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Annotated Bibliography of Iowa Prairie Literature

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Annotated Bibliography of Iowa Prairie Literature

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This bibliography contains 335 references by 244 authors on the prairies of Iowa. The references include the taxonomic, floristic, ecologic, physiologic, historical, and wildlife reports on the Iowa prairie. Each reference is annotated to clarify its title and to summarize the contributions or topics discussed.
INDEX DESCRIPTORS: Grasslands, prairie, Iowa vascular flora, Iowa natural heritage, annotated bibliography.

Interest in prairie research and preservation has been growing throughout North America in recent years. Iowa's prairie remnants, slim reminders of this once magnificent ecosystem, are important markers of the natural heritage of Iowa. Recent reports by Burk (1973), Cawley (1972), Roosa (1981), and Smith (1981) point out the rate of decline of Iowa prairie habitat since settlement and the high value of the remaining remnants. The extensive literature on Iowa's prairies, located in many diverse journals, serials, books, and unpublished theses and reports, has never been compiled. This bibliography, a summary of the studies on Iowa's prairies, provides access into that literature. All of Iowa's prairie-types were considered: wet, tallgrass, native, loess, sand, pothole, hill, and openings. References which treated prairie restoration and landscaping with prairie plants were also included.

METHODS

The bibliography includes 335 references prepared by 244 authors. References were included if they treated the floristics, taxonomy, ecology, physiology, historical aspects, or wildlife of Iowa's prairies. County floras were generally not included, as such works were well summarized by Eilers (1975). It was relatively easy to decide whether a particular report was appropriate for inclusion. Some judgment was needed to determine whether there was enough natural history in some historical accounts and whether a given report was discussing prairie rather than wetland vegetation. The following serials were searched in their entirety: *Proceedings of the Iowa Academy of Science, Iowa Conservationist, Cooperative Wildlife Reports, Iowa State Journal of Research, Studies in Natural History from the State University of Iowa*. Efforts were made to locate all pertinent theses and dissertations prepared at Iowa State University, University of Iowa, and the University of Northern Iowa. The botanical literature summaries of Eilers (1975), van der Valk (1975), and Peck and Roosa (1983) were consulted. All references were annotated to clarify their titles, to summarize contents, or to elaborate on the methods used in the study. In only two cases could the original source not be located.

ACKNOWLEDGEMENTS

We thank our many colleagues who study the Iowa prairies for their inspection of preliminary lists. They added immeasurably to our efforts to make the list as comprehensive as possible. We are especially grateful to the librarians of the University of Iowa and Iowa State University.

ANNOTATED BIBLIOGRAPHY

AIKMAN, J. M. 1928. Competition studies in the ecotone between prairie and woodland. Proc. Iowa Acad. Sci. 35:99-103.

Describes physical factors leading to invasion of prairie by shrubs and finally, forest. Measurements were taken along Missouri River in Nebraska, but Iowa's prairies and forests are briefly mentioned.

AIKMAN, J. M. 1930. Secondary plant succession on Muscatine Island, Iowa. Ecology 11:577-588.

Secondary succession, studied on abandoned fields in Muscatine County, was found to occur in four stages. The sand prairie stage required from 16 to 30 years to develop.

AIKMAN, J. M. 1949. What an academy can do to promote the conservation of natural resources. Proc. Iowa Acad. Sci. 56:29-37.

Offers reasons why academies are not generally effective in aiding in conservation of natural resources in states. Gives a brief history of the conservation committee of the Iowa Academy of Science and offers the Prairie Project as a model.

AIKMAN, J. M. 1955. Burning in the management of prairie in Iowa. Proc. Iowa Acad. Sci. 62:53-62.

Results of comparison of burned and unburned plots on two state-owned native prairies, Hayden Prairie in Howard County and Kalsow Prairie in Pocahontas County.

AIKMAN, J. M. 1959. Prairie research in Iowa. American Biology Teacher 21:9-11.

Gives a brief description, background, and some general results of prairie research in Iowa.

AIKMAN, J. M., and R. E. MCDERMOTT. 1943. Comparison of dominant prairie grasses as interplanting ground covers on eroded soil. Proc. Iowa Acad. Sci. 50:235-240.

Five species of prairie grasses were utilized in studies to determine the best ground cover for soil-holding and soil-building properties. Studies were done in southeastern Iowa.

AIKMAN, J. M., and R. F. THORNE. 1956. The Cayler Prairie: an ecologic and taxonomic study of a northwest Iowa prairie. Proc. Iowa Acad. Sci. 63:177-200.

Gives results of quantitative investigations, including frequency, abundance, and importance values of 15 grasses and 23 forbs. Also provides a brief description of the plant communities and an annotated vascular plant list from this Dickinson County prairie.

ALDRICH, C. 1901. The old prairie slough. Annals of Iowa 5:27-32.

A personal account of experiences with prairie sloughs (marshes) in several counties in Iowa.

ANDERSON, M. A., and G. M. BROWNING. 1949. Some physical and chemical properties of six virgin and six cultivated Iowa soils. Soil Sci. Soc. Amer. Proc. 14:370-374.

Studies were made of six soils in their virgin and cultivated state. Physical and chemical determinations included permeability, aeration porosity, volume weight, aggregate analysis, total nitrogen, pH, and available phosphorus. Two soils

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were derived from glacial till, the rest from Peorian loess. Locations of the prairies were not given.

ANDERSON, W. A. 1936. Progress in the regeneration of the prairie at Lakeside Laboratory. Proc. Iowa Acad. Sci. 43:87-93.

Quadrats established in 1931 were relocated and studied during 1934-1935. Tables of yearly records of presence and cover grades are given for 16 permanent quadrats. Included are 12 photographs of different aspects of the prairie, located in Dickinson County, Iowa.

ANDERSON, W. A. 1945. On transplanting prairie species. Proc. Iowa Acad. Sci. 52:93-94.

Twelve prairie species were transplanted to Iowa Lakeside Laboratory property, Dickinson County, Iowa. Three years later, five species were still present.

ANDERSON, W. A. 1946. Development of prairie at Iowa Lakeside Laboratory. Amer. Midl. Nat. 36:431-455.

In 1930, a grazed area adjacent to Iowa Lakeside Laboratory, Dickinson County, was purchased. In 1931, two lines of quadrats were established. In 1934 and 1935, these quadrats were studied; species lists and cover values are given for some of them. A list of species for the tract is included.

ANONYMOUS. 1925. Prairie parks. Bull. Iowa State Parks 2(4):9-12.

Reports on visits to prairies near Strawberry Point in Clayton County, near Osceola in Clarke County, and near Cherokee in Cherokee County. Probably written by L. H. Pammel.

BAILY, M. L. T. 1942. Prairie homesteading. The Palimpsest 23:229-238.

An account of a family's homesteading of a Pocahontas County tract. The prairie is described, as are prairie fires, blizzards, and numerous anecdotes of prairie pioneer life.

BAKER, R. G., and K. L. VANZANT. 1978. The history of prairie in northwest Iowa: the pollen and plant macrofossil record. Pp. 8-11 *in* D. C. Glenn-Lewin and R.Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August 1976. Iowa State Univ. Press, Ames.

Sediment core from Lake Okoboji indicates prairie plants arrived about 9,000 years ago. Macrofossils and pollen of prairie indicators appeared about that time, accompanied by increasing percentage of grasses and composites.

BAKKE, A. L., and E. P. SYLWESTER. 1953. Seed retention of some prairie plants. Proc. Iowa Acad. Sci. 60:82-85.

Bales of prairie vegetation from a Cherokee County, Iowa, prairie were examined to determine presence and viability of seeds and the possible use of the bales for mulch and seed source for highway plantings.

BARINGER, D. M. 1974. An analysis and comparison of the plant community on a prairie relic and an old pasture on sandy soil. M.S. thesis, Drake Univ., Des Moines. 53 pp.

A sand prairie and a nearby old field located in Red Rock Reservoir, Appanoose County, were studied and compared. A species list for each community is included.

BATES, J. N. 1983. A flora of the Loess Hills of western Iowa: Plymouth, Woodbury, and Monona counties. B.S. Honors thesis, Univ. South Dakota, Vermillion. 189 pp.

An annotated catalog of the vascular plants of the northern end of the Loess Hills landform, with emphasis on the prairie community. Included also is information on the geology of the loess and on the phytogeography of certain species.

BERRY, W. J. 1927. The influence of natural environment in north-central Iowa. Iowa J. Hist. Polit. 25:277-298.

Describes some physical aspects of the environment and how they influenced the settlement of Iowa in the mid-1800's.

BILLINGTON, R. A. 1949. Westward Expansion: A history of the American frontier. Macmillan Co., New York. 873 pp.

The book describes three periods: the colonial frontier, the trans-Applachian frontier, and the trans-Mississippi frontier. Chapter 23, The Mississippi Valley Frontier, contains many references to Iowa, the prairies, and settlement rates. There are four editions with this title.

BILLINGTON, R. A. 1959. The westward movement in the United States. Van Nostrand Co. 191 pp.

The settling of the United States is documented. Chapter 4, The Mississippi Valley Frontier, 1812-1840, describes the rate at which Iowa was settled.

BILLINGTON, R. A., and M. RIDGE. 1982. Westward Expansion: A history of the American Frontier. 5th ed. Macmillan Co. 892 pp.

An update of an earlier edition. Chapter 18, The Natural Setting, and Chapter 21, The Mississippi Valley Frontier, 1803-1840, contain references to Iowa.

BOWNE, G. R. 1945. Vanishing original prairie in Cedar Rapids, Iowa. Proc. Iowa Acad. Sci. 52:101-106.

A prairie area in Cedar Rapids, originally described by McGee in 1889, was being desrroyed by a home-building plan. The tract was studied and a species list is presented.

BOYD, I. L. 1939. Establishment of native prairie grasses on eroded soils. M.S. thesis, Iowa State Univ., Ames, 96 pp.

The establishment of 15 native prairie grasses on eroded soil was investigated by means of replicated seed plots, sod transplants, and contour strip seeding. Fall seedings were made in mil-acre plots on an eroded upland site, an eroded slope, and a lowhead. Sites were located in Davis County.

BOZOVAISKY, L. S. 1936. Some factors which influence the growth of *Dalea alopecuroides*, Willd. M.S. thesis, Iowa State Univ., Ames. 35 pp.

Field and greenhouse experiments were carried out to determine the adaptation of *Dalea alopecuroides* to different soil types, as influenced by seed treatment. Sandy soil, low in organic matter, proved to produce better growth. Field tests were conducted in Story County.

BRENNAN, K. M. 1969. The vertebrate fauna of Kalsow Prairie. M.S. thesis, Iowa State Univ., Ames. 42 pp.

A faunal list is presented along with comparison of population densities of birds and mammals on burned and unburned areas.

BRENNAN, K. M. 1969. Vertebrate fauna of Kalsow Prairie. Development Report No. 5: Iowa State Preserves Advisory Board, Des Moines. 30 pp.

Species list of reptiles, amphibians, birds, and mammals are given, along with a comparison of populations on burned versus nonburned areas. Maps of bird nests and mammal trapping sites are included.

BREWER, H. E. 1942. The response of certain leguminous species to variations in soil and microclimate on eroded areas in southern Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 156 pp.

Twenty-five species of native and introduced legumes were planted in randomized plots in three sites in Davis County. Great variation in establishment and growth in response to soil and microclimate were noted.

BREWER, H. E. 1947. Response to certain legumes to variations in soil and microclimate on eroded soils in southeastern Iowa. Ecol. Monogr. 17:471-500.

Twenty-five species of native and introduced legumes were planted in three sites in southeast Iowa from 1939-1941. Soil properties, microclimate data, and plant response were noted; plant response correlated best with microclimate, rather than the soils.

BROTHERSON, J. D. 1969. Species composition, distribution, and phytosociology of Kalsow Prairie, a mesic tallgrass prairie in Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 128 pp.

Kalsow Prairie State Preserve, a 65 ha (160-acre) native prairie in Pocahontas County, was studied

to determine subcommunities and to provide information on phytosociology in relation to edaphic and topographic factors and to disturbance. A species list is included.

BROTHERSON, J. D., and R. Q. LANDERS. 1973. Species patterns in relation to soil moisture gradients in Kalsow Prairie. Pp. 62 *in* L. C. Hulbert, ed., Third Midwest Prairie Conference Proceedings. Kans. State Univ., Lawrence.

Species presence was determined for vascular plants in 968 contiguous 9.14 m x 9.14 m (30 ft. × 30 ft.) quadrats in Kalsow Prairie, Pocahontas County, Iowa. Zonation occurred around potholes. Published by abstract only.

BROTHERSON, J. D., and R. Q. LANDERS. 1978. Recovery from severe grazing in an Iowa tallgrass prairie. Pp. 51-56 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976. Iowa State Univ. Press, Ames.

Describes the rate of recovery from grazing of a portion of Kalsow Prairie State Preserve, Pocahontas County, Iowa.

BROWN, R. G. 1947. Notes on the grasses of southeastern Iowa. Proc. Iowa Acad. Sci. 54:55-62.

Reports 138 species of grasses from an area encompassing 11 counties. An annotated species list is presented.

