



By Jeff Mosley

Browsing the Literature

This section reviews new publications available about the art and science of rangeland management. Personal copies of these publications can be obtained by contacting the respective publishers or senior authors (addresses shown in parentheses). Suggestions are welcomed and encouraged for items to include in future issues of *Browsing the Literature*. Contact Jeff Mosley, jmosley@montana.edu.

Animal Ecology

Assessing the influence of geography, land cover and host species on the local abundance of a generalist brood parasite, the brown-headed cowbird. K. Cummings and J. A. Veech. 2014. *Diversity and Distributions* 20:396–404. (J. Veech, Dept of Biology, Texas State Univ, San Marcos, TX 78666, USA). Cowbird abundance in the Great Plains was unrelated to vegetation type.

Consequences associated with the recent range expansion of nonnative feral swine. S. N. Bevins, K. Pedersen, M. W. Lutman, T. Gidlewski, and T. J. Deliberto. 2014. *BioScience* 64:291–299. (USDA Animal and Plant Health Inspection Service, National Wildlife Research Center, 4101 LaPorte Ave, Fort Collins, CO 80521, USA). The range of invasive feral swine has expanded from 17 to 38 states in the United States during the past 30 years, causing dramatic crop damage and livestock depredation losses.

Dependence of the endangered black-capped vireo on sustained cowbird management. C. B. Wilsey, J. J. Lawler, D. Cimprich, and N. H. Schumaker. 2014. *Conservation Biology* 28:561–571. (School of Environmental and Forest Sciences, Univ of Washington, Seattle, WA 98195, USA). In central Texas, authors conclude that populations of black-capped vireo, an endangered songbird, cannot be sustained without human control of brown-headed cowbirds.

Effects of wind energy development on survival of female greater prairie-chickens. V. L. Winder, L. B. McNew, A. J. Gregory, L. M. Hunt, S. M. Wisely, and B. K. Sandercock. 2014. *Journal of Applied Ecology* 51:395–405. (B. Sandercock, Division of Biology, Kansas State Univ, Manhattan, KS 66506, USA). About 90% of female mortality was due to predation. Female survival increased after wind energy development because wind energy development negatively impacted the predators.

Life-history characteristics of mule deer: effects of nutrition in a variable environment. K. L. Monteith, V. C. Bleich, T. R. Stephenson, B. M. Pierce, M. M. Conner, J. G. Kie, and R. T. Bowyer. 2014. *Wildlife Monographs* 186:1–62. (Dept of Zoology and Physiology, Univ of Wyoming, Laramie, WY 82071, USA). On the east side of the Sierra Nevada Mountains in California, the nutritional condition of adult mule deer females in March was the best predictor of their reproductive success during the forthcoming year.

Grazing Management

Crying wolf? A spatial analysis of wolf location and depredations on calf weight. J. P. Ramler, M. Hebblewhite, D. Kellenberg, and C. Sime. 2014. *American Journal of Agricultural Economics* 96:631–656. (D. Kellenberg, Dept of Economics, Univ of Montana, Missoula, MT 59812, USA). Found no evidence that wolf packs with home ranges that overlapped ranches decreased calf weight gains. However, on ranches that experienced a confirmed cattle depredation by wolves, wolf presence decreased calf weights an average of 22 pounds, possibly due to inefficient foraging behavior and stress to cows. The costs of these weight losses were greater than the costs of direct depredation.

Importance of grass–legume choices on cattle grazing behavior, performance, and meat characteristics. B. Maughan, F. D. Provenza, R. Tansawat, C. Maughan, S. Martini, R. Ward, A. Clemensen, X. Song, D. Conforth, and J. J. Villalba. 2014. *Journal of Animal Science* 92:2309–2324. (J. Villalba, Dept of Wildland Resources, Utah State Univ, Logan, UT 84322, USA). Weight gain was unaffected, but meat quality was higher when cattle grazed sainfoin–tall fescue mixtures vs. alfalfa–tall fescue mixtures. Consumer acceptance of steaks did not differ.

