

Montana Sagebrush Bibliography



Montana Fish, Wildlife & Parks

ACKNOWLEDGEMENTS

Montana Sagebrush Bibliography was developed out of a need expressed by many people in the Wildlife Division of Montana Fish, Wildlife & Parks who have persevered, some for more than 40 years, in the struggle to conserve sagebrush.

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We also thank the sportsmen and women of Montana who have supported our agency in organized groups and as individuals in efforts to conserve Montana's wildlife habitat over many years.

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Montana Sagebrush Bibliography



***Montana Fish,
Wildlife & Parks***

Michael R. Frisina
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Photo: R. Margaret Frisina



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Photo: R. Margaret Frisina



FOREWORD

The 1935-36 *Montana State Fish and Game Commission Biennial Report* states: *"To many people, the idea of wildlife management means only game wardens and closed seasons ...bounties on coyotes and cougar...and game preserves closed to hunters...but years of experience now indicate that modern wildlife management includes a far broader field of endeavor. It comprehends such problems as maintaining and improving the environment of the animal, ...as well as making provisions for a continuous supply."*

In the foreword of *Game Management in Montana* (1971), the Director of Montana Fish and Game Department states: *"Wildlife was, and is, dependent on the habitat."*

In the Pronghorn Antelope chapter of *Game Management in Montana*, three game managers - Buck Compton, Joe Egan and Dick Trueblood - state: *"Habitat is the key to the status and future of any wildlife population. Sagebrush and weeds are items essential in the year round pronghorn diet."*

From 1965 to 1975 Montana Department of Fish and Game and the Bureau of Land Management cooperated in the Sagebrush Ecology Project. One of the results of this 10-year study was Montana Fish, Wildlife & Parks (FWP) 1975 technical publication *Montana Sage Grouse*, which shows the indispensable link between sagebrush and sage grouse. Wynn Freeman, the Wildlife Division Administrator, states in the foreword: *"It is impossible to consider the future of sage grouse without considering the future of the sagebrush ranges they inhabit."* Or, to put it another way, the future of sagebrush is the future of sage

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grouse.

In FWP's 1987 technical publication *American Pronghorn Antelope in the Yellow Water Triangle, Montana*, Wildlife Division Administrator Arnold Olsen states: "*The almost inseparable alliance between antelope and sagebrush (Artemisia spp.) communities contributes to the uniqueness and vulnerability of these resources.*" The author, research biologist Duane Pyrah, recommends for habitat management "*protection from massive habitat conversions*". This is in relation to the loss of the big sagebrush community.

In FWP's 1989 technical publication *Ecology of Sympatric Populations of Mule Deer and White-Tailed Deer in a Prairie Environment* the authors note: "*Over all seasons and years, mule deer generally used sagebrush grasslands, ... more than expected on the basis of relative availability..*".

In FWP's 1995 technical publication *Ecological Implications of Sagebrush Manipulation* author and wildlife manager Joel Peterson writes: "*The necessity and desirability of controlling big sagebrush has been strongly questioned from an ecological standpoint by renowned plant ecologists like G. Hormay and R. Daubenmire.*" The foreword of this document states "*...Montana Fish, Wildlife and Parks (FWP) believes sagebrush manipulation is too often initiated without proper understanding of effects on wildlife, wildlife habitat and the overall ecosystem.*"

The Department and its professionals have been consistent for over 60 years in stating the importance of habitat for wildlife, and in particular the sagebrush-grassland community.

This publication is intended to maintain the integrity of thought, add to the knowledge, and honor our predecessors in the struggle to end the destruction of sagebrush in Montana. It is time to heed the message.

Stephen J. Knapp
Habitat Bureau Chief
Montana Fish, Wildlife & Parks



Photo: John White

INTRODUCTION

The Montana Sagebrush Bibliography was created as a reference source for those interested in the conservation of sagebrush plant communities and associated wildlife. The bibliography was designed with the Montana land manager in mind and includes publications useful when considering wildlife/sagebrush issues. Agency publications, meeting proceedings, books, and journal articles with specific information about Montana vegetation, soils, and wildlife are included. Non-published reports, environmental assessments, and environmental impact statements were not included.

The bibliography is divided into two parts:

PART I: MONTANA SAGEBRUSH

Part 1 provides the reader with important background information on Montana big sagebrush and also includes a key for the identification of the four subspecies of big sagebrush (*Artemisia tridentata*). A photo herbarium is also included to further assist with subspecies identification.

PART II: SAGEBRUSH BIBLIOGRAPHY

Part II consists of a numbered and alphabetized list of publications, subject index, and author index, providing the reader three different ways to review 451

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citations. Simply browse the bibliography for papers of interest or look for publications on a particular subject by referring to the subject index. For those who may have a particular reference in mind by author, we provided the author index.

This is a first attempt at a comprehensive sagebrush bibliography for Montana publications. We encourage comments for improving the usefulness of future editions. Send your comments and/or recommendations for additional publication inclusions to: *Mike Frisina, 1330 West Gold Street, Butte, MT 59701 or e-mail to: frisina@montana.com.*



PART I: MONTANA SAGEBRUSH

Carl Wambolt, Professor
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Sagebrush (*Artemisia*) is arguably the most important genus of plants in the western United States. Sagebrush taxa occur on an estimated 109 million ha in the region (Beetle 1960, McArthur and Plummer 1978). Most of the more than 25 million ha of Montana rangeland contain at least 1 sagebrush taxon (Table 1). *Artemisia* is comprised of 200 to 300 species that are distributed throughout the world's temperate climates (McArthur and Plummer 1978, Beetle and Johnson 1982). The sagebrush that generally are most important are those that are widely distributed and/or often dominate their communities. Their domination is natural due to their adaptation for many of the environmental conditions present in the western United States. These dominant sagebrush taxa are in the natural section Tridentatae of *Artemisia*, which is an endemic group to western North America (Beetle 1960).

The most common species is big sagebrush (*Artemisia tridentata*). The genus and species for big sagebrush was given by Nuttall in 1841 to a specimen collected by him on the Snake River plain. Big sagebrush is also the most important sagebrush species due to the large areas its subspecies occupy and often dominate under natural conditions. Although the subspecies may occasionally be found growing together, generally they require different environmental conditions. Understanding of these requirements provides insight to the ecological variation that exists among the many communities occupied by big sagebrush.

It has been often stated that the land occupied by basin big sagebrush (*Artemisia tridentata tridentata*) could be farmed. That is the case because this subspecies occupies deep, well-drained soils usually found in valley bottoms or other locations where such soils occur.

At the other extreme among the big sagebrush taxa, Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) occupies the most xeric locations among the taxa. These sites are usually the product of shallower soils and a large amount of clay or sometimes silt in the soil profile. The taxon does not do well

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on coarse-textured soils.

Mountain big sagebrush (*Artemisia tridentata vaseyana*), like basin big sagebrush, requires more moisture than does the Wyoming subspecies. However, mountain big sagebrush usually obtains its moisture by growing in localities with greater amounts of precipitation, rather than occupying very deep soils like basin big sagebrush grows in. The actual range of soils occupied by mountain big sagebrush ranges from sandy through silty and clayey textures, and may often be cobbly. However, generally finer textured soils appear to be favored by the taxon. Compared to surrounding community types mountain big sagebrush usually occupies the deeper better-watered locations.

The fourth subspecies of big sagebrush, subalpine sagebrush (*Artemisia tridentata spiciformis*) is of minor importance in Montana, as it is only known to occur in southwestern Montana near the Idaho border. It is found in the Centennial Valley and at the mouth of Cabin Creek near Hebgen Lake. Although it may occur occasionally elsewhere in southwestern Montana, it must be considered rare. Originally this taxon was considered to be a high elevation form of mountain big sagebrush. Subalpine big sagebrush is the only subspecies known to commonly root-sprout.

For further information regarding sagebrush vegetative types in Montana, the Society for Range Management (1994) publication "Rangeland Cover Types of the United States" should be consulted.

At intervals during the last 70 years, burning of sagebrush communities has been a popular practice in attempts to improve livestock forage production. There is considerable evidence in Montana that additional herbaceous cover for livestock foraging is not always realized following sagebrush control. For further information on this aspect, consult the following publications (Blaisdell 1953, Daubenmire 1975, Peek et al. 1979, Anderson and Holte 1981, Kuntz 1982, McNeal 1984, Mangan and Autenrieth 1985, Sturges and Nelson 1986, Wambolt and Payne 1986, Fraas et al. 1992, Wambolt and Watts 1996, Wambolt et al. 2001).

Upon review of 29 journals and diaries written prior to the onset of heavy immigrant movement into the western United States and before the vegetation along the major trails was grazed by domestic animals, Vale (1975) concluded that the pristine vegetation of the region was usually dominated by shrubs and that stands of grass were largely confined to mesic locations such as valley bottoms and canyons. Vale (1975) stated "the original condition of the range has implications for management. As brush was abundant in times prior to livestock grazing, its dominance of the vegetation today cannot always be considered evidence of over-grazing. Moreover, attempts to eradicate brush and encour-

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age pure stands of grass cannot be justified in terms of reestablishing the "natural plant cover."

Sagebrush taxa provide needed habitat components for scores of other organisms, both plant and animal (Wambolt 1998). McArthur and Plummer (1978) provided an air of optimism for sagebrush taxa that have shrunk to somewhere near one-half of their original range, and the organisms that require them. They stated, "we predict that in the years ahead the much-maligned sagebrush will be regarded with increasing favor by land managers". The publication of this sagebrush bibliography and similar materials since their prediction serve as evidence to their wisdom.

Table 1. Sagebrush¹ (*Artemisia*) taxa found in Montana.

<u>Taxon</u>	<u>Common name</u>
<u>TRIDENTATAE (section of ASTERACEAE)</u>	
<i>A. arbuscula arbuscula</i>	low sagebrush
<i>A. cana cana</i>	plains silver sagebrush
<i>A. c. viscidula</i>	mountain silver sagebrush
<i>A. longiloba</i>	alkali sagebrush
<i>A. nova</i>	black sagebrush
<i>A. rigida</i>	scabland sagebrush
<i>A. tridentata tridentata</i>	basin big sagebrush
<i>A. t. wyomingensis</i>	Wyoming big sagebrush
<i>A. t. vaseyana</i>	mountain big sagebrush
<i>A. t. spiciformis</i>	subalpine big sagebrush
<i>A. tripartita tripartita</i>	tall threetip sagebrush
<i>A. t. rupicola</i>	Wyoming threetip sagebrush
<u>Non - TRIDENTATAE subshrubs and shrubs</u>	
<i>A. frigida</i>	fringed sagewort
<i>A. longifolia</i>	longleaf sage
<i>A. pedatifida</i>	birdfoot sage
<i>A. spinescens</i>	bud sage

¹ There are an additional 11 *Artemisia* taxa in Montana that grow as forbs and are not included in this table.

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Literature Cited

- Anderson, J. E. and K. E. Holte. 1981. Vegetation development over 25 years without grazing on sagebrush-dominated rangeland in southeastern Idaho. *J. Range Manage.* 34:25-29.
- Beetle, A. A. 1960. A study of sagebrush-section Tridentatae of *Artemisia*. *Wyo. Agr. Exp. Sta. Bull.* 368.
- Beetle, A. A. and K. L. Johnson. 1982. Sagebrush in Wyoming. Univ. of Wyo. Agr. Exp. Sta. Bull. B-779. 68 p.
- Blaisdell, J. P. 1953. Ecological effects of planned burning sagebrush-grass range on the Upper Snake River Plains. *USDA Tech. Bull.* 1075.
- Daubenmire, R. 1975. Plant succession on abandoned fields and fire influences in a steppe area in southeastern Washington. *Northwest Sci.* 49:36-48.
- Fraas, W. W., C. L. Wambolt, and M. R. Frisina. 1992. Prescribed fire effects on a bitterbrush-mountain big sagebrush-bluebunch wheatgrass community, p. 212-216. In: W. P. Clary, E. D. McArthur, D. Bedunah, and C. L. Wambolt (compilers), *Proc-Symposium on Ecology and Management of Riparian Shrub Communities*. USDA For. Serv. Gen. Tech. Rep. INT-289, Ogden, Utah.
- Kuntz, D. E. 1982. Plant response following spring prescribed burning in an *Artemisia tridentata* ssp. *vaseyana*-*Festuca idahoensis* habitat type. Ph.D. dissertation, University of Idaho, Moscow, Idaho.
- Mangan, L. and R. Autenrieth. 1985. Vegetation changes following 2,4-D application and fire in a mountain big sagebrush habitat type, p. 61-65. In: *Rangeland Fire Effects - A Symposium*. K. Sanders and J. Durham (editors), BLM and University of Idaho, Moscow, Idaho.
- McArthur, D. E. and A. P. Plummer. 1978. Biogeography and management of native western shrubs: a case study, section Tridentatae of *Artemisia*. *Great Basin Naturalist Memoirs*, No. 2. Brigham Young University. Provo, Utah. p. 229-243.
- McNeal, A. F. 1984. Site characteristics and effects on elk and mule deer use of the Gardiner winter range, Montana. M. S. thesis, Montana



State University, Bozeman, Montana.

