

## **Andrés F. Cibils**

Department of Animal and Range Sciences, New Mexico State University, Las Cruces, NM 88003 – Ph. 575-646-4342; Fax 575-646-5441; email: acibils@nmsu.edu

### **EDUCATION**

- 1999 Doctor of Philosophy (PhD), Rangeland Ecosystem Science, Colorado State University
- 1996 Master of Science (MS), Rangeland Ecosystem Science, Colorado State University
- 1984 Bachelor of Science (BS), Animal Science (Ingeniero Zootecnista), Facultad de Ingeniería y Ciencias Agrarias, Universidad Nacional de Lomas de Zamora, Buenos Aires, Argentina

### **PROFESSIONAL EXPERIENCE**

- 2014-Present Professor of Range Science, Department of Animal and Range Sciences, New Mexico State University (*35% Teaching; 65% Research*)
- 2009-2013 Associate Professor of Range Science, Department of Animal and Range Sciences, New Mexico State University (*35% Teaching; 65% Research*)
- 2003-2008 Assistant Professor of Range Science, Department of Animal and Range Sciences New Mexico State University (*35% Teaching; 65% Research*)
- 2002-2003 Postdoctoral Research Fellow, School of Natural Resources, The University of Arizona (*100% Research*)
- 1999-2002 Range Research Scientist, Instituto Nacional de Tecnología Agropecuaria, Argentina (*100% Research*)
- 1994-1998 Graduate Research Assistant, Natural Resource Ecology Laboratory and Rangeland Ecosystem Science Department, Colorado State University (*100% Research*)
- 1992-1994 Range Research Associate, Instituto Nacional de Tecnología Agropecuaria, Argentina (*100% Research*)
- 1990-1992 County Extension Agent, Instituto Nacional de Tecnología Agropecuaria, Argentina (*70% Extension; 30% Research*)

### **RESEARCH, TEACHING, AND SERVICE AWARDS**

- 2020 Society for Range Management Outstanding Achievement Award - Research/Academia
- 2019 NM Section of the Society for Range Management President's Award - Outstanding Teacher, Mentor, and Scientist
- 2014 Donald C. Roush Excellence in Teaching Award (Office of the Executive Vice-President and Provost, New Mexico State University).
- 2014 The Presidential Volunteer Service Award. President's Council on Service and Civic Participation.

- 2012 The Presidential Volunteer Service Award. President’s Council on Service and Civic Participation.
- 2011 The Presidential Volunteer Service Award. President’s Council on Service and Civic Participation.
- 2010 Rangeland Science Education Council Early Career Teaching Award. (Rangeland Science Education Council and the Society for Range Management)
- 2008 North American Colleges and Teachers of Agriculture Teaching Award of Merit.
- 2006 Ronald E. McNair Post-Baccalaureate Achievement Program Mentor Award.
- 2006 The Presidential Volunteer Service Award. President’s Council on Service and Civic Participation.

**TEACHING EXPERIENCE**

- 2008 – Present (RgSc 520/620) Arid Land Plant-Herbivore Interactions
- 2007 – Present (RgSc 516/620) Management of Arid Lands
- 2005 – 2018 (RgSc 440) Rangeland Resource Ecology
- 2003 – 2018 (RgSc 294) Rangeland Resource Management
- 2004 – 2005 (RGSc 460) Advanced Rangeland Management

**SABBATICAL VISITING RESEARCH/TEACHING SCHOLAR**

- Spring 2018 Scotland’s Rural College, Hill and Mountain Research Centre, *Crianlarich, UK*  
Mongolian Univ. of Life Sciences, School of Agroecology, *Ulaanbaatar, MN*  
Universidad de la República, *Montevideo, Uruguay*  
Instituto Nacional de Tecnología Agropecuaria, *Chamical, Argentina*
- Spring 2011 Universidad Nacional de la Patagonia Austral, *Rio Gallegos, Argentina*  
Universidad Nacional de La Pampa, Fac. Agronomía, *Sta Rosa, Argentina*  
Universidad Nacional de Mar del Plata, Fac. Cs. Agrarias, *Balcarce, Argentina*

**RESEARCH INTERESTS**

Application of ecological theory to improve rangeland-based livestock production systems; livestock-ecosystem interactions; use of telemetry, GIS, and remote sensing tools to understand grazing patterns of livestock on large rangeland landscapes at multiple spatial and temporal scales; use of animal behavior-based criteria to inform adaptive grazing management decisions on rangelands; the role of livestock in subsistence agropastoral systems.

**CURRENT AND RECENTLY FUNDED RESEARCH PROJECTS**

- 2019 Collaborative applied livestock behavior research -Corta Madera Ranch, San Diego, California. \$ 25,000.00 (PD).
- 2019-2024 Novel Strategies to Increase Sustainability of Beef Production Systems in the Western United States. USDA-NIFA-AFRI-CAP-SAS \$8.9 million (PD)
- 2018 Aggies in the Forest – USDA Forest Service – SW Region \$9,000.00 – (PD)

