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

Assessment of abilities of white-tailed deer to jump fences. K. C. Vercauteren, T. R. Vandeelen, M. J. Lavelle, and W. H. Hall. 2010. *Journal of Wildlife Management* 74:1378–1381. (USDA–APHIS, National Wildlife Research Center, 4101 LaPorte Ave, Fort Collins, CO 80521, USA). Fences up to 4.9 feet high did not impede white-tailed deer, whereas fences 7.9 feet high were sufficient for excluding whitetails or keeping them captive.

Does supplemental feed increase selective foraging in a browsing ungulate? G. R. Timmons, D. G. Hewitt, C. A. Deyoung, T. E. Fulbright, and D. A. Draeger. 2010. *Journal of Wildlife Management* 74:995–1002. (D. Hewitt, Caesar Kleberg Wildlife Research Institute, Texas A&M Univ, Kingsville, TX 78363, USA). Supplemented white-tailed deer ate more browse in spring and more forbs in autumn than unsupplemented deer. "Supplemented deer continued to eat poor-quality, chemically defended forage, perhaps to alleviate ruminal acidosis induced by the supplement or because nutrients in the supplement increased the deer's ability to detoxify chemically defended forages."

Identification of subpopulations of North American elk (*Cervus elaphus* L.) using multiple lines of evidence: habitat use, dietary choice, and fecal stable isotopes. W. D. Walter, D. M. Leslie, E. C. Hellgren, and D. M. Engle. 2010. *Ecological Research* 25:789–800. (USDA–APHIS, National Wildlife Research Center, 4101 LaPorte Ave, Fort Collins, CO 80521, USA). " … The subpopulation with the greatest access to cultivated forages was on a higher nutritional plane than the other two subpopulations."

Sage-grouse habitat in Idaho: a practical guide for land owners and managers. J. K. Gillan and E. K. Strand. 2010. 66 p. (College of Agricultural and Life Sciences Publications, Univ of Idaho, Moscow, ID 83844, USA). Bulletin filled with color photographs and drawings to help people recognize characteristics of productive versus unfavorable sage-grouse habitat. Contents reflect the habitat guidelines included in the 2006 Idaho Conservation Plan for Sage-Grouse.

Grazing Management

Feeding goats on scrubby Mexican rangeland and pasteurization: influences on milk and artisan cheese quality. M. C. Hilario, C. D. Puga, N. Wrage, and F. Perez-Gil. 2010.

Tropical Animal Health and Production 42:1127–1134. (C. Puga, Dept of Animal Nutrition, National Institute of Medical Science and Nutrition Salvador Zubrian, Vasco Quiroga 15, Mexico City 14000, DF, Mexico). Grazing on rangeland increased the amounts of desirable polyunsaturated fatty acids in milk and cheese of goats compared with confinement feeding of a high-protein concentrate ration.

Forage characteristics affecting meat goat preferences for forage chicory cultivars. K. A. Cassida, J. G. Foster, and K. E. Turner. 2010. *Agronomy Journal* 102:1109–1117. (USDA–ARS, 1224 Airport Rd, Beaver, WV 25813, USA). Goats detected small differences in concentration of bitter-tasting sesquiterpene lactones among cultivars of forage chicory, but this had little effect on intake. Phosphorus fertilization of fall-grown chicory to reduce sesquiterpene lactone concentrations is unlikely to improve forage intake by goats.

Influence of advancing season on dietary composition, intake, site of digestion, and microbial efficiency in beef steers grazing season-long or twice-over rotation native range pastures in western North Dakota. H. J. Cline, B. W. Neville, G. P. Lardy, and J. S. Caton. 2010. *Journal of Animal Science* 88:2812–2824. (J. Caton, Dept of Animal Science, North Dakota State Univ, Fargo, ND 58108, USA). In both season-long and twice-over rotational grazing, mixed-grass range forage consumed after late September is deficient in nitrogen and cannot support lactating beef cows.

Hydrology/Riparian

Community-level consequences of invasion: impacts of exotic clonal plants on riparian vegetation. J. H. Cushman and K. A. Gaffney. 2010. *Biological Invasions* 12:2765–2776. (Dept of Biology, Sonoma State Univ, Rohnert Park, CA 94928, USA). After 2 years of cutting and herbicide treatments to control giant reed, native plant abundance and species richness was increased along the Russian River in northern California.

Environmental tolerance of an invasive riparian tree and its potential for continued spread in the southwestern US. L. V. Reynolds and D. J. Cooper. 2010. *Journal of Vegetation Science* 21:733–743. (US Geological Survey, 2150 Center Ave, Building C, Fort Collins, CO 80526, USA). "Russian olive is able to tolerate dense shade and low moisture conditions better than tamarisk and cottonwood. There is great potential for continued spread of Russian olive throughout the southwestern US because large areas of suitable habitat exist that are not yet inhabited by this species."