- Peek, J. M., R. A. Riggs, and J. L. Lauer. 1979. Evaluation of fall burning on bighorn sheep winter range. *J. Range Manage.* 32:430-432.
- Society for Range Management. 1994. Rangeland cover types of the United States. T. Shiflet (editors), Soc. for Range Manage. Denver, Colorado.
- Sturges, D. L. and D. L. Nelson. 1986. Snow depth and incidence of snow mold disease on mountain big sagebrush, p. 215-221. In: Proc.-Symposium on the Biology of *Artemisia* and *Chrysothamnus* (E.D. McArthur and B. L. Welch (editors), Gen. Tech. Rep. INT-200. USDA For. Serv., Intermountain Res. Sta.
- Vale, T. R. 1975. Presettlement vegetation in the sagebrush-grass area of the intermountain west. *J. Range Manage.* 28:32-36.
- Wambolt, C. L. 1998. Sagebrush-ungulate relationships on Yellowstone's northern range. *Wildl. Soc. Bull.* 26:429-437.
- Wambolt, C. L. and M. J. Watts. 1996. High stocking rate potential for controlling Wyoming big sagebrush, p. 148-150. In: J. R. Barrow, E. D. McArthur, R. E. Sosebee, and R. E. Rausch (compilers), Proc. Symposium on shrubland ecosystem dynamics in a changing environment. USDA For. Serv. Gen. Tech. Rep. INT-GTR-338. Ogden, Utah.
- Wambolt, C. L. and G. F. Payne. 1986. An 18-year comparison of control methods for Wyoming big sagebrush in southwestern Montana. *J. Range Manage.* 39:314-319.
- Wambolt, C. L., K. S. Walhof, M. R. Frisina. 2001. Recovery of big sagebrush communities after burning in south-western Montana. *J. Environmental Manage.* 61:243-252.



KEY TO BIG SAGEBRUSH SUBSPECIES

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1. Tall plants (1 to 3 m at maturity), leaves long in relation to width and wedge shaped, panicles arise throughout a relatively uneven crown.

Basin big sagebrush (*Artemisia tridentata tridentata*)



Basin big sagebrush - Lightly browsed



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Basin big sagebrush - Heavily browsed

1. Plants generally less than 1 m tall, leaves not wedge shaped with bases strongly tapered.
2. Crown rounded with panicles arising throughout a relatively uneven crown, leaves are bell-shaped and shorter than other big sagebrush taxa.

Wyoming big sagebrush (*Artemisia tridentata wyomingensis*)



Wyoming big sagebrush - Lightly browsed



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Wyoming big sagebrush - Heavily browsed

2. Crown flat-topped with panicles arising to relatively even lengths above the foliage.
3. Leaves intermediate in size, crown relatively compact.

Mountain big sagebrush (*Artemisia tridentata vaseyana*)



Mountain big sagebrush - Lightly browsed



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Mountain big sagebrush - Heavily browsed

3. leaves large, crown relatively open

Subalpine big sagebrush (*Artemisia tridentata spiciformis*)



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PHOTOGRAPHIC HERBARIUM

Photographs Courtesy Carl L. Wambolt, Professor
Montana State University

Artemisia tridentata tridentata
Basin big sagebrush



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Artemisia tridentata vaseyana Mountain big sagebrush



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Artemisia tridentata wyomingensis
Wyoming big sagebrush



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Artemisia tridentata spiciformis
Subalpine big sagebrush



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Photo: Michael R. Frisina



PART II: BIBLIOGRAPHY

1. **Alexander, R. R. 1985.** Major habitat types, community types, and plant communities in the Rocky Mountains. USDA For. Serv. Gen. Tech. Rep. RM-123.
2. **Allen, E. O. 1965.** Food and range use habits of whitetail deer on Missouri River bottomlands in northcentral Montana. M. S. thesis, Montana State University, Bozeman.
3. **Allen, E. O. 1968.** Range use, foods, condition, and productivity of white-tailed deer in Montana. *J. Wildl. Manage.* 32:130-141.
4. **Allred, B. W. 1941.** Grasshoppers and their effect on sagebrush on the Little Powder River in Wyoming and Montana. *Ecology* 22:387-392.
5. **Alt, K., and M. R. Frisina. 2000.** Natural regulation and Yellowstone National Park - unanswered questions. *Rangelands* 22:3-6.
6. **Ament, R. 1995.** Pioneer plant communities five years after the 1988 Yellowstone fires. M. S. thesis, Montana State University, Bozeman.
7. **Amstrup, S., and K. P Burnham. 1978.** Activities and habitat use of pronghorns on Montana-Wyoming coal lands. *Proc. Biennial Pronghorn Antelope Workshop* 8:270-306.
8. **Anderson, N. L. 1962.** Grasshopper-vegetation relationships on Montana grasslands. Ph.D. dissertation, Montana State College, Bozeman.
9. **Anderson, N. L. 1964.** Some relationships between grasshoppers and vegetation, *Ann. Entomol. Soc. of Am.* 57:736-742.
10. **Anderson, N. L. 1973.** The vegetation of rangeland sites associated with some grasshopper studies in Montana. *Mont. Agr. Exp. Sta. Bull. No. 668.* Montana State University, Bozeman.
11. **Arno, S. F., and R. D. Pfister. 1977.** Habitat types: an improved system

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18 Montana Sagebrush Bibliography

- for classifying Montana's forests. *Western Wildlands* 3:6-11.
12. **Bailey, E. D. 1960.** Behavior of the Rattlesnake mule deer on their winter range. M. S. thesis, University of Montana, Missoula.
 13. **Ball, S. K. 1987.** Mule deer use of agricultural lands adjacent to Missouri River breaks habitat. p. 57 In: A. Christensen (compiler), *Proc. Mont. Chapt., The Wildl. Soc., Kalispell.*
 14. **Barker, W. T., and W. C. Whitman. 1988.** Vegetation of the northern Great Plains Rangelands 10:266-272.
 15. **Bayless, S. R. 1967.** Food habits, range use and home range of pronghorn antelope in central Montana during winter. M. S. thesis, Montana State University, Bozeman.
 16. **Bayless, S. R. 1969.** Winter food habits, range use, and home range of antelope in Montana. *J. Wildl. Manage.* 33:538-551.
 17. **Bayless, S. 1971.** Relationships between big game and sagebrush. Abstract. NW Sect., The Wildl. Soc., Bozeman.
 18. **Bayless, S. R. 1992.** Duck population responses to water development in northcentral Montana. M. S. thesis, Montana State University, Bozeman.
 19. **Becker, B. W. 1972.** Pronghorn-cattle range use, food habits and relationships in an enclosed sagebrush control area. M. S. thesis, Montana State University, Bozeman.
 20. **Beer, J. 1944.** Distribution and status of pronghorn antelope in Montana. *J. Mammal.* 25:43-46.
 21. **Beverlin, G. W., and C. L. Wambolt. 1993.** Distribution and habitat of Montana *Chrysothamnus*. In: J. Cook (compiler), *Proc. Mont. Acad. Sci.* 50:37-52.
 22. **Black, H. W. 1959.** Public lands in Montana. *Proc. West. Assoc. Game and Fish Comm.* 39:127-131.
 23. **Blakiston, T. W. 1862-63.** On birds collected and observed in the interior of British North America. *The Ibis* 3:314-320, 4:3-10, 5:39-87, 122-155.
 24. **Blankenship, J. W. 1901.** Weeds of Montana. *Mont. Agr. Exp. Sta. Bull.* 30.
 25. **Blankenship, J. W. 1902-1904.** Report of the botanist. *Montana Agr. Exp. Sta. Bull.* 32:38-44, *Ann. Rep., Mont. Exp. Sta.,* 9:68-79, and 10:64-68.
 26. **Blankenship, J. W. 1905.** Supplement to the flora of Montana. *Montana Agr. College Sci. Studies* 1:33-109.
 27. **Blankenship, J. W. 1905.** A century of botanical exploration in Montana, 1805-1905; collections, herbaria and bibliography. *Montana Agr. College Sci. Studies* 1:3-31.
 28. **Booth, W. E. 1947.** The effect of grass competition on the growth and reproduction of big sagebrush, *Artemisia tridentata* Nutt. *Proc. Mont. Acad. Sci.* 7:23-25.
 29. **Booth, W. E. 1950.** Flora of Montana. Part 1, Conifer and monocots. Montana State University Research Foundation, Bozeman.

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30. **Booth, W. E., and J. C. Wright. 1959.** Flora of Montana. Part II, Dicotyledons. Montana State University, Bozeman.
31. **Bosquet, K. R. 1996.** Habitat preferences of sharp-tailed grouse broods on the C.M.R. NWR. M. S. thesis, Montana State University, Bozeman.
32. **Bourgeron, P. S., A. M. Kratz, T. Weaver, and N. Weidman. 1988.** Bibliography of Montana vegetation description. Great Basin Nat. 48: 301-323.
33. **Bray, R. O. 1990.** The influence of selected *Artemisia* compounds on mule deer preference. M. S. thesis, Montana State University, Bozeman.
34. **Bray, R. O., C. L. Wambolt, and R. G. Kelsey. 1991.** Influence of sage brush terpenoids on mule deer preference. Journal of Chemical Ecology 17:2053-2062.
35. **Brazda, A. R. 1952.** Elk migration patterns and some of the factors affecting movements in the Gallatin River drainage, Montana. M. S. thesis, Montana State College, Bozeman.
36. **Brazda, A. R. 1953.** Elk migration patterns and some of the factors affecting movements in the Gallatin River drainage, Montana. J. Wildl. Manage. 17:9-23.
37. **Britton, M. P. 1955.** An ecological study of a relict of grassland and on adjacent grazed pasture in Beaverhead Valley, Montana. M. S. thesis, Montana State College, Bozeman.
38. **Brown, R. 1965.** The distribution of plant communities in the Badlands of southeastern Montana. M. S. thesis, University of Montana, Missoula.
39. **Bruns, E. H. 1977.** Winter behavior of pronghorns in relation to habitat. J. Wildl. Manage. 41:560-571.
40. **Buck, P. D. 1947.** The biology of the antelope in Montana. M. S. thesis. Montana State College, Bozeman.
41. **Bucsis, R. A. 1974.** Ecological characteristics of the Armstrong mule deer winter range, Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
42. **Cada, J. D. 1968.** Populations of small mammals in central Montana with special reference to tentative sagebrush control sites. M. S. thesis, Montana State University, Bozeman.
43. **Cameron, E. S. 1907.** The birds of Custer and Dawson counties, Montana. Auk 24:241-270, 389-407, 25:39-56.
44. **Campbell, R. B. 1970.** Pronghorn, sheep and cattle range relationships in Carter County, Montana. M. S. thesis, Montana State University, Bozeman.
45. **Cannon, M. E. 1983.** Estimating range production from thickness of epipedon and other soil or site characteristics. M. S. thesis, Montana State University, Bozeman.
46. **Cannon, M. E., and G. A. Nielsen. 1984.** Estimating production of range vegetation from early measured soil characteristics. Soil Sci. Soc. Am. J. 48:1393-1397.

Dedicated to sagebrush, that essential component of the western range.



