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

A reconnaissance of small mammal communities in Garland and Government Prairies, Arizona. J. L. Ganey and C. L. Chambers. 2011. *Western North American Naturalist* 71:151–157. (US Forest Service, Rocky Mountain Research Station, 2500 S. Pine Knoll Rd, Flagstaff, AZ 86001, USA). In ponderosa pine forests of north central Arizona, deer mice favored rock cover, Mogollon voles favored shrub cover, and spotted ground squirrels favored forb cover.

Absence of *Mycobacterium bovis* in feral swine (*Sus scrofa*) from the Southern Texas Border Region. T. A. Campbell, D. B. Long, L. R. Bazan, B. V. Thomsen, S. Robbe-Austerman, R. B. Davey, L. A. Soliz, S. R. Swafford, and K. C. VerCauteren. 2011. *Journal of Wildlife Diseases* 47:974–978. (USDA-APHIS Wildlife Services, MSC 218, 700 Univ Blvd, Kingsville, TX 78363, USA). Study found no evidence of *Mycobacterium bovis* infection in feral pigs.

From venison to beef: seasonal changes in wolf diet composition in a livestock grazing landscape. A. T. Morehouse and M. S. Boyce. 2011. *Frontiers in Ecology and the Environment* 9:440–445. (Dept of Biological Sciences, Univ of Alberta, Edmonton, AB T6G 2H1, Canada). In southwestern Alberta where wolf–cattle conflicts have increased in recent years, wolves were found to shift their diet from wild prey during the winter to cattle during the spring–summer–fall cattle grazing season.

Maternal investment by Yellowstone pronghorn following winter habitat deterioration. K. K. Barnowe-Meyer, P. J. White, and J. A. Byers. 2011. *Western North American Naturalist* 71:222–233. (Wildlife Division, Nez Perce Tribe, Box 365, Lapwai, ID 83540, USA). Degraded winter habitat near the northern edge of Yellowstone National Park did not limit pronghorn reproduction. Spring–summer nutrition appears to be the limiting factor.

Rapid decrease in horn size of bighorn sheep: environmental decline, inbreeding depression, or evolutionary response to trophy hunting? P. W. Hedrick. 2011. *Journal of Heredity* 102:770–781. (School of Life Sciences, Arizona State Univ, Tempe, AZ 85287, USA). In Arizona, drought appears to be the major cause of a 30-year decline in horn size in trophy desert bighorns.

Territory size in mixed-grass prairie songbirds. S. L. Jones. 2011. *Canadian Field-Naturalist* 125:12–15. (US Fish and Wildlife Service, PO Box 25486, Denver Federal Center, Denver, CO 80225, USA). In mixed-grass prairie of north-central Montana, Sprague's pipits, Grasshopper sparrows, and Baird's sparrows had almost identical breeding territory sizes (i.e., 1 acre).

Grazing Management

Effects of mineral-supplement delivery system on frequency, duration, and timing of supplement use by beef cows grazing topographically rugged, native rangeland in the Kansas Flint Hills. N. A. Aubel, J. R. Jaeger, J. S. Drouillard, M. D. Schlegel, L. A. Pacheco, D. R. Linden, J. W. Bolte, J. J. Higgins, and K. C. Olson. 2011. *Journal of Animal Science* 89:3699–3706. (K. Olson, Dept of Animal Science and Industry, Kansas State Univ, Manhattan, KS 66506, USA). Forage utilization near mineral supplement sites did not differ between mineral delivered in a salt-based, granular form and mineral delivered in a cooked, molasses-based block.

Measurements

Indicators of ecosystem function identify alternate states in the sagebrush steppe. E. Kachergis, M. E. Rocca, and M. E. Fernandez-Gimenez. 2011. *Ecological Applications* 21:2781–2792. (Dept of Forest, Rangeland and Watershed Stewardship, Colorado State Univ, Fort Collins, CO 80523, USA). Many rangeland health indicators were correlated with quantitative indicators of ecosystem function. Rangeland health indicators can thereby help rangeland managers build and apply state-and-transition models without needing to collect expensive, time-consuming quantitative data.

Plant Ecology

Interacting controls on productivity in a northern Great Plains grassland and implications for response to ENSO events. L. B. Flanagan and A. C. Adkinson. 2011. *Global Change Biology* 17:3293–3311. (Dept of Biological Sciences, Univ of Lethbridge, Lethbridge, AB T1K 3M4, Canada). During an 8-year period from 1999–2006, rangeland productivity was generally greater in El Nino years and lower in La Nina years because of associated differences in summer precipitation.

Photosynthetic rates of two species of Malvaceae, *Malva viscosa* var. *drummondii* (wax mallow) and *Abutilon theophrasti* (velvetleaf). O. W. Van Auken and J. K. Bush. 2011. *Southwestern Naturalist* 56:325–332. (J. Bush, Dept of Biology, Univ of Texas–San Antonio, San Antonio, TX 78249, USA). In the savanna of central Texas, velvetleaf is best suited to sites with full sunlight, whereas wax mallow is a sun–shade intermediate.

