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

Aspen and conifer heterogeneity effects on bird diversity in the northern Yellowstone ecosystem. J. P. Hollenbeck and W. J. Ripple. 2007. *Western North American Naturalist* 67:92–101. (Dept. of Forest Resources, Oregon State Univ., Corvallis, OR 97331). Aspen stands invaded by conifers did not have higher bird species diversity than pure aspen stands.

Evidence for regionally synchronized cycles in Texas quail population dynamics. J. J. Lusk, F. S. Guthery, M. J. Peterson, and S. J. Demaso. 2007. *Journal of Wildlife Management* 71:837–843. (Dept. of Natural Resource Ecology and Management, Oklahoma State Univ., Stillwater, OK 74078). From 1978–2002, wet–dry weather cycles (5–6 years in duration) coincided with fluctuations in bobwhite quail populations.

Linking occurrence and fitness to persistence: habitat-based approach for endangered greater sage-grouse. C. L. Aldridge and M. A. Boyce. 2007. *Ecological Applications* 17:508–526. (US Geological Survey, 2150 Center Ave, Building C, Fort Collins, CO 80526). In dry mixed-grass prairie of southern Alberta, sage grouse-selected nesting and brood-rearing sites within patchy distributions of moderate sagebrush cover.

Population-specific demographic estimates provide insights into declines of lark buntings (*Calamospiza melanocorys*). A. A. Y. Adams, S. K. Skagen, and J. A. Savidge. 2007. *Auk* 124:578–593. (Dept. of Fish, Wildlife, and Conservation Biology, Colorado State Univ., Fort Collins, CO 80523). Nest predation was responsible for 92% of nest failures by lark buntings in shortgrass prairie of eastern Colorado.

Seasonal diet and foraging preference of greater kudu *Tragelaphus strepsiceros* in the Llano Uplift of Texas. S. S. Gray, T. R. Simpson, J. T. Baccus, R. W. Manning, and T. W. Schwertner. 2007. *Wildlife Biology* 13:75–83. (T. Schwertner, Dept. of Biology, Texas State Univ., San Marcos, TX 78666). Greater kudu, a large African ungulate introduced into central Texas, is a browsing animal with diet preferences similar to white-tailed deer.

Second chance for the plains bison. C. H. Freese, K. E. Aune, D. P. Boyd, J. N. Derr, S. C. Forrest, C. C. Gates, P. J. P. Goyan, S. M. Grassel, N. D. Halbert, K. Kunkel, and K. H. Redford. 2007. *Biological Conservation* 136:175–184. (Northern Great Plains Program, World Wildlife Fund, PO Box 7276, Bozeman, MT 59771). Advocates immediate actions to achieve the ultimate goal of returning tens of thousands of "largely wild and free-roaming" bison to the Great Plains.

Survival of pronghorns in western South Dakota. C. N. Jacques, J. A. Jenks, J. D. Sievers, D. E. Roddy, and F. G. Lindzey. 2007. *Journal of Wildlife Management* 71:737–743. (Dept. of Wildlife and Fisheries Sciences, South Dakota State Univ., Brookings, SD 57007). Coyote predation was the primary cause of pronghorn fawn (or kid) mortality. Concealment cover is important for fawn survival during late spring-early summer.

Hydrology/Riparian

Rangeland grazing as a source of steroid hormones to surface waters. E. P. Kolodziej and D. L. Sedlak. 2007. *Environmental Science and Technology* 41:3514–3520. (Dept. of Civil and Environmental Engineering, Univ. of California, Berkeley, CA 94720). Estrogens were present at levels suspected to harm fish in 10%–20% of water samples collected from rangeland creeks where cattle had direct access to the stream.

Measurements

Canopy spectra and remote sensing of Ashe juniper and associated vegetation. J. H. Everitt, C. Yang, and H. B. Johnson. 2007. *Environmental Monitoring and Assessment* 130:403–413. (USDA–ARS, 2413 E. Hwy 83, Weslaco, TX 78596). Ashe juniper in central Texas could be distinguished on color-infrared aerial photographs and on QuickBird false color satellite imagery.

Ecological site descriptions and remotely sensed imagery as a tool for rangeland evaluation. C. L. Maynard, R. L. Lawrence, G. A. Nielsen, and G. Decker. 2007. *Canadian Journal of Remote Sensing* 33:109–115. (R. Lawrence, Dept. of Land Resources and Environmental Sciences, Montana State Univ., Bozeman, MT 59717). Satellite imagery accurately identified rangeland sites that were outside the norm in productivity and exposed soil, as defined by their ecological site descriptions. This technique can help identify sites needing more management attention.

Monitoring with a modified Robel pole on meadows in the central Black Hills of South Dakota. D. W. Uresk and T. A. Benzon. 2007. *Western North American Naturalist* 67:46–50. (US Forest Service, Rocky Mountain Research Station, 1730 Samco Rd, Rapid City, SD 57702). Recommends sampling with 3 transects and 20 stations per transect when using a Robel pole to quantify standing herbage.

Plant Ecology

Common groundsel (*Senecio vulgaris*) seed longevity and seedling emergence. R. Figueroa, D. Doohan, J. Cardina, and K. Harrison. 2007. *Weed Science* 55:187–192. (K. Harrison, Dept. of Crop Science, Pontificia Univ. Catolica Chile, Vicuna Mackenna 4860, Santiago 7820436, Chile). Almost all groundsel seeds (94%) either germinated or died after 2 years of deep burial in a silt loam soil in Ohio.

