roger Sheley³; ¹Wyoming Wildlife Consultants, LLC, Laramie, WY, United States, ²Oregon 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 Fowers¹, Merilynn Hirsch¹, Thomas Monaco², Chris Call¹; ¹Utah State University, Logan, UT, United States, ²USDA-ARS Forest and Range research lab, Utah State University, Logan, UT, United States

Monday Afternoon

- A-7 Land-Use Legacies Affect Species Performance Nearly a Century after Cultivation** Lesley Morris^{1,2}, *Thomas Monaco*^{1,2}, *Robert Blank*³, *Elizabeth Leger*⁴, *Roger Sheley*⁵, *Tye Morgan*³; 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 Creech*², *Chad Boyd*³; ¹University of Nevada Cooperative Extension, Elko, NV, United States, ²Utah State University, Logan, UT, United States, ³USDA Agricultural Research Service, Burns, OR, United States
- A-10 Hydrologic Vulnerability of Great Basin Sagebrush-Steppe Following Pinyon and Juniper Encroachment** C. Jason Williams^{1,3}, *Frederick B. Pierson*¹, *Patrick R. Kormos*², *Stuart P. Hardegree*¹, *Patrick E. Clark*¹, *Osama Z. Al-Hamdan*^{1,3}; 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 Peters¹, *Shelby Filley*², *Andrew Hulting*³; ¹Oregon State University, Myrtle Point, OR, United States, ²Oregon 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. Taylor¹, *Ann L. Hild*¹, *Nancy L. Shaw*², *Erin K. Denney*²; ¹University of Wyoming, Department of Renewable Resources, Laramie, WY, United States, ²USDA 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 Scott*¹, *Charles Taylor*³, *John Walker*², *Dan Waldron*², *Corey Owens*¹, *Micheal Salisbury*¹; 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

Monday Afternoon

- 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 Huffman³, Dale Rollins², Dean Ransom, Jr.¹; 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 Hiding⁶, Urs Kreuter⁷, John E. Mitchell², John A. Tanaka⁸; 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*

Monday Afternoon

- A-20 Monitoring Shrub Canopy Cover Using Vegetation Charting Technique** *Mounir Louhaichi¹, Hani Al-Homsh¹, Fahim Ghassali¹, Osama Shalouf², 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 sprengei* 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 Krause³*; 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 Punttenney, 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; ¹Bureau of Land Management, Ely, NV, United States, ²Gracian 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
- 11:30 am **Bureau of Land Management, Wyoming - High Desert District, Rawlins Field Office, Sulphur Springs Allotment** Andy Warren; BLM-WY-HDD-Rawlins Field Office, Rawlins, Wyoming, 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 Hardegee; 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; 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

Expiring 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 Iqal¹, Douglas Johnson²; 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 Wittrock², Emily Munter³*; 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 Geaumont¹, Kevin Sedivec², Christopher Schauer¹*; ¹Hettinger Research Extension Center, Hettinger, North Dakota, United States, ²School 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 Barnes¹, Jim Howell²*; ¹Shining Horizons Land Management, Cimarron, Colorado, United States, ²The Howell Ranch, Cimarron, Colorado, United States
- 8:20 am **Estimating Influence of Stocking Regimes on Livestock Grazing Distributions** *Matthew Rinella¹, Marty Vavra²*; ¹USDA-ARS, Miles City, MT, United States, ²USDA-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
- 11:40 am **Pyric Herbivory in Action on Boreal Rangelands? The Fire-Grazing Interaction of Wood Bison in Northeast British Columbia, Canada** Sonja Leverkus^{1,2}, Sam Fuhlendorf¹; ¹Oklahoma State University, Stillwater, Oklahoma, United States, ²Ministry of Forests and Range, Fort Nelson, British Columbia, Canada

Tuesday Morning

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 Rasmussen¹, 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. Winslow¹, Karen J. Clause², 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 parksii*** 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 Benson³, Mike Finch⁴, Robert Wilson⁵, Scott Nissen⁶, Roger Becker⁷, Mike Moechnig⁸, Mark Renz⁹; 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 Morris^{1,2}, Thomas Monaco^{1,2}, 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 Gates², Arvid Boe¹, 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** *Meryllynn 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 - 12:00 pm **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*

Tuesday Morning

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 **Impact of Sheep Grazing on Demographic**
- 11:20 am **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 Lafe 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 Branson¹, Lance Vermeire²; ¹USDA, Agricultural Research Service, Sidney, MT, United States, ²USDA, Agricultural Research Service, Miles City, MT, United States

B-8 Effect of Landform Position on Mesquite Growth Patterns Fredrich Schrank¹, Roger Wittie¹, Carol Thompson¹, R. J. Ansley²; ¹Tarleton State University, Stephenville, Texas, United States, ²Texas 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 Tausch¹, Neil Frakes¹, Richard Miller², Bruce Roundy³*; ¹USDA Forest Service, Reno, NV, United States, ²Oregon State Univ., Corvallis, OR, United States, ³Brigham 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 Tannas¹, Edward Bork¹, Walter Willms²*; ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture 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 Brown¹, Jack Alexander², Justin Derner³*; ¹USDA NRCS, Las Cruces NM, United States, ²Synergy Resources, Bozeman MT, United States, ³USDA ARS, Cheyenne WY, United States
- B-16 Ecological Sites: Organizational Tool for Outcome-Based Land Management** *Justin Derner¹, Joel Brown², Jack Alexander³*; ¹USDA-Agricultural Research Service, Cheyenne, WY, United States, ²USDA-NRCS Jornada Experimental Range, Las Cruces, NM, United States, ³Synergy 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 Boyda¹, Jack Butler², Lan Xu¹*; ¹Department of Biology and Microbiology, South Dakota State University, Brookings, SD, United States, ²US 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

Tuesday Morning

- 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 Bork¹, Mike Alexander²; 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 Strand¹, Jocelyn Aycrigg^{1,2}; 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 Schacht¹, Larkin Powell¹, 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** *D 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

- B-30** 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 Grazer's Story – Lessons Learned Since 1955** *Wayne Berry; Williston, ND, United States*
- 3:40 **Panel Question and Answer**
- 4:30 pm

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-Adams², Carol Spurrier¹; 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 Allen³; 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. Pyke¹, 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 **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 Pellant²; 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 Williams^{1,4}, Osama Z. Al-Hamdan^{1,4}; ¹USDA-ARS Northwest Watershed Research Center, Boise, Idaho, United States, ²USDA-USFS Rocky Mountain Research Station, Moscow, Idaho, United States, ³USDA-NRCS Central National Technology Support Center, Fort Worth, Texas, United States, ⁴University 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 **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 James¹, Tony Svejcar¹, Matt Rinella²; ¹USDA-ARS, Burns, OR, United States, ²USDA-ARS, Miles City, MT, United States

