

Ada Hayden: Champion of Iowa Prairies

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Ada Hayden developed a love for prairies during her childhood. She was born in 1884 on a farm just north of Ames, Iowa, where her father had left several acres of prairie and wetland unplowed. While in her teens, she came under the influence of Louis H. Pammel, whose work in conservation was a model and inspiration during the many years he was her mentor. Ada Hayden chose prairies as the subject of her earliest research; her Ph.D. dissertation was on the anatomical adaptations of prairie plant species. Two journal papers based on her dissertation and two additional publications on prairies were in print within a year of awarding of her degree. After receiving her doctorate at Iowa State College, she was employed there as Assistant Professor of Botany, later as Research Assistant Professor of the Agricultural Experiment Station and Curator of the Herbarium. Almost single-handedly she pioneered the idea of setting aside prairie remnants in Iowa as state-owned preserves. Her field work culminated in a summary paper in 1947 describing 22 prairie areas worthy of preservation. She convincingly argued that these tracts should be given the highest priority for state purchase and preservation. She promoted her ideas in professional organizations and spoke of her cause in many venues. Her writings, including both technical publications and semi- or non-technical, descriptive articles, also helped stir public support for conservation of the state's remaining natural areas. Iowa's state preserves and the State Preserves Advisory Board are direct legacies of her efforts. Her work provides an example of dedication and perseverance for today's conservationists and natural historians.

INDEX DESCRIPTORS: Ada Hayden; prairie; conservation; preserves; Ames, Iowa.

Ada Hayden was born in the vicinity of Ames, Iowa, on 14 August 1884. Her parents, David Maitland Hayden and Christina Shearer Hayden, owned an 80-acre farm "3 miles northwest of Ames," a description which was later included on numerous herbarium specimen labels. The location of this property was T84N, R24W (Franklin Twp.), E $\frac{1}{2}$, NW $\frac{1}{4}$, Sec. 27 (unpubl. records, Auditor's Office, Story County). Her maternal grandparents, Mr. and Mrs. Robert Bruce Shearer, were early pioneers in Story County (Anonymous 1950), and, until 1902, they owned a farm adjacent to the Hayden property.

Ada's family's land was apparently quite variable in terrain, from gravelly prairie knolls with *Pulsatilla patens* (L.) P. Miller (pasque flowers) and *Astragalus crassicaarpus* Nutt. (ground plums) to wet spots with *Caltha palustris* L. (marsh marigolds) and *Cypripedium candidum* Muhl. (small white lady's-slipper orchids), as documented by specimens in Iowa State University's Ada Hayden Herbarium. The farm was Ada's playground in her youth and her sanctuary as she grew older. It also helped create her love of natural areas from an early age.

By the time she graduated from Ames High School, she had made the acquaintance of Iowa State College botanist Louis Pammel (Isely 1989). Her love of plants drew her to the study of botany at the college, and she chose Pammel as her advisor. She graduated from Iowa State in 1908, having been an honors student, a basketball player, and a member of several college organizations (Lovell 1987; unpubl. records, Iowa State University Library, Special Collections Department).

She soon began study at Washington University in Saint Louis, where she obtained her Master's degree in 1910. She then returned to Ames that year to begin work on a second Master's degree (received 1911), then her Ph.D. at Iowa State (awarded 1918).

INITIATION OF HER PRAIRIE RESEARCH AND PUBLICATION

Ada Hayden's research on prairies apparently started soon after her return to Ames (Fig. 1). In 1911, she had an abstract about types of prairies published in the *Proceedings of the Iowa Academy of Science* (Hayden 1911). In 1919, two papers resulting from her dissertation on the "ecologic anatomy" of several prairie plant species were published in the *American Journal of Botany* (Hayden 1919a, 1919b). The same year, an expanded paper based on the 1911 abstract was published in the *Proceedings of the Iowa Academy of Science* (Hayden 1919c).

Also that year she wrote a paper for the *Iowa Parks* report to the State Board of Conservation on the need to initiate efforts to set aside prairie areas as preserves (Hayden 1919d). In 1917 the state legislature had authorized the creation of the State Board of Conservation to oversee the establishment of Iowa State Parks. However, Governor William Harding failed to appoint members to this new board until late in 1918 (Conard 1997). Pammel, who was selected to be the first chairman of the Board of Conservation, called a general meeting in 1919 to discuss priorities for the first Iowa Parks (Pammel 1919). Of the many proposals made at the meeting and included in the published report, only Ada Hayden's presentation highlighted the need for the conservation of prairies. Apparently this article was the first published recognition of the importance of creating prairie preserves, and she hoped that newly appropriated funds to the State Board of Conservation would allow this to happen. However, she would have to wait more than a quarter century for the first prairie preserves to be purchased by the state. A brief quote from this paper provides an example of Ada Hayden's beautifully descriptive writing:

Iowa is said to be a prairie state, but what is a prairie to the present generation? Within 40 or 50 years, the broad stretches of tall shining grass trembling in the sunlight or tossed by the



Fig. 1. Ada Hayden, in "College Pasture," Ames, Iowa. Date unknown. (Source: Iowa State University Department of Botany).

breezes into billowy waves, gorgeous as the season progresses with its pageant of brilliant hued flowers . . . is fast passing. . . . Few but the farm boy and the meadow lark know where the swamp now lingers, where the marigolds glitter in the marsh, where the red-brown knoll, fanned by the winds of March, turn pale lavender as the pasque flower wakes in the spring. . . . [W]hat park planting can equal a mile or two of flaming Turk's cap lily which frequents the damp native prairie in July, or the white beds of nodding anemones, the red and white sweet william, the purple patches of gauzy spiderwort, the gorgeous butterfly weed, the glowing goldenrod, and the banks of stately, radiant sunflower. All these plants are carefully cultivated by florists in parts of the country where they are not native. Why not preserve now at a small cost what cannot be replaced at any cost? (Hayden 1919d)

INTERIM WORK AND INTERESTS

Following this one-year burst of publications, her publication record about prairies largely fell silent until the 1940s. Why this 20 year hiatus? Several possible reasons are suggested by her other activities. First, she was appointed to the faculty just after getting her doctorate, so undoubtedly she was busy getting her courses established. Secondly, her friend and mentor Louis Pammel recruited her assistance on his numerous projects and publications. She wrote chapters, provided photographs and illustrations, and perhaps, along with Charlotte King, organized and edited many of these publications (e.g., Pammel and King 1926; Pammel and collaborators 1930). Pammel felt that at least those prairies that were potentially

prime agricultural land should not be permanently set aside (Conard 1997); perhaps his attitude influenced her willingness to further push for prairie preserves. Maybe, on the other hand, she had been speaking and writing about prairies, but these notes and manuscripts have not survived or been located. For example, it is unclear what role, if any, she played in drafting Iowa's 1933 25-year conservation plan (Crane and Olcott 1933). Her work on a flora of the lakes region of Clay and Palo Alto counties (Hayden 1943), claimed by Isely (1989) to have been "the best published native flora survey . . . of any part of Iowa," must have consumed a great deal of her time. Also, she probably assumed somewhat greater responsibilities in the botany department following Pammel's retirement in 1927 and death in 1931. In 1934, Ada Hayden was named both an Agriculture Experiment Station Researcher and officially the Curator of the Herbarium (Hayden papers, Iowa State University Library, Special Collections Department). She also served as an officer or on committees for a number of botanical, university-affiliated, and civic organizations (Martin 1951).

PRAIRIE PRESERVE EFFORTS RESUMED

In the final decade before her death, Ada Hayden again took up the cause of preserving Iowa's remnant native prairie areas. Louise Parker was then vice-chair of the Iowa Conservation Commission (which evolved from the State Board of Conservation) and a willing advocate for prairie preserves (Parker 1944). Ada Hayden was on the Conservation Committee of the Iowa Academy of Science and chaired the Iowa Prairie Subcommittee of the Ecological Society of America's Committee on Preservation of Natural Conditions (Martin 1951). What jump-started this interest in prairie preserves? Perhaps two factors served as the motivation: 1) a decade had passed with no action toward establishing preserves since the 25-year conservation plan had been announced (Crane and Olcott 1933); and 2) in 1941 she sold her family farm near Ames (unpubl. records, Auditor's Office, Story County) and soon saw her beloved prairie plowed for the planting of crops. Conard (1997) proposed that perhaps the "Dust Bowl" of the 1930s and publication of Sears' *Deserts on the March* (1935), both of which led to a greater public awareness of ecology, may have popularized Ada Hayden's research, thus spurring her efforts for cataloging the remaining prairie areas and pushing for their acquisition as preserves.

Isely (1989), on the other hand, speculated that she had quietly been advocating prairie preservation the entire time, but that these years were required for her evangelism to begin to bear fruit. Whatever the reason, she suddenly began to write and speak publicly with a passion and urgency of the need to get some high quality examples of different kinds of Iowa prairies set aside as preserves. The Iowa Academy of Science gave her \$100 in 1944, which was later reimbursed by the Iowa Conservation Commission (Hayden n.d., Hayden papers, Iowa State University Library, Special Collections Department), to survey and select for potential preserves the best remaining prairies across the state. She traveled to, photographed, and described 22 prairie tracts in ten counties. Her 1944 report to the Iowa Conservation Commission was published in the *Proceedings of the Iowa Academy of Science* in 1946, followed by a "progress report" in 1947 (Hayden 1946a, 1947). As early as 1944, she made an appeal to the Iowa Academy of Science recommending the purchase of these sites as prairie preserves (Hayden 1945). Of these 22 tracts, two (now Hayden and Kalsow State Preserves) were purchased for protection in her lifetime. Only three additional tracts have been set aside as preserves since 1950, although prairie habitat may yet exist on some of the remaining areas. Table 1 summarizes the current status of all 22 areas proposed by Ada Hayden as worthy of consideration for preserves.

