



ALBUQUERQUE

February 6-10, 2022

75TH ANNUAL SRM MEETING

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Meeting Sponsors

A special note of thanks to our sponsors

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Welcome

Welcome to the 2022 SRM Annual Meeting!

Our Host Sections, Arizona and New Mexico, and the 2022 Planning Committee have put together a fantastic program, highlighting the region and all that the Southwest has to offer. We know that this year's meeting has had its share of obstacles and uncertainty, so we thank each and everyone of you who were able to make it here in-person to Albuquerque.

To continue to address the changing landscape of meetings, SRM will be offering a virtual component to this year's in-person meeting. SRM is taking many of its sessions to the hybrid format and we appreciate all of our Session organizers and participants for learning with us as we embark on this new meeting component. All of the in-person attendees will have access to the virtual meeting format and we hope that you will take the time during the week of Feb. 21st to participate in the virtual-only Sessions; you will find a list of these within this program as well as on the meeting App and online.

For now though, we look forward to once again meeting in-person and enjoying our time here in Albuquerque! Make sure to visit this year's Trade Show and all of our exhibitors and artisans—you'll have multiple opportunities to interact with them during the many social functions hosted in the space this year. This Tuesday, venture offsite with us as we got to the Expo for hands on training, a ranch rodeo, and fun! This year's technical program is not to be missed, drop into one of the many meeting rooms to take in the world-class list of speakers, both in-person and streaming in, that are taking part in this year's program.

We look forward to seeing you in the halls during this year's 75th SRM Annual Meeting!



Room Locations

MAIN LEVEL

Room Name

Registration

Tradeshow

Aztec

Galisteo

Cimarron

Dona Ana

Room

Foyer

Hall 3

140

110

130

120

Lower Level

Room Name

Picuris

Sandia

Santa Ana

Cochiti / Taos

Acoma / Zuni / Tesuque

Taos

Picuris

Cochiti

Isleta / Jemez

Santa Ana

Navajo / Nambe

Acoma

Apache

Laguna

Tesuque

Sandia

Zuni

Santo Domingo

Isleta

Jemez

Nambe

Navajo

San Juan

Room

27

29

31

18 & 30

16, 15 & 32

30

27

18

19 & 21

31

25 & 23

16

17

20

32

29

15

28

19

21

23

25

22

Upper Level Rooms

Room Name

San Miguel/Mesilla/

Pecos/Ruidoso

Mesilla

San Miguel

La Cienega

Pecos

Ruidoso

Tijeras

Ballroom C

Room

215

235

215

240

230

220

210

270

Map

DIRECTORY

UPPER LEVEL

WEST BUILDING

Kiva Auditorium 290
Box Office
Concessions
Kiva Boardroom 285
Ballroom A 280, B 275, C 270
Buena Vista Balcony
Skybridge to East Building

EAST BUILDING

Meeting Room 210-240
Suite A 231 - H 259
Parking Garage
Skybridge to West Building

MAIN LEVEL

WEST BUILDING

Hall 3 & 4
Guest Service Desk
Civic Plaza Entrance
2nd Street Entrance
Access to East Building

EAST BUILDING

Hall 1 & 2
Meeting Room 110-140
Tijeras Foyer
East Box Office
2nd St Entrance
Access to West Building
Tijeras Blvd Entrance

LOWER LEVEL

WEST BUILDING

Conference Center
Rooms 010-070
The Hub 055
La Sala
Civic Plaza Garage

Box Office
Concessions
Elevator
Escalator
Guest Services
Parking
Pick-up & Drop-off
Restroom
Stairs
Vending

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Trade Show

We welcome all to participate in the 2022 Society for Range Management Trade Show. We strongly encourage you to take advantage of this opportunity to share information and exchange ideas on exciting new products and services provided by companies and organizations. The quality and variety of exhibits this year will be exceptional. Feel free to ask questions, gather information, and explore the diversity of products and organizations hosting booths in Albuquerque. Exhibitors include commercial companies, government agencies, non-profit organizations, and universities.

Location: Hall 3

Trade Show Schedule

Sunday, February 6	
Trade Show	All Day
Welcome Mixer	4-6pm
Monday, February 7	
Trade Show	All Day
Trade Show Mixer	6-8pm
Tuesday, February 8	
Trade Show	8-11:30am

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TOURS

Technical Tours

1. Santa Ana Pueblo Rangeland Tour

Sunday, February 6, 2022

9am-3:30pm

Lunch and transportation provided

Registration fee \$20.00

Sunday

This rangeland tour of the Santa Ana Pueblo is guided and sponsored by the Native American Rangeland Advisory Committee. The tour will leave from the Albuquerque Convention in the morning and head to the Pueblo for a unique and exclusive tour of their high desert rangelands and riparian corridors. The Pueblo's natural resources department has been engaged in intensive monitoring to inform grazing management decisions for the last 20 years. They also focus on managing a diverse set of wildlife species in both upland and riparian areas using telemetry systems. Here is a sneak preview as seen on YouTube.

2. White Sands Missile Range- Trinity Site & Chihuahuan Desert Rangeland Tour

Thursday, February 10, 2022

7am-6:30pm

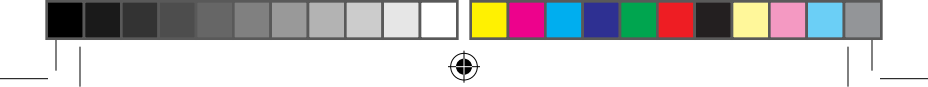
Lunch and transportation provided

Registration fee \$65.00

(Registration for this tour closes on January 7 to allow White Sands Missile Range to conduct background checks for all registered participants.)

Thursday

Journey through time as you travel down the old Camino Real (Spanish for Royal Road) to White Sands Missile Range where the first atomic bomb was tested at 5:29:45 a.m. Mountain War Time, Trinity Site, NM on July 16, 1945. The 19-kiloton test ushered the world into the atomic age. Join Dr. Dave Anderson, retired missile range ecologist and longtime NM SRM member for a rare tour of the missile range. Visit the prime yucca grasslands in the Trinity Basin, see the historic Wood Ranch, learn about the role of



prescribed fire on grasslands, view and observe the natural beauty of a black grama grassland in the primitive Mockingbird Mountains, and of course, experience Trinity Site.

3. Rio Grande Corridor Tour

USDA Plant Materials Center; Sevilleta National Wildlife Refuge; Bosque del Apache NWR
Thursday, February 10, 2022
7:45am-5:45pm
Lunch and transportation provided
Registration fee \$40.00

Journey through time as you travel down the old Camino Real (Spanish for Royal Road) stopping at three unique sites. The Los Lunas Plant Materials Center has provided the Southwest with plant solutions for over 70 years. Major conservation concerns include erosion and sediment control, range production and improvement, and riparian restoration. The center has developed over 30 improved conservation plants including varieties of sideoats grama, alkali sacaton, blue grama, bottlebrush squirrel tail, New Mexico olive, and Rocky Mountain narrowleaf penstemon. The 230,000-acre Sevilleta National Wildlife Refuge includes four different biomes that intersect and support a wide array of biological diversity. The Rio Grande flows through the center of the refuge, and is an important source of water that creates an oasis for wildlife in the arid landscape. Scientists from across the country and internationally come here to conduct research in these ecosystems. Our custom tour, not available to the public, will include stops at numerous Long-Term Ecological Research (LTER) project sites as well as a stop to see a Gunnison’s prairie dog colony. The 57,000-acre Bosque del Apache National Wildlife Refuge was established in 1939 to provide a critical stopover site for migrating waterfowl. The refuge is well known for the tens of thousands of cranes, geese, and ducks who winter here each year.

Thursday



4. Rangeland Management Tour

Ranney/Ramos Ranch; NMSU Corona Ranch; El Sueño Ranch

Thursday, February 10, 2022

7:15am-7pm

Registration fee \$40.00

Join us in touring three New Mexico ranches where we will focus on range management techniques. Ranching in the arid Southwest requires having your drought management plan written in pencil in your back pocket at all times. We will start our tour on the Ranney/Ramos Ranch where traditional (cow/calf operation) and modern (prescribed fire) management approaches are on full display. Our next stop will be the Corona Range and Livestock Research Station operated by New Mexico State University. Here we will see animal and range science research projects as well as an opportunity to look inside a brand-new wind tower. Finally, we will conclude with the El Sueño Ranch to see a dynamic ranch management approach complete with a live targeted grazing demonstration. Tour sponsors includes the Southwest Fire Science Consortium, the Great Plains Fire Science Exchange, Northern Rockies Fire Science Exchange, and the SRM Targeted Grazing Committee.

Social Tours

1.Santa Fe Plaza via Rail Runner Train

On-your-own tour (available each day of conference; Sunday – Thursday)

Guided tour option on Tuesday, February 8, 9:30am–1pm

Water and snacks available upon request

“All Aboard” for the Santa Fe Plaza via the NM Rail Runner Express to experience the ‘City Different.’ The Rail Runner schedule will be provided each day. The train leaves from the Albuquerque depot (a short 5-minute walk from the convention center) with multiple departures and returns allowing plenty of time to explore the Plaza. This is a ‘do-your-own-thing’ tour with lunch on your own at one of many fabulous restaurants. A visitor’s guide and map will

Sunday

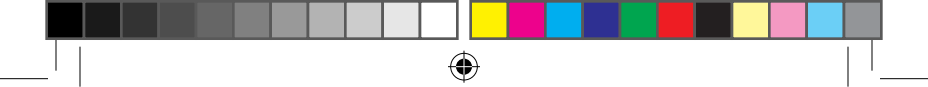
Monday

Tuesday

Wednesday

Thursday





be provided to explain historical sights and provide cultural context. Of particular interest is the Palace of the Governors dating from 1610 and the ‘Church with No Nails Staircase.’ You’ll have a chance to do it all – shopping for Native American jewelry and pottery, visiting art galleries and museums, and of course, enjoying fine New Mexican cuisine. The guided tour on Tuesday leaves at 9:30am and returns at 1pm.

2. New Mexico Museum of Natural History and Science

Tuesday, February 8, 2022
9:30am-1pm
Transportation and water provided
Registration fee \$25.00

Journey through billions of years of New Mexico’s natural history from the formation of the universe to the present day. Take a walking tour (1.5 hours) highlighting New Mexico’s diversity of plants and animals and showcasing a series of permanent and temporary exhibits. After the walking tour, you can catch a show in the Dyna Theater, a five-story theater with a giant 3D screen with digital surround sound, OR journey through the cosmos in a large 50-foot dome-screen planetarium (45 minutes).

3. Acoma Sky City

Wednesday, February 9, 2022
1pm-5pm
Transportation, water and snacks provided
Registration fee \$50.00

Sky City Cultural Center and Haak’u Museum, rich in cultural architecture, serves as the reception center for visitors to the Pueblo of Acoma. It is the gateway to Acoma “Sky City.” Acoma Pueblo embodies New Mexico’s cultural heritage with the oldest continuously inhabited settlement in North America. Acoma history is also the story of the Southwest, from its initial role as the home to the Anasazi people, to the thirteenth century founding of the Pueblo, which is still alive and well as a community and touchstone for Native Americans in the area and nationwide.

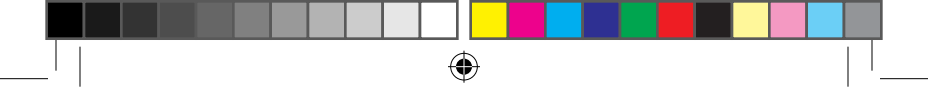
Sunday

Monday

Tuesday

Wednesday

Thursday



Student Events

Sunday, Feb 6th

8am-11pm: Student Plant ID Study Room
{Laguna}

Evening: HSYF Orientation Session
{Tijeras (Home Room)}

6-7:30pm: Student Conclave Social
{Tesuque}

Monday, Feb 7th

All day: HSYF Tour
6am-11pm: Student Plant ID Study Room
{Laguna}

8am-5pm: URME Exam
{Cochiti/Taos}

11:30am-1pm: YPC Business Meeting
(Lunch provided)
{Navajo}

1pm-4pm: Undergraduate extemp speaking contest
{Galisteo and Aztec}

4:30pm: Fun Run, Paseo de Bosque Trail; meet at registration desk

6pm: HSYF Professional Interaction Dinner

Tuesday, Feb 8th

All Day: HSYF Paper Presentation Session
{Cimarron}

6am-Noon: Plant ID Exam
{Cochiti/Taos}

Noon-1pm: Student Conclave Business meeting
{Isleta/Jemez}

1-3pm: Rangeland Cup

Wednesday, Feb 9th

8am-Noon: Undergraduate Paper Session
{San Juan}

1pm-5pm: SRM Business Meeting & Awards
{Ballroom C}

Sunday

Monday

Tuesday

Wednesday

Social Events

Sunday, February 6th

5pm-7pm **Welcome Mixer in the Trade Show: Live music, food and drinks!**

Monday, February 7th

4:30pm **YPC Fun Run**
 {Meet at Registration Desk}

4:30-6:30pm **USFS Family Meeting**
 {Cimarron}

6pm-8pm **Trade Show Mixer**

Sunday

Tuesday, February 8th

Transportaion provided to and from the Convention Center and Expo

6-8pm **University of Arizona Social**
 {Convention Center: Jemez}

5pm-10pm **Off-Site Events at the Expo:**

Ranch Rodeo/Exhibition

University Socials

Food Truck: The Taco Guy

Live Music: The Grasslands Band

Cash Bar and more!

Monday

Tuesday

Wednesday, February 9th

8pm **Wild Women of Range**

Dance: The Kyle Murphy Band
 {Ballroom C}

Wednesday



Symposium/Oral Session Timing

Each daily talk will follow the following format, so plan accordingly when looking at speaker schedules and agendas for each session.

AM session 8:30am-11:30am

8:30-8:50—Talk 1

8:50-9:10—Talk 2

9:10-9:30—Talk 3

9:30-9:50—Talk 4

9:50-10:10—**Break** (Visit the trade show for complimentary coffee and snacks!)

10:10-10:30—Talk 5

10:30-10:50—Talk 6

10:50-11:10—Talk 7 (or Symposium Discussion for Symposia)

11:10-11:30—Talk 8 (or Symposium Discussion for Symposia)

11:30-1:00—Lunch

PM session 1pm-4pm

1:00-1:20

1:20-1:40

1:40-2:00

2:00-2:20

2:20-2:40—**Break** (Visit the trade show for complimentary coffee and snacks!)

2:40-3:00

3:00-3:20

3:20-3:40

3:40-4:00

4:00-6:00—Poster session

Schedule At-A-Glance

Each day will begin at 8am (you can find coffee in the Trade Show!); lunch break from 11:30-1pm; afternoon sessions run from 1pm-4pm, followed by Poster Sessions and Socials.