Tuesday Afternoon

- 1:40 pm **Field Establishment of Perennial Grass Seedlings in Cheatgrass Invaded Systems** Elizabeth Leger¹, Erin Goergen¹, Courtney Rowe^{1,2}; 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 James⁷, Nancy Shaw⁵, Robert Cox⁶; ¹USDA ARS Northwest Watershed Research Center, Boise, ID, United States, ²Brigham Young University, Department of Plant and Wildlife Sciences, Provo, UT, United States, ³The Noble Foundation, Ardmore, OK, United States, ⁴USDA ARS Forage and Range Research Laboratory, Logan, UT, United States, ⁵USDA Forest Service, Rocky Mountain Research Station, Boise, ID, United States, ⁶Texas Tech University, Department of Natural Resources Management, Lubbock, TX, United States, ⁷USDA 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 Svejcar¹, Jason Williams²; ¹Agricultural Research Service, Burns, OR, United States, ²Agricultural 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 Hardegree²; 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 Zabinski¹, Nancy Shaw²; 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 Repp², 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 Booth², Larry Griffith²; 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 Smith, Paul Meiman, Joe Brummer; Colorado State University, Fort Collins, CO, United States
- 2:40 - 3:00 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 Saunders¹, Kurt D. Fausch²; ¹Utah State University, Logan, Utah, United States, ²Colorado State University, Fort Collins, Colorado, United States

Tuesday Afternoon

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 Hagen²; ¹USDA-ARS SWRC, Tucson, AZ, United States, ²Applied Geosolutions, LLC, Durham, NH, 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. Gearhart^{1,2}, Christopher S. Schauer², D. Terrance Booth³, Kevin K. Sedivec¹; 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, ³USDA-ARS, High Plains Grasslands Research Station, Cheyenne, WY, United States
- 2:20 - 2:40 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 Petersen¹, 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 Mosley¹, Rachel Frost¹, Tracy Mosley²; 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
- 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* Grassland** 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

Tuesday Afternoon

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-Amaro*¹, *Ricardo Mata-Gonzalez*¹, *Tim DelCurto*², *David Bohnert*³, *Oscar Riera-Lizarazu*¹, *Chad Boyd*⁴, *Jeff Leonard*¹; 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 Laca*¹, *Cristina Genro*², *Carolina Bremm*³, *Jairo Genro*⁴, *Craig Schriefer*¹; 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 saffariha*, *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 saffariha*, *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 Douglas*¹, *Homer Sanchez*¹, *George Peacock*¹, *Kenneth Spaeth*¹, *Gary Rea*¹, *James Muir*²; ¹USDA-NRCS, Fort Worth, TX, United States, ²AgriLife, Stephenville, TX, United States

Tuesday Afternoon

- C-6** **Evaluation of the Tenderness, Size, and Marbling of Forage-Finished Ribeye Steaks Produced in Kauai County, Hawaii** *Matthew Stevenson¹, Yong Soo Kim², Glen Fukumoto³; ¹University of Hawaii at Manoa Cooperative Extension Service, Lihue, HI, United States, ²University of Hawaii at Manoa, Honolulu, HI, United States, ³University of Hawaii at Manoa Cooperative Extension Service, Kealahou, 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 Smart¹, Jerry Volesky², Sara Winterholler¹, Walter Schacht³, Eric Mouse¹, Jordan Johnson³, Robert Valvala³, John Madison¹; ¹SDSU, Brookings, SD, United States, ²UNL, North Platte, NE, United States, ³UNL, 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** *Kari Veblen¹, David Pyke¹, Cameron Aldridge², Mike Casazza³, Timothy Assal², Melissa Farinha³; ¹U.S. Geological Survey, Corvallis, OR, United States, ²U.S. Geological Survey, Ft. Collins, CO, United States, ³U.S. Geological Survey, Dixon, CA, 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 Structure** *Vanessa Prileson¹, Andres Cibils¹, Wendy Taylor¹, Richard Dunlap², Shad Cox², Miguel Brizuela^{3,5}, Silvia Cid^{3,4}; ¹New Mexico State University, Las Cruces, NM, United States, ²NMSU-CRLRC, Corona, NM, United States, ³Universidad Nacional de Mar del Plata, Balcarce, Bs. As., Argentina, ⁴CONICET, Bs. As., Argentina, ⁵CIC, 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

- C-14** Interaction between Morphological Development and Burning Effectiveness in Kentucky Bluegrass and Smooth Bromegrass *John Hendrickson; Northern Great Plains Research Laboratory USDA-ARS, Mandan, North Dakota, United States*
- C-15** Response of Juniper Woodland-Fuel Loading to Mechanical and Prescribed Fire Treatment *Christopher Bernau, Stephen Bunting; University of Idaho, Moscow, ID, United States*
- C-16** Post-Fire Soil Water Repellency, a Preliminary Report: Extent and Characteristics within the Pinyon-Juniper Woodlands of the Eastern Great Basin *Daniel Zvirzdin, Matthew Madsen, Bruce Roundy; Brigham Young University, Provo, UT, United States*
- C-17** Pyric Herbivory in Central Montana Sagebrush Communities: Contrasting Domestic and Native Herbivores *Ilana Bloom-Cornelius, Samuel D. Fuhlendorf; Oklahoma State University, Stillwater, Oklahoma, United States*
- C-18** The Williamson Cattle Company - Florida Environmental Stewardship Award Winner 2010
Chad George¹, Brandee Williams²
¹USDA - Natural Resources Conservation Service, Okeechobee, FL, United States, ²USDA - Natural Resources Conservation Service, Palmetto, FL, United States
- C-19** Effects of Fire and Herbivory on Sentinel Species across the Landscape of Northeastern Montana
Angela Reid¹, Samuel Fuhlendorf²
¹Tall Timbers Research Station, Tallahassee, FL, United States, ²Oklahoma State University, Stillwater, OK, United States

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, ²Agriculture Research Service, 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 Booth², 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. Cox¹, D. Terrance Booth²; ¹USDA Agricultural Research Service, McMinnville, TN, United States, ²USDA Agricultural Research Service, Cheyenne, WY, United States
- 10:35 am **Monitoring Rangelands with Very-Large Scale Aerial Surveys: Advantages and Limitations** D. Terrance Booth¹, Samuel E. Cox²; ¹USDA-ARS, Cheyenne, Wyoming, United States, ²USDA-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 Heath², 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 - 11:55 am **Low-Cost Camera Modifications and Methodologies for Very-High-Resolution Digital Images** E. Raymond Hunt¹, James Carr², 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 Haile^{1,2}, 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**

Wednesday Morning

- 10:20 **Moving Beyond the Myths and Traditions of Fire Behavior in Rangelands** Dirac Twidwell¹, William Rogers¹, Samuel Fuhlendorf², Charles Taylor, Jr.³, David Engle²; 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

- 8:00 am **Evaluation of Sand Sagebrush Control in a Southern Mixed Prairie: Implications for Lesser Prairie Chicken Habitat Management** Eric Thacker¹, Robert Gillen², Stacey Gunter¹, Tim Springer¹; ¹USDA-ARS Southern Plains Range Research Station, Woodward, Oklahoma, United States, ²Western Kansas Agricultural Center, Kansas State University, Hays, Kansas, United States
- 8:20 am **Evaluation of Habitat Use by Sharp-Tailed Grouse on the Grand River National Grasslands in Northwest South Dakota** Dean Houchen^{1,2}, Benjamin Geaumont², Christopher Schauer², Kevin Sedivec¹; ¹North Dakota State University, Fargo, ND, United States, ²Hettinger Research Extension Center, Hettinger, ND, United States
- 8:40 am **Survival and Habitat Selection of Ring-Necked Pheasant Broods in Southwest North Dakota** Kristine Larson^{1,2}, 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
- 9:00 am **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
- 9:20 am **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