BROWN, M. E., and R. G. BROWN. 1939. A preliminary list of plants of the sand mounds of Muscatine and Louisa counties, Iowa. Proc. Iowa Acad. Sci. 46:167-178.

A general description of the sand mounds is given, followed by a list of 316 species, many of which are prairie species.

BURK, M. 1928. Prairie vegetation and environmental factors. Proc. Iowa Acad. Sci. 35:143-145.

Two quadrats were established on different parts of a prairie remnant — one on low ground, the other on high ground. The number of individuals of each species present in each quadrat, evaporation rates, soil temperature, and soil chemistry were recorded for each quadrat.

BURK, M. M. 1973. Natural areas owned by the Iowa Chapter of The Nature Conservancy. Proc. Iowa Acad. Sci. 80:175-177.

Gives a brief history of the chapter and a short description of the areas it owns.

CARPENTER, J. R. 1940. The grassland biome. Ecol. Monogr. 10:617-684.

Recognizes three grassland types, presents numerous maps which show species' ranges, and discusses the effect of climate. Iowa is often mentioned and shown on the maps. A detailed map of the grassland biome is included.

CARTER, J. L. 1960. The flora of northwestern Iowa. Ph.D. dissertation, Univ. of Iowa, Iowa City. 402 pp.

Describes the distribution and abundance of vascular plants for 10 northwest Iowa counties. Includes species lists for selected habitats.

CARTER, J. L. 1963. Plant communities of the loess bluffs of northwestern Iowa. Proc. Iowa Acad. Sci. 70:45-50.

Quadrat sampling was conducted in 1957 and 1958 on three typical plant communities on west-facing loess bluffs in Monona, Plymouth, and Woodbury counties. Twenty-one of the 164 vascular plant species were common to all three communities, while an additional 20 species were frequent in occurrence.

CAWLEY, E. T. 1972. The history of prairie preservation in Iowa. Pp. 22-24 *in* J. H. Zimmerman, ed., Proceedings of the Second Midwest Prairie Conference, Sept., 1970, Madison, WI.

Gives a brief history of prairie preservation in Iowa, present activities of the State Preserves Board, and states some immediate needs for preservation of remnant tracts.

CHRISTIANSEN, P. A. 1967. Establishment of prairie species in Iowa by seeding and transplanting. Ph.D. dissertation, Iowa State Univ., Ames. 119 pp.

Seeds of 75 species of prairie plants were collected and tested for germination. Sixty species germinated. Seeds of 65 species were seeded in field plots with various levels of competition.

CHRISTIANSEN, P. A. 1969. A management master plan for Hayden Prairie, Howard County, Iowa. Report of the State Preserves Advisory Board, Des Moines.

Provides history, present status, and a projected management plan for Hayden Prairie. Plant frequency data, a map of vegetation types, soils, and drainage patterns are included.

CHRISTIANSEN, P. A. 1972. Management on Hayden Prairie: past, present and future. Pp. 25-29 *in* J. H. Zimmerman, ed. Proceedings of the Second Midwest Prairie Conference, Sept., 1970, Madison, WI.

Describes and evaluates management practices and offers recommendations for improved management of Hayden Prairie, Howard County, Iowa.

CHRISTIANSEN, P. A., and R. Q. LANDERS. 1966. Notes on prairie species in Iowa. I. Germination and establishment of several species. Proc. Iowa Acad. Sci. 73:51-59.

Information is given on the germination and early establishment of 30 prairie species. Germination varied from 96% to 0%.

CHRISTIANSEN, P. A., and R. Q. LANDERS. 1969. Notes on prairie species in Iowa. II: Establishment by sod and seedling transplants. Proc. Iowa Acad. Sci. 76:94-104.

Sod plugs, 25 cm in diameter and 10-20 cm deep, were used successfully in transplanting 42 species. Forty-eight of 52 prairie species transplanted as seedlings were present after overwintering. The study was conducted in Boone, Mitchell, and Story counties, Iowa.

CHRISTIANSEN, P. A., and D. L. LYON. 1975. A research report on roadside vegetation management. Report to Iowa Department of Transportation and Linn County. 55 pp.

Plots to assess management strategies on roadside vegetation were established in Linn County in 1971 and checked through 1973. Several aspects of roadside vegetation management must be integrated to produce optimum results.

COFFEY, V. J. 1966. The Scrophulariaceae of Iowa. M.S. thesis, Univ. of Iowa, Iowa City. 139 pp.

Includes keys, habitat description, and dot maps. Prairies are often mentioned in relation to the habitat.

COFFIN, L. S. 1902. Breaking prairie. Annals of Iowa 5:447-452.

A description of the breaking plow and its operation.

CONARD, H. S. 1952. The vegetation of Iowa. State Univ. Iowa Stud. Nat. Hist. 19(4):1-166.

This phytosociological book devotes Ch. 4 (pp. 53-89) to "grasslands" and discusses the associations on the Iowa prairie, anatomy of some prairie plants, sand prairie flora, and gives an extensive species list.

CONSERVATION COMMITTEE, IOWA ACADEMY OF SCIENCE. 1944. Present status and outlook of conservation in Iowa. Proc. Iowa Acad. Sci. 51:40-96.

Pp. 43-48, written by Ada Hayden, provide a brief history of pioneer work of the Iowa Academy of Science in conservation, clarifies the differences between state parks and state preserves, and makes a plea for prairie preservation.

COOPERRRIDER, T. S. 1958. The flora of Clinton, Jackson, and Jones Counties, Iowa. Ph.D. dissertation, Univ. of Iowa, Iowa City. 340 pp.

Annotated catalog, including dot maps, is presented for these three eastern Iowa counties.

COOPERRIDER, T. S. 1960. The flora of three state parks in eastern Iowa. Proc. Iowa Acad. Sci. 67:145-161.

A brief introduction is followed by a list of species

for three state parks in easrern Iowa: Bellevue State Park, Jackson County; Maquoketa Caves State Park, Jackson County; and Wapsipinicon State Park, Jones County. Refers to prairie species growing in open areas at the crests of bluffs in all three parks.

COOPERRIDER, T. S. 1962. The vasuclar plants of Clinton, Jackson, and Jones Counties, Iowa. Univ. Iowa Stud. in Nat. Hist. 20(5):1-80.

An annotated catalog of the vascular flora of three counties in eastern Iowa, along with a description of the area.

COSTELLO, D. F. 1931. Comparative study of river bluff succession on Iowa and Nebraska sides of the Missouri River. Bot. Gaz. 91:295-307.

Plant succession was studied on bluffs on opposite sides of the Missouri River in the region of Nebraska City. The order of succession was found to be the same. However, on east-facing slopes, which excelled in number of individuals and variety of species, underwent succession at a faster rate.

COSTELLO, D. F. 1969. The Prairie World. Crowell Co., New York. 242 pp.

A popular account of the prairie, its plants and animals. Iowa is mentioned numerous times. A brief description of large prairie remnants is given.

CRAWFORD, D. J. 1966. The Umbellales of Iowa. M.S. thesis, Univ. of Iowa, Iowa City. 149 pp.

Presents descriptions and distribution maps for all species in the Umbellales. Also has pictures of the fruits. Several are prairie species.

CRAWFORD, D. J. 1970. The Umbelliferae of Iowa. Univ. Iowa Stud. Nat. Hist. 21(4):1-35.

Keys, description, and distributional maps of the species of Umbelliferae found in Iowa. Numerous taxa are prairie species.

CRIPE. C. L. 1924. *Dalea alopecuroides:* its uses, adaptation and value. B.S. thesis, Iowa State Univ., Ames. 13 pp.

Greenhouse experiments were conducted on the affect of soil type, inoculations, and lime treatment. Results showed the plant may be of agricultural value.

CRIST, A. 1978. A gradient analysis of a northern Iowa tallgrass prairie. M.S. thesis, Iowa State University, Ames. 123 pp.

The distribution of plant species and communities on Stinson Prairie State Preserve, Kossuth County, Iowa, were analyzed in relation to various environmental factors. Gradient analysis was used to compare individual species' distribution along a topographic gradient. A species list is appended.

CRIST, A., and D. C. GLENN-LEWIN. 1978. The structure of community and environmental gradients in a northern Iowa prairie. Pp. 57-64 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976, Ames. Iowa State Univ. Press, Ames.

Describes replicate transects on Stinson Prairie State Preserve, Kossuth County.

CRUM, G. H. 1971. Flora of a sand prairie in Black Hawk County, Iowa. Proc. Iowa Acad. Sci. 78:81-87.

A 14.6 ha (30 acres) sand prairie consisting of marshes, moist to dry sandy prairie, and wet to moist swale was studied. Included is an annotated list of 280 species of vascular plants. *Carex leptalea,* new to Iowa, was found.

CRUM, H. A., N. R. LERSTEN, and G. H. CRUM. 1976. *Sphagnum* taxa and their distribution in Iowa. Proc. Iowa Acad. Sci. 83:98-101.

One collecting site was a wetland in a sand prairie in Black Hawk County.

DAVIDSON, R. A. 1952. The Senecioneae, Cynareae, and Cicorieae of Iowa. M.S. thesis, University of Iowa, Iowa City. 123 pp.

Keys, annotated catalog, and county dot maps are presented for 67 species in three tribes of composites (Asteraceae).

DAVIDSON, R. A. 1953. The Senecioneae, Cynareae, and Cichorieae of Iowa. Proc. Iowa Acad. Sci. 60:98-111.

A condensation of a master's thesis. Includes keys and an annotated list of species, many of which are prairie plants.

DAVIDSON, R. A. 1957. The flora of southeastern Iowa. Ph.D. dissertation, Univ. of Iowa, Iowa City. 754 pp.

Gives an annotated species list and distribution maps of higher vascular plants. Species lists for characteristic habitats are included.

DAVIDSON, R. A. 1959. The vascular flora of southeastern Iowa State Univ. Iowa Stud. Nat. Hist. 20(2):1-102.

Annotated catalog of vascular plants of 14 counties, including many prairie species. Specific locations for rare species are given.

DAVIDSON, R. A. 1960. Plant communities of southeastern Iowa. Proc. Ia. Acad. Sci. 67:162-173.

Twenty-four general habitat types, from 14 counties, are described. Generally, a specific location is presented, each with a species list. Included are prairie tracts in Wapello, Louisa, Lee and Van Buren counties.

DICK-PEDDIE, W. A. 1955. Presettlement forest types in Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 76 pp.

A study was made of the primeval settlement forest cover of three Iowa counties — Allamakee, Jackson, and Lee — and of three belt transects, each six miles wide, across the state. The principal source of data was the original land survey records. Although a study of forest types, it has much information on the amount and distribution of prairies and oak barrens.

DODD, J. J. 1981. Diatoms from the Mark Sand Prairie, Black Hawk County, Iowa. Proc. Iowa Acad. Sci. 88:154-158.

A diatom flora of 107 species in 22 genera was identified from four microhabitats in a wet, sandy prairie swale. Fifteen were new records for Iowa.

DODDS, J. S., J. P. MCKEAN, L. O. STEWART, and G. F. TIGGES (eds). 1943. Original instructions governing public land surveys of Iowa: a guide to their use in resurveys of public lands. Iowa Engineering Society, Ames. 565 pp.

Describes technique used in original survey. Provides historical documentation on how Iowa's boundaries were determined, how subdivisions were marked, how Indian boundary lines were established, and on the private land claims. Although prairie is seldom mentioned, there are important implications on the extent of the original amount of prairie.

DONDORE, D. A. 1926. The prairie and the making of middle America: four centuries of description. Cedar Rapids, Iowa. Torch press. 472 pp.

An historical account of settlement of the midwest. Iowa is mentioned in a general way on 17 pages.

DRAKE, L. 1978. Prairie models for agricultural systems. Pp. 226-230 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976. Iowa State Univ. Press, Ames.

Proposes modeling a profitable mechanized agriculture after the prairie systems to achieve greater efficiency and reduce current problems of high energy consumption, excessive erosion, and soil depletion.

DUNCAN, P. D. 1978. Tallgrass prairie: the inland sea. Lowell Press. Kansas City. 113 pp.

A popular account of personal experiences with the prairie and the people who study the prairie. Iowa is mentioned on six pages and the prairie preserve system of Iowa is described. Illustrated with many color photographs.

DURITSA, M. F. 1983. A natural areas inventory of Black Hawk County, Iowa. M.S. thesis, Univ. of Northern Iowa, Cedar Falls.

A county-wide inventory was conducted. Numerous prairies were located; especially prominent is

the sand prairie type.

DYAS, R. W. 1975. Landscape design. with prairie plants. Pp. 411-416 *in* M. K. Wali (ed.) Prairie: a multiple viw. Univ. No. Dak. Press, Grand Forks.

Cites uses of prairie plants in landscape design.

EHRENREICH, J. H. 1957. Management practices for maintenance of native prairie in Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 159 pp.

The immediate and cumulative effects of different management practices such as complete protection, burning, and mowing were studied at Hayden Prairie, Howard County, Iowa.

EHRENREICH, J. H. 1959. Effect of burning and clipping on growth of native prairie in Iowa. J. Range Mngt. 12:133-137.

Effects of burning and clipping were studied on the growth of some dominant and principal subdominant grasses and forbs on Hayden Prairie, Howard County, Iowa.

