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

A review of disease related conflicts between domestic sheep and goats and bighorn sheep. T. J. Schommer and M. M. Woolever. 2008. US Forest Service Rocky Mountain Research Station General Technical Report RMRS-GTR-209. (Publications Distribution, Rocky Mountain Research Station, 240 W Prospect Rd, Fort Collins, CO 80526, USA). Recommends that bighorn sheep should not simultaneously occupy the same habitat as domestic sheep or goats.

Distribution and interaction of white-tailed deer and cattle in a semiarid grazing system. S. M. Cooper, H. L. Perotto-Baldivieso, M. K. Owens, M. G. Meek, and M. Figueroa-Pagan. 2008. *Agriculture Ecosystems and Environment* 127:85–92. (Texas AgriLife Research, 1619 Garner Field Rd, Uvalde, TX 78801, USA). Cattle did not displace whitetails into marginal habitat, and whitetails did not over utilize vegetation near supplemental feeding sites (i.e., deer feeders).

Topographic patterns of nest placement and habitat quality for grassland birds in tallgrass prairie. C. M. Frey, W. E. Jensen, and K. A. With. 2008. *American Midland Naturalist* 160:220–234. (K. With, Division of Biology, Kansas State Univ, Manhattan, KS 66506, USA). Topography did not directly affect nest survival. Increased vertical vegetation structure increased nest survival of Eastern meadowlarks and dickcissels, whereas increased grass and litter cover increased nest survival of grasshopper sparrows.

Grazing Management

A systematic review of wild burro grazing effects on Mojave Desert vegetation, USA. S. R. Abella. 2008. *Environmental Management* 41:809–819. (Univ of Nevada, 4505 S Maryland Parkway, Las Vegas, NV 89154, USA). Synthesizes the results from 24 studies of burro food habits, nutritive quality of burro forage plants, forage utilization levels, and burro grazing impacts.

Screening hydrolyzed casein as a deer repellent for reforestation applications. B. A. Kimball, J. H. Russell, J. P. DeGraan, and K. R. Perry. 2008. *Western Journal of Applied Forestry* 23:172–176. (Monell Chemical Senses Center, 3500 Market St, Philadelphia, PA 19104, USA). Hydrolyzed casein powder applied to western redcedar tree seedlings significantly reduced browsing damage by deer.

Hydrology/Riparian

Surface runoff response of native and introduced grasses under simulated rainfall in southern Alberta. S. R. Murphy, F. J. Larney, W. D. Willms, P. R. DeMaere, and S. Harden. 2008. *Canadian Journal of Soil Science* 88:337–348. (Tamworth Agricultural Institute, 4 Marsden Park Rd, Calala, New South Wales 2340, Australia). Native mixed-grass prairie had less runoff than seeded pastures of crested wheatgrass or Russian wildrye.

Temporal variation in the arthropod community of desert riparian habitats with varying amounts of salt cedar (*Tamarix ramosissima*). S. L. Durst, T. C. Theimer, E. H. Paxton, and M. K. Sogge. 2008. *Journal of Arid Environments* 72:1644–1653. (US Geological Survey, PO Box 5614, Flagstaff, AZ 86011, USA). Saltcedar and mixed saltcedar–willow riparian plant communities supported arthropod communities different from native willow habitat.

Total phosphorus concentrations and compaction in riparian areas under different riparian land uses of Iowa. G. N. Zaimes, R. C. Schultz, and T. M. Isenhardt. 2008. *Agriculture Ecosystems and Environment* 127:22–30. (School of Natural Resources, Univ of Arizona, Tucson, AZ 85721, USA). Soil total phosphorus and soil compaction in stream-side areas did not differ between rotational cattle grazing and no cattle grazing.

Plant–Animal Interactions

Harvester ant nests improve recovery performance of drought impacted vegetation in grazing regimes of semiarid savanna, Texas. N. Nicolai, F. E. Smeins, and J. L. Cook. 2008. *American Midland Naturalist* 160:29–40. (Dept of Agronomy and Horticulture, Univ of Nebraska, Lincoln, NE 68583, USA). Grasses on the margins of red harvester ant nests survived drought better than grasses located away from nests, but forbs were more abundant away from nests.

Plant Ecology

Grassland–shrubland transformation and grazing: A century-scale view of a northern Chihuahuan Desert grassland. S. Yanoff and E. Muldavin. 2008. *Journal of Arid Environments* 72:1594–1605. (Dept of Biology, Univ of New Mexico, Albuquerque, NM 87131, USA). Over a 100-yr period, shrubs invaded 87% of the sites examined, and average size of grassland patches declined by 90%.

Increased snow facilitates plant invasion in mixedgrass prairie. D. Blumenthal, R. A. Chimner, J. M. Welker, and J. A. Morgan. 2008. *New Phytologist* 179:440–448. (USDA-ARS, 1701 Center Ave, Fort Collins, CO 80526, USA). Increases in snowfall exacerbate invasion by diffuse knapweed, baby's breath, and Dalmatian toadflax.

Rehabilitation/Restoration

Avian community response to vegetation and structural features in grasslands managed with fire and grazing. B. R. Coppedge, S. D. Fuhlendorf, W. C. Harrell, and D. M. Engle. 2008. *Biological Conservation* 141:1196–1203. (Science and Mathematics Division, Tulsa Community College West, 7505 W 41st St, Tulsa, OK 74107, USA). In tallgrass prairie of north-central Oklahoma, total bird species diversity was greater in patch-burned pastures than in traditionally treated areas in which entire pastures were burned annually.

