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

Habitat associations and population trends of two hawks in an urbanizing grassland region in Colorado. E. Schmidt and C. E. Bock. 2005. *Landscape Ecology* 20:469–478. (C. Bock, Dept. of Ecology and Evolutionary Biology, Univ. of Colorado, Boulder, CO 80309). Numbers of rough-legged hawks declined dramatically while red-tailed hawk numbers increased dramatically as exurban development altered a treeless grassland during the past 30 years.

Grazing Management

Candidate cool-season legumes for filling forage deficit periods in the southern Great Plains. S. C. Rao, B. K. Northup, and H. S. Mayeux. 2005. *Crop Science* 45:2068–2074. (USDA-ARS, Grazinglands Research Lab, 7207 W. Cheyenne St., El Reno, OK 73036). Grasspea outperformed lentil and reached its maximum yield 75 days after seeding. Grasspea can provide nutritional forage during late spring in the southern Great Plains.

Cumulative forage production, forage quality and livestock performance from an annual ryegrass and cereal rye mixture in a pine walnut silvopasture. R. L. Kallenbach, M. S. Kerley, and G. J. Bishop-Hurley. 2006. *Agroforestry Systems* 66:43–53. (Plant Science Unit, Univ. of Missouri, Columbia, MO 65211). “Beef producers using a annual ryegrass/cereal rye in a silvopasture system likely would not sacrifice livestock production when hybrid pine and black walnut trees are 6- to 7-year-old when compared to an open pasture.”

Fatty acid and sensory characteristics of beef from three biological types of cattle grazing cool-season forages supplemented with soyhulls. R. T. Baublits, A. H. Brown, F. W. Pohlman, D. C. Rule, Z. B. Johnson, D. O. Onks, C. M. Murrieta, C. J. Richards, H. D. Loveday, B. A. Sandelin, and R. B. Pugh. 2006. *Meat Science* 72:100–107. (Dept. of Animal Science, Univ. of Arkansas, Fayetteville, AR 72701). Supplementation with soyhulls did not affect tenderness of beef from grass-fed cattle, but supplementation did reduce the grassy flavor.

Grazing evaluation of big bluestems bred for improved forage yield and digestibility. R. B. Mitchell, K. P. Vogel, T. J. Klopfenstein, B. E. Anderson, and R. A. Masters. 2005. *Crop Science* 45:2288–2292. (USDA-ARS, PO Box 830937, Lincoln, NE 68583). “Bonanza” big bluestem provided greater steer production than “Goldmine,” and both cultivars outperformed “Pawnee” and “Kaw” in a 3-year grazing trial.

How do the nature of forages and pasture diversity influence the sensory quality of dairy livestock products? B. Martin, I. Verdier-Metz, S. Buchin, C. Hurtaud, and J. B. Coulon.

2005. *Animal Science* 81:205–212. (INRA, Unite Rech Herbivores, F-63122 St Genes Champanelle, France). Recent experiments have shown that the botanical composition of grass diets consumed by dairy cattle affects cheese texture and flavor.

Non-destructive assessment of cattle forage selection: A test of skim grazing in fescue grassland. D. M. Moisey, E. W. Bork, and W. D. Willms. 2005. *Applied Animal Behaviour Science* 94:205–222. (E. Bork, Dept. of Agriculture, Food and Nutrition Science, Univ. of Alberta, Edmonton, AB T6G 2P5, Canada). A light defoliation in spring followed by a late-summer to dormant-season grazing period may harm rough fescue, but fall grazing alone appears sustainable.

The potential role of sheep in dryland grain production systems. H. B. Goosey, P. G. Hatfield, A. W. Lenssen, S. L. Blodgett, and R. W. Kott. 2005. *Agriculture Ecosystems & Environment* 111:349–353. (Dept. of Animal and Range Sciences, Montana State Univ., Bozeman, MT 59717). Grazing fallow cropland with sheep and goats suppressed weeds and wheat stem sawfly populations, an insect pest that decreases grain production. Weed and insect control occurred without increased soil compaction.

