Browsing the Literature

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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 publisher or senior author (addresses shown in parentheses). Suggestions are welcomed and encouraged for items to include in the future issues of *Rangelands.*

Animal Ecology

Elk use of private land refuges. M. Burcham, W.D. Edge, and C.L. Marcum. 1999. Wildlife Society Bulletin 27:833-839. (School of Forestry, Univ. of Montana, Missoula, MT 59812). Even where good security cover existed for elk during the hunting season, elk preferred adjacent private lands where hunting was not allowed.

Large carnivores that kill livestock: Do "problem individuals" really exist? J.D.C. Linnell, J. Odden, M.E. Smith, R. Aanes, and J.E. Swenson. 1999. Wildlife Society Bulletin 27:698-705. (Norwegian Institute for Nature Research, Tungasletta-2, 7485 Trondheim, Norway). This paper questions the paradigm that killing "problem individuals" within a carnivore population will reduce predation in areas where home ranges of livestock and carnivores overlap.

The importance of scale of patchiness for selectivity in grazing herbivores. M.F. WallisDeVries, E.A. Laca, and M.W. Demment. 1999. Oecologia 121:355-363. (E. Laca, Dept. of Agronomy and Range Sci., Univ. of California, Davis, CA 95616). Cattle avoided small patches of vegetation and concentrated their grazing in large patches, preferring large patches where cattle could easily ingest digestible forage.

Wapiti bed sites in Idaho sagebrush steppe. D.C. Strohmeyer, J.M. Peek, and T.R. Bowlin. 1999. Wildlife Society Bulletin 27:547-551. (7900 Wyoming Ave. South, Bloomington, MN 55438). Elk bed sites were dominated by big sagebrush plants at least 2 feet tall.

Hydrology

Runoff and erosion in a pinon-juniper woodland: Influence of vegetation patches. K.D. Reid, B.P. Wilcox, D.D. Breshears, and L. MacDonald. 1999. Soil Science Society of America Journal 63:1869-1879. (D. Breshears, MS J495, Los Alamos National Lab., Los Alamos, NM 87545). Large, infrequent, convective summer storms generated much of the runoff and most of the sediment, whereas prolonged frontal storms were capable of generating considerable runoff but little sediment.

Improvements

Effect of surface water on desert bighorn sheep in the Cabeza Prieta National Wildlife Refuge, southwestern Arizona. B. Broyles and T.L. Cutler. 1999. Wildlife Society Bulletin 27:1082-1088. (Southwest Center, Univ. of Arizona, Tucson, AZ 85721). Construction of water developments did not enhance desert bighorn sheep populations.

Effects of burning and grazing on a coastal California grassland. D.A. Hatch, J.W. Bartolome, J.S. Fehmi, and D.S. Hillyard. 1999. Restoration Ecology 7:376-381. (J. Bartolome, Division of Ecosystem Sci., 151 Hilgard Hall #3110, Univ. of California, Berkeley, CA 94720). California oatgrass benefited from livestock grazing but did not respond to a prescribed fire conducted in autumn.

Influence of deleterious rhizobacteria on leafy spurge (*Euphorbia esula*) roots. M.A. Brinkman, S.A. Clay, and R.J. Kremer. 1999. Weed Technology 13:835-839. (S. Clay, Plant Science Dept., South Dakota State Univ., Brookings, SD 57007). Leafy spurge root weight and root carbohydrate content were reduced about 20% when soils were inoculated with rhizobacteria in northern South Dakota.

Leafy spurge control using flea beetles. R.G. Lym, D.L. Olson, and D.A. Mundal. 1999. North Dakota State Univ. Extension Service Bulletin W-1183. (Extension Publications, North Dakota State Univ., Fargo, ND 58105). Describes how and where to use flea beetles (biological control agents) to limit the invasive plant leafy spurge.

Response of bighorn sheep to clear-cut logging and prescribed burning. T.S. Smith, P.J. Hardin, and J.T. Flinders. 1999. Wildlife Society Bulletin 27:840-845. (Alaska Biological Science Center, 1011 E. Tudor Rd., Anchorage, AK 99503). Bighorn sheep in northeastern Utah responded favorably to prescribed burning in sagebrush steppe and pinyon-juniper woodlands.