Saturday, February 5th

8am-5pm **SRM BOD Meeting**
{Apache}

Sunday, February 6th

- Tours**
- 8am-5pm **Registration**
{Foyer Outside Hall 3}
- All Day **2022 Planning Committee Room**
{Hopi/Tewa}
- 8am-5pm **Speaker Prep Room**
{Chaco}
- 8am-7pm **Trade Show**
{Hall 3}
- 8am-5pm **Advisory Council**
{Zuni}
- 8am-11pm **HSYF Home Room**
{Tijeras}
- 8am-5pm **Plant ID Study Room**
{Laguna}
- 8-10am **Awards Committee**
{Navajo}
- 8am-4pm **Policy and Public Affairs**
{Nambe}
- 8-11:30am **Range Science and Education Council**
{Virtual}
- 8am-Noon **Membership Committee**
{Sandia}
- 8am-Noon **Finance Committee**
{Apache}
- 10am-Noon **Rangeland Assessment and Monitoring**
{Santo Domingo}
- 1-3pm **Program Accreditation Committee**
{Navajo}

Sunday



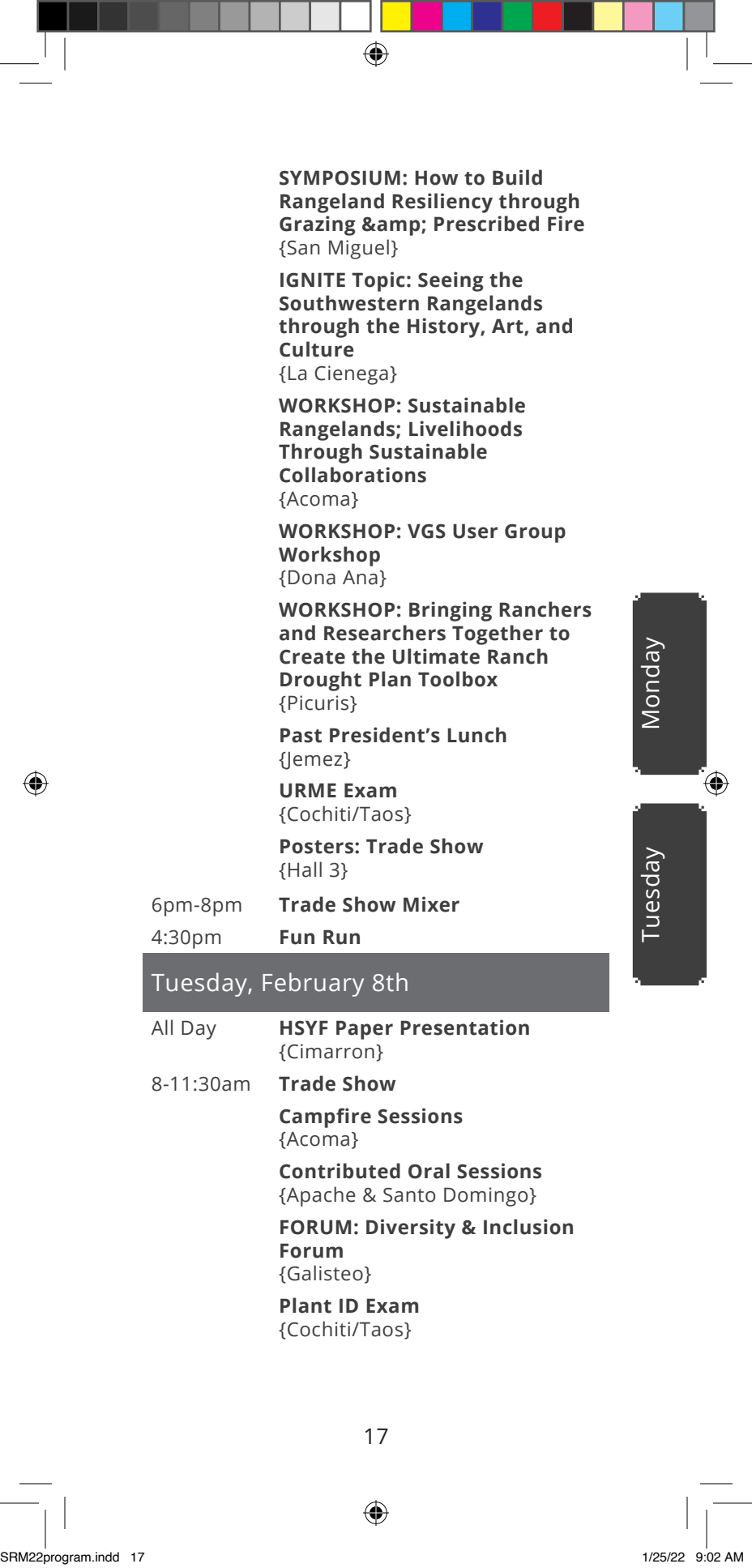
Sunday

Monday

1-3pm	Geospatial Science and Technology Committee {Isleta}
1-3pm	CPRM {Sandia}
1-5pm	Endowment Fund Development Committee {Apache}
1-5pm	International Affairs Committee {Santo Domingo}
2-4pm	Outreach, Communication, and Website Committee; Rangelands Partnership {San Juan}
1:30-5:30pm	Regional Project W1188 (Sage Grouse and Rural Communities in Western US Landscapes) {Acoma}
4-5pm	Livestock Foraging Behavior Committee {Isleta}
5-6pm	Grazing Lands Committe (GLC) {Sandia}
6-7:30pm	Targeted Grazing Committee {Sandia}
5-7pm	Welcome Reception {Hall 3}
6-7:30pm	Student Conclave Social {Tesuque}

Monday, February 7th

All Day	HSYF Tour
All Day	Trade Show
8-11:30am	Plenary Session
1-4pm	Sessions
	Contributed Oral Sessions {Apache & Santo Domingo}
	SYMPOSIUM: Options for Improving Forage Production on Western Rangeland for Sustainability {Mesilla}



**SYMPOSIUM: How to Build
Rangeland Resiliency through
Grazing & Prescribed Fire**
{San Miguel}

**IGNITE Topic: Seeing the
Southwestern Rangelands
through the History, Art, and
Culture**
{La Cienega}

**WORKSHOP: Sustainable
Rangelands; Livelihoods
Through Sustainable
Collaborations**
{Acoma}

**WORKSHOP: VGS User Group
Workshop**
{Dona Ana}

**WORKSHOP: Bringing Ranchers
and Researchers Together to
Create the Ultimate Ranch
Drought Plan Toolbox**
{Picuris}

Past President's Lunch
{Jemez}

URME Exam
{Cochiti/Taos}

Posters: Trade Show
{Hall 3}

6pm-8pm

Trade Show Mixer

4:30pm

Fun Run

Tuesday, February 8th

All Day

HSYF Paper Presentation
{Cimarron}

8-11:30am

Trade Show

Campfire Sessions
{Acoma}

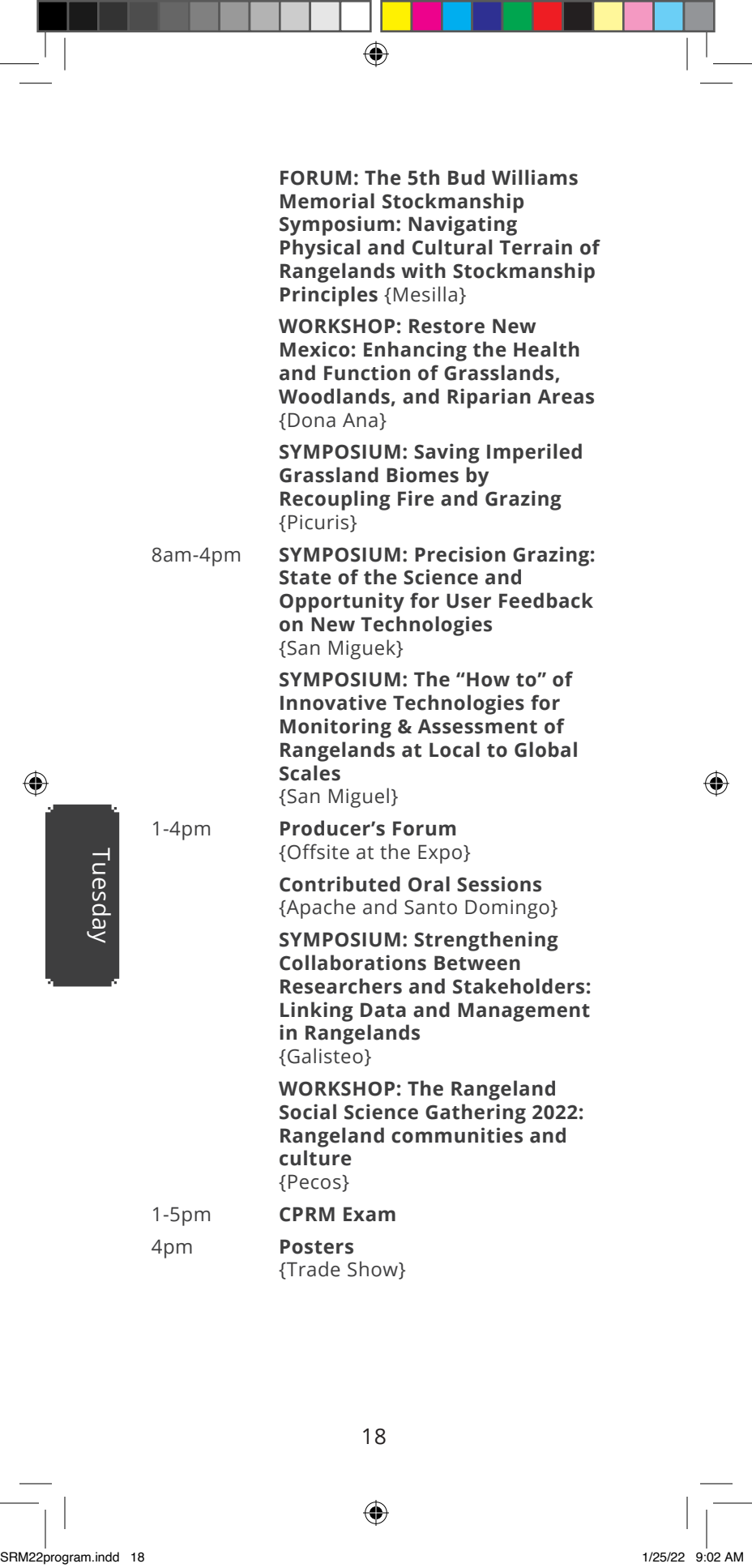
Contributed Oral Sessions
{Apache & Santo Domingo}

**FORUM: Diversity & Inclusion
Forum**
{Galisteo}

Plant ID Exam
{Cochiti/Taos}

Monday

Tuesday



FORUM: The 5th Bud Williams Memorial Stockmanship Symposium: Navigating Physical and Cultural Terrain of Rangelands with Stockmanship Principles {Mesilla}

WORKSHOP: Restore New Mexico: Enhancing the Health and Function of Grasslands, Woodlands, and Riparian Areas {Dona Ana}

SYMPOSIUM: Saving Imperiled Grassland Biomes by Recoupling Fire and Grazing {Picuris}

8am-4pm

SYMPOSIUM: Precision Grazing: State of the Science and Opportunity for User Feedback on New Technologies {San Miguek}

SYMPOSIUM: The “How to” of Innovative Technologies for Monitoring & Assessment of Rangelands at Local to Global Scales {San Miguel}

1-4pm

Producer’s Forum {Offsite at the Expo}

Contributed Oral Sessions {Apache and Santo Domingo}

SYMPOSIUM: Strengthening Collaborations Between Researchers and Stakeholders: Linking Data and Management in Rangelands {Galisteo}

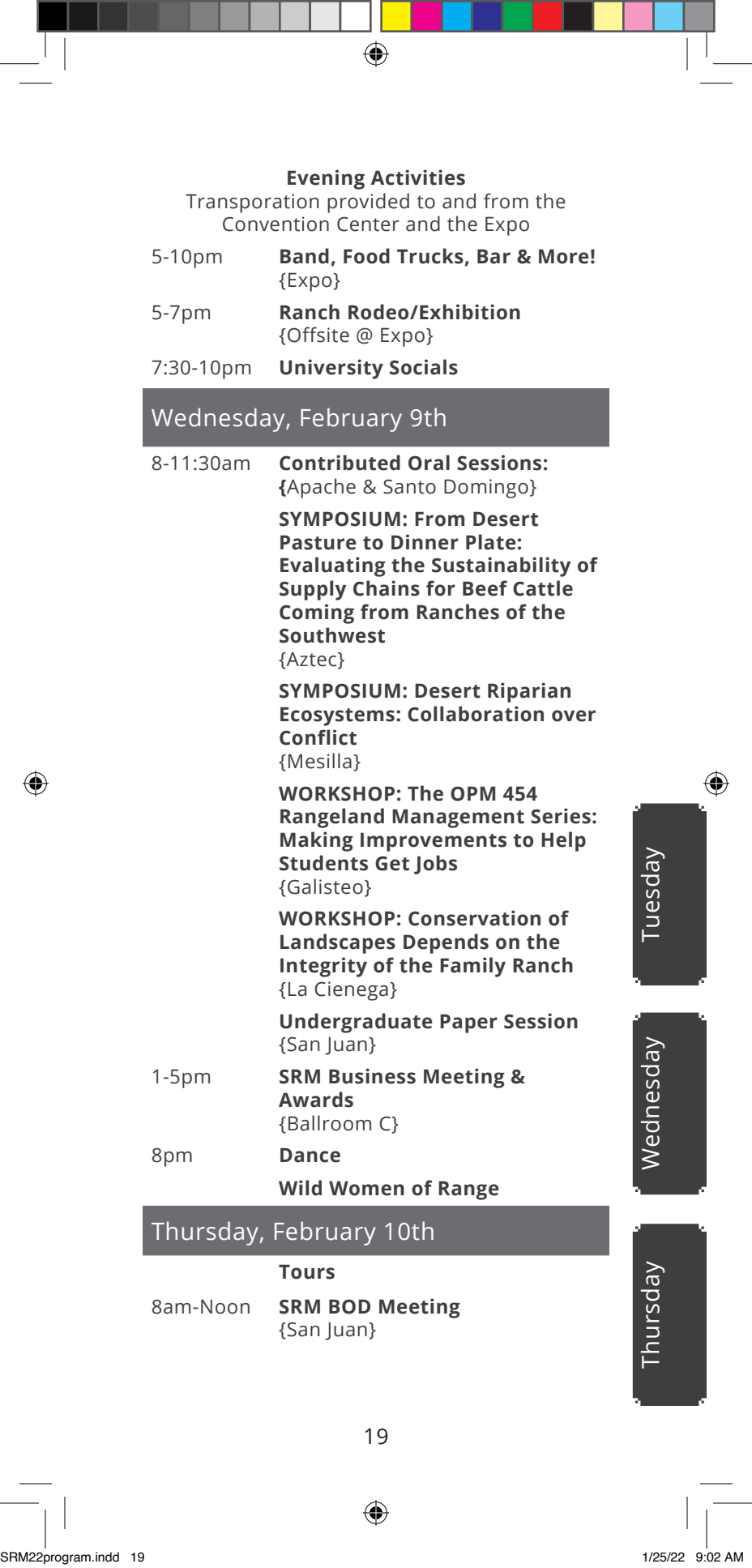
WORKSHOP: The Rangeland Social Science Gathering 2022: Rangeland communities and culture {Pecos}

1-5pm

CPRM Exam

4pm

Posters {Trade Show}



Evening Activities

Transporation provided to and from the
Convention Center and the Expo

- 5-10pm **Band, Food Trucks, Bar & More!**
{Expo}
- 5-7pm **Ranch Rodeo/Exhibition**
{Offsite @ Expo}
- 7:30-10pm **University Socials**

Wednesday, February 9th

- 8-11:30am **Contributed Oral Sessions:**
{Apache & Santo Domingo}
- SYMPOSIUM: From Desert
Pasture to Dinner Plate:
Evaluating the Sustainability of
Supply Chains for Beef Cattle
Coming from Ranches of the
Southwest**
{Aztec}
- SYMPOSIUM: Desert Riparian
Ecosystems: Collaboration over
Conflict**
{Mesilla}
- WORKSHOP: The OPM 454
Rangeland Management Series:
Making Improvements to Help
Students Get Jobs**
{Galisteo}
- WORKSHOP: Conservation of
Landscapes Depends on the
Integrity of the Family Ranch**
{La Cienega}
- Undergraduate Paper Session**
{San Juan}
- 1-5pm **SRM Business Meeting &
Awards**
{Ballroom C}
- 8pm **Dance**
Wild Women of Range

Thursday, February 10th

- Tours**
- 8am-Noon **SRM BOD Meeting**
{San Juan}

Tuesday

Wednesday

Thursday



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(Applicants do not need to attend the conference to apply. Visit fs.usda.gov/fsjobs-events for more details and webinars.)