Influence of drinking water with quebracho tannin on intake of endophyte-infected tall fescue by cattle. T. L. Jensen, F. D. Provenza, and J. J. Villalba. 2014. *Animal Feed Science and Technology* 188:13–16. (Dept of Wildland Resources, Utah State Univ, Logan, UT 84322, USA). Adding quebracho tannin to cattle drinking water did not increase cattle intake of endophyte-infected tall fescue.

Reducing cheatgrass (*Bromus tectorum* L.) fuel loads using fall cattle grazing. L. Schmelzer, B. Perryman, B. Bruce, B. Schultz, K. McAdoo, G. McCuin, S. Swanson, J. Wilker, and K. Conley II. 2014. *The Professional Animal Scientist* 30:270–278. (Montana State University Extension, PO Box 807, Columbus, MT 59019, USA). In central Nevada, targeted cattle grazing in the fall decreased cheatgrass and increased perennial vegetation.

Hydrology/Riparian

Can wildfire serve as an ecohydrologic threshold-reversal mechanism on juniper-encroached shrublands? C. J. Williams, F. B. Pierson, O. Z. Al-Hamdan, P. R. Kormos, S. P. Hardegree, and P. E. Clark. 2014. *Ecohydrology* 7:453–477. (USDA Agricultural Research Service, 800 Park Blvd, Suite 105, Boise, ID 83712, USA). In juniper-encroached sagebrush steppe in the Great Basin, the threshold when significant soil erosion occurs is when bare ground exceeds 50% to 60% and bare gaps between plant bases commonly extend beyond 3 feet.

Plant–Animal Interactions

Loss of a large grazer impacts savanna grassland plant communities similarly in North America and South Africa. S. Eby, D. E. Burkipple, R. W. S. Fynn, C. E. Burns, N. Govender, N. Hagenah, S. E. Koerner, K. J. Matchett, D. I. Thompson, K. R. Wilcox, S. L. Collins, K. P. Kirkman, A. K. Knapp, and M. D. Smith. 2014. *Oecologia* 175:293–303. (Dept of Biology, Colorado State Univ, Fort Collins, CO 80523, USA). In both burned and unburned sites in Kansas tallgrass prairie, excluding ungulate grazing decreased biological diversity.

Plant Ecology

A long-term perspective on woody plant encroachment in the desert Southwest, New Mexico, USA. A. Brunelle, T. A. Minckley, J. Delgadillo, and S. Blissett. 2014. *Journal of Vegetation Science* 25:829–838. (Dept of Geography, Univ of Utah, 260 S Central Campus Dr, Room 270, Salt Lake City, UT 84112, USA). Fossil pollen and charcoal samples indicate that the woody plant encroachment observed in the past 200 years is unprecedented during the previous 5,500 years. Encroachment is unrelated to fire exclusion but is related to increased atmospheric carbon dioxide and excessive livestock grazing during the late 19th and early 20th centuries.

Conifer reinvasion of montane meadows following experimental tree removal and prescribed burning. N. J. Kremer, C. B. Halpern, and J. A. Antos. 2014. *Forest Ecology and Management* 319:128–137. (C. Halpern, School of Environmental and Forest Sciences, Univ of Washington, Seattle, WA 98195, USA). Burning woody residues after tree removal did not increase tree seedling establishment and reinvasion of meadows in the Oregon Cascades.

Native insect herbivory limits population growth rate of a non-native thistle. J. O. Eckberg, B. Tenhumberg, and S. M. Louda. 2014. *Oecologia* 175:129–138. (Dept of Agronomy and Plant Genetics, Univ of Minnesota, Saint Paul, MN 55108, USA). In eastern Nebraska, native insects that feed on tall thistle also feed on the introduced, invasive plant bull thistle. Native insect herbivory reduced population growth rate of bull thistle from an 88% annual increase to a 54% annual decline.