EHRENREICH, J. H., and J. M. AIKMAN. 1957. Effect of burning on seedstalk production of native prairie grasses. Proc. Iowa Acad. Sci. 64:205-212.

This August, 1956 study, conducted on Hayden Prairie, Howard County, Iowa, involved five grass species.

EHRENREICH, J. H., and J. M. AIKMAN. 1963. An ecological study of the effects of certain management practices on native prairies in Iowa. Ecol. Mongr. 33:113-130.

Effects of complete protection, burning, and mowing were studied on vegetation and soils of mesic Hayden Prairie in Howard County, Iowa.

EILERS, L. J. 1964. The flora and phytogeography of the Iowan Lobe of the Wisconsin glaciation. Ph.D. dissertation. Univ. of Iowa, Iowa City. 412 pp.

Annotated catalog of vascular plants of the Iowan erosional surface. Includes a discussion of the relationship between Wisconsin glaciation and present flora.

EILERS, L. J. 1966. The remnant prairie flora in northeast Iowa. Proc. Iowa Acad. Sci. 73:32-43.

Lists 360 species of vascular plants inhabiting prairie remnants in northeastern Iowa. Includes descriptions and locations of the prairie remnants.

EILERS, L. J. 1971. The vascular flora of the Iowan area. Univ. Iowa Stud. Nat. Hist. 21(5):1-137.

A catalog of the vascular flora of the Iowan Erosional Surface consisting of all or parts of 27 counties. Includes a description of the region and a chart of species distributions.

EILERS, L. J. 1975. History of studies on the Iowa vascular flora. Proc. Iowa Acad. Sci. 82:59-64.

Historical summary of literature on Iowa vascular plants. Summary of Iowa naturalists and the present status of Iowa vascular plant studies is presented. A bibliography of 238 references is included.

ESAU, K. L. 1968. Carabidae (Coleoptera) and other arthropods collected in pitfall traps in Iowa cornfields, fencerows, and prairies. Ph.D. dissertation, Iowa State Univ., Ames. 209 pp.

Pitfall traps set in cornfields, fencerows, and prairies, captured over 500,000 arthropods. Fifty-seven of 94 species were found on native prairies. Cayler Prairie, Dickinson County and Kalsow Prairie, Pocahontas County were studied.

FARNEY, D. 1980. The tallgrass prairie: can it be saved? National Geographic 157:37-61.

History of midwestern prairies. Contains a map of Iowa with general locations of prairies and a panoramic photograph of Cayler Prairie, Dickinson County.

FAY, M. J. 1953. A preliminary report on the flora of southwestern Iowa. Proc. Iowa Acad. Sci. 60:119-121.

Brief description of project scope and survey, methods of dissertation research; includes work on loess bluff prairies.

FAY, M. J. 1954. The flora of southwestern Iowa. Ph.D. dissertation, University of Iowa, Iowa City. 500 pp.

An annotated catalog, including dot maps, is presented for 16 southwest Iowa counties.

FITZPATRICK, T. J. 1904. The June flora of Ocheyedan Mound. Plant World 7:220-223.

A physical description of this glacial kame is Osceola County, and of over 35 plant species noted during a June, 1904 visit.

FRECKMANN, R. W. 1966. The prairie remnants of the Ames area. Proc. Iowa Acad. Sci. 73:126-136.

A list of vascular plants found on five prairie remnants in Story County, Iowa, was compiled. These five relics, which include upland and lowland types, support a flora of about 180 species, 32 of which are adventive.

GEORGE, R. R. 1977. Native prairie grass pastures. Iowa Conservationist 36:7-9.

Describes the use of warm-season native grasses for pasture use, and points out the increased benefits to wildlife.

GEORGE, R. R. 1978. Native prairie grass pastures as nesting habitat for Bobwhite Quail and Ring-necked Pheasant. Pp. 104-106 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976. Iowa State Univ. Press, Ames.

Artificially established native prairie grass pastures were evaluated as nesting habitat for birds. Nest success was much higher than in hayfields.

GEORGE, R. R., A. L. FARRIS, C. C. SCHWARZ, D. D. HUMBURG, and J. C. COFFEY. 1978. Native prairie grass pastures as nesting habitat for bob-white quail and ring-necked pheasants. Iowa Wildlife Research Bulletin No. 21. Iowa Conservation Commission, Des Moines.

Native prairie grass pastures established and properly managed for warm-season livestock forage were found to provide suitable nesting habitat for a variety of upland birds during a four-year study in southern Iowa.

GERHARDT, C. E. 1940. An ecological survey of a large kettlehole. M.S. thesis, University of Iowa, Iowa City. 92 pp.

A kettlehoe (now Freda Haffner preserve) in Dickinson County, Iowa, was divided into four zones and surveyed for vascular plants and animals. The area was found to consist of a vertical gradient of plant and animal communities. Two seres, the hydrosere and xerosere, were recognized. Species lists and relative abundance for vascular plants, Orthoptera, plankton, and vertebrates are given.

GILBERT, W. 1925. A prairie province in Polk County. M.S. thesis, Iowa State Univ., Ames. 22 pp.

A lowland prairie, located in Polk County between Beaver Creek and the Des Moines River, was studied during one season. Plots were established on the upland, potholes, and sandy areas. Species from each plot and the percentage of frequency are given.

GLASS, W. D. 1982. The importance of refuge size in preserving species of prairie legumes, goldenrods, and milkweeds. M.S. thesis, University of Illinois at Chicago Circle. 62 pp.

During the summers of 1977-1978, 102 prairie remnants, ranging in size from 5.7m^2 to 960,000 m^2, were surveyed for number of legumes, goldenrods, and milkweeds. The equilibrium theory of biogeography was employed to determine if it applied to small prairie remnants. Prairie remnants were mostly located in Dickinson and Emmet counties, Iowa, and Jackson County, Minnesota. Additionally, two were located in Cherokee County, two in Kossuth County, and one each in Howard, Pocahontas, and Clay counties, all in Iowa.

GLEASON, H. A. 1923. The vegetational history of the midwest. Annals Assoc. Amer. Geog. 12:39-85.

Discusses the formation of the vegetation of the midwest in an historical context, maintaining the

principal vegetational elements were differentiated during the Tertiary Period. Discusses the effect of glacial advance and retreat, plant migrations, and describes two periods of prairie dominance.

GLENN-LEWIN, D. C. 1976. The vegetation of Stinson Prairie. Report to the Iowa State Preserves Advisory Board, Des Moines. 31 pp.

A species list, along with information on geology and soils, a vegetation map, and comparison to other prairies are given for the 12.5 ha (31 acre) Kossuth County prairie.

GLENN-LEWIN, D. C. 1976. The vegetation of Stinson Prairie, Kossuth County, Iowa. Proc. Iowa Acad. Sci. 83:88-93.

The vegetation of this native prairie is described and compared to other Iowa tallgrass prairies. A species list is included.

GLENN-LEWIN, D. C. 1980. The individualistic nature of plant community development. Vegetatio 43:141-146.

A body of anecdotal and experimental evidence raises questions about the common model of plant community succession in which each temporal vegetation stage facilitates the development of the next. Several lines of evidence emphasize the individualistic nature of plant community development. Work was done on Kalsow Prairie, Pocahontas County, Iowa.

GLENN-LEWIN, D. C., and A. CRIST. 1982. The fine structure of a prairie pothole and pothole border. Pp. 190-192 *in* R. Stuckey and K. J. Reese, eds. The prairie peninsula: in the shadow of Transeau. Proc. of the Sixth North American Prairie Conference, Ohio Biol. Surv. Notes 15:1-278.

Gradient analysis was used to analyze the distribution of plant species and resulting community structure along a topographic gradient on Stinson Prairie, Kossuth County, Iowa.

GLENN-LEWIN, D. C., and R. LAUSHMAN. 1983. Plant Communities. Iowa Conservationist 42:15-18.

Describes plant communities of Iowa's "Driftless Area." One community described is the hill prairie.

GLENN-LEWIN, D. C., R. H. LAUSHMAN, and P. D. WHITSON. 1984. The vegetation of the paleozoic plateau, northeastern Iowa. Proc. Iowa Acad. Sci. 91:22-27.

Plant communities of the Paleozoic Plateau are described. Although the forest community is emphasized, also included is a fairly detailed description of hill prairies and a sand prairie-dune complex.

GOETTSCH, B. C. 1971. Plant zonation in Ross Biological area. M.S. thesis, Iowa State University, Ames. 141 pp.

A small successional area located near Iowa State University, Story County, was studied to determine distribution and zonation of species relative to soils and slope. The area, formerly prairie, was degraded due to grazing. Species lists and maps of quadrats for some species are included.

GOODWIN, CARDINAL. 1919. The American Occupation of Iowa: 1833 to 1860. Iowa J. Hist. Pol. 17:83-102.

Summarizes and documents the rate of settlement in Iowa. Describes population increase and lists over 40 sources of information.

GOVERNOR'S COMMITTEE ON OUTDOOR RESOURCES. 1964. Part IV. Preservation of natural features, scientific preserves and historic sites. Pp. 35-52 *in* Report on Iowa's Outdoor Resources, Des Moines.

Makes an argument for establishing a State Preserves System and provides an inventory and a classification of natural features.

GRAHAM, B. F. 1975. CERA: an outdoor biological laboratory. Pp. 379-382 *in* M. K. Wali, ed., Prairie: a multiple view. Univ. of No. Dak. Press, Grand Forks.

Purchased by Grinnell College in 1968, the Conard Environmental Research Area (CERA), Poweshiek County, Iowa, is a highly diverse educational and research facility, dedicated to the study of the structure and function of the tallgrass prairie.

GULDNER, L. F. 1960. The vascular plants of Scott and Muscatine Counties. Davenport Pub. Mus. Pub. Botany. No. 1.

Includes many prairie species; descriptions of sand and tallgrass prairie habitats.

HADDOCK. W. J. 1901. The Prairies of Iowa. Privately printed by author.

Personal experiences of a trek to Iowa, settling in Iowa City. Described are prairies, beginning in 1856, in the vicinity of Iowa City, Cedar Rapids, and Grundy Center.

HAEFNER, M. 1935. Prairie fires. The Palimpsest 16(7):50-62.

An historical account of how the pioneers survived the prairie fire.

HALLBERG, G. R., N. C. WOLLENHAUPT, and G. A. MILLER. 1978. A century of soil development in soil derived from loess in Iowa. Soil Sci. Soc. Amer. J. 42:339-343.

An investigation in the Lake Calvin area of Iowa on the rate of soil development under prairie vegetation.

HARLAN, A. W. 1913. Journal of A. W. Harlan while crossing the plains in 1850. Annals of Iowa 11:32-62.

A journal of a traveler across Iowa on a journey to California. The party was in Iowa from May 4 to May 25. The prairie of southern Iowa is often mentioned.

HARR, D. 1981. Iowa's prairie orchids. Iowa Conservationist 40:6-7.

Describes and provides photographs of several prairie orchids and gives a brief description of their habitat.

HARTLEY, T. G. 1962. The flora of the "Driftless Area." Ph.D. dissertation, Univ. of Iowa, Iowa City. 928 pp.

Includes references to prairie species; species lists for characteristic sites are given. Distribution maps are included.

HARTLEY, T. G. 1966. The flora of the "Driftless Area." Univ. Iowa Stud. Nat. Hist. 21(1):1-174.

An annotated catalog of vascular plants, along with information on the geology, soils, and a history of plant studies, is given.

HARVEY, L. H. 1908. Floral succession in the prairie-grass formation of southeastern South Dakota. Bot. Gaz. 46:81-108 46:277-298.

This study occurred in 1903-1907 in contiguous portions of Iowa, Nebraska, and South Dakota. Much of the information, however, came from a 49-ha (120 acre) area near Yankton, South Dakota.

HAYDEN, A. 1911. An ecological study of a prairie province in central Iowa. (Abstract) Iowa Geol. Surv. Ann. Rept. 18:55-56.

A virgin prairie, probably in Story County, was studied to determine the identity of the plants and their location and to examine environmental factors which influenced the grouping of plants.

HAYDEN, A. 1918a. The ecologic anatomy of some plants of a prairie province in central Iowa. Ph.D dissertation, Iowa State Univ., Ames.

Original dissertation could not be located.

HAYDEN, A. 1918b. Notes on the floristic features of a prairie province in central Iowa. Proc. Iowa Acad. Sci. 25:369-389.

Analyzes formations of the prairie provinces in relation to geology, topography, edaphic features, water content, and temperature. Examples of plant formations are given, and reversion and succession are discussed. Prairie was located near Ames, Story County.

HAYDEN, A. 1919a. The ecologic foliar anatomy of some plants of a prairie province in central Iowa. Amer. J. Bot. 6:69-85.

The anatomy of leaves of plants from 12 families taken from different sites on a prairie was studied to determine if special adaptations are present. Numerous illustrations are included.

HAYDEN, A. 1919b. The ecologic subterranean

anatomy of some plants of a prairie province in central Iowa. Amer. J. Bot. 6:87-105, 28 plates.

The minute anatomy of the subterranean organs of prairie plants from 14 families was studied, described, and drawn. An historical perspective of research in subterranean organs is provided.

