Selected Bibliography on
Southern Range Management,
1973-1978

Acknowledgments

The Committee expresses appreciation to Joe W. Howell and Hanne H. Hansen for their efforts in collecting the original citations; to Hanne H. Hansen, Mary B. O'Hara, Mary Ann Plaskett, and Ruth Slusher for computerizing the citations; to Linda Hoyt for secretarial support; and to Margaret S. Jennings, Sylvianne Easton, Linda A. Korb and Howard W. Mobley for editorial assistance and verification.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>RANGE PLANTS</strong></td>
<td>3</td>
</tr>
<tr>
<td>General</td>
<td>3</td>
</tr>
<tr>
<td>Systematic Botany</td>
<td>3</td>
</tr>
<tr>
<td>Forage Value</td>
<td>3</td>
</tr>
<tr>
<td>Problem Plants</td>
<td>4</td>
</tr>
<tr>
<td>Ecology</td>
<td>5</td>
</tr>
<tr>
<td>Physiography and Soils</td>
<td>6</td>
</tr>
<tr>
<td>Ecosystems</td>
<td>6</td>
</tr>
<tr>
<td>Physiology and Morphology</td>
<td>7</td>
</tr>
<tr>
<td>Genetics, Pathology, and Entomology</td>
<td>8</td>
</tr>
<tr>
<td><strong>RANGE MANAGEMENT</strong></td>
<td>9</td>
</tr>
<tr>
<td>General</td>
<td>9</td>
</tr>
<tr>
<td>Range Forage Production, Utilization, and Maintenance</td>
<td>10</td>
</tr>
<tr>
<td>Improvements and Range Developments</td>
<td>10</td>
</tr>
<tr>
<td>Introduced Plants and Pasture Management</td>
<td>11</td>
</tr>
<tr>
<td>Plant Characteristics</td>
<td>12</td>
</tr>
<tr>
<td>Quality</td>
<td>14</td>
</tr>
<tr>
<td>Establishment</td>
<td>15</td>
</tr>
<tr>
<td>Management</td>
<td>16</td>
</tr>
<tr>
<td>Production</td>
<td>19</td>
</tr>
<tr>
<td>Fertilization</td>
<td>19</td>
</tr>
<tr>
<td>Plant Control</td>
<td>21</td>
</tr>
<tr>
<td>Chemical</td>
<td>21</td>
</tr>
<tr>
<td>Mechanical and Biological</td>
<td>23</td>
</tr>
<tr>
<td>Grazing Systems</td>
<td>23</td>
</tr>
<tr>
<td><strong>RANGE LIVESTOCK</strong></td>
<td>24</td>
</tr>
<tr>
<td>General</td>
<td>24</td>
</tr>
<tr>
<td>Breeds and Breeding</td>
<td>25</td>
</tr>
<tr>
<td>Feeds and Feeding</td>
<td>28</td>
</tr>
<tr>
<td>Livestock Diseases and Pests</td>
<td>31</td>
</tr>
<tr>
<td><strong>RANGE INFLUENCES</strong></td>
<td>33</td>
</tr>
<tr>
<td>General</td>
<td>33</td>
</tr>
<tr>
<td>Forestry</td>
<td>33</td>
</tr>
<tr>
<td>Recreation</td>
<td>35</td>
</tr>
<tr>
<td>Water and Soil</td>
<td>35</td>
</tr>
<tr>
<td>Fire</td>
<td>36</td>
</tr>
<tr>
<td><strong>RANGE RESOURCES AND ECONOMICS</strong></td>
<td>38</td>
</tr>
<tr>
<td>General</td>
<td>38</td>
</tr>
<tr>
<td>Marketing, Finances, and Statistics</td>
<td>41</td>
</tr>
<tr>
<td>Multiple Use</td>
<td>43</td>
</tr>
<tr>
<td><strong>RANGE RESEARCH</strong></td>
<td>44</td>
</tr>
<tr>
<td>General</td>
<td>44</td>
</tr>
<tr>
<td>Modeling</td>
<td>46</td>
</tr>
<tr>
<td><strong>RANGE EDUCATION</strong></td>
<td>47</td>
</tr>
<tr>
<td>General</td>
<td>47</td>
</tr>
<tr>
<td><strong>WILDLIFE MANAGEMENT</strong></td>
<td>48</td>
</tr>
<tr>
<td>General</td>
<td>48</td>
</tr>
<tr>
<td>Food Habits</td>
<td>49</td>
</tr>
<tr>
<td>Species Characteristics</td>
<td>50</td>
</tr>
<tr>
<td>Habitat</td>
<td>50</td>
</tr>
<tr>
<td>Statistics</td>
<td>52</td>
</tr>
<tr>
<td><strong>INDEX OF AUTHORS</strong></td>
<td>53</td>
</tr>
<tr>
<td><strong>INDEX OF KEYWORDS</strong></td>
<td>59</td>
</tr>
</tbody>
</table>
Selected Bibliography on Southern Range Management, 1973–1978