20 Montana Sagebrush Bibliography

47. **Caprio, J. M. 1966.** Pattern of plant development in the western United States. *Mont. Agr. Exp. Sta. Bull.* 607, Bozeman.
48. **Caprio, J. 1973** Timing the green wave. *NOW* 9:6-7, Montana State University Agr. Exp. Sta., Bozeman.
49. **Caprio, J. M. and J. S. Williams. 1973.** Impacts of induced rainfall on the great plains of Montana. *Mont. Agr. Exp. Sta. Res. Rep.* 42, Bozeman.
50. **Carleton, M. A. 1893.** List of plants collected by the Garfield University expedition of 1889. *Trans. Kansas Acad. of Sci.* 13:50-57.
51. **Carlson, J. R., J. G. Schutz, and W. R. Oaks. 1984.** Seed production technique of two chenopods. p. 191-195 In: A. R. Tiedemann, E. D. McArthur, H. C. Stutz, R. Stevens, and K. C. Johnson (compilers), *Proc. Symposium on the Biology of Antriplex and related chenopods.* USDA For. Serv. Gen. Tech. Rep. INT-172.
52. **Carter, R. L. 1951.** An environmental analysis of winter game range in western Montana. M. S. thesis, University of Montana, Missoula.
53. **Casey, T. M. 1984.** Preservation of wildlife habitat, a county land use planning perspective. p. 39-41 In: A. Dood (compiler), *Agriculture and Wildlife.* *Proc. Mont. Chapt., The Wildl. Soc.,* Butte.
54. **Chadde, S. W. 1985.** Initial recovery patterns of southwestern Montana foothill range. M. S. thesis, Montana State University, Bozeman.
55. **Chapline, W. R. 1936.** Excessive stocking and rule-of-thumb management from the Western Range, a great but neglected natural resource. *State Document 199, Separate No. 5, USDA:*151-184.
56. **Clark, D. 1991.** The effect of fire on Yellowstone ecosystem seed banks. M. S. thesis, Montana State University, Bozeman.
57. **Clawson, M. 1996.** An investigation of factors that may affect nest success in CRP lands and other grassland habitats in an agricultural landscape. M. S. thesis, Montana State University, Bozeman.
58. **Cole, G. F. 1955.** Range use and food habits of pronghorn antelope in central Montana, with special reference to alfalfa. M. S. thesis, Montana State University, Bozeman.
59. **Cole, G. F. 1955.** Range use and food habits of the pronghorn antelope in central Montana with special reference to alfalfa. *Mont. Agr. Exp. Sta. Bull.* No. 516.
60. **Cole, G. F. 1957.** A preliminary report on antelope-range relationships in central Montana. 10th Ann. Meeting, Amer. Soc. Range Manage, Great Falls.
61. **Cole, G. F. 1958.** Range Survey Guide. Montana Fish and Game Dept. Helena.
62. **Cole, G. F. 1959.** Key Browse Survey Method. *West. Assoc. State Game and Fish Comm., Proc.* 39:181-186.
63. **Compton, H. O. 1970.** Southeastern Montana antelope population trends in relation to severe winters. *Antelope Workshop, Scottsbluff, Nebraska.*
64. **Constan, K. J. 1967.** Food habits, range use and relationships of bighorn

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- sheep to mule deer and elk in winter, Gallatin Canyon, Montana. M. S. thesis, Montana State University, Bozeman.
65. **Cooperrider, A. Y. 1969.** Competition for food between mule deer and bighorn sheep on Rock Creek winter range, Montana. M. S. thesis, University of Montana, Missoula.
 66. **Cope, M. G. 1992.** Distribution, habitat selection, and survival of transplanted Columbian sharp-tailed grouse (*Tympanuchus phasionellus columbianus*) in the Tobacco Valley, Montana. M. S. thesis, Montana State University, Bozeman.
 67. **Cotter, J. E. 1963.** Causation and plant succession in disturbed areas of southwestern Montana. M. S. thesis, Montana State University, Bozeman.
 68. **Coues, E. 1878.** Field notes on birds observed in Dakota and Montana along the forty-ninth parallel during the seasons of 1873 and 1874. Article XXV. p. 545-661. In: Bull. of the U. S. Geological and Geographical Survey Vol. IV. U. S. Govt. Printing Off., Washington, D. C.
 69. **Coues, E. (editor). 1965.** History of the Expedition Under the Command of Lewis and Clark. Dover Publication, Inc. I/N. 3 Volumes.
 70. **Couey, F. M. 1946.** Antelope foods in southeastern Montana. J. Wildl. Manage. 10:367.
 71. **Creamer, W. H. 1991.** Prediction of available forage production of big sagebrush. M. S. thesis, Montana State University, Bozeman.
 72. **Creamer, W. H., C. L. Wambolt, and R. J. Rossi. 1992.** Comparison of three groups of variables for prediction of big sagebrush forage production. p. 217-221. In: W. P. Clary, E. D. McArthur, D. Bedunah, and C. L. Wambolt (compilers), Proc. Symposium on ecology and management of riparian shrub communities. USDA For. Serv. Gen. Tech. Rep. INT-289, Ogden, Utah.
 73. **Cutright, P. R. 1969.** Lewis and Clark: Pioneering Naturalists. Univ. Ill. Press, Urbana.
 74. **Davis, C. V. 1956.** 1955 checklist of the birds of Montana. Proc. Mont. Acad. of Sci. 16:5-13.
 75. **Davis, C. V. 1961.** A distributional study of the birds of Montana. Ph.D. dissertation, Oregon State University, Corvallis.
 76. **Davis, C. V. 1963.** Birds of Montana. Montana Wildlife. August:23-27.
 77. **Davis, C. V. 1972.** Birds of Montana. Montana Fish and Game Department, Helena.
 78. **Davis, C. V., and S. E. Weeks. 1963.** Guide to the ornithology of Montana (1911-1940). Proc. Mont. Acad. Sci. 23:157-169.
 79. **Delap, D. 1962.** Breeding land birds of the Little Rocky Mountains in north central Montana. Proc. Mont. Acad. Sci. 21:38-42.
 80. **Dixon, B. G. 1997.** Cumulative effects modelling for grizzly bears in the Greater Yellowstone Ecosystem. M. S. thesis, Montana State University, Bozeman.



22 Montana Sagebrush Bibliography

81. **Dolan, J. J., and J. E. Taylor. 1972.** Residual effects of range renovation on dense clubmoss and associated vegetation. *J. Range Manage.* 25:32-37.
82. **Dood, A. R. 1978.** Summer movements, habitat use, and mortality of mule deer fawns in the Missouri River Breaks, Montana. M. S. thesis, Montana State University, Bozeman.
83. **Dubois, K. L. 1979.** An inventory of the avifauna in the long pines of southeastern Montana. M. S. thesis, Montana State University, Bozeman.
84. **Duncan, E. A. 1975.** The ecology of curl-leaf mountain mahogany (*Cercocarpus ledifolius* Nutt.) in southwestern Montana with special emphasis to use by mule deer. M. S. thesis, Montana State University, Bozeman.
85. **Dusek, G. L. 1971.** Range relationships of mule deer in the prairie habitat, northcentral Montana. M. S. thesis, Montana State University, Bozeman.
86. **Dusek, G. L. 1975.** Range relations of mule deer and cattle in prairie habitat. *J. Wildl. Manage.* 39:605-616.
87. **Dusek, G. L. 1982.** Management implications of research on white-tailed deer in the Long Pines, southeastern Montana. p. 24-27 In: C. D. Eustace (editor), *Practical applications of recent research*, Proc. Mont. Chapt., The Wildl. Soc., Billings.
88. **Dusek, G. L. 1987.** Ecology of white-tailed deer in upland ponderosa pine habitats in south-eastern Montana. *Prairie Nat.* 19:1-17.
89. **Dusek, G. L. 1990.** Two worlds of the whitetail. *Montana Outdoors* 21:2-7.
90. **Dusek, G. L., A. K. Wood and R. J. Mackie. 1988.** Habitat use by white-tailed deer in prairie-agricultural habitat in Montana. *Prairie Nat.* 20:135-142.
91. **Dusek, G. L., and R. J. Mackie. 1988.** Factors influencing distribution and abundance of white-tailed deer in a prairie riverine environment. NW Sect., The Wildl. Soc., Coeur d'Alene, Idaho.
92. **Dusek, G. L., R. J. Mackie, J. D. Herriges, and B. B. Compton. 1989.** Population ecology of white-tailed deer along the lower Yellowstone River. *Wildl. Monogr.* 104:1-68.
93. **Dusek, G. L., and J. T. Morgan. 1991.** A camera system to evaluate population parameters and spatial relationships of deer. Proc. Third International Congr. on Nat. Res. and Wildl., Guadalajara, Mexico.
94. **Egan, J. L. 1957.** Some relationships between mule deer and alfalfa production in Powder River County, Montana. M. S. thesis, Montana State College, Bozeman.
95. **Egan, J. L. 1958.** Some relationships between mule deer and alfalfa production in Montana. *West. Assoc. State Game and Fish Comm.* 40:232-240.
96. **Eichhorn, L. C., and C. R. Watts. 1984.** Plant succession on burns in the river breaks of central Montana. *Proc. Mont. Acad. Sci.* 43:21-34.

Dedicated to sagebrush, that essential component of the western range.



97. **Ellison, L., and E. J. Woolfolk. 1937.** Effects of drought on vegetation near Miles City, Montana. *Ecology* 18:329-336.
98. **Eng, R. L. 1952.** A two-summer study of the effects on bird populations of chlordane bait and aldrin spray as used for grasshopper control. *J. Wildl. Manage.* 16:326-337.
99. **Eng, R. L. 1953.** The sage grouse season. *Montana Wildlife.* Winter.
100. **Eng, R. L. 1954.** Use of aerial coverage in sage grouse strutting ground counts. *Proc. West. Assoc. State Game and Fish Comm.* 34:231-233.
101. **Eng. R. L. 1955.** Method for obtaining sage grouse age and sex ratios from wings. *J. Wildl. Manage.* 19:267-272.
102. **Eng. R. L. 1955.** Wings for grouse management. *Montana Wildlife.* Summer.
103. **Eng. R. L. 1961.** Sage grouse - spring strutting activity. *Nat.* 2:15-20.
104. **Eng. R. L. 1963.** Observations on the breeding biology of male sage grouse. *J. Wildl. Manage.* 27:841-846.
105. **Eng. R. 1969.** For survival..sage grouse need sagebrush now. *Montana State University, College of Agr., Bozeman.* 5:2.
106. **Eng. R. L. 1986.** Upland game birds. p. 407-428. In: Cooperrider, A. Y., R. J. Boyd, and H. R. Stuart, editors. *Inventory and monitoring of wildlife habitat, XVIII.* USDI Bureau of Land Manage. Serv. Center, Denver, Colorado.
107. **Eng. R. L., and P. Schladweiler. 1972.** Sage grouse winter movements and habitat use in central Montana. *J. Wildl. Manage.* 36:141-146.
108. **Eng. R. L., E. J. Pitcher, S. J. Scott, and R. J. Greene. 1979.** Minimizing the effect of surface coal mining on a sage grouse population by a directed shift of breeding activities. p. 464-468 In: *The Mitigation Symposium, USDA Forest Service, Rocky Mt. Forest and Range Exp. Sta., Fort Collins, Colorado.*
109. **Eng. R. L., and R. J. Mackie. 1982.** Integrating grazing-range management practices with management of major wildlife species on rangeland in northcentral Montana. *Proc. West. Assoc. Fish and Wildl. Agencies* 62:112-119.
110. **Engelmann, G. 1862.** Plants collected during the exploration of the upper Missouri by F. V. Hayden in 1853. *Trans. Am. Philos. Soc.* 12:182-212.
111. **Ettert, R. A. 1938.** The morphology of *Artemisia tridentata* Nutt. *Lloydia. Quarterly J. Biological Sci.* 1:3-74.
112. **Eustace, C. D. 1967.** Food habits, range use and relationships between elk and livestock in the Gravelly Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
113. **Evanko, A. B., and R. A. Peterson. 1955.** Comparisons of protected and grazed mountain rangelands in southwestern Montana. *Ecology* 36:71-82.
114. **Fairman, L. L. 1966.** Movements, populations, and behavior of deer on a western Montana winter range. M. S. thesis, University of Montana,

Dedicated to sagebrush, that essential component of the western range.



24 Montana Sagebrush Bibliography

Missoula.

