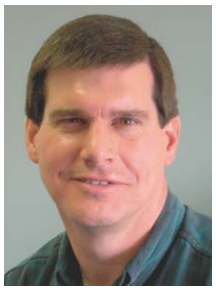

By Jeff Mosley

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

Drought leads to collapse of black-tailed prairie dog populations reintroduced to the Chihuahuan Desert. A. N. Facka, G. W. Roemer, V. L. Mathis, M. Kam, and E. Geffen. 2010. *Journal of Wildlife Management* 74:1752–1762. (Dept of Biology, North Carolina State Univ, Raleigh, NC 27695, USA). Black-tailed prairie dogs in southwestern deserts of North America fluctuate greatly in population size and have a high risk of mortality due to desert weather patterns.

Pharmacokinetic differences in exposure to camphor after intraruminal dosing in selectively bred lines of goats. E. J. Campbell, R. A. Frost, T. K. Mosley, J. C. Mosley, C. J. Lupton, C. A. Taylor, Jr., J. W. Walker, D. F. Waldron, and J. Musser. 2010. *Journal of Animal Science* 88:2620–2626. (Texas AgriLife Research Center, PO Box 918, Sonora, TX 76950, USA). Results are the first to confirm that heritable differences exist among individual goats in their pharmacological abilities to mitigate harmful effects from plant toxins.

Rapid response of a grassland ecosystem to an experimental manipulation of a keystone rodent and domestic livestock. A. D. Davidson, E. Ponce, D. C. Lightfoot, E. L. Fredrickson, J. H. Brown, J. Cruzado, S. L. Brantley, R. Sierra-Corona, R. List, D. Toledo, and G. Ceballos. 2010. *Ecology* 91:3189–3200. (Institute of Ecology, Univ Nacional Autonoma Mexico, Mexico City 04510, DF, Mexico). Black-tailed prairie dogs in the Chihuahuan Desert were twice as abundant in areas grazed by cattle compared with ungrazed areas.

Selection of tannins by sheep in response to gastrointestinal nematode infection. J. J. Villalba, F. D. Provenza, J. O. Hall, and L. D. Lisonbee. 2010. *Journal of Animal Science* 88:2189–2198. (Dept of Wildland Resources, Utah State Univ, Logan, UT 84322, USA). Sheep burdened with intestinal parasites self-medicated themselves by selecting forage with tannins. Tannins are plant secondary compounds that typically suppress forage palatability, but tannins also suppress internal parasites.

State-and-transition models for assessing grasshopper sparrow habitat use. A. L. Holmes and R. F. Miller. 2010. *Journal of Wildlife Management* 74:1834–1840. (Dept of Fisheries and Wildlife, Oregon State Univ, Corvallis, OR 97331, USA). "Grasshopper sparrows showed clear differences in abundance among community phases and were most

numerous in perennial grasslands and least abundant in depleted sagebrush and sagebrush annual grass community phases."

Grazing Management

Effect of supplemental ground flaxseed fed to beef cattle grazing summer native range on the northern Great Plains. E. J. Scholljegerdes and S. L. Kronberg. 2010. *Journal of Animal Science* 88:2108–2121. (USDA-ARS, Northern Great Plains Research Lab, PO Box 459, Mandan, ND 58554, USA). Supplemented steers gained more than unsupplemented steers, but steers supplemented with cracked corn-soybean meal gained similarly to steers supplemented with ground flaxseed.

Management of Canadian prairie rangeland. A. W. Bailey, D. McCartney, and M. P. Schellenberg. 2010. Agriculture and Agri-Food Canada Publication No. 10144; 58 p. (M. Schellenberg, Semiarid Prairie Agricultural Research Centre, PO Box 1030, Swift Current, SK S9H 3X2, Canada). This comprehensive bulletin concisely describes the ecology of western Canadian prairies and synthesizes current knowledge about sustainable livestock grazing management strategies in these ecosystems.

