

Society for Range Management 65th Annual Meeting and Trade Show

Poster Sessions

- 2 sessions: A) Monday 1:00 p.m. – Tuesday 11:00 a.m.
 B) Tuesday 1:00 p.m. – Wednesday 10:00 a.m.

Poster Session A

Monday afternoon (1:00 p.m. – 6:00 p.m.)
Tuesday morning (8:00 a.m. – 10:00 a.m.)

Excellence in Range Management

1-15 Awards committee selections

Grazing Related Posters

- 16 **Plant community preference by cattle on BC bunchgrass range**
Donald Thompson¹, Barbara Wheatley², John Church³, Melissa McLeod⁴, ¹*Agriculture and AgriFood Canada, Lethbridge, Alberta, Canada*, ²*Agriculture and AgriFood Canada, Kamloops, BC, Canada*, ³*Thompson Rivers University, Kamloops, BC, Canada*, ⁴*Selkirk Community College, Castlegar, BC, Canada (0007)*
- 17 **Expected-Use Grazing Maps**
Andrew Brischke¹, James Heitholt², ¹*University of Arizona, Tucson, AZ*, ²*USDA Forest Service, Sierra Vista, AZ (0047)*
- 18 **The effect of grazing intensity on grasslands and cattle performance in south-central North Dakota**
Bob Patton¹, Paul Nyren¹, Anne Nyren¹, ¹*North Dakota State University - Central Grasslands Research Extension Center, Streeter, ND (0050)*
- 19 **Differential Relationships of Livestock Production and Seasonal Precipitation for Three Grazing Intensities in Shortgrass Steppe**
Justin Derner¹, David Augustine¹, Daniel Milchunas², ¹*USDA-ARS, Cheyenne, WY*, ²*Colorado State University, Fort Collins, CO (0080)*
- 20 **Plant Community Response to Rotational Grazing in a Noxious Weed Dominated System**
Alexis Robertson¹, Leslie Roche¹, Josh Davy², Dennis Nay³, Kenneth Tate¹, ¹*Department of Plant Sciences, University of California, Davis, Davis, CA*, ²*UC Cooperative Extension, University of California, Davis, CA*, ³*USDA Natural Resources Conservation Service, CA (0083)*
- 21 ***Hesperostipa comata* and *Pascopyrum smithii* response to defoliation and moisture: a test of rotational grazing's suitability in the Dry Mixedgrass prairie**
Tanner Broadbent¹, Edward Bork¹, Walter Willms^{2,1}, ¹*University of Alberta, Edmonton, Canada*, ²*Agriculture and Agri-Food Canada, Lethbridge, Canada (0086)*
- 22 **Measuring the Potential Benefits of Using Targeted Cattle Grazing to Alter Fire Behavior**
L.A. Varelas¹, L.A. Torell¹, D.W. Bailey¹, L.D. Howery², Retta Bruegger², ¹*New Mexico State University, Las Cruces, NM*, ²*University of Arizona, Tucson, AZ (0102)*

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- 23 **Fall and winter forage characteristics of 15 perennial range grass species**
Kevin Jensen¹, Justin Derner², Jack Staub¹, Craig Rigby¹, Blair Waldron¹, ¹USDA-ARS-
*Forage and Range Research Lab, Logan, UT, ²USDA-ARS-High Plains Grassland
Research Station, Cheyenne, WY (0121)*
- 24 **Regrowth of three key forage species in the Southern Interior of British Columbia**
Vanessa Volpatti¹, ¹Thompson Rivers University, Kamloops, British Columbia, Canada,
²Agriculture and Agri-foods Canada, Kamloops, British Columbia, Canada (0146)
- 25 **Modeling cover and grazing effects on runoff and erosion in a Pacific Northwest
grassland**
Hussin Alshantiri¹, Linda H. Hardesty¹, William J. Elliot², Joan Q. Wu³, ¹Washington State
University, Pullman, WA, ²USFS Rocky Mountain Research Station, Moscow, ID,
³Washington State University, Puyallup, WA (0193)
- 26 **Modeling Grazing Utilization on Fort Hood Texas Using Inverse Distance Weighted
Interpolation**
Edward Rhodes¹, Will Shaw¹, R. Loren Naylor¹, Tim Brown¹, Wayne Hamilton², J Richard
Conner^{2,3}, Jay Angerer¹, ¹Center for Natural Resource Information Technology, Temple,
TX, ²Texas A&M Dept of Ecosystem Science & Management, College Station, TX,
³Texas A&M Dept of Agricultural Economics, College Station, TX (0259)
- 27 **Variability in range cow mineral use is associated with season and daily high
temperature in Northern Great Plains**
J.M. Muscha¹, J.T. Mulliniks², A.J. Roberts¹, R.C. Waterman¹, J.A. Paterson³, M.K.
Petersen¹, ¹USDA-ARS Fort Keogh LARRL, Miles City, MT, ²New Mexico State
University, Las Cruces, NM, ³Montana State University, Bozeman, MT (0261)
- 28 **Soil Property Dynamics Relative to a Cattle Watering Point**
Casey Matney¹, ¹Colorado State University, Fort Collins, CO (0266)
- 29 **Effects of Herbivory on Seedling Survival in a Riparian Forest of the Middle
Sheyenne River Watershed**
Sarah Braaten¹, Shawn DeKeyser¹, Joseph Zeleznik¹, ¹NDSU, Fargo, ND (0300)