Plenary Speakers

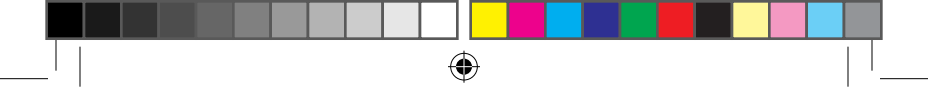
Dr. Nathan Sayre is Professor of Geography at the University of California-Berkeley. His research centers on the political economy and environmental history of semi-arid rangelands, especially in the southwestern United States: how they have changed, how they have been understood and managed, and the politics and economics of land use change, fire restoration, and endangered species conservation. He is the author of *The Politics of Scale: A History of Rangeland Science* (2017); *Working Wilderness: the Malpai Borderlands Groups and the Future of the Western Range* (2005); *Ranching, Urbanization, and Endangered Species in the Southwest: Species of Capital* (2002); and *The New Ranch Handbook: A Guide to Restoring Western Rangelands* (2001). Nathan is a board member of the Malpai Borderlands Group and the Gold Rush Heritage Foundation. He holds affiliations with the USDA-Agricultural Research Service-Jornada Experimental Range, the USDA's Southwest Climate Hub, UC-Berkeley's Energy Resources Group, the Berkeley Food Institute, and the Range Graduate Group.



Plenary Speakers

Dr. Shelemia Nyamuryekung'e received both his M.Sc. and Ph.D. from New Mexico State University. His research interests include animal-plant and climate interactions to achieve sustainable production in extensive cattle ranching systems of the southwest US. His current research examines grazing behavior, mother-offspring interactions, heat tolerance, and the use of telemetry devices as a tool for animal monitoring. He currently serves as Research Associate with the USDA-NIFA CAP Southwest Beef project (<https://southwestbeef.org/>). He leads research in Digital Ranching, Precision Livestock Ranching tools, and breed comparisons involving Raramuri Criollo cattle.



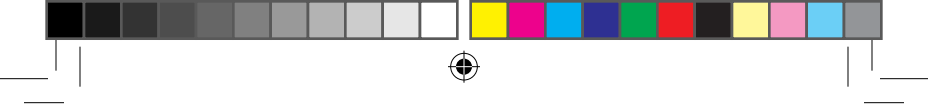


Plenary Session

Monday, February 7th
Ballroom C

8-8:10am	Posting the Colors (ROTC)
8:10-8:20am	Welcome & Land Acknowledgement by SRM President J. Alfonso “Poncho” Ortega; 2022 Co Chairs
8:20-8:30am	Invocation by Tribal Leader from Santa Ana, Sandia, or Isleta Pueblo
8:30-8:50am	Pueblo Buffalo Dance Grou
8:50-8:55am	Thanks by SRM President J. Alfonso “Poncho” Ortega
9:00-9:35am	Plenary Speaker 1: Nathan Sayre
9:35-10:10am	Speaker 2: Shelemia Nyamuryekung’e
10:10 10:20am	Break
10:20-10:35am	Awards Presentation
10:35-11:10am	Speaker 3; USDA Farm Service Agency Administrator Zach Ducheneaux
11:10-11:30am	Panel (general Q&A)

Monday



SCHEDULE

Monday Afternoon

WORKSHOP

Options for Improving Forage Production on Western Rangeland for Sustainability

Organizer: Dallen Smith
{Pecos}

Sponsor:

Utah Seeds Tremonton, Utah

The session will inform attendees of the current tools that have shown through research and application to western rangeland to have sustainable improvement of forage production for livestock and wildlife. Different sites sometimes present different challenges when prescribing range improvement projects. Knowing the options and how they can meet the range managers goals are paramount when selecting methods for range improvements.

Speakers:

Dr. Kevin Jensen USDA ARS, Logan, Utah
(How Successful Seedings has Reduced the Amount of Hay Needed in Montana)

Dr. Blair Waldron USDA ARS, Logan, Utah **(How Forage Kochia reduces Fire Frequency)**

Dr. Barry Perryman Agriculture, Veterinary and Rangeland Sciences, University Nevada, Reno
(How Fall Grazing of Cheatgrass has Reduced Stands of Cheatgrass in Nevada.)

Dallen R. Smith Assistant Professor Utah State University, Randolph, Utah **(How Chaining Decadent Stands of Sagebrush Can Increase Forage Production)**

Orson Boyce Owner of Utah Seeds Tremonton, Utah **(Selecting the Right Seed for the Right Location)**

Cooper Hibbard part owner and manager of Sieban Livestock Company, Adel, Montana
(How Improving Rangeland Has Improved the Net Income on the Sieban Ranch)

Monday

WORKSHOP

How to Build Rangeland Resiliency through Grazing & Prescribed Fire

Organizer: Stephanie Larson
{San Miguel}

We investigate the influence of fuel reduction by cattle grazing on emissions of greenhouse gases and particulate matter from wildfires on California rangelands. We present preliminary summary results from a statewide research project aimed at experimentally assessing how different levels of grazing intensity augment fire behavior (i.e. rate of spread, flame heights, fire intensity, etc.). We discuss survey results in three ecoregions of California that assessed ranch management practices and their correlation of experiencing a wildfire. We examine two practices, prescribed fire and grazing, to reduce woody encroachment of *Baccharis pilularis*, improve threats to endangered species, reduce invasive species and other anthropomorphic threats, such as nitrogen deposition and land use change. Practices, programs and tools discussed address prescribe burn associations, a grazing match service and parcel scale tool which prioritizes practices to reduce fire fuel loads, resulting in increased rangeland resiliency, community safety, improved livestock forage, and enhanced conservation values.

Speakers:

(20-25 minute presentation, 5-10 questions)

Felix Ratcliff – Grazing impacts on wildfire emissions

Influence of Cattle Grazing on Greenhouse Gases and Particulate Matter Emissions from California Grassland Wildfires

Matthew Shapero – Grazing & Fire Behavior

What is the effect of grazing on wildfire behavior?

Theresa Becchetti - Impacts of livestock
grazing on wildfire

Can ranching practices impact wildfires?

Monday



Monday

Sheila Barry- Using grazing to manage vegetation for better rangeland health

Integrated livestock production systems support grazing management and positive conservation outcomes

Jeff Stackhouse - Using fire to manage vegetation for better rangeland health

Using fire to maintain coastal rangelands of California

Devii Rao – Prescribed Burn Association

Improving Fire Resiliency and Building Community through Development of a Prescribed Burn Association

Stephanie Larson, Wildfire Fuel Mapper

Maps, resources and information to help Northern California residents and land managers reduce fuel hazards.

WORKSHOP

Bringing Ranchers and Researchers Together to Create the Ultimate Ranch Drought Plan Toolbox

Session Organizers: Tonya Haigh, Julie Elliott

Sponsorship:

Grazing Lands Committee

Management decisions during drought can have long-lasting impacts on the ranching enterprise, rural livelihoods, and the ecology of the landscape. In this session, ranchers and researchers will work together to link innovations in forage and drought monitoring with the processes that ranchers have developed to sustainably manage drought in their operations. The idea for the session came from the development of the NDMC's Ranch Drought Monitoring Dashboard (<https://drought.unl.edu/ranchplan/monitor.aspx>), created to connect drought tools to the decisions ranchers are making. The session will improve the usability of the dashboard and tools for ranchers across the U.S.

Part 1: Rancher Panel – Drought Plans

The session will kick off with a panel of ranchers who will describe their ranch drought plans.

- Brian Alexander, Kansas
- Hobbs Margaret, Oregon
- Mike Hemovich, Arizona
- Jerry Doan, North Dakota
- Myra Hipke Richardson, Nebraska



Part 2: Tools to Support the Development and Implementation of Ranch Drought Plans

The rancher panel will lead discussion and feedback after each set of presentations. All attendees are invited to ask questions and share their feedback about ease of tool use, the information the tools provide, information needs that are not being addressed, etc. This will be an open conversation and opportunity to learn from each other.

Set 1: Tools that use weather station or ranchers' own precipitation data

1. South Dakota Drought Tool. Presenters:

Emily Helms & Stan Boltz, USDA NRCS

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/sd/technical/landuse/pasture/>

2. ND Drought Calculator. Presenters: Igathinathane Cannayen, John Hendrickson, Kevin Sedivec, Jeff Printz, Mark Hayek, David Archer
The ND Drought Calculator aims to answer the most common question of "What can I expect this year for forage production?"

3. Grass-Cast. Presenter: Julie Elliott, USDA NRCS (Colorado) <https://grasscast.unl.edu>

4. New annual forage production scenario tool. Presenters: Markéta Poděbradská, Bruce K. Wylie, Deborah J. Bathke, Yared A. Bayiss, Stephen P. Boyte, Jesslyn F. Brown, Devendra Dahal, Michael J. Hayes, Brian D. Wardlow. What can I expect this year for forage production and what are the extremes I should plan for?

5. Rain Gauges for Range Monitoring: Co-developing tools and best practices for ranch-scale drought detection. Presenter: Mike Crimmins, University of Arizona Extension
<https://myraingelog.arizona.edu/>

Set 2: Tools that Use Remotely-Sensed Data

6. PhenoMap: Watching seasonal conditions on rangelands. Presenters: Charlie Schrader-Patton, Inc, Jackie Ott, Nancy E. Grulke

7. FuelCast: Projecting forage yield in the growing season. Presenter: Matt Reeves, USDA FS

8. The Rangeland Analysis Platform: Tools for estimating pasture productivity, year-to-year variability, and stocking rate. Presenter: Eric Jensen, Rangeland Analysis Platform Outreach Coordinator

Monday



IGNITE

Seeing the Southwestern Rangelands through the History, Art, and Culture

Organizer: Hailey Wilmer

{La Cienega}

Global rangelands are not only vibrant, diverse ecosystems, they are also peopled workinglands with rich and diverse cultural and historical contexts. In this session, we explore how broader engagement with the humanities can enrich our ability to understand and address the management and social contexts of our work in rangelands. Because the epistemic assumptions, analytic approaches and overall goals of the humanities derive from different traditions than STEM-based fields like range science and ecology, the humanities offer new possibilities for range folks to interpret and operate in complex agricultural and social-ecological systems. In the American Southwest, for example, the work of historians and artists helps us “see” a wider view of the Southwestern rangeland story by bringing to light the complex and contested relationships between rangeland peoples and rangelandscapes, with attention to historical events and governance, local art and performance, and food culture. Join us as we bring humanities scholars and rangeland scientists together for an engaging session of learning, sharing stories and ideas, and cross-disciplinary discussion about the role of the humanities in supporting “the art and science” of range management.

Monday

Speakers:

Hailey Wilmer, USDA Agricultural Research
Service

Leisl Carr Childers, Colorado State University

Jacie Rex, Colorado State University

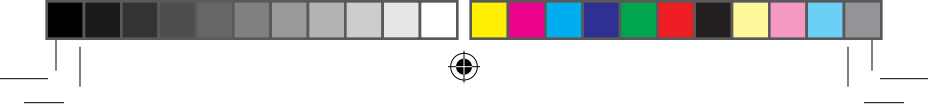
Taylor Spence, Sandia Preparatory School

Nathan Sayre, University of California, Berkeley

Josh Specht, University of Notre Dame

Will Munger, Utah State University





WORKSHOP

**Sustainable Rangelands & Livelihoods
Through Sustainable Collaborations**

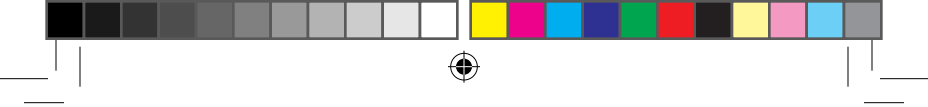
Organizer: Anna Clare Monlezun
{Acoma}

Sponsor:

Colorado State University's Office of the Vice
President for Research

What if we considered each other and cattle as partners in conservation? Could this be a win-win for the livestock and rangeland conservation sectors, resolving the [often] paradoxical objectives of beef production and natural resource management? The goal of this session is to bring together diverse rangeland sustainability stakeholders to learn about and create innovations for ecosystem and livelihood sustainability. Identifying research needs and opportunities from diverse perspectives is particularly important in the context of changing climate, changing land use policies, increased concern for land use governance, and changing livestock system demographics. Public lands are places where governance meets agriculture, recreation, conservation, and science. Participants will experience the inner-workings of collaborative democratic science where, in addition to participatory research methods, we propose that goals and action items are created collaboratively through a bottom-up approach, emphasizing the role and input of those with “boots on the ground.” Guided by a presenter team from Colorado State University (CSU) and the National Cattlemen's Beef Association (NCBA) with diverse research experiences in the socio-cultural components of rangeland management and sustainable food production systems, participants will engage in a unique experiential learning opportunity focusing on the integration and inclusion of diverse values, needs, and perspectives. CSU presenters are currently involved in social-ecological research of collaborative grazing management on government-owned conservation lands, and NCBA presenters are engaged in holistic research across the three pillars of sustainability, specifically examining tradeoffs and synergies across all segments of the beef industry.

Monday



Through their beef sustainability research program, NCBA continues to identify and provide research opportunities that elucidate cattle's role in rangeland ecosystems.

Speakers:

Dr. Myriah Johnson, Senior Director, Beef Sustainability Research, NCBA

Dr. Stacy Lynn, Research Scientist, Natural Resource Ecology Laboratory, CSU

Anna Clare Monlezun, PhD Student, Dept. of Ecosystem Science and Sustainability, CSU

Agenda:

Introductions and Land Acknowledgement Statement

Group discussion on "Grounding Principles of Collaborative Learning & Action" (The how?)

Group discussion on "Foundational Concepts of Sustainability Collaborations? (The what?)

Group needs and interests assessment

World Cafe style exploration of emergent themes

Synthesis & creating actionable items to carry forth

Monday

VGS User Group Workshop

Organizer: Ashley Lauren Shepherd
{Dona Ana}

VGS is a software application designed for recording and managing ecosystem sampling data. Rangeland managers with the Natural Resource Conservation Service, Bureau of Indian Affairs, Forest Service, Bureau of Land Management, as well as various state agencies, universities and private consultants use VGS for collecting vegetation and other ecosystem data. Due to the widespread use of VGS and many users being members of Society for Range Management, a user group workshop is held annually at the National meeting. This year the workshop will provide presentations that introduce VGS to those who have never used the program, assist current users in answering questions, and provide general tips and tricks.

