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Lessons From an Inventory of the Ames, Iowa, Flora (1859–2000)

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A botanical survey of the vascular flora of the "planning and zoning jurisdiction" of the city of Ames, Iowa (i.e., the area within a boundary 3.2 km beyond the current city limits) was compiled from 1990 to 2000. During this survey, 916 taxa (71% native) were encountered within this boundary. Literature reviews and a survey of Iowa State University's Ada Hayden Herbarium for specimens that had been collected in Ames since 1859 add 204 taxa to the flora. This total of 1,120 taxa exceeds the number of taxa known from any comparable area (including counties) in Iowa. We produced a checklist including date of first record, origin, abundance and habitat codes for all species that were noted during the current survey. Information for historic records includes source and, if based on a herbarium voucher, dates of first and most recent collections. This study reports 58 taxa that are not included in Eilers and Roosa's (1994) checklist of the Iowa vascular flora; 28 species currently or historically known from Ames are included in the 1994 Iowa Department of Natural Resources list of endangered, threatened or special concern species. Two species on the federal list of threatened plant species, *Lespedeza leptostachya* (native) and *Boltonia decurrens* (naturalized), are also found within the study area. An outline of previous studies of the Ames flora is presented. Sites containing notable plant assemblages in the survey area are mapped and described.

The results of the survey provide both an enhanced general knowledge of the state's flora and an example of local analysis of floristic change. These results are also relevant to conservation efforts, such as habitat restoration and reconstruction, and in evaluating the conservation status of the vascular plant species in the state. This inventory highlights the need for similar, intensive studies of the flora elsewhere in Iowa. The compilation of the historical data for such studies could be greatly aided by the development of computerized catalogs of the state's herbaria.

INDEX DESCRIPTORS: Iowa flora, plant communities, floristic survey, urban flora, Story County, conservation, threatened and endangered species.

The vascular flora of Ames, Iowa, has received considerable attention from professional and amateur botanists since the middle of the nineteenth century. One period of extensive study occurred prior to 1900 and culminated with several published reports describing the flora in and around this city (Bessey 1871, Hitchcock 1890, Pammel 1898). The past vegetation of Ames (1859–1989) has also been documented by more than 4000 voucher specimens deposited in the Ada Hayden Herbarium (ISC) at Iowa State University. More recently (1990–2000), we conducted a second major inventory of the Ames flora, which resulted in the addition of many new plant species to the checklist. We suspect that the flora of no other comparable area in Iowa (i.e., county, state preserve, state park, etc.) has been as thoroughly studied as this one.

In this paper, we begin with a review of past botanical studies of the Ames flora. Then, we present a checklist of this flora as documented by past researchers and ourselves. Although the natural vegetation of Ames has been drastically altered by human pressures since the time of European settlement, we discovered 916 vascular plant taxa in or near Ames during our recent (1990–2000) inventory. Addition of historical records to this checklist elevates this total to 1,120 plant taxa, more taxa than are known from any Iowa county. These findings suggest that we still have much to learn about the Iowa flora.

THE STUDY AREA

Ames (1995 population: 48,691) is located in Story County in central Iowa. The boundary of the current plant inventory (Fig. 1) represents a 3.2 km (=2 mi) extension of the Ames city limits, which corresponds to the city's planning and zoning jurisdiction. The area lies within the following coordinates: 41°57′40″N to 42°05′30″N latitude and 93°31′40″W to 93°43′30″W longitude. Most of the area thus circumscribed (23,700 ha = 58,560 ac) lies within Story County; however, a very small portion to the west extends into Boone County.

Formerly, most of Story County was covered by prairie vegetation (Anderson 1996), but today the majority of this land area has been converted to crop fields. Nevertheless, several remnants of prairie vegetation still exist in the study area. Significant tracts of forest vegetation also occur in Ames, most in association with streams and rivers. Ames forests belong to the Central Hardwoods Forest Region (Braun 1964) and are dominated primarily by oak (*Quercus*) species. Wetland habitats, which were more common in Ames at the time