Social Related Posters

- 30 **Regionalization of ranching by hydrographic basins and some factors related to
beef production in Sonora, Mexico**
Francisco Denogean-Ballesteros¹, Salomon Moreno-Medina¹, Fernando Ibarra-Flores¹,
Martha Martín-Rivera¹, Rafael Retes-Lopez², ¹Universidad de Sonora, Santa Ana,
Sonora, Mexico, ²Universidad de Sonora, Hermosillo, Sonora, Mexico (0041)
- 31 **Social and Institutional Constraints to Rangeland Management Innovation: The
Role of Social Networks**
Jacey Cerda¹, Maria Fernandez-Gimenez¹, ¹Colorado State University, Fort Collins, CO
(0091)
- 32 **Big sky small acres: rural living in Montana**
Tracy Mosley¹, Toby Day², Virginia Knerr³, Jeffrey Mosley⁴, Jodi Powell⁵, Adam Sigler⁶,
Lori Valadez⁷, ¹Montana State University Park County Extension, Livingston, MT,
²Department of Plant Sciences and Plant Pathology, Montana State University,
Bozeman, MT, ³Montana State University Broadwater County Extension, Townsend, MT,
⁴Department of Animal and Range Sciences, Montana State University, Bozeman, MT,

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⁵Montana State University Powell County Extension, Deer Lodge, MT, ⁶Department of Land Resources & Environmental Sciences, Montana State University, Bozeman, MT, ⁷USDA Natural Resources Conservation Service, Bozeman, MT (0169)

- 33 **Information Exchange and Social Networks in Pyrenean Pastoral Communities**
Maria Fernandez-Gimenez¹, Federico Fillat², ¹Colorado State University, Fort Collins, CO, USA, ²Pyrenean Institute of Ecology, Jaca, Huesca, Spain (0219)
Monitoring and Assessment Posters
- 34 **Vegetation Monitoring on an 8000 acre Exclosure in Semi-Arid Grasslands**
Linda Kennedy¹, Daniel Robinett², ¹National Audubon Society, Elgin, Arizona, USA, ²Robinett Rangeland Resources LLC, Elgin, AZ (0051)
- 35 **Sustainable ranch management: Integrating monitoring information and a business planning process**
Kristie Maczko¹, John Tanaka^{2,1}, Mike Smith², Cindy Garretson-Weibel⁵, Chuck Stanley⁶, Gene Fults⁷, Stan Hamilton^{3,1}, J.K. "Rooter" Brite¹⁰, Larry Bryant¹¹, Dick Loper⁴, Ric Lopez⁹, Bob Bolton⁸, John Mitchell¹², ¹Sustainable Rangelands Roundtable, Fort Collins, CO, ²University of Wyoming Dept. of Renewable Resources, Laramie, WY, ³Idaho Dept. of Lands (ret.), Boise, ID, ⁴Wyoming State Grazing Board, Lander, WY, ⁵Wyoming Business Council, Cheyenne, WY, ⁶Natural Resources Conservation Service, Fort Worth, TX, ⁷Natural Resources Conservation Service, Portland, OR, ⁸Bureau of Land Management, Washington D.C., ⁹USDA Forest Service, Washington D.C., ¹⁰Grazing Lands Conservation Initiative and JA Ranch, Bowie, TX, ¹¹Bryant Ranches, Fox, OR, ¹²USDA Forest Service Rocky Mountain Research Station (ret.), Fort Collins, CO (0054)
- 36 **Measurement of Vegetation using Smartphone Technologies**
Alex J. Pearson¹, Bechir Hamdaoui¹, Mounir Louhaichi², Michael D. Johnson³, Douglas E. Johnson⁴, ¹College of Engineering, Oregon State University, Corvallis, OR, ²ICARDA, Aleppo, Syria, ³Dept. of Physics, UC Santa Barbara, Santa Barbara, CA, ⁴Oregon State University, Corvallis, OR (0079)
- 37 **A proto-type laser/optical system for measurement of vegetation height and cover in quadrats**
Joseph M. Kleinhenz¹, Sara C. Norman², Patrick E. Clark³, Mounir Louhaichi⁴, Robert M. Johnson¹, Norman R. Harris⁵, Douglas E. Johnson¹, ¹Duke University, Durham, NC, ²Oregon State University, Corvallis, OR, ³USDA Agricultural Research Service, Boise, ID, ⁴ICARDA, Aleppo, Syria, ⁵University of Alaska, Palmer, AK (0081)
- 38 **Deriving Shrub Heights from High Resolution Stereo-Pair Aerial Imagery: An Application for Broad-Scale Rangeland Monitoring**
Jeffrey Gillan¹, Jason Karl¹, Michael Duniway², ¹Jornada Experimental Range, USDA-ARS, Las Cruces, NM, ²Canyonlands Research Station, USGS-BRD, Moab, UT (0114)
- 39 **Vegetation assessment along a grazing gradient in semi-arid rangelands of Uzbekistan**
Mounir Louhaichi¹, Toshpulat Radjabov², Kristina Toderich³, Stefanie Christmann⁴, Aden Aw-Hassan¹, ¹International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria, ²Samarkand Division of Academy of Science of Uzbekistan, Samarkand, Uzbekistan, ³International Center for Biosaline Agriculture (ICBA), Central Asia & Caucasus sub-office, Tashkent, Uzbekistan, ⁴International Center for Agricultural Research in the Dry Areas (ICARDA), Tashkent, Uzbekistan (0127)

