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

**Seasonal habitat selection by elk in north central Utah.** J. L. Beck, K. T. Smith, J. T. Flinders, and C.L. Clyde. 2013. *Western North American Naturalist* 73:442–456. (Dept of Ecosystem Science and Management, Univ of Wyoming, Laramie, WY 82071, USA.) Management of spring, summer, and fall habitat for elk in north-central Utah should focus on sustaining or enhancing aspen and mountain brush plant communities found at higher elevations. Winter habitat management should focus on lower-elevation sagebrush grassland areas that are far from major roads.

**Transmission of brucellosis from elk to cattle and bison, Greater Yellowstone Area, USA, 2002–2012.** J. C. Rhyan, P. Nol, C. Quance, A. Gertonson, J. Belfrage, L. Harris, K. Straka, and S. Robbe-Austerman. 2013. *Emerging Infectious Diseases* 19:1992–1995. (USDA Animal and Plant Health Inspection Service, National Wildlife Research Center, 4101 LaPorte Ave, Fort Collins, CO 80521, USA.) Bison and elk in and near Yellowstone National Park in Wyoming, Montana, and Idaho remain reservoirs for bovine brucellosis. No known transmissions occurred from 1990 to 2001, but at least 17 transmission events occurred from wildlife to livestock (13 beef cattle herds and four domestic bison herds) from 2002 to 2012.

## Grazing Management

**Impacts from winter–early spring elk grazing in foothills rough fescue grassland.** T. M. Thrift, T. K. Mosley, and J. C. Mosley. 2013. *Western North American Naturalist* 73:497–504. (T. Mosley, Montana State Univ Extension, 119 South 3rd St, Livingston, MT 59047, USA.) Long-term elk grazing during winter–early spring degraded foothill rangeland in west-central Montana. Authors concluded that periodic rest from ungulate grazing is needed during winter–early spring, most likely no more often than once every 4 years.

**Production and environmental implications of equine grazing.** R. C. Bott, E. A. Greene, K. Koch, K. L. Martinson, P. D. Siciliano, C. Williams, N. L. Trottier, A. Burk, and A. Swiniker. 2013. *Journal of Equine Veterinary Science* 33:1031–1043. (Dept of Animal Science, South Dakota State Univ, Brookings, SD 57071, USA.) This review paper summarizes current knowledge of equine grazing impacts on pastures.

## Hydrology/Riparian

**Coupling legacy geomorphic surface facies to riparian vegetation: assessing red cedar invasion along the Missouri River downstream of Gavins Point Dam, South Dakota.** S. L. Greene and J. C. Knox. 2014. *Geomorphology* 204:277–286. (Dept of Geography, Univ of Wisconsin, Madison, WI 53706, USA.) Density of invasive eastern red cedar trees increases beneath older, less dense stands of plains cottonwood trees.

## Plant–Animal Interactions

**Directness and tempo of avian seed dispersal increases emergence of wild chiltepins in desert grasslands.** T. A. Carlo and J. J. Tewksbury. 2014. *Journal of Ecology* 102:248–255. (Dept of Biology, Penn State Univ, University Park, PA 16802, USA.) In Sonoran Desert grasslands of southern Arizona, birds preferred to roost in spiny hackberry trees vs. velvet mesquite trees, thereby depositing seeds beneath the spiny hackberry trees where the trees' denser foliage provided better microhabitat for seedling establishment.

## Plant Ecology

**Does a decade of elevated [CO2] affect a desert perennial plant community?** B. A. Newingham, C. H. Vanier, L. J. Kelly, T. N. Charlet, and S. D. Smith. 2014. *New Phytologist* 201:498–504. (Dept of Forest, Rangeland, and Fire Sciences, Univ of Idaho, Moscow, ID 83844, USA.) Elevated atmospheric carbon dioxide levels had no effect on plant communities in the Mojave Desert.

**Impact of livestock grazing on plant and small mammal communities in the Ruby Mountains, northeastern Nevada.** E. A. Rickart, K. G. Bienek, and R. J. Rowe. 2013. *Western North American Naturalist* 73:505–515. (Natural History Museum of Utah, Univ of Utah, Salt Lake City, UT 84108, USA.) Plant diversity was less, herbaceous cover was less, and shrub cover was greater outside an exclosure that had been protected from livestock grazing for at least 50 years.

**Net primary productivity of subalpine meadows in Yosemite National Park in relation to climate variability.** P. E. Moore, J. W. van Wagtendonk, J. L. Yee, M. P. McClaran, D. N. Cole, N. K. McDougald, and M. L. Brooks. 2013. *Western North American Naturalist* 73:409–418. (US Geological Survey, 5083 Foresta Rd, El Portal, CA 95318, USA.) Warmer and drier climate will increase plant productivity in mesic meadows but not in xeric meadows.

**Projecting future grassland productivity to assess the sustainability of potential biofuel feedstock areas in the Greater Platte River basin.** Y. X. Gu, B. K. Wylie, S. P. Boyte, and K. P. Phuyal. 2014. *Global Change Biology Bioenergy* 6:35–43. (ASRC Research and Technology Solutions, 47914 252nd St, Sioux Falls, SD 57198, USA.) Current predictions of future climate conditions are not expected to have much effect on grassland productivity in Nebraska.

**Rainfall variability has minimal effects on grassland recovery from repeated grazing.** S. E. Koerner, S. L. Collins, J. M. Blair, A. K. Knapp, and M. D. Smith. 2014. *Journal of Vegetation Science* 25:36–44. (Dept of Biology, Colorado State Univ, Fort Collins, CO 80523, USA.) In Kansas tallgrass prairie, a clipping experiment concluded that more variable precipitation patterns will not affect total plant community productivity in either grazed or ungrazed areas.