Hydrology/Riparian

Moist-soil plant seed production for waterfowl at Chautauqua National Wildlife Refuge, Illinois. M. W. Bowyer, J. D. Stafford, A. P. Yetter, C. S. Hine, M. M. Horath, and S. P. Havera. 2005. *American Midland Naturalist* 154:331–341. (J. Stafford, Illinois Natural History Survey, Forbes Biological Station, PO Box 590, Havana, IL 62644). Carrying capacity of migratory waterfowl was estimated to be 2.7 duck use-days per acre on moist-soil wetlands in central Illinois.

Plant diversity in riparian forests in northwest Colorado: Effects of time and river regulation. A. L. Uowolo, D. Binkley, and E. C. Adair. 2005. *Forest Ecology and Management* 218:107–114. (Dept. of Forest, Rangeland and Watershed Stewardship, Colorado State Univ., Fort Collins, CO 80523). On two rivers in northwestern Colorado, one with flow regulated by diversions and dams and one with unregulated flow, plant species richness in cottonwood riparian forests declined similarly, declining by more than 50% from young stands (<20 years old) to old stands (>250 years old).

Responses of black willow (*Salix nigra*) cuttings to simulated herbivory and flooding. S. W. Li, L. T. Martin, S. R. Pezeshki, and F. D. Shields. 2005. *Acta Oecologica—International Journal of Ecology* 28:173–180. (Dept. of Biology, Univ. of Memphis, Memphis, TN 38152). In floodplains and riparian zones of the southeastern United States, black willow appears tolerant of heavy browsing.

Measurements

Principles of obtaining and interpreting utilization data on Southwest rangelands. L. Smith, G. Ruyle, J. Maynard, S. Barker, W. Meyer, D. Stewart, B. Coulloudon, S. Williams, and J. Dyess. 2005. Univ. of Arizona Cooperative Extension Publication AZ1375. (Publications, College of Agriculture and Life Sciences, Univ. of Arizona, Tucson, AZ 85721). Discusses how percentage utilization data should be used when managing livestock grazing on upland rangelands.

Rangeland field data techniques and data applications. K. E. Spaeth, G. L. Peacock, J. E. Herrick, P. Shaver, and R. Dayton. 2005. *Journal of Soil and Water Conservation* 60:114A–119A. (USDA-NRCS, PO Box 6567, Fort Worth, TX 76115). Describes recent changes in methodologies used by the USDA Natural Resources Conservation Service to complete natural resource inventories on privately owned rangelands.

Plant/Animal Interactions

Dispersal of leafy spurge (*Euphorbia esula* L.) seeds in the feces of wildlife. E. J. Wald, S. L. Kronberg, G. E. Larson, and W. C. Johnson. 2005. *American Midland Naturalist* 154:342–357. (Dept. of Renewable Resources, Univ. of Wyoming, Laramie, WY 82071). Wild turkeys probably do not disperse leafy spurge seed, whereas sharp-tailed grouse, white-tailed deer, and mule deer may do so on a limited basis.

Plant Ecology

Changes in woodland cover on prairie refuges in North Dakota, USA. T. A. Grant and R. K. Murphy. 2005. *Natural Areas Journal* 25:359–368. (U.S. Fish and Wildlife Service, 681 Salyer Rd., Upham, ND 58789). Provides evidence that deciduous woodlands have expanded significantly into National Wildlife Refuge prairie grasslands during the past 100 years.

Elevated CO₂ and defoliation effects on a shortgrass steppe: Forage quality versus quantity for ruminants. D. G. Milchunas, A. R. Mosier, J. A. Morgan, D. R. LeCain, J. Y. King, and J. A. Nelson. 2005. *Agriculture Ecosystems & Environment* 111:166–184. (Dept. of Forest, Rangeland and Watershed Stewardship, Colorado State Univ., Fort Collins, CO 80523). Elevated amounts of atmospheric carbon dioxide decreased crude protein concentration and digestibility of the forage. Defoliation increased the amount of protein and energy in the forage compared with nondefoliated plants regardless of atmospheric carbon dioxide concentrations.

