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

Changes in rodent community structure in the Chihuahuan Desert, Mexico: Comparisons between two habitats. L. Hernandez, A. G. Romero, J. W. Laundre, D. Lightfoot, E. Aragon, and J. L. Portillo. 2005. *Journal of Arid Environments* 60:239–257. (Institute de Ecologia, Centro Regional Chihuahua, Km 33-3 carr Chihuahua-ojinaga, 32900 Aldama, Chihuahua, Mexico). Rodent diversity was equal between a tobosagrass site and a mesquite–creosote bush–prickly pear site, but rodent density was greater in the shrub site.

Differences in social behaviour between late pregnant, postpartum and barren mares in a herd of Icelandic horses. M. C. van Dierendonck, H. Sigurjonsdottir, B. Colenbrander, and A. G. Thorhallsdottir. 2004. *Applied Animal Behaviour Science* 89:283–297. (Dept. of Animal Science and Society, Utrecht Univ., Postbox 80168, 3508 TD Utrecht, The Netherlands). Social rank was correlated strongly with age. The dominant horses were older mares that had not yet lost physical condition due to old age. Also, horses selected grooming partners based on familiarity more so than kinship, and without influence from social rank.

Grassland vegetation and bird communities in the Southern Great Plains of North America. R. N. Chapman, D. M. Engle, R. E. Masters, and D. M. Leslie. 2004. *Agriculture Ecosystems and Environment* 104:577–585. (D. Engle, Dept. of Plant and Soil Sci., Oklahoma State Univ., Stillwater, OK 74078). Although grassland seeded to Old World bluestem had less plant species diversity than native mixed-grass prairie, breeding grassland birds did not preferentially select native prairie over the seeded grasslands.

Nesting biology of three grassland passerines in the northern tallgrass prairie. M. Winter, D. H. Johnson, J. A. Shaffer, and W. D. Svedarsky. 2004. *Wilson Bulletin* 116:211–223. (SUNY College of Environmental Sci. and Forestry, 1 Forestry Dr., Syracuse, NY 13210). The main cause of nest failure was nest predation, with nest predation averaging 48% for clay-colored sparrows, 42% for bobolinks, and 34% for Savannah sparrows.

Tree and shrub invasion in northern mixed-grass prairie: Implications for breeding grassland birds. T. A. Grant, E. Madden, and G. B. Berkey. 2004. *Wildlife Society Bulletin* 32:807–818. (US Fish and Wildlife Service, 681 Salyer Rd., Upham, ND 58789). As tree or shrub cover increased on grasslands in north-central North Dakota, fewer birds were present. Bird use declined more and more as the height of woody plants increased from low brush to tall shrubs to trees.

Variation in grasshopper (Acrididae) densities in response to fire frequency and bison grazing in tallgrass prairie. A. Joern. 2004. *Environmental Entomology* 33:1617–1625. (School of Biological Sci., Univ. of Nebraska, Lincoln, NE 68588). Individual grasshopper species had varied responses to fire frequency and bison grazing in the Flint Hills of Kansas. Bison grazing increased the density of 7 species, fire frequency affected 2 species, and 1 species was unaffected by either fire or grazing.

Grazing Management

Designing better water troughs: Dairy cows prefer and drink more from larger troughs. L. C. P. Machado, D. L. Teixeira, D. M. Weary, M. A. G. von Keyserlingk, and M. J. Hotzel. 2004. *Applied Animal Behaviour Science* 89:185–193. (Depto. de Zootecnia e Des Rural, Universidade Federal de Santa Catarina, Rod. Admar Gonzaga 1346, Florianopolis, SC 88.034-001, Brazil). Cows preferred a taller water trough (24 inches vs 12 inches) and they preferred a water trough that was larger in size (55 × 37 inches vs 50 × 27 inches).

Hydrology/Riparian

Livestock exclusion and belowground ecosystem responses in riparian meadows of eastern Oregon. J. B. Kauffman, A. S. Thorpe, and E. N. J. Brookshire. 2004. *Ecological Applications* 14:1671–1679. (Institute of Pacific Island Forestry, 1151 Punchbowl St., Room 323, Honolulu, HI 96813). Livestock exclusion for 9–18 years increased belowground plant biomass, lowered soil bulk density, and increased infiltration rates in riparian meadows.

Plant Ecology

Influence of habitat fragmentation and crop system on Columbia Basin shrubsteppe communities. M. A. Quinn. 2004. *Ecological Applications* 14:1634–1655. (Dept. of Crop & Soil Sci., Washington State Univ., Pullman, WA 99164). Shrub steppe sites located near annual croplands supported fewer grasshoppers, beetles, and butterflies than shrub steppe communities that were near fields of perennial crops.

Slow recovery in desert perennial vegetation following prolonged human disturbance. Q. F. Guo. 2004. *Journal of Vegetation Science* 15:757–762. (Desert Lab, Univ. of Arizona, Tucson, AZ 85721). Following several decades of excessive livestock grazing, about 50 years of livestock exclusion were required before plant diversity, density, and cover stabilized in the Sonoran Desert of southern Arizona.

Variable effects of feral pig disturbances on native and exotic plants in a California grassland. J. H. Cushman, T. A. Tierney, and J. M. Hinds. 2004. *Ecological Applications* 14:1746–1756. (Dept. of Biology, Sonoma State Univ., Rohnert Park, CA 94928). Soil disturbances by feral pigs “generally promoted the continued invasion of this coastal grassland by exotic plant taxa.”