115. **Feist, F. G. 1968.** Breeding - bird populations on sagebrush-grassland habitat in central Montana. Audubon Field Notes 22:691-695.
116. **Feist, F. G. 1968.** Breeding bird populations in relation to proposed sagebrush control in central Montana. M. S. thesis. Montana State University, Bozeman.
117. **Ferguson, R. B. and J. V. Basile. 1967.** Effect of seedling numbers on bitterbrush survival. J. Range Manage. 20:380-382.
118. **Flath, D. L. 1998.** Species of special interest or concern. Montana Fish, Wildlife & Parks, Helena.
119. **Fliger, R. 1966.** Wings help set seasons. Montana Wildl. Fed. News. 6.
120. **Foresman, K. R. 2001.** The wild mammals of Montana. American Society of Mammalogists. Allen Press, Lawrence, Kansas.
121. **Foresman, K. R. 2001.** Key to the mammals of Montana. University of Montana, Missoula.
122. **Fraas, W. W. 1992.** Bitterbrush growth and reproductive characters in relation to browsing in southwest Montana. M. S. thesis, Montana State University, Bozeman.
123. **Fraas, W. W., C. L. Wambolt, and M. R. Frisina. 1992.** Prescribed fire effects on a bitterbrush-mountain big sagebrush-bluebunch wheatgrass community. p. 212-216. In: W. P. Clary, E. D. McCarthur, D. Bedunah, and C. L. Wambolt (compilers), Proc: Symposium on ecology and management of riparian shrub communities, USDA For. Serv. Gen. Tech. Rep. INT-289.
124. **Freeman, J. S. 1971.** Pronghorn range use and relation to livestock in southeastern Montana. M S. thesis, Montana State University, Bozeman.
125. **Frisina, M. R. and K. L. Alt. 1992.** Identification of Montana's furbearing mammals. Montana Outdoors. May/June. Montana Fish, Wildlife & Parks, Helena.
126. **Frisina, M. R., C. L. Wambolt, B. Sowell, S. J. Knapp, M. Sullivan, and C. Johnson. 2001.** A balancing act-maintaining habitat for sage grouse, prairie dogs and livestock requires managing resources for a balance. Rangelands 23:17-19.
127. **Fritzen, D. 1996.** Ecology and behaviour of mule deer on the Rosebud Coal Mine. Ph.D. dissertation, Montana State University, Bozeman.
128. **Fuhrmann, R. T. 1998.** Distribution, morphology, and habitat use of the red fox in Yellowstone. M. S. thesis, Montana State University, Bozeman.
129. **Gallaher, W. B., D. W. Nelson, A. O. Cosgriff, and G. F. Payne. 1970.** The effect of 2,4-D on sagebrush and associated vegetation on the Beaverhead National Forest, Montana. USDA, For. Serv. and Montana Agr. Exp. Sta., Bozeman.
130. **Geyer, C. A. 1895.** Notes on the vegetation and general character of the Missouri and Oregon Territories made during a botanical journey from

Dedicated to sagebrush, that essential component of the western range.



- the state of Missouri across the southpass of the Rocky Mountains to the Pacific, during the years of 1843 and 1844. *London J. Botany* 4:479-492, 653-662, 5:22-41, 98-208, 285-310, 509-524.
131. **Giddings, B. 1986.** Home range size, movements and habitat use of bobcats in a prairie rangeland environment. M. S. thesis, Montana State University, Bozeman.
 132. **Giddings, B. 1988.** Prairie bobcats. *Montana Outdoors*, March/April. Montana Fish, Wildlife & Parks, Helena.
 133. **Giddings, B., G. L. Risdahl, and L. R. Irby. 1990.** Bobcat habitat use in southeastern Montana during periods of high and low lagomorph abundance. *Prairie Nat.* 22:249-258.
 134. **Gieseke, L. F. 1930.** Soils of Blaine County. *Montana Agr. Exp. Sta. Bull.* No. 228.
 135. **Gieseke, L. F. 1931.** Soils of Choteau County, soil reconnaissance of Montana, preliminary report. *Montana Agr. Exp. Sta. and USDA.*
 136. **Gieseke, L. F. 1931.** Soils of Choteau County. *Montana Agr. Exp. Sta. Bull.* No. 252.
 137. **Gieseke, L. F. 1931.** Soils of Hill County. *Montana Agr. Exp. Sta. Bull.* No. 246.
 138. **Gieseke, L. F. 1931.** Soils of Hill County. Soil reconnaissance of Montana, preliminary report. *Montana Agr. Exp. Sta. and USDA.*
 139. **Gieseke, L. F. 1937.** Soils of Judith Basin County. *Montana Agr. Exp. Sta. Bull.* No. 349.
 140. **Gieseke, L. F. 1938.** Soils of Fergus County. *Montana Agr. Exp. Sta. Bull.* No. 355.
 141. **Gieseke, L. F. 1938.** Soils of Petroleum County. *Montana Agr. Exp. Sta. Bull.* 363.
 142. **Gieseke, L. F. 1939.** Soils of Musselshell County. *Montana Agr. Exp. Sta. Bull.* 374.
 143. **Gieseke, L. F. 1944.** Soils of Broadwater County. *Montana Agr. Exp. Sta. Bull.* No. 421.
 144. **Gieseke, L. F. 1944.** Soils of Meagher County. *Montana Agr. Exp. Sta. Bull.* 420.
 145. **Gieseke, L. F. 1957.** Soils of Stillwater County, soil reconnaissance of Montana, preliminary report. *Montana Agr. Exp. Sta. and USDA.*
 146. **Gieseke, L. F., C. B. Manifold, A. T. Strahorn and O. F. Bartholomew. 1953.** Soils Survey, central Montana. *USDA Montana Agr. Exp. Sta. Series 1940*, No. 9:1-133.
 147. **Gill, G. B. 1972.** Alterations of the in vitro digestibility of deer browse as affected by systematic mixing of paired species. M. S. thesis, University of Montana, Missoula.
 148. **Goldan, D. S. 1982.** Baseline data on vegetation, breeding bird populations, and small mammals in relation to proposed contour furrowing in southeastern Montana. M. S. thesis, Montana State University,



26 Montana Sagebrush Bibliography

Bozeman.

149. **Graham, R. J. 1958.** The effects of aerial spraying on fish and wildlife. 49th West. Forestry Conf., San Francisco, California.
150. **Gray, A., and J. D. Hooker. 1880.** The vegetation of the Rocky Mountain region and a comparison with that of other parts of the world. U.S. Geol. and Geog. Surv. Bull. 6:1-77.
151. **Gray, C. 1995.** Mule deer habitat use in the Bennet Hills, Idaho. M. S. thesis, Montana State University, Bozeman.
152. **Grensten, J. J., and D. E. Ryerson. 1973.** Impacts of induced rainfall on the Great Plains of Montana: Section 2 - ecological wildlife and biocommunities. Research Rep. 42. Mont. Agr. Exp. Sta., Montana State University, Bozeman.
153. **Griffith, C. 1992.** The misunderstood sagebrush. Montana Wildlife, October/November.
154. **Grove, A. J. 1998.** Effects of Douglas fir establishment in southwestern Montana mountain big sagebrush communities. M. S. thesis, Montana State University, Bozeman.
155. **Gruell, G. E. 1982.** Fire's influence on vegetative succession: wildlife habitat implications and management opportunities. p. 43-50. In: C. D. Eustace (compiler), Proc. Mont. Chapt., The Wildl. Soc., Billings.
156. **Guenther, G. E. 1989.** Ecological relationships of bitterbrush communities on the Mount Haggin Wildlife Management Area. M. S. thesis, Montana State University, Bozeman.
157. **Guenther, G. E., C. L. Wambolt and M. R. Frisina. 1993.** Characteristics of bitterbrush habitats that influence canopy cover and mule deer browsing. J. Environmental Manage. 37:175-181.
158. **Gunderson, P. T. 1990.** Nesting and brood rearing ecology of sharp-tailed grouse on the Charles M. Russel National Wildlife Refuge, Montana. M. S. thesis, Montana State University, Bozeman.
159. **Habeck, J. R., and E. Hartley. 1965.** The vegetation of Montana - a bibliography. Northwest Sci. 39:60-72.
160. **Habeck, J. R., and E. Hartley. 1967.** Bibliography of Montana vegetation. Botany Dept., University of Montana, Missoula.
161. **Hamlin, K. L. 1974.** Ecological relationships of mule deer in the Bridger Mountains, Montana with special reference to daily and seasonal movements. M. S. thesis, Montana State University, Bozeman.
162. **Handl, W. P., and W. F. Mueggler. 1973.** Preliminary classification of mountain grassland and shrubland habitat types in southwestern Montana. USDA, Forest Service, Intermountain Forest and Range Experiment Station Region One.
163. **Handl, W. P., and W. F. Mueggler. 1974.** Mountain grassland and shrubland habitat types of western Montana. USDA, Forest Service, Intermountain Forest and Range Experiment Station Region One. Interim Report.

Dedicated to sagebrush, that essential component of the western range.



164. **Hansen, J. J. 1987.** Effect of stock density on ground cover on a south-west Montana foothills rangeland. M. S. thesis, Montana State University, Bozeman.
165. **Harvey, S. 1981.** Life history and reproductive strategies in *Artemisia*. M.S. thesis, Montana State University, Bozeman.
166. **Harvey, S. J. 1990.** Responses of steppe plants to gradients of water, soil texture, and disturbance in Montana, USA. Ph.D. dissertation, Montana State University, Bozeman.
167. **Harvey, S., and T. Weaver, 1979.** Vegetative reproduction in twenty-one native shrubs of Montana. Proc. Mont. Acad. Sci. 38:73-77.
168. **Havard, V. 1878.** Botanical outlines of the country marched over by the Seventh United States Cavalry during the summer of 1877. p. 1681-1687 in Ann. Rep. of Chief of Engineers, U.S. Army for 1878. Vol. II, Part III, Series 1846. U.S. Govt. Printing Off., Washington, D.C.
169. **Havard, V. 1880.** List of plants found on the plains of western Dakota and eastern Montana during the summer of 1877 and spring 1879. p. 1-20. In: Ann. Rep. of Chief of Engineers, U.S. Army for 1880. Washington, D.C.
170. **Hayden, F. V. 1858.** Plants collected during the exploration of the upper Missouri by F. V. Hayden. Rep. Secretary of War for 1858. 2:726-747.
171. **Herbert, H., and J. Donahue. 1990.** Landforms for soil surveys in the northern Rockies. Montana Forest and Conservation Experiment Station miscellaneous publication No. 51, School of Forestry, University of Montana, Missoula.
172. **Herriges, J. D. 1986.** Movement, activity, and habitat use of white-tailed deer along the lower Yellowstone River. M. S. thesis, Montana State University, Bozeman.
173. **Hiatt, R. W. 1942.** Recent summer studies on native game birds in eastern Montana. Proc. Mont. Acad. Sci. 3:21-22.
174. **Hiatt, R. W., and P. L. Wright. 1943.** Studies on upland game birds of Montana with special emphasis on native species. Montana Fish and Game Dept., Helena.
175. **Hinkley, D. 1986.** Bureau of Land Management riparian management for Montana, North and South Dakota. p. 44-45. In: Montana wetlands: their distribution, uses, value, and future. Proc: A Symposium and workshop, June 24-25, 1986, Bozeman, Montana.
176. **Hoffman, G. R. 1986.** The concept of habitat types in the classification of lands supporting grassland vegetation. p. 77-78. In: Clambey, G., and R. Pemble (editors), The Prairie: Tri-College University Cent. Env. Stud., North Dakota State University, Fargo.
177. **Hoffman, T. L. 1996.** An ecological investigation of mountain big sage brush in the Gardiner basin. M. S. thesis, Montana State University, Bozeman.
178. **Hoffman, T. L., and C. L. Wambolt. 1996.** Growth response of Wyoming



28 Montana Sagebrush Bibliography

- big sagebrush to heavy browsing by wild ungulates. p. 242-245. In: J. R. Barrow, E. D. McArthur, R. E. Sosebee, and R. E. Rausch (compilers), Proc: Symposium on shrubland ecosystem dynamics in a changing environment. USDA For. Serv. Gen. Tech. Rep. INT-GTR-338. Ogden, Utah.
179. **Hoffman, R. S., and D. L. Pattie. 1968.** A guide to Montana Mammals. University of Montana Forest and Conservation Experiment Station, Missoula.
 180. **Hooker, W. J. 1847-1856.** Catalogue of Mr. Geyer's collection of plants gathered in the Upper Missouri, the Oregon Territory, and the intervening portion of the Rocky Mountains. London J. Botany 6:65-79; Hooker's J. Botany 3:287-300; 5:257-265; 7:371-378; 8:16-19.
 181. **Houston, D. B. 1982.** The Northern Yellowstone Elk. MacMillan Publishing Co., Inc.
 182. **Husby, P. O. 1982.** Effects of grazing on vegetation in the *Artemisia tridentata-Festuca idahoensis* habitat. M. S. thesis, Montana State University, Bozeman.
 183. **Hutto, R. L., and J. S. Young. 1999.** Habitat relationships of landbirds in the Northern Region, USDA Forest Service. Rocky Mountain Research Station, Gen. Tech. Rep. RMRS-GTR-32.
 184. **Interagency Range Committee. 1973.** Vegetative rangeland types in Montana. Montana Agr. Exp. Sta. Bull. 671, Montana State University, Bozeman.
 185. **Irby, L. R. 1981.** Variation in defecation rates of pronghorn relative to habitat and activity levels. J. Range Manage. 34:278-279.
 186. **Irby, L., W. Zidack, J. Johnson, and J. Saltiel. 1996.** Economic damage to forage crops by native ungulates as perceived by farmers and ranchers in Montana. J. Range Manage. 49:375-380.
 187. **Irby, L., J. Saltiel, W. Zidack, and J. Johnson. 1997.** Wild ungulate damage: perceptions of farmers and ranchers in Montana. Wildl. Soc. Bull. 25:320-329.
 188. **Jackson, S. D. 1990.** Ecology of mule deer on a sagebrush-grassland habitat in northeastern Montana. M. S. thesis, Montana State University, Bozeman.
 189. **Jameson, D. A. 1952.** Nutritive value of browse on Montana winter ranges. J. Range Manage. 5:306-310.
 190. **Jameson, D. A. 1952.** The chemical composition and utilization of greasewood and other browse species as related to some aspects of cattle nutrition on winter ranges in south-eastern Montana. M. S. thesis, Montana State University, Bozeman.
 191. **Janson, R. G. 1957.** Game bird inventory methods. Montana Wildlife. June.
 192. **Jeffries, N. W. 1968.** Livestock range - its nature and use. Part III. Plant relationships. Cooperative Extension Service Bulletin 1015 (revised).