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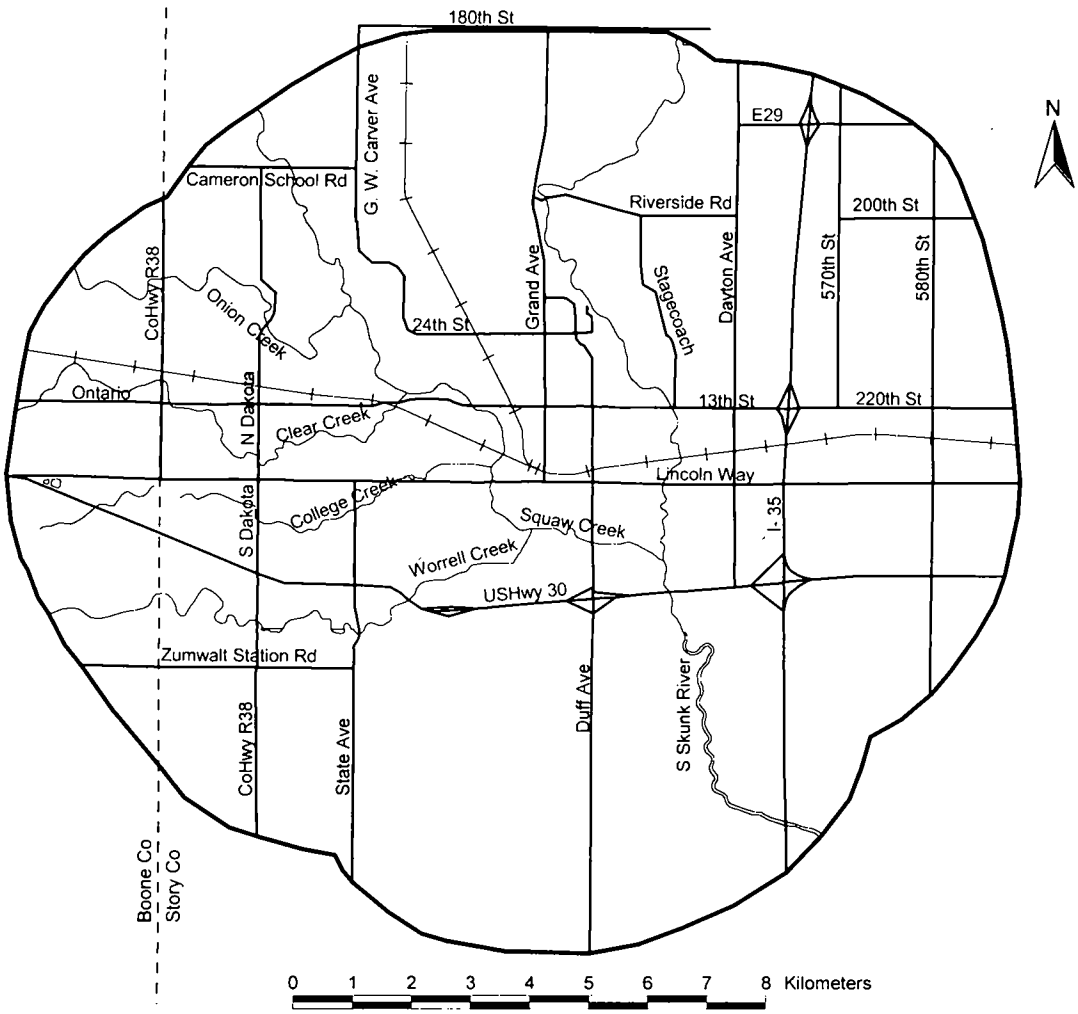

Fig. 1. Map of the current survey area—Ames, Iowa.

of settlement by Europeans (Anderson 1996), are currently restricted to only a few tracts within the boundary of this inventory. Detailed descriptions of many of these natural habitats in Ames are given by Norris and Farrar (1999).

Many vascular plants in Ames commonly occur in areas subject to frequent human disturbance. These include construction sites, railroad and road rights-of-way, old fields, crop fields, sidewalks, residential lawns and waste treatment areas. A large number, but by no means all, of the plant species typical of these sites have been introduced from outside of Iowa. Although these anthropogenic habitats are not usually the focus of floristic studies in the Midwest (but see Swink and Wilhelm 1994), they comprise a majority of the land area in Ames. Therefore, we thoroughly surveyed a large variety of disturbed sites in Ames for plant species during this inventory.

PAST STUDIES OF THE AMES FLORA (to 1989)

Although a few herbarium specimens collected in Ames prior to 1870 have been preserved, concerted study of the flora was initiated that year with the arrival of Charles Bessey. Bessey founded the Iowa Agricultural College Herbarium soon after his arrival and began collecting specimens of the local flora. His annual report of the Botany Department to the college administration for 1871 included an appendix entitled "Contributions to the Flora of Iowa" (Bessey 1871). It listed 588 taxa, most (452, 77%) of which were cited as occurring in Ames. According to unpublished reports (Parks Library Special Collections Department, Iowa State University), the students in Bessey's first-year botany course were required to collect and identify a minimum of 100 species. Some students chose to mount their specimens in bound volumes (exsiccatae) and personally retained their collections, but others were mounted and added to the herbarium. This resulted in rapid growth of the herbarium, so that within Bessey's first year at the college, the herbarium had grown to ca. 2,500 specimens, most from the Ames vicinity.