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- 40 **Comparison of visual obstruction and maximum grass height for estimating standing biomass in Northeastern California**
Melissa Merrill-Davies^{1,2}, Daniel Marcum^{1,3}, ¹University of California Cooperative Extension, Davis, CA, ²Modoc County, Alturas, CA, USA, ³Shasta/Lassen Counties, McArthur, CA (0149)
- 41 **Comparison of two methods for estimating shrub canopy cover**
Katie Santini¹, Stephen Bunting¹, ¹University of Idaho, Moscow ID (0173)
- 42 **Applications of remote sensing technology to assess landscape structure of pygmy rabbit habitat selection at multiple scales**
Virginia Harris¹, Eva K. Strand¹, Janet L. Rachlow¹, ¹University of Idaho, Moscow, ID (0188)
- 43 **Evaluating the Sensitivity of Basal Gap Intercept for Evaluation of Rangeland Health in the Desert-Steppe of Mongolia**
Retta Bruegger¹, Maria Fernandez-Gimenez², ¹University of Arizona, Tucson, AZ, ²Colorado State University, Fort Collins, CO (0207)
- 44 **Modeling Erosion in a Southern New Mexico Watershed Using Agwa: Sensitivity to Variations of Input Precision and Scale**
Sarah Burnett¹, Jason Karl², Laurie B. Abbott¹, ¹New Mexico State University, Las Cruces, NM, ²USDA ARS Jornada Experimental Range, Las Cruces, NM (0217)
- 45 **Determining Plant Growth Stages and Leaf Moisture Content in PHYGROW Using Daily Leaf Growth and Leaf Turnover**
William Shaw¹, Jay Angerer¹, Edward Rhodes¹, R. Loren Naylor¹, Tim Brown¹, Wayne Hamilton¹, J. Richard Conner¹, ¹Texas A&M University, College Station, TX (0247)
- 46 **Comparing Surface Cover Change Detection in Semi-arid Shrub-steppe With Land EKG® and Line-Point Intercept**
Tipton Hudson¹, ¹Washington State University, Ellensburg, WA (0269)
- 47 **A Remote Sensing Approach for Evaluating Brush Management Caused Transitions Between Vegetation States**
Sapana Lohani¹, Chandra Holifield Collins², Philip Heilman², Ronald L. Tiller³, ¹University of Arizona, Tucson, AZ, ²USDA-ARS Southwest Watershed Research Center, Tucson, AZ, ³The Nature Conservancy, Tucson, AZ (0304)
- 48 **Estimating age of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) using morphological characteristics**
Melissa L. Landeen¹, Steven L. Petersen¹, Stanley G. Kitchen², Loreen Allphin¹, ¹Brigham Young University - Department of Plant and Wildlife Science, Provo, UT, ²Rocky Mountain Research Station - Shrub Science Lab, Provo, UT (0313)

Behavior Posters

- 49 **Landscape occupancy by free-ranging cattle in northeastern Oregon**
K. Wilson¹, M. Wilson¹, L. Larson¹, J. Williams¹, P. Clark², D. Johnson¹, ¹Oregon State University, Corvallis, OR, ²USDA - ARS, Boise, ID (0062)

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50 **Distribution and behavior of cattle grazing riparian pastures in northeastern Oregon**
M. Wilson¹, K. Wilson¹, L. Larson¹, J. Williams¹, P. Clark², D. Johnson¹, ¹*Oregon State University, Corvallis, OR*, ²*USDA-ARS, Boise, ID (0063)*

51 **Grazing spatial behavior of Awassi sheep in small paddocks**
Mounir Louhaichi¹, Tomoki Kojima², Laci Bristow³, Barbara Rischkowsky¹, Douglas E. Johnson³, ¹*International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria*, ²*Kyoto University, Kyoto, Japan*, ³*Oregon State University, Corvallis, OR (0128)*

International Posters

52 **Biomass production in Mongolia's desert-steppe: relationship to grazing and community based rangeland management**
Chantsalkham Jamsranjav¹, Robin Reid¹, Maria Fernandez-Gimenez¹, ¹*Colorado State University, Fort Collins, CO (0186)*

53 **Defining factors that influence performance of CBRM institutions and their resilience to climate change**
Tungalag Ulambayar^{1,2}, Maria Fernandes Gimenez^{1,2}, Batkhishig Baival^{1,2}, ¹*Colorado State University, Fort Collins, CO*, ²*Department of Forestry and Rangeland Stewardship, Fort Collins, CO (0202)*

54 **Traditional Indigenous Community Mechanisms for Coping with Climate Change among the Ilchamus Pastoralists in Marigat District, Kenya**
Clement Lenachuru¹, Maria Fernandez-Gimenez¹, Robin Reid¹, ¹*Colorado State University, Fort Collins, CO (0212)*

Outreach/Education Posters

55 **The Great Basin Science Delivery Project**
Eugénie MontBlanc¹, Michael Pellant², Jeanne Chambers³, Kurt Pregitzer⁴, Brad Schultz⁵, Elizabeth Leger¹, Randy Sharp⁶, ¹*University of Nevada, Reno, NV*, ²*Bureau of Land Management, Boise, ID*, ³*U.S.D.A. Forest Service, Rocky Mountain Research Station, Reno, NV, USA*, ⁴*University of Idaho, Moscow, ID*, ⁵*University of Nevada Cooperative Extension, Winnemucca, NV*, ⁶*U.S.D.A. Forest Service, Sparks, NV (0032)*

56 **Range Rocks!: An outdoor experiential learning program for high school students**
John Kava¹, Doug Tolleson¹, ¹*The University of Arizona, V Bar V Ranch, Camp Verde, AZ (0067)*

57 **Attracting High School Students to Rangeland Careers -- The Western National Rangeland Career Development Event**
Lovina Roselle¹, Karen Launchbaugh¹, Kelly Crane¹, Gretchen Hyde², Mindy Pratt³, Tracy Shane⁴, ¹*University of Idaho, Moscow, ID*, ²*Idaho Rangeland Resource Commission, Emmett, ID*, ³*Utah State University, Logan, UT*, ⁴*Great Basin College, Elko, NV (0115)*