- 2018 Collaborative applied livestock behavior research – The Nature Conservancy Canyonlands Resresearch Center (Dugout Ranch). \$17,000.00 (PD)
- 2017-21 Towards Resilient Food-Energy-Water Systems in Response to Drought Impacts and Socioeconomic Shocks. NSF INFEWS/T1. \$154,795.90 (Co-PI)
- 2016-17 Common Pastures: Sustaining Flocks, Farms, and Families. USAID Mali– Farmer to Farmer – VEGA – Common Pastures \$150,000.00 (Collaborator)
- 2016-17 Borlaug Fellowship Program – Mongolia – USDA-FAS \$62,114.00 (PD)
- 2015-19 Rangeland beef cow longevity and efficiency in relation to heifer development system. Collaboration among USDA-ARS Fort Keogh LARL – NMSU- INTA (Argentina) \$88,000.00 (Collaborator)
- 2015-19 Maternal behavior and diet selection of Raramuri Criollo vs. British crossbreed cows in desert and semi-desert environments of the US-Mexico borderland. Collaboration USDA-ARS-Jornada Experimental Range and NMSU ANRS - \$60,000.00 (Collaborator)
- 2015-16 Improving the Sustainability of Malian Sheep and Goat Farming. USAID Mali– Farmer to Farmer – VEGA – Common Pastures \$150,000.00 (Collaborator)
- 2013-18 Development of livestock behavior-based criteria to inform adaptive grazing management decisions on rangelands. USDA Hatch Grant \$15,000.00/yr (PD)
- 2012-16 Promotion de l'utilisation du fourrage de manioc pur l'amélioration de la productivité des petits ruminants et du revenu des femmes a Dougoukouna, Région de Ségou. World Bank - IER Mali \$66,663.60 (Collaborator)
- 2011 Sabatical Leave Travel Fellowship – Ministerio de Ciencia y Tecnología de la Argentina, Programa Raíces, Subsidio Cesar Milstein. \$4,500.00
- 2010-16 Acequia Water Systems Linking Culture and Nature: Integrated Analysis of Community Resilience to Climate and Land Use Changes. NSF-CNH \$40,000.00 (full award ~1.4 Millon) (Co-PI)
- 2009-14 Rangeland Ecosystems. State of New Mexico \$12,000.00/yr (PD)
- 2009-14 Locoweed Management : Integrated Management Ecology and Toxicology \$22,000.00/yr (Co-PI)
- 2007-12 Factors that influence foraging behavior of domestic ungulates. USDA Hatch Grant \$15,000.00/yr (PD)
- 2007-11 Feeding site selection mediated by biotic and abiotic factors in three livestock production regions of Argentina” PICT 2006-01488 \$88,573.00 (Co-PI)
- 2005-10 Plant- and animal-related factors affecting juniper intake by sheep and goats. USDA CSREES Joe Skeen Institute for Rangeland Restoration. \$90,000.00 (PD)

#### REFEREED PUBLICATIONS

68. Bailey, D.W., M. Milward, **A.F. Cibils**, J. L. Holechek 2020. A GPS-Based Evaluation of Factors Commonly Used to Adjust Cattle Stocking Rates on both Extensive and Mountainous Rangelands. *Rangelands (In Press)*

67. Stricklan, D., P. Saud, **A.F.Cibils**, R.L. Steiner, D.C. Cram, K. R. Young, A. M. Faist.2020 Germination of one-seed juniper seeds distributed by different frugivore groups. *Rangeland Ecology and Management (In Press)*.
66. Nyamuryekung'e, S., **A.F. Cibils**, R.E. Estell, D. VanLeeuwen, C. Steele, O. Roacho Estrada, F. Rodriguez Almeida, A. Gonzalez, S. Spiegel. 2020. Do young calves influence movement patterns of nursing Raramuri Criollo cows on rangeland? *Rangeland Ecology and Management* 73:84-92
65. Zaied, A.J., H. M. E. Geli, M.N. Sawalhah, J.L. Holechek, **A.F. Cibils**, C.C. Gard. 2019.An Evaluation of Historical Trends in New Mexico Beef Cattle Production in Relation to Climate and Energy. *Sustainability* 11, 6840
64. Bailey, D.W., J.C. Moseley, R.E. Estell, **A.F. Cibils**, M. Horney, J.R. Hendrickson, J.W. Walker, K.L. Launchbaugh, B.A. Burritt. 2019. Targeted Livestock Grazing: A Prescription for Healthy Rangelands. *Rangeland Ecology and Management* 72:865-877.
63. McIntosh, M.M., J.L. Holechek, S. Spiegel, **A.F. Cibils**, R.E. Estell. 2019. Long-term Declining Trends in Chihuahuan Desert Forage Production in Relation to Precipitation and Ambient Temperature. *Rangeland Ecology and Management* 72: 976-987.
62. Sawalhah, M.N., J.L. Holechek, **A. F. Cibils**, H.M.E. Geli, A. Saied. 2019. Rangeland Livestock Production in Relation to Vegetation and Climate Trends in New Mexico. *Rangeland Ecology and Management* 72:832-845
61. Spiegel, S., R.E. Estell, **A.F.Cibils**, D.K. James, H. R. Peinetti, D.M. Browning, K. Romig, A.L. Gonzalez. 2019. Seasonal divergence in foraging behavior of heritage and conventional cattle on a heterogeneous desert landscape. *Rangeland Ecology and Management* 72: 590-601.
60. Smythe, B.G., M. E. Wise, **A. F. Cibils**, D. VanLeeuwen, A. Summers, M. G. Fletcher, E. J. Scholljegerdes. 2019. Growth and Reproductive Performance of Rangeland Beef-Cattle as influenced by controlled and uncontrolled populations of horn flies (Diptera: Muscidae). *Journal of Economic Entomology* 112: 969-973.
59. Estell, R.E., **A.F. Cibils**, S.A.Utsumi, D. Stricklan, E. Butler, A. Fish, A. Ganguli.2018. Controlling one-seed juniper saplings with small ruminants: What we have learned. *Rangelands* 40:129-135.
58. Sawalhah, M.N., S.D. Al-Kofahi, Y.A. Othman, **A.F. Cibils**. 2018. Assessing Rangeland Cover Conversion in Jordan after the Arab Spring Using a Remote Sensing Approach. *Journal of Arid Environments* 157: 97-102
57. Lopez, S.C., **A.F.Cibils**, U.R. Smedly, S.J. Guldan, A.G. Fernald, C.G. Ochoa, K.G. Boykin, L. Cibils. 2018. Linkages between acequia farming and rangeland grazing in traditional agropastoral communities of the southwestern USA. *Sustainability* 10(6), 2021.
56. Browning, D.M., S. Spiegel, R.E. Estell, **A.F. Cibils**, R. H. Peinetti. 2018. Integrating space and time: A case for phenological context in grazing studies and management. *Frontiers of Agricultural Science and Engineering* 5(1):44-56.

