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

Drought and cooler temperatures are associated with higher nest survival in mountain plovers. V. J. Dreitz, R. Y. Conrey, and S. K. Skagen. 2012. *Avian Conservation and Ecology* doi:10.5751/ACE-00519-070106. 13 p. (College of Forestry and Conservation, Univ of Montana, Missoula, MT 59812, USA). In eastern Colorado, nest survival of mountain plovers averaged 27%, declined as the breeding season progressed, and was favored by dry conditions and cooler temperatures.

Effects of prescribed burning on avian nest survival in the southern Great Plains. A. M. Long, W. E. Jensen, and R. S. Matlack. 2012. *Journal of Wildlife Management* 76:899–906. (W. Jensen, Dept of Biological Sciences, Emporia State Univ, Emporia, KS 66801, USA). In Texas Panhandle grasslands invaded by mesquite and cholla, prescribed burning for brush control benefited reproduction of lark sparrows but did not affect mourning doves.

Grazing Management

Early weaning in northern Great Plains beef cattle production systems: I. Performance and reproductive response in range beef cows. R. C. Waterman, T. W. Geary, J. A. Paterson, and R. J. Lipsey. 2012. *Livestock Science* 148:26–35. (USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT 59301, USA). Early weaning at the start of breeding season (i.e., removing calves at 80 days of age versus 210 days postpartum) improved weight gain and body condition of cows entering winter, but improvements in cow reproductive performance were inconsistent.

Early weaning in northern Great Plains beef cattle production systems. II. Development of replacement heifers weaned at 80 or 215 d of age. R. C. Waterman, T. W. Geary, J. A. Paterson, and R. J. Lipsey. 2012. *Livestock Science* 148:36–45. (USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT 59301, USA). Weaning heifer calves early will not reduce a heifer's opportunity to be retained as a replacement female because early-weaned heifer calves have similar or greater reproductive success as replacements than heifers that are weaned much later.

Effects of targeted grazing and prescribed burning on community and seed dynamics of a downy brome (*Bromus tectorum*)–dominated landscape. J. M. Diamond, C. A. Call, and N. Devoe. 2012. *Invasive Plant Science and Management* 5:259–269. (C. Call, Wildland Resources

Dept, Utah State Univ, Logan, UT 84322, USA). Targeted cattle grazing during May, with or without prescribed burning in the following October, reduced cheatgrass reproduction in northern Nevada.

Stocker growth on rye and ryegrass pastures affects subsequent feedlot gains and carcass traits. J. J. Cleere, F. M. Rouquette, Jr., A. D. Herring, J. W. Holloway, H. Lippke, B. G. Warrington, C. R. Long, K. R. Pond, M. F. Miller, and G. E. Aiken. 2012. *Forage and Grazinglands* doi:10.1094/FG-2012-0524-01-RS. 12 p. (F. Rouquette, Jr., Texas AgriLife Research, 1710 FM 3053 North, Overton, TX 75684, USA). Cattle with low gains during the grazing backgrounding phase might not fully compensate in the feedlot, resulting in lighter carcasses with smaller ribeye areas.

Hydrology/Riparian

Aspen and willow restoration using beaver on the northern Yellowstone winter range. S. D. McColley, D. B. Tyers, and B. F. Sowell. 2012. *Restoration Ecology* 20:450–455. (B. Sowell, Dept of Animal and Range Sciences, Montana State Univ, Bozeman, MT 59717, USA). Although the reintroduction of beaver stimulated the growth of aspen sprouts and saplings, browsing by elk, deer, and bison prevented aspen recovery.

Emulating riverine landscape controls of beaver in stream restoration. P. DeVries, K. L. Fetherston, A. Vitale, and S. Madsen. 2012. *Fisheries* 37:246–255. (R2 Resource Consultants, Inc, 15250 NE 95th St, Redmond, WA 98052, USA). Constructing log structures that choke stream flow and mimic the hydraulic function of a natural beaver dam is less expensive and disruptive than large-scale engineering restoration and can restore fish habitat and floodplain vegetation more quickly than simply revegetating and waiting for riparian vegetation to mature.

Invasive woody plants affect the composition of native lizard and small mammal communities in riparian woodlands. H. L. Bateman and S. M. Ostoja. 2012. *Animal Conservation* 15:294–304. (Dept of Applied Science and Mathematics, Arizona State Univ, Polytech Campus, 6073 S. Backus Mall, Mesa, AZ 85212, USA). In the Mojave Desert, many species of insects, reptiles, and small mammals utilized saltcedar-dominated plant communities as well as mixed saltcedar–cottonwood–willow–mesquite communities.

Plant Ecology

Ecosystem function differs between Old World bluestem invaded and native coastal prairie in south Texas. M. E. Ruffner, R. L. McCulley, J. A. Nelson, and T. G. Barnes. 2012. *Biological Invasions* 14:1483–1500. (Dept of Forestry, Univ of Kentucky, Lexington, KY 40546, USA). On sandy loam soils, plant production, soil carbon, soil nitrogen, and litter decomposition rates were less on native prairie than on sites dominated by Old World bluestems. On clay soils, native prairie and Old World bluestem sites did not differ much in ecosystem attributes.