Speakers:

Ashley Hall and Charles Perry



Tuesday Morning

8am-11:30am

The 5th Bud Williams Memorial Stockmanship Symposium: Navigating Physical and Cultural Terrain of Rangelands with Stockmanship Principles

Organizer: Kent Reeves
{Picuris}

Sponsor:

TomKat Educational Foundation

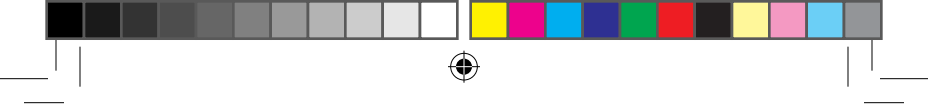
Since 2015 there have been four Stockmanship Symposia at SRM Annual Meetings (2015, 2016, 2018, & 2020). The value of Stockmanship as a critical tool for range management has been demonstrated at these previous symposia with bison and wild horse management, livestock/range management in the presence of predators, utilization of range, managing wilderness grasslands with pack stock, and placing livestock. This Fifth Symposium for the 2022 SRM AM builds on past symposia with participant knowledge navigating both physical and cultural terrain of rangelands.

This four-hour symposium will bring together cattle, sheep and goat producers, researchers, and educators for four interactive panel discussions using Stockmanship. These are listed below. We will build on the success and participant input from previous Stockmanship Symposia: with panelists discussing use of dogs (herding and guardian); horses; ATVs; characteristics of low stress moves; grazing livestock where you want them; interpreting behavior and signs of livestock health; what surprised practitioners when it worked; experiences teaching Stockmanship to different audiences; and working within diverse communities across changing landscapes.

Agenda: (All panels are scheduled to be 45 minutes with 15 minutes of Q&A)

Introduction to Stockmanship (Low-Stress-Livestock-Handling) – Introduction of Stockmanship and the Bud Williams Principles for practicing it. Taught by Dawn Hnatow.

Tuesday



Navigating Western Landscape Terrain While Practicing Stockmanship in Real Time:

Navigating Unplanned Changes, What Have We Learned, and Can We Change? – Panel discussion with invited participants to discuss opportunities and challenges practicing Stockmanship in various rangeland terrain. Open forum.

Using Dogs and Horses for Navigating Terrain and Wildlife

– Panel discussion with stockmanship practitioners who use guardian and herding dogs for protection of livestock and moving in diverse landscapes.

Navigating Cultural and Social Terrain

in Urban and Rural Communities – Panel discussion with invited participants discussing cultural/social relationships and the role Stockmanship plays with people in the local communities.

All Day

Precision Grazing: state of the science and opportunity for user feedback on new technologies

Organizer: Matthew McIntosh
{San Miguel}

Sponsors:

SRM Grazing Behavior Committee; Sustainable Southwest Beef Coordinated Agricultural Project

Tuesday



Precision farming technologies are an emerging management platform aimed at digitizing crop and animal production practices to enable detection and mediation of real-time environmental and welfare concerns and to equip producers with affordable, accurate, and easy-to-use tools to improve production sustainability. The goal of this symposium is to highlight current state-of-the-art precision grazing and digital ranching tools, techniques, and platforms under study and in development for application on extensive rangelands. The session will be broadly targeted toward scientists, government agencies, and producers, all of whom are presumed to benefit from precision grazing technologies. The morning session of the Precision Grazing symposium will feature a suite of rangeland scientists investigating various precision grazing tools including virtual fencing, tri-axial accelerometers, and grazing detection instruments, as well as producer outlooks on digital ranching necessities. The afternoon session will feature work conducted by the Sustainable Southwest Beef Coordinated Agricultural Project which is aimed at developing an integrated precision grazing system and dashboard that can track cattle and sheep welfare and geolocation, body condition scores, and other ranch infrastructure in near real time in various production systems. Morning and afternoon sessions will each feature two half hour workshop/discussion sections to garner feedback and identify interest, barriers to adoption, and future directions for digital ranching applications.

Tuesday

TOMKAT RANCH



Speakers:

Dr. Chad Boyd (Range and Meadow Forage Management Research: Burns, OR) : **Use of virtual fencing for influencing livestock distribution on sagebrush rangelands**

Brandon Mayer (and Dr. George Ruyle; University of Arizona): **Using invisible fence technology to manage cattle grazing on the Santa Rita Experimental Range**

Meredith Ellis (G bar C Ranch): **What Ranchers Need from Precision Grazing Technologies: Accounting for the Gray Area**

Dr. Derek Bailey (New Mexico State University): **Experiences and Opportunities for Monitoring Livestock Grazing Management**

Dr. Colin Tobin (North Dakota State University): **Potential and Challenges for Remotely Detecting Livestock Welfare Concerns**

Dr. EJ Raynor (USDA-ARS Crop Research Laboratory, Fort Collin, CO): **What can measurements of daily cattle foraging behavior tell us about their foraging environment?**

Dr. Santiago Utsumi (New Mexico State University; Sustainable Southwest Beef Coordinated Agricultural Project Precision Ranching Team): **Sustainable Southwest Beef Coordinated Agricultural Project Precision Ranching Team Goals and Current State of Technology**

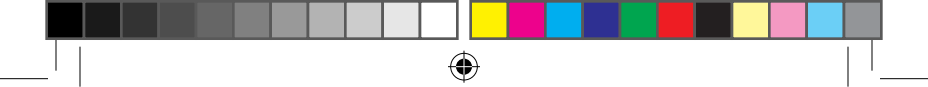
Dr. Matt McIntosh and Dr. Shelemia Nyamuryekung'e (New Mexico State University; Sustainable Southwest Beef Coordinated Agricultural Project Precision Ranching Team): **Real-time LoRaWAN precision ranching technologies: What we've learned**

Dr. Huiping Cao (New Mexico State University; Sustainable Southwest Beef Coordinated Agricultural Project Precision Ranching Team): **Real-time Interactive LoRa-WAN Dashboard Development**

Dr. Laura Boucheron (New Mexico State University; Sustainable Southwest Beef Coordinated Agricultural Project Precision Ranching Team) : **Development of Infrared Body Condition Score Cameras for Monitoring Cattle Welfare on Extensive Rangelands**

Tuesday





Dr. Carolina Brandani and Vinícius Gouvê
(New Mexico State University; Sustainable
Southwest Beef Coordinated Agricultural
Project Precision Ranching Team): **Trials and
Applications of precision technologies for
tracking welfare of backgrounding and
finishing stage cattle**

Dr. John Holland (Scotland's Rural Collage;
Sustainable Southwest Beef Coordinated
Agricultural Project Precision Ranching Team):
**Development of LoRaWAN communicating
sensors for extensive livestock grazing in
the Scottish mountains - opportunities
for the science and practice of managing
livestock and pastures in harsh
environments**

Lucía Ribagorda Garcia (NoFence Grazing
Technology): **Sustainability Benefits of
Integrating Virtual Fencing Platforms into
Traditional Livestock Systems**

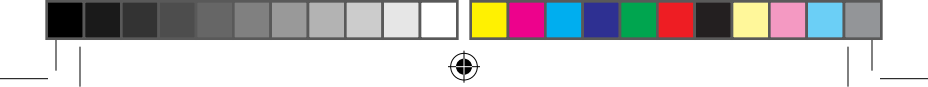
All Day

**The How to of Innovative Technologies for
Monitoring & Assessment of Rangelands at
Local to Global Scales**

Organizer: Robert Washington-Allen
{Aztec}

To paraphrase Jones et al. (2018) Ecosphere
9(9):e02430. 10.1002/ecs2.2430, The integration
of new technologies including time series of
fine to coarse scaled remotely sensed data
that includes historical aerial photography and
modern day airborne drones, globally available
"free" data archives including satellite data
from the NASA DAACs or social media data
from Twitter or Facebook applications like
iNaturalists (www.inaturalist.org) cloud-comput-
ing platforms like Google Earth Engine, machine
learning, open source software including R and
python, maker technology, have revolutionized
how we can monitor and assess the condition,
trend, drivers, and sustainability of rangelands
at local to global spatial scales

Tuesday



8:30-
9am

**Introduction to The “How-to”
of Innovative Technologies for
Monitoring & Assessment of
Rangelands at Local to Global
Scales Oral Symposium/Workshop**

Dr. Robert A. Washington-Allen,
Dept. of Agriculture, Veterinary, &
Rangeland Science, University of
Nevada, Reno

9-
9:30am

**Global monitoring of land cover
and land use:** Dr. Matthew Hansen,
University of Maryland, Keynote
Address

9:30-
9:50am

**Quantifying population trends
and habitat for the chestnut-bel-
lied scaled quail in South Texas:**

Dr. Humberto Perotto, Texas A&M
University, Kingsville: Quantifying
population trends and habitat for
the chestnut-bellied scaled quail in
South Texas

9:50-
10:10am

Break

10:10-
11:10am

**Virtual Workshop Session,
Interactive mapping and
analysis of geospatial big data
using geemap and Google Earth
Engine:** Dr. Qiusheng Wu, Dept. of
Geography, University of Tennessee,
Knoxville: (Tentative Title:
Introducing the geemap Python
package for interactive mapping
with Google Earth Engine (video | gif
| notebook)

11:10-
11:20am

Discussion for Symposia, Led by
Dr. R. Douglas Ramsey, Utah State
University

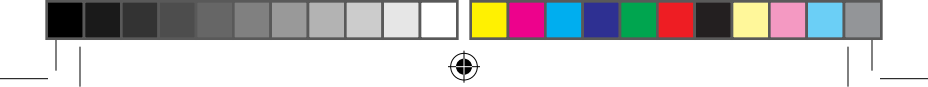
PM Session 1-4pm

1-
1:30pm

**Development and Implementation
of an Open-hardware GPS Tracker
for Livestock Location Studies:**

Dr. Jason Karl, University of Idaho,
Development and Implementation of
an Open-hardware GPS Tracker for
Livestock Location Studies

Tuesday



1:30-
2pm

FeatherFlame: An open-source, DIY wildland fire behavior measurement system: Dr. Devan McGranahan, USDA-ARS, Mobile technologies for Assessing Community-Led Rangeland Management: Successes and challenges from the Ewaso North Ecosystem of Northern Kenya

2-
2:30pm

Remote sensing of plant-soil-nutrient dynamics in rangelands with fusion of UAV hyperspectral-LiDAR, UAV multispectral-photogrammetry, and ground-based LiDAR-digital photography: Dr. Joel Sankey, USGS Flagstaff, et al. Part 1: Remote sensing of plant-soil-nutrient dynamics in rangelands with fusion of UAV hyperspectral-LiDAR, UAV multispectral-photogrammetry, and ground-based LiDAR-digital photography

2:30-
2:50pm

Break

2:50-
3:20pm

Woody plant encroachment of grassland and the reversibility of shrub dominance: Erosion, fire and feedback processes: Dr. Junran Li et al. Part 2: Remote sensing of plant-soil-nutrient dynamics in rangelands with fusion of UAV hyperspectral-LiDAR, UAV multispectral-photogrammetry, and ground-based LiDAR-digital photography

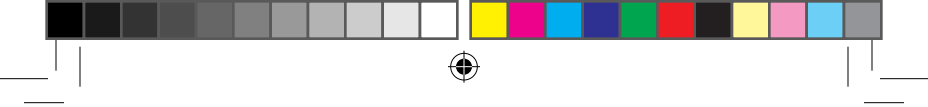
3:20-
3:50pm

What forage conditions can I expect this Year?: Dr. Matt Reeves, US Forest Service, Rocky Mountain Research Station, Missoula, MT USA Trends Analysis of Rangeland Condition Monitoring Assessment and Projection (RCMAP) Fractional Component Time-Series (1985-2020)

3:50-
4pm

Future Perspectives Mr. Lucas Phipps, Dept. of Agriculture, Veterinary, & Rangeland Science, University of Nevada, Reno and Others

Tuesday



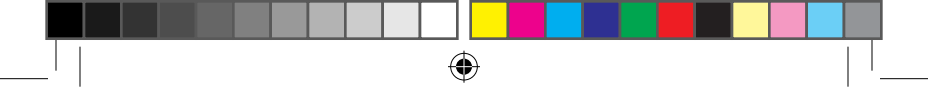
WORKSHOP

**Restore New Mexico: Enhancing the Health
and Function of Grasslands, Woodlands, and
Riparian Areas**

Organizer: Jessica Gardetto
{Dona Ana}

The goal of the Rangeland Technology and Equipment Council (RTEC) workshop is to promote the wise use and improvement of rangelands through the supporting functions of equipment development and application of innovative technology. This year’s workshop will highlight the technology, strategies and equipment being used by the BLM and its partners in the Restore New Mexico Program. The BLM’s Restore New Mexico initiative began in 2005 in the Pecos District Office in southeastern New Mexico. Since that time, an array of treatments have been applied across New Mexico, designed to enhance the health and function of grasslands, woodlands, and riparian areas. Advances in technology, modification of techniques and equipment, new herbicides, and collaborative monitoring have all played a part in the evolution of the initiative. Involvement of stakeholders and collaboration with the scientific community have also contributed to the success of this program. Today there is a greater understanding of how treatment methods, timing, and application impact results and ecosystem function. Sharing lessons learned is paramount to the success of the initiative as well as the success of other similar programs or initiatives on rangelands across the west. This workshop will provide participants with an interactive platform to question and discuss treatments and results with presenters and each other.

Tuesday



Diversity & Inclusion Forum

Organizer: Clare Hydock and Tate Beddingfield
{Galisteo}

The Diversity & Inclusion Forum is a session presented by the SRM Diversity & Inclusion Committee. During this forum, the D&I Committee will present the Committee’s Draft Strategic Plan. We will review the SRM D&I Survey that was conducted in 2021 and discuss the implications from the data. Following this, two Stories of the Range will be presented by our guest speakers. A general discussion will close out the forum. Everyone is welcome to attend and participate.

Symposium

Saving Imperiled Grassland Biomes by Recoupling Fire and Grazing

Organizer: Bradford Wilcox & Laura Goodman
{Mesilla}

Sponsor:

Targeted Grazing

Woody plant encroachment—the conversion of open grasslands and savannas to woodlands—represents one of the gravest threats to grassland biomes worldwide. We contend here that the widespread adoption of pyric herbivory (the synergistic application of fire and grazing) and mixed-species grazing (cattle and goats) not only would make grasslands and savannas more resilient to woody plant encroachment but also would enhance the profitability and resiliency of livestock production systems. These management strategies control woody plants, increase biodiversity, improve grassland ecosystem function, and favor livestock production. Although this management paradigm holds tremendous promise by mimicking original grassland disturbance regimes, it has not been widely adopted because of cultural constraints. Saving the remaining grasslands in the Great Plains and elsewhere will require a widespread shift in cultural norms—facilitated by targeted government incentives and a coordinated program of regional research, extension, and education that involves farmers and ranchers as key stakeholders. This session will focus on outlining strategies for encouraging broader adaption of these synergistic management strategies.