HAYDEN, A. 1943. A botanical survey in the Iowa lake region of Clay and Palo Alto Counties. Iowa State J. Sci. 17:277-415.

A summary of observation made during seven growing seasons beginning in April, 1934. Physiography, climate, soils, and the flora are all described. The prairie is briefly described and an annotated list of plants is presented.

HAYDEN, A. 1945. The selection of prairie areas in Iowa which should be preserved. Proc. Iowa Acad. Sci. 52:127-148.

Describes climatic aspects of Iowa, the value of prairie preserves, and provides a basis for selection of prairie tracts.

HAYDEN, A. 1946. A progress report on the preservation of prairie. Proc. Iowa Acad. Sci. 53:45-82.

Gives locations and descriptions of 22 native prairie tracts. Included are reports by G. O. Hendrickson on mammals of the prairie and by F. F. Riecken of soils.

HAYDEN, A. 1947. The value of roadside and small tracts of prairie in Iowa as preserves. Proc. Iowa Acad. Sci. 54:28-31.

Provides a rationale for preservation of small tracts and provides locations of some tracts worthy of permanent protection.

HAYDEN, A. 1948. The Iowa Lakeside Laboratory: a prairieless field laboratory. Proc. Iowa Acad. Sci. 55:163-170.

Gives background of Iowa Lakeside Laboratory, laments the fact that no prairies have been preserved, and reemphasizes the need for prairie preserves.

HAYDEN, A., and J. M. AIKMAN. 1949. Considerations involved in the management of prairie reserves. Proc. Iowa Acad. Sci. 56:133-142.

Provides an historic background of the true prairie biome, extent of the grassland formation, and management recommendations for Iowa prairies.

HAYDEN, A., and H. S. DOTY. 1945. State parks and preserves. Proc. Iowa Acad. Sci. 52:32-34.

Provides an outline of the "Conservation of Iowa Prairie" project of the Conservation Committee of the Iowa Academy of Science.

HENDRICKSON, G. O. 1926. Some notes on the ecology of prairie insects. M.S. thesis, Iowa State University, Ames. 114 pp.

Approximately 500 species of insects were collected from a 2 ha (five-acre) prairie near Ames. An annotated list is provided.

HENDRICKSON, G. O. 1928. Some notes on the insect fauna of an Iowa Prairie. Annals Entomol. Soc. Amer. 21:132-138.

An annotated list of insects collected on a five-acre prairie, owned by Ada Hayden, near Ames, Story County.

HENDRICKSON, G. O. 1929. Studies on the insect fauna of Iowa prairies, Ph.D. dissertation, Iowa State University, Ames. 233 pp.

During the years 1925-1928, the insect fauna of eight plant community-types at forty virgin prairie tracts was studied. Approximately 15,000 specimens, representing 1,175 species, subspecies, or varieties, were collected. An annotated list of insects and the locations of the prairies is given.

HENDRICKSON, G. O. 1930a. Notes on vertebrates of Iowa prairies. Proc. Iowa Acad. Sci. 37:398-399.

Gives observations on prairies near Ames, Stanhope, and Renwick. Fifteen vertebrates are listed.

HENDRICKSON, G. O. 1930b. Studies on the insect fauna of Iowa prairies. Iowa State J. Sci. 4(2):49-179.

A synopsis of his Ph.D. dissertation. During 1925-1928, forty prairies were sampled, and approximately 15,000 specimens were collected. Locations of prairies are given, as is an annotated list of insects, along with the plant community where collected.

HENDRICKSON, G. O. 1931. Further studies on the insect fauna of Iowa prairies. Iowa State J. Sci. 5:195-209.

This annotated list of 144 species represents an addition to the list presented in his 1930 paper, resulting from more recent identification.

HENDRICKSON, G. O. 1946. Values of prairie preserves to wild birds and mammals. Proc. Iowa Acad. Sci. 53:49-51.

Provides ecological reasons for preserving prairies.

HERMANN-PARKER, S. 1978. Life history of *Psoralea esculenta* (Leguminosae): reproductive biology and interactions with a curculionid weevil. Pp. 86-91 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, Ames, 1976. Iowa State Univ. Press, Ames.

A study of *Psoralea esculenta* on Cayler Prairie, Dickinson County, Iowa, showed that buds are attacked by a host-specific weevil, which depresses seed production to 10-55%. Populations of this species consist of flowering, nonflowering, and dormant plants.

HEWES, L. 1950. Some features of early woodland and prairie settlement in a central Iowa county. Annals Assoc. Amer. Geogr. 40:40-57.

Provides documentation on distribution of woodlands and prairies in Story County prior to settlement, and shortly after settlement. Discusses the role of woodlands on settlement of the county.

HEWES, L. 1951. The northern wet prairie of the United States: nature, sources of information, and extent. Annals Assoc. Amer. Geogr. 41:307-323.

Provides description, location, and extent of the northern wet prairie. Gives information on numerous Iowa counties regarding original drainage conditions and uses a township in Story County as a detailed example.

HEWES, L. and P. E. FRANDSON. 1952. Occupying the wet prairie: the role of artifical drainage in Story County, Iowa. Annals Assoc. Amer. Geogr. 42:24-50.

Examines the character of the occupation and utilization of wet prairie, using Story County, Iowa, for detailed examples.

HILL, G. R. 1973. The influence of fire and predator-pollinator interactions upon a tallgrass prairie plant community. M.S. thesis, University of Iowa, Iowa City. 82 pp.

Following a controlled burn on Cayler Prairie, Dickinson County, Iowa, two transects were established. Each extended into the burned and unburned portions. Four 60 × 60 meter quadrats were located along each transect. Species richness, diversity, and equitability were all higher in the burned portion.

HILL, G. R., and W. J. PLATT. 1975. Some effects of fire upon a tallgrass prairie plant community in northwestern Iowa. Pp. 103-113 *in* M. K. Wali, ed., Prairie: a multiple view. Univ. No. Dak. Press, Grand Forks.

Effects of fire on the production, community organization, and relative abundance of dominant grasses on Cayler Prairie, Dickinson County, Iowa, by comparision of burned and unburned portions during the 1972 growing season.

HINTZ, H. W. 1961. Hill prairies within the City of Dubuque, Iowa. Proc. Iowa Acad. Sci. 68:162-166.

The location, present condition, and recent history is presented for several prairies within the city limits of Dubuque, Iowa. A brief description of the vegetation and associated insects is given.

HOPKINS, J. A. 1930. The passing of the herds. The Palimpsest 11(7):282-291.

An account of the herds of cattle that used the prairie from the time of settlement until about 1890, before fences and a herd law.

HORACK, K. 1924. In quest of a prairie home.

The Palimpsest 5(7):249-257.

An account of an 1837-1845 journey across the Iowa prairie in search of a suitable home. Written by the granddaughters of one of the members.

HOULETTE, W. 1970. Iowa: the pioneer heritage. Wallace-Homestead Book Co., Des Moines. 292 pp.

A popular account of life in the pioneer era. It is basically an historical treatment, with prairies only mentioned in passing.

HOWE, R. W. 1984. Wings over the prairie. Iowa Conservationist 43(9):5-7.

Describes selected examples of the butterflies, skippers, and birds of Iowa prairies, reasons for their decline, and why it is important to save prairie remnants.

HOWE, R. W., M. J. HUSTON, W. P. PUSATERI, R. H. LAUSHMAN, and W. E. SCHENNUM. 1984. An inventory of significant natural areas in Iowa. Iowa Conservation Commission, Des Moines. 135 pp.

A two-year progress report of the Iowa Natural Areas Inventory. Loess hill prairie, tallgrass prairie, hill prairie, sand prairie, and Sioux Quartzite prairie are described on pp. 24-28.

JOENS, J., and E. HINTZ. 1983. Switchgrass: more than wildlife habitat. Iowa Conservationist 42:18-20.

Describes the Conservation Commission's program of providing switchgrass to private landowners for pasture use.

JOENS, R. L. 1978. Natural areas such as outdoor laboratories by Iowa State University. M.S. thesis, Iowa State Univ., Ames.

Natural areas, used by the staff of Iowa State University, were described. Several prairies are mentioned. The Ames High School Prairie was mapped and analyzed for species composition.

JOHNS, M. R. 1929. Heliantheae of Iowa. I. Proc. Iowa Acad. Sci. 36:143-184.

Includes description and distribution of some important prairie composites.

JOHNS, M. R. 1930. Heliantheae of Iowa. II. Proc. Iowa Acad. Sci. 37:161-208.

Includes descriptions, distribution, and habitat information on some important and common prairie species in Iowa.

JORDAN, P. D. 1941. A prairie tour in 1850. The Palimpsest 22:213-224.

An account of two missionaries driving a wagon from Eddyville to the Missouri River and back. Included are general comments about the Iowa prairie and the general pioneer way of life.

KENNEDY, R. K. 1969. An analysis of tallgrass prairie vegetation relative to slope position, Sheeder Prairie, Iowa. M.S. thesis, Iowa State Univ., Ames. 70 pp.

A study of Sheeder Prairie Preserve yielded a plant list of 180 species in 54 families. A stratified random sampling grid was arranged along two belt transects. Eighteen stands were ordinated using the prairie continuum index.

KENNEDY, R. K. 1970. Sheeder Prairie Preserve: a natural prairie landscape in Guthrie County, Iowa. A report to the Iowa State Preserves Advisory Board, Des Moines. 32 pp.

Two belt transects were established across the prairie and random quadrats sampled. Species frequency, dominance, and distribution are given and a species list is included.

KOELLING, M. R., and C. K. KUCERA. 1965. Productivity and turnover relationships in native tallgrass prairie. Iowa State J. Sci. 39:387-392.

Productivity and litter breakdown were analyzed for a prairie site in Missouri and Hayden Prairie in northern Iowa.

KUCERA, C. L., and J. M. AIKMAN. 1951. Secondary plant succession on an eroded Lindley soil as affected by variations in cultural treatment. Iowa State J. Sci. 25:581-597.

Two species of grasses and two species of legumes were compared with plants in current undisturbed stages of secondary plant succession for their effects on successional change and site improvement on an eroded Lindley silt loam in southeast Iowa.

KULFINSKI, F. B. 1957. Establishment of vegetation on highway backslopes in Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 192 pp.

Field and greenhouse experiments involving rates of seeding, composition of seed mixtures, effects of companion crops, and levels of fertility were conducted during 1954, 1955, and 1956. Native grass mixtures were used along Highway 37 near Dunlap in Harrison County.

KULFINSKI, F. B. 1957. Establishment of vegetation on highway backslopes in Iowa. Bull. No. 7, Iowa Highway Research Board, Ames, Iowa. 135 pp.

Contains one experiment which used a mixture of native grass seed on backslopes in western Iowa.

KWANG, YAO-WEN. 1951. The Polemoniales of Iowa (Convolvulaceae to Verbenaceae). M.S. thesis, Univ. of Iowa, Iowa City. 115 pp.

Includes keys, dot maps, and notes on habitat. Prairies are occasionally mentioned under habitat.

LAMMERS, T. G. 1980. The vascular flora of Starr's Cave State Preserve. Proc. Iowa Acad. Sci. 87:148-158.

A total of 379 species from 79 families were collected from this 56.7 ha (140-acre) preserve. Several small prairie openings occur on the dry ridges.

LAMMERS, T. G. 1981. The vascular flora of Des Moines County, Iowa. M.S. thesis, University of Northern Iowa, Cedar Falls.

Describes prairie types and provides a species list for each.

LAMMERS, T. G. 1983. The vascular flora of Des Moines County, Iowa. Proc. Iowa Acad. Sci. 90:55-71.

The vascular flora of the 1060 km^2 (409 sq. mi.) county, located in southeastern Iowa, was studied 1975-1980. A total of 809 species in 109 families was found; four species were new to Iowa.

LANDERS, R. Q. 1966a. Management of natural landscapes in Iowa: an appraisal. Proc. Iowa Acad. Sci. 73:155-160.

States that management must be based on well-defined objectives and sound operational techniques, both of which have been lacking in many situations in Iowa. Proposals are made for an effective program.

LANDERS, R. Q. 1966b. Visit the virgin prairie. Iowa Farm Science 21:418-419.

A popular account meant to introduce readers to the prairie, provides examples of prairie plants and when they may be found in bloom.

LANDERS, R. Q. 1972. The use of prairie grasses and forbs in Iowa roadside and park landscapes. Pp. 180-183 *in* J. H. Zimmerman, ed., Proceedings of the Second Midwest Conference, August, 1970, Madison, WI.

Describes a prairie-planting project along I-80 in western Iowa and makes a plea for use of native plants along roadways.

LANDERS, R. Q. 1975. A report on the status and management of native prairie areas in national parks and monuments in the midwest region. Report to the National Park Service, Omaha, NE. 84 pp.

An appraisal of present management of 11 midwest national parks or monuments. Herbert Hoovet National Historic Site and Effigy Mounds National Monument, both in Iowa, are included.

LANDERS, R. Q. 1978. Prairie vegetation in national parks, midwest region. Pp. 36-38 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Conference. Iowa State Univ. Press, Ames.

A description of the prairie on 10 midwest national parks, national historic sites, or national monuments. Two are located in Iowa.

