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

Conservation Reserve Program benefits on Henslow's sparrows within the United States. J. R. Herkert. 2007. *Journal of Wildlife Management* 71:2749–2751. (The Nature Conservancy, 301 SW Adams St, Suite 1007, Peoria, IL 61602, USA). CRP grasslands appear to be playing a significant role in reversing long-term population declines of Henslow's sparrows, one of North America's fastest declining songbirds.

Dietary monoterpene concentrations influence feeding patterns of lambs. L. E. Dziba and F. D. Provenza. 2008. *Applied Animal Behaviour Science* 109:49–57. (Agricultural Research Council, P/Bag X2, Irene 0062, South Africa). Domestic sheep adjusted their eating patterns to reduce the likelihood of ingesting toxic quantities of monoterpenes, the chemical-defense compounds common in sagebrush and juniper.

Diets of adults and lambs of desert bighorn sheep during years of varying rainfall in central Arizona. T. Mckinney and T. W. Smith. 2007. *Southwestern Naturalist* 52:520–527. (Arizona Game and Fish Dept, 2221 W Greenway Rd, Phoenix, AZ 85023, USA). Botanical composition of desert bighorn sheep diets did not vary much between drought years and normal rainfall years.

Diets of swift foxes (*Vulpes velox*) in continuous and fragmented prairie in northwestern Texas. J. F. Kamler, W. B. Ballard, M. C. Wallace, and P. S. Gipson. 2007. *Southwestern Naturalist* 52:504–510. (W. Ballard, Dept of Natural Resources Management, Texas Tech Univ, Lubbock, TX 79409, USA). The swift fox is an adaptable feeder that can thrive where native prairie is interspersed with cropland and CRP fields.

Historic distribution and challenges to bison recovery in the northern Chihuahuan Desert. R. List, G. Ceballos, C. Curtin, P. J. P. Gogan, J. Pacheco, and J. Truett. 2007. *Conservation Biology* 21:1487–1494. (Institute of Ecology, Univ Nacional Autonoma Mexico, 3er Circuito Exteriror Ciudad Univ, Mexico City 04510, DF, Mexico). Archeological records and historical accounts document that bison were present in northern Mexico and adjoining areas in the United States for centuries, refuting the claim that the northern Chihuahuan Desert did not evolve with grazing by large ungulates.

Insect community response to plant diversity and productivity in a sagebrush-steppe ecosystem. E. J. Wenninger and R. S. Inouye. 2007. *Journal of Arid Environments* 72:24–33.

(USDA-ARS, Horticultural Research Lab, 2001 S Rock Rd, Fort Pierce, FL 34945, USA). In Idaho, insect diversity and abundance in early summer were positively correlated with plant diversity, but in late summer moisture levels had more influence on insect populations than the plant community.

Vegetative and invertebrate community characteristics of Conservation Reserve Program fields relative to gamebirds in western Kansas. E. D. Doxon and J. P. Carroll. 2007. *American Midland Naturalist* 158:243–259. (Oklahoma Cooperative Fish and Wildlife Research Unit, 404 Life Science W, Oklahoma State Univ, Stillwater, OK 74078, USA). Most unharvested wheat fields and CRP grasslands had adequate insects available for gamebird chicks.

Grazing Management

Case study: grazing management on seeded and unseeded post-fire public rangelands. L. B. Bruce, B. Perryman, K. Conley, and K. McAdoo. 2007. *The Professional Animal Scientist* 23:1–6. (Dept of Animal Biotechnology, Univ of Nevada, Reno, NV 89557, USA). Livestock grazing neither inhibited post-fire recovery nor enhanced it.

Lupine-induced "Crooked Calf Disease" in Washington and Oregon: identification of the alkaloid profiles in *Lupinus sulfureus*, *Lupinus leucophyllus*, and *Lupinus sericeus*. S. T. Lee, D. Cook, K. E. Panter, D. R. Gardner, M. H. Ralphs, E. S. Motterram, J. A. Pfister, and C. C. Gay. 2007. *Journal of Agricultural and Food Chemistry* 55:10649–10655. (USDA-ARS, Poisonous Plant Research Lab, 1150 E 1400 N, Logan, UT 84341, USA). Lupine plants classified botanically as the same plant species contained different kinds and amounts of alkaloids with varying potential for causing congenital birth defects in livestock. Botanical classification is insufficient to determine potential toxicities and risk to livestock.

Soil water regimes of annual and perennial forages during drought years in the Aspen Parkland ecoregion of Alberta. D. L. Bradshaw, D. S. Chanasyk, V. S. Baron, and M. A. Naeth. 2007. *Canadian Journal of Soil Science* 87:523–533. (Dept of Renewable Resources, Univ of Alberta, Edmonton, AB T6G 2H1, Canada). Meadow bromegrass should provide more reliable forage production during drought than quackgrass, smooth brome, Kentucky bluegrass, or alfalfa.

The suitability of cool- and warm-season annual cereal species for winter grazing in Saskatchewan. W. E. May, L. H. Klein, G. P. Lafond, J. T. McConnell, and S. M. Phelps. 2007. *Canadian Journal of Plant Science* 87:739–752. (Agriculture and Agri-Food Canada, PO Box 760, Indian Head, SK S0G 2K0, Canada). Pearl millet and sorghum-sudangrass were poorly adapted to Saskatchewan, but 'Crown' proso millet, 'Golden German' foxtail millet, 'Red Siberian' foxtail millet, and corn all showed promise and should be evaluated further.