55. Holechek, J.L., **A.F.Cibils**, K. Bengaly, J.I. Kinyamario. 2017. Human Population Growth, African Pastoralism and Rangelands: A Perspective. *Rangeland Ecology and Management* 70:273-280
54. Ashcroft Jr., N.K., A.G. Fernald, D.M. VanLeeuwen, T.T. Baker, **A.F.Cibils**, and J.C. Boren. 2017. The effects of thinning trees and scattering slash on runoff and sediment yield withing dense piñon-juniper woodlands in New Mexico, United States. *Journal of Soil and Water Conservation* 72: 122-130.
53. Goodman, L.E., **A.F. Cibils**, R.L. Wesley, J.T.Muliniks, M.K. Petersen, E.J. Scholljegerdes, S.H. Cox. 2016. Temperament affects rangeland use patterns and reproductive performance of beef cows. *Rangelands* 38(5): 292-296.
52. Turner, B., V. Tidwell, A. Fernald, J. Rivera, S. Rodriguez, S. Guldan, C. Ochoa, B. Hurd, K. Boykin, **A. Cibils**. 2016. Modeling acequia irrigation systems using system dynamics: model development, evaluation, and sensitivity analyses to investigate effects of socio-economic and biophysical feedbacks. *Sustainability* 8 (10), 1019, doi:10.3390/su8101019
51. Nyamurekung'e, S. **A.F.Cibils**, R.E. Estell, A.L. Gonzalez. 2016. Use of an unmanned aerial vehicle-mounted video camera to assess feeding behavior of Raramuri Criollo cows. *Rangeland Ecology and Management* 69:386-389.
50. Sawalhah, M.N., **A.F. Cibils**, A. Maladi, H. Cao, D.M. VanLeeuwen, J.L. Holechek, C.M. Black-Rubio, R.L. Wesley, R.L. Endecott, T.J. Mulliniks, and M.K. Petersen. 2016. Forage and weather influence day- vs. nighttime cow behavior and calf weaning weights on rangeland. *Rangeland Ecology and Management* 69: 134-143.
49. Holechek, J.L., M.N. Sawalhah, and **A.F. Cibils**. 2015. Renewable Energy, Energy Conservation, and US Rangelands. *Rangelands* 37 (6) 217-225.
48. Goodman, L.E., **A.F.Cibils**, R.L. Steiner, J.D.Graham, K.C.McDaniel. 2015. Control of Silky Crazyweed (*Oxytropis sericea*) with Aminopyralid and Picloram +2-4D on Native Rangeland. *Invasive Plant Science and Management* 8 (4): 401-408.
47. Smythe, B.G., J.B. Pitzer, M.E. Wise, **A.F. Cibils**, D. VanLeeuwen, R.L. Byford. 2015. Behavioral Responses of Cattle to Naturally-Occurring Seasonal Populations of Horn Flies (Diptera: Muscidae) Under Rangeland Conditions. *J. Econ. Entomol.* 108(6):2831-2836.
46. Cram, D.C., T.T. Baker, A.G. Fernald, **A.F. Cibils**, and D.M. VanLeeuwen. 2015. Fuel and Vegetation Trends Following Wildfire in Treated vs. Untreated Forests. *Forest Science* 61:753-762.
45. Anderson, D.M., R.E. Estell, A.L. Gonzalez, **A.F. Cibils**, and L A. Torell. 2015. Criollo Cattle: Heritage Genetics for Arid Landscapes. *Rangelands* 37(2): 62-67.
44. **Cibils, A.F.**, D. McGrew, B. Kassambara, K. Bengaly, B. Sissoko, R.N. Acharya. 2015. Challenges and Opportunities for Agro-pastoral Livestock Smallholders in Mali .*Outlook on Agriculture* 44: 69-80.
43. Fernald, A., S. Guldan, K. Boykin, **A. Cibils**, M. Gonzales, B. Hurd, S. Lopez, C.Ochoa, M. Ortiz, J. Rivera, S. Rodriguez, and C.Steele. 2015. Linked hydrologic and social systems that support resilience of traditional irrigation communities. *Hydrology and Earth System Sciences* 19:293-307.

42. Goodman, L.E., **A.F. Cibils**, S.C. Lopez, R. L. Steiner, J. D. Graham, K. C. McDaniel, L.B. Abbott, B.L. Stegelmeyer, D. M. Hallford. 2014. Targeted Grazing of White Locoweed: Short Term Effects of Herbivory Regime on Vegetation and Sheep. *Rangeland Ecology and Management* 67: 680-692.
41. Sawalhah, M.N., **A. F. Cibils**, C. Hu, H. Cao, J.L. Holechek. 2014. Animal-Driven Rotational Grazing Patterns on Seasonally Grazed New Mexico Rangeland. *Rangeland Ecology and Management* 67: 710 -714.
40. **Cibils, A.F.**, R.J. Lira Fernández, G.E. Oliva, J.M. Escobar. 2014. Is Holistic Management Really Saving Patagonian Rangelands from Degradation? : A Response to Teague. *Rangelands* 36(3):26-27.
39. Wesley, R. L, **A.F. Cibils**, C. M. Black-Rubio, E. R. Pollak, and S.A. Utsumi. 2014. Maternal influence on feeding site selection of male and female lambs. *Animal: An International Journal of Animal Bioscience* 8:991-999.
38. Pendleton, R.L., S.G. Kitchen, **A.F. Cibils**. 2014. Humans in changing shrubland ecosystems: Foreword. *Rangelands* 36:3-4.
37. Estell, R.E., K.M. Havstad, **A.F. Cibils**, D.M. Anderson, T.S. Schrader. 2014. The changing role of shrubs in rangeland-based livestock production systems: Can shrubs increase our forage supply? *Rangelands* 34:25-31.
36. Estell, R.E., S.A. Utsumi, **A.F. Cibils**, D.M. Anderson. 2014. Is differential use of *Juniperus monosperma* by small ruminants driven by terpene concentration? *Journal of Chemical Ecology* 40:285-293.
35. Diaz Falú, E. M., M.A. Brizuela, M.S. Cid, **A.F. Cibils**, M.G. Cendoya, D. Bendersky. 2014. Daily feeding site selection of cattle and sheep co-grazing a heterogeneous subtropical grassland. *Livestock Science* 161:147-157.
34. Ochoa, C.G., S. J. Guldan, **A.F. Cibils**, S. Lopez, K.G. Boykin, V. C. Tidwell, A. G. Fernald. 2013. Hydrologic connectivity of head waters and floodplains in a semiarid watershed. *Journal of Contemporary Water Research and Education* 152: 69-78.
33. Howery, L.D., **A.F. Cibils**, D.M. Anderson. 2013. Potential for using visual, auditory, and olfactory cues to manage foraging behavior and spatial distribution of rangeland livestock. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources* 8:1-10.
32. Utsumi, S.A., **A.F. Cibils**, R.E. Estell, S.A. Soto-Navarro, L. Cheng, and D.M. Hallford. 2013. Effects of adding protein, condensed tannins, and polyethylene glycol to diets of sheep and goats fed one-seed juniper and low quality roughage. *Small Ruminant Research* 112:56-68.
31. Anderson, D.M., R.E. Estell, **A.F. Cibils**. 2013. Spatiotemporal cattle data – a plea for protocol standardization. *Positioning* 4:115-136.
30. Estell, R.E., K.M. Havstad, **A.F. Cibils**, E.L. Fredrickson, D.M. Anderson, T.S. Schrader, and D.K. James. 2012. Increasing shrub use by livestock in a world with less grass. *Rangeland Ecology and Management* 65:553-562.
29. Fernald, A., V. Tidwell, J. Rivera, S. Rodriguez, S. Guldan, C. Steele, C. Ochoa, B. Hurd, M. Ortiz, K. Boykin, and **A. Cibils**. 2012. Modeling water, environment, livelihood, and culture, in traditional irrigation communities and their linked watersheds. *Sustainability* 4: 2998-3022.