Spatial dynamics and morphological plasticity of common reed (*Phragmites australis*) and cattails (*Typha* sp.) in freshwater marshes and roadside ditches. M. E. Bellavance and J. Brisson. 2010. *Aquatic Botany* 93:129–134. (J. Brisson, Dept of Biological Science, Univ of Montreal, Montreal, QC H1X 2B2, Canada). Common reed has a net competitive advantage over cattails in roadside ditches and freshwater marshes of eastern North America. Common reed is expanding and cattails are retreating.

Wildfire promotes dominance of invasive giant reed (*Arundo donax*) in riparian ecosystems. G. C. Coffman, R. F. Ambrose, and P. W. Rundel. 2010. *Biological Invasions* 12:2723–2734. (Institute of Marine Science, Univ of California–Santa Barbara, Santa Barbara, CA 93106, USA). Wildfire increased the dominance of giant reed, a large bamboo-like grass, along the Santa Clara River in southern California. Increased abundance of giant reed increased the susceptibility of riparian woodlands to subsequent fire, potentially creating an invasive plant–fire regime cycle.

Plant–Animal Interactions

Structural changes in vegetation coincident with annual grass invasion negatively impacts sprint velocity of small vertebrates. J. P. Rieder, T. A. S. Newbold, and S. M. Ostoja. 2010. *Biological Invasions* 12:2429–2439. (Dept of Forest, Rangeland and Watershed Stewardship, Colorado State Univ, Fort Collins, CO 80523, USA). In sagebrush steppe of western Utah, sites infested with cheatgrass had fewer lizards and rodents and less rodent species richness compared with uninfested sites.

Plant Ecology

Impacts of mixed severity wildfire on exotic plants in a Colorado ponderosa pine–Douglas-fir forest. P. J. Fornwalt, M. R. Kauffman, and T. J. Stohlgren. 2010. *Biological Invasions* 12:2683–2695. (USDA Forest Service, Rocky Mountain Research Station, 240 West Prospect Rd, Fort Collins, CO 80526, USA). Exotic understory plants were stimulated by wildfire, especially in severely burned areas, but 5 years after the fire the exotics had not yet interfered with native understory recovery.

Rehabilitation/Restoration

Control of one invasive plant species allows exotic grasses to become dominant in northern Great Plains. D. L. Larson and J. L. Larson. 2010. *Biological Conservation* 143:1901–1910. (US Geological Survey, 1920 Fitch Ave, Univ of Minnesota, Saint Paul, MN 55108, USA). In North Dakota prairie, native grasses were suppressed more by exotic grasses such as smooth brome than by leafy spurge.

Extracting useful data from imperfect monitoring schemes: endangered butterflies at San Bruno Mountain,

San Mateo County, California (1982–2000) and implications for habitat management. T. Longcore, C. S. Lam, P. Kobernus, E. Polk, and J. P. Wilson. 2010. *Journal of Insect Conservation* 14:335–346. (Dept of Geography, Univ of Southern California, Los Angeles, CA 90089, USA). Recommends control of invasive weeds and brush control to protect grassland butterflies.

Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells. N. Benachour and G. E. Seralini. 2009. *Chemical Research Toxicology* 22:97–105. (Institute of Biology, Univ of Caen, Caen 14032, France). Raises serious concerns that Roundup herbicide in very low concentrations, such as those expected in food and feed derived from Roundup-treated crops, can damage and kill human cells.

Habitat selection by prairie dogs in a disturbed landscape at the edge of their geographic range. R. Avila-Flores, M. S. Boyce, and S. Boutin. 2010. *Journal of Wildlife Management* 74:945–953. (Institute of Ecology, Ciudad Univ, Mexico City 04510, DF, Mexico). Controlled burns, herbage mowing, and mechanical removal of shrubs were suggested for promoting short vegetation, low density of shrubs, and high herbage cover to benefit black-tailed prairie dogs in northwestern Mexico.

Trait-mediated interactions and lifetime fitness of the invasive plant *Centaurea solstitialis*. S. M. Swope and I. M. Parker. 2010. *Ecology* 91:2284–2293. (Dept of Ecology and Evolutionary Biology, Univ of California–Santa Cruz, Santa Cruz, CA 95064, USA). Yellow starthistle plants attacked by two biological control agents (a well-established weevil and a recently introduced pathogen) were not harmed more than plants attacked only by the weevil.

White-headed woodpecker nesting ecology after wildfire. C. S. Wightman, V. A. Saab, C. Forristal, K. Mellen-McLean, and A. Markus. 2010. *Journal of Wildlife Management* 74:1098–1106. (Montana Fish, Wildlife and Parks, PO Box 200701, Helena, MT 59632, USA). In ponderosa pine forests, white-headed woodpeckers will benefit from management activities that open the forest canopy and, in the event of wildfire, promote mosaic burn patterns.

Soils

Influence of livestock grazing, floodplain position, and time on soil nutrient pools in a Sierra-Nevada montane meadow. R. R. Blank and T. Morgan. 2010. *Soil Science* 175:293–302. (USDA–ARS, Exotic and Invasive Weed Research Unit, 920 Valley Rd, Reno, NV 89512, USA). Ten years of data from mountain meadows in the Plumas National Forest in California indicate that the current livestock grazing management plan does not greatly impact soil nutrient availability.

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