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*.

Animal Ecology

Habitat use patterns of sympatric deer species on Rocky Mountain Arsenal, Colorado. D. G. Whittaker and F. G. Lindzey. 2004. *Wildlife Society Bulletin* 32:1114–1123. (Oregon Department of Fish and Wildlife, 3406 Cherry Ave NE, Salem, OR 97303). Although spatial overlap and dietary overlap were high between mule deer and white-tailed deer, seasonal differences in habitat use patterns resulted in spatial segregation, thereby allowing the 2 species to coexist.

The effect of a condensed tannin-containing forage on methane emission by goats. R. Puchala, B. R. Min, A. L. Goetsch, and T. Sahl. 2005. *Journal of Animal Science* 83:182–186. (Langston University, PO Box 730, Langston, OK 73050). Methane emission by Angora goats declined when fed forage (*sericea lespedeza*) that contained condensed tannins.

The influence of mountain lion predation on bighorn sheep translocations. E. M. Rominger, H. A. Whitlaw, D. L. Weybright, W. C. Dunn, and W. B. Ballard. 2004. *Journal of Wildlife Management* 68:993–999. (Department of Range, Wildlife, and Fisheries Management, Texas Tech University, Lubbock, TX 79409). Predation of domestic cattle and conifer encroachment may contribute to high levels of mountain lion predation on bighorn sheep in New Mexico.

Grazing Management

Desert grassland canopy arthropod species richness: temporal patterns and effects of intense, short-duration livestock grazing. G. S. Forbes, J. W. Van Zee, W. Smith, and W. G. Whitford. 2005. *Journal of Arid Environments* 60:627–646. (W. Whitford, USDA-ARS, Jornada Experimental Range, Box 30003, Las Cruces, NM 88003). Short-duration grazing by cattle in late summer reduced insect species richness in the grass–herb vegetation layer but had no effect on species richness of insects living in the canopies of broom snakeweed or mesquite. Cattle grazing in winter had no effect on insect species richness.

Heterogeneous response to preventive sheep husbandry during wolf recolonization of the French Alps. N. Espuno, B. Lequette, M. L. Poulle, P. Migot, and J.D. Lebreton. 2004. *Wildlife Society Bulletin* 32:1195–1208. (CNRS, Centre of Ecological Function and Evolution, 1919 Route Mende, F-34293 Montpellier, France). Confining sheep at night in the presence of several livestock-guarding dogs can prevent most wolf depredations. The efficiency of each of these techniques is drastically reduced when they are not used jointly.

Management of goats for controlling noxious weeds: a primer. S. Williams and B. Jensen. 2004. University of Idaho Extension and Idaho Agricultural Experiment Station CIS 1121. (\$2; Extension Publications, University of Idaho, Moscow, ID 83844). Provides helpful tips when considering a prescribed goat grazing program for controlling noxious weeds.

Hydrology/Riparian

Do woody plants affect streamflow on semiarid karst rangelands? B. P. Wilcox, M. K. Owens, R. W. Knight, and R. K. Lyons. 2005. *Ecological Applications* 15:127–136. (Department of Rangeland Ecology and Management, Texas A&M University, College Station, TX 77843). Changes in woody plant cover had little influence on streamflow in Ashe juniper watersheds of the Texas Hill Country.

Hydrologic exchange and N uptake by riparian vegetation in an arid-land stream. J. D. Schade, J. R. Welter, E. Marti, and N. B. Grimm. 2005. *Journal of the North American Benthological Society* 24:19–28. (Department of Integrative Biology, University of California, Berkeley, CA 94720). Results from a Sonoran Desert stream suggest that riparian vegetation may uptake a significant amount of streamwater nitrogen.

Interaction of beaver and elk herbivory reduces standing crop of willow. B. W. Baker, H. C. Ducharme, D. C. S. Mitchell, T. R. Stanley, and H. R. Peinetti. 2005. *Ecological Applications* 15:110–118. (US Geological Survey, 2150 Center Ave, Bldg. C, Fort Collins, CO 80526). Willows recovered rapidly from simulated beaver cutting alone, but willows were harmed when simulated beaver cutting was combined with elk browsing.

Streambank erosion associated with grazing practices in the humid region. C. T. Agouridis, D. R. Edwards, S. R. Workman, J. R. Bicudo, B. K. Kostra, E. S. Vanzant, and J. L. Taraba. 2005. *Transactions of the American Society of Agricultural Engineers* 48:181–190. (Department of Biosystems and Agricultural Engineering, University of Kentucky, Lexington, KY 40546). In central Kentucky, authors concluded that riparian recovery from cattle grazing impacts may require decades of cattle exclusion.

Winter site fidelity and body condition of three riparian songbird species following a fire. I. A. Samuels, T. Gardali, D. L. Humple, and G. R. Geupel. 2005. *Western North American Naturalist* 65:45–52. (282 31st Ave, San Francisco, CA 94121). Wintering songbirds (fox sparrow, hermit thrush, and ruby-crowned kinglet) were largely unaffected by wildfire in a coastal California riparian site.

Plant Ecology

An ecosystem in transition: causes and consequences of the conversion of mesic grassland to shrubland. J. M.

Briggs, A. K. Knapp, J. M. Blair, J. L. Heisler, G. A. Hoch, M. S. Lett, and J. K. McCarron. 2005. *BioScience* 55:243–254. (School of Life Sciences, Arizona State University, Tempe, AZ 85287). Without mechanical removal of shrubs, it is unlikely that management of fire and grazing regimes alone will be sufficient to restore grass dominance to former tallgrass prairie that now supports savanna-like vegetation codominated by grasses and woody plants.