Wednesday Morning

- 9:40 am **Distribution of a Rare Sand Dune Legume Limited by Deer Herbivory at Multiple Scales** Darcy Henderson¹, 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 Williams¹, 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] A.D.J.Meeuse & Smit) Ecological Site** Casey Matney¹, Tamzen Stringham²; ¹Colorado State University, Fort Collins, CO, United States, ²University of Nevada, Reno, Reno, NV, United States
- 8:20 am **Expediting State-and-Transition Models through Sorting of Ecological Sites into Disturbance Response Groups** Tamzen Stringham¹, Patti Novak-Echenique², Erica Freese¹, Lucas Wiseley², Patrick Shaver³; ¹University of Nevada, Reno, Reno, NV, United States, ²USDA Natural Resource Conservation Service, Reno, NV, United States, ³USDA Natural Resource Conservation Service, Portland, OR, United States
- 8:40 am **Using Plant Functional Groups to Create Data-Driven State-and-Transition Models** Emily Kacherqis, 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^{1,2}, Christopher Call¹, Shane Green²; ¹Department of Wildland Resources, Utah State University, Logan, UT, United States, ²USDA-NRCS, UT, United States
- 9:20 am **Improvement in Ecological Status with Grazing Management and Range Chiseling** Matthew J. Ricketts¹, Jim Jacobs¹, Keith Schott², Sonny Smith³; ¹USDA-NRCS, Bozeman, MT, United States, ²Rancher, Broadview, MT, United States, ³Rancher, Cameron, MT, United States
- 9:40
- 10:00 am **Changes in Relic Plant Communities in Utah over 60 Years** Shane Green¹, Keith Wadman²; ¹USDA NRCS, Salt Lake City, UT, United States, ²Great Basin Consulting, Utah, United States

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 Symstad¹, Robert Gitzen², Jayne Jonas³; ¹U.S. Geological Survey, Hot Springs, SD, United States, ²University of Missouri, Columbia, MO, United States, ³IAP World Services, Brighton, CO, United States
- 9:20 am **Field Test of Digital Photography Biomass Estimation Technique in Tallgrass Prairie** Sherry Leis^{1,2}, Lloyd Morrison²; ¹Missouri State University, Springfield, MO, United States, ²Heartland 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 Murphy¹, Chris Funk²; ¹University of Wyoming, Laramie, Wyoming, United States, ²Colorado 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 Toevs⁴, Jason Karl¹, Jason Taylor³, Matthew Bobo³, Jeffrey Herrick¹, Carrol Spurrier², Craig Mackinnon²; ¹USDA Agricultural Research Service, Jornada Experimental Range, Las Cruces, NM, United States, ²Bureau of Land Management, Division of Rangeland Resources, Washington, DC, United States, ³Bureau of Land Management - NOC, Branch of Assessment and Monitoring, Denver, CO, United States, ⁴Bureau 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 **Highlights of the 2010 RPA Rangeland Assessment**
- 12:00 pm *Matt Reeves¹, John E. Mitchell (Emeritus)²; ¹USDA, Forest Service, Rocky Mountain Research Station, Missoula, MT, United States, ²USDA, 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 Miegroet⁴, Grant Cardon⁵; 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 Wolf^{1,2}, Brent Hallock¹, Robert Rutherford¹, Marc Horney¹, Anthony O'Geen^{2,1}, Royce Larsen³; 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 Evans¹, Ricardo Mata-Gonzalez¹, David Martin², Terry McLendon³; 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 - 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 Prairie**
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 Koc³, Carol Weinhold²; ¹University of Nebraska-Lincoln, Lincoln, NE, United States, ²Nebraska Department of Roads, Lincoln, NE, United States, ³Ataturk University, Erzurum, Turkey
- 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

Wednesday Morning

Poster Session D

February 9, 8:00 am - 12:00 pm

MCC - Russel

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

- 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 Knapp^{1,2}, Maria Fernandez-Gimenez², Retta Bruegger⁴, Larry Howery⁴, Allen Torell³, Derek Bailey³*; 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 Deenik¹, Robert Godfrey², Glen Fukumoto¹, John Powley¹, Matthew Stevenson¹, Lawrence Duponcheel³, Alejandro Badilles³*; 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 Finzel^{1,3}, Marc Horney¹, Cece Dahlstrom^{1,2}*; 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

Wednesday Morning

- 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.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.¹, J. Alfonso Ortega-S.¹, Timothy E. Fulbright¹, G. Allen Rasmussen¹, 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*
- 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 Wellina²; 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 Smart¹, Bruce Wylie²; 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, MJ 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-23 Predicting Nutritive Value of Desert Bighorn Sheep Forage Using Near Infrared Spectroscopy** John A. Kava, Douglas R. Tolleson; University of Arizona, V Bar V Ranch, Rimrock, Arizona, 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 Hamilton², 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

Wednesday Morning

- 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 Boltz¹, Jeff Hemenway¹; ¹USDA NRCS, Huron, SD, United States
- D-27 Predicting the Spread of Invasive Plant Species Under a Rangeland Climate Change Scenario** Robbie Lee¹, Gary Bradfield¹, Maja Krzic¹, Reg Newman², Brian Wallace²; ¹University of British Columbia, Vancouver, BC, Canada, ²B.C. Ministry of Forests and Range, Kamloops, BC, Canada
- D-28 Transcending Communication Borders in Range Management** Cristina Francois^{1,2}, Abe Clark^{2,1}, Del Despain¹, Don McClure², Rob Grumbles¹; ¹University of Arizona, Mohave County Cooperative Extension, Kingman, AZ, United States, ²Bureau 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^{1,4}, Steve Foster^{1,4}, Kent McAdoo^{1,4}, Ron Torell^{2,4}, Rick Orr^{3,4}, Margaret Orr⁴; ¹University of Nevada Cooperative Extension, Nevada, United States, ²Nevada Cattlemen's Association, Elko, Nevada, United States, ³Sustainable Grazing Coalition, Elko, Nevada, United States, ⁴NV 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. Landeen¹, Steven L. Petersen¹, Stanley G. Kitchen², Peter J. Weisberg³, Brian A. Reeves², Kevin A. Costa¹; ¹Brigham Young University - Department of Plant and Wildlife Sciences, Provo, UT, United States, ²Rocky Mountain Research Station - Shrub Sciences Lab, Provo, UT, United States, ³University 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 Westbrook⁵, Becky Westbrook⁵, 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 Dwire¹, *Joseph Gurrieri*², *Christopher Carlson*³, *Marc Coles-Ritchie*⁴, *Stephen Solem*⁵, *Allison Aldous*⁶, *Devendra Amatya*⁷, *Trish Carroll*⁸, *Barry Johnston*⁹, *Linda Spencer*¹⁰; 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 Tanager; *U.S. Geological Survey, Jamestown, ND, United States*
- 10:30 am **Biological Assessment and Monitoring of Wetlands in the Prairie Pothole Region** Christina Harqiss; *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 Zajkowski¹; ¹RedCastle 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 Rangó, 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 Karl¹, Jean Opsomer³, Sarah Nusser², Andrea Laliberte¹, Michael Duniway¹, Robert Unnasch⁴; ¹USDA 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^{1,2}; ¹USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID, United States, ²Noble 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 DeBacker¹, John Heywood²; 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 Carr^{1,2}; 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. Ndzeidze¹, Kipp E. Johnson¹, Michael D. Johnson², Mounir Louhaichi³, Patrick E. Clark⁴, Douglas E. Johnson¹; 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 **Demonstration and Discussion Sessions**
- 1:30 pm **The Use of SamplePoint** Sam Cox
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 Hedstrom¹, Rick Caquelin²; ¹Rancher, Raynesford, Montana, United States, ²USDA-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