28. Breck, S., P. Clark, L. Howery, D. Johnson, B. Kluever, S. Smallidge, and **A. Cibils**. 2012. A perspective on livestock-wolf interactions on western rangelands. *Rangelands* 34:6-11.
27. Wesley, R.L., **A.F. Cibils**, J.T. Mulliniks, E.R. Pollak, M.K. Petersen, and E.L. Fredrickson. 2012. An assessment of behavioural syndromes in rangeland-raised beef cattle. *Applied Animal Behaviour Science* 139:183-194.
26. Perotto-Baldivieso, H.L., S.M. Cooper, **A.F. Cibils**, M. Figueroa-Pagán, K. Udaeta, C.M. Black-Rubio. 2012. Detecting autocorrelation problems from GPS collar data in livestock studies. *Applied Animal Behaviour Science* 136: 117-125.
25. Mulliniks, J. T., M. E. Kemp, S. H. Cox, D. E. Hawkins, **A. F. Cibils**, D. M. VanLeeuwen, and M. K. Petersen. 2011. The effect of increasing amount of glucogenic precursors on reproductive performance in young postpartum range cows. *Journal of Animal Science* 89:2932-2943.
24. Cid, M.S., R. C. Fernández Grecco, M. Oesterheld, J. M. Paruelo, **A. F. Cibils**, and M.A. Brizuela. 2011. Grass-fed beef production systems of Argentina's flooding pampas: Understanding ecosystem heterogeneity helps improve livestock production. *Outlook on Agriculture* 40: 181-189.
23. Peinetti, R.H., E.L. Fredrickson, D.P.C. Peters, **A.F. Cibils**, O.J. Roacho-Estrada, and A.S. Laliberte. 2011. Foraging behavior of heritage versus recently introduced herbivores on desert landscapes of the American Southwest. *Ecosphere* 2(5):art57.doi10.1890/ES 11-00021-01.
22. Anderson, D.L., G. L. Bonvissuto, M. A. Brizuela, G. Chiossone, **A. F. Cibils**, M. S. Cid, I. Feldman, R. C. Fernández Grecco, C. Kunst, M. Oesterheld, G. E. Oliva, J. M. Paruelo, R. H. Peinetti, and E. S. Villagra. 2011. Perspectives on Rangeland Management Research and Education in Argentina. *Rangelands* 33: 2-12.
21. Lujan, A.L., S.A. Utsumi, S.T. Smallidge, T.T. Baker, R.E. Estell, **A.F. Cibils**, and S.L. Ivey. 2010. Manipulating sheep browsing levels on coyote willow (*Salix exigua*) with supplements. *Sheep & Goat Research Journal* 25: 32-38.
20. Jackson, K.T., **A.F. Cibils**, W.R. Gould, J.D. Graham, and C.D. Allison. 2010. Does feeding area restriction inhibit social learning of toxic weed ingestion in cattle? *Animal: An International Journal of Animal Bioscience* 4:1577-1587.
19. Estell, R.E., S.A. Utsumi, and **A. F. Cibils**. 2010. Measurement of monoterpenes and sesquiterpenes in serum, plasma, and rumen fluid from sheep. *Animal Feed Science and Technology* 158:104-109.
18. Utsumi, S.A., **A. F. Cibils**, R. E. Estell, T.T. Baker, and J. H. Walker. 2010. One-seed juniper sapling use by goats in relation to stocking density and mixed grazing with sheep. *Rangeland Ecology and Management* 63:373-386.
17. Ramirez-Garduno, H., A.G. Fernald, **A. F. Cibils**, D. M VanLeeuwen. 2010. Response of understory vegetation and soil moisture to infrequent heavy defoliation of chemically thinned juniper woodland. *Journal of Arid Environments* 74:291-297.
16. Graham, D., R. Creamer, D. Cook, B. Stegelmeier, K. Welch, J. Pfister, K. Panter, **A. Cibils**, M. Ralphs, M. Encinias, K. McDaniel, D. Thompson, K. Gardner. 2009. Solutions to Locoweed Poisoning in New Mexico and Western US: Collaborative Research between New Mexico State University and the USDA/ARS Poisonous Plant Lab. *Rangelands* 31(6): 3-8.