The rate of collecting and adding specimens to the herbarium grew during the 1870s and 1880s (see Fig. 2). The species list resulting from the 132 Ames collections of Vene Gambell, one of Bessey's students in the early 1880s, was posthumously reported by Lindly (1911). But Albert Hitchcock, another of Bessey's students and subsequently a staff member of the college in the 1880s (Isely 1994), developed an even more active interest in the Ames flora. He prepared a checklist of the flora of the Ames area, comprising ca. 700 taxa (Hitchcock 1890). The Ames specimens still in the her-

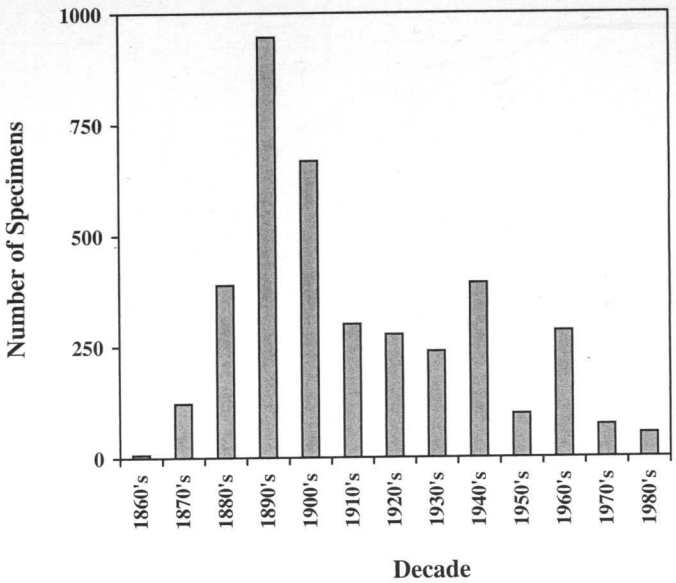

Fig. 2. Graph indicating the number of plant specimens collected in Ames, Iowa, 1860–1989 (by decade).

barium and Hitchcock's (1890) publication have provided us with an excellent opportunity to compare the current flora with that of the past.

In 1889, Louis Pammel was named to head the College's Botany Department, at about the same time as Hitchcock's departure from the state. Pammel's own collecting and that of his students would add greatly to the herbarium during the next 40 years. In our 1999 survey of the herbarium, we found approximately 4,200 specimens from Ames. Of that total, approximately one-third had been added by 1900, and 607 specimens, far more than from any other collector, had been made by Pammel. Pammel's active collecting and his research interests resulted in publications on the flora of Story County (Pammel 1898) and a survey of the weeds of Story County (Pammel and King 1914). Pohl's (1985) biography of Pammel detailed his work and interests.

Three of the next four highest numbers of specimens collected in Ames were made by his students: Ada Hayden (1901–1943; 476 specimens), Jacob Anderson (1913, 1942–43; 232 specimens), and George Washington Carver (1892–1897; 171 specimens). Hayden was curator of the herbarium from 1934 to 1950 and was one of the founders of Iowa's state preserve system (Isely 1989). Anderson is primarily known for his floristic studies of the Alaskan flora; however, following his return to Ames, he collected plants in the vicinity of the college campus (Isely 1954). Carver received his bachelor's and master's degrees at Iowa Agricultural College (now Iowa State University) and was on the college staff before his appointment at Tuskegee University (McMurry 1981).

Hitchcock's known collections ranked fourth on the list at 188. However, Hitchcock (1890) stated that all of the nearly 700 names on his published list were based on specimens in his personal herbarium, with only a few having been deposited in the college herbarium. Figure 2 clearly shows the increase of activity in collecting herbarium specimens during Pammel's tenure, the maintenance of fairly high numbers until 1950 (the year of Hayden's death), and the subsequent decline in more recent decades.