Hydrology/Riparian

Manganese and zinc toxicity thresholds for mountain and Geyer willow. J. O. Shanahan, J. E. Brummer, W. C. Leininger, and M. W. Paschke. 2007. *International Journal of Phytoremediation* 9:437–452. (J. Brummer, Dept of Soil and Crop Sciences, Colorado State Univ, Fort Collins, CO 80523, USA). Geyer willow had greater tolerance to both manganese and zinc compared with mountain willow, but both species should be useful for restoring riparian sites contaminated with moderate levels of these heavy metals.

Measurements

Comparison of different methods for measuring leaf area index in a mixed grassland. Y. H. He, X. L. Guo, and J. F. Wilmshurst. 2007. *Canadian Journal of Plant Science* 87:803–813. (X. Guo, Dept of Geography, Univ of Saskatchewan, Saskatoon, SK S7N 5A5, Canada). Both instruments tested (AccuPAR and LAI2000) underestimated leaf area index, but the LAI2000 performed better than AccuPAR.

Plant Ecology

A field guide to Nevada grasses. B. L. Perryman and Q. D. Skinner. 2007. ($39.95 plus shipping; Indigenous Rangeland Management Press, 610 6th St Ct, Lander, WY 82520, USA. 256 p.). An exceptional field guide for 118 species of grasses found in Nevada and the Great Basin, with vegetative, inflorescence, and ecological dichotomous keys. Grass morphology is illustrated with vivid microphotographs.

Bur buttercup, *Ranunculus testiculatus*, new to eastern Canada. M. J. Oldham, C. E. Goodwin, and S. Blaney. 2006. *Canadian Field-Naturalist* 120:319–322. (Ontario Ministry of Natural Resources, PO Box 7000, Peterborough, ON K9L 1C8, Canada). This annual Eurasian weed is widespread in western North America and is currently expanding its range eastward. The plant is toxic to livestock.

Competition, resources, and vegetation during 10 years in native grassland. S. D. Wilson. 2007. *Ecology* 88:2951–2958. (Dept of Biology, Univ of Regina, Regina, SK S4S 0A2, Canada). In the Northern Great Plains, the cover of C-3 grasses varied more with yearly fluctuations in precipitation than did the cover of blue grama, dense clubmoss, or fringed sagewort.

Functional group and species responses to precipitation in three semiarid rangeland ecosystems. J. D. Derner, B. W. Hess, R. A. Olson, and G. E. Schuman. 2008. *Arid*

Land Research and Management 22:81–92. (USDA-ARS, High Plains Grasslands Research Station, 8408 Hildreth Rd, Cheyenne, WY 82009, USA). Above-average spring precipitation increased total forage yield in shortgrass steppe, northern mixed-grass prairie, and sagebrush grassland, largely due to increased yield of C-3 perennial grasses.

Rehabilitation/Restoration

Canada thistle (*Cirsium arvense*) control with aminopyralid in range, pasture, and noncrop areas. S. F. Enloe, R. G. Lym, R. Wilson, P. Westra, S. Nissen, G. Beck, M. Moechnig, V. Peterson, R. A. Masters, and M. Halstvedt. 2007. *Weed Technology* 21:890–894. (Dept of Plant Science, Univ of Wyoming, Laramie, WY 82071, USA). Aminopyralid is an effective alternative to picloram and clopyralid herbicides for controlling Canada thistle.

Comparing alternative management strategies of fire, grazing, and weed control using spatial modeling. L. Provencher, T. A. Forbis, L. Frid, and G. Medlyn. 2007. *Ecological Modelling* 209:249–263. (The Nature Conservancy, 1 E 1st St, Suite 1007, Reno, NV 89509, USA). Modeling was used to compare 6 rangeland management scenarios in eastern Nevada involving prescribed fire, livestock grazing, and mechanical and chemical vegetation treatments. After 20 years the predicted differences in plant composition between scenarios were small.

Kayak orchardgrass. S. N. Acharya, D. R. Friebel, and Y. Castonguay. 2007. *Canadian Journal of Plant Science* 87:905–906. (Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403 1st Ave S, Lethbridge, AB T1J 4B1, Canada). Kayak is a new high-yielding, early-maturing orchardgrass cultivar with good winterhardiness.

Selective and non-selective control of invasive plants: the short-term effects of growing-season prescribed fire, herbicide, and mowing in two Texas prairies. M. T. Simmons, S. Windhager, P. Power, J. Lott, R. K. Lyons, and C. Schwope. 2007. *Restoration Ecology* 15:662–669. (Lady Bird Johnson Wildflower Center, Univ of Texas, 4801 La Crosse Ave, Austin, TX 78739, USA). Prescribed fire during the growing season reduced the abundance of yellow bluestem (*Bothriochloa ischaemum*), an invasive C-4 Eurasian grass.

Soils

Soil fungal abundance and diversity: another victim of the invasive plant *Centaurea maculosa*. A. K. Broz, D. K. Manter, and J. M. Vivanco. 2007. *International Society for Microbial Ecology Journal* 1:763–765. (J. Vivanco, Center for Rhizosphere Biology, 1173 Campus Delivery, Colorado State Univ, Fort Collins, CO 80523, USA). Spotted knapweed decreased the abundance and diversity of native soil microbes.

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