Tuesday



Speakers:

- 8:30- Sam Fuhlendorf
8:50am **Do Invasive Plants Affect Diversity and Livestock Performance in Heterogeneous Grassland? The Effect of *Sericea Lespedeza* (*Lespedeza cuneata*) Invasion and Mitigation on the Tallgrass Prairie.** Nicholas McMillan¹, Samuel Fuhlendorf¹, Robert Hamilton²
1Oklahoma State University, Stillwater, USA. 2The Nature Conservancy, Pawhuska, USA
- 8:50- **Trees or Goats, Your Choice**
9:10am
- 9:10- **Ecoregion-scale restoration with fire fosters a suite of rangeland conservation outcomes**
9:30am Dirac Twidwell¹, Victoria Donovan¹, Daniel Uden¹, Dillon Fogarty¹, Alison Ludwig², Christine Bielski¹, Caleb Roberts³
1University of Nebraska, Lincoln, USA. 2University of Nebraska, Lincoln, United Kingdom. 3Arkansas USGS Cooperative Fish and Wildlife Research Unit, Fayetteville, USA
- 9:30- **Educating the voters and policy-makers of tomorrow to ensure the future of rangelands**
9:50am Ben Wu¹, Maria Macik¹, Laura Goodman², Erin Ingram³, Jenny Keshwani³, Nate Poling¹, Morgan Treadwell¹, Bryan Yockers⁴
1Texas A&M University, College Station, TX, USA. 2Oklahoma State University, Stillwater, OK, USA. 3University of Nebraska, Lincoln, NE, USA. 4Jenks High School, Jenks, OK, USA
- 9:50- **Break** (Visit the trade show for complimentary coffee and snacks!)
10:10am



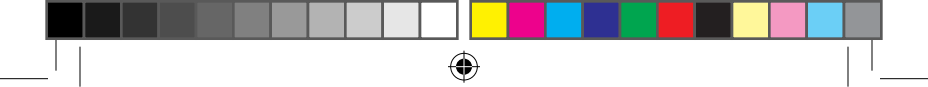
10:10- Morgan Treadwell
10:30am **The Prairie Project: Learning to Do and Doing to Learn**
Morgan Treadwell¹, Brad Wilcox², John Walker³, Sam Fuhlendorf⁴, Dirac Twidwell⁵, Laura Goodman⁴, Ben Wu²
¹Texas A&M AgriLife Extension Service, San Angelo, USA. ²Texas A&M University, College Station, USA. ³Texas A&M AgriLife Research Service, San Angelo, USA. ⁴Oklahoma State University, Stillwater, USA. ⁵University of Nebraska, Lincoln, USA

10:30- **The Prairie Project: Understanding and promoting decision making for sustainable rangeland management;** Texas A&M
10:50am Transportation Institute, College Station, Texas, USA

10:50- Nic McMillan
11:10am **Do Invasive Plants Affect Diversity and Livestock Performance in Heterogeneous Grassland? The Effect of Sericea Lespedeza (*Lespedeza cuneata*) Invasion and Mitigation on the Tallgrass Prairie.**
Nicholas McMillan¹, Samuel Fuhlendorf¹, Robert Hamilton²
¹Oklahoma State University, Stillwater, USA. ²The Nature Conservancy, Pawhuska, USA

11:10- **Discussion for Symposia**
11:30am

Tuesday



CAMPFIRE SESSIONS

8-11:30am

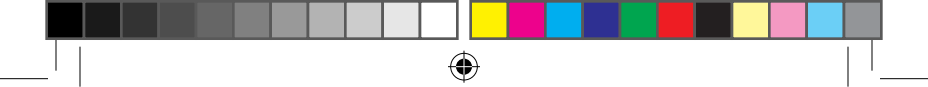
{Acoma}

Campfire Conversations are a lively collaborative dialogue around questions that matter for the future of the Society for Range Management and rangelands facilitated as a roundtable discussion.

The format is based on the World Café facilitation method. (<http://www.theworldcafe.com/key-concepts-resources/world-cafe-method/>) This is a method for connecting diverse perspectives and sharing collective discoveries on issues that matter. The world cafe will take place in a large conference room with round tables. Each table has a topic and a facilitator.

- First, participants select a table for the first round of discussions (20-30 minutes) and the facilitator welcomes them with the directions and ground rules.
- Then, the participants around each table will dig into a topic question with the facilitator recording key insights on flip chart paper. The facilitator will moderate the discussion and ensure fair opportunities to contribute are available to all participants.
- At the end of the first small group round, participants will move to another table. Once seated at a second table, they will hear a summary of the discussion developed by the last group from the facilitator and will then build upon this discussion with their own ideas. Rotation continues for 3-4 rounds.

Tuesday



Ecosystems Services in Rangelands: Emerging Opportunities in Challenging Times

Lauren Porensky - USDA-ARS, Fort Collins, CO

Rangelands across the globe support a wide array of ecosystem services, broadly defined as nature's contributions to people. Ecosystem services provide local benefits for producers and rangeland managers (for example, food production, wildlife for hunting and viewing, and beautiful landscapes to live in and enjoy), as well as broad-scale benefits that accumulate to society beyond the boundaries of the local operation or management area (for example, carbon storage, clean water and air, and maintaining or enhancing plant and animal biodiversity). Rangeland landscapes and the ecosystem services they support are currently threatened by cropland conversion, urban development, climate change, wildfire, and other forms of degradation and fragmentation. In the face of these threats, ecosystem services generated in working rangelands are increasingly identified as important to conserve. Currently, local rangeland stewards are rarely recognized or compensated for the broad-scale public benefits provided by their lands, management, and local knowledge. However, ecosystem service markets and other opportunities for recognition are rapidly emerging. For increasingly vulnerable rural communities and producers facing low profit margins, recognition of societally important ecosystem services may offer opportunities for enhancing socioeconomic and ecological sustainability. The Society for Range Management (SRM) currently does not have a concrete science or policy statement on the topic of ecosystem services. Here, we seek conversation and feedback from SRM members on the question, "What should be the role of SRM when it comes to rangeland ecosystem services?" Conversations will focus on whether and how SRM should position itself to be more proactive in this space, including formal policy or position statements as well as engagement with rangeland stewards and industry to 1) encourage application of stewardship practices that support ecosystem services and avoid disservices, 2) develop mechanisms for stackable ecosystem services, and 3) provide Society recognition for stewards who are innovating in this space.

Tuesday



Climate Change Adaptation and Mitigation on Rangelands

Anna Maher – USDA Northwest Climate Hub,
Portland, OR

What short and long-term strategies are rangeland managers and advisors employing to respond to climate variability and change, including extreme weather events?

Producers, rangeland managers, and advisors are facing more frequent and extreme challenges on North American rangelands, e.g., extreme weather and wildfire. Coupled with economic factors and increased competition for resources (e.g., water) life on the range is becoming more and more challenging. Major floods (e.g., 2015 and 2019) and droughts (e.g., 2012, 2020, 2021) are projected to become more intense and frequent in the future, adding even more environmental pressure to rangelands. We will initiate conversations around the challenges managers are experiencing and the strategies they use to address them, acknowledging that some proposed solutions may currently be very costly or infeasible for land managers. By learning from each other, we can enhance opportunities, discover shared perspectives, share knowledge, and create new pathways for collaboration and sustainable management.

Tuesday

What should the journal Rangelands look like in the future?

Joel Brown - Rangelands Steering Committee,
Las Cruces, NM

Rangelands serves an important role in SRM and to the rangeland profession by publishing peer-reviewed and management-focused articles with relevance to the science and art of range management. The Rangelands Steering Committee is seeking input from SRM Annual Meeting participants about future directions. While there are a number of side-boards for the publication, we are seeking ideas to make it more accessible, reader-friendly, and relevant.



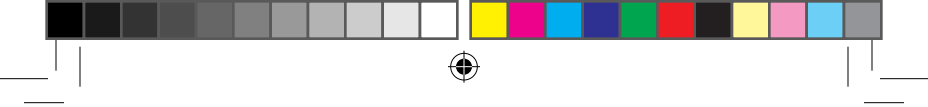


What does ethical and respectful partnership with rural and natural resource-based communities look like?

Hailey Wilmer - USDA-ARS, Dubois, ID

As the complexity and scope of rangeland management challenges expands, scientists and managers are increasingly partnering in various forms of transdisciplinary and collaborative research efforts. These partnerships provide important opportunities to develop new actionable knowledge in social-ecological systems, but they also pose new risks and challenges for our research, and for the communities and ecosystems in which we work. For example, researchers who operate under an extractive research model -- getting the data they need and leaving, without attention to community reciprocity-- can damage trust in science, relationships, or even harm communities and ecosystems. Unfortunately, we rarely discuss the ethics of these partnerships or how we can most respectfully and effectively partner with extension educators, ranchers, rural and Tribal communities, and with land managers. Additionally, research partnerships are not always covered under conventional human subjects (IRB) or animal care policies, and so rangeland scientists may not receive training or guidance in this area. In this campfire conversation topic, we invite managers, ranchers, ecologists, animal and wildlife scientists to explore the question: what are best practices for meaningful, respectful manager-science partnerships on rangelands? How can we fund the bandwidth required? The conversation will include consideration of do's and don'ts, lessons learned, skills and methods, and guiding concepts for ethical research partnership following the framework developed in Wilmer et al, 2021. (DOI: 0.1007/s00267-021-01508-4), and working guidelines employed in Thunder Basin, WY collaborative research.

Tuesday

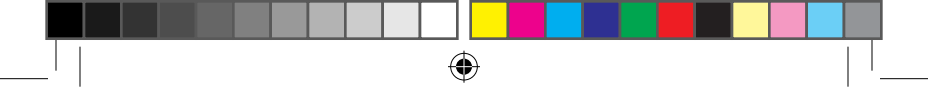


This session will be hosted by: Hailey Wilmer, Justin Derner, Lauren Porensky, Ryan Wilbur, Derek Scasta, Retta Bruegger and Vicken Hillis. The session is set up to bring the science of “team and transdisciplinary science” into focus for rangeland scientists. It should also give managers, ranchers and extension professionals the opportunity to communicate with researchers about respectful partnerships, therefore fostering inclusive and respectful engagement. The session will be hosted by a group of people from multiple backgrounds, and will help us talk about the challenges of doing range research on public and private lands with natural resource based communities. We hope it will inspire students, researchers and academics to think critically and often about how and why they engage with managers and community members.



Tuesday





Spreading the Message of the Importance of Rangelands to a Global Community

Mark Thorne - University of Hawaii-Manoa
-Cooperative Extension, Kamuela, Hawaii

International Year of Rangelands & Pastoralists
North American Communications Team

Barbara Hutchinson, Lia Biondo, Alejandra Blancas, David Borre, Courtney Buchanan, Elena Dosamantes, Diana Gonzalez, Jurgen Hoth, Diego Meza, Peggy Strankman, Lauren Svejcar, Mark Thorne

The purpose of this proposed Campfire Conversation is to engage Society for Range Management members in a discussion about spreading the message of the importance of rangelands to a global community that has no reference for what rangelands are. We seek the expertise of rangeland management professionals, educators, researchers, students, ranchers, and policy makers in marketing rangelands to the world. The goals of the of the International Year of Rangelands and Pastoralists (IYRP) align with those of the Society for Range Management. Specifically, the IYRP aims to increase a worldwide understanding of the importance of rangelands for global food security, conservation, and environmental services. It will call attention to the need for sustainable management and enlightened policies that protect and support rangelands and those that make their living from them. It would enhance the perceived natural and cultural values of rangelands and pastoral systems, strengthen pastoralists' rights and pride in their own cultural systems and traditions, and foster innovation toward sustainability and overcoming poverty. It seeks the increased capacities of local and national scientists and researchers to monitor and predict future trends in rangelands and to provide high-quality information to the people living in and managing them. The achievement of obtaining an IYRP and enlightening the world of the importance of rangelands and pastoralists will be the responsibility of rangeland professionals around the globe. **Our burning question is: How do we spread the message of the importance of rangelands to a global community that has no reference of what rangelands are?**

Tuesday



Tuesday Afternoon

Strengthening collaborations between researchers and stakeholders: linking data and management in rangelands

Organizer: Kevin Wilcox - University of Wyoming, Laramie, WY; Megan Van Emon - Montana State University, Bozeman, MT
{Galisteo}

Stakeholders need relevant information for sustainable land management, yet there exist substantial disconnects between the research and stakeholder communities. For example, many stakeholders do not know where to find research findings associated with their management goals, and many researchers do not know what types of data and studies will be most relevant for stakeholders. This symposium is designed to (1) provide opportunities for stakeholders to learn how data are being made available and (2) to provide guidance for researchers who want to convey their findings to stakeholders. Here, a variety of speakers ranging from researchers to stakeholders from various backgrounds will share their expertise and experiences about the data-to-management pipeline. Additionally, 30 minute organized discussion sessions between sets of speakers will facilitate cross-pollination of ideas about integrating data and management.

Speakers:

Cynthia Hartway (Wildlife Conservation Society, Blackfoot Nation) – Using data to solve conservation issues

Dr. Sam Wyffels (Montana State University) Using Drones to Monitor Pasture Quality and Quantity

Dr. Tim DelCurto (Montana State University) – Utilizing New Technology for Grazing Behavior: Stakeholder Impacts

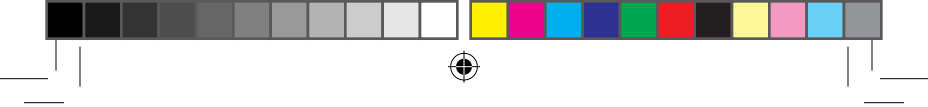
Leo Barthelmess (Stakeholder) – The Use of Virtual Fencing Technology on My Operation

Teri Schulz (stakeholder) and Dr. Nicole Kaplan (researcher, USDA) – Working together to proactively solve land management issues

Dr. Sean Kearney (USDA) – Creating map based tools for use in land management

Tuesday





Wizipan Little Elk (Rosebud Economic Development Corporation) – Introduction and management of a native owned bison herd

**Stockmanship and Stewardship
Producer Forum**

Organizer: Doug Tolleson
{Offsite: The Expo New Mexico
(Transportation Provided)}

All-inclusive Afternoon Discussion/Workshop

1-2pm

**Rancher Panel Roundtable
Discussion and Audience Q&A**

Topic: Stockmanship and Stewardship – How do they interact in a successful rangeland ranching operation?

Facilitated by Doug Tolleson
Panelists TBD, 4-6 ranchers
~45 min of facilitated discussion,
~15 min of audience Q&A

- Potential questions:
1. Why is rangeland stewardship important in a ranching operation?
 2. Why is stockmanship important in a ranching operation?
 3. How does stockmanship lead to rangeland stewardship? Or how do they interact?
 4. How have you observed better stockmanship leading directly to an improved rangeland stewardship out come?
 5. How have you observed a rangeland stewardship practice leading directly to improved stockmanship?
 6. What would you like the general public to know about stockmanship?
 7. Etc...