58 **Best Management Practices on Rangelands to Influence Ecosystem Services**
Stephanie Larson¹, Sheila Barry¹, Theresa Becchetti¹, Morgan Doran¹, Larry Forero¹, Holly George¹, Mel George¹, Roger Ingram¹, Valerie Eviner¹, ¹*UC Davis, Davis, CA (0315)*

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Historical Context Posters

- 59 **A 70 year comparison of California range landscapes: Collaborating with F.G. Renner, A.L. Hormay and M.W. Talbot**
Melvin George¹, Neil McDougald², Ralph Phillips³, Enid Phillips⁴, Dennis Dudley⁵, Kerry Arroues⁶, David Lile⁷, ¹*Plant Sciences Department, University of California, Davis, CA*, ²*Cooperative Extension, Madera County, Madera, CA*, ³*Cooperative Extension, Kern County, Bakersfield, CA*, ⁴*Kern County, Bakersfield, CA*, ⁵*USDA NRCS, Madera, CA, USA*, ⁶*USDA NRCS, Hanford, CA*, ⁷*Cooperative Extension, Lassen County, Susanville, CA (0013)*
- 60 **Seed banks and land-use history of pastures and hayfields on an organic dairy farm**
Matt Sanderson¹, Robert Stout², Sarah Goslee², Jeff Gonet², ¹*USDA-ARS, Mandan, ND*, ²*USDA-ARS, University Park, PA (0182)*

Fisheries/Wildlife Posters

- 61 **Wolves and Wild Horses: When old world predator and prey meet again on the sagebrush steppe in Nevada**
Ryan Leary¹, Tracey Jean Wolfe¹, ¹*USDI-BLM, Carson City, NV*, ²*USDA-NRCS, Yerington, NV (0052)*
- 62 **Assessing Greater Sage-Grouse Breeding Habitat with Aerial and Ground Imagery**
Jeffrey Beck¹, Terrance Booth², Carmen Kennedy², ¹*University of Wyoming, Laramie, WY*, ²*USDA-ARS, High Plains Grassland Research Station, Cheyenne, WY (0126)*
- 63 **Microhabitat use by northern Idaho ground squirrels in response to prescribed fire**
Christina Sullivan¹, Elise Suronen¹, Beth Newingham¹, ¹*University of Idaho, Moscow, ID (0316)*
- 64 **Vegetation heterogeneity within and among prairie dog colonies on Northern Great Plains grasslands**
Jack Butler¹, Lan Xu², Eric Boyda², ¹*US Forest Service, Rocky Mountain Research Station, Rapid City, SD*, ²*Department of Natural Resources, South Dakota State University, Brookings, SD (0324)*

Improvements, Plant Materials, Restoration Posters

- 65 **Vegetational changes following several brush clearing and soil ripping options for buffelgrass establishment in México**
Fernando Ibarra-Flores¹, Martha Martín-Rivera¹, David Cañes-Cota¹, Edmundo Garcia-Moya², Salomon Moreno-Medina¹, Francisco Denogean-Ballesteros¹, Felix Ayala-Alvarez¹, Francisco Pacheco-Ayala³, Fernando Ibarra-Martín¹, ¹*Universidad de Sonora, Santa Ana, Sonora, Mexico*, ²*Colegio de Postgraduados, Montecillo, Texcoco, Mexico*, ³*Universidad de Sonora, Hermosillo, Sonora, Mexico (0039)*
- 66 **¿Is it profitable to control mesquite infestations in Short Grasslands of Cananea, Sonora, Mexico?**
Martha Martín-Rivera¹, Fernando Ibarra-Flores¹, Salomon Moreno-Medina¹, Francisco Denogean-Ballesteros¹, Rodolfo Garza-Ortega², Rafael Retes-López³, Emanuel Hurtado-Ramirez¹, Ernesto Gerlach-Barrera¹, Fernando Ibarra-Martín¹, ¹*Universidad de Sonora, Santa Ana, Sonora, Mexico*, ²*Dow Agrosciences de Mexico, Hermosillo, Sonora, Mexico*, ³*Universidad de Sonora, Hermosillo, Sonora, Mexico (0040)*