Committee on Range Bibliography of the Southern Section, Society for Range Management

Introduction

This bibliography is the fourth of a series inaugurated in 1963 for the purpose of recording publications that deal importantly with the forest ranges of the South, and with the livestock and wildlife utilizing this vast resource.

For the first number of the series, the compilers appraised all literature that had accrued through 1961. The second bibliography spanned the years 1962–1967. The third bibliography covered the years 1968–1972 and somewhat strengthened the wildlife section with some minor changes. The present list contains over 1000 entries and updates the coverage of publications through 1978; the present classification system expands or modifies some previous categories to provide additional attention to interactions among the various uses of the southern range. This listing should provide information relevant to the diverse interests of land managers, stockmen, conservationists, scientists, teachers, and students.

As in the first three bibliographies in this series, the southern range area is considered to extend from eastern Oklahoma to Virginia, and from southern Kentucky and Missouri to the Gulf of Mexico. Because pasture commonly augments the diets of cattle that subsist chiefly on range forage, pertinent publications on supplemental pastures and cropland are included.

The present, 1973–1978, bibliography inaugurates a new production process. Citations collected by WINROCK International Livestock Research and Training Center were used to create a computer-based bibliographic file. This file was edited, corrected, updated, categorized, and indexed by a team of range scientists (the authors), editors, librarians, technical information specialists, and computer specialists. For the most part, team members worked together from their own offices by using various communication channels—many computer-based—to achieve the joint effort described above. The publication appears to be similar to earlier bibliographies in this series, but the author index, the keyword index, the computer typesetting, and camera-ready copy were drawn from the corrected computer-based file records as by-products—requiring little additional effort.

Another by-product is a searchable data base. The records from the computer file are now part of CORR (Communications on Renewable Resources), an information resource available for searching through Bibliographic Retrieval Services, Inc. (BRS). Access to CORR may be obtained through Richard L. Knox, Leader, Technology Transfer Group, Forest Service, U.S. Department of Agriculture, Box 2417, Washington, D.C. 20013. Development of this and other subsets of CORR relevant to range management have been sponsored jointly by the Interagency Range Information Committee. Cooperation by the Forest Service (Vern L. Thompson, Don D. Seaman, Theodore V. Russell), the Soil Conservation Service (Donald T. Pendleton, Douglas V. Sellars) of the U.S. Department of


Henry A. Pearson is Chief Range Scientist and Harold E. Grelen is Principal Range Scientist at the Southern Forest Experiment Station, Forest Service—USDA—Pineville, Louisiana. R. Dennis Child and E. K. Byington are Range Scientists at Winrock International Livestock Research and Training Center, Petit Jean Mountain, Morrilton, Arkansas. Clifford E. Lewis is Principal Range Scientist, Southeastern Forest Experiment Station, Forest Service—USDA—Marianna, Florida.
Agriculture and the Bureau of Land Management (Ron Younger and Edward L. Fisk) of the U.S. Department of the Interior has made the Committee's work possible. Mary B. O'Hara, Forest Service Technical Information Specialist, has provided leadership and direction in developing the concept of CORR and CORR products. Cooperation between the Forest Service and the U.S. Department of Energy has provided valuable computer services, particularly use of ORCHIS, a system developed at Oak Ridge National Laboratory.

