

SRM 2020 Denver: Symposium/Workshops/Ignite Sessions

Tuesday AM (10:00 am to Noon)

Session 13	Governors 14	Working together to find solutions for invasive species management: getting mitigation on the ground across ownerships (Symposium)
Session 14	Plaza A-C	Adaptive management of burned rangelands: challenges and opportunities for its co-production by land-agency staff and scientists (Symposium)
Session 15	Governors 15	Unheard: Amplifying Atypical Voices in Rangeland Management (Ignite)
Session 16	Windows	Healthy Ecosystems for Rangeland Development (HERD): sustainable rangeland management strategies and practices (Symposium)
Session 17	Plaza F	Greenhorn to Trailboss: Cultivating the Next Generation of Stewards (Workshop)
Session 18	Silver	Refocusing Rangeland Songbird Research: Connecting Songbirds, Land Management, and Critical Habitat Characteristics (Ignite)

What will prompt diverse land managers, landowners, livestock producers, and government decisionmakers to take effective, proactive, and sustained actions to address current and emergent threats from invasive plants? This is a central unanswered question in rangeland management. Across the western US and in many other rangeland systems around the world, invasive exotic grasses are displacing native plants, reducing biodiversity, and fueling wildfires. These invasive grasses can have potentially devastating impacts on the economic and ecological health of rangeland communities – both human and natural. The scientific community has responded to this threat by producing detailed data and decision support tools to mitigate the impacts and aid in the management of invasive species. However, similar scientific study on how to structure and implement effective and efficient governance and management systems to successfully constrain the impacts of invasive species is lacking. This symposium focuses on this gap in knowledge. We begin by reviewing the current state of knowledge on invasive plant governance and identify key questions and gaps. We then propose a shift in thinking about the type of management challenge presented by invasive plants from a place-based program involving individual landowners or public land managers to a common pool resource challenge requiring individual and coordinated actions. A final presentation will then show how these barriers to effective governance and management are evident in efforts to mitigate the impacts of buffelgrass (*Cenchrus ciliaris*) in southern Arizona and suggest how shifting thinking about invasive species from a place-based problem to a coordination problem can lead to more effective governance. The three presentations provide a foundation for an interactive discussion with meeting participants about their experiences with management and governance of invasive plants on rangelands, barriers they have identified, and solutions to working across interests and jurisdictions to more effectively share scientific knowledge, apply mitigation techniques, and expand available resources.

Speakers/discussion facilitators:

Aaron M Lien, Assistant Research Scientist, School of Natural Resources and the Environment, University of Arizona, Tucson, AZ amlien@cals.arizona.edu

Elise Gornish, Cooperative Extension Specialist, School of Natural Resources and the Environment, University of Arizona egornish@email.arizona.edu

Mitchel McClaran, Professor, School of Natural Resources and the Environment and Associate Director, Arizona Experiment Station, University of Arizona mcclaran@email.arizona.edu

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Like many other rangelands worldwide, the sagebrush-steppe of the western US has been greatly impacted by wildfire and invasive plants. Efforts to restore desirable native species and ecosystem function are challenging and frequently unsuccessful. Increasingly, land managers recognize the need to practice adaptive management of post-wildfire burned areas at both the project and regional scales. Acting on this recognition will require managers and scientists to develop a shared understanding of their roles, and the challenges and opportunities they experience at each step in the adaptive management process.

Presentations in this symposium will focus on how science for informing adaptive management of public lands is being co-produced by scientists and managers regarding the objectives of reducing exotic annual grasses, increasing desirable perennial plant communities, and stemming the increase of wildfire in sagebrush steppe.