15. Utsumi, S.A., **A. F. Cibils**, R. E. Estell, S. A. Soto-Navarro, and D. Van Leeuwen. 2009. Seasonal changes in one-seed juniper intake by sheep and goats in relation to dietary protein and plant secondary metabolites. *Small Ruminant Research* 81: 152-162.
14. **Cibils, A. F.**, J. A. Miller, A. M. Encinias, K. G. Boykin, and B. F. Cooper. 2008. Monitoring heifer grazing distribution at the Valles Caldera National Preserve. *Rangelands* 30(6):19-23.
13. Black-Rubio, C. M., **A. F. Cibils**, R. L. Endecott, M. K. Petersen, and K. G. Boykin. 2008. Piñon-juniper woodland use by cattle in relation to weather and animal reproductive state. *Rangeland Ecology and Management* 61:394-404.
12. **Cibils, A.F.**, L.D. Howery, G.B. Ruyle. 2008 Social models fail to induce diet and feeding site avoidance in naïve yearling steers. *Animal: An International Journal of Animal Bioscience* 2:255-264.
11. Black-Rubio, C.M., **A. F. Cibils**, W. B. Gould. 2007. Maternal influence on feeding site avoidance behavior of lambs. *Applied Animal Behaviour Science* 105:122-139.
10. Utsumi, S.A., **A.F.Cibils**, R.E. Estell, Y.F. Wang. 2006. Influence of plant material handling protocols on terpenoid profiles of one-seed juniper saplings. *Rangeland Ecology and Management* 59:668-673.
9. Utrilla, V., M. Brizuela, **A. Cibils**. 2006. Structural and nutritional heterogeneity of riparian vegetation in Patagonia (Argentina) in relation to seasonal grazing by sheep. *Journal of Arid Environments* 67: 661-670.
8. Utrilla, V., M. Brizuela, **A. Cibils**. 2005. Riparian Habitats (*Mallines*) of Patagonia: A Key Grazing Resource for Sustainable Sheep Farming Operations. *Outlook on Agriculture*34:55-59.
7. **Cibils, A.F.**, D.M. Swift, R.H. Hart, M.J. Trlica, M.Thorne. 2005. Gender-specific responses to winter defoliation of greenhouse-grown *Atriplex canescens* clones under contrasting soil moisture regimes. *Journal of Arid Environments* 61:211-226.
6. **Cibils, A. F.**, L. D. Howery, and G. B. Ruyle. 2004. Diet and habitat selection by cattle: therelationship between skin and gut defense systems. *Applied Animal Behavior Science* 88: 187-208.
5. **Cibils, A.F.**, D.M. Swift, R.H. Hart. 2003. Female biased herbivory in fourwing saltbush browsed by cattle. *Journal of Range Management* 56: 47-51.
4. **Cibils, A.F**, D.M. Swift, R.H. Hart. 2003. Changes in shrub fecundity in fourwing saltbush browsed by cattle. *Journal of Range Management* 56: 39-46.
3. **Cibils, A.F.**; C.A. Baetti; M.E. Fernández; P. Paredes. 2001. Relaciones altura-biomasa remanente de dos gramíneas de la Estepa Magallánica (Santa Cruz), con referencia al diagnóstico de intensidad de pastoreo utilizado en la zona (Trabajo Original). *Revista Argentina de Producción Animal* 21: 17-24.
2. **Cibils, A.F.**, D.M. Swift, R.H. Hart .2000. Gender-related differences of shrubs in stands of *Atriplex canescens* with different histories of grazing by cattle. *Journal of Arid Environments* 46: 383-396.
1. Oliva, G.E., **A.F.Cibils**, P.Borrelli, G.Humano. 1998. Stable states in relation to grazing in Patagonia: A 10-year experimental trial. *Journal of Arid Environments*. 40:113-131.



## MANUSCRIPTS IN REVIEW

- Continanza, F.G. **A.F. Cibils**, M.K. Petersen, J.M. Muscha, A.J. Roberts, C. Steele, S. Soto Navarro, R.L. Steiner, H. Cao, Q. Gong. Effect of post-weaning development method on grazing patterns of rangeland beef heifers during spring. *Submitted to Rangeland Ecology and Management*
- Holechek, J.L., **A.F. Cibils**, Sawalhah, M.N. Climate Change, Rangelands and Ranching in the Western United States: An Overview with Perspective. *Submitted to Sustainability*.
- Spiegel, S, **A.F. Cibils**, B. Bestelmeyer, J. Steiner, R. Estell, et al. Beef Production in the Southwestern United States: Strategies toward Sustainability. *Submitted to Frontiers in Sustainable Food Systems*.

## BOOK CHAPTERS

7. López, S.C., **A.F. Cibils**, L. Cibils, U.R. Smedly, S.J. Guldan, A.G. Fernald, C.G. Ochoa, and K.G. Boykin. 2019. The role of livestock in supporting acequia communities of northern New Mexico. In S.J. Guldan, A. Rosenberg, and A.G. Fernald (Eds.), *Acequias of New Mexico, Elements of Resilience in a Coupled Natural-Human System*. (*In Press*).
6. Brizuela, M.A. y **A. Cibils**. 2011. Implicancias de la carga y distribución de los animales en pastoreo en la utilización de pasturas. Capítulo 13. En: Cangiano, C.A. y M.A. Brizuela (eds). *Producción Animal en Pastoreo*. 2da Edición. Publicaciones INTA pp 349-376
5. Jackson, K.T., **A.F. Cibils**, J.D. Graham, W.R. Gould, C.D. Allison. 2007. White locoweed (*Oxytropis sericea* Nutt.) ingestion by naïve stockers: Diet preference patterns of natural “eaters” and “avoiders”. p 429-435 *In: Panter KE, Wierenga TL, and Pfister JA, Editors. Poisonous Plants: Global Research and Solutions*. CABI, Wallingford, Oxon, UK.
4. Utrilla, V., Brizuela, M. y **Cibils, A.** 2007. Respuesta de la vegetación y de ovejas en un mallín magallánico bajo diferentes condiciones de uso previo y de asignación de forraje. En: *La cuenca del río Coyle. Estado actual de las investigaciones*. Editores: Carballo, F.; Espinosa, S. y Belardi, J.B. Universidad Nacional de la Patagonia Austral. Argentina.
3. **Cibils, A.F.** and P.R. Borrelli. 2005. Grasslands of Patagonia. p. 121-170 *In: J.M. Suttie, S.G. Reynolds, and C. Batello, Editors. Grasslands of the World*. FAO Plant Production and Protection Series. No. 34. Food and Agriculture Organization of the U. N., Rome.
2. Borrelli, P.R. and **A. F. Cibils** .2005. Rural depopulation and grassland management in Patagonia. p. 461-487 *In: S.G. Reynolds and J. Frame, Editors. Grasslands: Developments, Opportunities, Perspectives*. FAO and Science Publishers, Inc. Rome.
1. Oliva, G.; I. Noy-Meir y **A. Cibils**. 2001. Fundamentos de ecología de pastizales. Cap. 3. pp 83-100. *En: Ganadería Ovina Suatentable en la Patagonia Austral*. Borrelli, P. y G. Oliva. Ed. INTA Reg. Pat. Sur.