Dedicated to sagebrush, that essential component of the western range.



- Montana State University, Bozeman.
193. **Jensen, F. S., and H. D. Varnes. 1964.** Geology of the Fort Peck area, Garfield, McCone, and Valley counties, Montana. U. S. Geol. Survey Prof. Paper 414-F.
 194. **Johnson, D. E. 1950.** Biology of the elk calf, *Cervus canadensis nelsoni*. M. S. thesis, Montana State University, Bozeman.
 195. **Johnson, D. E. 1951.** Biology of the elk calf *Cervus canadensis nelsoni*. J. Wildl. Mgmt. 15:396-410.
 196. **Johnson, J. R. 1966.** The effects of some environmental influences on big sagebrush (*Artemisia tridentata* Nutt.) reinvasion. M. S. thesis, Montana State University, Bozeman.
 197. **Johnson, J. R., and G. F. Payne. 1968.** Sagebrush reinvasion as affected by some environmental influences. J. Range Manage. 21:209-213.
 198. **Johnson, W. D., Jr and H. R. Smith. 1964.** Geology of the Winnet-Mosby area, Petroleum, Garfield, Rosebud and Fergus counties, Montana. USGS Bull. 1149.
 199. **Jones, K. J., Jr, R. P. Lampe, C. A. Spenrath, and T. H. Kunz. 1973.** Notes on the distribution and natural history of bats in southeastern Montana. p. 1-12. In: Occasional papers of the museum, Texas Tech University.
 200. **Jorgensen, H. E. 1970.** Ecological aspects of the life history of *Agropyron smithii* in central Montana with related effects of selective herbicide treatments of rangeland. Ph.D. dissertation, Montana State University, Bozeman.
 201. **Jorgenson, H. E. 1979.** Vegetation of the yellow water triangle, Montana. Montana Fish, Wildlife & Parks, Helena.
 202. **Jourdonnais, C. S. 1985.** Prescribed fire and cattle grazing influences on the vegetation and elk use of a rough fescue community. M. S. thesis, Montana State University, Bozeman.
 203. **Kasworm, W. F., L. R. Irby, and H. B. Ihsle Pac. 1984.** Diets of ungulates using winter ranges in northcentral Montana. J. Range Manage. 37:67-71.
 204. **Keating, K. A. 1982.** Population ecology of Rocky Mountain bighorn sheep in the upper Yellowstone River drainage. M. S. thesis, Montana State University, Bozeman.
 205. **Kirkpatrick, T. O. 1972.** Outdoor recreation in Montana: the campground craze. Montana Bus. Quarterly 10:39-49.
 206. **Kirkpatrick, T. O. 1973.** Outdoor recreation in Montana: characteristics of participants. Montana Bus. Quarterly 11:35-48.
 207. **Kirkwood, J. E. 1926.** Botany of the Montana Rockies. Torreyia 26:105-109.
 208. **Kirkwood, J. E. 1927.** Botanical explorations in the Rocky Mountains - Lolo Trail. Sci. Monthly 26:215-328.
 209. **Kirkwood, J. E. 1930.** Northern Rocky Mountain trees and shrubs.

Dedicated to sagebrush, that essential component of the western range.



30 Montana Sagebrush Bibliography

Stanford University Press.

210. **Kissell, R. 1996.** Population dynamics, food habits, seasonal habitat use, and spatial relationships of bighorn sheep, mule deer, and feral horses in the Pryor Mountains. Ph.D. dissertation, Montana State University, Bozeman.
211. **Kissell, R., L. Irby, and R. Mackie. 1994.** Spatial segregation of bighorn sheep, mule deer, and feral horses. Bienn. Symp. Northern Wild Sheep and Goat Council. 9:166-173.
212. **Kitchen, D. W. and B. W. O'Gara. 1982.** Pronghorn. p. 960-971. In: Chapman, J. A., and G. A. Feldhammer, editors. Wild mammals of North America. Johns Hopkins University Press, Baltimore.
213. **Klages, M. G., and D. E. Ryerson. 1965.** Effects of nitrogen and irrigation on yield and botanical composition of western Montana range. Agron. J. 57:78-81.
214. **Klarich, D., and T. Weaver. 1973.** Effects of volatile substances of *Artemisia tridentata* on seed germination. Proc. Mont. Acad. Sci. 33:31-36.
215. **Knapp, S. J. 1972.** Range use of mule deer prior to initiation of rest-rotation grazing for cattle on the Fort Howes Ranger District, Custer Natl. Forest, Montana. M. S. thesis, Montana State University, Bozeman.
216. **Knoche, K. G. 1968.** The ecology of the Rattlesnake Creek, Montana mule deer winter range. M. S. thesis, University of Montana, Missoula.
217. **Knowles, C. J., and R. B. Campbell. 1982.** Distribution of elk and cattle in a rest-rotation system. p. 47-60. In: Proc. of the Wildlife-Livestock Relationships Symposium. Wildl. and Range Exp. Sta., University of Idaho.
218. **Knowles, P. R. 1985.** Home range size and habitat selection of bobcats in northcentral Montana. Can. Field-Nat. 99:7-12.
219. **Komberec, T. J. 1976.** Mule deer population ecology, habitat relationships, and relations to livestock grazing management in "Breaks" habitat of eastern Montana. M. S. thesis, Montana State University, Bozeman.
220. **Kraft, Susan. 1987.** Ecology of mule deer in the upper Missouri River Breaks, Montana. M. S. thesis, University of Montana, Missoula.
221. **Lackschewitz, K. 1986.** Plants of west-central Montana - identification and ecology: annotated checklist. Gen. Tech. Rep. INT-217, USDA, For. Serv., Intermountain Res. Sta., Ogden, Utah.
222. **Legg, K., and L. Irby. 1996.** Factors regulating the bighorn sheep population in the Tom Miner Basin. Bienn. Symp. Northern Wild Sheep and Goat Council. 10.
223. **Legg, K. 1996.** Movements and habitat use of bighorn sheep along the upper Yellowstone. M. S. thesis, Montana State University, Bozeman.
224. **Lehmkuhl, J. 1980.** Distribution and habitat selection of elk in the Garnet Range of western Montana. M. S. thesis, University of Montana, Missoula.

Dedicated to sagebrush, that essential component of the western range.



225. **Leiberg, J. B. 1884.** Notes on the flora of western Dakota and eastern Montana adjacent to the Northern Pacific Railroad. *Bot. Gaz.* 9:103-107 and 126-129.
226. **Leiberg, J. B. 1904.** Forest conditions in the Absaroka division of the Yellowstone Forest Reserve, Montana and the Livingston and Big Timber quadrangles. *U. S. Geol. Surv., Prof. Paper*, 29:1-148.
227. **Leik, T. H. 1964.** Consumption of wild game and fish in Montana. Montana Dept. of Fish and Game.
228. **Lewis, S. T. 1998.** Evaluation of habitat use by a transplanted sheep herd in Theodore Roosevelt National Park. M. S. thesis, Montana State University, Bozeman.
229. **Lind, C. V. 1966.** Wildlife habitat management and BLM: A boon or boondoggle? *Proc. West. Assoc. of State Game and Fish Comm.* 46:157-161.
230. **Lommasson, T. 1948.** Succession in sagebrush. *J. of Range Manage.*, 1:9-21.
231. **Longyear, B. O. 1927.** Trees and shrubs of the Rocky Mountain Region. G. P. Putnam's Sons, New York.
232. **Lonner, T. N. 1972.** Age distribution and some age relationships of key browse plants on big game ranges in Montana. M. S. thesis, Montana State University, Bozeman.
233. **Lovaas, A. L. 1957.** Mule deer food habits and range use in the Little Belt Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
234. **Lovaas, A. L. 1958.** Mule deer food habits and range use, Little Belt Mountains, Montana. *J. Wildl. Manage.* 22:275-283.
235. **Lovaas, A. L. 1970.** People and the Gallatin elk herd. Montana Fish and Game Dept., Helena.
236. **Lyon, L. J. 1968.** An evaluation of density sampling methods in a shrub community. *J. Range Manage.* 21:16-20.
237. **Mackie, R. J. 1965.** Range ecology and relationships of mule deer, elk, and cattle in the Missouri River Breaks. Ph.D. dissertation, Montana State University, Bozeman.
238. **Mackie, R. J. 1966.** Some phenomena associated with dynamics of mule deer in the Missouri River Breaks, Montana. *Proc. West. Assoc. State Fish and Game Comm.* 46:129-133.
239. **Mackie, R. J. 1966.** A list of literature on big sagebrush, sagebrush control and ecological effects on sagebrush control. Montana Dept. of Fish and Game, Helena.
240. **Mackie, R. J. 1970.** Range ecology and relations of mule deer, elk, and cattle in the Missouri River Breaks, Montana. *Wildl. Monogr.* 20:1-79.
241. **Mackie, R. J. 1975.** A critical look at the key browse survey method. Presented at the annual meeting of the Mont. Chapt., The Wildl. Soc., Bozeman, Montana.
242. **Mackie, R. J. 1975.** Evaluation of the key browse survey method. Presented at the 5th Mule Deer Workshop.

Dedicated to sagebrush, that essential component of the western range.



32 Montana Sagebrush Bibliography

243. **Mackie, R. J. 1976.** Interspecific competition between mule deer, other game animals and livestock. p. 49-54. In: Symposium on mule deer decline in the west. Utah State University, Coll. of Nat. Resour., Agr. Exp. Sta., Logan.
244. **Mackie, R. J. 1981.** Interspecific relations. p. 487-507. In: O. C. Wallmo, editor. Mule and black-tailed deer of North America. University of Nebraska Press.
245. **Mackie, R. J. and Lonner, T. N. 1977.** Evaluation of effectiveness of the key browse survey method. Proceedings of the Sixth Wyoming Shrub Ecology Workshop. Buffalo, Wyoming:9-24.
246. **Mackie, R. J., D. F. Pac, K. L. Hamlin, and G. L. Dusek. 1998.** Ecology and management of mule deer and white-tailed deer in Montana. Montana Fish, Wildlife & Parks, Helena.
247. **Marsh, H., K. F. Swingle, and R. R. Woodward. 1959.** Nutrition of cattle on an eastern Montana range. Mont. Agr. Exp. Sta. Bull. 549.
248. **Martin, N. S. 1965.** Effects of chemical control of sagebrush on the occurrence of sage grouse in southwestern Montana. M. S. thesis, Montana State University, Bozeman.
249. **Martin, N. S. 1970.** Sagebrush control related to habitat and sage grouse occurrence. J. Wildl. Manage. 34:313-320.
250. **Martinka, C. J. 1967.** Mortality of northern Montana pronghorns in a severe winter. J. Wildl. Manage. 31:159-164.
251. **Martinka, R. R. 1970.** Structural characteristics and ecological relationships of male blue grouse (*Dendragapus obscurus* [Say]) territories in southwestern Montana. Ph.D. dissertation, Montana State University, Bozeman.
252. **Martinka, R. R., and J. E. Swenson. 1980.** A review of census methods for North American upland game birds. p. 181-196. In: F. L. Miller and A. Gunn, editors. Symposium on Census and Inventory Methods for Population and Habitats. Contribution No. 217, Forest, Wildlife and Range Exp. Sta., University of Idaho, Moscow.
253. **Matlock-Cooley, S. 1993.** Interaction between deer mice, antelope bitter brush, and cattle in southwest Montana. M. S. thesis, Montana State University, Bozeman.
254. **Matthews, W. L. 1980.** The meadow jumping mouse in southeastern Montana. Prairie Nat. 12:63-64.
255. **Matthews, W. L., and J. E. Swenson. 1982.** The mammals of east-central Montana. Proc. Mont. Acad. Sci. 39:1-13.
256. **Mattox, J. E. 1955.** A study of percent of plants grazed method of utilization determination and its application. Mont. Agr. Exp. Sta. Mimeo. Cir. No. 88:38-40.
257. **McCarthy, J. A. 1996.** A floristic survey of the Pryor Mountains. M. S. thesis, Montana State University, Bozeman.
258. **McConnell, R. C., W. A. Buchanan, D. R. Caulfield, and W. C. Bourne.**

Dedicated to sagebrush, that essential component of the western range.