Table 1. Status of Ada Hayden's proposed prairie preserves (Hayden 1947)^a.

County	Hayden's Site Designation	Acres Proposed (Current Size, if Applicable)	Current Status/Notes
Dickinson	No. 1 Floete Prairie	20	Cropland/Privatey owned, largely plowed in 1948 (Hayden unpubl. notes ^b); reduced to ca. 5 acres of hillside prairie above a swale
Dickinson	No. 2 Cayler Farm ^b	320(160)	Cayler Prairie State Preserve/ca. 480 acres of adjacent pasture and cropland with prairie remnants on steep slopes have recently been added, creating the Cayler Prairie Wildlife Area
Dickinson	No. 3 Higgins Estate	400	Pasture?, degraded/Privatey owned
Dickinson	No. 4 Speer Prairie	320(110)	Freda Haffner Kettlehole State Preserve
Dickinson	No. 5 Shimek Plan	ca. 1330	Prairie, pasture, crop/Little Sioux River Valley proposed by Shimek as National Preserve; includes both Cayler and Freda Haffner preserves, otherwise privately owned with some prairie remnants on rugged valley slopes
Dickinson	No. 6 Thom Farm	160(10)	Prairie, degraded/Privatey owned, voluntary protection
Emmet	No. 1 Robb Prairie	314(20+)	Largely degraded or destroyed/Possibly included at least part of Anderson Prairie State Preserve, Crimm Savanna (with small gravel prairie) and Ringham Habitat Area
Emmet	No. 2 Four-Mile Lake Prairie	10(5)	Disturbed prairie/Hayden noted presence of <i>Platanthera (Habenaria) leucophaea</i> (prob. = <i>P. praeclara</i>) and <i>Lespedeza leptostachya</i>
Pocahontas	No. 1 Kalsow Prairie	160(160)	Kalsow Prairie State Preserve
Pocahontas	No. B Gunderson Prairie	?	Cropland/Privatey owned
Howard	No. 1 Lime Springs Prairie	199(240)	Hayden Prairie State Preserve
Cherokee	No. 1 Pilot Rock Prairie	160	Pasture, degraded/Privatey owned (2 acres are "Pilot Rock Lookout")
Cherokee	No. 2 Harrison Steele Prairie	320(200)	Steele Prairie State Preserve
O'Brien ^c	No. 1 McCulla Estate (Simmons Ranch)	320	Pasture, degraded/Privatey owned
O'Brien ^c	No. 2 Steele Estate	400	Pasture, degraded/Privatey owned
O'Brien ^c	No. 3	40	Pasture, degraded/Privatey owned
O'Brien ^c	No. 4	40	Pasture, degraded/Privatey owned
O'Brien ^c	No. 5	?(21)	Prairie (at least in part)/McCormack Area (Tracy State Monument Park)
Crawford	No. 1 McWilliams Prairie	25	Plowed in the 1950's, now pasture/Adjacent to Yellow Smoke CCB Park ^d
Ida	No. 1 Hare Prairie	60	Cropland/Privatey owned, plowed fall 1948 (Hayden unpubl. notes)
Pottawattamie	No. 1 Mathews Prairie	20	Cropland?/Privatey owned
Guthrie	No. 7[1]	20	Cropland/Privatey owned

^a Table includes information provided by John Pearson (Iowa Department of Natural Resources) and from use of the Iowa State University GIS Facility, with assistance of Patrick Brown (Department of Animal Ecology/GIS Facility, Iowa State University).

^b An unpublished "working list" by Hayden from which the publication (Hayden 1947) is derived is in the Hayden papers, Iowa State University Library, Special Collections Department. This list includes site names that are not used in the publication. Also, a number of notes (such as those cited here) were added to the text in years following the publication.

^c The Iowa Department of Natural Resources' purchase of land for the Waterman Prairie Wildlife Area includes sites adjacent to or near several of those proposed by Ada Hayden. These formerly pastured areas include prairie of varying quality.

^d Information provided by Lance Nelson (Director, Crawford County Conservation Board).