## RECENT PROCEEDINGS PAPERS

62. McIntosh, M.M., **A.F. Cibils**, R. E. Estell, A.L. Gonzalez, S. Nyamuryekung'e, S. Spiegel. 2018. Day-to-day variation in grazing behavior in relation average daily gain in rangeland beef cattle. Proceedings of the 52<sup>nd</sup> Congress of the International Society for Applied Ethology. July 30 – Aug. 3, Prince Edward Island, Canada. P. 92.

61. Herrera Conegliano, O.A., Jaimes. F. Cendoya, G., Blanco, L. Clemares, N., Ricci, P. y **Cibils, A.F.** 2018. Evaluación de la preferencia animal por sectores del potrero ubicados a distinta distancia de la aguada. Resúmenes del VIII Congreso Nacional y IV Congreso del Mercosur de Pastizales Naturales. Chamental, La Rioja, Argentina, May 15-17, p. 65.
60. Fariña, C.M., Siffredi, G.L., Oesterheld, M. **Cibils, A.F.**, y Willems, P.M. 2018. Pastoreo intensivo en distintas estaciones del año: efectos a escala de comunidad en una estepa de Patagonia Norte. Resúmenes del VIII Congreso Nacional y IV Congreso del Mercosur de Pastizales Naturales. Chamental, La Rioja, Argentina, May 15-17, p. 80.
59. **Cibils, A.F.** 2018. Uso de ganado adaptado al ambiente para conciliar metas de producción y conservación del pastizal natural. Resúmenes VIII Congreso Nacional y IV Congreso del Mercosur de Pastizales Naturales. Chamental, La Rioja, Argentina, May 15-17, p. 125-6.
58. Goodman, L., **A.F. Cibils**, L. Owensby. 2016. Individual-based variation in grazing behavior of rangeland-raised beef cows. Proceedings of the 50th Congress of the International Society for Applied Ethology. July 12 – 15, 2016, Edinburgh, Scotland. P.148.
57. Bengaly, K, S. Traore, **A.F. Cibils**, J. Moses, S. Nyamurekung'e. 2016. Rainy Season Herding Patterns of Agro-Pastoral Livestock Smallholders in Southwestern Mali: A Preliminary GPS-Based Assessment. Proceedings of the 10<sup>th</sup> International Rangeland Congress, Saskatoon, Canada, July 17-22, 2016, P. 1084-1086.
56. Nyamurekung'e, S., **A.F. Cibils**, R.E. Estell, A.L. Gonzalez. 2016. Use of a UAV-Mounted Video Camera to Assess Feeding Behavior of Raramuri Criollo Cows. Proceedings of the 10<sup>th</sup> International Rangeland Congress, Saskatoon, Canada, July 17-22, 2016, P. 1070-1072.
55. Fariña, C.M., **A.F. Cibils**, G.L. Siffredi, M. Oesterheld, P.M. Willems. 2016. Effects of mob grazing with sheep in winter or spring on green-up and reproductive effort of *Poa igularis* in northern Patagonia. Proceedings of the 10<sup>th</sup> International Rangeland Congress, Saskatoon, Canada, July 17-22, 2016, P. 197-189.

#### RECENT ABSTRACTS

96. **A. Cibils**, R. Estell, S. Spiegel, A. Gonzalez, S. Nyamuryekung'e, M. McIntosh. 2020. Raramuri Criollo cattle and climate change in the desert southwest. 8th Natural History of the Gila Symposium, February 28. ([http://gilasyposium.org/?page\\_id=209](http://gilasyposium.org/?page_id=209))
95. Y. Almalki, A. Fernald, **A. Cibils**, C. Ochoa, D. Cram, R. Steiner. 2020. Understory vegetation response to thinning pinyon-juniper woodlands. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 39.
94. M. McIntosh, **A. Cibils**, S. Nyamuryekunge, R. Estell, A. Cox, A. Dawes, T. Waterhouse, J. Holland. 2020. A test of LoRaWAN real time GPS tracking on beef cattle in desert pastures. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 3.
93. M. Sawalhah, **A. Cibils**, J. Holechek, H. Geli. 2020. The water footprint of beef cattle raised on New Mexico rangeland. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 147.

92. Y. Almalki, A. Fernald, **A. Cibils**. 2020. One seed juniper sapling control: Effects of simulated browsing on soil-plant water dynamics in relation to sapling size and density. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 111.
91. S. Nyamuryekunge, **A. Cibils**, R. Estell, A. Gonzalez, M. McIntosh, S. Spiegel, F. Continanza. 2020. Vegetation selection of heritage vs. conventional beef cows grazing Chihuahuan Desert rangeland. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 104.
90. M. McIntosh, D. Duni, **A. Cibils**, R. Estell, A. Gonzalez, S. Nyamuryekunge, M. Redd, M. Duniway, Sheri Spiegel. 2020. Late fall landscape use by heritage vs. conventional beef cattle on Colorado Plateau rangelands: a case study. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 29
89. S. Nyamuryekunge, A. Dawes, M. McIntosh, **A. Cibils**, R. Estell, A. Gonzalez, S. Spiegel. 2020. Influence of rainfall events on drinker visitation patterns by beef cows on desert rangeland. 73<sup>rd</sup> Society for Range Management Annual Meeting, Feb. 16-20, Denver, CO. Poster 28
88. **A. Cibils**, R. Estell, A. Gonzalez, S. Spiegel, et al. 2019. El rol del bovino Criollo Raramuri como herramienta de adaptacion al cambio climatico en los desiertos del SO de los EE.UU. XII Simposio Internacional de Recursos Geneticos para Las Americas y el Caribe. December 8-11, Rocha, Uruguay, p. 22.
87. M. McIntosh, **A. Cibils**, R. Estell, A. Gonzalez, et al. 2019. Carcass characteristics of Criollo and Criollo crossbred steers raised on Chihuahuan Desert rangeland. *J. Animal Science* 97, Suppl. 3: 338
86. S. Nyamuryekung'e, **A. Cibils**, R. Estell, A. Gonzalez, et al. 2019. Body temperature and movement patterns of Raramuri Criollo versus Angus-crossbred cows grazing Chihuahuan Desert rangeland in summer. *J. Animal Science* 97, Suppl. 3: 297.
85. F. Continanza, J. Muscha, M. Petersen, A. Roberts, Q. Gong, H. Cao, **A. Cibils**. 2019. A Comparison of Two Methods to Estimate Heifer Activity Using GPS and Accelerometer Data. 72<sup>nd</sup> Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.
84. Y. Almalki, **A. Cibils**, R. Estell, D. Stricklan, S. Utsumi, A. Fernald. 2019. Juniper Sapling Regrowth Following Targeted Grazing Treatments in Relation to Terpenoid Concentration. 72<sup>nd</sup> Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.
83. M. McIntosh, J. Holechek, **A. Cibils**, R. Estell. 2019. Long-Term Trends in Perennial Grass Production, Precipitation and Temperature in the Chihuahuan Desert. 72<sup>nd</sup> Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.
82. S. Nyamuryekunge, **A. Cibils**, R. Estell, A. Gonzalez, M. McIntosh, S. Spiegel, F. Continanza. 2019. Movement and Cow-Calf Proximity Patterns of Raramuri Criollo Vs. Angus-Crossbred Nursing Cows Grazing Chihuahuan Desert Rangeland in Summer. 72<sup>nd</sup> Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.