Resistance to *Centaurea solstitialis* invasion from annual and perennial grasses in California and Argentina. J. L. Hierro, C. J. Lortie, D. Villarreal, M. E. Estanga-Mollica, and R. M. Callaway. 2011. *Biological Invasions* 13:2249–2259. (Univ Nacional La Pampa, CONICET, RA-6300 Santa Rosa, La Pampa, Argentina). Invasion by yellow starthistle might be linked to its remarkable ability to take advantage of disturbance, rather than a presumed ability to capitalize on soil water made available when native perennial grasses were replaced by exotic annual grasses.

Seed biology and ecology of natalgrass (*Melinis repens*). C. A. Stokes, G. E. MacDonald, C. R. Adams, K. A. Langeland, and D. L. Miller. 2011. *Weed Science* 59:527–532. (Dept of Agronomy, Univ of Florida, Gainesville, FL 32611, USA). Seed germination rate of natalgrass, an invasive grass in Florida and other subtropical and tropical regions worldwide, was not reduced by seed burial lasting 15 months.

Within-stand variation in understory vegetation affects fire behavior in longleaf pine xeric sandhills. E. S. Wenk, C. G. Wang, and J. L. Walker. 2011. *International Journal of Wildland Fire* 20:866–875. (C. Wang, Dept of Forestry and Natural Resources, Clemson Univ, Clemson, SC 29634, USA). Patchy understory vegetation in longleaf pine stands creates heterogeneous fires. Fire intensity and heating will be greater where the understory is dominated by turkey oak versus wiregrass or pine litter.

Rehabilitation/Restoration

Tree shelters and weed control enhance growth and survival of natural blue oak seedlings. D. D. McCreary, W. Tietje, J. Davy, R. Larsen, M. Doran, D. Flavell, and S. Garcia. 2011. *California Agriculture* 65:192–196. (Univ of California Cooperative Extension, Sierra Foothill Research and Extension Center, 8279 Scott Forbes Rd, Browns Valley, CA 95918, USA). The combined use of tree shelters and weed control is recommended to help volunteer blue oak seedlings grow into saplings in California oak woodlands.

Socioeconomics

Can we manage for resilience? The integration of resilience thinking into natural resource management in the United States. M. H. Benson and A. S. Garmestani. 2011. *Environmental Management* 48:392–399. (Dept of Geography, Univ of New Mexico, Albuquerque, NM 87131, USA). “In this paper we examine the concept of resilience and the manner in which some legal and regulatory frameworks governing federal natural resource agencies have difficulty accommodating it.”

Development by design: mitigating wind development's impact on wildlife in Kansas. B. Obermeyer, R. Manes,

J. Kiesecker, J. Fargione, and K. Sochi. 2011. *Plos One* 6: e26698. 11 p. (Nature Conservancy, 226 Broadway St, Cottonwood Falls, KS 66845, USA). About 48% of the land area in Kansas has the potential to provide wind energy while still meeting wildlife conservation goals. Authors recommend creating a certification program to recognize those wind energy development projects that avoid and offset negative impacts to wildlife.

Eleven ways to improve executive management of conflict. M. E. Fraidenburg. 2011. *Fisheries* 36:428–435. (5432 Keating Rd NW, Olympia, WA 98502, USA). Techniques are presented that supervisors can use to help their employees become skilled managers of natural resource conflicts.

Perceptions of ranchers about medusahead (*Taeniatum caput-medusae* [L.] Nevski) management on sagebrush steppe rangelands. D. D. Johnson, K. W. Davies, P. T. Schreder, and A. M. Chamberlain. 2011. *Environmental Management* 48:400–417. (Dept of Rangeland Ecology and Management, Oregon State Univ, 450 N. Buena Vista Ave, Burns, OR 97720, USA). “Web- or computer-based invasive plant information and tools were largely unpopular among ranchers, whereas traditional forms of information delivery including brochures/pamphlets and face-to-face interaction were preferred.”

Understanding land trusts and factors impacting their demand for conservation easements: survey results from the Intermountain West. E. D. Cropper, C. T. Bastian, D. M. McLeod, C. M. Kreske, and D. L. Hoag. 2011. Laramie, WY, USA: Univ of Wyoming Cooperative Extension Service Bulletin B-1225; 20 p. (University of Wyoming Extension Communications, Dept 3354, 1000 E University Ave, Laramie, WY 82071, USA). A survey in Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming revealed wide variation among land trusts in the characteristics of lands they prefer to conserve. Information should help those landowners considering a conservation easement to find a land trust with compatible interests.

Who's in charge: role of clarity in a Midwestern watershed group. K. Floress, L. S. Prokopy, and J. Ayers. 2011. *Environmental Management* 48:825–834. (College of Natural Resources, Univ of Wisconsin, Stevens Point, WI 54481, USA). Roles of volunteer steering-committee members, paid project staff members, and agency personnel need clearly defined to avoid confusion regarding project management authority.

Jeff Mosley is Professor of Range Science and Extension Range Management Specialist, Department of Animal and Range Sciences, Montana State University, Bozeman, MT 59717, USA.