Sources consulted included books, periodicals, publications of the U.S. Government, and of State Agricultural Experiment Stations, releases of regional organizations and private foundations, and bibliographies with abstracts. Periodicals searched included:

Agronomy Journal
American Forests
American Journal of Botany
American Midland Naturalist
Botanical Gazette
Botanical Review
Crop Science
Ecology
Ecological Monographs
Economic Botany
Forest Farmer
Forests and People
Forest Science
Gulf Coast Cattleman
Journal of Animal Science
Journal of Forestry
Journal of Range Management
Journal of Soil and Water Conservation
Journal of Wildlife Management
Soil Science
The Cattleman

Several members of the Society for Range Management and State and Federal agencies reviewed an initial draft of the bibliography and supplied additional pertinent references and suggestions:

Elvis R. Beaty, Agronomy Department, University of Georgia, Athens, Ga.
Nathan A. Byrd, Southeastern Area, State and Private Forestry, USDA Forest Service, Atlanta, Ga.
Raymond D. Evans, Missouri Department of Conservation, Jefferson, Mo.
Sam D. Halverson, Region 8—Southern Region, USDA Forest Service, Atlanta, Ga.
Dennis H. Hunter, School of Forest Resources and Conservation, University of Florida, Gainesville, Fla.
Norwin E. Linnartz, School of Forestry and Wildlife Management, Louisiana State University, Baton Rouge, La.
H. Dean Moberly, Department of Economics, Auburn University, Montgomery, Ala.
John D. Powell, Georgia Agricultural Experiment Station, Americus, Ga.
George E. Probasco, USDA Forest Service, North Central Forest Experiment Station, Columbia, Mo.
David W. Sanders, USDA Soil Conservation Service, Jackson, Miss.
Ronald E. Thill, USDA Forest Service, Southern Forest Experiment Station, Pineville, La.
J. Wayne Weaver, USDA Soil Conservation Service, Springfield, Mo.
Range Plants

GENERAL

General phases of southern range vegetation.

SYSTEMATIC BOTANY

Systematic botany (including dendrology), keys and identification aids, botanical expeditions, plant introduction, and accounts of large herbaria.

FORAGE VALUE

Palatability and nutritive, seasonal, and general values of southern range plants and plant parts as forage and in the diets of livestock, wild mammals, and birds. Special foods such as acorns and other mast. See also Quality and Food Habits.


**PROBLEM PLANTS**

Poisonous or otherwise noxious range plants, including parasites, exclusive of control of such plants. See also Plant Control.


ECOLOGY

Range ecology, habitat classification systems, plant communities, shoot and root responses, and ecological methods of study. See also Ecosystems.


Physiography and Soils

Geologic features, soils (including litter), soil moisture, sites, and soil management as they affect range plants and plant groups. Soil surveys.


Ecosystems

Forest and range classification and inventory systems, habitat types, and interactions.


**PHYSIOLOGY AND MORPHOLOGY**

*Functions, life processes, nutrition, and physiological requirements of range plants. Anatomy and development.*


99. Halls, L.K.

100. Howell, F.G., J.B. Gentry, and M.H. Smith, eds.

101. Hyder, D.N.


103. Larcher, W.


106. Moser, L.E.

107. Plummer, A.P.

108. Sosebee, R.E., ed.


111. Wolters, G.L.

**GENETICS, PATHOLOGY, AND ENTOMOLOGY**

Heredity, cytology, and range plant breeding; diseases and insects of range plants, their causes, effects, and treatments.


114. Brown, A.D.


116. Burton, G.W.

117. Heinrichs, D.H.
Range Management

GENERAL

General discussions of southern ranges, including range surveys, management plans, and livestock distribution.


RANGE FORAGE PRODUCTION, UTILIZATION, AND MAINTENANCE

Production and use of range forage, including grazing capacity, systems of forage management, range condition, and adaptability of ranges to different kinds of animals. See also Grazing Systems.


137. Dodd, J.D., R. Jurries, and A.T. Weichert. 

138. Dodd, J.D., R. Jurries, and A.T. Weichert. 
1975. Stimulating native forage production for livestock and wildlife on fallow rieland. Texas Agricultural Experiment Station Progress Report PR-3325C. Texas A&M University, College Station, TX. 8 p.


140. Hughes, R.H. 

141. Jorgensen, J.R. 

142. Mislevy, P. 

143. Moore, W.H. 

1977. Gulf cordgrass production, utilization, and nutritional value following burning. Texas Agricultural Experiment Station Bulletin 1176. Texas A&M University, College Station, TX. 19 p.