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 Maczko¹, John Tanaka², Stanley F. Hamilton³; ¹Sustainable Rangelands Roundtable - University of Wyoming, Laramie, WY, United States, ²Department of Renewable Resources, University of Wyoming, Laramie, WY, United States, ³Idaho Department of Lands (retired), Boise, ID, United States
- 8:20 am **SRR Sustainable Ranch Management Assessment Project - Concepts, Goals, and Objectives** Stanley F. Hamilton¹, Dick Loper²; ¹Idaho Department of Lands (retired), Boise, ID, United States, ²Wyoming 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 Fults¹, Chuck Stanley²; ¹Natural Resources Conservation Service, Portland, Oregon, United States, ²Natural 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 Quimby², Doug Powell¹; ¹Bureau of Land Management, Washington DC, United States, ²USDA Forest Service, Denver, CO, United States*
- 10:00 am Break**
- 10:20 am **SRR Ecological Assessment Indicators: Selection and Monitoring Techniques** *Michael Smith¹, John Mitchell¹; ¹University of Wyoming, Laramie, WY, United States, ²USDA 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*
- 12:00 pm

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. Englert¹, Jack R. Carlson², W. Curtis Sharp³, Douglas Helms¹; ¹USDA-NRCS, Washington, D.C., United States, ²USDA-NRCS (Retired), Fort Collins, CO, United States, ³USDA-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 James¹, Tom Jones²; ¹USDA-ARS, Burns, OR, United States, ²USDA-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-Reilly; 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** *Devan 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 Braqq; University of Nebraska at Omaha, Omaha, Nebraska, United States*
- 11:40 am - 12:00 pm **Relationships of Fire to North American Grouse** *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** Juala 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 Ranche, 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 - 12:00 pm **Crossings, Corridors and Trophic Cascades: Wolves and Woody Vegetation in Banff National Park** Clifford A. White; Scientist Emeritus, Parks Canada, Banff, Alberta, Canada

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 Nauqle¹, Kevin Doerty², Jason Tack³, 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**
- 12:10 pm **Coordinated Effort to Recover the Sage Grouse** Tom Moore; NRCS, Davis, CA, United States

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
- 12:30 pm **Review and Discussion about Mapping, Soils, and Climate Tools**

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 Cox², Justin Derner²; ¹USDA-ARS, Fort Collins, CO, United States, ²USDA-ARS, Cheyenne, WY, United States
- 1:55 pm **Assessing Sagebrush Steppe Rangelands with VLSA Imagery** *Corey Moffet^{1,2}, 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. Booth², 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, Terrance Booth^{1,2}, Samuel Cox^{1,2}, Brad Cooper¹, Richard Dunlap¹, Shad Cox¹, David Borland^{1,3}; 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 Booth⁴, Matthew Bobo³, Samuel Cox⁴, Shad Cox⁵, Richard Dunlap⁵, Al Sandoval³, Kent Reid⁶; 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 Meador¹, 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
- 5:15 pm **Implications for Future Research** James Dobrowolski; National Institute of Food and Agriculture, Washington, DC, United States

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 **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

Thursday Afternoon

- 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 Taliqa; 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 **Group Discussion**
- 4:00 pm

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 Fuhlendorf², James Miller³; 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

- 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 Taylor¹, Dirac Twidwell², William Rogers²; ¹Texas AgriLife Research, Sonora, TX, United States, ²Texas 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
- 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

- 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; NRCS, National Office, United States

- 2:55 pm

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 **Plant Growth Curve Simulation Tool**
pm *Gale Dunn*
ARS, Fort Collins, CO, United States
- 2:00 **Organizing and Interpreting Plant Community Data**
pm *Kendra Moseley*
NRCS, Davis, CA, United States
- 2:30 **Considerations and Development of the Hydrologic
Function Section in Rangeland ESDs**
pm *Ken Spaeth*
USDA-NRCS, Fort Worth, TX, United States
- 3:10 Break**
pm
- 3:30 **Developing Ecological Site Keys**
pm *Jon Siddoway, Kirt Walstad*
NRCS, Bozeman, MT, United States
- 4:00 **Remote Sensing for ESD development**
pm *Doug Ramsey*
Utah State University, Logan, UT, United States
- 4:20 **Remote Sensing for STM development**
pm *Alex Hernandez*
Utah State University, Logan, UT, United States
- 4:40 **Additional Review, Discussion and Questionnaire**
- 5:00
pm

Author Index

Acorn, John	38
Acton, Matthew	63, 80
Aldous, Allison	91
Aldridge, Cameron	74
Alexander, Jack	62,
Alexander, Mike	63, 79
Alford, Craig	71
Al-Hamdan, Osama Z	48, 67
Al-Homsh, Hani	50
Allen, David	105
Allen, Phil S	66
Allphin, Loreen	50
Allred, Brady	45, 104
Alpers, Greg	58, 63
Alvez, Juan P	56
Amatya, Devendra	91
Anderson, Lars	63
Anderson, Val	33
Angerer, Jay	88
Ansley, Jim	105
Ansley, R J	61
Applegate, Laura	62
Aragon, Joe	96
Assal, Timothy	74
Atwill, Edward	39
Auble, Gregor	50
Augustine, David	39, 101
Avila-C., J Miguel	87
Awada, Tala	84
Ayala-A., Felix	57, 87
Aycrigg, Jocelyn	63
Azarnivand, hosein	73
Badilles, Alejandro	86
Bailey, Derek	46, 56, 86, 88
Baker, Paige	38
Bangsund, Dean	55
Banister, Ray	65
Barnes, Matt	55, 56, 63
Barre, David	49
Barry, Sheila	42
Bartoskewitz, Marc	47

Bartuszevige, Anne	40
Becchetti, Theresa	39, 43
Becker, Roger	58, 59
Beck, Jeffrey	85, 101
Beck, K George	59
Beckstead, Julie	66
Beckman, Ben	85
Bedunah, Don	83
Beers, Jim	105
Belcher, Ken	39
Benson, Jerry	34, 58
Bernau, Christopher	75
Beschta, Robert	41
Bestelmeyer, Brandon	35
Beyers, Jan L	66
Biondini, Mario	44
Blankenship, Kori	97
Blank, Robert	47, 48, 61
Blevins, Audie	42
Bloom-Cornelius, Ilana	75
Blumenthal, Dana	102
Bobo, Matthew	83, 93, 102
Boe, Arvid	58
Bohle, Mylen	56
Bohnert, David	73
Bolton, Robert	76
Boltz, Stan	64, 89
Booth, D Terrance (Terry)	35, 69, 70, 76, 77, 85, 101, 102
Bork, Edward	62, 63, 72, 74, 79, 84
Borland, David	101, 102
Boss, Darrin	46
Bott, Rebecca	87
Boxall, Peter	39
Boyce, Mark	105
Boyda, Eric	62
Boyd, Chad	48, 68, 73
Boyte, Stephen P	70
Braaten, Sarah	69
Bradfield, Gary	89
Bradford, James	43
Brady, Ward	63
Brady, Ward W	82