Karen Prentice, Bureau of Land Management's (BLM) National Science Advisor, will describe land agency perspectives on the challenges and opportunities for co-producing science in sagebrush steppe landscapes. Next, Matt Germino, Research Ecologist with the US Geological Survey (USGS) will present lessons learned by a diverse team of public resource managers, land owners, and Federal and University researchers who carefully coordinated post-fire management to maximize opportunities for research and learning on the 2015 Soda Wildfire. With five years of monitoring, 2500 plots distributed across nearly 300,000 acres of varied terrain, ecological condition, and management treatments already provide an unparalleled learning laboratory from which key lessons on adaptive management can be learned. These 2500 plots provide a strong foundation for future monitoring, learning, and adaptive management. Then, USGS Research Ecologist David Pilliod will describe the co-production process of the Land Treatment Exploration Tool and the Land Treatment Digital Library that supplies its data. The Land Treatment Digital Library is a catalog of information about past treatments on public lands administered by the BLM in the western United States, especially burned areas. The Land Treatment Exploration Tool is designed for resource managers to use when planning land treatments. It provides useful summaries of environmental characteristics of planned treatment areas and facilitates adaptive management practices by comparing those characteristics to other similar treatments within a specified distance or area of interest. Paul Steblein, Wildland Fire Science Coordinator for the USGS, will then moderate a discussion session that we anticipate will explore needs, barriers, and opportunities for

improving information flow between scientists and managers for rehabilitation and restoration of post-fire rangelands.

Introduction: Paul Steblein (USGS)

A land manager's perspective:

Co-production of science that supports adaptive management: scaling considerations from the field to the national level

Karen Prentice (BLM), Sarah Carter (USGS)

Project-specific case study:

The seminal trial of post-fire adaptive management on the 2015 Soda Fire

Matt Germino (USGS), Rob Bennett (BLM), Alex Webb (USFWS), Amy Stillman (BLM), Cara Applestein (Boise State Univ), Matt Fisk (USGS)

National-scale learning system:

The Land Treatment Digital Library and Exploration Tool: Science co-production and adaptive management on public rangelands

David Pilliod (USGS), Gordon Toevs (BLM), Justin Welty (USGS)

Discussion moderated by Paul Steblein (USGS)

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While rangelands are the most extensive terrestrial land-cover, the voices and stories of rangelands are rarely widely heard by urban residents and when they are, the perspectives shared with the general public are limited. External pressures such as energy development, ex-urban development, and invasives threaten to lead to unintended transformations on rangelands that are uninformed by the stories of people who depend on these landscapes. At the same point, scientists struggle to use storytelling effectively to translate challenges to a broader audience.

During this ignite-style session we will explore with attendees the narratives and narrators of stories that are less frequently heard in rangeland management. We will begin with an overview of the importance of rangelands and a meta-analysis of news stories about rangelands to lay a foundational understanding of the stories widely circulated about rangelands. We will frame the importance of narrative and power in management decision-making, and a conceptual diagram of how we see stories influencing rangeland management. We will then lead a discussion and audience polling about the dominant narratives and narrators heard on rangelands. We will transition to case studies with a brief introduction to rangeland challenges that we will address in case studies.

We have three stories to share. 1) Cheatgrass: An invasive species problem that is overtaking the West--how do we communicate data that impacts our communities? 2) Wild Horses and Burros: how do we listen to multifaceted perspectives on a disputed topic? 3) Women's voices in ranching: how can we make sure diverse voices are included in management conversations? These stories will be used to illustrate how storytelling and narratives can and do function in rangeland management and how they could be harnessed for better land management. We will ask the audience to propose synergistic questions after they listen to these three short talks. After each short talk, we will facilitate a brief audience polling activity to generate conversation and explore these topics in more depth. We will end with a discussion on which voices do we need in our current and future rangeland management decisions--who can we actively bring to this discussion?

Our goals for the session are to address and explore the following questions: 1) How can storytelling on rangelands include diverse voices and influence land management practices? 2) Whose voices are included at the table and whose voices are not here? 3) How can we redefine our collective consciousness of the West? In addition to understanding the three case studies we will share, we hope attendees will leave with a better understanding of the role of storytelling and diverse perspectives in rangeland management.

Amanda Botsford, MEM Student, Western Colorado University
Anna Coburn, MEM Student, Western Colorado University
Sam Liebl, MEM Student, Western Colorado University
Corrine Knapp, Assistant Professor, University of Wyoming

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The Healthy Ecosystems for Rangeland Development (HERD) approach aims to improve Rangeland governance at the local level of rangeland users (local communities) and the intermediate level of decentralized rangeland managers and service providers in districts and governorates level, at the national level and at the regional level. The project approach designed to support dialogue-based processes in which all rangeland users and stakeholders are involved in a shared search for negotiated solutions. Rangeland governance is, on this basis, 'improved' or 'good' if the process that leads to it is transparent, democratic, equitable, pro-poor, and gendered, and that these approaches are reflected in the outcomes.

