



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

Elk alter habitat selection as an antipredator response to wolves. S. Creel, J. Winnie, B. Maxwell, K. Hamlin, and M. Creel. 2005. *Ecology* 86:3387–3397. (Department of Ecology, Montana State University, Bozeman, MT 59717). When wolves were present, elk moved into the protective cover of wooded areas and spent less time foraging in grassland habitats that had high foraging value but high predation risk.

Precipitation, density, and population dynamics of desert bighorn sheep on San Andres National Wildlife Refuge, New Mexico. L. C. Bender and M. E. Weisenberger. 2005. *Wildlife Society Bulletin* 33:956–964. (US Geological Survey, PO Box 30003, MSC 4901, Las Cruces, NM 88003). Precipitation limited the numbers of desert bighorn sheep by affecting production or survival of lambs, most likely through influences on forage quantity and quality. The carrying capacity for desert bighorn sheep on the wildlife refuge was zero when total annual precipitation was less than 11 inches.

Grazing Management

An integrated approach to crop/livestock systems: wintering beef cows on swathed crops. J. F. Karn, D. L. Tanaka, M. A. Liebig, R. E. Ries, S. L. Kronberg, and J. D. Hanson. 2005. *Renewable Agriculture and Food Systems* 20:232–242. (D. Tanaka, USDA-ARS, Northern Great Plains Research Lab, PO Box 459, Mandan, ND 58554). Winter feed costs per cow averaged 8 cents less per day when beef cows grazed swathed western wheatgrass rather than eating hay in a dry-lot.

Effects of supplementation and stocking rate on body condition and production parameters of multiparous beef cows. B. J. Renquist, J. W. Oltjen, R. D. Sainz, J. M. Connor, and C. C. Calvert. 2005. *Animal Science* 81:403–411. (J. Oltjen, Department of Animal Science, University of California, Davis, CA 95616). Calf birth weight and calving interval did not differ between moderate and heavy stocking rates, but weaning weights were lower under heavy stocking. Strategic protein supplementation based on cow body condition did not improve animal performance when compared with standard supplementation practices.

The adoption and impact of management intensive rotational grazing (MIRG) on Connecticut dairy farms. J. Foltz and G. Lang. 2005. *Renewable Agriculture and Food Systems* 20:261–266. (Department of Agricultural and Applied Economics, University of Wisconsin, Madison, WI 53706). Adopters of management intensive rotational grazing (MIRG) had higher levels of formal education than did non-adopters, but using MIRG did not decrease production costs or increase profits.

Winter feeding sites of hay in round bales as major developmental sites of *Stomoxys calcitrans* (Diptera : Muscidae) in pastures in spring and summer. A. B. Broce, J. Hogsette, and S. Paisley. 2005. *Journal of Economic Entomology* 98:2307–2312. (Department of Entomology, Kansas State University, Manhattan, KS 66506). In the past 2 decades, stable flies have become a major pest of cattle and horses on pastures in the midwestern United States. The wastage and manure that accumulate from pasture-feeding hay in round bales provide the main breeding habitat for these flies.

Hydrology/Riparian

Distribution and abundance of nonnative fishes in streams of the western United States. C. B. Schade and S. A. Bonar. 2005. *North American Journal of Fisheries Management* 25:1386–1394. (Cooperative Fish and Wildlife Research Unit, 104 Biological Sciences East, University of Arizona, Tucson, AZ 85721). Of the total western US stream length bearing fish, 18% had a physical environment that was ranked moderately or highly disturbed by humans.

Efficacy of natural grassland buffers for removal of *Cryptosporidium parvum* in rangeland runoff. E. R. Atwill, K. W. Tate, M. D. C. Pereira, J. Bartolome, and G. Nader. 2006. *Journal of Food Protection* 69:177–184. (Veterinary Medicine Teaching and Research Center, University of California, Tulare, CA 93274). Grassland buffer strips 3.6 ft or 6.9 ft wide effectively reduced the transport of *Cryptosporidium* parasites from cattle feces.

Plant-Animal Interactions

Effects of environmental salinity on vertebrate florivory and wetland communities. N. A. Geddes and S. Mopper. 2006. *Natural Areas Journal* 26:31–37. (S. Mopper, Department of Biology, University of Louisiana at Lafayette, Lafayette, LA 70504). White-tailed deer ate the flowers and immature seed capsules of coastal iris, a native perennial plant in Louisiana wetlands. In turn, the number and diversity of arthropods was reduced.

Implications of invasion by *Juniperus virginiana* on small mammals in the southern Great Plains. V. J. Horncastle, E. C. Hellgren, P. M. Mayer, A. C. Ganguli, D. M. Engle, and D. M. Leslie. 2005. *Journal of Mammalogy* 86:1144–1155. (E. Hellgren, Department of Zoology, Southern Illinois University, Carbondale, IL 62901). An increase in eastern red cedar canopy cover from 0% to 30% dramatically decreased the abundance and diversity of small mammals in tallgrass prairie.

Large herbivores influence the composition and diversity of shrub-steppe communities in the Rocky Mountains, USA. D. J. Manier and N. T. Hobbs. 2006. *Oecologia* 146:641–651. (Natural Resource Ecology Lab, Colorado

State University, Fort Collins, CO 80523). Long-term exclusion of wild and domestic ungulates from shrub-steppe in western Colorado did not affect cover or frequency of grasses, biotic crusts, or bare soil. Shrub cover was greater inside the exclosures, whereas cover and frequency of forbs was greater in the grazed areas outside the exclosures.