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- 67 **Distribution and Habitat Requirements of Desert Yellowhead (*Yermo xanthocephalus*), Fremont County, Wyoming**
Bonnie Heidel¹, Joy Handley¹, Mark Andersen¹, ¹Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY (0044)
- 68 **Incorporating Technology in Plant Materials Collecting Tasks**
Scott Jensen¹, Jason Stettler², ¹USDA Forest Service, Rocky Mountain Research Station GSD, Provo, UT, ²Utah Division of Wildlife Resources, Great Basin Research Station, Ephraim, UT (0075)
- 69 **Plant Materials: Bridging the Great Divide between Cultivars and Local Sources with Pooled Materials from Provisional Seed Zones**
Scott Jensen¹, Jason Stettler², ¹USDA FS RMRS GSD, Provo, UT, ²Utah Division Of Wildlife Resources, Great Basin Research Center, Ephraim, UT (0077)
- 70 **Is Artificial Seeding Needed After Roller Chopping Mixed-Brush Plant Communities?**
Felix Ayala-A.^{1,2}, J. Alfonso Ortega-S.², Timothy E. Fulbright², G. Allen Rasmussen², D. Lynn Drawe³, ¹Universidad de Sonora, Santa Ana, Sonora, Mexico, ²Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, TX, ³Former Director of The Rob and Bessie Welder Wildlife Foundation, Sinton, TX (0123)
- 71 **Reestablishing Wyoming big sagebrush on restored bentonite mines in the Big Horn Basin, Wyoming**
Catherine Tarasoff¹, Dan Close², ¹Michigan Technological University, Houghton, MI, ²MI-Swaco, Greybull, WY (0129)
- 72 **Post-fire Native Seeding Strategies: Results from a Wyoming Big Sagebrush Site in Northern Nevada**
Matthew Fisk¹, Erin Denney¹, Robert Cox², Nancy Shaw¹, ¹USDA Forest Service, Rocky Mountain Research Station, Boise, ID, ²Department of Natural Resources Management, Texas Tech University, Lubbock, TX (0151)
- 73 **Abundance Relationships Between Geyer's Larkspur and Other Coexisting Plant Species**
J. D. Schroeder¹, P. J. Meiman¹, J. E. Brummer¹, J. Vaad¹, ¹Colorado State University, Fort Collins, CO (0225)
- 74 **Can seedling facilitation increase plant emergence and establishment?**
Lauren Stoffel¹, Dan Mummey¹, ¹MPG Operations, Missoula, MT (0251)
- 75 **Population Age Structure for Sickle Saltbush and Winterfat in the Catlow Valley of Oregon**
Casey Matney¹, ¹Colorado State University, Fort Collins, CO (0264)
- 76 **Field Response of Seed Agglomerate Technology: First Year Evaluation**
Matthew Madsen¹, Kirk Davies¹, Tony Svejcar¹, ¹USDA-ARS, Burns, OR (0310)

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GIS Related Posters

- 77 **Target Vegetation Detection of Degrading Savanna Grasslands in the Western High Plateaus of Cameroon using Multi-spectral and Temporal Landsat Images**
Stephen Ndzeidze¹, Patrick Clark², Mounir Louhaichi³, Gilbert Banboye⁴, Douglas E. Johnson¹, ¹*Oregon State University, Corvallis, OR*, ²*USDA/Agricultural Research Service, BoiseID*, ³*ICARDA, Aleppo, Syria*, ⁴*University de Yaounde I, Yaounde, Cameroon (0068)*
- 78 **Rangeland Monitoring Using Remote Sensing and GIS: A Case Study of Scale and Resolution in Measuring Plant Community Structure**
Ammon Boswell¹, Steven Petersen¹, Ryan Jensen¹, Danny Summers², Jason Vernon², ¹*Brigham Young University, Provo, UT*, ²*Utah Division of Wildlife Resources, Ephraim, UT (0306)*
- 79 Open
- 80 Open

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Poster Session B

Tuesday afternoon (1:00 p.m. – 6:00 p.m.)

Wednesday morning (8:00 a.m. – 10:00 a.m.)

Weeds, Invasive Species, Herbicides Posters

- 1 ***Diorhabda elongata* and Saltcedar Control: 10 Years Later**
Charlie D. Clements¹, Dan N. Harmon¹, James A. Young¹, Jeff Knight², ¹USDA-ARS, Reno, NV, ²Nevada State Department of Agriculture, Reno, NV (0024)
- 2 **A Working Ranch with an Effective Medusahead Management Program**
Brenda Smith¹, Roger Sheley¹, Ben McGough², Barbara McGough², ¹USDA-ARS, Burns, OR, USA, ²Circle Bar Ranch, Mitchell, OR (0025)
- 3 **Profitability of Pastar[®] herbicide for brush control on buffelgrass pastures at Sonora, Mexico**
Fernando Ibarra-Flores¹, Martha Martín-Rivera¹, Salomon Moreno-Medina¹, Francisco Denogean-Ballesteros¹, Julio Chavarin-Palacios², Rafael Retes-López³, Ana Bertha Martínez-Durán¹, Ramses Ortega-Reyna¹, Fernando Ibarra-Martín¹, ¹Universidad de Sonora, Santa Ana, Sonora, Mexico, ²Dow Agrosociencias de México, Zapopan, Jalisco, Mexico, ³Universidad de Sonora, Hermosillo, Sonora, Mexico (0038)
- 4 **Effects of integrating mowing and imazapyr on African rue (*Peganum harmala* L.) and native bunchgrasses**
Dustin Johnson¹, Kirk Davies², ¹Oregon State University, Burns, OR, USA, ²USDA-Agricultural Research Service, Burns, OR (0043)
- 5 **Plant Material Testing and Cheatgrass Suppression: A 10-Year-Old Case Study**
Charlie D. Clements¹, James A. Young¹, Dan N. Harmon¹, ¹USDA-ARS, Reno, NV (0045)
- 6 **Effects of the Maternal Environment on Cheatgrass Seed Dormancy**
Dan N. Harmon¹, Charlie D. Clements¹, James A. Young¹, ¹USDA-ARS, Reno, NV (0046)
- 7 **Soil bioassay tests highlight alfalfa and clover sensitivity to herbicide residue in northern temperate pastures**
Amanda Miller¹, Edward Bork¹, Linda Hall¹, Patrick Forsythe², Bill Summers², ¹University of Alberta, Edmonton, Alberta, Canada, ²DuPont, Canada, Canada (0049)
- 8 **Evaluating Sheep and Goat Grazing Strategies in Controlling *Prunus spinosa* Encroachment into Historic Grasslands on the Hohenfels Joint Multinational Readiness Center, Hohenfels Germany**
Peter Schreder¹, Scott Holbrook², Albert Boehm³, Steve Warren⁴, ¹Oregon State University, Corvallis, OR, ²Natural Resource Innovations, Mannheim, Germany, Germany, ³Hohenfels JMRC U.S. Army, Hohenfels, Germany, Germany, ⁴US Forest Service, Rocky Mountain Research Station, Provo, UT (0055)
- 9 **Germination of red brome grass as affected by aminocyclopyrachlor**
John Brock¹, Antonio Lopez¹, Corey Ertl¹, Eddie Alford¹, ¹Arizona State University Polytechnic, Mesa, AZ (0088)