Bragg, Thomas	97
Branson, David	61
Breck, Stewart	40
Bremm, Carolina	73
Brennan, Leonard	79
Brizuela, Miguel	74
Broadbent, Tanner	74, 84
Brown, Joel	62, 100
Brown, Timothy	88
Bruegger, Retta	86
Brummer, Joe	63, 69, 88
Bryant, Fred C	47
Budd, Bob	52
Buhl, Deborah	45
Bunting, Stephen	70, 75, 78
Burch, Pat	59, 71
Burkett, Laura	35
Busby, Fee	93
Bush, Laura	47
Butler, Jack	62, 72
Butterfield, Charles	85
Caesar, Anthony	44
Caesar, TheCan	44
Cagney, Jim	77
Calderón-Domínguez, Pedro Angel	82
Call, Chris	47
Call, Christopher	58, 81
Campbell, Steve	100
Caquelin, Rick	49, 94
Cardon, Grant	84
Carlson, Christopher	91
Carlson, Jack R	95
Carr, Craig A	50
Carr, James	78, 93
Carroll, Trish	91
Casazza, Mike	74
Casey, P Allen	50
Casper, Michael	53
Castner, Eric	71
Catellier, Christiane	80
Cavalcanti, Ricardo	77
Chamberlain, Anna-Marie	47

Chambers, Jeanne	53
Chen, Fang	101
Chigbrow, D Joseph	80, 98
Cho, Jaepil	48, 68, 87
Chou, Yifang	87
Christiansen, Thomas	99
Christman, Laine	42
Cibils, Andres	74, 101, 102
Cid, Silvia	74
Clark, Abe	89
Clark, Doug	87
Clark, Jason	41
Clark, Patrick	77, 98
Clark, Patrick E	48, 50, 80, 93
Clarke, Tim	65
Clary, Justin	100
Clause, Karen	104
Clause, Karen J	57
Clements, Charles	47
Clements, Charlie	52, 61, 68
Cline, Nathan	68, 78, 88
Coles-Ritchie, Marc	91
Collins, Gail	46
Conley, Julie	80
Connelly, Jack	106
Conner, J Richard	88
Conner, Lafe	61
Cooper, Brad	101
Coppock, D Layne	84, 86
Costa, Kevin A	89
Courtright, Ericha	35
Cox, Mercedes	89
Cox, Robert	47, 68, 87
Cox, Samuel	35, 77, 101, 102
Cox, Samuel E	77, 102
Cox, Shad	56, 74, 101, 102
Crane, Kelly	98
Crane, Kelly K	80
Creech, Earl	48
Crimmins, Michael	82
Crook, Lean	78
Crowder, Wayne	103
Cummings, Chad	58, 59, 63, 71

Currie, Chase	79
Dahlgren, Randy	39
Dahlstrom, Cece	86
Davies-Adams, Laurie	65
Davies, Kirk	59, 61, 68, 97
Davis, Craig	104
Davis, D Bracken	78
Davis, Natasha	88
Davis, Phillip	59
Davis, Stephen	39
DeBacker, Michael	93
Debinski, Diane	104
Deboobt, Timothy	88
Deenik, Jonathan	86
DeKeyser, Edward (Shawn)	37, 50, 69, 91
DelCurto, Timothy	55, 73
Demaere, Craig	79
DeMaso, Stephen	79
Denney, Erin K	48
Deranleau, Shane	64
Derner, Justin	39, 62, 101
Despain, Del	89
Dewey, Sarah	43
DiAllesandro, Andrew	44
Dixon, Charles E	80
Dobrowolski, James	42, 54, 102
Doerty, Kevin	99
Doescher, Paul	71
Douglas, Joel	73
Drawe, D Lynn	57, 87
Dreesen, David	96
Dring, Tim	99
Duke, Clifford S	49
Duncan, Celestine	59
Duniway, Michael	44, 92
Dunlap, Richard	56, 74, 101, 102
Dunn, Gale	107
Duponcheel, Lawrence	86
Dwire, Kathleen	91
Eastburn, Danny	44
Edinger-Marshall, Susan	43
Edwards, Michael	71
Elmore, Dwayne	97

Endress, Bryan	40
Engle, David	79, 97, 104
Englehart, Joe	43
Englert, John M	95
Erickson, Terrell	106
Espeland, Erin	44
Evans, Jeff	99
Evans, Tracie	84
Fansler, Valerie	34
Farinha, Melissa	74
Farley, Joshua	56
Faulkner, Mitch	64
Fausch, Kurt D	69
Faulstich, Jim	52
Fenchel, Gregory	96
Fernandez-Gimenez, Maria	51, 80, 81, 86
Fidel, Joe	106
Fiedler, Diane	62
Filley, Shelby	48
Finch, Mike	58
Finn, Sean	54
Finzel, Julie	44, 86
Fisher, Micheal	88
Flanagan, DC	35
Florence, Scott	52
Fosse, Pat	53
Foster, Steve	89
Foulke, Thomas	98
Fowers, Beth	47
Fox, William E	49
Fraase, Andrew	45
Frakes, Neil	62
Francois, Cristina	89
Frank, Albert	43
Frazer, Nat	53
Freese, Erica	81
Frisina, Michael	63
Frost, Rachel	41, 60, 71, 85
Frost, William	43
Fuchs, Derrick	74
Fuhlendorf, Samuel	45, 56, 61, 63, 75, 79, 97, 104, 105
Fukumoto, Glen	74, 86

Fulbright, Timothy E	57, 87
Fults, Gene	94
Funk, Chris	82
Gaiser, Dean	58
Gangwer, Kristin	86
Garcia, Neto	45
Garretson-Weibel, Cindy	103
Gates, Roger	58, 87
Gayton, Don	59
Gearhart, Amanda L	70
Geaumont, Benjamin	55, 79
Genro, Cristina	73
Genro, Jairo	73
George, Chad	47, 75
George, Holly	86
George, Melvin	39
Gerhart, Shelly L	52
Ghassali, Fahim	50
Gibson, Chad	67
Gilgert, Wendell	40, 99
Gillen, Robert	79
Gill, Richard	61
Girard, Tisa	63, 79
Gitzen, Robert	82
Glenn, Charles	85
Godfrey, Robert	86
Goergen, Erin	68
Gokhale, Bhushan	101
Gonzalez, Carlos	74
Gonzalez, Mark A	76
Gonzalez-V., Eduardo A	87
Goodson, Danny	96
Goodwin, Jeff	86
Goosey, Hayes	60
Goven, Gene	65
Grace, James	71
Graham, David	59
Graves, Melissa	60
Gray, Erin C	90
Greenhalgh, Linden	71
Green, Shane	81
Griebel, Randall L	52
Griffith, Duane	60, 85

