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

Dominance, age and weight in American bison males (*Bison bison*) during non-rut in semi-natural conditions. C. Roden, H. Vervaecke, and L. Van Elsacker. 2005. *Applied Animal Behaviour Science* 92:169–177. (RZSA, CRC, Koningin Astridplein 26, B-2018 Antwerp, Belgium). Older and heavier individuals occupied the higher social ranks in a linear dominance hierarchy.

The Starkey Project: A synthesis of long-term studies of elk and mule deer. M.J. Wisdom (technical editor). 2005. Alliance Communications Group, Lawrence, KS 66044. 252 p. (ISSN 1-891276-40-9). This book summarizes 20 years of research from northeastern Oregon about mule deer and elk responses to land management activities.

Viability of Bell's sage sparrow (*Amphispiza belli* spp. *Belli*): Altered fire regimes. H.R. Akcakaya, J. Franklin, A.D. Syphard, and J.R. Stephenson. 2005. *Ecological Applications* 15:521–531. (Applied Biomathematics, 100 North Country Rd., Setauket, NY 11733). In the foothills and mountains of southern California, sage sparrows depend on chaparral habitat with fire-free intervals of about 30 years.

Grazing Management

Livestock grazing management impacts on stream water quality: a review. C.T. Agouridis, S.R. Workman, R.C. Warner, and G.D. Jennings. 2005. *Journal of the American Water Resources Association* 41:591–606. (128 CE Barnhart Bldg., Univ. of Kentucky, Lexington, KY 40546). Reviews the research basis for livestock grazing best-management practices commonly implemented in the southern humid region of the United States.

Hydrology/Riparian

Beginnings of range management: An anthology of the Sampson-Ellison photo plots (1913 to 2003) and a short history of the Great Basin Experiment Station. D.A. Prevedel, E.D. McArthur, and C.M. Johnson. 2005. USDA Forest Service General Technical Report RMRS-GTR-154, 60 p. (Publications, Rocky Mountain Research Station, 240 West Prospect Rd., Fort Collins, CO 80526). Presents a photographic record of high-elevation watershed conditions in 1913, the 1940s, 1972, 1990, and 2003 in central Utah. The photo plots were initiated by Arthur Sampson and later maintained by Lincoln Ellison—2 men who pioneered range management.

Surface water and ground-water thresholds for maintaining *Populus–Salix* forests, San Pedro River, Arizona. S.J. Lite and J.C. Stromberg. 2005. *Biological Conservation*

125:153–167. (School of Life Sci., Arizona State Univ., Tempe, AZ 85287). Fremont cottonwood and Goodding willow were dominant over tamarisk on sites where surface flow was present more than 76% of the time; yearly groundwater fluctuation was less than 1.6 feet, and maximum depth to groundwater averaged less than 8.5 feet.

Measurements

Plot shape effects on plant species diversity measurements. J.E. Keeley and C.J. Fotheringham. 2005. *Journal of Vegetation Science* 16:249–256. (US Geological Survey, Sequoia National Park, Three Rivers, CA 93271). Average species richness did not differ between square and rectangular sample plots.

Plant/Animal Interactions

Mesquite (*Prosopis glandulosa*) germination and survival in black grama (*Bouteloua eriopoda*) grassland: relations between microsite and heteromyid rodent (*Dipodomys* spp.) impact. B.D. Duval, E. Jackson, and W.G. Whitford. 2005. *Journal of Arid Environments* 62:541–554. (Dept. of Fishery and Wildlife Sci., New Mexico State Univ., Las Cruces, NM 88001). Rodent activity may be responsible for increased mesquite density in Chihuahuan Desert grasslands.

Plant Ecology

Quantifying tree cover in the forest–grassland ecotone of British Columbia using crown delineation and pattern detection. Y. Bai, N. Walsworth, B. Roddan, D.A. Hill, K. Broersma, and D. Thompson. 2005. *Forest Ecology and Management* 212:92–100. (Dept. of Plant Sci., Univ. of Saskatchewan, Saskatoon, SK S7N 5A8, Canada). In a 250-acre site of grassland and forest, about 27% of the open grassland was lost to tree encroachment between 1966 and 1995.

Variation in nitrogen deposition and available soil nitrogen in a forest–grassland ecotone in Canada. M. Kochy and S.D. Wilson. 2005. *Landscape Ecology* 20:191–202. (S. Wilson, Dept. of Biology, Univ. of Regina, Regina, SK S4S 0A2, Canada). Fire without ungulate grazing may accelerate expansion of aspen into grassland, whereas fire accompanied by ungulate grazing will not.

Rehabilitation/Restoration

Benefits of classical biological control for managing invasive plants. T.W. Culliney. 2005. *Critical Reviews in Plant Sciences* 24:131–150. (USDA–APHIS, 1730 Vars Drive, Suite 300, Raleigh, NC 27606). "Since establishment of the stringent standards and regulatory apparatus currently in place in the United States and elsewhere, there have been no reported cases of biological weed control causing significant harm to nontarget populations or to the environment at large."