LANDERS, R. Q., P. A. CHRISTIANSEN, and T. HEINER. 1970. Establishment of prairie species in Iowa. Pp. 50-51 *in* Proceedings of a

symposium on prairie and prairie restoration, Knox College, Biological Field Stn. Spec. Publ. No. 3, Galesburg, Ill.

Various types of prairie restoration techniques are described. Seeds of 65 prairie species were planted in Webster soils under various levels of competition. Sod transplantation was attempted during early spring and was successful for 42 species. Seedlings grown in a greenhouse were transplanted into bluegrass sod. Of 16 species, 15 were present two years later. Prairie species were planted along highway rights-of-way with good success.

LANDERS, R. Q., and R. E. KOWALSKI. 1968. Using Iowa's prairie species to fight roadside weeds. Iowa Farm Science 22(12):13-14.

Argues for native species to be used on roadsides and provides management recommendations.

LANTZ, C. W. 1969. The Clay Prairie in Butler County, Iowa. Proc. Iowa Acad. Sci. 76:109-112.

A total of 98 species in 33 families was found on this 2.64-acre tract.

LAUBACH, R. 1984. Breeding birds of Sheeder Prairie Preserve, west-central Iowa. Proc. Iowa Acad. Sci. 91:153-163.

The avifauna of a 10.1 hectare native prairie was studied from 1980 through 1982. Singing male counts and nest searches were made and territories mapped. Of the 64 species found, 25 were considered to be nesting.

LEA, A. M. 1836. Notes on Wisconsin Territory, with a map. H. S. Tanner, Phila. (Reprinted in 1913 Annals of Iowa 11:115-167).

A description of the area now called Iowa. Prairies are described in several places.

LEHMANN, J. W. 1983. A vascular flora of Dubuque County, Iowa. M.S. thesis, Univ. of Northern Iowa, Cedar Falls. 272 pp.

An annotated catalogue of vascular plants. Hill prairies and sand prairies, with location and representative species lists, are described on pages 24-28.

LEKWA, S. 1982. Restoring and managing Iowa Prairies. Iowa Conservationist 41(2):7-9.

Describes methods for restoring prairies, including types of drills, species to include, and how chemicals can be utilized. Also includes information on fire as a management tool.

LEKWA, S. 1984. Prairie restoration and management. Iowa Conservationist 43(9):12-14.

Provides step-by-step instruction for restoring prairie vegetation, and gives a list of prairie seed dealers.

LEMON, P. C. 1970. Prairie ecosystem boundaries in North America. Pp. 13-19 *in* Proceedings of a symposium on prairie and prairie restoration. Knox College, Galesburg, IL. Biological Field Stn. Spec. Publ. No. 3.

Provides a map of the major biomes in North American, and gives the main segments that outline the prairie boundary. Iowa lies mainly in the grassland and mixed grassland biome. Precipitation and temperature maps are also included.

LOESCHER, J. H. 1972. Diatoms from a native Iowa Prairie. Ph.D. dissertation, Iowa State Univ., Ames. 99 pp.

During 1969-1970, diatoms were collected from Sheeder Prairie, Guthrie County, Iowa. A total of 74 species, varieties, and forms representing 15 genera were encountered. Four taxa were new to Iowa.

LOESCHER, J. H. 1981. Diatoms (Bacillarophyceae) from Sheeder Prairie, Guthrie County, Iowa. Proc. Iowa Acad. Sci. 88:63-69.

Seventy-four diatom species, varieties, and forms representing 15 genera were found in collections from 19 stations. Marked differences in the floras from upland collections were observed.

LOOMAN, J. 1962. Lichen and bryophyte communities in prairie grasslands. Ph.D. dissertation, University of Wisconsin, Madison. 112 pp.

Lichen and bryophyte communities were sampled along an approximate 2,415 km (1,500 mile) triangle-shaped transect from Madison, Wisconsin, to Wyoming to Saskatchewan and back to Madison. Environmental gradients are drawn, species lists are given, and ordination values are given. Cayler Prairie State Preserve, Dickinson County and a private Cherokee County prairie were selected as Iowa stations.

LOTZ, E. P. 1935. A comparison of certain types of sand flora and a climax prairie. M.S. thesis, Univ. of Iowa, Iowa City. 109 pp.

The plants of sandy areas in southeastern Iowa and adjacent Illinois were studied and compared to a prairie climax format. The areas were located along railroads in Muscatine, Louisa, Des Moines, and Johnson Counties, Iowa, and along a railroad right-of-way in Henderson County, Illinois.

LYON, B. L. 1940. The menace of the bluestem. The Palimpsest 21:247-260.

An account of prairie fires in Iowa. Included numerous descriptions of the consequences of uncontrolled fires, mainly from central Iowa.

MACBRIDE, T. H. 1926. Landscapes of early Iowa. The Palimpsest 7(9):283-293.

Contains a description of the original Iowa prairie. Many species are mentioned and the prairie fire described.

MADSON, J. 1972. The running country. Audubon Magazine 74(4):12-19.

A story of the marvel of the tallgrass prairie. Iowa and its prairies are often mentioned.

MADSON, J. 1982. Where the sky began: land of the tallgrass prairie. Houghton Mifflin Co., Boston.

An anecdotal account of a man's personal relationship with the prairie. Iowa prairies are frequently mentioned. An appendix of protected prairies in midwest states is given.

MAHAN, B. E. 1921. The way to Iowa. The Palimpsest 2(10):301-310.

Provides population figures for Iowa for the period 1832-1850.

MALIN, J. C. 1961. The grassland of North America: prolegonema to its history, with addenda. Lawrence, KS. 398 pp.

An attempt to meld the disciplines of history and ecology into an overview of the prairie of the Trans-Mississippi West. Early Iowa scientists are mentioned and an extensive bibliography is included. An earlier edition, without the final chapter, exists.

MALONE, C., and L. H. TIFFANY. 1978. Iowa lichens: an annotated listing. Proc. Iowa Acad. Sci. 85:74-80.

A checklist of Iowa lichens, consisting of 263 species in 74 genera, is presented. Included is substrate preference and county of occurrence. Fourteen taxa are reported from Sioux Quartzite outcrops in a prairie environment and seven taxa from exposed soil in loess bluff grasslands.

MARTIN, J. N. 1937. *Strophostyles helvola* (L.) Britton, its habits and probable value on eroded soils. Iowa State J. Sci. 12:25-35.

This species is resistant to drought and heat, and tolerate a wide range in the pH of soils. These traits, along with its prolific seeding and ability to propagate, make it a candidate for stabilizing sandy wastes and eroding hillsides.

MCCARTY, D. G. 1973. Stories of pioneer life on the Iowa prairie. Emmetsburg Publ. Co., Emmetsburg, Iowa. 165 pp.

Basically, an historical documentation of pioneer life in Palo Alto County, Iowa. The prairie is often mentioned.

MCCOMB, A. L., and W. E. LOOMIS. 1944. Subclimax prairie. Torr. Bot. Club Bull. 71:46-76.

Gives evidence, gathered in central and western Iowa, that oak-hickory forest is a climax. In western Iowa, where climate approaches that of a prairie climax, soils become increasingly important. States that prairies are semi-permanent edaphic, but not climatic, climax. Examples were taken from Harrison, Monona, and Woodbury counties in western Iowa and Boone and Story counties in central Iowa.

MCFARLAND, J. E. 1969. The pioneer era on the Iowa prairies. Graphic Publishing Co., Lake Mills, Iowa. 195 pp.

An historical account of the settling of the prairie. It is principally about the region of central and northern Iowa commonly called the Des Moines Lobe.

MENZEL, B. W., J. B. BARNUM, and L. M. ANTOSCH. 1984. Ecological alterations of Iowa prairie-agricultural streams. Iowa State J. Res. 59:5-30.

Water quality, habitat structure, and macroinvertebrates and fish communities were surveyed in 1979-1980 in 10 headwater streams in east-central Iowa. Through historical records, an attempt was made to show the degradation of streams between the present and when Iowa was a prairie state.

MILLER, L. S. 1954. The present status of systematic mammalogy in Iowa with some notes on recent mammal collecting within the state. Proc. Iowa Acad. Sci. 61:556-560.

Cites recent records of the Grasshopper Mouse from Cayler Prairie, Dickinson County, Iowa.

MOATS, B., and B. NELSON. 1980. Emmet County Prairie. Iowa Conservationist 39:8-9.

Describes some of the biota of a 81 ha (200-acre) prairie in northwest Iowa.

MONSON, P. H. 1959. The spermatophytes of the Des Moines Lobe in Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 353 pp.

Keys to the vascular plants of the Des Moines Lobe, including specific citation of the less common species.

MORRILL, J. B. 1953. Prairie flora on the Missouri River bluffs of western Iowa. M.S. thesis, Iowa State Univ., Ames.

Sixteen stations were established on the bluffs between Sioux City and Hamburg. Collections were made at two-week intervals throughout the growing season. Plant communities are described and a species list is given. Several new state records were recorded.

MORRISSEY, T. 1956. The flora of the Pine Hill Prairie relict. Proc. Iowa Acad. Sci. 63:201-213.

Presents a description of a native prairie relict which lives within the city limits of Davenport, Scott County, Iowa. Included is a systematic list of species with relative abundance.

MOTE, R. F. 1953. Soil protozoa on an Iowa virgin prairie. M.S. thesis, Drake University, Des Moines.

Research was conducted at the 13.3 ha (33-acre) Moeckley Prairie, Polk County.

MOTE, R. F. 1954. A study of soil protozoa on an Iowa virgin prairie. Proc. Iowa Acad. Sci. 61:570-592.

Soil samples from a 13.3 ha (33-acre) native prairie in Polk County yielded protozoa in 75 of 81 cultures. Drawings of many species are included.

MOYER, F. J. 1953. Ecology of native prairie in Iowa. Ph.D. dissertation, Iowa State Univ., Ames.

A vegetation analysis was made of two Iowa tallgrass prairies, Kalsow in Pocahontas County, and Hayden in Howard County. Included also is information on soils.

NELSON, B. 1979. The prairie: Iowa heritage. Iowa Conservationist 38:5-6.

Describes the demise of Iowa's prairies, and tells how newcomers become acquainted with a prairie.

NEWHALL, J. B. 1957. A glimpse of Iowa in 1846. State Historical Society, Iowa City. 106 pp. (reprint of an 1846 publication).

A general description of the soil, timber, rivers, prairies, climate of the new state. Also, a brief description of many counties and towns is included.

NIEMANN, D. A. 1971. Classification and ordination of the vegetation of Woodman Hollow, Iowa. M.S. thesis, Iowa State Univ., Ames. 130 pp.

A north-south transect was established across the greatest topographic variation in the preserve, running from the upland on one side of the ravine through a prairie opening to the opposite upland. Several prairie openings are found in the preserve. Included is a list of species found during the study.

NIEMANN, D. A. 1975. Distribution and habitats of the orchids of Iowa. Ph.D. dissertation, Iowa State Univ., Ames. 195 pp.

Describes the distribution, abundance, and habitats of Iowa orchids, some of which are found in prairie habitats. Also contains a vegetational history of Iowa and phytosociological implications.

NIEMANN, D. A., and R. Q. LANDERS. 1974. Forest communities in Woodman Hollow State Preserve, Iowa. Proc. Iowa Acad. Sci. 81:176-184.

Discusses the relations of prairie opening within several forest types associated with canyon topography in Webster County; expressed is concern that shrubs would invade and eliminate the openings.

NORTON, D. C., and P. E. PONCHILLIA. 1968. Stylet-bearing nematodes associated with plants in Iowa prairies. Proc. Iowa Acad. Sci. 75:32-35.

Five widely-located Iowa native prairies were sampled for plant parasite nematodes. Differences in nematode occurrences among the prairies were noted, as were differences between prairies and cultivated fields. Several new species of nematodes were encountered.

NORTON, D. C., D. DUNLAP, and D. D. WILLIAMS. 1982. Plant-parasite nematodes in Iowa: Longidoridae and Trichodoridae. Proc. Iowa Acad. Sci. 89:15-19.

Documents the occurrence of nine species of Longidoridae and Trichodoridae in Iowa. *Xiphinema americanum* is mentioned as occurring in native prairies. *Trichodorus proximus* was collected at Kalsow Prairie, Pocahontas County, Cayler Prairie and Freda Haffner Kettlehole, Dickinson County.

NOVACEK, J. 1984. The Western connection. Iowa Conservationist 43(4):26-27.

Describes the vegetation of the Loess Hills of western Iowa, discusses relationships with Great Plains vegetation, and speculates about the phytogeography of certain species.

O'KEEFE, J. A. 1980. Some aspects of the ecology and physiology of bryophytes of the prairie. M.S. thesis, Iowa State Univ., Ames. 130 pp.

Bryophytes were collected from Freda Haffner Kettlehole, Dickinson County; Cayler Prairie, Dickinson County; Black's Prairie, Story County; and Kalsow Prairie, Pocahontas County. Species lists for each site are included.

O'KEEFE-VAN DER LINDEN, J., and D. R. FARRAR. 1983. An ecological study of the bryophytes of a natural prairie in northwestern Iowa. Bryologist 86:1-13.

