



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](mailto:jmosley@montana.edu).

## Animal Ecology

**Effects of fire and grazing on grasshopper sparrow nest survival.** T. J. Hovick, J. R. Miller, S. J. Dinsmore, D. M. Engle, D. M. Debinski, and S. D. Fuhlendorf. 2012. *Journal of Wildlife Management* 76:19–27. (Oklahoma State Univ, 008C Ag Hall, Stillwater, OK 74074, USA.) In southern Iowa grasslands, grasshopper sparrow reproduction was higher in cattle-grazed pastures that were patch-burned than in cattle-grazed pastures that were burned more uniformly.

**Effects of rangeland management on the site occupancy dynamics of prairie-chickens in a protected prairie.** L. B. Menew, T. J. Prebyl, and B. K. Sandercock. 2012. *Journal of Wildlife Management* 76:38–47. (Division of Biology, Kansas State Univ, Manhattan, KS 66506, USA.) “To conserve prairie-chickens, we recommend prairies be managed with combinations of prescribed fire and grazing that maintain a heterogeneous mosaic of prairie habitats, while preventing woody encroachment.”

**Influence of domestic livestock grazing on American pika (*Ochotona princeps*) haypiling behavior in the eastern Sierra Nevada and Great Basin.** C. J. Millar. 2011. *Western North American Naturalist* 71:425–430. (USDA Forest Service, Pacific Southwest Research Station, 800 Buchanan St, Albany, CA 94710, USA.) Preliminary evidence suggests that the nutritive quality of pika diets may be lowered when livestock graze near tallus slopes in mountain ecosystems.

**Shared bacterial and viral respiratory agents in bighorn sheep (*Ovis canadensis*), domestic sheep (*Ovis aries*), and goats (*Capra hircus*) in Montana.** D. S. Miller, G. C. Weiser, K. Aune, B. Roeder, M. Atkinson, N. Anderson, T. J. Roffe, K. A. Keating, P. L. Chapman, C. Kimberling, J. Rhyon, and P. R. Clarke. 2011. *Veterinary Medicine International* Volume 2011, Article ID 162520. 12 p. (Dept of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State Univ, Fort Collins, CO 80523, USA.) Pasteurellaceae biovariants and viruses were found in apparently healthy bighorn sheep, domestic sheep, and goats in isolated populations and in populations that used a common range. *Mycoplasma* sp. was found in livestock but not bighorn sheep.

## Grazing Management

**Heifer development systems: a comparison of grazing winter range or corn residue.** D. M. Larson, A. S. Cupp, and R. N. Funston. 2011. *Journal of Animal Science* 89:2365–2372. (R. Funston, Univ of Nebraska West Central Research and Extension Center, 402 W State Farm Rd, North Platte, NE 69101, USA.) In Nebraska there was no difference in reproduction or economics of grazing heifers post-weaning on corn residue versus winter range.

**Heifer development systems: dry-lot feeding compared with grazing dormant winter forage.** R. Funston and D. M. Larson. 2011. *Journal of Animal Science* 89:1595–1602. (Univ of Nebraska West Central Research and Extension Center, 402 W State Farm Rd, North Platte, NE 69101, USA.) In Nebraska, it cost \$45 more to develop a pregnant heifer using dry-lot feeding than it did using a winter grazing system that utilized corn residue and winter range.

**Sheep bedding in the Centennial Mountains of Montana and Idaho: effects on vegetation.** S. S. Seefeldt and A. B. Leytem. 2011. *Western North American Naturalist* 71:361–373. (USDA-ARS Subarctic Agricultural Research Unit, 355 O'Neill Bldg, Univ of Alaska, Fairbanks, AK 99775, USA.) “Vegetation in the bedding areas was resilient to grazing impacts, and long-term use of sites in this ecosystem does not significantly degrade vegetation.”

## Hydrology/Riparian

**Leaf-level physiological responses of *Tamarix ramosissima* to increasing salinity.** J. M. Carter and J. B. Nippert. 2012. *Journal of Arid Environments* 77:17–24. (Dept of Ecology and Evolutionary Biology, Univ of Kansas, Lawrence, KS 66044, USA.) The invasive shrub/tree saltcedar functioned robustly across a broad range of soil surface salinities in western Kansas riparian ecosystems.