Reclamation/Restoration

Community- and ecosystem-level changes in a species-rich tallgrass prairie restoration. P. Camill, M. J. McKone, S. T. Sturges, W. J. Severud, E. Ellis, J. Limmer, C. B. Martin, R. T. Navratil, A. J. Purdie, B. S. Sandel, S. Talukder, and A. Trout. 2004. *Ecological Applications* 14:1680–1694. (Dept. of Biology, Carleton College, 1 North College St., Northfield, MN 55057). Only 3 years were required before warm-season perennial grasses became dominant within restored tallgrass prairie in southern Minnesota.

Effects of soil carbon amendment on nitrogen availability and plant growth in an experimental tallgrass prairie restoration. J. M. Averett, R. A. Klips, L. E. Nave, S. D. Frey, and P. S. Curtis. 2004. *Restoration Ecology* 12:568–574. (R. Klips, Dept. of Ecology, Evolutionary and Organismal Biology, Ohio State University, Columbus, OH 43210). Application of a soil carbon amendment (hardwood sawdust) provides several immediate benefits for tallgrass prairie restoration by decreasing the competitiveness of exotic plants.

Endangered cactus restoration: Mitigating the non-target effects of a biological control agent (*Cactoblastis cactorum*) in Florida. P. Stiling, D. Moon, and D. Gordon. 2004. *Restoration Ecology* 12:605–610. (Dept. of Biology, Univ. of South Florida, Tampa, FL 33620). The moth *Cactoblastis cactorum* is a biological weed control insect from Australia that has recently invaded the United States and threatens native cacti. Authors predict that many cactus species in the US South, Southwest, and Mexico are threatened by this moth.

Living with fire: Homeowner assessment of landscape values and defensible space in Minnesota and Florida, USA. K. C. Nelson, M. C. Monroe, J. F. Johnson, and A. Bowers. 2004. *International Journal of Wildland Fire* 13:413–425. (Dept. of Forest Resources, Univ. of Minnesota, 115 Green Hall, 1530 Cleveland Ave. North, St. Paul, MN 55108). Most homeowners in wildfire-prone areas supported the use of prescribed burns to reduce wildfire risks, especially if the prescribed burns were conducted by fire experts who understand the local ecology and fire behavior.

Restoration efforts for plant and bird communities in tallgrass prairies using prescribed burning and mowing. F. Van Dyke, S. E. Van Kley, C. E. Page, and J. G. Van Beek. 2004. *Restoration Ecology* 12:575–585. (Dept. of Biology, Wheaton College, 501 College Ave., Wheaton, IL 60187). Plant species diversity was unaffected by mowing or burning tallgrass prairie in Iowa, but mowing and burning did retard shrub encroachment.

Switchgrass and big bluestem hay, biomass, and seed yield response to fire and glyphosate treatment. M. A.

Sanderson, R. R. Schnabel, W. S. Curran, W. L. Stout, D. Genito, and B. F. Tracy. 2004. *Agronomy Journal* 96:1688–1692. (USDA-ARS, Bldg. 3802, Curtin Road, University Park, PA 16802). In central Pennsylvania, plant yield of switchgrass or big bluestem will be unaffected if burned before plants exceed 4 to 6 inches of new growth. In most cases, glyphosate herbicide should be applied just before green-up in spring.

Using ecological restoration to constrain biological invasion. J. D. Bakker and S. D. Wilson. 2004. *Journal of Applied Ecology* 41:1058–1064. (Ecological Restoration Institute, Northern Arizona Univ., PO Box 15017, Flagstaff, AZ 86011). Results suggest that a plant community's resistance to invasive plants depends on which species are present in the plant community. Therefore, potential exists for restoration seed mixes to be tailored to constrain selected invaders.

White-tailed deer forage production in managed and unmanaged pine stands and summer food plots in Mississippi. S. L. Edwards, S. Demarais, B. Watkins, and B. K. Strickland. 2004. *Wildlife Society Bulletin* 32:739–745. (Dept. of Wildlife and Fisheries, Mississippi State Univ., Box 9690, Mississippi State, MS 39762). In loblolly pine forests of north-central Mississippi, herbicide, prescribed fire, and fertilizer treatments were more cost-effective ways to improve forage production for whitetails than planting food plots of cowpeas.

Socioeconomics

Current issues in rangeland resource economics—2004. L. A. Torell, N. R. Rimbey, and L. Harris. 2004. Utah Agricultural Experiment Station Report 190. (available at <http://www.agx.usu.edu/reports/2004/SRM>). This report is the proceedings of a symposium held at the 2004 annual meeting of SRM in Salt Lake City, Utah. Papers discuss some of the socioeconomic impacts resulting from ongoing changes in rangeland ownership patterns and population demographics of the western United States.

Flying blind: The rise, fall, and possible resurrection of science policy advice in the United States. H. Kelly, I. Oelrich, S. Aftergood, and B. H. Tannenbaum. 2004. Federation of American Scientists Occasional Paper No. 2. 107 p. (\$15; Federation of American Scientists, 1717 K St. Northwest, Suite 209, Washington, DC 20036). Authors contend that the infrastructure for providing science advice to Congress and the Executive Branch is in a state of crisis. In response, the authors provide Congress and the Executive Branch with detailed recommendations for ways that scientists can provide expert advice when policy decisions hinge on complex technical issues.

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THE STARKEY PROJECT:

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