Ada Hayden's concern for prairies did not stop with their "legal" protection. She and John Aikman (Hayden and Aikman 1949) proposed a guide for managing the newly acquired preserves. In this same paper, they also presented a rationale for the on-going existence of prairies in the state:

The native prairie reserve is to be regarded as an historic pre-

serve illustrative of the native cover as the settlers found it; as a living museum of fauna and flora; as a reference specimen of vegetative structure; as an example of the native landscape; and as a field laboratory where such scientific observations and experiments may be conducted as will not injure the area. (Hayden and Aikman 1949)

She took her cause for the state's acquisition of prairies to any who would listen. She wrote popular articles (e.g., Hayden 1946b), spoke to groups and clubs, and was interviewed on the radio in an effort to spread awareness of the need for prairie preservation (Hayden papers, Iowa State University Library, Special Collections Department). As alluded to earlier, she was a good photographer and artist. She hand-colored a set of lantern slides to use in her presentations (Isely 1989). She even requested that landowners consider donating their prairie holdings to the state (Hayden papers, Iowa State University Library, Special Collections Department).

Shortly after her death on 12 August 1950, the first of the prairies purchased, a 199 acre tract in Howard County, was named in her honor (Parker 1950). In 1965, a legislative act created the State Preserves Advisory Board and officially recognized state preserves as a means of permanently protecting Iowa's special sites. Today, Hayden Prairie is considered "a jewel" of the state preserves system (Leoschke and Klier 1990), and a 1995 celebration and re-dedication marked the 50th year of its acquisition.

ASSESSMENT OF HER EFFORTS AND RESULTS

As we reflect on Ada Hayden's life, what qualities did she possess that put her at the forefront of the movement to preserve prairies? Duane Isely made several statements in his tribute paper to Ada Hayden that may help us (Isely 1989). In one place, he commented about her passion for prairies, saying:

Hayden grew up with access to native prairie, fell in love with it, and was faithful to the end of her days.

In a description of her personality, he stated that:

She has been described as determined, fearless, independent, brusque and eccentric. . . . Certainly a distinctive Hayden trademark was her independence. (Isely 1989)

I'm sure these traits were of benefit to a woman willing to do field work and attempt to influence public decision in those days.

How was Ada Hayden's work viewed outside of Iowa? She was apparently quite active in the Ecological Society of America and the Ecologists' Union, along with the Grasslands Research Foundation (Billings et al. 1951; Martin 1951). In 1945 she was invited to attend the annual conference on genetics and natural history at Washington University as a consultant. This conference was led by Edgar Anderson, so at least this famous botanist must have held her in high regard. The *Ames Tribune* reported that she was extended the invitation . . .

In recognition of Dr. Hayden's contributions to knowledge of the prairie flora of the upper Mississippi Valley. (Anonymous 1945)

It is unfortunate that there are no surviving records of whether she made formal presentations of her research at national meetings or whether her contributions were primarily in committee work.

Her obituary in the *Ames Tribune* (Anonymous 1950) stated that "she was well known and respected in her field of activity throughout the country." In partial justification of this statement, the writers of her obituary in the *Bulletin of the Ecological Society of America* said,

Her name will always be associated with the exceptionally progressive conservative actions, policies, and ideas that place Iowa in a position of conservation leadership among the states. (Billings et al. 1951)

In the abstract and presentation for the Prairie Conference, I proposed that "almost single-handedly, she pioneered the idea of setting aside prairie remnants in Iowa as state preserves." In light of the

work especially of Bohumil Shimek and Ada Hayden's contemporaries in the 1940s, including Louise Parker, fellow botanist John Aikman, zoologist George Hendrickson and soils specialist Frank Riecken, is this statement really true? Dr. Isely, who personally knew her in the 1940's, seemingly agreed with my claim of Ada Hayden as THE champion of Iowa's prairies, saying:

Dr. Hayden was diversely talented and skilled. Professionally she was a knowledgeable floristic botanist and ecologist. . . . At the time I knew her [1944–1950] she was outspokenly and emotionally dedicated to the prairie effort. Commonly less than a diplomat, she was possibly most convincing to those already convinced. Consequently, her firmness of purpose, knowledge and persistence were especially effective in team effort. There, they more or less automatically rendered her a leader. (Isely 1989)

In summary, I believe Ada Hayden was uniquely qualified to be the champion of Iowa's prairie preserves. She had the scientific training to evaluate both what she saw happening in the state and the ecological literature that was coming on the scene at that time. Her academic and scientific credentials gave her an "edge" in persuading colleagues and others to join her cause. Her position as a researcher with the Iowa State College Agriculture Experiment Station provided time and support for her efforts. Finally, perhaps most importantly, her passion and vision for preserving prairies propelled her accomplishments. Her achievements may have appeared small, with only two preserves established during her lifetime; however, the legacy of her efforts furnished the framework for the current Iowa State Preserves system. Her publications remain as useful references, providing important insights into Iowa's prairies. This legacy continues to influence today's conservationists and natural historians.

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