Stockpiled tall fescue and livestock performance in an early stage Midwest silvopasture system. R. L. Kallenbach, E. B. Venable, M. S. Kerley, and N. J. Bailey. 2010. *Agroforestry Systems* 80:379–384. (Division of Plant Science, Univ of Missouri, Columbia, MO 65211, USA). Average daily gain of steers grazing non-forested pasture did not differ from steers in silvopastures, but steer gain per acre was 36% less in silvopastures.

Hydrology/Riparian

Common native and invasive wetland plants in Montana. S. M. Carpendo and L. A. Saul. 2010. Montana Dept of Environmental Quality, Helena, MT; 121 p. (Wetland Program, Montana Dept of Environmental Quality, 1520 East 6th Ave, Helena, MT 59620, USA). Bulletin designed to help nonbotanists identify 30 native plant species and 19 common invasive plant species that may be found in Montana wetlands.

Effectiveness of best management practices in improving water quality in a pasture-dominated watershed. I. Chaubey, L. Chiang, M. W. Gitau, and S. Mohammed. 2010. *Journal of Soil and Water Conservation* 65:424–437. (Dept of Agricultural and Biological Engineering, Purdue Univ, West Lafayette, IN 47907, USA). Buffer strips and proper grazing management were the two most important Best Management Practices affecting nitrogen and phosphorus export from pastures in a northwestern Arkansas–eastern Oklahoma watershed.

Tamarisk biocontrol in the western United States: ecological and societal implications. K. R. Hultine, J. Belnap, C. van Riper, J. R. Ehleringer, P. E. Dennison, M. E. Lee, P. L. Nagler, K. A. Snyder, S. M. Uselman, and J. B. West. 2010. *Frontiers in Ecology and the Environment* 8:467–474. (Dept of Biology, Univ of Utah, Salt Lake City, UT 84112, USA). Recommends ways to reduce potential negative impacts of saltcedar biocontrol on riparian ecosystems.

Measurements

Comparison of motion-activated cameras for wildlife investigations. D. L. Hughson, N. W. Darby, and J. D. Dungan. 2010. *California Fish and Game* 96:101–109. (Mojave National Preserve, 2701 Barstow Rd, Barstow, CA 93211, USA). Photographic rates of detection and number of species detected by motion-triggered cameras can vary dramatically, even from identical camera models placed side by side.

Mapping three invasive weeds using airborne hyperspectral imagery. C. H. Yang and J. H. Everitt. 2010. *Ecological Informatics* 5:429–439. (USDA-ARS, 2413 East Highway 83, Weslaco, TX 78596, USA). Three case studies from Texas illustrate how hyperspectral remote sensing can map invasive plant infestations. Two examples of rangeland plants (Ashe juniper and broom snakeweed) and one invasive aquatic weed (waterhyacinth) are presented.

Plant Ecology

A field guide to Wyoming grasses, 5th edition. Q. D. Skinner. 2010. Univ of Wyoming Cooperative Extension Service Publication No. RJ-215, Laramie, WY; 596 p. ($55; Ag Resource Center, Univ of Wyoming Cooperative Extension Service, Dept 3313, 1000 East University Ave, Laramie, WY 82072, USA). Detailed color photos and corresponding plant morphology useful for identification are presented for each species.

Contrasting physiological responsiveness of establishing trees and a C-4 grass to rainfall events, intensified summer drought, and warming in oak savanna. A. Volder, M. G. Tjoelker, and D. D. Biske. 2010. *Global Change Biology* 16:3349–3362. (Dept of Horticultural Sciences, Texas A&M Univ, College Station, TX 77843, USA). Eastern redcedar trees will likely outcompete post oak trees under future climatic scenarios of hotter and drier environmental conditions.

Grassland root communities: species distributions and how they are linked to aboveground abundance. D. A. Frank, A. W. Pontes, E. M. Maine, J. Caruana, R. Raina, S. Raina, and J. D. Fridley. 2010. *Ecology* 91:3201–3209. (Dept of Biology, Syracuse Univ, Syracuse, NY 13244, USA). In foothill grasslands of Yellowstone National Park,

almost all plant species present had roots distributed throughout the soil profile. Spatial segregation of roots apparently plays a minor role in resource partitioning among plant species in these grasslands.