Canada thistle (*Cirsium arvense*) and pasture forage responses to wiping with various herbicides. C.W. Grekul, D.E. Cole, and E.W. Bork. 2005. *Weed Technology* 19:298-306. (E. Bork, Dept. of Agriculture, Food and Nutrition Sci., Univ. of Alberta, Edmonton, AB T6G 2P5, Canada). Wick applications of broadleaf herbicides (clopyralid, or picloram plus 2,4-D, or 2,4-D plus mecoprop plus dicamba) effectively controlled Canada thistle without reducing grass production.

Diflufenzopyr influences leafy spurge (*Euphorbia esula*) and Canada thistle (*Cirsium arvense*) control by herbicides. R.G. Lym and K.J. Deibert. 2005. *Weed Technology* 19:329-341. (Dept. of Plant Sci., North Dakota State Univ., Fargo, ND 58105). Leafy spurge control was enhanced when diflufenzopyr, an auxin-transport inhibitor, was applied with either quinclorac, picloram, or dicamba. Diflufenzopyr reduced the efficacy of glyphosate but did not affect imazapic.

Examining the strength and possible causes of the relationship between fire history and Sudden Oak Death. M.A. Moritz and D.C. Odion. 2005. *Oecologia* 144:106–114. (151 Hilgard Hall 3110, Univ. of California, Berkeley, CA 94720). Presents evidence that a fire-free interval of 50 years or less may help control Sudden Oak Death, a pathogen-caused disease that kills oak trees.

Host plant specificity and potential impact of *Aceria salsolae* (Acari: Eriophyidae), an agent proposed for biological control of Russian thistle (*Salsola tragus*). L. Smith. 2005. *Biological Control* 34:83–92. (USDA–ARS, 800 Buchanan St., Albany, CA 94710). A mite that feeds on leaves and flower buds can suppress Russian thistle without harming nontarget plants in North America.

The effect of season of picloram and chlorsulfuron application on Dalmation toadflax (*Linaria genistifolia*) on prescribed burns. J.S. Jacobs and R.L. Sheley. 2005. *Weed Technology* 19:319-324. (Dept. of Land Resources and Environmental Sci., Montana State Univ., Bozeman, MT 59717). Chlorsulfuron applied in the fall or spring and picloram applied in the spring effectively suppressed Dalmation toadflax cover, biomass, and density for up to 3 years.

Socioeconomics

Landscape patterns of exurban growth in the USA from 1980 to 2020. D.M. Theobald. 2005. *Ecology and Society* 10(1):32 [online] URL: http://www.ecologyandsociety.org/vol10/iss1/art32. (Dept. of Natural Resource Recreation and Tourism, Colorado State Univ., Fort Collins, CO 80523). In the lower 48 US states, the amount of land covered by urban, suburban, and exurban development increased from 10.1% to 13.3% from 1980 to 2000. By 2020, it is predicted that 16.5% of the land area will be covered.

Support for hunting as a means of wolf (*Canis lupus*) population control in Sweden. G. Ericsson, T.A. Heberlein, J.

Karlsson, A. Bjarvall, A. Lundvall. 2004. *Wildlife Biology* 10:269-276. (T. Heberlein, Dept. of Rural Sociology, Univ. of Wisconsin, Madison, WI 53706). Among 4 groups of people surveyed (general public, all hunters, the public living in areas with wolf populations, and hunters living in wolf population areas), a majority of all 4 groups found it acceptable to hunt wolves to reduce the risk of livestock depredation (53%–91%).

The wildland-urban interface in the United States. V.C. Radeloff, R.B. Hammer, S.I. Stewart, J.S. Fried, S.S. Holcomb, and J.F. McKeefry. 2005. *Ecological Applications* 15:799–805. (Dept. of Forest Ecology and Management, Univ. of Wisconsin, Madison, WI 53706). The wildland–urban interface in the lower 48 US states covers 9% of the land area and contains 45 million housing units.

Soils

Patterns of soil erosion and redeposition on Lucky Hills Watershed, Walnut Gulch Experimental Watershed, Arizona. J.C. Ritchie, M.A. Nearing, M.H. Nichols, and C.A. Ritchie. 2005. *Catena* 61:122–130. (Remote Sensing Lab, USDA–ARS, Beltsville, MD 20705). Soil erosion decreased as the percentage of rock fragments in the top 10 inches increased, but soil erosion was unrelated to the amount of vegetative cover.

Probable origin of laterally coalesced nabkas and adjacent bare lanes at Dugway Proving Ground, Utah, USA. N.E. West and D.A. Johnson. 2005. *Arid Land Research and Management* 19:241–255. (Dept. of Forest, Range, and Wildlife Sciences, Utah State Univ., Logan, UT 84322-5230). Evidence suggests that nabkas or "desert ripples" (ie, long, thin mounds of silt on the ground surface) are formed by wind erosion rather than by prehistoric floods.

Response of soil delta N-15 and nutrients to eastern red cedar (*Juniperus virginiana*) encroachment into a relict calcareous prairie. A. Bekele and W.H. Hudnall. 2005. *Plant and Soil* 271:143–155. (Tarleton State Univ., PO Box T-0410, Stephenville, TX 76402). Encroaching woody plants in Louisiana prairie alter the surface soil pH in the top 4 inches, making the soil more forest-like.

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