145. Oliver, W.M. 

146. Pearson, H.A. 

147. Pearson, H.A. 

148. Pearson, H.A. 


**IMPROVEMENTS AND RANGE DEVELOPMENTS**

General publications on range improvements and developments. Mechanical or artificial developments, including stock-watering places, trails and driveways, fences, corrals, and chutes. See also Introduced Plants And Pasture Management, Fertilization, Plant Control, and Fire.


151. Anonymous. 


153. Bay, R.R. 
INTRODUCED PLANTS AND PASTURE MANAGEMENT

Development and grazing of improved pastures and introduced plants. Includes establishment and use of grazed firebreaks.


**Plant Characteristics**

*Morphological, chemical, and anatomical traits of introduced plants. See also Forage Value, Quality, and Food Habits.*


225. Palmertree, H.

226. Palmertree, H.


Quality

Palatability and nutritive value of introduced plants and supplemental pastures. See also Forage Value and Food Habits.


230. Abubakar, I.


237. Coleman, S.W., and K.M. Barth.


239. Davis, G.V., and M.S. Offutt.
1975. Nutritive value of sweet white lupine for ruminants. Arkansas Agricultural Experiment Station Bulletin 792. 18 p.


244. Lane, C.D., K.M. Barth, J.B. McLaren, W.L. Sanders, and M.J. Constantin.

245. Matches, A.G., ed.

246. McCullough, M.E.
1977. The role of harvested or processed forage in beef feeding. In Forage-fed beef: production and marketing alternatives in the South. South-


Establishment

Establishment of introduced plants and supplemental pastures.


270. Matocha, J.E. 1975. No-till and seedbed production of small grains-rhizomes mixture for forage in east Texas. Texas Agricultural Experiment Station Bulletin B-1155. Texas A&M University, College Station, TX. 11 p.


Management

Management and use of introduced plants and supplemental pastures.


288. Arkansas Forage and Grassland Council. 1977. Quality forages for beef and milk produc-


321. Knight, W.E.
320. Jones, J.E., K.M. Barth, and S.W. Coleman.
319. Johnson, G., ed.


1975. The management of Serala sericea for forage and seed. Alabama Agricultural Experiment Station Circular 222. Auburn University, Auburn, AL. 12 p.


1974. Effects of pasture type and wintering level on gains of slaughter heifers. Tennessee Farm and Home Science. Progress Report 91:15-17. Tennessee Agricultural Experiment Station, Knoxville, TN.


1974. Stack and bale systems for hay handling and feeding. Alabama Agricultural Experiment Station Bulletin 455. 34 p.


Production

Production of introduced plants and supplemental pastures.


FERTILIZATION

Effects of fertilization on range productivity. See also Forage Value, Physiography and Soils, Quality, and Food Habits.


PLANT CONTROL

Principles and methods of controlling poisonous, injurious, and otherwise undesirable plants including brush. See also Chemical, Mechanical and Biological, and Fire.


Chemical

Chemical control of noxious plants.


395. Bovey, R.W., and J.D. Diaz-Colon. 1977. Selected bibliography of the phenoxy herbicides. II. The substituted dibenzo-p-dioxins. MP-1323. Texas A&M University, Texas Agricultural Experiment Station, College Station, TX. 57 p.
396. Bovey, R.W., and J.D. Diaz-Colon. 1978. Selected bibliography of the phenoxy herbicides. VIII. Effects on higher plants. MP-1388. Texas A&M University, Texas Agricultural Experiment Station, College Station, TX. 60 p.

397. Bovey, R.W., and J.D. Diaz-Colon. 1978. Selected bibliography of the phenoxy herbicides. IV. Ecological effects. MP-1360. Texas A&M University, Texas Agricultural Experiment Station, College Station, TX. 28 p.

398. Bovey, R.W., and J.D. Diaz-Colon. 1978. Selected bibliography of the phenoxy herbicides. VI. Methods of extraction and analysis. MP-1381. Texas A&M University, Texas Agricultural Experiment Station, College Station, TX. 34 p.


**Mechanical and Biological**


### GRAZING SYSTEMS

Various range management systems including continuous, deferred and rotational systems. See also Range Forage Production, Utilization, And Maintenance.