Will environmental changes reinforce the impact of global warming on the prairie-forest border of central North America? L. E. Frelich and P. B. Reich. 2010. *Frontiers in Ecology and the Environment* 8:371–378. (Dept of Forest Resources, Univ of Minnesota, Saint Paul, MN 55108, USA). Within the next 50–100 years tree density in the boreal and northern hardwood forests is predicted to decrease, making these forests more savanna-like.

Rehabilitation/Restoration

Effects of prescribed fire on vegetation and passerine birds in northern mixed-grass prairie. T. A. Grant, E. M. Madden, T. L. Shaffer, and J. S. Dockens. 2010. *Journal of Wildlife Management* 74:1841–1851. (US Fish and Wildlife Service, Souris River Basin National Wildlife Refuge Complex, 681 Salyer Rd, Upham, ND 58789, USA). Reductions in bird abundance are limited mostly to the first growing season after fire. Results indicate that grassland songbirds are well adapted to frequent, periodic fires.

Field sandbur (*Cenchrus spinifex*) control and bermudagrass response to nicosulfuron tank mix combinations. M. A. Matocha, W. J. Grichar, and C. Grymes. 2010. *Weed Technology* 24:510–514. (Texas AgriLife Extension Service, College Station, TX 77843, USA). Combinations of nicosulfuron and metsulfuron herbicides are viable options for controlling field sandbur in bermudagrass pastures.

Fire effects on cover and dietary resources of sage-grouse habitat. E. C. Rhodes, J. D. Bates, R. N. Sharp, and K. W. Davies. 2010. *Journal of Wildlife Management* 74:755–764. (Dept of Ecosystem Science and Management, Texas A&M Univ, College Station, TX 77843, USA). Canopy cover of perennial grasses and forbs did not increase following fall burning of Wyoming big sagebrush sites in southeastern Oregon, but perennial grass yield doubled in the burned treatment. Study sites averaged only 10% sagebrush canopy cover before burning.

Multistate modeling of habitat dynamics: factors affecting Florida scrub transition probabilities. D. R. Breininger, J. D. Nichols, B. W. Duncan, E. D. Stolen, G. M. Carter, D. K. Hunt, and J. H. Drese. 2010. *Ecology* 91:3354–3364. (IHA 300, Kennedy Space Center, FL 32899, USA). Much of the scrub and flatwoods ecosystem cannot improve from a degraded state without expensive mechanical cutting.

Socioeconomics

Factors influencing success among collaborative sage-grouse management groups in the western United States. L. R. Belton and D. Jackson-Smith. 2010. *Environmental Conservation* 37:250–260. (Dept of Wildland Resources, Utah State Univ, Logan, UT 84322, USA). The presence of a neutral facilitator, participants' feelings of ownership, groups whose local plans had more authority and early-stage group successes were all factors that characterized successful collaborative conservation efforts to develop and implement local sage-grouse management plans.

Soils

Primary and residual effects of Abrams tank traffic on prairie soil properties. P. S. Althoff, S. J. Thien, and T. C. Todd. 2010. *Soil Science Society of America Journal* 74:2151–2161. (T. Todd, Dept of Plant Pathology, Kansas State Univ, Manhattan, KS 66506, USA). In northeastern Kansas, soil bulk density increased when disturbance occurred under wet soil conditions or with repeated traffic, but soils recovered to undisturbed levels within 1 to 3 years.

Recovery of soil microbial community structure after fire in a sagebrush-grassland ecosystem. S. R. Dangi, P. D. Stahl, E. Pendall, M. B. Cleary, and J. S. Buyer. 2010. *Land Degradation and Development* 21:423–432. (Dept of Plant Science, California State Univ, 2415 East Ramon Ave, Fresno, CA 93740, USA). Soil microbial productivity recovered within 7 years after prescribed fire in south central Wyoming. Aboveground plant biomass increased with time after fire until 39 years, when mountain big sagebrush became dominant over herbaceous species.

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