2-
2:15pm

Break

Tuesday



- 2:15-4:15pm Rotation of small groups between three topics
1. Practical forage evaluation techniques (grass and shrub), demo/participation. Hands on utilization assessments with potted plants, participant discussion of what stewardship practices might lead to the degree of utilization observed, what other factors may be involved? How can we use these observations to inform management?
- 2:15-4:15pm
- a. Led by Ashley Hall, University of Arizona
 2. Cattle body condition scoring, demo/participation. Live animal assessments by participants after "coaching" by instructors, participant discussion of what stewardship practices might lead to the observed body conditions, what other factors may be involved? How can we use these observations to inform management?
 - a. Led by Dr Joslyn Beard, University of Arizona
 3. Cattle manure pat scoring. Evaluation of manure samples as indicators of cattle diet quality, and what weather, plant phenology, or grazing management factors will result in a range of manure conditions (i.e. high to low). How can we use these observations to inform management?
 - a. Led by Dr Doug Tolleson, Texas A&M University
- 4:15-5:30pm Low stress livestock handling (demo) and practical working facility design (participation). Demonstration of livestock handling by instructors, discussion of different handling facility designs, participants get to evaluate and critique a demo animal handling facility.
- Led by Dr Ron Gill, Texas A&M University

Tuesday



WORKSHOP

The Rangeland Social Science Gathering 2022: Rangeland communities and culture

Organizers: Hailey Wilmer - USDA-ARS US
Sheep Experiment Station, Dubois, ID; Munger
Will - Utah State University, Logan, UT; Mark
Brunson - Utah State University, Logan, UT
{Pecos}

Rangelands provide a unique opportunity for social scientists to investigate human-nature and social relationships from a variety of analytical approaches. The Rangeland Social Science Gathering began in 2017 and now includes an annual meet up and online community forum hosted on Slack open to all SRM attendees, scholars and practitioners with an interest in contributing to a community of rangeland social science. This year, the Gathering will take the form of a workshop with two primary objectives: 1) to continue to build and expand the networks of our community inclusively across disciplines, methods, populations, and geographic areas; and 2) to explore the role of culture in rangeland ecology and management through a facilitated discussion hosted by USU PhD candidate Will Munger. If you would like to participate, please prepare for the workshop by gathering your favorite piece of rangeland culture for a group discussion. This could include virtual or material object or activity, such as your favorite piece of material culture (crafts, tools, gear), visual art, literature or poetry, film, multimedia, food, game, dance, or other objects. All members of the SRM community are invited to attend. Participants are invited to actively engage in networking and discussion in person or online. The session format is based on discussion. There will be very little formal presentation time from the facilitators, instead participants will spend most of their time talking with one another and actively engaging with new ideas and people.

Tuesday



Wednesday

SYMPOSIUM

From Desert Pasture to Dinner Plate: Evaluating the Sustainability of Supply Chains for Beef Cattle Coming from Ranches of the Southwest

Organizer: Sheri Spiegel
{Aztec}

Agenda:

- 8:30-8:50am **Beef supply chains of the southwestern US, from inputs to marketing to consumption:** Spiegel, Steiner, Aney, McIntosh, Cibils, Duff
- 8:50-9:10am **Explorations of heritage vs conventional cattle in a changing climate:** McIntosh, Macon, Redd, Cibils, Estell, Nyamuryekung'e, Gonzalez, Duff, Cox, Spiegel
- 9:10-9:30am **Ranching and wheat backgrounding with precision tools: The good, the bad, and the ugly:** Utsumi, Waterhouse, Holland, Gouvea, Cibils
- 9:30-9:50am **Recycling manure from beef feedlots: Environmental outcomes and perspectives from operators:** Meredith, Kleinman, Brandani, Auvermann
- 9:50-10:10am **Break**
- 10:10-10:30am **Opportunities and challenges of grass-finishing on desert pastures:** Aney, Hurst, Torell
- 10:30-10:50am **Environmental footprints of alternative supply chains;** Castaño Sanchez, Rotz, Tolle, Gifford, Duff, McIntosh, Spiegel

Tuesday



10:50-
11:30am **Producer panel: experiences with supply chains originating from SW ranches, responses to 6 talks: Inman, Padres Mesa Ranch and the Native Beef Program; Tolle, Evergreen Livestock & Ranching; Guldemann, Ganados del Rey; Redd, TNC Dugout Ranch**
speakers, producer panelists, audience

WORKSHOPS

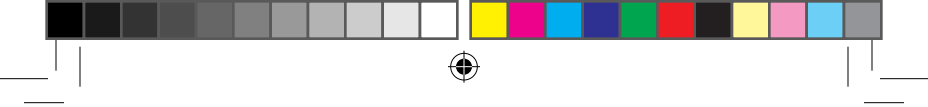
The OPM 454 Rangeland Management Series: Making Improvements to Help Students Get Jobs

Organizers: Diana Doan-Crider - Animo Partnership in Natural Resources, Kerrville, TX;
Gilbert Jackson- USFS, Washington, DC
{Galisteo}

In continuation of past and recent efforts to identify and repair disconnects in the enhance recruitment and hiring process for the federal Rangeland Management Specialist 454 Series, this workshop will bring participants from federal agencies (hiring managers and HR), university range faculty, and members of SRM together to create solutions for several specific topics. Two expected outcomes for this workshop will be a) the creation and implementation of a consistent inter-agency "crosswalk" for students needing to describe course discrepancies as part of the requirements for the Range 454 series, and b) planning for the potential creation of pathways for existing agency personnel to obtain additional training and courses to qualify for rangeland management specialist positions. We will also continue to identify "what's next" in our efforts to identify strategies for resolving other disconnects that have been identified in previous working groups. A pre-work will be provided for workshop participations that will familiarize everyone with those findings.

Wednesday





Conservation of Landscapes Depends on the Integrity of the Family Ranch

Organizer: Roy Roath - Colorado State
University, Fort Collins, CO
{Cimarron}

This session will elucidate the issues related to resource management and scale and economic challenges of the family ranch. This session would include presentations and a facilitated brain-storming session that will engage the broader audience in a session to search and record tentative solutions. The Team of speakers are Dr. Roy Roath, Extension Range Specialist, Colorado, retired; Kelly and Randy Bader, ranchers SE Colorado; Dean Wang, banker and rancher, E. Montana; and John Welch, rancher, Texas panhandle, Colorado and Montana.

1pm-4pm

SRM Business Meeting and Awards Session
{Ballroom C}



Wednesday



Virtual Sessions

Taking place the week of Feb. 21st. Specific dates/times to be announced soon— will be posted in email announcements and on the meeting App/Virtual Platform.

Sustainability for the Livestock Industry and Rangelands through Outcome-based Grazing Authorizations; Organizer: Kathryn Dyer
Wednesday, Feb. 23rd; 8:30-11:30am MT

From Data to DOI; Organizer: John Hendrickson
- USDA-ARS, Mandan, North Dakota

Understanding how to fund your research: tips for graduate students, postdocs, and new faculty; Organizer: Andres Cibils - USDA NIFA, Kansas City, MO; James Dobrowolski - USDA NIFA, Kansas City, MO
Tuesday, Feb. 22nd; Noon-3pm MT

From plant cells to landscapes: Understanding ecological drought responses to help in adaptive management and restoration of rangelands; Organizer: Rory O'Connor - USDA-ARS, Burns, OR

Building Resilience in Indigenous Natural Resources; Organizer: Nick Padilla

IGNITE

Applying Long-Term Monitoring Data to Rangeland Science: Perspectives from Early-Career Rangeland Scientists; Organizer: Aleta Nafus
Tuesday, Feb. 22nd; 3:30-5pm MT

The International Year of Rangelands and Pastoralists (IYRP) 2026: Global Framework, Action Plans, and Knowledge Gaps; Organizer: Layne Coppock - Emeritus Professor, Utah State University, Providence, Utah
Tuesday, Feb. 22nd; 7am-Noon MT

Transformational Climate Change on Rangeland Ecosystems Organizer: Joel Brown
Tuesday, Feb. 22nd; 8am

Reclamation and Restoration Issues in Arid Environments of the Southwestern United States; Organizers: Brenda Schladweiler, Daryle Bennett, and Sean DiStefano
Tuesday, Feb. 22nd; 1-4pm

Ignite--Ecological Sites: Emerging Research and Applications; Organizer: Shawn Salley





Desert Riparian Ecosystems: Collaboration over Conflict;

Organizers: Russell Burton - Y2 Consultants, LLC, Daniel, Wyoming; Kyle Schumacher - Northern Prairies Land Trust, Tilden, Nebraska

Sustainability for the Livestock Industry and Rangelands through Outcome-based Grazing Authorizations

Organizer: Kathryn Dyer

- 8:30-8:45am Kathryn Dyer- **A short background on the BLM desire to increase flexibility in grazing permits. Outcome Based Grazing Authorizations (OBGA) and Flexibility in Grazing being used in meaningful ways on public lands. How to approach flexibility through NEPA and permits in BLM.**
- 8:45-9:00am Kevin Hodge, Chris King and Nick Schultz- **Elk Creek Ranch: The benefits of coordinating with livestock operators, overcoming staffing changes, and how even relatively small amounts of flexibility can be very useful and provide ability to address forage quantities and locations, invasive annual grasses or other changes year to year.**
- 9:00-9:20am Elizabeth Freniere, Stacy Sylvester and Mark Hendrix- Smith Creek Ranch: **How to utilize monitoring and subsequent adjustments based on short term monitoring indicators. How to evolve into cooperative monitoring and finding a sustainable path forward.**
- 9:20-9:30am **Group Discussion**





9:30-9:55am	Jayna Ferrell- Fitzgerald/ Coyote Colvin Ranches: Benefitting the landscape through implementation of flexible grazing strategies. Monitoring annually through implementation is providing information on a short term basis to inform flexibilities, leading to long term success using livestock as a meaningful contributor to improve issues that are on the landscape. Also discussing how the west-wide drought recently was able to be handled more effectively through use of flexibility in the grazing management.
9:55-10:15am	Break
10:15-10:40am	Cheryl Newberry and Neils Hansen- PH Livestock: How implementation of multiple flexibilities over time has benefitted the landscape and the livestock operation. How using short and long-term monitoring that is connected to objectives shows results and informs annual flexibilities. Within that, the role of cooperative monitoring in identification and communication of ecological conditions. How ecological improvements created by flexible livestock management can provide ecological benefits that can allow for flexibilities to increase with time.
10:40-10:50am	Group Discussion
10:50-11:05am	Adrienne Hoskins- Pheasants Forever: Working with BLM on OBGA and Flexibility in Livestock Grazing. Different roles partner organizations play when working with multiple use mission can be an important resource in moving forward.
11:05-11:20am	Kathryn Dyer Conclusion and path forward for OBGA and incorporating Flexibility in Livestock Grazing Permits.
11:20-11:30am	Final Discussion for Symposia





From Data to DOI

Organizer: John Hendrickson - USDA-ARS,
Mandan, North Dakota

Livestock production information is critical for developing sustainable management systems on rangelands. However, the inherent variability in weather patterns and precipitation for rangelands requires long-term (i.e., decadal) efforts to collect this production data. There are existing livestock production datasets collected by federal and state research entities as well as non-governmental organizations (NGOs), but many, if not most, of these datasets have not been cataloged or published and therefore remain unknown to others. This workshop will focus on the process of moving from Data to Digital Object Identifiers (DOIs). Examples will be showcased where datasets have been collected, cataloged, and published providing recognition for the individuals and institutions who collected the data and helped preserve it as a legacy for the future. Lessons learned from these examples will be highlighted with in-depth discussions to assist others wanting to move from Data to DOI. This session will have considerable time for interaction with the audience to address questions and concerns, and to identify new datasets.

Speakers:

Project overview—**Digitizing and organizing the data** Nicole Kaplan—USDA-ARS and Holly Johnson—USDA-ARS

Advantages of getting a DOI and putting the Data into a depository-- Erin Antognoli—USDA-National Ag Library

Example of a long-term livestock performance dataset—Kevin Sedivec—North Dakota State University

Breakout groups (15 minutes each to allow for participants to cycle through the breakout groups)

1. Getting/Finding the data - John Hendrickson and Justin Derner—USDA-ARS

2. Putting the data into a digital format and data dictionary - Holly Johnson—USDA-ARS

3. Cataloging and depositing the data—Nicole Kaplan—USDA-ARS

4. Obtaining a DOI—Erin Antognoli - USDA-National Ag Library





Understanding how to fund your research: tips for graduate students, postdocs, and new faculty

Organizer: Andres Cibils - USDA NIFA, Kansas
City, MO; James Dobrowolski - USDA NIFA,
Kansas City, MO

This half-day workshop will be directed to beginning researchers. Our goal is to describe current programs at the USDA-NIFA that support doctoral, postdoctoral, and new investigator research, extension, and education projects. This interactive session will seek to help the next generation of rangeland scientists navigate the USDA-NIFA grant application system. Topics covered will include: 1) the anatomy of an RFA; 2) what it takes to write a successful grant proposal; 3) overview of USDA NIFA's grant types emphasizing those pertinent to SRM's beginning researchers; 4) resources available to support new investigator success. The workshop will include a listening session designed to elicit feedback from participants regarding NIFA's ability to support their needs.

USDA NIFA programs supporting undergraduate and graduate students, postdocs, and new faculty
Andres Cibils, James Dobrowolski, Erin Ryley, Ray
Ali. USDA NIFA, Kansas City, USA

From plant cells to landscapes: Understand- ing ecological drought responses to help in adaptive management and restoration of rangelands

Organizer: Rory O'Connor - USDA-ARS, Burns, OR

Plants that dominate rangeland ecosystems have adapted to grow under water limitations, but these ecosystems are still vulnerable to ecological droughts. Ecological drought is the deficit of water availability that causes an ecosystem to cross a threshold structurally and/or functionally. Understanding the resistance and resilience of plants, native and invasive, to water limitations or droughts becomes increasingly important for determining the best methods to adaptively manage and restore these ecosystems, especially after disturbances. In this symposium we will present on topics relating to how plants respond to water limitations and ecological drought at different plant, spatial, and temporal scales (i.e., the plant cellular level, population, community, ecosystem, and landscape scales). We will make sure to discuss how responses at each of these scales can potentially inform restoration and management strategies in rangelands.





Speakers:

Extreme Drought: Physiological and Anatomical Responses in a Dominant Grass

Troy Ocheltree, Seton Bachle², Rory O'Connor³, Jesse Nippert² ¹Department of Forest and Rangeland Stewardship, Colorado State University, Fort Collins, USA. ²Division of Biology, Kansas State University, Manhattan, USA. ³US Department of Agriculture–Agricultural Research Service, Eastern Oregon Agricultural Research Center, Burns, USA

Regeneration in plant communities: Unpacking the impacts of drought on seed banks and recruitment in grazed working lands

Julie Larson (Presenting), University of Colorado, Boulder, USA; Thomas Merchant, University of Colorado, Boulder, USA; Katharine Suding, University of Colorado, Boulder, USA

Drought Timing Matters in the Sagebrush Steppe, but Not by the End of the Season

Elsie Denton¹, Emily Bishop², Dustin Golembiewski², Katherine Collins¹ ¹USDA-ARS, Burns, USA. ²Texas A&M University, Kingsville, USA

A holistic perspective on what ecological drought effects on post-fire restoration of burned sagebrush steppe: from the soil, to plant, to cow.

Matthew Germino (Presenting), US Geological Survey, Boise, USA

Using plant physiology to determine drought resistance and resilience in rangeland bunchgrasses

Rory O'Connor, Erik Hamerlynck

Varying physiological responses of grassland communities to interactive effects of drought and fire

Jesse Nippert (Presenting), Kansas State University, Manhattan, USA; Rachel Keen, Kansas State University, Manhattan, USA; Kim O'Keefe, St. Edwards, Austin, USA

New metrics for quantifying ecological drought and resistance-resilience in dryland ecosystems

John Bradford (Presenting), USGS Southwest Biological Science Center, Flagstaff, USA; Daniel Schlaepfer, USGS Southwest Biological Science Center, Flagstaff, USA; Damaris Chenoweth, USGS Southwest Biological Science Center, Flagstaff, USA





Building Resilience in Indigenous Natural Resources

Organizer: Nick Padilla

Sponsored By:

SRM Native American Range Advisory Committee
& Grazing Lands Committee

Many issues in range and natural resources are not unique to any one tribe and the goal of the symposium is provide time for native and non native participants to engage in conversation and information sharing of natural resource management being done throughout Indian Country. The half day symposium is a joint effort brought by the Native American Range Advisory Committee and Grazing Lands Committee.