Range Livestock

GENERAL

Historical, popular, and general account of the range livestock industry and of southern range livestock of all classes; range livestock management and handling, including grazing habits and growth of animals. See also Range Research and Range Management.


467. Burgess, S.L., ed. 1976. Forage feeding may prove best alternative in Georgia. The Paper 23:1, 4. University of Georgia, Agricultural Experiment Station, Athens, GA.


**BREEDS AND BREEDING**

Southern range livestock breeds and breeding systems and methods, including artificial insemination and judging.


489. Beverly, J.R. 1975. Recognizing and handling calving problems. Texas Agricultural Experiment Station Miscellaneous Publication 1203. Texas A&M University, Agricultural Experiment Station, College Station, TX. 8 p.
490. Boston, A.C.

491. Boston, A.C., M.S. Taylor, and E.A. Icaza.


1974. Factors affecting weaning weights of Santa Gertrudis calves. Texas Agricultural Experiment Station Progress Report PR-3211. Texas A&M University, Agricultural Experiment Station, College Station, TX. 5 p.

494. Crockett, J.R., and M. Koger.


497. Franke, D.E.


510. Loyacano, A.F., J.E. Pontif, and W.A. Nipper.


FEEDS AND FEEDING

Animal nutrition and supplemental feeding on the range, feedlots for winter, and feeding range animals for market. See also Forage Value, Quality and Food Habits.


556. Ehmke, V.  

557. Ehmke, V.  


563. Holt, E.C.  


1974. Performance of four-year-old Hereford, Hereford X Holstein and Holstein females as influenced by level of winter supplementation under range conditions. Oklahoma Agricultural Experiment Station Miscellaneous Publication 92. Oklahoma Agricultural Experiment Station, Stillwater, OK. p. 56-65.


576. Mott, G.O.  

578. National Research Council, Committee on Natural Resources.  


580. Nix, J.E.  

581. Oliver, W.M.  

582. Oliver, W.M.  


585. Osuji, P.O.  

586. Pate, F.M.  

587. Pate, F.M., and J.R. Crockett.  


589. Pearson, H.A.  

590. Pope, L.S.  

591. Powell, J.  

592. Ray, M.L.  


596. Schake, L.M.  


598. Sell, W.H.  

599. Smith, A.E.  
LIVESTOCK DISEASES AND PESTS

All enemies of range animals, including diseases, poisons, parasites, predators, and mechanically injurious range plants. See also Problem Plants and Plant Control.


and Forestry Experiment Station Research Report 3(1). Mississippi State University, Mississippi State, MS. 2 p.


**Range Influences**

**GENERAL**

*General treatment of land uses which have a direct influence on southern livestock ranges.*


**FORESTRY**

*Forest growth and reproduction and timber management systems. Coordination of forestry and grazing, including grazing damage to trees.*


RECREATION

Rangeland use for recreational purposes, including camping, picnicking, hiking, hunting, and bird-watching.


WATER AND SOIL

Watershed management and related soil and water activities.


FIRE

Forest and range fires; prescribed burning, general effects of fire on vegetation and habitat. See also Plant Control.


Central Forest Experiment Station, St. Paul, MN. 3 p.

750. Reeves, H.C.

751. Reeves, H.C., and L.K. Halls.

752. Sackett, S.S.


754. Vogl, R.J.

755. Vogl, R.J.

756. Vogl, R.J.

757. Vogl, R.J.


Range Resources and Economics

GENERAL

Range and livestock resources and policies. Organization and administration of southern rangeland, ranches, and livestock. Livestock associations and coordination of range and farm.

760. Anonymous.

761. Anonymous.


764. Bennett, M.


766. Blaser, R.E.


769. Brokken, R.F.  

770. Buck, J.  

771. Burgess, S.L., ed.  

772. Butler, C.P.  

773. Campbell, R.S., and W. Keller, eds.  

774. Carpenter, J.C., Jr., H.E. Harris, and J.I. Feazell.  

775. Clonts, H.A., ed.  

776. Creech, R.G.  
1977. Forage research program—forage system development should result in better production of beef and milk in Mississippi. MAFES Research Highlights 40(12):2-3.

777. Cuskaden, C.M.  

1975. Economics of alternative uses of steep hill land in the Yazoo-Little Tallahatchie watershed of Mississippi. Mississippi Agricultural and Forestry Experiment Station Bulletin 835. Mississippi State University, Mississippi State, MS. 27 p.