Griffith, Larry	69
Griffiths, Tim	99, 106
Grumbles, Rob	89
Guffey, Kelsey	45
Gunter, Stacey	79
Guo, Xulin	80
Gurrieri, Joseph	91
Hagan, Sarah	97
Hagen, Stephen	70
Haiitbaev, R	58
Haile, Kimberly	78
Hall, Arthur	66
Hallock, Brent	84
Halstvedt, Mary	58, 59, 71
Hamilton, Robert	45
Hamilton, Stanley F	94, 103
Hamilton, Wayne	88
Hanlon, Sarah	53
Harbour, James	71
Hardegree, Stuart	48, 53, 54, 68, 87
Hardesty, Linda	62
Hargiss, Christina	91
Harmon, Dan	52, 61, 68
Harper, John	87
Harris, Terri	52
Harris, Virginia	63
Hart, John	98
Hase, Kristen	105
Hatfield, Patrick	60
Hays, Amy	78
Hays, Brian	78
Heath, Scott	78
Hedstrom, Steve	94
Heilman, Philip	70
Helms, Douglas	95
Hemenway, Jeff	89
Henderson, Allison	39
Henderson, Darcy	80
Hendrickson, John	75
Hernandez, Alex	107
Hernandez, M	35
Herrick, Jeff	35
Herrick, Jeffrey	44, 83

Heywood, John	93
Hibbard, Chase	38, 52
Hibbs, Willow	80
Hickman, Karen	39
Hidinger, Lori	49
Hild, Ann	48, 72
Hillberry, Dee	69
Hirsch, Merilynn	47, 58
Hively, W Dean	78
Hodur, Nancy	55
Hjerdas, Blain	52
Hoffman, Chad	78
Holechek, Jerry	88
Hollenback, John	94
Homer, Collin G	70
Hopkins, David	89
Horney, Marc	84, 86
Houchen, Dean	79
Hourihan, Erin	62
Howell, Jim	55
Howery, Larry	86, 90
Hubbs, Mike	100
Huberty, Mindy	87
Hudson, Tipton	43
Huffman, Kurt	49
Hulet, April	34, 70, 78
Hulting, Andrew	48
Hunt, E Raymond	78
Hutchinson, Barbara	41
Igl, Lawrence	54
Irving, Barry	74
Iwaasa, Alan	39
Jachetta, John	58
Jacobs, James	104
Jacobs, James S	57
Jacobs, Jim	81
Jacobson, Laura	59
Jacobs, Ruth	54
Jager, Dusty	87
James, Jeremy	67, 68, 84, 95
Jasmer, Gerald	99
Jasmine, Jamie	106
Jay, Steven	102

Jensen, Delyn	46
Jensen, Katherine	42
Jensen, Kevin	33, 95
Jensen, Ryan	70
Jessop, Brad	34
Johanson, Jamin	81, 100
Johns, Braden	47
Johnson, Dan	40
Johnson, Douglas	54
Johnson, Douglas E	50, 77, 80, 93, 98
Johnson, Jordan	74
Johnson, Kipp E	93
Johnson, Michael	77
Johnson, Michael D	93
Johnson, Patricia	58
Johnston, Barry	91
Jolley, Leonard	65
Jonas, Jayne	45, 82
Jones, Jason	88
Jones, Jeff	87
Jones, Thomas	68, 96
Jones, Tom	95
Kachergis, Emily	51, 81
Kagima, Barbara	70
Kaminski, Timmothy	43
Kane, Stephanie	42
Karl, Jason	35, 36, 83, 92
Kava, John	83, 88
Kay, Charles	96, 106
Kelley, Clarence	103
Keyser, Tara	89
Kilpatrick, Ed	53
Kim, Yong Soo	74
King, Warren	42
Kiniry, James	43
Kiniry, Jim	44
Kirychuk, Brant	40
Kitchen, Karen	63
Kitchen, Stanley G	89
Kline, Bill	59, 71
Knapp, Corrine	86
Knerr, Jan	78
Kobayashi, Mimako	43

Koc, Ali	85
Kormos, Patrick R	48
Kott, Rodney	60, 85
Krause, Chad	50
Kreuter, Urs	49
Krzic, Maja	89
Kulawardhana, R Wasantha	49
Kuvlesky Jr., William	79
Laca, Emilio	73
Laliberte, Andrea	92, 93
Lamb, Eric	80
Landeen, Melissa L	89
Langston, Vernon	58, 59, 63, 71
Lardy, Benjamin	85
Lardy, Greg	45
Larsen, Royce	84
Larson, Kristine	79
Larson, Larry	80, 98
Larson, Stephanie	42
Larson, Steve	95, 96
Larson, Steven	96
Latimer, Andrew	44
Lauenroth, William K	44
Launchbaugh, Karen	41, 44
Lavine, Barry	35
Lawrence, Rick	92, 102
Lee, Robbie	89
Leffler, A Joshua	84
Leger, Elizabeth	48, 68
Lehnhoff, Erik	90
Leis, Sherry	82
Leistritz, Larry	55
Lennox, Michael	42
Leonard, Jeff	73
Leverkus, Sonja	56
Lewis, David	39
Liebig, Mark	39
Lile, David	39
Limbach, W Eric	77
Limb, Ryan	96, 105
Lipka, Adrienne	56
Litt, Andrea R	57, 87
Lloyd-Reilly, John	96, 104

Longland, Bill	40
Loper, Dick	94
Lossing, Samuel	57
Louhaichi, Mounir	50, 77, 93
Lowe, Sarah	80
Lukefahr, Steven	74
Luna, Tara	88
Lunt, Steven	56
Lusk, Jeffery	63
Lym, Rodney	59
Mabey, TJ	52
Mackinnon, Craig	83
Maczko, Kristie	49, 94
Madison, John	74
Madsen, Matthew	68, 75, 78
Maestas, Jeremy	40, 99
Major, Donald J	70
Mamedov, E	56
Mamo, Charles	43
Mandich, Cheryl	80
Mangold, Jane	34, 60, 72
Manning, Mary	76
Marlow, Clayton	45, 59, 78, 97
Martin, David	84
Martin, Ryan	53
Masters, Robert	58, 63
Mata-Gonzalez, Ricardo	73, 84
Matney, Casey	81
Mattson, Arnold	42
Maxell, Bryce	76
Maxwell, Bruce	59
Ma, Zhao	84
McAdoo, Kent	34, 40, 48, 89
McCallum, Bonnie	41
McClure, Don	89
McCollum, Daniel W	49
McCue, Sabrina	87
McCuin, Gary	89
McDaniel, Kirk	59
McDonald, Sandra	90
McDougald, Neil	43
McGranahan, Devan	97
McIver, James	67