**Mapping giant reed (*Arundo donax*) infestations along the Texas–Mexico portion of the Rio Grande with aerial photography.** C. H. Yang, J. H. Everitt, and J. A. Goolsby. 2011. *Invasive Plant Science and Management* 4:402–410. (USDA-ARS Kiki Garza Subtropical Agricultural Research Center, 2413 E Highway 83, Weslaco, TX 78596, USA.) More than 14,750 acres of riparian habitat along the Rio Grande River straddling the Texas–Mexico border are infested with giant reed, a common invasive plant in riparian habitats of the southern United States.

**Threats to riparian ecosystems in western North America: an analysis of existing literature.** B. Poff, K. A. Koestner, D. G. Neary, and V. Henderson. 2011. *Journal of the American Water Resources Association* 47:1241–1254. (Bureau of Land Management, 4701 N Torrey Pines, Las Vegas, NV 89130, USA.) After reviewing 453 publications addressing threats to riparian ecosystems in western North

America, the authors concluded that livestock grazing is considered less of a threat now than in the 1980s and 1990s, while concerns are increasing about invasive species, dams, and climate change.

## Measurements

**Efficiency and accuracy of wildland weed mapping methods.** S. D. Christenson, C. V. Ransom, K. A. Edvarchuk, and V. P. Rasmussen. 2011. *Invasive Plant Science and Management* 4:458–466. (C. Ransom, Dept of Plants, Soils, and Climate, Utah State Univ, Logan, UT 84322, USA.) “There was no significant difference in the accuracy of the buffered-point, screen-drawn, and perimeter-walked methods at reporting patch size and location.”

**Evaluation of NDVI to assess avian abundance and richness along the upper San Pedro River.** T. M. Mcfarland, C. Van Riper III, and G. E. Johnson. 2011. *Journal of Arid Environments* 77:45–53. (Institute of Renewable Natural Resources, Texas A&M Univ, 1500 Research Parkway, College Station, TX 77843, USA.) In southeastern Arizona, the Normalized Difference Vegetation Index (NDVI) was related to both avian abundance and avian species richness, but even the best NDVI model was insufficiently accurate to characterize the avian community.

## Plant Ecology

**Comparing morphological development and nutritive value of Caucasian old world bluestem and native grasses.** K. R. Harmony and K. R. Hickman. 2012. *Forage and Grazinglands* doi:10.1094/FG-2012-0127-01-RS. 8 p. (Kansas State Univ Agricultural Research Center, 1232 240th Ave, Hays, KS 67601, USA.) Caucasian old world bluestem had similar or better nutritive value throughout the growing season than little bluestem or sideoats grama. Standard forage quality analyses did not explain why grazing animals avoid selecting Caucasian old world bluestem when present in native rangeland.

**Conservation easements in California blue oak woodlands: testing the assumption of livestock grazing as a compatible use.** R. Reiner and A. Craig. 2011. *Natural Areas Journal* 31:408–413. (A. Craig, Nature Conservancy, 11010 Foothill Blvd, Los Molinos, CA 96055, USA.) After 5 years, cattle grazing reduced oak seedling density but also reduced the cover of the invasive grass medusahead.

**Lost in the weeds: *Ligustrum sinense* reduces native plant growth and survival.** B. T. Greene and B. Blossey. 2012. *Biological Invasions* 14:139–150. (Dept of Natural Resources, Cornell Univ, Ithaca, NY 14853, USA.) As the invasive shrub Chinese privet increased in Piedmont floodplain forests of South Carolina, herbaceous cover, height, abundance, and native plant species richness

decreased. Invasion of Chinese privet reduces seedling survival and growth of native plant species.

**The biology of Canadian weeds. 149. *Rumex acetosella*** L. G. J. Stopps, S. N. White, D. R. Clements, and M. K. Upadhyaya. 2011. *Canadian Journal of Plant Science* 91:1037–1052. (D. Clements, Dept of Biology, Trinity Western Univ, Langley, BC V2Y 1Y1, Canada). Summarizes current ecological knowledge about sheep sorrel, a common invasive plant across Canada and the northern United States that can be poisonous to horses and sheep.