Speakers:

Crystal Tulley-Cordova, Navajo Nation Water Resources

Serra Hoagland-USFS Research & Development tribal engagement efforts, USDA Forest Service, Missoula, USA

Glenn Harper, Range and Wildlife Division

Manager Pueblo of Santa Ana

Dan Ginter, Pueblo of Santa Ana

IGNITE

Applying Long-Term Monitoring Data to Rangeland Science: Perspectives from Early-Career Rangeland Scientists

Organizer: Aleta Nafus

This ignite session will highlight the diversity of ways in which the Bureau of Land Management's Assessment, Inventory, and Monitoring (AIM) data and other datasets using the same core methods are being used in rangeland research. We aim to bring together innovative research from early-career rangeland scientists and graduate students and cover topics including restoration, vegetation treatment, wind erosion, data quality, and rangeland health. These scientists represent the future of rangeland science and lead the way in creating tools and methodologies that can inform a data-driven approach to rangeland management. As well as encouraging development of early-career professionals, this session will provide an opportunity for connecting individuals across multiple disciplines and institutions to share insight on using standardized monitoring data in rangeland science.



Speakers:

Introductory talk from AIM team

Elin Binck - **Assessing the status of wetlands on BLM land**

Brandi Wheeler - **Using qualitative and quantitative wind erosion assessments together to support land management decisions**

Ronald Treminio - **Magnitude and spatial patterns of sediment transport and dust emissions in the Great Basin in response to vegetation and ecological characteristic calculated from AIM data**

Molly Reichenborn - **Plant community recovery following chemical control of mesquite**

Savannah Meadors - **Using terrestrial AIM data to inform dryland restoration ecology needs**

Danielle Miles - **Assessing the top-down and bottom-up drivers of community diversity across sagebrush and conifer habitats in the northern Great Basin**

Caitlin White - **Using AIM to identify data-driven restoration candidates robust to cheatgrass and fire in the Great Basin**

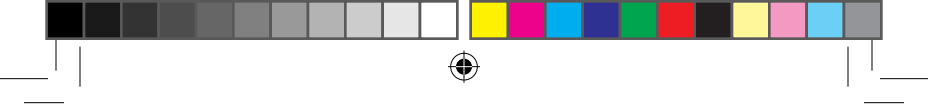
Leah Dreesman - **Investigating non-sampling error in terrestrial AIM data**

Symposium:

Transformational Climate Change on Rangeland Ecosystems

Organizer: Joel Brown
{Dona Ana}

Session Description: Rangeland managers have typically adapted to changes in weather by deploying a variety of management responses such as stocking rate manipulation, supplemental feeding, and vegetation manipulation. However, accelerating climate change has begun to transform rangeland socioecological systems. In addition to direct effects, climate change often greatly constrains the ability of managers to respond to other forces such as invasive species, economic cycles and consumer demands. Adaptation is the implementation of existing, accepted practices to respond to gradual change; while transformation requires substantial change that will result in new land uses, management systems and ecosystem services. In this symposium, we will examine likely transformative changes in climatic drivers, ecosystem functions and socioecological responses across North American rangelands. The symposium will conclude with a panel discussion and Q&A session.



Speakers:

- | | |
|-----------------|---|
| 1-
1:20pm | Leslie Roche: Building climate resilience across California's working rangelands |
| 1:20-
1:40pm | Brandon Bestelmeyer: Ecological transformations in desert grasslands: resist, accept, or direct? |
| 1:40-
2pm | Emile Elias: Indicators of observed and projected climate vulnerability and transformation in New Mexico |
| 2-
2:20pm | Hailey Wilmer: Ranching, Rangelands and Resilience: Moving from Buzzwords to Boundary Objects |
| 2:20-
2:40pm | Break |
| 2:40-
3:00pm | Anna Maher: Climate Impacts, Management Challenges, and Opportunities on U.S. Northwest Rangelands |
| 3-
3:20pm | Ken Spaeth: Evaluation of current rangeland conditions and trends on non-Federal rangeland community types |
| 3:20-
3:40pm | Dirac Twidwell: A New Conservation Movement to Address Biome-Scale Threats in Great Plains Grasslands |
| 3:40-
4pm | Discussion |



Reclamation and Restoration Issues in Arid Environments of the Southwestern United States

Organizers: Brenda Schladweiler, Daryle Bennett, and Sean DiStefano
{Picuris}

Sponsor:

SRM Restoration & Reclamation Committee

1-
1:40pm **Science Co-production to Improve Reclamation Efforts on Energy-impacted Arid Landscapes.**

Rebecca Mann, Biologist, U.S. Geological Survey, Southwest Biological Science Center, Moab, UT
Katrina Lund, 2S&K Logistics Moab TAC Team, Moab, UT

1:40-
2pm **Q&A on First Speaker Pair,**
Transition to Next Speaker Pair

2-
2:20pm **Using Spectral Analysis and GIS Satellite Imagery to Conduct a Classification of the Present Canopy Cover and Tree Density of Oneseed Juniper on the Pueblo of Santa Ana, New Mexico,** Raul Campos-Marquetti, GIS/IT Division Manager, The Pueblo of Santa Ana

2:40-
3pm **Juniper Savannah Restoration on the Pueblo of Santa Ana,** Dan Ginter, Range Program Manager, The Pueblo of Santa Ana

3-
3:20pm **Q&A on Second Speaker Pair,**
Transition to Next Speaker Pair

3:20-
4pm **Tackling the Challenges of Well Pad Reclamation with Communication and Cooperation**
Randi Lupardus, Consultant/ Postdoc, USGS Canyonlands Research Station, Moab, UT
Lindsey Freitag, Natural Resource Specialist, BLM Colorado Valley Field Office, Silt, CO



IGNITE Ecological Sites: Emerging Research and Applications

Organizer: Shawn Salley

The use of Ecological Sites and their associated State-and-Transition Models to manage range-lands and other ecosystems is now considered common practice. This revolutionary approach has improved communication between scientists and land managers. Our Ignite session will present emerging Ecological Site research and highlight future applications for the Ecological Site program.

Speakers:

- J. Johanson, "Site Considerations for Resource Management and Conservation: A Brief History"
- D. White, "Soils 2026: Soils 2026 Phase 2.0: Completing initial soil survey inventory"
- C. Rebernak, "Utilizing DSM to model soil map units and components by ecological site and climate"
- S. Salley, "A National Approach to Identify Soil Groups, Ecological Sites, and Resource Concerns."
- J. Schallner, "Developing quantitative ecological state keys to assess relationships between states and indicators related to management goals"
- A. Knight, "Developing data driven general state and transition models from standardized monitoring datasets"
- M. Kucera, "Incorporating Process-Based Erosion Model Erosion and Water Budget Risk Statistics into State and Transition Models (STMs)"
- E. Christensen, "Simulations based on state and transition models to predict future land condition"





Desert Riparian Ecosystems: Collaboration over Conflict

Organizers: Russell Burton - Y2 Consultants, LLC,
Daniel, Wyoming; Kyle Schumacher - Northern
Prairies Land Trust, Tilden, Nebraska

Sponsor/Organizer: Wildlife Habitat Committee

1) Desert riparian ecosystems of the southwest United States and northern Mexico have provided critical resources for humans and wildlife for thousands of years. Following European expansion, these ecosystems took on additional obligations as important areas for human development, livestock grazing, and other forms of production agriculture. In the hundreds of years to follow, uses have expanded and demand for these valuable resources has increased, leading to increased conflict. As conflict and demand increased without adapting management, litigation, areas of range and riparian degradation, pressure on endangered wildlife species, reduced watershed resilience, and lost grazing opportunities occurred. These conflicts have led to decreased opportunities for families involved in production agriculture to maintain livelihoods for future generations. Over the last century, advances in management and science have opened the door for multiple uses to occur more harmoniously. These improvements have fostered collaboration in resource management that has set an example for stakeholders going forward. Conflict will likely continue, but continued collaboration among diverse stakeholder groups can improve the outlook for generations of users and resource managers to come. This symposium will bring a diverse group of stakeholders for these riparian systems to investigate past, present, and future conflicts, potential resolutions, highlight lessons learned from collaborative partnerships across the west, and consider opportunities moving forward.

Speakers:

History of Management and Conflict in Desert SW Ecosystems, Dr. Sam Fernaldo, NMSU
Grazing Stakeholder, Dr. Ken Tate, UC-Davis
Wildlife Stakeholder, Dr. Deb Finch, USDA Forest Service
Fisheries Stakeholder, TBD, Trout Unlimited
Tribal Stakeholder, TBD per SRM-NARAC, TBD
Restoration Spotlight, Shaun Conner, Bio-Logic, Inc
Natural Resource Consultants





Producer Spotlight
Vegetation Management Spotlight, Dr. Tamzen
Stringham, UNR
Novel Advancements in the Sciences,
Wally Macfarelane, USU

**The International Year of Rangelands and
Pastoralists (IYRP) 2026: Global Framework,
Action Plans, and Knowledge Gaps**

Organizer: Layne Coppock - Emeritus Professor,
Utah State University, Providence, Utah

The International Affairs Committee (IAC) of SRM wants to organize a virtual workshop/symposium in support of the International Year of Rangelands and Pastoralists (IYRP) 2026. The IYRP process and outcomes thus far are described at <https://iyrp.info/>. Initiated several years ago by the Mongolian government, the IYRP proposal is now in the final stages of approval by the United Nations General Assembly (UNGA). The approval may occur by December, 2021. Upon approval, a multi-year process begins whereby planning occurs that culminates in a series of coordinated global initiatives in 2026 and beyond. About 34 nations and 291 stakeholder organizations organized so far into 11 global regions are now supporters of the IYRP. The broad goals of the IYRP are to (1) promote awareness of the importance of rangelands and grasslands to our global society, and (2) foster the design and implementation of outreach activities, policies, and studies that collectively improve natural resource management and sustainably enhance the lives of dependent populations. These people include a wide spectrum of subsistence or commercial livestock producers as well as a variety of other groups who directly or indirectly benefit from rangeland/grassland ecosystem services. Our proposed event is also a coordinated follow-on for initial IYRP deliberations to be held in virtual sessions at the International Rangelands Congress (IRC) in Nairobi, Kenya, in October, 2021.

The IRC sessions will focus on building a cohesive global community for the IYRP as well as raising awareness to broaden and deepen stakeholder commitments. The ball is then passed to this SRM event, where a process of conceptualizing regional and global action plans and identifying knowledge gaps will occur.





Coppock, O'Rourke: Intro to the seminar

Bulgamaa Densambuu : Mongolian leadership for the IYRP

-Mongolia's Leadership in Creating a Vision for the IYRP

-Bulgamaa Densambuu, Mongolian National Federation of PUGs, Ulaanbaatar, Mongolia; Tungalag Ulambayar, Zoological Society of London, Ulaanbaatar, Mongolia

Engin Yilmaz : Background for the IYRP

-Introduction to the UN International Year of Rangelands and Pastoralists

-Engin YILMAZ, Yolda Initiative, Ankara, Turkey

Ian Scoones: Central role of pastoralism in global debates

-Why pastoralists need to be central to the global food and climate debate

-Ian Scoones, PASTRES, Institute of Development Studies, University of Sussex, Brighton, United Kingdom

Masambuko: Global rangelands atlas

Fiona Flintan: Rangeland fragmentation and tenure issues

-Tick tock, tick tock! How to address the ticking clock of rangeland fragmentation and loss through a new approach to formalizing tenure of land and resources

-Fiona Flintan, ILRI, Rome, Italy; Lance Robinson, Consultant, USA, USA

Waters-Bayer and Wario: Rangelands and renewable energy

-Rush for the "wasteland": revaluing pastoral land in the light of renewable energy

-Ann Waters-Bayer^{1,2}, Hussein Tadicha Wario^{3,4}
-1Agrecol Association, Goettingen, Germany. 2CE-LEP (Coalition of European Lobbies for Eastern African Pastoralism), Brussels, Belgium. 3CRRD (Center for Research & Development in Drylands), Isiolo, Kenya. 4DITSL (German Institute for Tropical & Subtropical Agriculture), Witzenhausen, Germany

Richard Conant: Global carbon sequestration

Could Carbon Sequestration in Global Rangelands Mitigate Climate Change?--A Modeling Perspective; Colorado State University, Fort Collins, USA

Klain: Payments for ecosystem services

Promise, Peril and Paths Forward for Payments for Rangeland Ecosystem Services; Utah State University, Logan, USA





Norton, Washington-Allen, and Payne: Donors for global rangelands

Review of North American and Global Donor Organizations Supporting Dry Land Research and Outreach to Tackle Climate Change Impacts – Opportunities for New Collaborations.

David Briske : Overcoming pastoral marginalization

Replacing the Rangeland Marginalization Narrative with One of Planetary Value; Texas A&M University, College Station, USA

Niamir-Fuller, Waters-Bayer, Hutchinson, O'Rourke: Summary of IYRP workshop outcomes

Niamir-Fuller, Waters-Bayer, Hutchinson, O'Rourke, Coppock: Synthesis and way forward for IYRP

Overview Of Virtual IYRP Workshops

Feb. 23-24; 7-9am MT

The International Affairs Committee (IAC) of the SRM and the IYRP ISG (International Support Group for the International Year of Rangelands and Pastoralists) will convene two virtual workshops at the 75th Annual Meeting of SRM in early 2022. These workshops will engage IYRP stakeholders worldwide in preliminary deliberations to identify regional and global priority actions associated with 12 global themes identified by the IYRP ISG (see Figure 1). The objective is to gain a better understanding of similarities and differences across regions. Using the examples of a few priority actions selected by participants before and during the workshops, details such as implementation time line and “who does what” can be identified on a preliminary basis. These workshops are a follow-up to the IYRP virtual sessions held at the Joint International Rangeland and Grassland Congresses (IRC/IGC) during October 2021 in Nairobi, Kenya. This effort with SRM will continue the momentum of coalition building to promote rangelands and pastoralists while we await approval of the IYRP 2026 by the United Nations General Assembly (UNGA) in 2022.

The “IYRP at SRM” program consists of several linked events: two virtual workshops (2 hours each), one hybrid symposium, and a post-conference survey of IYRP participants. IYRP friends and supporters worldwide are invited to register for free (registration information will follow). The main





language for the workshops will be English and simultaneous translation into Spanish and French will be provided.

IYRP Symposium, 8 February 2022

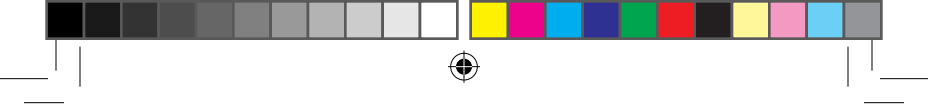
The symposium will be held during the main SRM Conference. The overall focus of the symposium is how to move global rangelands from the “marginalization narrative” to a “global value narrative”, a process that focuses on ecosystem services and economic benefits of pastoralism, and asks how we can improve natural resource management, create more effective policy frameworks, and mitigate poverty and poor governance. The gathering will address how the IYRP can stimulate more impactful, integrated projects for rangeland landscapes and rangeland users. Thirteen papers will be presented by eminent scholars. More details are forthcoming.