Life on the edge for limber pine: seed dispersal within a peripheral population. D. F. Tomback, A. W. Schoettle, K. E. Chevalier, and C. A. Jones. 2005. *Ecoscience* 12:519–529. (Department of Biology, University of Colorado, PO Box 173364, Denver, CO 80217). In mountain habitats, limber pine depends on Clark's nutcrackers for seed dispersal. In grassland habitats, deer mice and kangaroo rats are the principal seed dispersers.

Plant Ecology

Net carbon exchange and evapotranspiration in postfire and intact sagebrush communities in the Great Basin. M. R. Prater, D. Obrist, J. A. Arnone, and E. H. DeLucia. 2006. *Oecologia* 146:595–607. (E. DeLucia, Department of Plant Biology, University of Illinois, Urbana, IL 61801). Big sagebrush communities were net carbon sinks, and net carbon exchange in a crested wheatgrass-needleandthread community did not differ from intact big sagebrush communities. However, annual plant communities dominated by cheatgrass and mustard were net sources of carbon to the atmosphere.

When landscaping goes bad: the incipient invasion of *Mahonia bealei* in the southeastern United States. C. R. Allen, A. S. Garmestani, J. A. LaBram, A. E. Peck, and L. B. Prevost. 2006. *Biological Invasions* 8:169–176. (Cooperative Fish and Wildlife Research Unit, Clemson University, Clemson, SC 29634). Beale's barberry, a clonal shrub native to China and a popular ornamental in the southeastern United States, needs to be recognized as an aggressive invader that may negatively impact native plants and animals.

Seed weight variation of Wyoming sagebrush in northern Nevada. C. A. Busso and B. L. Perryman. 2005. *Biocell* 29:279–285. (B. Perryman, Department of Animal Biotechnology, University of Nevada, Reno, NV 89557). The weight of big sagebrush seeds depends upon the amount of precipitation that the mother plant receives during the growing season. Increased precipitation enables big sagebrush to produce heavier seeds, irrespective of air temperatures during the growing season.

The biology and agronomy of switchgrass for biofuels. D. J. Parrish and J. H. Fike. 2005. *Critical Reviews in Plant Sciences* 24:423–459. (241 Smyth Hall, Virginia Tech University, Blacksburg, VA 24061). Summarizes best management practices for planting and harvesting switchgrass for biofuel production.

Rehabilitation/Restoration

Canada thistle biological control agents on two South Dakota wildlife refuges. C. C. Reed, D. L. Larson, and J. L. Larson. 2006. *Natural Areas Journal* 26:47–52. (508 Wisconsin Street, San Francisco, CA 94107). The biological control agent *Ceutorhynchus litura* did not reduce flowering, stem length, or stem numbers of the target plant, Canada thistle, in southern South Dakota.

Forb response to herbicides in a degraded tallgrass prairie. S. J. Tunnell, J. Stubbendieck, S. Palazzolo, and R. A. Masters. 2006. *Natural Areas Journal* 26:72–77. (Department of Agronomy and Horticulture, University of Nebraska, Lincoln, NE 68583). Wick-applied herbicides to suppress smooth sumac were less detrimental to forbs than was broadcast spraying.

Ponderosa pine restoration and turkey roost site use in northern Arizona. S. L. Martin, T. C. Theimer, and P. Z. Fule. 2005. *Wildlife Society Bulletin* 33:859–864. (Department of Biological Science, Northern Arizona University, Flagstaff, AZ 86011). Thinning and prescribed burning to restore ponderosa pine stands did not affect use of roost sites by wild turkeys.

Socioeconomics

Extension's role in conflict resolution and consumer education. M. M. Schutz and J. S. Ayres. 2005. *Journal of Applied Poultry Research* 14:406–413. (Department of Animal Science, Purdue University, West Lafayette, IN 47907). When addressing societal conflicts involving animal agriculture, Extension educators need to provide science-based alternatives before conflicts spiral out of control. All Extension educators need to be aware of the skills needed for

dispute resolution and conflict management, but not all Extension educators need to be skilled facilitators.

Income earning potential versus consumptive amenities in determining ranchland values. L. A. Torell, N. R. Rimbey, O. A. Ramirez, and D. W. McCollum. 2005. *Journal of Agricultural and Resource Economics* 30:537–560. (Department of Agricultural Economics and Agricultural Business, New Mexico State University, Las Cruces, NM 88003). In New Mexico, the location and scenic view of a ranch has more influence on ranch value than does its annual income-earning potential.

Soils

Mycorrhizal diversity: cause and effect? G. Kernaghan. 2005. *Pedobiologia* 49:511–520. (Department of Biology, Laval University, Sainte Foy, PQ G1K 7P4, Canada). Reviews recent literature about the role of mycorrhizal fungi in nutrient cycling and ecosystem function in grasslands and forests.

Plant invasion of native grassland on serpentine soils has no major effects upon selected physical and biological properties. K. M. Batten, J. Six, K. M. Scow, and M. C. Rillig. 2005. *Soil Biology and Biochemistry* 37:2277–2282. (The American Institute of Biological Sciences, 1444 I St NW, Suite 200, Washington, DC 20005). Invasion by goatgrass or yellow starthistle into grasslands did not appreciably alter soil aggregate stability.

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