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- 10 **The response of perennial pepperweed (*Lepidium latifolium*) to physical and chemical mowing and subsequent herbicide treatment**
Brad Schultz¹, Earl Creech², Kent McAdoo³, ¹University of Nevada Cooperative Extension, Winnemucca, NV, ²Utah State University, Logan, UT, ³University of Nevada Cooperative Extension, Elko, NV (0106)
- 11 **The response of creeping wildrye (*Leymus triticoides*) to physical and chemical mowing, and subsequent herbicide treatment**
Brad Schultz¹, Earl Creech², Kent McAdoo³, ¹University of Nevada Cooperative Extension, Winnemucca, NV, ²Utah State University, Logan, UT, ³University of Nevada Cooperative Extension, Elko, NV (0109)
- 12 **The response of five fall-seeded grass species and Russian knapweed (*Acroptilon repens*) to fall tillage and herbicide application**
Brad Schultz¹, Earl Creech², Vanelle Petersen³, ¹University of Nevada Cooperative Extension, Winnemucca, NV, ²Utah State University, Logan, UT, ³Dow AgroSciences, CA (0110)
- 13 **Does invasion by non-native Old World Bluestems reduce habitat for soil microfaunal groups?**
Richard Packauskas¹, Jordana Lafantasie¹, Jessica Casey¹, ¹Fort Hays State University, Hays, KS (0153)
- 14 **Cheatgrass Invasion "Engineers" the Soil to Facilitate Its Growth**
Robert Blank¹, Tye Morgan¹, ¹USDA/ARS, Reno, NV (0162)
- 15 **Medusahead spread along vector pathways and random transects**
Aleta Nafus¹, Kirk Davies¹, ¹USDA-ARS, Burns, OR (0184)
- 16 **Black greasewood community response to aminocyclopyrachlor application**
Jordana J. LaFantasie¹, Brian A. Meador², Andrew R. Kniss², ¹Fort Hays State University, Hays, KS, ²University of Wyoming, Laramie, WY (0190)
- 17 **Ecohydrology of Invasive Reed Canary Grass (*Phalaris arundinacea*)**
Adam Gebauer¹, Suzanne Schwab¹, Rebecca Brown¹, Camille McNeely¹, Carmen Nezat¹, ¹Eastern Washington University, Cheney, WA (0203)
- 18 **Saltcedar in the Great Plains: Seed Ecology Considerations**
Sarah Burnette^{1,2}, Amy Symstad², Roger Gates¹, ¹South Dakota State University, Rapid City, SD, ²United States Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, ND (0205)
- 19 **Wildlife and Cattle Use of Locoweed-Infested Plots Treated With Targeted Grazing**
Laura Goodman¹, Andres Cibils¹, David Graham², Lyndi Owensby¹, Wendy Taylor¹, ¹New Mexico State University, Las Cruces, NM, USA, ²Cooperative Extension Service, New Mexico State University, Clayton, NM (0208)
- 20 **Piñon and juniper tree mastication effects in the Great Basin and Colorado Plateau**
Jordan Bybee¹, Bruce Roundy¹, Leann Crook¹, ¹Brigham Young University, Provo, UT (0215)

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- 21 **The economic and ecological potential for biological control using small ruminants of two invasive species of forest understory: Amur Honeysuckle and Common Buckthorn**
Allen Casey¹, Charlotte Clifford-Rathert², Michael Schulte², Luke Wilbers², Cody Cave², James Caldwell², Ronald Cordsiemon¹, Jerry Kaiser¹, Mark Kennedy¹, John Turner¹,
¹USDA-NRCS, Columbia, MO, ²Lincoln University, Jefferson City, MO (0226)
- 22 **Can Biological Control and Targeted Grazing Be Integrated to Suppress Spotted Knapweed?**
Rachel Frost¹, Jeffrey Mosley¹, Brent Roeder¹, Tracy Mosley², Gerald Marks³, ¹Montana State University, Bozeman, MT, ²Park County Extension, Livingston, MT, ³Missoula County Extension, Missoula, MT (0228)
- 23 **Web-based Decision Support Matrix for Integrate Weed Management**
Theresa Becchetti¹, Stephanie Larson², Joe DiTomaso³, Emilio Laca³, Mel George³,
¹University of California Cooperative Extension, Modesto, CA, USA, ²University of California Cooperative Extension, Santa Rosa, CA, USA, ³University of California, Davis, CA (0254)
- 24 **Litter Accumulation and Decomposition in Smooth Bromegrass (*Bromus inermis* Leyss.) Pastures**
John Guretzky¹, Terry Klopfenstein¹, Walter Schacht¹, ¹University of Nebraska-Lincoln, Lincoln, NE (0262)
- 25 **Rangeland Cup**
- 26 **Survey of impacts of insect biological control on soil N transformations in Tamarix-invaded ecosystems in the Great Basin**
Shauna Uselman¹, Keirith Snyder¹, Robert Blank¹, ¹USDA-ARS, Reno, NV (0272)
- 27 **Investigating the potential for piñon and juniper mastication to influence soil health and invisibility**
Deborah Rigby¹, Zachary Aanderud¹, Bruce Roundy¹, ¹Brigham Young University, Provo, UT (0299)
- 28-29 **Rangeland Cup**
- 30 **Tulare County WMA: Leading Edge Cost-Share Yellow starthistle Control Program**
James Sullins¹, Andrew Isner², ¹UC ANR UCCE, Tulare County, CA, USA, ²WMA, Tulare County, CA (0335)
- 31-32 **Rangeland Cup**
- 33 **Ranch Level Economic Impacts of Western Juniper Encroachment in Owyhee County, Idaho**
Ashley McClain¹, Neil Rimbey¹, ¹University of Idaho, Moscow, ID (0336)
- 34-35 **Rangeland Cup**