Bryophyte distribution and abundance was studied on Freda Haffner Kettlehole State Preserve, a native prairie remnant in Dickinson County. Of the 34 taxa found, most were common and widespread and many were typical weedy pioneers. Total bryophyte abundance correlated with slope steepness and ground-level light intensity.

OWEN, D. D. 1840. Mineral lands of the United States. U.S. Senate Document No. 239, Washington, D.C.

A report on minerals, but pp. 70-115 contain information on the proportion of prairie and timber in over 250 townships in the "Dubuque district," an area from Iowa City east to Davenport and north to Allamakee County.

OWEN, D. D. 1844. Report of a geological exploration of part of Iowa, Wisconsin, and Illinois. Printed by the U.S. Senate, Washington, D.C.

Mainly a report on minerals, but it contains an appendix (pp. 100-145) that describes the proportion of prairie and timber of over 250 town-

ships in the "Dubuque district," an area roughly from Iowa City to Prairie du Chien and east to the Mississippi River. There is information on pp. 189-191 on the ratio of prairies to timber in eastern and northeastern Iowa.

PAMMEL, L. H. 1901. Preliminary notes on the flora of western Iowa, especially from the physiographical ecological viewpoint. Proc. Iowa Acad. Sci. 9:152-180.

A general article, basically providing information on the flora of Harrison and Pottawattamie Counties, but also giving climatic and edaphic data and ecological conditions in other parts of Iowa. Numerous species lists are presented and numerous photographs are included.

PAMMEL, L. H. 1930. Buffalo in Iowa. Annals of Iowa 17:403-434.

Provides evidence that buffalo were once widespread in Iowa, mainly through citing bogs in which bones had been found.

PARKER, A. 1946. Iowa's first prairie preserve. Proc. Iowa Acad. Sci. 53:41-43.

Text of a speech to the Iowa Academy of Science on the 100th anniversary of the state of Iowa. Provides an historical background of the state's purchase of a Howard County prairie, now called Hayden Prairie.

PARKER, N. H. 1856. Iowa as it is in 1856. Keen and Lee, Chicago.

A gazeteer for citizens and immigrants on selection and cultivation of prairies. A series of three books, dated 1855, 1856, 1857, exist. All are essentially the same.

PECK, J. H., L. J. EILERS, and D. M. ROOSA. 1978. The vascular plants of Fremont County, Iowa. Iowa Bird Life 48:3-18.

The vascular flora of this extreme southwest Iowa county totals 550 species in 97 families. Many are plants of the loess hill prairies.

PECK, J. H., T. G. LAMMERS, B. W. HAGLAN, D. M. ROOSA, and L. J. EILERS. 1981. A checklist of the vascular flora of Lee County, Iowa. Proc. Iowa Acad. Sci. 88:159-171.

Provides a checklist for entire flora, including prairie and hill prairie species; intact prairie was described as being "virtually nonexistent."

PECK, J. H., D. M. ROOSA and L. J. EILERS. 1980. A checklist of the vascular flora of Allamakee County, Iowa. Proc. Iowa Acad. Sci. 87:62-75.

Based on field and herbaria studies, the Allamakee County vascular flora is composed of 1040 taxa, which represents approximately 50 percent of the species in the state flora. Many prairie species occur in the list, mainly from hill prairies.

PECK, J. H., B. W. HAGLAN, L. J. EILERS, D. M. ROOSA, and D. VANDER ZEE. 1984. Checklist of the vasculat flora of Lyon and Sioux counties, Iowa. Proc. Iowa Acad. Sci. 91:92-97.

The combined vascular flora of Lyon and Sioux counties, Iowa, is composed of 612 species, of which 454 occur in both counties. Several prairie remnants yet occur in these counties, and many prairie species are represented in the checklist.

PECK, J. H. and D. M. ROOSA. 1983. Bibliography of Iowa aquatic and wetland plant literature. Proc. Iowa Acad. Sci. 90:72-77.

A bibliography of 350 references; some include information on low prairies and prairie potholes.

PEMBLE, R. H., R. L. STUCKEY, and L. E. ELFNER. 1975. Native grassland ecosystems east of the Rocky Mountains in North America: a preliminary bibliography. A supplement to Prairie: a Multiple View. M. K. Wali, ed. Univ. North Dakota Press, Grand Forks.

An exhaustive treatment of grassland biome literature, with nearly 7,000 entries.

PETERSON, W. J. 1931. Across the prairies of Iowa. The Palimpsest 12(8):326-334.

An account of an 1834 dragoon expedition up the Des Moines River. The Iowa prairie is often mentioned.

PETERSON, W. J. 1935. Buffalo hunting with Keokuk. The Palimpsest 16(2):33-49.

An account of an 1833 buffalo hunting in what is now Franklin County, Iowa.

PETERSON, W. J. 1954. Iowa in the Louisiana purchase. The Palimpsest 35:357-367.

Presents a history of the Louisiana purchase, with a description of the land, the monetary considerations, and important persons who played a part.

PICK, Sister M.A. 1952. Solidago in Iowa. M.S. thesis, Univ. of Iowa, Iowa City. 45 pp.

Includes keys, habitats and dot maps. Prairies are often mentioned as habitat.

PINNEKE, R. R., and S. LEKWA. 1979. Doolittle Prairie: vestige of vanishing prairie wetlands. Iowa Conservationist 38:4-5.

Describes the history and biota of a 8.5 ha (21-acre) native prairie in Story County.

PLATT, W. J. 1975a. The colonization and formation of equilibrium plant species associations on badger disturbances in the tall-grass prairie. Ecol. Monogr. 45:285-305.

Badger disturbances on Cayler Prairie, Dickinson County, Iowa, were observed over a four-year period to study colonization patterns and formation of equilibrium plant species associations.

PLATT, W. J. 1975b. The vertebrate fauna of Cayler Preserve, Dickinson County, Iowa. Proc. Iowa Acad. Sci. 82:106-108.

A total of 72 terrestrial vertebrates were recorded during four years of observations. A species list is presented.

PLATT, W. J. 1976. The natural history of a fugitive prairie plant (*Mirabilis hirsuta* (Pursh.) MacM.). Oecologia (Berl.) 22:399-409.

This perennial fugitive species was studied at Cayler Prairie, a 160-acre native prairie in Dickinson County, Iowa. Reproductive success of *M. hirsuta* is contingent upon successful colonization of badger den disturbance sites.

PLATT, W. J., and N. R. BLAKLEY. 1973. Short-term effects of shrew predation upon invertebrate prey sets in prairie ecosystems. Proc. Iowa Acad. Sci. 80:60-66.

During August, 1971, the effect of different densities of *Sorex cinereus* on density and species composition of invertebrate prey sets on two prairies in northwestern Iowa were studied.

PLATT, W. J., G. R. HILL, and S. CLARK. 1974. Seed production in a prairie legume (*Astragalus canadensis* L.). Oecologia (Berl.) 17:55-63.

The effects of pollination, predispersal seed predation, and plant density upon seed production of *Astragalus canadensis* L. in Cayler Prairie, Dickinson County, Iowa, were studied by experimental manipulation of plant density. Seed production was greater at high than low plant densities.

PLATT, W. J., and I. M. WEIS. 1977. Resource partitioning and competition within a guild of fugitive prairie plants. Amer. Nat. 111:479-513.

Badger disturbances at Cayler Prairie, Dickinson County, Iowa, were studied to determine what plants colonized them, resource partitioning among fugitive species, and to compare empirical data with theoretical predictions.

PLATT, W. J., and I. M. WEIS. 1985. An experimental study of competition among fugitive prairie plants. Ecology 66:708-720.

Competition was assessed among five wind-dispersed perennial fugitive plant species existing on small open sites caused by foraging badgers on Cayler Prairie, Dickinson County, Iowa. The outcome of interactions depended on the intervals between immigrations.

POHL, R. W. 1966. The grasses of Iowa. Iowa State J. Sci. 40:341-566.

Contains keys, habitats, and distribution maps for the grasses of Iowa.

POUND, R., and F. L. CLEMENTS. 1898. The vegetation regions of the prairie province. Bot. Gaz. 25:381-394.

Divides the Great Plains into a prairie region,

sandhill region, and a foothill region. Provides notes on the species characteristics of each region.

PUSATERI, W. 1984. Special plants of Iowa's prairies. Iowa Conservationist 43(9):27-30.

Describes some of the common showy members of Iowa's prairie flora, as well as some of the most unusual. Photographs of selected species are included.

QUICK, H. 1922. Vandemark's Folly. A. L. Burt Co., New York. 420 pp.

A popular history of Vandemark Township, Monterey County (probably fictitious, but events were drawn from real experiences). Contains many references to the Iowa prairie.

QUICK, H. 1925. One man's life. Bobbs-Merrill Co., Indianapolis. 408 pp.

The family of Herbert Quick moved to the Grundy County area in 1857. This book contains many references to the Iowa prairie, including descriptions of prairie fires, prairie blizzards, the treelessness of the prairie, and perhaps the earliest reference to the pristine condition of prairie streams in Iowa.

REIMER, C. W. 1970. Some diatoms (Bacillariophyceae) from Cayler Prairie. Nova Hedwigia Beihefte 31:235-249.

Soil samples were taken during the summers of 1966, 1967, and 1968 from a 65 ha (160-acre) Dickinson County prairie. Of 70 taxa found, two were described as new forms. The upland soil flora was much less diverse than that of the swale.

RHODES, R. S., and H. A. SEMKEN. 1984. Fossil mammals of the Loess Hills. Iowa Conservationist 43(4):9-11.

Gives a chronology for the existence of mammals from the Pleistocene Ice Ages to present. The change from conifer forest to prairie is described.

RICHARDS, M. S. 1969. Observations on responses of prairie vegetation to an April fire in central Iowa. M.S. thesis, Iowa State Univ., Ames. 76 pp.

Research was conducted on Kalsow Prairie State Preserve, Pocahontas County. Selected species were observed after a prescribed April burn. Plots were established in burned, unburned, and mowed areas and changes in dry weight, vegetative cover, and flowering response were recorded.

RICHARDS, M. S. 1970. Report on the vegetation of Kalsow Prairie. State Preserves Advisoty Board, Des Moines. 50 pp.

Describes five vegetation types and dominant plants of each. Discusses species distribution on the prairie. A species list is included.

RICHARDS, M.S. 1972. Management of Kalsow Prairie. Pp. 30-33 *in* J. H. Zimmerman, ed., Proceedings of the Second Midwest Prairie Confetence, Sept., 1970, Madison, WI.

A brief history of Kalsow Prairie, Pocahontas County, Iowa, is given, along with an assessment of current management practices and recommendations for management and use.

RICHARDS, M. S., and R. Q. LANDERS. 1973. Responses of species in Kalsow Prairie, Iowa, to an April fire. Proc. Iowa Acad. Sci. 80:159-161.

Selected prairie species were observed during the first growing season following a prescribed burn on Kalsow Prairie, Pocahontas County, Iowa. Changes in dry weight, vegetative cover, and flowering response were measured on burned, unburned, and mowed areas.

RICHMAN, I. B. 1931. The prairie. The Palimpsest 12(3):107-113.

A popular account of the Iowa prairie — its beauty, blizzards, and fires.

RICKEY, M. D. 1964. A floristic survey of Delaware County, Iowa. M.S. thesis, Univ. of Iowa, Iowa City. 187 pp.

An annotated catalog of vascular plants. Included is a description of the area, and species lists from the major habitats including low moist prairies and upland prairies.

RIECKEN, F. F. 1946. Supplementary recommendations: preservation of undisturbed land areas in Iowa. Proc. Iowa Acad. Sci. 53:47-49.

Provides factors to be consided in selecting undisturbed areas for preservation. Gives soil types and counties where they occur.

RIECKEN, F. F., and B. R. TEMBHARE. 1978. Effect of prairie and forest vegetation on phosphorus status of Iowa soil profiles. Pp. 46-50 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976. Iowa State Univ. Press, Ames.

Available phosphorus was determined in prairie transition and forest soil profiles for well-drained and poorly drained soil sequences.

RISSER, P. G., E. C. BIRNEY, H. D. BLOCKER, S. W. MAY, W. J. PARTON, and J. A. WIENS. 1981. The true prairie ecosystem. US/IBP synthesis series. No. 16. Hutchinson Ross Publ. Co., Stroudsburg, PA. 557 pp.

A synthesis of research on the prairie biome. It provides a description of grassland types, origin and biota of the prairie ecosystem, and a summary of research on major vertebrate and invertebrate groups. An extensive bibliography is included.

ROEDER, D. R., and J. H. PECK. 1977. *Batrachospermum* Roth. (Rhodophyta), a genus of red algae new to Iowa. Proc. Iowa Acad. Sci. 84:133-138.

One collection was from a wetland on a sand prairie in Black Hawk County, Iowa.

ROOSA, D. M. 1976. Iowa's prairie preserves. Iowa Conservationist 35:7-10.

Describes the prairies presently in Iowa's state preserve system.

ROOSA, D. M. 1978. Prairie preservation in Iowa: history, present status, and future plans. Pp. 204-206 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976, Iowa State Univ. Press, Ames.

Gives brief history of prairie preservation in Iowa, what is currently being done, and what is hoped for the future. Also includes a status report on the prairie preserve system.