McLendon, Terry	84
Mealor, Brian	72, 102
Meehan, Miranda	50, 69
Meiman, Paul	69, 88, 89
Meissner, Justin	94, 99
Menalled, Fabian	59, 60, 72
Mendelsohn, Brittany	63
Mendieta, Vincent	77
Meredith, Jeff	71
Merigliano, Michael	50
Meyer, Susan E	66
Milby, Jessica	84
Miller, James	104
Miller, Kristin L	55
Miller, Michelle	85
Miller, Richard	62, 97
Miller, Val	59
Miller, William	63, 80
Miller, Zach	72
Miller, Zoe	90
Misar, Christopher	58
Mitchell (Emeritus), John E	49
Mitchell, John	95
Mitchell, John E	49, 83
Mix, Clare	63
Moberg, Dean	104
Moechnig, Mike	58
Moffet, Corey	34, 68, 92, 101, 104
Moffett, Joel	53
Mohamed, Ahmed	88
Molina, Jorge	47
Monaco, Thomas	47, 48, 58, 84
Monaco, Tom	33, 95
Mononi, Jack	65
Moore, Lynn M	44
Moore, Tom	99
Moranz, Ray	104
Morehouse, Andrea	98
Morgan, Jack	43
Morgan, Jack A	49
Morgan, Tye	47, 48, 61
Morris, Lesley	48, 58
Morrison, Lloyd	82

Mosali, Jagadeesh	51
Moseley, Kendra	107
Moseley, Mark	66, 78
Mosley, Jeffrey	60, 71, 85
Mosley, Tracy	71
Mott, Ivan	96
Mouse, Eric	74
Mousel, Eric	74
Muir, James	73
Muir, Patricia S	90
Mukimov, T	58
Mulliniks, Travis	45
Munter, Emily	55
Murphy, Cheryl	49
Murphy, Melanie	82
Muscha, Jennifer	45
Nafus, Aleta	59, 61
Naugle, Dave	99, 106
Naylor, R Loren	88
Ndzeitze, Stephen K	50, 93
Nearing, Mark	35
Nester, Penny	87
Neville, Bryan	45
Newman, Reg	89
Nissen, Scott	58
Noble, Tom	93
Nordquist, Megan	46
Norland, Jack	50, 69
Norton, Shawn	51
Novak-Echenique, Patti	81
Nusser, Sarah	92
Nyren, Anne	45
Nyren, Paul	45
Obermeyer, Brian	105
O'Geen, Anthony	39, 84
Opsomer, Jean	92
Orloff, Noelle	72
Orr, Margaret	89
Orr, Rick	89
Ortega, Alfonso	79
Ortega-Ochoa, Carlos	82
Ortega-S., Alfonso	74
Ortega-S., J Alfonso	47, 57, 87

Overstreet, Laura	89
Owensby, Lyndi	59
Owens, Corey	48, 49, 74
Owens, Jacob	100
Paradeis, Breanna	44
Parkinson, Hilary	69
Parks, Catherine	40
Parr, Steve	96
Parson, Mark	95
Paschke, Mark	90
Patton, Jeannie	97
Peacock, George	73
Peel, Michael	96
Pellant, Mike	33, 53, 54, 66, 68
Pendergrass, Kathy	104
Perez-Amaro, Jose Alberto	73
Perry, Lisa	43
Perryman, Barry	62
Peters, Amy	48
Petersen, Charles	46
Petersen, Edward	50
Petersen, M K	45
Petersen, Steve	46, 70
Petersen, Steven	88
Petersen, Steven L	89
Peters, Matthew P	82
Peterson, Vanelle	58, 71
Phillips, Rebecca	43
Pierson, FB	35
Pierson, Frederick B	48, 67
Pitcher, Lance	85
Polley, Wayne	43
Popescu, Sorin	77
Porter, Kevin	47
Powell, Doug	95
Powell, Larkin	63
Powley, John	86
Pratt, Mindy	41
Prileson, Vanessa	74
Provenza, Fredrick	46
Puntenney, Kira	51
Pyke, David	35, 66, 71, 74
Pyle, Landon	49

Quilter, Mark C	78
Quimby, Chuck	95
Quistberg, Sarah	100
Racher, Brent	102
Ramsey, Doug	107
Rango, Albert	92, 93
Ransom, Jr., Dean	49, 62
Ransom, Corey	58
Rashford, Benjamin S	98
Rasmussen, G Allen	57, 87
Rawlins, Jennifer	34
Raza, Mansoor	101
Rea, Gary	73
Reese, Kerry	106
Reeves, Brian A	89
Reeves, Matt	83
Reeves, Matt C	49
Reid, Angela	61, 75
Reid, Kent	102
Reid, Simon	63
Reiner, Alicia	44
Reinhart, Kurt	49, 61
Reisner, Michael	71
Renz, Mark	58
Repasky, Kevin	102
Repp, Jeff	69
Rew, Lisa	102
Rhodes, Edward	88
Rice, Peter	59
Ricketts, Matthew J	81
Rick, Susan	71
Riera-Lizarazu, Oscar	73
Rigge, Matthew	88
Rimbey, Neil	42
Rimbey, Neil R	43
Rinella, Matt	67
Rinella, Matthew	55
Ripple, William	41
Rittenhouse, Larry R	56
Roath, Roy	80
Robertson, Mandi	89
Robichaud, Peter R	67
Robins, Joseph	95

Robinson, Todd	46
Rocca, Monique	81
Roche, Leslie	39, 44
Roeder, Brent	60,71, 85
Rogers, James	51
Rogers, William	79, 105
Rogers, William E	57
Rollins, Dale	49
Rollins, Kimberly	42, 43
Root, Heather	90
Roselle, Lovina	41
ross, jesikah maria	86
Roth, Aaron	61
Roundy, Bruce	34,57, 62, 68, 70, 75, 78, 85
Roundy, Darrell	85
Rowe, Courtney	68
Row, John M	50
Rowland, Mary	40
Russell, Morgan	56
Rutherford, Robert	84
Ruyle, George	82
Sada, Donald	91
saffariha, maryam	73
Salisbury, Micheal	48, 74
Sanchez, Homer	73, 100
Sanders, Bob	54
Sanderson, Matt	82
Sandoval, Al	102
Santana, Lars	63
Saunders, W Carl	69
Schacht, Walter	63, 74, 84, 85
Schauer, Christopher	55, 58, 70, 79
Schellenberg, Michael	34
Schell, Kyle	74
Schmitt, Abdon	56
Schnapp, Laura A	78, 90
Schneider, Jeanne	87
Schon, Kathy	87
Schott, Keith	81
Schrader, Scott	35
Schrank, Fredrich	61
Schriefer, Craig	73

Schueck, Linda	54
Scott, Cody	48, 49, 74
Scott, John	63
Scott, Michael	50
Sears, Callum	98
Sebade, Brian	72
Sedivec, Kevin	45, 50, 55, 69, 70, 79
Serr, Kindra	101
Seyfried, Mark	44
Shalouf, Osama	50
Sharp, W Curtis	95
Shaver, Pat	35, 99, 100
Shaver, Patrick	81, 105
Shaw, Nancy	34, 53, 66, 68, 69
Shaw, Nancy L	48
Shaw, William	88
Sheehy, Cody	41
Sheley, Roger	47, 48, 53, 58, 59, 67, 90
Shelly, Steve	76
Shewmaker, Glenn	56
Siddoway, Jon	93, 107
Simonds, Gregg	102
Sims, Phillip	43
Sindarov, Sh	58
Skinner, Robert	63
Sleugh, Byron	58, 59, 71
Sloane, Charles	59
Smart, Alexander	74, 85, 88
Smeins, Fred E	57
Smith, Agee	46
Smith, Brenda	47, 53, 67, 90
Smith, Dallen	65, 69
Smith, Forrest	47, 104
Smith, Frederick	89
Smith, Jim	97
Smith, Mae	69
Smith, Michael	62, 95
Smith, Mike	65, 69
Smith, Sonny	81
Smith, Thomas	72
Snyder, Donald	84
Solem, Stephen	91