Riparian Posters

- 36 **Babacomari River Riparian Protection Project**
Dan Robinett¹, ¹Robinett Rangeland Resources LLC, Elgin, AZ (0031)

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37-38 **Rangeland Cup**

39 **Stream conservation and riparian forests: hydrologic ecosystem services of riparian forests in Pacific Lowland Nicaragua rangeland**
Ryan Niemeyer¹, Alex Fremier¹, Robert Heinse¹, Fabrice DeClerck², Wilfredo Chávez Huamán², ¹University of Idaho, Moscow, ID, ²The Tropical Agricultural Research and Higher Education Center (CATIE), Turrialba, Cartago, Costa Rica (0288)

40-41 **Rangeland Cup**

42 **A Comparison of Stream Morphology and Vegetation of Cottonwood-Dominated and Open Reaches Within a Riparian Ecological Site in NW Colorado**
Kira Puntenney¹, Emily Kachergis¹, ¹Colorado State University, Fort Collins, CO (0303)

43-44 **Rangeland Cup**

45 Open

46-47 **Rangeland Cup**

48 Open

Soils, Ecological Sites, State-and-Transition Posters

49 **Site characteristics of intact shortgrass steppe in the southern Great Plains USA**
Paulette Ford¹, ¹USDA Forest Service Rocky Mountain Research Station, Albuquerque, NM (0012)

50 **Learning to Predict Vegetation Change: a Step-wise Progression for Acquiring State and Transition Modeling Skills**
Colleen Ryan¹, Eva Strand², ¹Systems for Environmental Management, Missoula, MT, ²University of Idaho, Moscow, ID (0064)

51 **The tri-soil experiment: do plants discriminate among vegetation soil types?**
Robert Blank¹, Tye Morgan¹, ¹USDA/ARS, Reno, NV (0163)

52 **Data support for a state-and-transition model: what have we learned?**
Brandon Bestelmeyer¹, David Briske², Maria Fernandez Gimenez³, X. Ben Wu², ¹Jornada Experimental Range, Las Cruces, NM, ²Texas A&M University, College Station, TX, ³Colorado State University, Fort Collins, CO (0196)

53 **Impact of soil type on vegetation response to prairie dog herbivory**
John Hendrickson¹, Mark Liebig¹, Cory Barth², Kevin Sedivec², ¹USDA-Agricultural Research Service, Mandan, ND, ²North Dakota State University, Fargo, ND (0231)

54 **Towards broad-scale perspectives on landscape dynamics: the National Ecological Dynamics Database**
Jeb Williamson¹, Brandon Bestelmeyer¹, ¹USDA-ARS Jornada Experimental Range, New Mexico State University, Las Cruces, NM (0236)

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- 55 **Herbaceous plant diversity and productivity relationships across multiple states of an oak woodland-annual grassland system**
D.J. Eastburn¹, Leslie M. Roche¹, Kenneth W. Tate¹, ¹*University of California, Davis, Davis, CA (0253)*
- 56 **A State-and-Transition Approach to Evaluating Trade-offs among Ecosystem Services**
John Ritten¹, Maria Fernandez-Gimenez², Emily Kachergis³, Willow Hibbs⁴, ¹*University of Wyoming, Laramie, WY*, ²*Colorado State University, Fort Collins, CO*, ³*Agricultural Research Service, Cheyenne, WY*, ⁴*Natural Resources Conservation Service, Saratoga, WY (0279)*
- 57 **A GIS Modeling Method for Predicting the extent of Land Resource Unit Subdivisions to assist with the Development of Ecological Site Descriptions**
Bill Drummond¹, Tamra DeCock¹, ¹*NRCS, Miles City, MT (0287)*
- 58 **Use of soil electrical conductivity for soil mapping in rangelands**
Daniel Mummey¹, Mike McTee¹, Lauren Stoffel¹, Philip Ramsey¹, ¹*MPG Operations, Missoula, MT (0289)*
- 59 **Impact of grasshopper herbivory on rangeland production and species composition in northern mixed prairie: Results from a long term experiment**
David Branson¹, ¹*USDA, Agricultural Research Service, Sidney, MT (0298)*
- 60 Open