### Rehabilitation/Restoration

**Effects of applying nitrogen on yield of introduced perennial summer grass cultivars in Oklahoma.** E. R. Funderburg, J. T. Biermacher, C. A. Moffet, M. Haque, and J. Mosali. 2011. *Forage and Grazinglands* doi:10.1094/FG-2011-1223-01-RS. 8 p. (Agricultural Research Division, Samuel Roberts Noble Foundation, 2510 Sam Noble Parkway, Ardmore, OK 73401, USA.) Without nitrogen fertilizer, “Tifton 85” bermudagrass was the greatest forage producer tested. With 50 lb N/acre applied, “B Dahl” old world bluestem and “Tifton 85” bermudagrass were the greatest forage producers, whereas “Tifton 85,” “Coastal,” “Midland 99,” and “Common/Giant blend” bermudagrass were the greatest forage producers when 100 to 300 lb N/acre were applied.

**Evaluation of herbicides and mowing on catbriar (*Smilax bona-nox*) in Oklahoma rangeland.** E. Funderburg, J. Locke, and J. Biermacher. 2011. *Weed Technology* 25:626–630. (Agricultural Research Division, Samuel Roberts Noble Foundation, 2510 Sam Noble Parkway, Ardmore, OK 73401, USA.) “If infested areas can be mowed, adding herbicide is not necessary to reduce catbriar population.”

**Fire-frequency effects on vegetation in north Florida pinelands: another look at the long-term Stoddard Fire Research Plots at Tall Timbers Research Station.** J. S. Glitzenstein, D. R. Streng, R. E. Masters, K. M. Robertson, and S. M. Hermann. 2011. *Forest Ecology and Management* 264:197–209. (Tall Timbers Research Station, 13093 Henry Beadel Dr, Tallahassee, FL 32312, USA.) In the Coastal Plain of the southeastern United States, plant species richness and herbaceous plant abundance were greatest with prescribed fires at 1- to 2-year intervals rather than 6- to

7-year intervals as suggested by prior data analyses from the Stoddard Fire Plots.

**Herbicides and mowing to control barb oatgrass (*Aegilops triuncialis*) and restore native plants in serpentine grasslands.** P. A. Aigner and R. J. Woerly. 2011. *Invasive Plant Science and Management* 4:448–457. (26775 Morgan Valley Rd, Lower Lake, CA 95457, USA.) “Clethodim and fluazifop show great potential to selectively remove barb oatgrass and other nonnative annual grasses in grasslands that are otherwise dominated by native grasses and forbs. Mowing is a less selective, but viable alternative.”

***Rhus glabra* response to season and intensity of fire in tallgrass prairie.** K. M. Hajny, D. C. Hartnett, and G. W. T. Wilson. 2011. *International Journal of Wildland Fire* 20:709–720. (D. Hartnett, Division of Biology, Kansas State Univ, Manhattan, KS 66506, USA.) Frequent backfires applied in autumn or winter effectively limited the expansion of smooth sumac into grasslands.

**Tolerance of Old World climbing fern (*Lygodium microphyllum*) spores to herbicides.** J. T. Hutchinson and K. A. Langland. 2011. *Invasive Plant Science and Management* 4:411–418. (Dept of Agronomy, Univ of Florida, Gainesville, FL 32653, USA.) Metsulfuron herbicide applied at  $\geq 0.2$  grams active ingredient per liter prevented germination of spores from Old World climbing fern, an invasive fern in central and southern Florida. Metsulfuron was more effective than triclopyr, imazapyr, glyphosate, fluroxypyr, or asulam herbicides.

### Socioeconomics

**Saving the sagebrush sea: an ecosystem conservation plan for big sagebrush plant communities.** K. W. Davies, C. S. Boyd, J. L. Beck, J. D. Bates, T. J. Svejcar, and M. A. Gregg. 2011. *Biological Conservation* 144:2573–2584. (USDA-ARS Eastern Oregon Agricultural Research Center, 67826-A Hwy 205, Burns, OR 97720, USA.) In addition to calling for more research to help restore sagebrush communities invaded by exotic annual grasses, the authors also suggest that more conservation easements and other incentives are needed to dissuade landowners from developing their properties.

---

*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.*