1958. Soil survey of Wibaux County, Montana. USDA Soil Conserv. Serv. and Mont. Agr. Exp. Sta.
259. **McKelvey, S. D. 1955.** Botanical explorations of the trans-Mississippi west, 1790-1850. Arnold Arboretum of Harvard University, Jamaica Plain, Massachusetts.
260. **McNeal, A. F. 1984.** Site characteristics and effect on elk and mule deer use of the Gardiner winter range, Montana. M. S. thesis, Montana State University, Bozeman.
261. **Meehan, T. 1898.** The plants of the Lewis and Clark Expedition across the continent, 1804-1806, p. 12-49. In: Proc. Acad. Sci., Philadelphia, Pennsylvania.
262. **Mehus, C. A. 1995.** Influences of browsing and fire on sagebrush taxa of the northern Yellowstone winter range. M. S. thesis, Montana State University, Bozeman.
263. **Meuggler, W. F. 1967.** Response of mountain grassland vegetation to clipping in southwestern Montana. Ecology 48:943-949.
264. **Milner, G. 1995.** Mule deer habitat use in the Owyhee Mtns, Idaho. M. S. thesis, Montana State University, Bozeman.
265. **Mitchell, J. 1965.** Prairie grouse. Montana Wildl. Fed. News 5:3.
266. **Montagne, C., L. C. Munn, G. A. Nielsen, J. W. Rogers, and H. E. Hunter. 1982.** Soils of Montana. Bull. 744. Mont. Agr. Exp. Sta., Montana State University, Bozeman.
267. **Montana Agricultural Experiment Station. 1973.** Impacts of induced rainfall on the Great Plains of Montana. Montana State University Agr. Exp. Sta. Bull. 670.
268. **Montana State College, Extension Service. 1954.** Livestock and range research in Montana. Montana State College, Bozeman. Agr. Exp. Sta. Circ. 206.
269. **Montana State University, Extension Service. 1991.** Forestry BMP'S, Forest stewardship guidelines for water quality. Extension Service EB0096.
270. **Montana Dept. of Fish & Game. 1942.** Recent studies on upland game birds of Montana with special emphasis on native species. Montana Fish & Game Department, Helena.
271. **Montana Dept. of Fish & Game. 1959.** Sage grouse. Montana Wildlife. November.
272. **Montana Dept. of Fish and Game. 1959.** Upland game birds. Montana Wildlife. November:18-20.
273. **Montana Dept. of Fish and Game. 1961.** Sagebrush sleuths. Montana Wildlife. July.
274. **Montana Dept. of Fish and Game. 1963.** Sheep Creek sage grouse. Montana Wildlife. August:20-22.
275. **Montana Dept. of Fish and Game. 1966.** Montana hunting and fishing - 1965-66. Montana Dept. of Fish and Game. Info. Bull., Helena.

Dedicated to sagebrush, that essential component of the western range.



34 Montana Sagebrush Bibliography

276. **Morgan, J. T. 1993.** Summer habitat use of white-tailed deer on the Tally Lake Ranger District, Flathead NF. Ph.D. dissertation, Montana State University, Bozeman.
277. **Morris, M. S. 1946.** An ecological basis for the classification of Montana grasslands (a summary). Proc. Mont. Acad. Sci. 5 and 6:41-44.
278. **Morris, M. S., J. E. Schmautz, and P. F. Stickney. 1962.** Winter field key to the native shrubs of Montana. U. S. For. Serv., Inter. For. and Range Exp. Sta. and Mont. For. and Cons. Exp. Sta. Bull. No. 23.
279. **Morris, M. S., R. G. Kelsey, and D. Griggs. 1976.** The geographic and ecological distribution of big sagebrush and other woody *Artemisias* in Montana. Proc. Mont. Acad. Sci. 36:56-79.
280. **Moulton, G. E. (Editor). 1988.** The journals of the Lewis and Clark expedition, University of Nebraska Press. 5 volumes.
281. **Mueggler, W. F. 1967.** Voles damage big sagebrush in southwestern Montana. J. Range Manage. 20:88-91.
282. **Mueggler, W. F. and W. L. Stewart. 1980.** Grassland and shrubland habitat types of western Montana. Technical Report INT-66; Intermountain Forest and Range Experimental Station, Ogden, Utah.
283. **Muir, M. K. 1971.** Nutrient status survey of the Yellowstone drainage of Montana. Mont. Ag. Exp. Sta. Bull. 642. Montana State University, Bozeman.
284. **Murie, O. J. 1945.** Notes on coyote food habits in Montana and British Columbia. J. Mammal. 26:33-40.
285. **Mussehl, T. W. 1958.** Blue grouse production, movements and populations in the Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
286. **Mussehl, T. W. 1960.** Blue grouse production, movements, and populations in the Bridger Mountains, Montana. J. Wildl. Manage. 24:60-68.
287. **Mussehl, T. W. and F. W. Howell (editors). 1971.** Game management in Montana. Montana Fish and Game Department, Helena.
288. **Nelson, E. W. 1925.** Status of the pronghorned antelope, 1922-1924. USDA Dept. Bull. No. 1346, Govt. Print. Off., Washington, D. C.
289. **Northrup, R. 1991.** Sharp-tailed grouse habitat use during fall and winter on the CMR NWR. M. S. thesis, Montana State University, Bozeman.
290. **Nyberg, H. E. 1980.** Distribution, movements and habitat use of mule deer associated with the Brackett Creek winter range, Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
291. **O'Gara, B. W., and K. R. Greer. 1970.** Food habits in relation to physical condition in two populations of pronghorns. Proc. Antelope States Workshop 4:131-139.
292. **Olenicki, T. J. 1993.** Seasonal variation of fecal nitrogen and forage succulence in relation to condition and movement of two southwestern Montana deer populations. M. S. thesis, Montana State University,

Dedicated to sagebrush, that essential component of the western range.



- Bozeman.
293. **Olson, K. C. 1982.** Effect of precipitation on mixed grass plant communities of southeastern Montana and its implications for grazing intensity. M. S. thesis, Montana State University, Bozeman.
 294. **Onsager, J. A. 2000.** Suppression of grasshoppers in the Great Plains through grazing management. *J. Range Manage.* 53:592-602.
 295. **Pac, D. F. 1976.** Distribution, movements, and habitat use during spring, summer, and fall by mule deer associated with the Armstrong Winter Range, Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
 296. **Parker, K. G. 1971.** Livestock range - Its nature and use. Part I. Range plants. Cooperative Extension Service, Montana State University, Bulletin 1014, Bozeman.
 297. **Parmenter, R. R., M. R. Mesch, and J. A. MacMahon. 1987.** Shrub litter production in a sagebrush-steppe ecosystem: rodent population cycles as a regulating factor. *J. Range Manage.* 40:50-54.
 298. **Pase, C. P. 1958.** An ecological study of sagebrush, *Artemisia tridentata* Nutt., in western Montana. M. S. thesis, University of Montana, Missoula.
 299. **Payne, G. F. 1955.** Native plants as sources of nutrients for grazing animals. *Proc. Mont. Acad. Sci.* 15:45-47.
 300. **Payne, G. F. 1956.** Some germination studies of *Artemisia tridentata*. *Proc. Mont. Acad. Sci.* 17:41-42.
 301. **Pence, D., M. Smith, and M. R. Frisina. 1993.** Experimental stewardship program - an underpublicized success story. *Rangelands.* 15:177-180.
 302. **Pengelly, W. L. 1961.** State conservation programs and problems in Montana. *Cons. Ed. Assoc. Eighth Ann. Conf.*
 303. **Personius, T. L. 1985.** The influence of crude terpenoid constituents on mule deer preference for big sagebrush and black sagebrush. M. S. thesis, Montana State University, Bozeman.
 304. **Personius, T. L., C. L. Wambolt, J. R. Stephens, and R. G. Kelsey. 1987.** Crude terpenoid influence on mule deer preference for sagebrush. *J. Range Manage.* 40:84-88.
 305. **Peterson, J. G. 1969.** The food habits and summer distribution of juvenile sage grouse in central Montana. M. S. thesis, Montana State University, Bozeman.
 306. **Peterson, J. G. 1970.** The food habits and summer distribution of juvenile sage grouse in central Montana. *J. Wildl. Manage.* 34:147-155.
 307. **Peterson, J. G. 1970.** Gone with the sage. *Montana Outdoors,* 5:1-3.
 308. **Peterson, J. G. 1984.** The value of big sagebrush (*Artemisia tridentata*) as a forage source for mule deer. *Literature Review, Proc. Mont. Chapt., The Wildl. Soc.* 1984:72-85.
 309. **Peterson, J. G. 1995.** Sagebrush: ecological implications of sagebrush manipulation. Montana Department of Fish, Wildlife & Parks, Helena.
 310. **Pfister, R. D. 1977.** Ecological classification of forest land in Idaho and

Dedicated to sagebrush, that essential component of the western range.



36 Montana Sagebrush Bibliography

- Montana. Proc. ecological classification of forest land in Canada and northwestern U.S. A., University of British Columbia, Vancouver.
311. **Pfister, R. D. B. L. Kovalchik, S. F. Arno, and R. C. Presby. 1977.** Forest habitat types of Montana. USDA For. Serv., Intermountain For. & Range Exp. Sta., Gen. Tech. Rep. INT-34. Ogden, Utah.
 312. **Pfister, R. D., and S. F. Arno. 1980.** Classifying forest habitat types based on potential climax vegetation. *Forest Sci.* 26:52-70.
 313. **Picton, H. D. 1970.** The comparative digestive physiology of cervids. Northwest Sect. of The Wildl. Soc.
 314. **Picton, H. D., and C. C. Youmans. 1985.** Assessment and mitigation of habitat insularization in eastern Montana. In: Thorne Ecological Symposium, Glenwood Springs, Colorado.
 315. **Picton, H. D., and C. C. Youmans. 1985.** Protection against habitat nibbling and the assessment and mitigation of habitat insularization in eastern Montana. *Environ. Res. Found.* 3:4-5.
 316. **Porter, T. C. 1851.** List of plants collected by T. A. Culbertson on an expedition to the Mauvaises Terres and upper Missouri in 1850. p. 133-136. In: Fifth Ann. Rep. Smithsonian Institution, Washington, D. C.
 317. **Porter, T. C. 1872.** Catalogue of plants collected during the expedition to the headwaters of the Yellowstone River in 1871. *Hayden Surv.* 1871:477-498. Washington.
 318. **Prellwitz, D., S. Martin, P. Mayer, M. Dryer, and J. Grenston. 1989.** Impact of drought on nesting birds in northeastern Montana during 1988. In: M. Aderhold, compiler. The effects of the 1988 drought and fires on wildlife, Proc. Mont. Chapt., The Wildl. Soc., Missoula.
 319. **Pyrah, D. 1970.** Antelope herd ranges in central Montana. Fourth Antelope States Workshop, Nebraska. Montana Fish and Game Department.
 320. **Pyrah, D. 1970.** Poncho markers for game birds. *J. Wildl. Manage.* 34:466-477.
 321. **Pyrah, D. 1971.** Sage grouse habitat research in central Montana. Proc. West. Assoc. of Game and Fish Comm., Aspen, Colorado. 51:293-300.
 322. **Pyrah, D. B. 1971.** Telemetry-sagebrush and wildlife. *Montana Outdoors.*
 323. **Pyrah, D. 1982.** Mortality patterns of antelope in the Yellowstone Water Triangle. p. 1. In: C. D. Eustace (compiler), Proc. Mont. Chapt., The Wildl. Soc., Billings.
 324. **Pyrah, D. B. 1987.** American pronghorn antelope in the Yellow Water Triangle, Montana. Montana Fish, Wildlife & Parks, Helena.
 325. **Pyrah, D., and R. Wallestad. 1974.** Movement and nesting of sage grouse hens in central Montana. *J. Wildl. Manage.* 38:630-633.
 326. **Quimby, D. C. 1966.** A review of literature relating to the effects and possible effects of sagebrush control on certain game species in Montana. 46th Annual Conference West. Assoc. of State Fish and Game Comm., Butte, Montana. July 12-14, 1966.