ROOSA, D. M. 1981. Iowa natural heritage preservation: history, present status, and future challenges. Proc. Iowa Acad. Sci. 88:43-47.

Makes references to the decline of the prairie, cites the contribution of concerned persons, especially Ada Hayden and Bohumil Shimek, and describes what is currently happening in preservation attempts.

ROOSA, D. M. 1984. Iowa's prairie preserves. Iowa Conservationist 43(9):22-26.

Included is an explanation Iowa's state preserves law, and a brief description of the 20 prairies now designated as state preserves.

RUDMAN, S., and R. W. POHL. 1951. Vegetational changes in an ungrazed grassland at the Iowa Lakeside Laboratory. Proc. Iowa Acad. Sci. 58:189-200.

Gives results of a restudy of the plots on a 24.3 ha (60-acre) grassland on the grounds of Iowa Lakeside Laboratoty. Species lists are presented for all plots which were originally established by W. A. Anderson.

RUHE, R. V., and W. H. SCHOLTES. 1956. Ages and development of soil landscapes in relation to climatic and vegetational changes in Iowa. Soil Sci. Soc. of Amer. Proc. 20:264-273.

Uses radio carbon dating to age soil landscapes. A cool, moist, arboreal environment ended about 5,000 years ago, when a warmer subhumid to humid prairie environment became dominant.

RYDBERG, P. A. 1931. A short phytogeography of the prairies and Great Plains of central North America. Brittonia 1:57-66.

Divides the central North America region into life zones. Most of Iowa is in the Central Prairies of the Middle Temperate zone.

RYDBERG, P. A. 1932. Flora of the prairies and plains of central North America. New York Botanical Garden, Bronx, N.Y. 969 pp.

A taxonomic treatment of the prairie plants of the tallgrass biome and the Great Plains.

SALISBURY, N. E., and J. C. KNOX. 1969. Glacial landforms of the Big Kettle locality, Dickinson County, Iowa. Development Series Report No. 6. State Preserves Advisory Board, Des Moines. 11 pp.

Gives the glacial history of the region of Iowa that includes the Kettlehole and provides maps of the Des Moines Lobe, a portion of Dickinson County, and several counties in Iowa and Minnesota. Pictures of the Kettlehole and Cayler Prairie are included. Although geological in orientation, prairie is mentioned and a plea for preservation of the Kettlehole is made.

SAUERBERG, K. E. 1938. A comparison of the structure, environment, and reactions of the oak-hickory and prairie communities in central Iowa. M.S. thesis, Iowa State Univ., Ames. 81 pp.

Structure, environment, and reaction of an oak-hickory community was compared to a prairie community. Included were species abundance, soil moisture, soil temperature, and wind, and reacrion of plants to soil and light. The oak-hickory community was located in the North woods (now called Pammel Woods); the prairie was a 7.3 ha (18-acre) tract owned by Dr. Ada Hayden. Both sites were close to Iowa State University, Story County. Many detailed quadrats are drawn.

SCHENNUM, W. 1984. Prairie hayfields. Iowa Conservationist 43(9):20.

Explains the link between the use of prairie vegetation for hay and the preservation of these remnants.

SCHMITT, D. P. 1969a. Plant parasitic nematodes and nematode populations in the Kalsow Prairie. M.S. thesis, Iowa State Univ., Ames.

Fifteen sites were sampled from a variety of habitats on the 65 ha (160-acre) Kalsow Prairie Preserve, Pocahontas County, Iowa, in 1968. Samples were taken in February, late April-early May, late June-early July, and late August-early September. Tables of nematodes present and plants at each site are presented.

SCHMITT, D. P. 1969b. Population patterns of some stylet-bearing nematodes in a native Iowa prairie. J. Nematol. 1:304 (abstract only).

Ten soil samples from each of 15 sites on Kalsow Prairie, Pocahontas County, were analyzed for nematode populations. Species were found to have distinct habitat preferences.

SCHMITT, D. P. 1973. Population fluctuations of some plant parasitic nematodes in the Kalsow Prairie, Iowa. Proc. Iowa Acad. Sci. 80:69-71.

Population density changes of selected plant parasitic nematodes were investigated at four bimonthly intervals beginning in February, 1968.

SCHMITT, D. P. and D. C. NORTON. 1972. Relationships of plant parasitic nematodes to sites in native Iowa prairies. J. Nematol. 4:200-206.

Soil samples from three native Iowa prairies, Cayler Prairie, Dickinson County; Hayden Prairie, Howard County; and Kalsow Prairie, Pocahontas County, were analyzed for plant parasitic nematodes. A list of plants with associated nematodes and similarity coefficients are included.

SEASHORE, C. E. 1941. Pioneering in Iowa. The Palimpsest 22:178-183.

Personal experiences from his boyhood on a Boone County farm. He recounts the breaking of the prairie sod with three yoke of oxen, the dangerous prairie fires, and blizzards.

SEITZ, W. K. and R. Q. LANDERS. 1972. Controlled burning in relationship to bobwhite quail populations on a southern Iowa public hunting area. Iowa State J. Res. 47:149-165.

Twelve plots, totaling 13 acres, were burned in early spring, 1971, to determine how it affected use by bobwhite quail. Brome and bluegrass responded quickly, followed by goldenrods, common ragweed and sericea lespedeza. Prairie grasses became prominent in early June.

SHELFORD, V. E. 1963. The ecology of North America. Univ. of Ill. Press, Urbana.

Iowa is prominently mentioned in the two chapters on grasslands. Maps which show the distribution of grassland types show the position of Iowa in the grassland biome.

SHIMEK, B. 1896. The flora of the Sioux quartzite in Iowa. Proc. Iowa Acad. Sci. 4:72-77.

Over 60 species, observed on a two-day visit in August, 1896, are given with notes on their abundance and distribution in Iowa.

SHIMEK, B. 1897. The flora of the Sioux quartzite in Iowa II. Proc. Iowa Acad. Sci. 5:28-31.

Two areas of quartzite outcropping were studied and compared. Tables of plants from different habitat types are given.

SHIMEK, B. 1909. Botanical report. The Prairies. *In* Geology of Harrison and Monona counties. Ann. Rept. Iowa Geol. Surv. 20:426-483.

Summarizes the reasons for the lack of trees on prairies. Divides Iowa prairies into six distinct types. Gives extensive species lists for 13 sites in Monona and Harrison counties. Includes detailed information on meteorological conditions.

SHIMEK, B. 1910. Prairie openings in the forest. Proc. Iowa Acad. Sci. 17:16-19.

Gives reasons for the occurrence of oak openings and presents a species list of plants collected on these openings. Collections are from eastern Iowa, chiefly Johnson County.

SHIMEK, B. 1911. The prairies. Bull. Lab. Nat. Hist., State Univ. of Iowa 6(2):169-240, plus 13 plates.

Provides an extensive species list for six different types of Iowa prairies and gives four sources for invasion of nonprairie plants. Examines the effects on the prairie of physical factors such as evaporation, rainfall, temperature, wind, and topography. Concludes that exposure to evaporation, as determined by wind, temperature, and topography is the primary cause of treelessness of the prairie.

SHIMEK, B. 1913. An artifical prairie. Bull. Lab. Nat. Hist., State Univ. of Iowa 6(4):35-42, plus 1 plate.

Reports on a prairie that developed on an area bordering a highway when a cut was made through a wooded area north of Homestead, Iowa County. Speculates on sources of the prairie flora and give a species list.

SHIMEK, B. 1915. The plant geography of the Lake Okoboji region. Bull. Lab. Nat. Hist., State Univ. Iowa 7(2):3-69.

Provides a physiographic description of the area and a summary of the plants of each ecological region. Included are lists of vascular plants of eight prairie sites, eight aquaric habitats, in addition to lists of lichens, fungi, and mosses.

SHIMEK, B. 1917a. The plant geography of the Lake Okoboji region: additional notes. Bull. Lab. Nat. Hist., State Univ. of Iowa. 7(4):3-5.

Lists additional species collected since the publication of the preceeding paper.

SHIMEK, B. 1917b. The sand flora of Iowa. Bull. Lab. Nat. Hist. State Univ. of Iowa. 7(4):6-24, plus 5 plates.

Divides sandy areas in Iowa into five types and selects seven sites for study of the distribution of the flora. A table of nearly 400 species is given for these seven areas. Most are prairie species.

SHIMEK, B. 1924. The prairies of the Mississippi River bluffs. Proc. Iowa Acad. Sci. 31:205-212.

Points out the existence of hill prairies on the bluffs of the Mississippi River, tells how he feels they are maintained, and presents lists of species.

SHIMEK, B. 1925. Persistence of the prairie. Univ. Iowa Stud. Nat. Hist. 11(5):3-24, plus 4 plates.

Reports on two areas, one near Wilton, Muscatine County, and one near Mason City, Cerro Gordo County, where the prairie flora has returned to a disturbed surface. Argues that the prairie flora

represents a climax stage. An extensive species list is presented.

SHIMEK, B. 1927. The prairies. Wild Flower 4:6-7.

Excerpts from an earlier paper mainly describing the seasonal aspect of prairies.

SHIMEK, B. 1928. The prairies again. Science 68:321-323.

Argues that the prairie flora is a climax stage.

SHIMEK, B. 1931. The relation between the migrant and native flora of the prairie region. Univ. Iowa Stud. Nat. Hist. 14(2):10-16.

Gives examples of how introduced plants inhabit disturbed sites and sometimes compete with the native prairie flora. A plea for preservation of prairie is included.

SHIMEK, B. 1934. The Shimek Plan. Unpubl. manuscript at the University of Iowa. Original not seen.

States the problems of grassland preservation and outlines a strategy for prairie protection in Iowa.

SHIMEK, B. 1948. The plant geography of Iowa. (H. S. Conard, ed.) State Univ. Iowa Stud. Nat. Hist. 18(4):1-178.

A summation of Shimek's observation on the vegetation of Iowa which is our best source of information on the native condition of Iowa. Contains his final thinking on the treeless nature of Iowa prairies.

SHIMEK, E. 1915. The ecological histology of prairie plants. Proc. Iowa Acad. Sci. 22:121-126.

A study of 65 prairie plants was made to determine the character of the structural adaptations to the environment. Plants were taken from the loess bluff, Harrison County; near Okoboji Lake, Dickinson County; and near Iowa City, Johnson County. A matrix of the results is included.

SMITH, D. 1978. Mystique of the prairie. Pp. 194-197 *in* D. C. Glenn-Lewin and R. Q. Landers, eds., Proceedings of the Fifth Midwest Prairie Conference, August, 1976. Iowa State Univ. Press, Ames.

Gives personal reflections and examples from literature on the development, splendor, and demise of the prairie.

SMITH, D. D. 1981. Iowa prairie — an endangered ecosystem. Proc. Iowa Acad. Sci. 88:7-10.

Describes the presettlement prairie, its demise, and current preservation attempts.

SMITH, D. D. 1984. Iowa prairie — a state of mind. Iowa Conservationist 43(9):3-4.

A personal description of one man's reverence for the prairie. Included is a rationale for saving the remnants.

SMITH, D., and P. CHRISTIANSEN. 1982. Prairies. Chapter 7 (Pp. 158-179) *in* T. C. Cooper, ed., Iowa's Natural Heritage. Iowa Acad. Sci. and Iowa Nat. Heritage Found., Des Moines.

A popular account of the various types of prairie in Iowa, a description of a prairie year, and a listing of protected prairies.

SMITH, D. D., P. CHRISTIANSEN, and D. M. ROOSA. 1977. Great River Road Natural Areas: a preliminary survey. Pp. 499-597 *in* J. Hotopp, Iowa's Great River Road Cultural and Natural Resources Vol. II. Archaeology, geology, and natural areas. A preliminary survey. Prepared by Office of State Archaeologist, Iowa City, for the Iowa Department of Transportation, Highway Division, Ames.

Describes natural areas of the Great River Road cooridor located during a preliminary survey. Species lists, site location forms, and maps are included. Hill prairies, prairie openings, and sand prairies are described. Corridor is located in portions of Allamakee, Clayton, Dubuque, Louisa, Muscatine, and Des Moines counties.

SMITH, S. G., and R. Q. LANDERS. 1964. Survey of natural land in Iowa suitable for preservation. Report of the Iowa Chapter of The Nature Conservancy to the Governor's Committee on Conservation of Outdoor Resources. 10 pp.

Results of a statewide survey by The Nature Conservancy to determine areas suitable for acquisiton for preserves. Numerous prairies are described.

SORENSON, P. D. 1962. The Williams Prairie: a prairie relict in Johnson County. Proc. Iowa Acad. Sci. 69:45-53.

Includes a brief introduction and history of the prairie, a list of 266 species of 63 families; five species were new county records.

SPENCE, W. L. 1959. The Salicaceae of Iowa. M.S. thesis, Univ. of Iowa, Iowa City. 108 pp.

Includes keys, dot maps, notes on habitats, illustrations, and locational information on the rare species. Prairies are occasionally mentioned.

SPRAUGE, G. 1949. Northern Iowa — 1858. The Palimpsest 30:42-60.

A series of letters, written by H. C. Kelley, describing aspects of northern Iowa as it was in 1858. The prairie and prairie soils are often mentioned.

