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

Abundance and diversity of shrub-steppe birds in relation to encroachment of ponderosa pine. P. G. Krannitz. 2007. *Wilson Journal of Ornithology* 119:655–664. (Environment Canada, 5421 Robertson Rd, Rural Route 1, Delta, BC V4K 3N2, Canada). In grassland and shrub steppe of south-central British Columbia, abundance of grassland and shrub-steppe birds declined with increasing numbers of encroaching ponderosa pine trees.

Grazing Management

Effectiveness of nutrient supplement placement for changing beef cow distribution. M. R. George, N. K. McDougald, W. A. Jensen, R. E. Larson, D. C. Cao, and N. R. Harris. 2008. *Journal of Soil and Water Conservation* 63:11–17. (Dept of Plant Science, Univ of California, Davis, CA 95616, USA). Three studies in California all confirm that livestock grazing distribution can be managed by strategic placement of nutritional supplements.

In search of sustainable agricultural systems for the Llano Estacado of the U.S. southern high plains. V. G. Allen, C. P. Brown, E. Segarra, C. J. Green, T. A. Wheeler, V. Acosta-Martinez, and T. M. Zobeck. 2008. *Agriculture Ecosystems and Environment* 124:3–12. (Dept of Plant and Soil Science, Texas Tech Univ, Lubbock, TX 79409, USA). An integrated crop–livestock system that included cotton and steers grazing on ‘W W-B Dahl’ old-world bluestem pastures used less irrigation water, fertilizer, and pesticides than traditional cotton monocultures. The integrated system also was more profitable when cotton yields were less than 1,340 pounds/acre.

Livestock utilization and bird community composition in mixed-conifer forest and oak woodland in southern Oregon. J. D. Alexander, J. L. Stephens, and N. E. Seavy. 2008. *Northwest Science* 82:7–17. (Klamath Bird Observatory, PO Box 758, Ashland, OR 97520, USA). In mixed-conifer forest, bird community composition was unaffected by cattle grazing intensity, but in oak woodlands, areas with moderate to heavy cattle grazing had fewer shrub-nesting, foliage-gleaning, and long-distance migrant birds than areas with light to no cattle grazing.

Responses of *Medicago sativa* and *M. falcata* type alfalfas to different defoliation times and grass competition. J. R. Hendrickson, M. A. Liebig, and J. D. Berdahl. 2008. *Canadian*

Journal of Plant Science 88:61–69. (USDA-ARS, Northern Great Plains Research Lab, PO Box 459, Mandan, ND 58554, USA). ‘Yellowhead’ alfalfa is well-suited for seeding into mixed-grass prairie. Herbage yield will be maximized if grazing or haying is delayed until alfalfa is in the flowering stage.

Solar photovoltaic water pumping for remote locations. K. Meah, S. Fletcher, and S. Ula. 2008. *Renewable and Sustainable Energy Reviews* 12:472–487. (Dept of Electrical and Computer Engineering, Univ of Wyoming, Laramie, WY 82071, USA). Describes the technical, environmental, and economic benefits of solar-powered pumps compared with diesel or propane generators or extending electric utility lines.

Hydrology/Riparian

Acceleration of vegetation turnover and element cycling by mammalian herbivory in riparian ecosystems. L. G. Butler and K. Kielland. 2008. *Journal of Ecology* 96:136–144. (K. Kielland, Institute of Arctic Biology, Univ of Alaska, Fairbanks, AK 99775, USA). Increasing browsing pressure by moose and snowshoe hares decreased willow abundance and favored thinleaf alder and balsam poplar in riparian willow communities in Alaska.

Assessment of changes in stream and riparian conditions of the Marys River Basin, Nevada. S. Newman and S. Swanson. 2008. *Journal of the American Water Resources Association* 44:1–13. (169 May Rd, Colville, WA 99114, USA). In northeastern Nevada, most of the riparian areas studied improved significantly in condition from 1979 to 2000. Repeat photography confirmed results of quantitative sampling and riparian proper functioning condition assessments aided interpretation of quantitative data.