Dedicated to sagebrush, that essential component of the western range.



327. **Reitz, L. P. 1937.** Crop regions in Montana as related to environmental factors. Mont. Agr. Exp. Sta. Bull. No. 340.
328. **Reitz, L. P., and H. E. Morris. 1939.** Important grasses and other common plants on Montana ranges. Mont. Agr. Exp. Sta. Bull. No. 375.
329. **Rens, R. J. 2001.** Elk effects on sagebrush-grassland after fire on Yellowstone's northern range. M. S. thesis, Montana State University, Bozeman.
330. **Richardson, R. E., and L. T. Hanson. 1977.** Soil survey of Sheridan County. USDA Soil Conserv. Serv., USDI Bureau of Indian Affairs and Mont. Agr. exp. Sta.
331. **Riley, S. J. 1982.** Fluctuations in mule deer fawn survival as related to the culinary habits of wild canids. p. 15-19. In: C. D. Eustace (compiler), Proc. Mont. Chapt., The Wildl. Soc., Billings.
332. **Riley, S. J. 1982.** Survival and behavior of radio-collared mule deer fawns during summers, 1978-1980, in the Missouri River Breaks, Montana. M. S. thesis, Montana State University, Bozeman.
333. **Riley, S. J., and A. R. Dood. 1984.** Summer movements, home range, habitat use, and behavior of mule deer fawns. J. Wildl. Manage. 48:1302-1310.
334. **Roberts, D. A. 1970.** Post-treatment studies of antelope range use, food habits and behavior during the summer season. M. S. thesis, Montana State University, Bozeman.
335. **Rogler, G. A., and J. H. Haas. 1947.** Range production as related to soil moisture and precipitation on the northern Great Plains. J. Am. Soc. Agron. 39:378-379.
336. **Roosevelt, T. 1893.** The wilderness hunter. G. P. Putnam's Sons, The Knickerbocker Press.
337. **Rosgaard, A. I., Jr. 1981.** Ecology of the mule deer association with the Brackett Creek winter range in the Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
338. **Ross, R. L., and H. E. Hunter. 1976.** Climax vegetation of Montana based on soils and climate. USDA SCS Bull., Bozeman.
339. **Rouse, R. A. 1957.** Elk food habits and range use and movements, Gravelly Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
340. **Rumble, M. A. 1985.** Using twig diameters to estimate browse utilization on three shrub species in southeastern Montana. Presented at the symposium on plant-herbivore interactions, Snowbird, Utah. August 7-9, 1985:172-175.
341. **Rydberg, P. A. 1900.** Catalogue of the flora of Montana and the Yellowstone National Park. N.Y. Bot. Garden Mem. 1, Lancaster, Pennsylvania.
342. **Rydberg, P. A. 1922.** Flora of the Rocky Mountains and adjacent plains, Colorado, Utah, Wyoming, Idaho, Montana, Saskatchewan, Alberta, and

Dedicated to sagebrush, that essential component of the western range.



38 Montana Sagebrush Bibliography

- neighboring parts of Nebraska, South Dakota, North Dakota and British Columbia. Ed. 3, New York.
343. **Rydberg, P. A., and S. L. Shear. 1897.** A report upon the grasses and forage plants of the Rocky Mountain region. Bull. USDA, Div. of Botany 5:1-48.
 344. **Salih, M. S. A., E. K. Taha, and G. E. Payne. 1973.** Water repellency of soils under sagebrush. J. of Range Manage. 26:330-331.
 345. **Savory, A. 1989.** Savory's views. Montana Farmer-Stockman. December, Letter to editor.
 346. **Schladweiler, P. 1969.** Breeding season movements and habitat use by male sage grouse. West. Assoc. State Game and Fish Comm., Jackson Hole, Wyoming. 49:317-322.
 347. **Schladweiler, P., and T. W. Musssehl. 1967.** Use of radio telemetry during forest grouse-pesticide studies. NW Sect., The Wildl. Soc., Moscow, Idaho.
 348. **Schladweiler, P., and R. Wallestad. 1974.** Breeding season movements and habitat selection of male sage grouse, J. Wildl. Manage. 38:634-637.
 349. **Schladweiler, P., K. L. Hamlin, and D. B. Pyrah. 1984.** Coyote food habits, prey availability, and relationships to predation on deer in the Missouri River Breaks, Montana. Paper presented at Third Predator Symposium, Missoula.
 350. **Schlatterer, E. F. 1971.** A partial list on the affect of control on sagebrush and associated plants. NW Sect., The Wildl. Soc.
 351. **Scow, L. L. 1981.** Ecological distribution of small mammals at Sarpy Creek, Montana, with special consideration of the deer mouse, *Peromyscus maniculatus*. M. S. thesis, Montana State University, Bozeman.
 352. **Selting, J. P. 1994.** Seasonal use of agricultural lands by mule deer, white-tailed deer and pronghorn antelope in Carter County, Montana. M. S. thesis, Montana State University, Bozeman.
 353. **Semmens, W. 1996.** Seasonal movements and habitat use of the Highland-Pioneer bighorn sheep herd. M. S. thesis, Montana State University, Bozeman.
 354. **Sime, C. S. 1991.** Sage grouse use of burned, non-burned, and seeded vegetation communities on the Idaho National Engineering Laboratory, Idaho. M. S. thesis, Montana State University, Bozeman.
 355. **Smith, D. W. 1969.** A preliminary classification and characterization of big sage, *Artemisia tridentata* Nutt., communities in central Montana. M. S. thesis, Montana State University, Bozeman.
 356. **Smith, P. W. 1981.** Development of a Montana land cover map from LANDSAT imagery. M. S. thesis, Montana State University, Bozeman.
 357. **South, P. R. 1957.** Food habits and range use of the mule deer in the Scudder Creek area, Beaverhead County, Montana. M. S. thesis,

Dedicated to sagebrush, that essential component of the western range.



- Montana State College, Bozeman.
358. **Southard, A. R. 1973.** Soils in Montana. Mont. Ag. Exp. Sta. Bull. 621. Montana State University, Bozeman.
 359. **Steerey, W. F. 1979.** Distribution, range use and population characteristics of mule deer associated with the Schafer Creek winter range, Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
 360. **Stevens, D. R. 1965.** Range relationships of elk and livestock in the Crow Creek drainage, Elkhorn Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
 361. **Stevens, D. R. 1966.** Range relationships of elk and livestock, Crow Creek Drainage, Montana. J. Wildl. Manage. 30:349-363.
 362. **Stevens, R., and E. D. McArthur. 1974.** A simple field technique for identification of some sagebrush taxa. J. Range Manage. 27:325-326.
 363. **Stickney, P. F. 1966.** Browse utilization based on percentage of twigs browsed. J. Wildl. Manage. 30:204-206.
 364. **Striby, K. D. 1985.** The in vitro digestibility and utilization of big sagebrush and black sagebrush. M. S. thesis, Montana State University, Bozeman.
 365. **Striby, K. D., C. L. Wambolt, R. G. Kelsey, and K. M. Havstad. 1987.** Crude terpenoid influence on in vitro digestibility of sagebrush. J. Range Manage. 40:244-248.
 366. **Swenson, J. E. 1970.** Notes on distribution of *Myotis leibii* in eastern Montana. Blue Jay 28:173-174.
 367. **Swenson, J. E. 1981.** Distribution of Richardson's ground squirrel in eastern Montana. Prairie Nat. 13:27-30.
 368. **Swenson, J. E. 1981.** The hardwood draws of southeastern Montana: their importance to wildlife and vulnerability to man's activities. p. 37-61. In: Management of Riparian Ecosystems. Proc. Mont. Chapt., The Wildl. Soc., Great Falls.
 369. **Swenson, J. E. 1982.** Effects of hunting on habitat use by mule deer on mixed-grass prairie in Montana. Wildl. Soc. Bull. 10:115-120.
 370. **Swenson, J. E., S. J. Knapp and H. J. Wentland. 1983.** Winter distribution and habitat use by mule deer and white-tailed deer in southeastern Montana. Prairie Nat. 15:97-112.
 371. **Swenson, J. E., C. Simmons, and C. D. Eustace. 1987.** Decrease of sage grouse (*Centrocercus urophasianus*) after ploughing of sagebrush steppe. Biol. Conserv. 41:125-132.
 372. **Thomas, T. R., and L. Irby. 1991.** Winter habitat use by mule deer with access to wheat fields and planted forb-grassland. Wildl. Soc. Bull. 19:155-162.
 373. **Thompson, W. L. 1993.** Ecology of Merriam's turkeys in relation to burned and logged areas in southeastern Montana. M. S. thesis, Montana State University, Bozeman.
 374. **Thornburg, A. A. 1982.** Plant materials for use on surface-mined lands in arid and semi-arid regions. USDA Soil Conserv. Serv., SCS-TP-157.

Dedicated to sagebrush, that essential component of the western range.



40 Montana Sagebrush Bibliography

375. **Thorvilson, R. C. 1969.** An appraisal of endocrine activity in strutting sage grouse. M. S. thesis, Montana State University, Bozeman.
376. **Thorvilson, R. C. 1970.** An appraisal of endocrine activity in strutting sage grouse. NW Sect., The Wildl. Soc.
377. **Trout, R. G. 1978.** Small mammal abundance and distribution in the Missouri River Breaks, Montana. M. S. thesis, Montana State University, Bozeman.
378. **Tschache, O. P. 1970.** Effects of ecological changes induced by various sagebrush control techniques on small mammal populations. M. S. thesis, Montana State University, Bozeman.
379. **Tyers, D., and L. Irby. 1995.** Shiras moose winter habitat use in the upper Yellowstone River valley prior to and after the 1988 fires. *Alces* 31:35-43.
380. **VanHorn, R. C. 1993.** Ferruginous hawk and prairie falcon reproductive and behavioral responses to human activity near the Kevin Rim, Montana. M. S. thesis, Montana State University, Bozeman.
381. **Vosburgh, T. 1996.** Impacts of recreational shooting on prairie dog communities. M. S. thesis, Montana State University, Bozeman.
382. **Walcheck, K. C. 1969.** Birds observed by Lewis and Clark in Montana, 1805-1806. *Proc. Mont. Acad. of Sci.* 29:13-29.
383. **Walcheck, K. C. 1970.** Nesting bird ecology of four plant communities in the Missouri River Breaks, Montana. *Wilson Bull.* 82:370-382.
384. **Walcheck, K. C. 1971.** Nesting-bird ecology and population trends following chemical control of big sagebrush in the Missouri River Breaks, Montana. Department of Biology, Northern Montana College, Havre.
385. **Walhof, K. S. 1997.** A comparison of burned and unburned big sagebrush communities in southwest Montana. M. S. thesis, Montana State University, Bozeman.
386. **Wallestad, R. O. 1970.** Summer movements and habitat use by sage grouse broods in central Montana. M. S. thesis, Montana State University, Bozeman.
387. **Wallestad, R. O. 1971.** Summer movements and habitat use by sage grouse broods in central Montana. *J. Wildl. Manage.* 35:129-136.
388. **Wallestad, R. 1971.** A review of current sage grouse research in Montana. 7th Biennial Sage Grouse Workshop, Salt Lake City, Utah.
389. **Wallestad, R. 1975.** Life history and habitat requirements of sage grouse in central Montana. Montana Department of Fish & Game Tech. Bull., Helena.
390. **Wallestad, R., and D. B. Pyrah. 1974.** Movements and nesting requirements of sage grouse hens in central Montana. *J. Wildl. Manage.* 38:630-633.
391. **Wallestad, R., and P. Schladweiler. 1974.** Breeding season movements and habitat use of male sage grouse in central Montana. *J. of Wildl. Manage.* 38:634-637.

Dedicated to sagebrush, that essential component of the western range.