Soper, Jonathan	85
Soulodre, Etienne	92
Sowell, Bok	63
Spaeth, KE	35
Spaeth, Kenneth	44, 73
Spaeth, Kenneth E	67
Speath, Ken	107
Spencer, Linda	91
Spiker, Jerrold R	55
Springer, Tim	79
Sprinkle, Jim	82
Spurrier, Carol	35, 65
Spurrier, Carrol	83
Stanley, Chuck	94
Stannard, Mark	103
Steffens, Tim	53, 56
Steffler, Ann	63, 80
Stevens, Bryan	106
Stevenson, Matthew	74, 86
St. John, Loren	103
Stoltenberg, Matt	50
Stone, JJ	35
Strand, Eva	63, 78, 87
Stringham, Tamzen	57, 81
Strom, Calvin	62
Stubbendieck, James	70
Sullins, James	43
Svejcar, Tony	67, 68, 97
Swanson, John	34
Swaty, Randy	97
Swope, Sarah	87
Symstad, Amy	45, 82
Synatzske, David R	57, 87
Tack, Jason	99
Taliga, Christine	104
Tanaka, John	41, 42, 49, 94, 95, 103
Tangen, Brian	91
Tannas, Steven	62, 72, 87
Tate, Kenneth	39, 44
Tausch, Robin	44, 62
tavili, ali	73
Taylor, Jr., Charles	79
Taylor, Charles	48, 105

Taylor, David "Tex"	42
Taylor, David T	98
Taylor, John (Jack)	38
Taylor, Jason	83
Taylor, J Bret	101
Taylor, Megan M	48
Taylor, Michael	42, 43
Taylor, Wendy	59, 74
Thacker, Eric	79, 97
Thomas, Milt	46, 56
Thompson, Carol	61
Thompson, Dennis	95
Thompson, Donald	61
Thorne, Mark	86
Thrift, Brian	53
Tidwell, Kendall	48
Tjelmeland, Aaron	47
Toevs, Gordon	83
Tolleson, Doug	83
Tolleson, Douglas R	86
Torell, L Allen	42, 43, 86
Torell, Ron	89
Torma, Peter	52
Torrez, Steven	66
Travis, William R	86
Tueller, Paul	76
Turner, Lee	67
Twidwell, Dirac	57, 79, 105
Uhalde, Gracian	52
Underwood, Amelia	66
Unnasch, Robert	92
Utsumi, Santiago	102
Valvala, Robert	74
Vance, Linda	76
Van Miegroet, Helga	84
Van Riper, Laura	65
Vasquez, Edward	47
Vavra, Martin (Marty)	40, 55
Veblen, Kari	74
Vermeire, Lance	34, 61, 104
Viall, Eric	89
Volesky, Jerry	74
Volt, Mark	63

Wacker, Stefanie	72
Wadman, Keith	81
Waldron, Blair	95, 96
Waldron, Dan	48
Walker, John	48
Wallace, Brian	89
Walstad, Kirt	107
Wambeke, Jordan	85
Wang, Guojie	45
Warnock, Bonnie J	78, 90
Warren, Andy	53
Warrick, Curtis	65
Washington-Allen, Robert A	49, 77
Weber, Keith	101
Wei, H	35
Weinhold, Carol	85
Weinmeister, Robin	46
Weir, John	105
Weisberg, Peter J	89
Weixelman, Dave	76
Welling, Robert	46, 88
Weltz, MA	35
Weltz, Mark	44, 52, 57, 65, 68
Werner, Tom	53
Westbrooks, Becky	90
Westbrooks, Randy	90
White, Cliff	63, 96
White, Clifford A	98
White, Keith	96
Whitted, Dennis	45
Wickman, Jaala	98
Williams, Brandee	75, 88
Williams, C Jason	48, 67
Williams, Jason	68
Williams, Joe	104
Williams, John	80, 98
Williams, Justin	33, 58
Williams, MJ	88
Willms, Walter	62, 72, 84
Wilson, Robert	58
Windham, Michael	50
Winslow, Susan	104
Winslow, Susan R	57

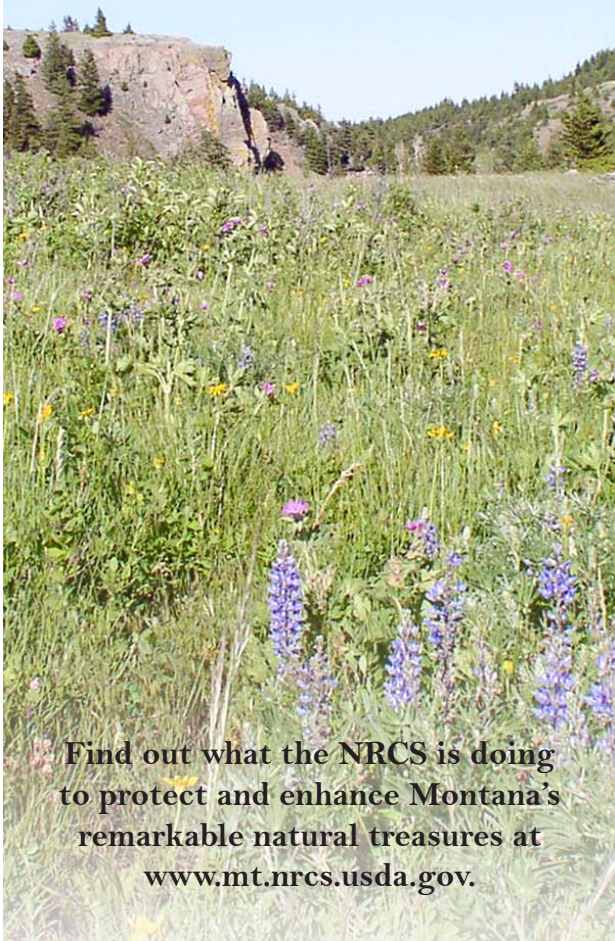
Winterholler, Sara	74
Winters, Craig	93
Wirth, Troy A	66
Wisdom, Michael	40
Wiseley, Lucas	81
Wittie, Roger	61
Wittrock, Galen	55
Woerz, Adele L	50
Wolf, Kristina	84
Wonkka, Carissa L	57
Wulfhorst, JD	42
Wylie, Bruce K	70, 88
Wynia, Richard L	50
Xu, Lan	58, 62
Yarina, Adam	84
Young, Carolyn	51
Young, James	52
Young, Kert	57, 78, 85
Young, Steve	90
Zabinski, Cathy	69
Zajkowski, Thomas	92
Zarriello, Thomas	54
Zeleznik, Joseph	69
Zvirzdin, Daniel	75

*Some see grass.
We see a natural treasure.*

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



United States Department of Agriculture
Natural Resources Conservation Service



**Find out what the NRCS is doing
to protect and enhance Montana's
remarkable natural treasures at
www.mt.nrcs.usda.gov.**

Helping People Help the Land

USDA is an equal opportunity provider and employer.

Winter Dance—2012

Lessons from the Past — Strategies for the Future



January 29 — February 3, 2012

SRM 65th
Annual Meeting
Spokane, WA