IYRP Virtual Workshops, 31 January and 1 February 2022

The overall focus of the workshops is to consider how the 12 IYRP themes (Figure 1), developed in 2017, can translate into priority actions by the 11 Regional Support Groups of the IYRP (RISGs), and what similarities and complementarities might be drawn around the globe. The workshops will begin to develop partnerships around a few common priority activities as examples and models, including suggestions on how best to implement actions. This exercise is meant as a preliminary step towards global and regional action planning. If enough momentum is generated at the workshops, it is hoped that coalitions that come together to promote particular priorities will commit to working together in the future.

The RISGs will undertake a participatory pre-workshop exercise starting in early January 2022. They will map out the 12 proposed IYRP themes into priority issues. If we take the IYRP theme “Climate change and resilience,” then the RISGs would decide on two priority issues within that theme; for example, ‘methane from livestock’ and ‘indigenous knowledge and resilience.’ They will then identify at least one activity that would raise awareness or fill knowledge gaps for rangelands and pastoralists related to each of those two issues. The RISG Chairs will submit their findings by 25 January to the Workshop Facilitators, who will then summarize and compare/contrast the findings and create a short list of examples that could be discussed in more detail during the workshops. The Workshop





Facilitators will create summary tables that will be sent to all workshop participants by 29 January.

Workshop 1: “Priority Actions for IYRP Themes 1–6”: Wednesday February 23 from 7 AM to 9 AM MST. The structure of the workshop would be:

- Facilitator presentation of a summary table for the first 6 IYRP themes and the short list of up to 10 priority activities common across all regions (15 minutes)
- Participants will then take an instant online poll to choose one of these 10 priority activities as example for further elaboration. The main criteria will be which priority activity a) involves the most regions, and b) needs to be started soonest so that results could be observable before the end of 2026.
- The RISG Chairs involved with this chosen priority activity will briefly describe it from their regional perspective as a way to start the discussion on how to implement the chosen example: what, who, how, when, etc.

Workshop 2: “Priority Actions for IYRP Themes 7–12”: Thursday February 24 from 7 AM to 9 AM MST.

This will be run exactly the same as Workshop 1, except that the focus will be on the second set of 6 IYRP themes.

The results of both workshops will be synthesized and presented by the Facilitators at the IYRP Symposium on 8 February. Furthermore, in the weeks following the Conference, the Facilitators will write a brief report that summarizes the workshop and symposium findings, including results from a brief, online post-Conference participant survey intended to reveal lessons learned as to how the stakeholder engagement process for IYRP could be improved.



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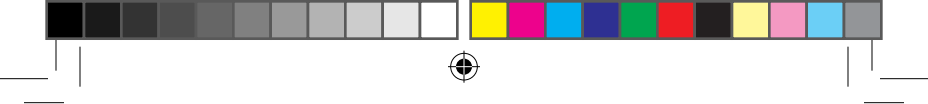
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Committee Meetings

Sunday, February 6th

Advisory Council	8am-5pm {Zuni}
Awards Committee	8am-10am {Navajo}
Policy and Public Affairs	8am-4pm {Nambe}
Range Science and Education Council	8-11:30am {Virtual}
Membership Committee	8am-Noon {Sandia}
Finance Committee	8am-Noon {Apache}
Rangeland Assessment and Monitoring	10-Noon {Santo Domingo}
Program Accreditation Committee	1-3pm {Navajo}
Geospatial Science and Technology Committee	1-3pm {Isleta}
CPRM	1-3pm {Sandia}
Endowment Fund Development Committee	1pm-5pm {Apache}
International Affairs Committee	1pm-5pm {Santo Domingo}
Outreach, Communication, and Website Committee; Rangelands Partnership	2-4pm {San Juan}
Regional Project W1188 (Sage Grouse and Rural Communities in Western US Landscapes)	1:30-5:30pm {Acoma}
Livestock Foraging Behavior Committee	4pm-5pm {Isleta}
Grazing Lands Committee (GLC)	5pm-6pm {Sandia}
Targeted Grazing Committee	6pm-7:30pm {Sandia}





SRM Diversity & Inclusion Statement

The Society for Range Management (SRM) is a diverse body of members, employees, and representatives that are dedicated to leading the stewardship of rangelands based on sound ecological principles.

These principles have led us to understand that Humankind originated in rangelands, thus resulting in the present day global diversity of peoples, languages, cultures, and natural resource management and socio-economic systems.

SRM welcomes, encourages, affirms, and values the participation and inclusion of all individuals with an interest in rangelands regardless of race, color, religion, gender, age, sexual orientation, national origin, culture, educational status, disabilities, emerging ideas and perspectives, or socio-economic status. We vigorously strive to eliminate implicit bias and reject discrimination and stereotyping within the society by proactively fostering tolerance, mutual respect, and multicultural awareness and competency by actively promoting inclusion in membership, education & training, competition, leadership, committees, staff, and all other areas of SRM activity.

Guidelines for Professional Behavior at SRM Organized Activities

Adopted by the SRM Board of Directors, July 16, 2019

Introduction

Professional conferences and meetings provide opportunity for education, exchange of ideas, networking and meeting new colleagues. Of paramount importance during SRM organized activities is that members, employees, students, and representatives of SRM exhibit acceptable professional behavior and respect the rights, dignity, and diversity of all people. The purpose of these Guidelines is to promote professional behavior, eliminate expressions of implicit bias and reject discrimination and stereotyping during SRM organized activities.





It is expected that SRM staff, membership and all meeting participants abide by these Guidelines. SRM staff and membership are also expected to abide by the SRM Code of Ethics and general Standards of Conduct in all SRM meetings and events or when representing the Society.

Expected Behaviors

- Comply with the rules and policies of the venues associated with the meeting (e.g., conference center, hotels, or any other venue).
- Communicate with respect and consideration for others respecting the diversity of views and opinions of others.
- Exercise professionalism always, refraining from personal attacks or harassing behavior directed toward meeting participants.
- Eliminate disruptive devices like cell phone ringers during presentations.
- Acquire permission to record speakers or take photographs during presentations, especially regarding use on social media outlets.
- Report any situation you deem dangerous or if you suspect someone is in distress.

Examples of Unacceptable Behavior

- Personal attacks directed towards meeting or event participants and SRM staff.
- Harassment or intimidation in any form including physical, written or verbal.
- Verbal or written comments related to an individual's physical appearance, gender, sexual orientation, gender identity, race, religion, origin, age or any other aspect that could be perceived as discrimination.
- Intentional disruption of presentations or other events.
- Unwanted sexual attention and inappropriate physical contact.
- Additional examples of unacceptable behavior include but are not limited to: inappropriate use of images in presentations, bullying behavior, and retaliation for reporting unacceptable behavior.

How are Complaints Handled?

- If you witness or experience harassing or unacceptable behavior please contact the person or persons designated by the SRM Board of Directors who can work with appropriate SRM leadership to resolve the situation.



-During the Annual Meeting harassing or unacceptable behavior will be reported to the SRM Ombudsperson. All information received by the Ombudsperson will be forwarded to the Board of Directors for action.

--Contact the Ombudsperson Kelly Fogarty: 202-870-3342 or operations@rangelands.org

-Sections can designate contact(s) who will then report their findings to the Section Board of Directors for action.

- Reports will be taken seriously and will be kept confidential to the extent possible.

- Discussions with SRM leadership will not identify individuals registering the complaint to the extent possible.

- Participants who violate the Guidelines for Professional Behavior at SRM Organized Activities may receive a warning or expulsion from the event and potentially future events as determined by SRM leadership.

- Reports and documentation of complaints will be maintained by person or persons designated by the SRM Board of Directors and violators of the Guidelines for Professional Behavior at SRM Organized Activities will receive written documentation of the actions taken by SRM leadership following the meeting.





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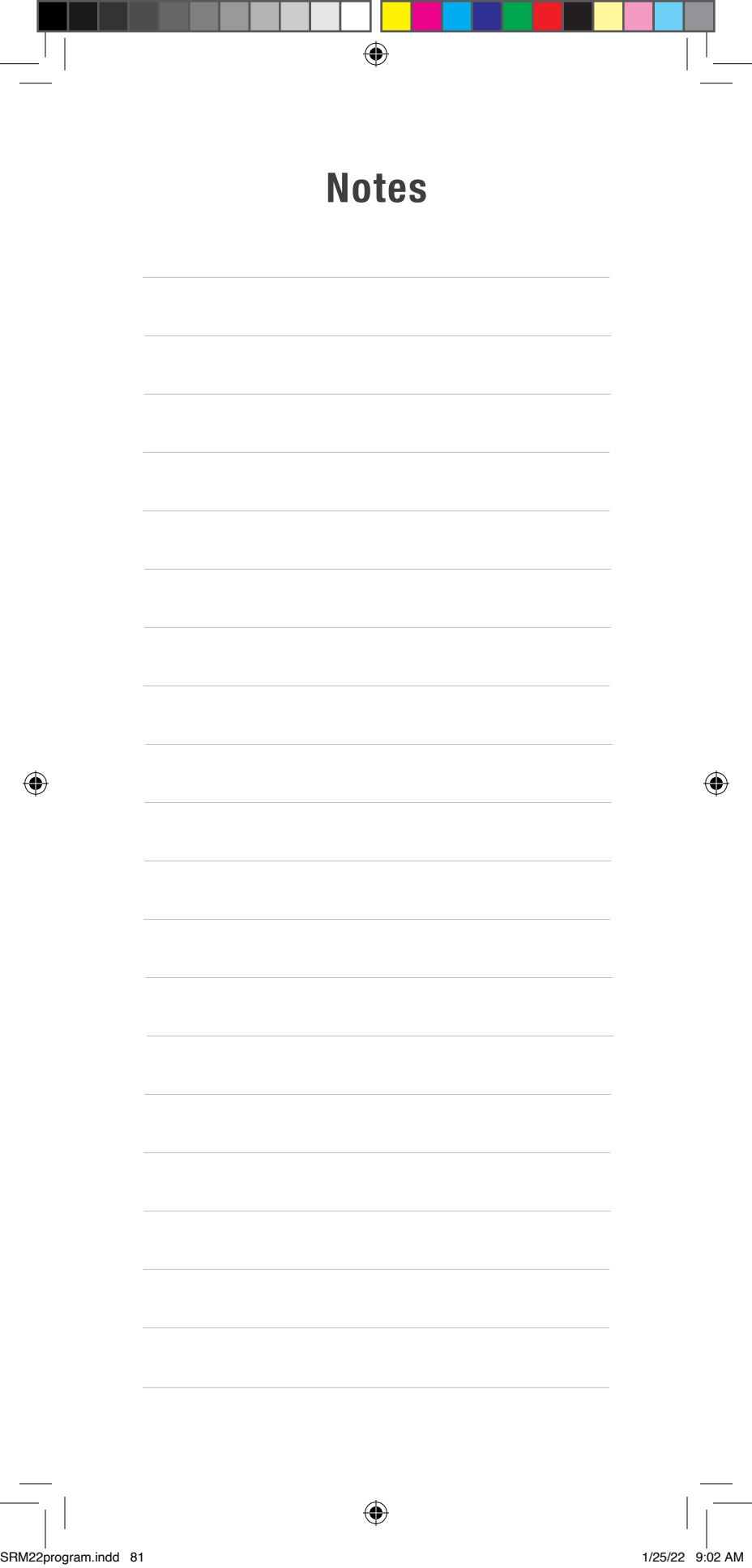
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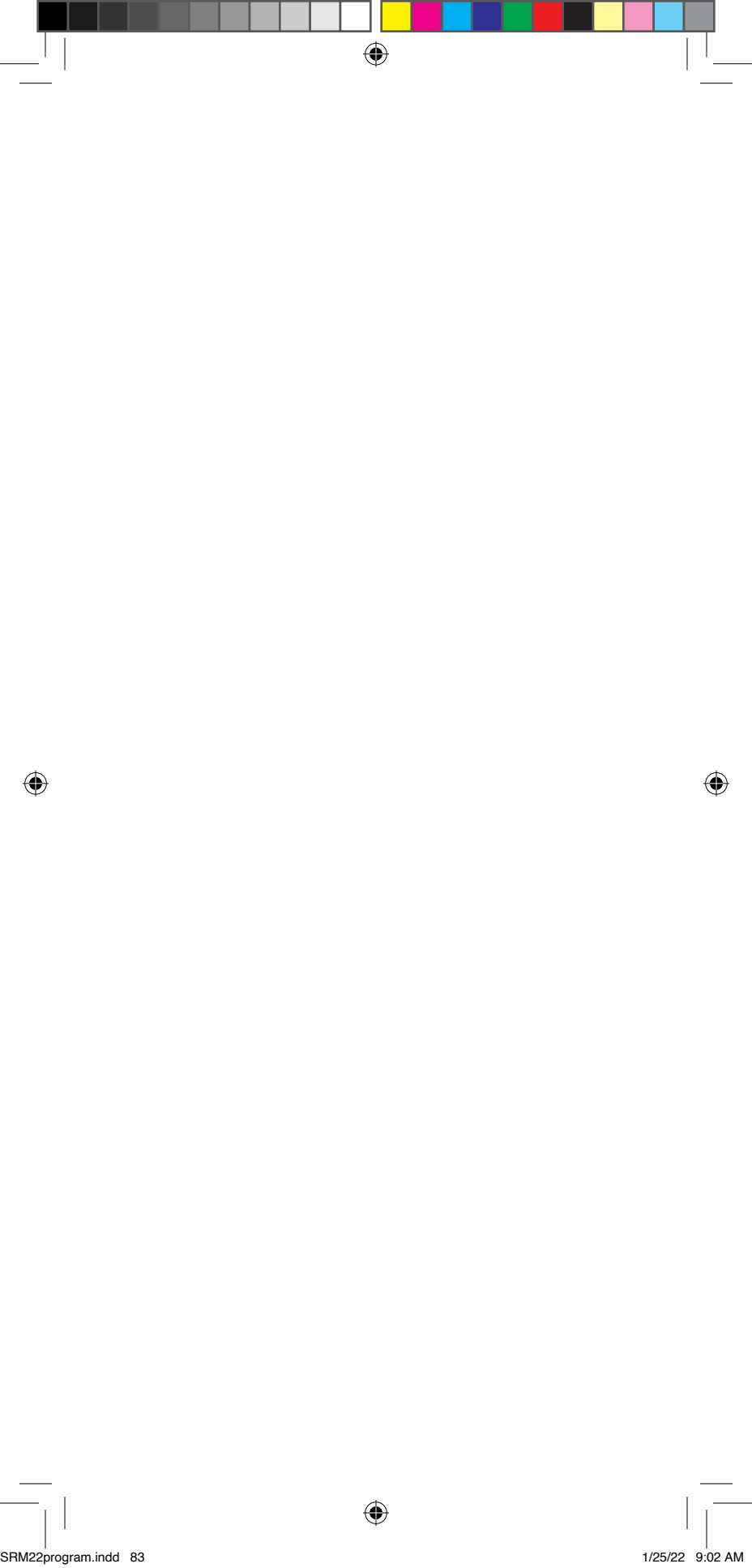
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