81. M. Sawalhah, **A. Cibils**, J. Holechek, H. Geli, A. Zaied. 2019. The Changing Relation Between Precipitation and Rangeland Grazing Capacity in a Warmer Southwest. 72nd Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.
80. S. Spiegel, R. Estell, **A. Cibils**, D. James, H. R. Peinetti, D. Browning, K. Romig, A. Gonzalez, A. Lyons, B. Bestelmeyer. 2019. Trials and Tribulations of Quantifying Hotspots of Cattle Use in Large Desert Pastures. 72nd Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.
79. Y. Almalki, C. Ochoa, D. Cram, A. Fernald, **A. Cibils**, R. Steiner. 2019. Understory Vegetation and Soil Moisture Response to Thinning Piñón-Juniper Woodlands. 72nd Society for Range Management Annual Meeting, Feb. 10-13, Minneapolis, MN.

#### GRADUATE STUDENTS

<i>Student Name</i>	<i>Year</i>	<i>Thesis/Dissertation Title</i>	<i>Current Position</i>
Chance Cook, MS (Non-Thesis)	2021*	TBD	Graduate student/Athlete
Danielle Duni, MS	2021*	Grazing patterns of Raramuri Criollo vs. Red Angus cows on the Colorado Plateau	Graduate student
Matt McIntosh, PhD	2021*	Effects of grazing Raramuri Criollo vs. Brangus cows on Chihuahuan Desert vegetation and soils	Graduate student
Shelemia Nyamuryekung'e, PhD	2020*	Foraging habits, heat tolerance, and maternal behavior of heritage vs. improved beef breeds grazing desert rangeland	Graduate student
Angela Yemma, MS	2020*	Impacts of feral horses on rangelands of the Four Corners area of the SW US	Graduate student
Dave S. Stricklan, PhD	2019	One seed juniper seed dispersal ecology	Visiting Assistant Professor - NMSU
Guadalupe Continanza, PhD	2019	Influence of animal-, environment-, and management- related factors on grazing behavior and performance of rangeland beef heifers	Research Scientist –INTA Balcarce - Argentina
Matt McIntosh, MS	2018	Weight gain and behavior of Criollo vs. crossbred steers developed on Chihuahuan Desert rangeland	PhD student, NMSU

Gabriela Colodner, ABD	2017	Modeling livestock productivity and grazing behavior using multi-temporal vegetation analyses of short-term remotely sensed imagery in a semiarid rangeland	Instructor- Instituto Tecnológico Superior de Zacapoaxtla, Puebla, Mexico
Shelemia Nyamuryekung'e, MS	2017	Movement and spatial proximity patterns of rangeland-raised Raramuri Criollo cow-calf pairs	PhD student, NMSU
Jose Manuel Díaz Gómez, M.S. (Non Thesis)	2015	The Economics of Raramuri Criollo versus British Crossbred Cattle Production in the Chihuahuan Desert	PhD student, Arkansas State University.
Laura Goodman, PhD	2015	Characterization of Individual-Based Variation in Grazing Behavior of Rangeland-Raised Beef Cows Using the Behavioral Syndrome Framework	Assistant Professor and Range Extension Specialist – Oklahoma State University
Mohammed Sawalhah, PhD	2014	Livestock and vegetation responses to stocking rate treatments in two rangeland ecosystems of New Mexico	Assistant Professor, Arid Land Academy, Hashemite University, Zarqa, Jordan.
Stephanie Lopez, M.S.	2014	The role of livestock grazing in Acequia community livelihoods in northern New Mexico	Animal Husbandry Assistant – Allegheny-Singer Research Institute
Vanessa Prileson, M.S.	2013	Resource selection patterns of cattle grazing piñon juniper/grassland mosaics	Rangeland Management Specialist, Pima County, Arizona
Sara Marta, M.S.(Non Thesis)	2011	Wolf reintroduction programs in the United States: a brief comparative review focusing on the Mexican Gray Wolf Recovery Program	Rangeland Management Specialist, USDA-NRCS, Truth or Consequences, NM
Laura Goodman, M.S.	2010	Plant and animal responses to targeted grazing of white locoweed with sheep	PhD student, Department of Animal and Range, NMSU
Jacob Martin, M.S.	2008	Factors affecting locoweed ( <i>Oxytropis</i> sp. and <i>Astragalus</i> sp.) ingestion by yearling cattle	Rangeland Management Specialist, BLM Grand Junction, CO
Santiago Utsumi, Ph.D.	2008	Influence of nutrients, toxins, and grazing strategies on the utilization of one seed juniper by small ruminants	Consultant, Buenos Aires, Argentina
Robert Wesley, M.S.	2007	Influence of socially-induced and inherited behaviors on feeding site selection of cattle and sheep	Manager, SRP-McGinley Ranch, Gordon, Nebraska

Kyle Jackson, M.S.	2006	Social facilitation of white locoweed ingestion by cattle: Influence of alternative food choices and feeding site related factors	Game Warden, NM Fish and Game Department.
Christina Black, M.S.	2005	Influence of non-forage factors on the grazing behavior of cattle and sheep	Rancher, Wagonmound, NM

*\*Expected Graduation date*

#### **REFEREE**

*Journal articles:* J, Arid Environments, Range. Ecology and Management, J. Wildlife Science, J. Animal Science, Agriculture Ecosystems and Environment, Rangelands, Livestock Science, Environmental Management, Animal, Sheep and Goat Research J., Tecnociencia Chihuahua (México), Interciencia (Venezuela), Animal Production Science (Australia), Computers and Electronics in Agriculture, J. Agronomy, Agronomy (MDPI).