STEMPLE, M. E., and S. RODGERS. 1961. History of Prairie Chickens in Iowa. Proc. Iowa Acad. Sci. 68:314-322.

Relates factors which led to the decline and demise of prairie chickens in Iowa. Habitat destruction and overhunting were the principal factors identified. Gives characteristics of the last known Iowa booming and mating grounds.

STONEBURNER, D. L. 1970. Forest-prairie boundary energetics and secondary succession. Ph.D. dissertation, Iowa State Univ., Ames. 92 pp.

Mass and energy data were collected and rates of litter decomposition were estimated on a monthly basis along two transects through a forest-prairie ecotone at Ledges State Park, Boone County, Iowa, during the growing season of 1969. The data were interpreted through the principles of thermodynamics.

STUCKEY, R. L. 1978. Origin and development of the concept of the prairie peninsula. Pp. 4-23 *in* The Prairie Peninsula — in the shadow of Transeau, R. L. Stuckey and K. K. Reese, eds. Ohio Biol. Surv. Biol. Notes No. 15.

Recounts the contributions of various scientists to the peninsula concept and analyzes the evolution of the concept since Transeau's 1935 publication. Iowa is shown on several maps.

SWIERENGA, R. P. 1968. Pioneers and profits: land speculation on the Iowa frontier. Iowa State Univ. Press, Ames. 260 pp.

Provides documentation for the rate at which Iowa was settled. Includes many maps and tables giving amount of land sold during certain time periods. Prairie land is often mentioned or alluded to.

SWISHER, J. A. 1946. Land for sale. The Palimpsest 27:271-284.

A history of distribution of public lands. Important dates are given and prices paid for land are listed.

THORNE, R. F. 1964. Relict nature of the flora of White Pine Hollow forest reserve, Dubuque County, Iowa. Univ. Iowa Stud. Nat. Hist. 20(6):1-33.

Includes as a habitat type "openings of limestone ridges and bluff crests," and includes a short list of prairie species observed there. Also included is a list of the vascular flora, annotated with habitats of occurrence.

TOBEY, R. C. 1981. Saving the prairies: the life cycle of the founding school of American plant ecology, 1895-1955. Univ. Cal. Press, Berkeley, CA. 315 pp.

An in-depth historical review of the role of grasslands in the development of American plant ecology. Some Iowa researchers are discussed; however, the focus is on Nebraska.

TOLSTEAD, W. L. 1938. A flora of Winneshiek and Allamakee counties and Clayton County in the viciniry of McGregor. Iowa State J. Sci. 12:321-384.

A checklist of mosses. pteridophytes, gymnosperms, monocots and dicots, with comments on plant formations. Prairies are described under the "xerosere", along with lists of characteristic species.

TRANSEAU, E. N. 1935. The prairie peninsula. Ecology 16:423-437.

Locates the eastern extension of the prairie at the time of settlement. Provides range maps for 17 species to help define the prairie peninsula.

VAN BRUGGEN, T. 1958. The flora of south-central Iowa. Ph.D. dissertation, Univ. of Iowa, Iowa City. 505 pp.

An annotated catalog of the vascular flora, including dot mops, is presented for nine south-central Iowa counties.

VAN DER VALK, A. G. 1975. The history of plant ecology in Iowa as reflected in the Proceedings of the Iowa Academy of Science. Proc. Iowa Acad. Sci. 82:65-70.

The history of plant ecology in Iowa is examined by analyzing papers published in the Proceedings of the Iowa Academy of Science. A bibliography of 135 entries is included.

VANDER ZEE, D. 1975. The flora of Gitchie Manitou Preserve, Lyon County, Iowa. Report to the State Preserves Advisory Board, Des Moines. 18 pp.

Includes a history of the preserve, information on the successional status of the plant communities, and an annotated list of plant species.

VANDER ZEE, D. 1977. Gitchie Manitou Preserve: flora, ecology, and management. M.S. thesis, Iowa State Univ., Ames.

Includes soils map, history of the Lyon County preserve, an annotated catalog of plant species, and management recommendations.

VANDER ZEE, D. 1979. The vascular flora of Gitchie Manitou State Preserve, Lyon County, Iowa. Proc. Iowa Acad. Sci. 86:66-75.

The vascular flora of this preserve in Lyon County was studied in 1974-76. Included is a list of 328 species from 66 families. Seven plant communities are described.

VAN GUNDY, W. 1984. Roadside prairies. Iowa Conservationist 43(9):8-9.

Describes the demise of the Iowa prairie, and explains the importance of those remnants which still exist along roads.

WARD, H. S. 1940. The role of *Plantago aristata* Michx., *Ambrosia artemisiifolia* L., and *Solidago nemoralis* Ait. in the secondary plant succession on eroded soil in southern Iowa. M.S. thesis, Iowa State Univ., Ames.

The role of these three species in secondary succession on eroded soils was investigated in Davis County from 1938 to 1940. Seed germination studies were conducted, and the life history of each elaborated.

WARD, H.S. 1948. Reactions of adapted legumes and grasses on the structural condition of eroded Lindley-Weller soils in southeastern Iowa. Ph.D. dissertation, Iowa State Univ., Ames.

Five species of grasses and four species of legumes were planted in randomized replications on five sites in Davis County. Soil structure was examined after three years and after eight years.

WARD, H. S. 1949. Reaction of adapted legumes and grasses on the structural condition of eroded Lindley-Weller soils in southeastern Iowa. Ecol. Monogr. 19:145-171.

Studies were initiated in 1941 to determine the effects of different species of grasses and legumes on severely eroded Weller and Lindley soils at Floris, Davis County, Iowa. Five species were native prairie species.

WARNER, R. M. 1945. Relation of vegetative cover to the plant growth conditions of eroded soils. Iowa State J. Sci. 20:101-153.

The relation of plant cover to certain growth conditions on eroded soils was studied near Floris, Davis County, Iowa. Some prairie species were used. Species lists and photographs are included.

WEAVER, J. E. 1944. North American Prairie. The American Scholar 13:329-339.

Describes the limits of the prairie in North America, mentions Iowa and Illinois as having "True Prairie," and makes a plea for prairie preservation.

WEAVER, J. E. 1954. North American Prairie. Johnsen Publ. Co., Lincoln, NE. 348 pp.

A summation of Weaver's observations on prairies throughout the Midwest and Great Plains. Iowa's prairies are mentioned throughout and Iowa's prairie literature is cited extensively. Weaver concludes this book with a plea for all states to follow Iowa's example to preserve the remaining prairie (see p. 325).

WEAVER, J. E. 1958. Native grasslands of southwestern Iowa. Ecology 39:733-750.

The vegetation on 81 ha (200 acres) of prairie, consisting of tracts from near Guthrie Center, Guthrie County; Anita, Cass County; Corning and Creston, Union County is described. Observations from throughout the year are included.

WEAVER, J. E. 1960a. Floodplain vegetation of the central Missouri Valley and contacts of woodland with prairie. Ecol. Monogr. 30:37-64.

The area examined extended about 564 km (350 miles) along the axis of the Missouri River and from the Mississippi-Missouri divide in Iowa westward about 322 km (200 miles) to the edge of the Great Plains. The emphasis is on woodlands and aquatic vegetation, but the woodland-prairie ecotone is described.

WEAVER, J. E. 1960b. Extent of communities and abundance of the most common grasses in prairie. Bot. Gaz. 122:25-33.

Data were taken during 1928-1932 from 63 prairies throughout a 60,000 sq. mi. area of the central Missouri River Valley. The study was concerned with the relative extent of the grassland types in relation in topography, soil, and other environmental conditions. Eleven of the prairies were located in western Iowa.

WEAVER, J. E. 1968. Prairie plants and their environment. Univ. Nebr. Press, Lincoln. 276 pp.

Published posthumously, this is a summation of 50 years of prairie research by Weaver and his students. A map shows the general location of 30 Iowa sites studied.

WEAVER, J. E., and F. W. ALBERTSON. 1936. Effects of the great drought on the prairies of Iowa, Nebraska, and Kansas. Ecology 17:567-639.

Prairies near Glenwood, Mills County; near Corning, Union County; near Anita, Cass County; and near Oakland, Pottawattamie County were studied in 1935 for effects of the previous year's drought.

WEAVER, J. E., and W. E. BRUNER. 1954. Nature and place of transition from true prairie to mixed prairie. Ecology 35:117-126.

A description of the very gradual change in vegetation from the true prairie to mixed prairie, which occurs in a broad ecotone about 81 km (50 miles) in width. This ecotone is in eastern Nebraska and Kansas. Iowa's prairies are mentioned as examples of mesic prairies.

WEAVER, J. E., and T. J. FITZPATRICK. 1932. Ecology and relative importance of the dominants of the tallgrass prairie. Bot. Gaz. 93:113-150.

Results of a ten-year study of the life histories, distribution, and relative importance of the dominant grasses in a central area of the tallgrass prairie. Study occurred in the western one-third of Iowa and the eastern one-third of Nebraska.

WEAVER, J. E., and T. J. FITZPATRICK. 1934. The Prairie. Ecol. Monogr. 4:109-295.

A synopsis of five years of studies involving 135 sites in eastern Nebraska, western Iowa, and adjacent areas in Kansas, Missouri, South Dakota, and Minnesota. Thirty sites in Iowa were chosen; several are shown by photographs.

WEIS, I. M. 1975. Alterations in a grassland plant community: the effects of microtine herbivory. Ph.D. dissertation, Univ. of Iowa, Iowa City. 117 pp.

The effect of microtine herbivory on a formerly heavily-grazed grassland, Dickinson County, Iowa, was studied by establishing four treatment quadrats in each of two blocks. An exclosure was erected and microrines removed. *Poa pratensis* increased within the exclosure, while *Andropogon* was greater outside. The total sample biomass did not differ significantly.

WERNER, P. A. and W. J. PLATT. 1976. Ecological relationships of co-occurring goldenrods (*Solidago:* Compositae). Amer. Nat. 110:959-971.

Comparisons were made of propagule characteristics and niche relationships among co-occurring species of goldenrods in a 23-year-old field in Michigan and a virgin tallgrass prairie in Dickinson County, Iowa.

WHITE, J. A. 1983. Regional and local variation in composition and structure of the tallgrass prairie vegetation of Iowa and eastern Nebraska. M.S. thesis, Iowa State Univ., Ames. 137 pp.

Sets of vegetation samples were used from 11 different preserves, spanning three physiographic regions in Iowa and eastern Nebraska. Numerical analyses and partirional ordination demonstrated how patterns of variation combined to produce the tallgrass prairie.

WHITE, J. A. and D. C. GLENN-LEWIN. 1984. Regional and local variation in tallgrass prairie remnants of Iowa and eastern Nebraska. Vegetatio 57:65-78.

Vegetation samples were taken from 11 prairie preserves, spanning three physiographic regions in Iowa and eastern Nebraska. Numerical classification and partitioned ordination revealed a complex pattern of both local and geographical variation, with the primary coenocline being a complex topographical-moisture gradient. A condensation of the above entry.

WHITNEY, J. D. 1858. Physical Geography. Chapter 1 *in* Report on the Iowa Geological Survey of the State of Iowa 1(1):1-34.

Sketches the principal features of the topography of Iowa. Describes Iowa's prairies in a general way, particularly as related to soil, glacial history, and climate. There is some information on vegetation and the original extent of prairies.

WILLIAMS, I. A. 1921. Lost in an Iowa blizzard. The Palimpsest 2(1):1-15.

A personal account of a prairie blizzard in the winter of 1856-57 in northern Iowa.

WILSON, B. H. 1926. Across the prairies of Iowa. The Palimpsest 7(6):243-255.

An account of the completion of the first telegraph line across Iowa.

WILSON, J. H. 1970. Effects of prescribed burning on survival of certain woody plants. M.S. thesis, Iowa State Univ., Ames. 50 pp.

Five plots in Story County, Iowa, were chosen to test the effect of burning on woody plant survival. All plots contained some native prairie vegetation, and some invading woody species. Physical factors of spring and fall burns were recorded, and species were monitored for survival.

WOLDEN, B. O. 1971. Flora of Island Grove and adjacent Iowa prairies before 1908. Proc. Iowa Acad. Sci. 78:2-8.

A description is given of the Emmet County vegetation of an area near the northern Iowa border before the native plants were seriously reduced. A total of 537 species are listed.

WOOLEY, J. 1984. Prairie chicken update. Iowa Conservationist 43(9):10-11.

Since 1980, the Iowa Conservation Commission has attempted to reestablish the greater prairie chicken in the prairies of the Loess Hills of western Iowa. This report tells what progress has been made, what problems remain, and what future efforts are needed.

ZOBRIST, H. W. 1933. A study of factors which limit the adaptation of *Dalea alopecuroides.* M.S. thesis, Iowa State Univ., Ames. 49 pp.

Greenhouse and field studies were conducted in Story County to determine the effect of planting depth, seed inoculation, and seed treatment. Seeds planted shallowly provided the best stands, and chemical treatment of seeds proved to increase stand and growth.

ZOSKEY, P. 1979. A practical use for prairie restoration. Iowa Conservationist 38:2-3.

Describes a pilot program of roadside prairie plantings in Van Buren County and provides a rationale for expanded use of the program.