Effects of ungulate herbivory on aspen, cottonwood, and willow development under forest fuels treatment regimes. B. A. Endress, M. J. Wisdom, M. Vavra, C. G. Parks, B. L. Dick, B. J. Naylor, and J. M. Boyd. 2012. *Forest Ecology and Management* 276:33–40. (Division of Applied Plant Ecology, Institute of Conservation Research, San Diego Zoo Global, 15600 San Pasqual Valley Rd, Escondido, CA 92027, USA). In grand fir and Douglas-fir coniferous forests of western North America, deciduous aspens, cottonwoods, and willows regenerated best when disturbance from mechanical thinning and prescribed fire was followed by exclusion from ungulate browsing.

Resource limitation and the role of a hemiparasite on a restored prairie. V. A. Borowicz and J. E. Armstrong. 2012. *Oecologia* 169:783–792. (School of Biological Sciences, Illinois State Univ, Normal, IL 61790, USA). In tallgrass prairie of Illinois, removal of a hemiparasitic plant species, Canadian lousewort (*Pedicularis canadensis*), almost doubled grass production and increased forb production to a lesser degree.

Species dynamic, forage yield, and nutritive value of seeded native plant mixtures following grazing. M. P. Schellenberg, B. Biligetu, and A. D. Iwaasa. 2012. *Canadian Journal of Plant Science* 92:699-706. (Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Center, Swift Current, SK S9H 3X2, Canada). Two seeded native plant mixtures were compared in southern Saskatchewan. The mixture of native cool-season grasses was more productive than a combination of native warm- and cool-season grasses, but inclusion of the warm-season grasses increased pasture protein content during late summer.

Unexpected patterns of sensitivity to drought in three semi-arid grasslands. K. Cherwin and A. Knapp. 2012. *Oecologia* 169:845–852. (Dept of Biology, Colorado State Univ, Fort Collins, CO 80523, USA). In shortgrass prairie, drought impacts depended upon rainfall patterns. Plant growth was reduced by drought when growing-season rainfall was dominated by many small events, but not when rainfall occurred in few but larger events.

Yield and nutritive value differences among cool-season grasses. G. E. Brink and M. D. Casler. 2012. *Forage and Grazinglands* doi:10.1094/FG-2012-0619-01-RS. 11 p. (USDA-ARS US Dairy Forage Research Center, 1925 Linden Dr West, Madison, WI 53706, USA). Of eight cool-season grasses evaluated in Wisconsin, tall fescue had the greatest leaf yields, but meadow fescue and timothy leaves were more digestible, resulting in greater energy available for lactation or growth.

Rehabilitation/Restoration

Effects of applying five nitrogen rates on quality of nine varieties of introduced perennial forages. E. Funderburg, J. T. Biermacher, C. A. Moffet, D. Alkire, and J. Mosali. 2012. *Forage and Grazinglands* doi:10.1094/FG-2012-0517-01-RS. 14 p. (The Samuel Roberts Noble Foundation, 2510 Sam Noble Parkway, Ardmore, OK 73401, USA). In southern Oklahoma, applying nitrogen fertilizer increased the nutritive quality of all grass varieties tested (seven varieties of bermudagrass and two varieties of Old World bluestem) sufficiently to increase stocker calf weight gain by 0.5 lb/day.

High richness and dense seeding enhance grassland restoration establishment but have little effect on drought response. D. L. Carter and J. M. Blair. 2012. *Ecological Applications* 22:1308–1319. (Division of Biology, Kansas State Univ, Manhattan, KS 66506, USA). In Nebraska, seeding diverse mixtures at high rates resulted in greater diversity and cover of seeded species than seeding mixtures of low richness at lower rates.

Long-term population dynamics of seeded plants in invaded grasslands. M. J. Rinella, J. M. Mangold, E. K. Espeland, R. L. Sheley, and J. S. Jacobs. 2012. *Ecological Applications* 22:1320–1329. (USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT 59301, USA). Long-term monitoring revealed that intermediate wheatgrass and bluebunch wheatgrass are seeded grasses most likely to persist and suppress spotted knapweed.

Mowing any time after midsummer can manage Japanese stiltgrass. A. L. Shelton. 2012. *Invasive Plant Science and Management* 5:209–216. (Dept of Biology, Indiana Univ, Bloomington, IN 4705, USA). Mowing once during July or August is an effective way to suppress Japanese stiltgrass, an invasive plant in the eastern United States.

Socioeconomics

Revising the Dust Bowl: high above the Kansas grasslands. K. M. Sylvester and E. S. A. Rupley. 2012. *Environmental History* 17:603–633. (Institute of Social Research, Univ of Michigan, Ann Arbor, MI 48109, USA). Locations of submarginal cropland identified in modern digital soil surveys were compared with aerial photos of crop field locations in Depression-era Kansas. Results demonstrate that few acres of submarginal land were actually cropped during the Depression. Dust Bowl effects were almost all due to weather rather than humans farming land unsuitable for cultivation.

Soils

Effects of seasonal grazing, drought, fire, and carbon enrichment on soil microarthropods in a desert grassland. W. G. Whitford and Y. Steinberger. 2012. *Journal of Arid Environments* 83:10–14. (USDA-ARS, Jornada Experimental Range, Las Cruces, NM 88003, USA). Three consecutive years of short-duration, high-stock-density cattle grazing during summer or winter had no effect on the abundance and community composition of soil microarthropods, nor did fire or soil amendment with glucose.

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