Southwestern willow flycatchers (*Empidonax traillii extimus*) in a grazed landscape: factors influencing brood parasitism. K. M. Broadhead, S. H. Stoleson, and D. M. Finch. 2007. *Auk* 124:1213–1228. (Center for Wildlife Ecology, Simon Fraser Univ, 888 University Way, Burnaby, BC V5A 1S6, Canada). In southwestern New Mexico, brood parasitism of southwestern willow flycatchers by brown-headed cowbirds was not influenced by the proximity of grazing cattle. Brood parasitism decreased as nest height increased. Nests in boxelder trees were less susceptible than nests in willows.

Stream fish responses to grazing exclosures. P. B. Bayley and H. W. Li. 2008. *North American Journal of Fisheries Management* 28:135–147. (Dept of Fisheries and Wildlife, Oregon State Univ, Corvallis, OR 97331, USA). In northeastern Oregon streams, cattle grazing did not affect total fish density (juveniles + adults) of redband trout

or speckled dace, although juvenile redband trout were more abundant in stream reaches excluded from cattle.

Measurements

Cover pole design for easy transport, assembly, and field use. P. D. Toledo, L. B. Abbott, and J. E. Herrick. 2008. *Journal of Wildlife Management* 72:564–567. (USDA-ARS, Jornada Experimental Range, PO Box 30003, New Mexico State Univ, Las Cruces, NM 88003, USA). Describes a self-supporting cover pole (or Robel pole) that can be easily constructed, transported, and assembled for use in remote locations.

Plant Ecology

Direct and indirect control of grassland community structure by litter, resources, and biomass. E. G. Lamb. 2008. *Ecology* 89:216–225. (Dept of Soil Science, Univ of Saskatchewan, Saskatoon, SK S7N 5A8, Canada). In rough fescue grassland of east-central Alberta, plant diversity declined with increasing amounts of litter cover.

Fire history of pinyon-juniper woodlands on Navajo Point, Glen Canyon National Recreation Area. M. L. Floyd, W. H. Romme, D. Hanna, D. Hanna, M. Winterowd, and J. Spence. 2008. *Natural Areas Journal* 28:26–36. (Prescott College, 220 Grove Ave, Prescott, AZ 86301, USA). “Despite a long history of livestock grazing and fire suppression policies, the woodlands of Navajo Point still retain most of their primeval character.” The greatest potential threat to the pristine character of this woodland is from cheatgrass that occurs intermittently throughout the area.

Rehabilitation/Restoration

Responses of breeding birds in tallgrass prairie to fire and cattle grazing. A. F. L. A. Powell. 2008. *Journal of Field Ornithology* 79:41–52. (Dept of Ecology, Evolution, and Behavior, Univ of Minnesota, Saint Paul, MN 55108, USA). In Kansas tallgrass prairie, Bell’s vireos were more abundant in areas burned once every 4 yr, whereas grasshopper sparrows, Henslow’s sparrows, and eastern meadowlarks were more abundant in areas burned more frequently. Upland sandpipers, grasshopper sparrows, and eastern meadowlarks were more abundant in areas grazed lightly by cattle than in ungrazed areas.

Seeding cool-season grasses into unimproved warm-season pasture in the southern Great Plains of the United States. P. W. Bartholomew and R. D. Williams. 2008. *Grass and Forage Science* 63:94–106. (USDA-ARS, Grazinglands Research Lab, PO Box 1730, Langston, OK 73050, USA). “Lack of persistence and low productivity limit the usefulness of cool-season perennial grasses for over-seeding unimproved warm-season pastures in the southern Great Plains.”

Strategies for managing early succession habitat for wildlife. C. A. Harper. 2007. *Weed Technology* 21:932–937. (Dept of Forestry, Fisheries and Wildlife, Univ of Tennessee, Knoxville, TN 37996, USA). Discusses the importance to wildlife of active management that purposely introduces disturbance (e.g., prescribed fire, disking, herbicide, mowing, etc.) to create and maintain a mosaic of plant communities in various successional stages.