Climate, Climate Change, Carbon Sequestration, etc. Posters

- 61 **The Potential Effect of Climate Change on Forage Production in the Southwest**
Allen Torell¹, Kirk McDaniel¹, Brian Hurd¹, ¹*New Mexico State University, Las Cruces, NM (0009)*
- 62 **Correlation among rainfall and cattle inventories during the last 20 years in Sonora, Mexico**
Salomon Moreno-Medina¹, Francisco Denogean-Ballesteros¹, Fernando Ibarra-Flores¹, Martha Martín-Rivera¹, Rafael Retes-Lopez², Cyrenne Moreno-Alvarez¹, ¹*Universidad de Sonora, Santa Ana, Sonora, Mexico*, ²*Universidad de Sonora, Hermosillo, Sonora, Mexico (0042)*
- 63 **Effect of climate/vegetation zone and plant part on n-alkanes in Arizona range grasses**
Doug Tolleson¹, David Forbes², John Kava¹, Carrie Hensarling², ¹*The University of Arizona, V Bar V Ranch, Camp Verde, AZ*, ²*Texas Agrilife Research and Extension Center, Uvalde, TX (0069)*
- 64 **Brush Management Effects on Soil Carbon Sequestration in Sagebrush-Dominated Rangelands**
Justin Derner¹, George Vance², Gerald (Jerry) Schuman¹, Ronald Follett³, ¹*USDA-ARS, Cheyenne, WY, USA*, ²*University of Wyoming, Laramie, WY, USA*, ³*USDA-ARS, Fort Collins, CO (0078)*

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- 65 **Drought-Year Vegetation Does Not Respond to Conifer Removal but Does to Ungulate Exclusion**
Dave Kramer¹, Robert Cox¹, ¹Texas Tech University, Lubbock, TX (0099)
- 66 **MYCORRHIZATION RATES OF TWO GRASSES FOLLOWING ALTERATIONS IN MOISTURE INPUTS IN SOUTHERN MIXED GRASS PRAIRIE**
Heath Owens¹, Jordana LaFantasie¹, Peter Adler², ¹Fort Hays State University, Hays, KS, USA, ²Utah State University, Logan, UT (0132)
- 67 **Timing is Everything: How environmental changes may disrupt the timing of plant-pollinator interactions**
Michelle Solga¹, Jason Harmon¹, Amy Ganguli¹, ¹North Dakota State University, Fargo, ND (0137)
- 68 **A vegetation survey and soil seed bank analysis at the Lubbock Lake Landmark during the drought of 2011**
Matthew McEwen^{1,2}, Robert Cox², Eileen Johnson^{1,2}, ¹Lubbock Lake Landmark Museum of Texas Tech, Lubbock, TX, ²Texas Tech University, Lubbock, TX (0144)
- 69 **Germination prediction from soil moisture and temperature in the Great Basin**
Nathan L. Cline¹, Bruce A. Roundy¹, Stuart P. Hardegree², ¹Brigham Young University, Provo, UT, ²USDA-ARS Northwest Watershed Research Center, Boise, ID (0250)
- 70 **Aspen crown dieback and mortality on the southwestern edge of its range**
T. Zegler¹, M. Moore¹, K. Ireland¹, M. Fairweather², P. Fulé¹, C. Sieg³, ¹Northern Arizona University, Flagstaff, AZ, ²United States Forest Service, Arizona Zone of Forest Health Protection, Flagstaff, AZ, ³Rocky Mountain Research Station, Flagstaff, AZ (0338)

Fire Related Posters

- 71 **Efficacy of Using Supplementation and Herding to Reduce Fine Fuels in the Santa Rita Mountains of southeastern Arizona**
Retta Bruegger¹, Larry Howery¹, Derek Bailey², Chuck Duncan³, Sean Lockwood⁴, ¹University of Arizona, Tucson, AZ, ²New Mexico State University, Las Cruces, NM, ³U.S. Forest Service, Safford, AZ, ⁴U.S. Forest Service, Nogales, AZ (0011)
- 72 **Development of Great Plains Fire Science Exchange Planning Consortium**
Sherry Leis¹, David Engle², Ryan Harr³, Terrie Becerra², ¹Heartland Inventory and Monitoring Network, Springfield, MO, ²Oklahoma State University, Stillwater, OK, ³Iowa State University, Ames, IA (0022)
- 73 ***Festuca rubra* evaluation for potential use in green stripping for wildfire control**
Matthew Robbins¹, Jack Staub¹, Paul Johnson¹, ¹USDA ARS Forage and Range Research Laboratory, Logan, UT, USA, ²Utah State University, Logan, UT (0030)
- 74 **Fire Season and Frequency Effects on Native Grass Bud Banks in the Northern Great Plains**
Morgan Russell^{1,2}, Lance Vermeire², John Hendrickson³, Amy Ganguli¹, ¹North Dakota State University, Fargo, ND, ²USDA-ARS, Miles City, MT, ³USDA-ARS, Mandan, ND (0057)

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- 75 **Influence of post-fire soil water repellency on soil nitrogen, soil moisture, and seedling growth**
Kaitlynn Fernelius¹, Matthew Madsen², ¹*Brigham Young University, Provo, UT*, ²*USDA - Agricultural Research Service, Burns, OR (0094)*
- 76 **Fuel consumption in native and old growth upland pine savannahs of the southeastern US**
Angela Reid¹, Kevin Robertson¹, ¹*Tall Timbers Research Station, Tallahassee, FL (0131)*
- 77 **Burning on the hot end: balancing ecological objectives of prescribed fire in sage-steppe with risk of annual grass invasion**
Jay Kerby¹, Nathan Rudd², ¹*The Nature Conservancy, Burns, OR*, ²*The Nature Conservancy, Portland, OR (0257)*
- 78 **Applying Patch-Burn Grazing in Tallgrass Prairie Rangeland Invaded by an Exotic Cool Season Grass**
John D. Scasta¹, Dave M. Engle¹, Diane M. Debinski², ¹*Oklahoma State University, Stillwater, OK*, ²*Iowa State University, Ames, IA (0282)*
- 79 **Seed drilling effects on soil infiltration properties in the sagebrush steppe after wildfire**
A.C. Ganguli¹, B.A. Newingham², ¹*North Dakota State University, Fargo, ND*, ²*University of Idaho, Moscow, ID (0337)*
- 80 Open