## Rehabilitation/Restoration

**Despite spillover, a shared pathogen promotes native plant persistence in a cheatgrass-invaded grassland.** E. A. Mordecai. 2013. *Ecology* 94:2744–2753. (Dept of Biology, Univ of North Carolina, Chapel Hill, NC 27599, USA.) A model based on field data from western Utah indicates that black fingers of death, a fungal seed pathogen that attacks cheatgrass, likely benefits native bunchgrasses competing with cheatgrass, but the effect is relatively weak.

**Downy brome (*Bromus tectorum*) control with imazapic on Montana grasslands.** J. Mangold, H. Parkinson, C. Duncan, P. Rice, E. Davis, and F. Menalled. 2013. *Invasive Plant Science and Management* 6:554–558. (Dept of Land Resources and Environmental Sciences, Montana State Univ, Bozeman, MT 59717, USA.) Control was most consistent when Plateau herbicide was applied at 6–8 ounces of product per acre when downy brome (i.e., cheatgrass) was at the one- to two-leaf growth stage.

**Evaluating the effect of rainfall variability on vegetation establishment in a semidesert grassland.** J. S. Fehmi, G. Y. Niu, R. L. Scott, and A. Mathias. 2014. *Environmental Monitoring and Assessment* 186:395–406. (School of Natural Resources and the Environment, Univ of Arizona, Tucson, AZ 85721, USA.) Based on 31 years of rainfall data, reclamation seedings in southern Arizona can be expected to fail in 32% of years.

**Factors affecting spotted knapweed (*Centaurea stoebe*) seedling survival rates.** A. P. Maines, D. G. Knochel, and T. R. Seastedt. 2013. *Invasive Plant Science and Management* 6:568–576. (T. Seastedt, Dept of Ecology and Evolutionary Biology, Univ of Colorado, Boulder, CO 80309, USA.) Biological control insects may be able to suppress spotted knapweed where bio-control insects are abundant and where few spotted knapweed seedlings survive due to insufficient precipitation or mammalian herbivory.

**Impacts of prescribed fire, glyphosate, and seeding on cogongrass, species richness, and species diversity in longleaf pine.** S. F. Enloe, N. J. Loewenstein, D. W. Held, L. Eckhardt, and D. K. Lauer. 2013. *Invasive Plant Science and Management* 6:536–544. (Dept of Agronomy and Soils, Auburn Univ, Auburn, AL 36849, USA.) In southwestern Alabama, prescribed burning or seeding without glyphosate treatment did not control cogongrass, but glyphosate treatment alone or combined with seeding was effective.

**Integration of prescribed burning, aminopyralid, and reseeding for restoration of yellow starthistle (*Centaurea solstitialis*)–infested rangeland.** G. B. Kyser, A. Hazebrook, and J. M. DiTomaso. 2013. *Invasive Plant Science and Management* 6:480–491. (J. DiTomaso, Dept of Plant Sciences, Univ of California, Davis, CA 95616, USA.) In California, prescribed fire in late October followed by aminopyralid herbicide (Milestone) and drill seeding in January successfully controlled yellow starthistle and established perennial grass.

**Saflufenacil efficacy on horseweed and its interaction with glyphosate.** T. W. Eubank, V. K. Nandula, K. N. Reddy, D. H. Poston, and D. R. Shaw. 2013. *Weed Biology and Management* 13:135–143. (V. Nandula, USDA Agricultural Research Service, PO Box 350, Stoneville, MS 38776, USA.) Saflufenacil herbicide, applied with methylated seed oil as a surfactant, can suppress glyphosate-resistant horseweed, a common pasture weed whose leaves and flowers contain a terpene that particularly irritates the nostrils of horses.

**Seed-feeding beetles (Bruchinae, Curculionidae, Brentidae) from legumes (*Daleaornata*, *Astragalus filipes*) and other forbs needed for restoring rangelands of the Intermountain West.** J. H. Cane, C. Johnson, J. Romero Naples, D. A. Johnson, and R. Hammon. 2013. *Western North American Naturalist* 73:477–484. (USDA Agricultural Research Service, Pollinating Insect Research Unit, Utah State Univ, Logan, UT 84322, USA.) Seeds collected from basalt milkvetch, Blue Mountain prairie clover, and other forbs should be inspected for seed-feeding beetles. If beetles are detected, seeds should be treated with insecticide before transporting seeds to storage warehouses.

**Treatment alternatives and timing affect seeds of African mustard (*Brassica tournefortii*), an invasive forb in American Southwest arid lands.** S. R. Abella, A. A. Suazo, C. M. Norman, and A. C. Newton. 2013. *Invasive Plant Science and Management* 6:559–567. (National Park Service, 1201 Oakridge Dr, Fort Collins, CO 80525, USA.) In the Mojave Desert of Nevada and Arizona, treatment with glyphosate, 2,4-D, or metsulfuron herbicide eliminated or nearly eliminated seed germination by African mustard, an exotic annual forb.

## Socioeconomics

**Aboriginal influences and the original state of nature: a new paradigm for conservation.** C. Kay. 2013. *Current Conservation* 7.1:8–16. (Huntsman School of Business, Utah State Univ, Logan, UT 84322, USA.) This thought-provoking essay about the historic and prehistoric role of humans in natural resource management recommends that local people should be paid to provide conservation services.

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