Effects of elk herbivory on vegetation and nitrogen processes. K. A. Schoenecker, F. J. Singer, L. C. Zeigenfuss, D. Binkley, and R. S. C. Menezes. 2004. *Journal of Wildlife Management* 68:837–849. (US Geological Survey, 2150 Center Ave, Bldg. C, Fort Collins, CO 80523). Height, canopy cover, litter, and nitrogen yield of willows were reduced by winter elk browsing in Rocky Mountain National Park, Colorado.

Effects of grazing exclusion on rangeland vegetation and soils, East Central Idaho. J. J. Yeo. 2005. *Western North American Naturalist* 65:91–102. (The Nature Conservancy, 116 1st Ave North, Hailey, ID 83333). On sagebrush steppe and shadscale rangelands, bluebunch wheatgrass had greater basal cover inside exclosures on 4 of 10 sites; Sandberg bluegrass had greater basal cover outside exclosures on 5 of 15 sites; and overall, species richness did not differ between inside and outside of exclosures.

Effects of long-term cattle exclosure on vegetation and rodents at a desertified arid grassland site. T. J. Valone and P. Sauter. 2005. *Journal of Arid Environments* 61:161–170. (Department of Biology, St Louis University, 3507 Laclede Ave, St Louis, MO 63103). Four decades of cattle exclosure resulted in greater basal cover of perennial grasses and higher abundance and diversity of pocket mice.

In search of allelopathy: an eco-historical view of the investigation of chemical inhibition in California coastal sage scrub and chamise chaparral. R. W. Halsey. 2004. *Journal of the Torrey Botanical Society* 131:343–367. (Southern California Chaparral Field Institute, PO Box 545, Escondido, CA 92033). “Allelopathy remains a controversial topic today despite hundreds of investigations because of the difficulty in isolating all the possible variables affecting plant growth.”

Shrub-steppe vegetation of the East Fork and the Middle Fork of the Salmon River Drainages. J. M. Peek, J. J. Yeo, W. O. Hickey, J. L. Lauer, and J. C. Claar. 2005. University of Idaho Forest, Wildlife and Range Experiment Station Bulletin 82. (\$10; Publications, University of Idaho, PO Box 442240, Moscow, ID 83844-2240). Based on research data and field experience from 1970–2003, the authors present a classification of 19 shrub-steppe plant communities in central Idaho’s mountain-canyon rangelands.

Using transplanted plains rough fescue (*Festuca hallii* [Vasey] piper) as an indicator of grazing in Elk Island National Park, Canada. J. N. Best and E. W. Bork. 2003. *Natural Areas Journal* 23:202–209. (E. Bork, Department of Agriculture, Food and Nutrition Science, University of Alberta, Edmonton, AB T6G 2P5, Canada). Intensive year-long grazing by native ungulates reduced the height and basal area of rough fescue plants. Grazed plants had 15% greater mortality than ungrazed plants.

Wildfire effects and post-fire responses of an invasive mesquite population: the interactive importance of grazing and non-native herbaceous species invasion. J. A. Kupfer and J. D. Miller. 2005. *Journal of Biogeography* 32:453–466. (Department of Geography and Regional Development, University of Arizona, Harvill Building, Tucson, AZ 85721). Cattle grazing before a wildfire reduced damage to velvet mesquite trees in semidesert grassland of southern Arizona.

Rehabilitation/Restoration

Aboveground biomass removal by burning and raking increases diversity in a reconstructed prairie. D. Tix and I. Charvat. 2005. *Restoration Ecology* 13:20–28. (I. Charvat, Department of Plant Biology, University of Minnesota, 1445 Gortner Ave, St Paul, MN 55108). In reconstructed tallgrass prairie in Minnesota, “. . . raking after mowing in the spring provides an alternative to prescribed burning that has many of the same positive aspects as fire but does not promote aggressive C-4 grasses to the same extent.”

Effects of timing of prescribed fire on the demography of an invasive plant, spotted knapweed *Centaurea maculosa*. S. M. Emery and K. L. Gross. 2005. *Journal of Applied Ecology* 42:60–69. (W. K. Kellogg Biological Station, Michigan State University, Hickory Corners, MI 49060). Annual sum-

mer burns in a Michigan prairie reduced population growth of spotted knapweed by reducing reproduction.

Soil biological and chemical properties in restored perennial grassland in California. M. Potthoff, L. E. Jackson, K. L. Steenwerth, I. Ramirez, M. R. Stromberg, and D. E. Rolston. 2005. *Restoration Ecology* 13:61–73. (Institute of Soil Science and Forest Nutrition, University of Goettingen, Busgenweg 2, D-37077 Goettingen, Germany). Four years after tillage and planting perennial grasses into California annual grassland, soil microbial biomass and activity had recovered to pre-tillage levels.

Supplemental risk evaluations and status of *Puccinia car-duorum* for biological control of musk thistle. W. L. Bruckart. 2005. *Biological Control* 32:348–355. (USDA-ARS, 1301 Ditto Ave, Fort Detrick, MD 21702). Results confirm that the use of *Puccinia carduorum* (an introduced, pathogenic rust) for biological control of musk thistle should not harm rare, threatened, or endangered *Cirsium* species or modern artichoke cultivars.

Soils

Multi-decadal impacts of grazing on soil physical and biogeochemical properties in southeast Utah. J. C. Neff, R. L. Reynolds, J. Belnap, and P. Lamothe. 2005. *Ecological Applications* 15:87–95. (US Geological Survey, Denver Federal Center, Denver, CO 80225). Livestock grazing from the late 1800s to 1974 decreased soil fertility by making the soil surface more susceptible to wind erosion.

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