Does species diversity limit productivity in natural grassland communities? J. B. Grace, T. M. Anderson, M. D. Smith, E. Seabloom, S. J. Andelman, G. Meche, E. Weiher, L. K. Allain, H. Jutila, M. Sankaran, J. Knops, M. Ritchie, and M. R. Willig. 2007. *Ecology Letters* 10:680–689. (US Geological Survey, 700 Cajundome Blvd, Lafayette, LA 70506). An analysis of 12 grassland ecosystems found that increased plant species diversity did not increase grassland productivity.

Elton's hypothesis revisited: an experimental test using cogongrass. A. R. Collins, S. Jose, P. Daneshgar, and C. L. Ramsey. 2007. *Biological Invasions* 9:433–443. (Dept. of Biology, Univ. of Vermont, Burlington, VT 05405). In loblolly pine and longleaf pine forest sites in Florida, plant species diversity did not affect the invasibility of sites by cogongrass, an exotic grass invading large areas of the southeastern United States.

Evaluation of central North American prairie management based on species diversity, life form, and individual species metrics. L. A. Brudvig, C. M. Mabry, J. R. Miller, and T. A. Walker. 2007. *Conservation Biology* 21:864–874. (Dept. of Natural Resource Ecology and Management, Iowa State Univ., Ames, IA 50011). A mosaic of burning and grazing (alone and in combination) is recommended to provide the greatest landscape-level plant species diversity in tallgrass prairie.

Soil water partitioning contributes to species coexistence in tallgrass prairie. J. B. Nippert and A. K. Knapp. 2007. *Oikos* 116:1017-1029. (Division of Biology, Kansas State Univ., Manhattan, KS 66506). In Kansas tallgrass prairie, C_3 and C_4 plants coexist by partitioning soil water. C_4 plants depend on water in shallow soil layers, whereas C_3 species only use shallow soil water when it is plentiful and use deeper soil water as the upper soil layers dry.

Vegetation responses to 35 and 55 years of native ungulate grazing in shrubsteppe. E. A. Rexroad, K. H. Beard, and A. Kulmatiski. 2007. *Western North American Naturalist* 67:16–25. (K. Beard, Dept. of Wildland Resources, Utah State Univ., Logan, UT 84322). Moderate elk densities did not affect plant biomass or cover under moderate climatic conditions; however, plant biomass and cover were reduced when grazing/browsing occurred by elk in a drier environment and by deer in a colder environment.

Rehabilitation/Restoration

Aspen in the Sierra Nevada: regional conservation of a continental species. P. C. Rogers, W. D. Shepperd, and D. L. Bartos. 2007. *Natural Areas Journal* 27:183–193. (College of Natural Resources, Utah State Univ., Logan, UT 84322). Reviews aspen ecology in the Sierra Nevada Mountains of California and recommends the reintroduction of mixed-severity wildfires to promote aspen growth.

Does the type of disturbance matter when restoring disturbance-dependent grasslands? A. S. MacDougall and R. Turkington. 2007. *Restoration Ecology* 15:263–272. (Dept. of Botany, Univ. of British Columbia, Vancouver, BC V6T 1Z4, Canada). In a degraded oak savanna in southwestern British Columbia, burning, mowing and raking, and weed control were all equally effective at suppressing exotics and increasing native plant growth because all treatments increased the availability of light for the native plants.

Effects of species richness on resident and target species components in a prairie restoration. J. K. Piper, E. S. Schmidt, and A. J. Janzen. 2007. *Restoration Ecology* 15:189–198. (Dept. of Biology, Bethel College, North Newton, KS 67117). In tallgrass prairie restoration, planting diverse seed mixtures increased the diversity and rate of establishment of desired plant communities, but there was no benefit to planting more than 8 species in a mixture.

How planting method, weed abatement, and herbivory affect afforestation success. B. W. Sweeney, S. J. Czapka, and L. C. A. Petrow. 2007. *Southern Journal of Applied Forestry* 31:85–92. (Stroud Water Research Center, 970 Spencer Rd, Avondale, PA 19311). Tree shelters effectively protected hardwood tree seedlings from deer browsing, and protecting seedlings from browsing was more important than either the method of tree planting or the method of controlling weeds.

***Nasella pulchra* survival and water relations depend more on site productivity than on small-scale disturbance.** K. Lombardo, J. S. Fehmi, K. J. Rice, and E. A. Laca. 2007. *Restoration Ecology* 15:177–178. (J. Fehmi, School of Natural Resources, Univ. of Arizona, Tucson, AZ 85721). In California annual grassland, clipping surrounding nonnative annuals did not affect the performance or survival of purple needlegrass seedlings.

Socioeconomics

Conservation easements: biodiversity protection and private use. A. R. Rissman, L. Lozier, T. Comendant, P. Kareiva, J. M. Kiesecker, M. R. Shaw, and A. M. Merenlender. 2007. *Conservation Biology* 21:709–718. (Dept. of Environmental Science, Policy, and Management, Univ. of California, Berkeley, CA 94720). Among a sample of 119 conservation easements held by The Nature Conservancy, 46% were working landscape easements that allow ranching, forestry, or farming.

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