*MS theses, PhD dissertations, PhD proposals:* Universidad de Buenos Aires (Argentina), Universidad Nacional de Mar del Plata (Argentina), Unidad Integrada Balcarce UNMdelp-INTA (Argentina), Universidad Nacional del Comahue (Argentina), Universidad de la República (Uruguay), Central Queensland University (Australia).

#### **EDITORIAL BOARD MEMBERSHIPS**

Journal of Arid Environments (2012- 2013 and 2018-current, Consulting Editor; 2013 – 2015, Associate Editor); Rangeland Ecology and Management (2009-2011), Tecnociencia Chihuahua (Mexico), Revista Colombiana de Ciencia Animal (Colombia).

#### **GRANT REVIEW PANELS**

2019 USDA-NIFA-IDEAS

#### **ACADEMIC AND PROFESSIONAL LEADERSHIP ROLES**

2017-18 Range Science Program Lead, Department of Animal and Range Sciences, New Mexico State University.

2017 Interim Associate Department Head. Department of Animal and Range Sciences, New Mexico State University.

2014-2018 NM Section Society for Range Management – Newsletter Editor

2014 NMSU Chapter, The Honor Society of Agriculture, Gamma Sigma Delta, Past President.

2013-14 Co-editor, sponsored issue of *Rangelands* on “*Humans in Changing Shrubland Ecosystems*” April 2014.

2013 NMSU Chapter, The Honor Soc. Agric., Gamma Sigma Delta, President.

2012 17<sup>th</sup> Wildland Shrub Symposium (USFS Shrub Research Consortium) – Co-Organizer.

2012	NMSU Chapter, The Honor Society of Agriculture, Gamma Sigma Delta, President Elect.
2011	NM Section Society for Range Management – Past president.
2010	NM Section Society for Range Management – President.
2009	NM Section Society for Range Management – President Elect.
2008-12	US Forest Service Shrub Consortium – Executive Committee Member.
2007-08	Society for Range Management – International Affairs Committee – Chair
2006-08	NM Section Society for Range Management – Director.
2005-08	NM Section Society for Range Management – I&E Committee Chair.

#### **INTERNATIONAL RESEARCH COLLABORATIONS**

2018	Precision Animal Agriculture. Scotland’s Rural College, Hill and Mountain Research Centre. <i>Crianlarich</i> . Scotland. Fulbright Specialist. UK-US Fulbright Commission.
2016-19	‘Conectando Comportamiento, Ecología de Paisajes, y Dinámica Poblacional: Hacia una Gestión Sustentable de Producción Ovina en Sistemas de Ganadería Extensiva’ PICT 2015-0815- Foncyt –Argentina-. Co PI.
2012-16	‘Promotion de l'utilisation du fourrage de manioc pur l'amélioration de la productivité des petits ruminants et du revenu des femmes a Dougoukouna, Région de Ségou’ World Bank - IER Mali (Collaborator)
2007-11	“Feeding site selection mediated by biotic and abiotic factors in three livestock production regions of Argentina” PICT 2006-01488. Universidad de Mar del Plata – FONCYT, Argentina, Co-PI.
2007-11	“Utilización de suplementación estratégica para cubrir deficiencias dietarias en majadas de Magallanes” CORFO-INIA, Chile, Collaborator.
2003-05	“Development of a decision support system to improve lambing rates on the Magellanic Steppe in Southern Patagonia” INTA-FONCYT, Argentina, Collaborator.

#### **INTERNATIONAL VOLUNTEER TECHNICAL ASSISTANCE**

2019	Winrock International - U.S. Agency for International Development – Farmer to Farmer Program. Increasing Women’s Income Generation through Improved Small Ruminant Feeding and Nutrition. Segou, Mali, West Africa – March 1-18, 2019.
2017	Common Pastures -U.S. Agency for International Development – Farmer to Farmer Program – Improved Rangeland-based Small Ruminant Production and Nutrition Systems, Segou, Mali, West Africa – June 4-22, 2017.
2016-22	Fulbright Specialist. Council of International Exchange of Scholars.

- 2015 Common Pastures -U.S. Agency for International Development – Farmer to Farmer Program – Integrating Rangelands into Small Ruminant Feeding Programs in the area of Bougouni, and GPS monitoring of small ruminants in herds of villages of the region of Segou, Mali, West Africa – August 2-20.
- 2014 Winrock International -U.S. Agency for International Development – Farmer to Farmer Program – Challenges and opportunities for smallholder livestock producers in Mali: A meta-analysis of fifty six case studies Bamako, Mali, West Africa. January 3-13.
- 2013 Winrock International -U.S. Agency for International Development – Farmer to Farmer Program – Improvement of small ruminant management practices, Small Ruminant Association, Village of Finkolo Ganadougou, Sikasso Region, Mali, West Africa. August 1- 17.
- 2012 Winrock International -U.S. Agency for International Development – Farmer to Farmer Program –Cassava Forage Technology Development with IER – Animal Nutrition Lab., Segou Region, Mali, West Africa. February 19-March 3.
- 2010 Winrock International -U.S. Agency for International Development – Farmer to Farmer Program – Training in Use of Cassava Foliage in Goat Diets to Village of Dougoukouna Women’s Association (Benkadi), Dougoukouna, Segou Region, Mali, West Africa. May 25-June 9.
- 2005 Winrock International – U.S. Agency for International Development – Farmer to Farmer Program - Training in Rotational Grazing Practices to Dairy Farmers in Cortes and Santa Barbara. San Buenaventura, Honduras, Central America. May 21-June 6.

**PROFESSIONAL AND HONOR SOCIETY MEMBERSHIPS**

- 2013 – Present International Society for Applied Ethology
- 2009 – Present Gamma Sigma Delta Agriculture Honor Society
- 2003 – Present New Mexico Section of the Society for Range Management
- 1999 – Present Society for Range Management
- 1999 – Present Ecological Society of America
- 1999 – Present Rangeland Ecology Chapter of the Ecological Soc. of America
- 1996 – Present Phi Kappa Phi Honor Society