Broadcast vs. wet-blade herbicide applications for southern wax myrtle (*Myrica cerifera*) control. B. A. Sellers and J. J. Mullahey. 2008. *Weed Technology* 22:286–289. (Range Cattle Research and Education Center, Univ of Florida, 3401 Experiment Station Rd, Ona, FL 33865, USA). Broadcast application of triclopyr herbicide suppressed southern wax myrtle as well or better than application via the Burch Wet Blade mowing system.

Controlling performance of bluebunch wheatgrass and spotted knapweed using nitrogen and sucrose amendments. J. M. Mangold and R. L. Sheley. 2008. *Western North American Naturalist* 68:129–137. (Dept of Land Resources and Environmental Sciences, Montana State Univ, Bozeman, MT 59717, USA). Nitrogen fertilizer enhanced spotted knapweed, and sucrose amendment had no effect.

Effects of season and scale on response of elk and mule deer to habitat manipulation. R. A. Long, J. L. Rachlow, and J. G. Kie. 2008. *Journal of Wildlife Management* 72:1133–1142. (Dept of Biological Sciences, Idaho State Univ, Pocatello, ID 83209, USA). In northeastern Oregon, elk in spring selected sites where dense forest had been thinned with prescribed fire, but elk did not prefer these sites in summer. Mule deer did not select burned sites in spring or summer.

Evaluation of herbicides for restoring native grasses in buffelgrass-dominated grasslands. A. D. Tjelmeland, T. E. Fulbright, and J. Lloyd-Reilley. 2008. *Restoration Ecology* 16:263–269. (Dept of Animal and Wildlife Sciences, Texas A&M Univ, Kingsville, TX 78363, USA). Tebuthiuron herbicide suppressed buffelgrass and increased seeded native grasses.

Great Basin Wildfire Forum: the search for solutions. E. Miller and R. Narayanan (eds.). 2008. (Nevada Agricultural Experiment Station, 1664 N Virginia St, Reno, NV 89557, USA). A distinguished panel of 16 experienced rangeland scientists presents 42 recommendations for solving the critical wildfire problems of the Great Basin.

Swift fox response to prescribed fire in shortgrass steppe. C. M. Thompson, D. J. Augustine, and D. M. Mayers. 2008. *Western North American Naturalist* 68:251–256. (US Forest Service, Pacific Southwest Research Station, 2081 E Sierra Ave, Fresno, CA 93710, USA). In southeastern Colorado, swift fox response to prescribed fire was either positive or neutral. Authors recommend this tool for maintaining high-quality grassland habitat for swift fox.

Socioeconomics

Citizen participation in collaborative watershed partnerships. B. Koehler and T. M. Koontz. 2008. *Environmental Management* 41:143–154. (School of Environment and Natural Resources, The Ohio State Univ, Columbus, OH 43210, USA). Citizens were more likely to actively participate in collaborative watershed groups when citizens felt comfortable sharing their opinions and when citizens were knowledgeable about the issues being addressed.

Soils

Grazing impacts on soil carbon and microbial communities in a mixed-grass ecosystem. L. J. Ingram, P. D. Stahl, G. E. Schuman, J. S. Buyer, G. F. Vance, G. K. Ganjegunte, J. M. Welker, and J. D. Derner. 2008. *Soil Science Society of America Journal* 72:939–948. (Dept of Renewable Resources, Univ of Wyoming, Laramie, WY 82071, USA). Heavy, season-long, continuous cattle grazing during a 10-yr drought decreased the abundance of cool season plants, increased warm season plants, and decreased soil organic carbon. Impacts from light-intensity, season-long, continuous cattle grazing did not differ from no grazing.

Moisture pulses, trace gas emissions and soil C and N in cheatgrass and native grass-dominated sagebrush steppe in Wyoming, USA. U. Norton, A. R. Mosier, J. A. Morgan, J. D. Derner, L. J. Ingram, and P. D. Stahl. 2008. *Soil Biology and Biochemistry* 40:1421–1431. (Dept of Renewable Resources, Univ of Wyoming, Laramie, WY 82071, USA). Western wheatgrass plant communities had greater carbon dioxide emissions but less nitrous oxide emissions than sites dominated by cheatgrass.

Prescribed fire and grazing effects on carbon dynamics in a northern mixed-grass prairie. M. D. MacNeil, M. R. Haferkamp, L. T. Vermeire, and J. M. Muscha. 2008. *Agriculture Ecosystems and Environment* 127:66–72. (USDA-ARS, 243 Fort Keogh Rd, Miles City, MT 59301, USA). Concluded that mixed-grass prairie in eastern Montana is unlikely to sequester much soil carbon, irrespective of prescribed burning or cattle grazing practices.

Soil carbon and nitrogen in relation to shrub size and death in a semiarid grassland. M. P. McClaran, J. Moore-Kucera, D. A. Martens, J. van Haren, and S. E. Marsh. 2008. *Geoderma* 145:60–68. (School of Natural Resources, Univ of Arizona, Tucson, AZ 85721, USA). Soil carbon sequestration will benefit when velvet mesquite removal treatments focus on smaller trees while leaving large mesquite trees standing.

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