Plant/Animal Interactions

Endophyte-grass-herbivore interactions: The case of Neotyphodium endophytes in Arizona fescue populations. K. Saikkonen, M. Helander, S.H. Faeth, F. Schulthess, and D. Wilson. 1999. Oecologia 121:411-420. (Dept. of Biology, Arizona State Univ., Tempe, AZ 85287). A fungal endophyte on a native grass, Arizona fescue, did not increase in plants subjected to grazing by cattle, elk, and deer.

Environmental heterogeneity, animal disturbances, microsite characteristics, and seedling establishment in a *Quercus havardii* community. S.S. Dhillion. 1999. Restoration Ecology 7:399-406. (Dept. of Biol. and Nature Conservation, Agricultural Univ. of Norway, PB 5014, As, N-1432, Norway). In sand shinnery oak communities in western Texas, soil displacement by rabbits favored little bluestem seedlings.

Methane emissions of beef cattle grazing tall fescue pastures at three levels of endophyte infestation. M.A. Pavao-Zuckerman, J.C. Waller, T. Ingle, and H.A. Fribourg. 1999. Journal of Environmental Quality 28:1963-1969. (H. Fribourg, Dept. of Plant and Soil Sciences, Univ. of Tennessee, Knoxville, TN 37901). Cattle emitted less methane when grazing tall fescue-white clover pastures than when grazing monocultures of tall fescue.

Quality of deferred forage from waterfowl nesting sites on the Canadian prairies. P.G. Jefferson, L. Wetter, and B. Wark. 1999. Canadian Journal of Animal Science 79:485-490. (Semiarid Prairie Agricultural Research Centre, P.O. Box 1030, Swift Current, SK S9H 3X2, Canada). Forage quality did not decline appreciably when hay harvesting was deferred for 3 years versus 2 years.

Plant Ecology

Nurse plants, mycorrhizae, and plant establishment in a disturbed area of the Sonora Desert. A. Carrillo-Garcia, J.L. Leon de la Luz, Y. Bashan, and G.J. Bethlenfalvay. 1999. Restoration Ecology 7:321-335. (G. Bethlenfalvay, USDA-ARS, 3420 NW Orchard Ave., Corvallis, OR 97330). Arbuscular-mycorrhizal fungi enhanced the establishment of colonizer plants in bare soils of disturbed areas.

Purple loosestrife, *Lythrum salicaria* L. L.W. Mitch. 1999. Weed Technology 13:843-846. (Dept. of Vegetable Crops, Univ. of California, Davis, CA 95616). Summarizes the ecology and distribution of purple loosestrife, an exotic wetland weed.

Reclamation

Ryegrasses in Alaska. L.J. Klebesadel. 2000. Univ. of Alaska Agr. and For. Exp. Sta. Bull. 108. (Publications Room, School of Agriculture and Land Resources Management, Univ. of Alaska, Fairbanks, AK 99701). Summarizes experiments on the forage yield, digestibility, and cattle grazing preferences of annual ryegrass and perennial ryegrass.

Socioeconomics

Public attitudes toward wildlife damage management and policy. D.K. Reiter, M.W. Brunson, and R.H. Schmidt. 1999. Wildlife Society Bulletin 27:746-758. (Dept. of Forest Resources, Utah State Univ., Logan, UT 84322). Support exists among US citizens nationwide for lethal control of livestock predators and crop depredators.

Soils

Biogeochemical cycling of calcium and magnesium by ceanothus and chamise. S.A. Quideau, R.C. Graham, O.A. Chadwick, and H.B. Wood. 1999. Soil Science Society of America Journal 63:1880-1888. (Dept. of Environmental Science, Univ. of California, Riverside, CA 92521). In California chaparral, nutrient cycling by ceanothus plants caused the soil's calcium/magnesium ratio to be higher than did nutrient cycling by chamise.

Phosphorus pools in tree and intercanopy microsites of a juniper-grass ecosystem. S. Kramer and D.M. Green. 1999. Soil Science Society of America Journal 63:1901-1905. (D. Green, Environmental Resources Program, School of Planning and Landscape Architecture, Arizona State Univ., Tempe, AZ 85287). Soil nutrients are usually concentrated under tree canopies in semiarid woodlands, but phosphorus did not follow this pattern in a juniper woodland in northern Arizona.

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