Recent advance of forest–grassland ecotones in southwestern Yukon. A. J. Conway and R. K. Danby. 2014. *Canadian Journal of Forest Research* 44:509–520. (R. Danby, Dept of Geography, Queen's Univ, Kingston, ON K7L 3N6, Canada). Tree encroachment into grassland, particularly by aspen, has been widespread on flat terrain and southern aspects during the past 60–80 years.

Simultaneous intraspecific facilitation and interspecific competition between native and annual grasses. R. L. Sheley and J. J. James. 2014. *Journal of Arid Environments* 104:80–87. (USDA Agricultural Research Service, 67826-A Hwy 205, Burns, OR 97720, USA). Drought stress made the invasive annual grass medusahead less competitive with squirreltail, a native perennial bunchgrass.

Understorey plant community dynamics following a large, mixed severity wildfire in a *Pinus ponderosa*–*Pseudotsuga menziesii* forest, Colorado, USA. P. J. Fornwalt and M. R. Kaufmann. 2014. *Journal of Vegetation Science* 25:805–818. (US Forest Service, Rocky Mountain Research Station, 240 W Prospect Rd, Fort Collins, CO 80526, USA). A large wildfire had largely neutral or stimulatory impacts on understorey plant communities at 5 years postburn.

Rehabilitation/Restoration

Impacts of mowing and bud destruction on *Centaurea solstitialis* growth, flowering, root dynamics and soil moisture. D. F. Spencer, S. F. Enloe, M. J. Pitcairn, and J. M. DiTomaso. 2014. *Weed Research* 54:140–150. (USDA Agricultural Research Service, Mail Stop 4, One Shields Ave, Davis, CA 95616, USA). Mowing reduced the number of yellow starthistle seed-heads 67% and reduced its seed production 76%.

Impacts of mulch on prairie seedling establishment: facilitative to inhibitory effects. F. P. O. Mollard, M. A. Naeth, and A. Cohen-Fernandez. 2014. *Ecological Engineering* 64:377–384. (Dept of Renewable Resources, Univ of Alberta, Edmonton, AB T6G 2H1, Canada). In mixed-grass prairie of southern Alberta, application of low rates of mulch (9 ounces per square yard) increased native plant establishment.

Mountain plover nest survival in relation to prairie dog and fire dynamics in shortgrass steppe. D. J. Augustine and S. K. Skagen. 2014. *Journal of Wildlife Management* 78:595–602. (USDA Agricultural Research Service, 1701 Centre Ave, Fort Collins, CO 80526, USA). Prescribed fire can be

used to create nesting habitat for mountain plovers in the southern Great Plains.

Quantifying restoration effectiveness using multi-scale habitat models: implications for sage-grouse in the Great Basin. R. S. Arkle, D. S. Pilliod, S. E. Hanser, M. L. Brooks, J. C. Chambers, J. B. Grace, K. C. Knutson, D. A. Pyke, J. L. Welty, and T. A. Wirth. 2014. *Ecosphere* 5:article no. 31; doi: 10.1890/ES13-00278.1. 32 p. (US Geological Survey, 970 Lusk St, Boise, ID 83706, USA). Postwildfire seeding did not help sage-grouse habitat recovery.

Restoration of mountain big sagebrush steppe following prescribed burning to control western juniper. K. W. Davies, J. D. Bates, M. D. Madsen, and A. M. Nafus. 2014. *Environmental Management* 53:1015–1022. (USDA Agricultural Research Service, 67826-A Hwy 205, Burns, OR 97720, USA). Seeding sagebrush and herbaceous perennials after burning successfully restored cover and density of sagebrush and perennial grasses within 3 years.

Soils

Influence of shrub encroachment on the soil microbial community composition of remnant hill prairies. A. C. Yannarell, S. E. Menning, and A. M. Beck. 2014. *Microbial Ecology* 67:897–906. (Dept of Natural Resources and Environmental Sciences, Univ of Illinois, Urbana, IL 61801, USA). Soil fungal communities in grasslands are distinct from those in adjacent forest or shrub-encroached borders. Shrub encroachment into grasslands changes the species composition of soil fungi from communities of “grassland soil fungi” to communities of “woody plant soil fungi.”

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