392. **Wallestad, R., J. G. Peterson, and R. L. Eng. 1975.** Foods of adult sage grouse in central Montana. *J. Wildl. Manage.* 39:628-630.
393. **Walton, T. P. 1984.** Reproductive mechanisms of plains silver sagebrush (*Artemisia cana cana*) in southeastern Montana. M. S. thesis, Montana State University, Bozeman.
394. **Walton, T. P., R. S. White, and C. L. Wambolt. 1986.** *Artemisia* reproductive strategies: A review with emphasis on plains silver sagebrush. p. 67-74. In: E. D. McArthur and B. L. Welch, compilers. *Proc: Symposium on the Biology of Artemisia and Chrysothamnus*. USDA Forest Serv. Gen. Tech. Rep. INT-2000, Ogden, Utah.
395. **Wambolt, C. 1975.** Long term effects of sage control in Gramineae. *Coop. Ext. Serv., Montana State University, Bozeman.* 5.
396. **Wambolt, C. L. 1994.** Northern Rocky Mountain cover types. p. 27-39. In: T. Shiflet (editor), *Rangelands cover types of the United States*. Soc. for Range Manage., Denver, Colorado.
397. **Wambolt, C. L. 1995.** Elk and mule deer sagebrush preferences. *Montana Ag. Research. Mont. Agr. Exp. Sta.* 12:35-40.
398. **Wambolt, C. L. 1996.** Mule deer and elk foraging preference for 4 sagebrush taxa. *J. Range Manage.* 49:499-503.
399. **Wambolt, C. L. 1998.** Sagebrush and ungulate relationships on Yellowstone's northern range. *Wildl. Soc. Bull.* 26:429-437.
400. **Wambolt, C. L. 2001.** Mule deer foraging preference among five sagebrush (*Artemisia* L.) taxa. *Western North American Naturalist* 61: 490-494.
401. **Wambolt, C. L. 2002.** Sagebrush-ungulate relationships on the northern Yellowstone winter range. In: Monsen, S. D., N. L. Shaw, M. Pellant (compilers), *Proc: Sage grouse habitat restoration symposium*. USDA For. Serv., Rocky Mountain Research Station. RMRS-P-00. Ogden, Utah.
402. **Wambolt, C. L., and G. F. Payne. 1986.** An 18-year comparison of control methods for Wyoming big sagebrush in southwestern Montana. *J. Range Manage.* 39:314-319.
403. **Wambolt, C. L., and G. F. Payne. 1986.** Controlling Wyoming big sagebrush. *Montana Ag Research. Mont. Agr. Exp. Sta.* 3:1-6.
404. **Wambolt, C. L., and A. F. McNeal. 1987.** Selection of winter foraging sites by elk and mule deer. *J. Environmental Manage.* 25:285-291.
405. **Wambolt, C. L., R. G. Kelsey, T. L. Personius, K. D. Striby, A. F. McNeal, and K. M. Havstad. 1987.** Preference and digestibility of three big sagebrush (*Artemisia tridentata*) subspecies and black sagebrush (*A. nova*) as related to crude terpenoid chemistry. p. 71-73. In: F. D. Provenza, J. T. Flinders, and E. D. McArthur (compilers), *Proc: Symposium on Plant-Herbivore Interactions*. USDA For. Serv. Gen. Tech. Rep. INT-222, Ogden, Utah.
406. **Wambolt, C. L., T. P. Walton, and R. S. White. 1989.** Seed dispersal

Dedicated to sagebrush, that essential component of the western range.



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- characteristics of plains silver sagebrush. *Prairie Nat.* 21:113-118.
407. **Wambolt, C. L., R. G. Kelsey, A. F. McNeal, T. L. Personius, and K. D. Striby. 1990.** Forage relationships of select sagebrush taxa. p. 21-24. In: Fisser, H. G., editor. *Proc. of the fourteenth Wyoming Shrub Ecology Workshop, 1985, Rock Springs, Wyoming.*
408. **Wambolt, C. L., T. P. Walton, and R. S. White. 1990.** Sprouting and seedling establishment in plains silver sagebrush (*Artemisia cana* Pursh. ssp. *cana*). *Great Basin Naturalist.* 50:201-207.
409. **Wambolt, C. L., R. G. Kelsey, R. O. Bray, R. L. Personius, and K. D. Striby. 1991.** Wildlife reactions to sagebrush crude terpenoids. p. 37-40. In: Fisser, H. G. (editor), *Proc. of the seventeenth Wyoming Shrub Ecology Workshop. 1988, Jackson, Wyoming: University of Wyoming, College of Agriculture, Department of Range Management.*
410. **Wambolt, C. L., and G. W. Beverlin. 1992.** Taxonomy of Montana *Chrysothamnus*. In: J. Cook, compiler, *Proc. Mont. Acad. Sci.* 51:33-38.
411. **Wambolt, C. L., W. H. Creamer, and R. J. Rossi. 1994.** Predicting big sagebrush winter forage by sub-species and browse form class. *J. Range Manage.* 47:231-234.
412. **Wambolt, C. L., W. W. Fraas, and M. R. Frisina. 1996.** Variation in bitter brush (*Purshia tridentata* Pursh) crude protein in southwestern Montana. *Great Basin Naturalist* 56:205-210.
413. **Wambolt, C. L., and M. J. Watts. 1996.** High stocking rate potential for controlling Wyoming big sagebrush. J. R. Barrow, E. D. McArthur, R. E. Sosebee and R. J. Tausch (compilers), *Proc: Symposium on shrubland ecosystem dynamics in a changing environment. USDA For. Serv. Gen. Tech. Rep. INT-GTR-338. Ogden, Utah.*
414. **Wambolt, C. L., M. R. Frisina, K. S. Douglass, and H. W. Sherwood. 1997.** Grazing effects on nutritional quality of bluebunch wheatgrass for elk. *J. Range Manage.* 50:503-506.
415. **Wambolt, C. L., W. W. Fraas, and M. R. Frisina. 1998.** Bitterbrush (*Purshia tridentata* Pursh) growth in relation to browsing. *Great Basin Naturalist.* 58:28-37.
416. **Wambolt, C. L., R. S. White, and T. P. Walton. 1998.** An effective method of measuring seed dissemination. *Intermountain J. Sciences.* 4:27-32.
417. **Wambolt, C. L., and H. W. Sherwood. 1999.** Sagebrush response to ungulate browsing in Yellowstone. *J. Range Manage.* 52:363-369.
418. **Wambolt, C. L., T. L. Hoffman, and C. A. Mehus. 1999.** Response of shrubs in big sagebrush habitats to fire on the Northern Yellowstone Winter Range. p. 238-242. In: E. D. McArthur, W. K. Ostler, and C. L. Wambolt (compilers), *Proc: Shrubland ecotones. USDA For. Serv. Gen. Tech. Rep. RMRS-P-11. Ogden, Utah.*
419. **Wambolt, C. L., T. Hoffman, and H. Sherwood. 2000.** Browsing effect on Wyoming big sagebrush by antelope and other ungulates. p. 73-76. In:



- J. K. Fishcer (editor), Proc: 17th Biennial Pronghorn Antelope Workshop, Lake Tahoe. Pub. Calif. Dept. of Fish & Game.
420. **Wambolt, C. L., and T. Hoffman. 2001.** Mountain big sagebrush age distribution and relationships on the northern Yellowstone winter range, p. 330-335. In: E. D. McArthur and D. J. Fairbanks (compilers), Proc: Shrubland Ecosystem Genetics and Biodiversity. USDA For. Serv. Proc. RMRS-P-21. Ogden, Utah.
 421. **Wambolt, C. L., K. S. Walhof, and M. R. Frisina. 2001.** Recovery of big sagebrush communities after burning in south-western Montana. J. Environmental Manage. 61:243-252.
 422. **Warden, R. L., J. L. Krall, and V. C. Hubbard. 1949.** Recommendations for chemical weed control in Montana. Ext. Serv. Bull. No. 256, Montana State College, Bozeman.
 423. **Warren, L. E. 1971.** Types of herbicides and their uses. Montana State Pesticide Workshop.
 424. **Watts, C. R. 1981.** Changes in the birds of central Montana. Proc. Mont. Acad. Sci. 40:31-40.
 425. **Watts, C. R., L. C. Eichhorn, and R. J. Mackie. 1987.** Vegetation trends associated with season-long and rest-rotation grazing on breaks-type range. J. Range Manage. 40:393-396.
 426. **Watts, M. J., and C. L. Wambolt. 1989.** Economic evaluation of Wyoming big sagebrush (*Artemisia tridentata*) control methods. Weed Technology 3:640-645.
 427. **Watts, M. J., and C. L. Wambolt. 1990.** An economic comparison of Wyoming big sagebrush controls. Montana Ag. Research. Mont. Agr. Exp. Sta. 7:17-19.
 428. **Watts, M. J., and C. L. Wambolt. 1996.** Long-term recovery of Wyoming big sagebrush after four treatments. J. Environmental Manage. 46:95-102.
 429. **Weaver, T. 1977.** Area-mass relationships for common Montana shrubs. Proc. Mont. Acad. Sci. 37:54-58.
 430. **Weaver, T., and D. Klarish. 1976.** Toxic effects of volatile exudates from *Artemisia tridentata* Nutt. on soil microbes. Proc. Mont. Acad. Sci. 36:80-85.
 431. **Weaver, T., and D. Klarish. 1977.** Allelopathic effects of volatile substances from *Artemisia tridentata*. Am. Midland Nat. 97:508-512.
 432. **Weaver, T., and F. Forecella. 1979.** Seasonal variation in soil nutrients under six Rocky Mountain vegetation types. . Soil Sci. Soc. Am. 43:589-593.
 433. **Weigand, J. P. 1994.** Range use and interspecific competition of Rocky Mountain bighorn sheep in the Highland Mountains. M. S. thesis, Montana State University, Bozeman.
 434. **Wentland, H. J. 1968.** Summer range habits of the pronghorn antelope in central Montana with special reference to proposed sagebrush control



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- study plots. M. S. thesis, Montana State University, Bozeman.
435. **White, R. S., and P. O. Currie. 1983.** The effects of prescribed burning on silver sagebrush. *J. Range Manage.* 36:611-613.
436. **Wilkins, B. T. 1956.** Range use, food habits and agricultural relationships on the mule deer, Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
437. **Wilkins, B. T. 1957.** Range use, food habits, and agricultural relationships of the mule deer, Bridger Mountains, Montana. *J. of Wildl. Manage.* 21:159-169.
438. **Willard, E. E. 1977.** Influence of grazing by various systems on vegetation and soils in the Missouri River Breaks, Montana. USDA, Bureau of Land Management and Montana Forest and Conservation Experiment Station.
439. **Winkler, G. L. 1987.** Montana *Chrysothamnus*. M. S. thesis, Montana State University, Bozeman.
440. **Winkler, G., and C. L. Wambolt. 1991.** Range extension, description, and habitat for *Haploppus macronema* ssp. *linearis* (Asteraceae). *Prairie Nat.* 23:101-106.
441. **Wizlizenus, F. A. 1839.** A journey to the Rocky Mountains in the year 1839. Missouri Historical Society; St. Louis, Missouri. 1912.
442. **Wood, A. K. 1987.** Ecology of a prairie mule deer population. Ph.D. dissertation, Montana State University, Bozeman.
443. **Wood, A. K. 1988.** Use of shelter by mule deer during winter. *Prairie Nat.* 20:15-22.
444. **Wood, A. K. 1989.** Comparative distribution and habitat use by pronghorn antelope and mule deer. *J. Mammal.* 70:335-340.
445. **Wood, A. K., R. J. Mackie, and K. L. Hamlin. 1989.** Ecology of sympatric populations of mule deer and white-tail deer in a prairie environment. Montana Fish, Wildlife & Parks, Helena.
446. **Worthington, D. J. 1991.** Abundance and distribution of bats in the Pryor Mountains of south central Montana and northeastern Wyoming. *Mont. Nat. Herit. Prog.*, Helena.
447. **Wright, J. C., and E. A. Wright. 1948.** Grassland types of south central Montana. *Ecology* 29:449-460.
448. **Youmans, H. B. 1979.** Habitat use by mule deer of the Armstrong winter range, Bridger Mountains, Montana. M. S. thesis, Montana State University, Bozeman.
449. **Zelenak, J. 1996.** Breeding ecology of ferruginous hawks at the Kevin Rim in northern Montana. M. S. thesis, Montana State University, Bozeman.
450. **Zimmerman, A. 1998.** Re-establishment of swift fox in north central Montana. M. S. thesis, Montana State University, Bozeman.

Conservation of Swift Foxes in a Changing World. Saskatoon,

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451. **Zimmerman, A., L. Irby, and B. Giddings. 1998.** The status of swift fox in north central Montana. Proc. Swift Fox Symposium: Ecology and Conservation of Swift Foxes in a Changing World, Saskatoon, Saskatchewan 18-129. February 1998.



Photo: C. L. Wambolt



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