Variation in ant populations with elevation, tree cover, and fire in a pinyon–juniper–dominated watershed. E. M. MontBlanc, J. C. Chambers, and P. F. Brussard. 2007. *Western North American Naturalist* 67:469–491. (US Forest Service, Rocky Mountain Research Station, 920 Valley Rd, Reno, NV 89512, USA). Diversity and composition of ant populations were unaffected by prescribed fires used to suppress pinyon–juniper encroachment into sagebrush steppe of central Nevada, but ants were more abundant on burned sites.

Socioeconomics

An ecological economic simulation model for assessing fire and grazing management effects on mesquite rangelands in Texas. W. R. Teague, W. E. Grant, U. P. Krueter, H. Diaz-Solis, S. Dube, M. M. Kothmann, W. E. Pinchak, and R. J. Ansley. 2008. *Ecological Economics* 64:611–624. (Texas Agri-Life Research, PO Box 1658, Vernon, TX 76384, USA). Prescribed burning to suppress honey mesquite and cactus was profitable when preburning range condition was fair or better. The highest level of profit consistent with maintaining or improving range condition was attained when livestock stocking rate was low.

A subspecies no more? A mouse, its unstable taxonomy, and western riparian resource conflict. R. R. Crifasi. 2007. *Cultural Geographies* 14:511–535. (City of Boulder Open Space and Mountain Parks Dept, PO Box 791, Boulder, CO 80306, USA). The listing of the Preble's meadow jumping mouse as a federally threatened species provides the backdrop to this discussion of how economic forces and ideological struggles over land use decisions influence taxonomists and the names they give to plants and animals.

Ecological services to and from rangelands of the United States. K. M. Havstad, D. P. C. Peters, R. Skaggs, J. Brown, B. Bestelmeyer, E. Frederickson, J. Herrick, and

J. Wright. 2007. *Ecological Economics* 64:261–268. (USDA-ARS, Jornada Experimental Range, PO Box 30003, New Mexico State Univ, Las Cruces, NM 88003, USA). Continued application of ecologically based principles of land management will provide society with a diverse array of future products and values from rangelands. Management practices that maintain or restore ecological functions will be increasingly emphasized.

The ethics of semantics: do we clarify or obfuscate reality to influence perceptions of farm animal production? C. C. Croney and R. D. Reynnells. 2008. *Poultry Science* 87:387–391. (Dept of Animal Science, Oregon State Univ, Corvallis, OR 97331, USA). Authors contend that the general public and livestock agriculture will both be better served overall if the realities of food animal production are conveyed to the general public with less innocuous terminology.

Use of US croplands for biofuels increases greenhouse gases through emissions from land-use change. T. Searchinger, R. Heimlich, R. A. Houghton, F. X. Dong, A. Elobeid, J. Fabiosa, S. Tokgoz, D. Hayes, and T. H. Yu. 2008. *Science* 319:1238–1240. (Woodrow Wilson School, Princeton Univ, Princeton, NJ 08544, USA). Authors predict that farmers worldwide will convert forest and grassland to new cropland to replace cropland diverted to biofuels production. Consequently, instead of reducing greenhouse gas emissions by 20% as most prior studies have estimated, this study predicts that large increases in biofuels production will increase net carbon emissions worldwide by 50–100%.

Soils

Plant functional composition influences rates of soil carbon and nitrogen accumulation. D. A. Fornara and D. Tillman. 2008. *Journal of Ecology* 96:314–322. (Dept of Ecology, Evolution, and Behavior, Univ of Minnesota, Saint Paul, MN 55108, USA). Very diverse mixtures of perennial grass species stored 500% and 600% more carbon and nitrogen in the soil than did monocultures of the same grasses. Including legumes or warm-season grasses in the mixtures increased soil carbon accumulation by 193% and 522%.

Jeff Mosley is Professor of Range Science and Extension Range Management Specialist, Dept of Animal and Range Sciences, Montana State University, Bozeman, MT 59717, USA.