One of the important aspects of Sustainable Rangeland Management (SRM) is the active participation of local communities and collaboration with relevant stakeholders during the different phases of the strategic planning process. The project methodology targeted the three levels in set of activities that in total aims to improve knowledge and information sharing, multi-stakeholders dialogue for better resources management, and build the local and national institutional in the process.

HERD approach brings together many components adapted from well-proven methodologies in the fields of project management, business management, Rangeland Management and Planning and rural development. The approach also builds on existing sets of guidelines such the EU project EMPOWERS Guidelines for Water Governance (2004-2007), the IUCN Increasing Climate Change Resilience Guiding Toolkit (2014) and the Participatory Rangeland Management Planning (PRMP) guideline.

HERD project will adopt the Participatory Rangeland Management and Planning (PRMP) Methodology as the base approach with some customization in the project management cycle to reflect the strategic planning at the three management levels of the project and merge some of other methodologies and tools to enrich the processes. PRMP initially is intended to help practitioners adapt participatory approaches to the unique situation of the rangelands. PRMP is an iterative/cyclic process laid down in the essential steps. The aim of PRMP is to facilitate participatory rangeland management planning in a simplified and practical way.

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The younger generation has been further removed from agriculture today with the transition of the cultural norm to urban lifestyles, but we are still having students enroll in natural resource degrees. One of the challenges our younger generations faces is learning how to build those professional relationships through face-to-face conversations with those in the private sector. Forest production, mining, and ranching are the oldest private sector users of forestry and rangelands. It is essential for students' professional development to make personal connections with these credible resource users to open productive conversations about the knowledge and skill base necessary to reach the goals and objectives of private operations. For this to happen, it will take the technology focused generation that is graduating to see how important the ability to communicate effectively across a broad range of resource users is in the early stages of career development.

Our outcome for the training is for young professionals to learn how scientific and educational communication approaches will impact application of their work outcomes and the pitfalls or struggles they might encounter starting out in their career. Since ranches are the resource that most range managers will encounter early in their career, YPC will focus on the livestock production industry.

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Rangeland songbirds are experiencing widespread population declines across the US. From the tallgrass prairie to the sagebrush ecosystem, loss of habitat is considered the primary cause of decline for many species of conservation concern. The majority of research and conservation efforts focus primarily on population metrics, tracking the downward trajectory of bird numbers. However, there is strong evidence that declining songbird populations are linked to the loss, degradation or fragmentation of habitat. As bird populations continue their downward trend, it is imperative to focus on wildlife habitat characteristics and management of remaining tracts of land. In rangeland ecosystems, the need for effective multi-use management strategies that support wildlife and traditional rangeland uses continues to increase. In this symposium, sponsored by the SRM wildlife habitat committee, we will highlight current songbird habitat research conducted by rangeland professionals. This ignite session will emphasize the connection between declining populations and loss or degradation of habitat, by featuring research on land management, songbirds and critical habitat characteristics such as forbs and plant community structure.

Tracey Johnson- Livestock grazing as a tool for managing songbird habitat: evidence from a broad-scale grazing experiment

Cameron Duquette-Grassland Bird Nesting Success and Community Composition in a Landscape Managed with Patch-burn Grazing

Jennifer Lutze: Increasing structural heterogeneity for bird habitat and private lands management

Vanessa Schroeder- Short Term Effects of Contemporary Grazing Practices on Sagebrush-obligate Songbird Habitat and Reproductive Success

Courtney Duchardt: What mountain plovers and cattle (may) agree on: moderate-sized prairie dog colonies in the Thunder Basin National Grassland

Sam Wolfe- Songbird Abundance on Rangelands in Eastern Oregon Prior to Juniper Removal

Jason Tack-Conifer Management Tools for Woodland and Sagebrush Obligate Songbirds

Kristin Davis-Tradeoffs and challenges in applying adaptive rangeland management for a shortgrass-obligate bird

Jennifer Timmer- Multiple Ecosystem Services in a State-And-Transition Model for Sagebrush Rangelands

Alan Harrington: A Unique Look into Landscape-level Threats and Sagebrush-obligate Songbird Dynamics

Anna Chalfoun: Multi-scale Habitat Associations of the Three Sagebrush-obligate Songbirds: Mechanistic Insights from 18 Years of Study