1978. Effect of nitrogen levels and stocking rates on profitability of winter grazing. Mississippi Agricultural and Forestry Experiment Station Bulletin 865. Mississippi State University, Mississippi State, MS. 8 p.

781. Everhart, M.E.  


788. Hobbis, J.C.  

1974. Results and implications of mixed in-
terger programming of small farm organizations for part-time farmers in Piedmont County. Georgia Agricultural Experiment Station Research Bulletin 156. University of Georgia, Tifton, GA. 21 p.


803. Moak, J.E. 1973. Some characteristics of private nonindustrial forest landowners in Mississippi. Mississippi Agricultural and Forestry Experiment Station Information Sheet 1214. Mississippi Agricultural and Forestry Experiment Station, Mississippi State, MS. 2 p.


**MARKETING, FINANCES, AND STATISTICS**

*Land use surveys, cost of production, marketing of products and returns.*


enterprises analyzed in economics of beef production industry in different areas of the South. Southern Cooperative Series Bulletin 213. Southern Regional Association of State Agricultural Experiment Stations, Auburn, AL 36830. 47 p.


**MULTIPLE USE**

*Interactions of two or more resource uses—timber, livestock, wildlife, recreation, or water—on range. See also Range Influences.*


ida, School of Forest Resources and Conservation, Gainesville, FL. p. 12-22.


Range Research

GENERAL

Methods, description and history of, and need for, range investigations in the South. See also Ecology.


899. Justus, N.E. 1977. Forage research at the Southwest Mis-


MODELING

Conceptual and mathematical modeling, including simulation and optimization for single and multiple use of resources.


929. Luxmoore, R.J., D.J. van Rooyen, F.D. Hole, J.B. Mankin, and R.A. Goldstein. 1976. Field water balance and simulated water
relations of prairie and oak-hickory vegetation on deciduous forest soils. Soil Science 123(2):77-86.


938. Sanders, J.O. 1977. Application of a beef cattle production model to the evaluation of genetic selection criteria. Thesis (Ph.D.), Texas A&M University, College Station, TX, College Station, TX. 142 p.


Range Education

GENERAL

Range management opportunities and professional qualifications, training, and organizations. Glossaries, lists, and bibliographies.


949. Powell, J.

950. Pratt, J.N.


952. Smeins, F.E., and R.B. Shaw.
1978. Natural vegetation of Texas and adjacent areas 1675-1975—a bibliography. Texas Agricultural Experiment Station Miscellaneous Publication MP-1399. Texas A&M University, College Station, TX. 36 p.


954. U.S. Department of Agriculture, Forest Service.

955. Vallentine, J.F.

956. White, L.D.
1974. Major centers of range information. In Range resources of the South (Rev.). Georgia Agricultural Experiment Station Bulletin N.S.9. University of Georgia Coastal Plain Experiment Station, Tifton, GA. p. 27-33.

Wildlife Management

GENERAL

Wildlife on southern ranges.

957. Buckner, J.L.


959. Chamberlain, E.B.


961. Goff, F.G., R.L. Stephenson, and D. Lewis.

962. Holbrook, H.L.


964. Leedy, D.L.


966. Lowman, G.E.

967. U.S. Department of Agriculture, Forest Service.
FOOD HABITS

Wildlife food selections and nutritional requirements. See also Forage Value and Quality.


984. Hurst, G.A. [n.d.]. Effects of controlled burning on wild turkey poultry food habits. 32nd Annual Conference Southeast Association of Fish and Wildlife Agencies, 5-8 Nov 1978, Hot Springs, VA.


**SPECIES CHARACTERISTICS**

*Descriptions and activities of wildlife species.*


**HABITAT**

*Special emphasis on the environment, management, and effects on plants and plant values.*


**STATISTICS**

*Wildlife inventories including methods; hunting success; animal dynamics including population changes. See also Range Research.*


PEARSON, H.A.; R.D. CHILD; E.K. BYINGTON; H.E. GRELEN; and C.E. LEWIS

Contains 1049 entries, classified by subject matter, and with indexes of authors and keywords.

Additional keywords: livestock, forage plants, wildlife, range ecology, forest grazing.