Invasive plants of range and wildlands and their environmental, economic, and societal impacts. C. L. Duncan and J. K. Clark (eds.). 2005. (\$20; Weed Science Society of America, 810 E. 10th St., Lawrence, KS 66044-8897). This 222-page book summarizes scientific literature regarding the

economic, environmental, and societal losses caused by 16 major invasive plants on US rangelands.

Land management history and floristics in mixed-grass prairie, North Dakota, USA. R. K. Murphy and T. A. Grant. 2005. *Natural Areas Journal* 25:351–358. (U.S. Fish and Wildlife Service, PO Box 578, Kenmare, ND 58746). Native plant species occur more commonly on private lands grazed by cattle than on adjacent National Wildlife Refuge lands that have been excluded from livestock grazing for the past 70 years.

Multi-scale impacts of crested wheatgrass invasion in mixed-grass prairie. D. C. Henderson and M. A. Naeth. 2005. *Biological Invasions* 7:639–650. (Dept. of Renewable Resources, Univ. of Alberta, Edmonton, AB T6G 2H1, Canada). Plant diversity was lower where crested wheatgrass had invaded northern Great Plains grasslands, but vegetation and litter biomass were greater. In the soil, amounts of organic matter, carbon, total nitrogen, and total phosphorus did not differ.

Rehabilitation/Restoration

Establishing *Artemisia tridentata* ssp. *wyomingensis* on mined lands: Science and economics. G. E. Schuman, L. E. Vicklund, and S. E. Belden. 2005. *Arid Land Research and Management* 19:353–362. (USDA-ARS, High Plains Grasslands Research Station, 8408 Hildreth Rd., Cheyenne, WY 82009). “Our research has shown that reducing grass seeding rates will reduce competition and result in larger sagebrush plants that are more likely to survive and provide greater structural diversity to the plant community.”

Managing native invasive juniper species using fire. R. J. Ansley and G. A. Rasmussen. 2005. *Weed Technology* 19:517–522. (Texas Agricultural Experiment Station, 11708 Highway 70 South, Vernon, TX 76384). Discusses rates of juniper encroachment relative to presettlement fire regimes and the effects of using prescribed fire to treat these rangelands.

Medusahead control with fall- and spring-applied herbicides on northern Utah foothills. T. A. Monaco, T. M. Osmond, and S. A. Dewey. 2005. *Weed Technology* 19:653–658. (USDA-ARS, Forage and Range Research Lab, 690 North 1100 East, Logan, UT 84322). Potential exists to use sulfometuron or imazapic herbicides to suppress medusahead, an aggressive, nonnative, winter annual grass.

Seed germination and viability of Wyoming sagebrush in northern Nevada. C. A. Busso, M. Mazzola, and B. L. Perryman. 2005. *Interciencia* 30:631–637. (Dept. of Agronomy, Univ. Nacional Sur, CERZOS, RA-8000 Bahia Blanca, Buenos Aires, Argentina). When Wyoming big sagebrush is used for restoration, relatively heavy seeds should be used because they have the greatest germination potential.

Socioeconomics

Attitudes of rural landowners toward wolves in northwestern Minnesota. A. S. Chavez, E. M. Gese, and R. S. Krannich. 2005. *Wildlife Society Bulletin* 33:517–527. (US Fish and Wildlife Service, 6010 Hidden Valley Rd., Carlsbad, CA 92009). Rural residents both within and outside of areas inhabited by wolves had negative attitudes toward wolves.

Mentoring guidelines for wildlife professionals. K. M. S. Wells, M. R. Ryan, H. Campa, and K. A. Smith. 2005. *Wildlife Society Bulletin* 33:565–573. (Missouri Dept. of Conservation, 1110 South College Ave., Columbia, MO 65201). Provides guidelines for successful mentoring relationships between senior and early-career professionals, including strategies for successful matching and managing the mentoring process.

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