Ames collections from 1950 to 1989 were sporadic, comprising barely 15% of the more than 4,200 specimens found in our herbarium survey. We hypothesize that this decline in local collecting was due to several factors, including changing floristic and taxonomic interests, with a decreased emphasis on the local flora, and a general shift from field- to laboratory-oriented studies (Lewis 1998). Duane Isely and Richard Pohl both joined the Iowa State College Botany Department faculty in the 1940s. Each had a primary focus on a single plant family: Isely's research was on the Fabaceae (s.l.) of the United States, and Pohl's research was on the Poaceae of the United States and eventually the Neotropics. Generally, the research projects of their graduate students followed suit, with the exception of Paul Monson's (1959) floristic study of the area encompassing Iowa's Des Moines Lobe of the Wisconsinan glaciation (Prior 1991). Occasionally, local projects also captured the secondary research interests of these students, e.g., Robert Freckmann's (1968) study of the prairies in the Ames area.

Although providing a baseline for general comparisons, it would be misleading to imply that the 1999 herbarium survey provides a comprehensive record of past collections made in Ames. Catastrophic events, including a tornado (1882) and fire (1900), damaged the buildings that were home to the herbarium and damaged or destroyed part of the holdings. Some collections were also damaged by insects, water, and other environmental problems due to the early use of wooden cabinets that could not be adequately sealed. It is unknown whether such factors resulted in actual destruction or deaccession of specimens, and if so, to what degree. Loss of specimens in loan shipments may also have occurred. Misidentification of specimens, illegibility of label data, scant locality information, and misinterpretation of the information are other factors that may affect the accuracy of data compiled in our survey. The published accounts (Bessey 1871, Hitchcock 1890) and herbarium specimens (ISC) that document the historic Ames flora offered the additional challenges of changes in taxonomic and nomenclatural concepts during the intervening years, of relocation of cited localities, and of an incomplete set of specimens to document Hitchcock's study. Despite these problems, the efforts of Hitchcock and other early researchers of the Ames flora have given us a fascinating glimpse of the dynamics of the Ames flora during the past 141 years.

METHODS

Field Work

An inventory and evaluation of Ames, Iowa, natural areas were initiated in 1991 by the Ames City Planning Office (Norris 1994, Norris 1995, Norris and Farrar 1999). The purpose of this inventory was to identify and rate the natural quality of all forests, prairies and wetlands in the study area. The boundary of this inventory was established in 1991 as a two-mile (3.2 km) extension of the Ames corporate limits (Fig. 1), which encloses an area corresponding to the zoning jurisdiction of the Ames City Planning Office. W.R. Norris conducted field work for this inventory between 1991 and 1995, primarily in forest, prairie and wetland habitats. He summarized his findings in a report submitted to the City of Ames in 1994 (Norris 1994). This report consisted of maps and written descriptions of all surveyed areas.

Although not a goal of the initial inventory, Norris compiled lists of all vascular plant taxa encountered during his surveys of Ames forests, prairies and wetlands (Norris 1995). This list of 493 taxa observed between 1991 and 1995 was based on sight observations of numerous common plant species as well as field collections of difficult-to-identify taxa (e.g., grasses, sedges, rushes, smartweeds, asters, goldenrods, sunflowers, etc.).

Norris and D.Q. Lewis (curator, ISC) conducted additional field work in 1996 and 1997 to further document the Ames flora. They expanded the realm of the initial survey (i.e., forests, prairies and wetlands) to include open and disturbed habitats including riparian

Table 1. Codes used to describe preferred habitats of vascular plants in Ames, Iowa.

1) T (tree-dominated habitats)	
df	dry forest—typically on ridgetops and on south- and west-facing slopes
mf	moist forest—typically on north- and east-facing slopes
wf	wet forest—typically in bottomlands
wd	woodland—tree-dominated habitats with incomplete canopy closure
es	escarpment—due to erosion or soil slumping
ed	edge
2) P (prairie habitats)	
dr	dry prairie
ms	moist prairie
wt	wet prairie—includes 'wet meadow' vegetation from some wetland classification systems
3) W (wetland habitats)	
ez	emergent zone—typically dominated by bulrush, bur-reed and several deep- to shallow-water sedge species
sz	submergent zone—typically dominated by pondweeds and duckweeds
rp	riparian—includes grassy stream edges and sandbars
md	mudflat—not associated with running water
sp	seep
4) O (open habitats—primarily anthropogenic)	
ur	urban—sidewalks, lawns, etc.
cr	cropfields, gardens, flowerbeds
rw	rights-of-way, including fencerows, railroad embankments and powerlines
rc	rocky habitats, including railroad ballast, gravel pits and sand
of	old field, hayfield
ps	pasture

areas, seeps, mudflats, roadsides, old fields, agricultural fields, construction sites and railroad rights-of-way. R.O. Pope and M. P. Widrlechner joined the project in late 1997 and contributed additional plant records based on their observations of the Ames flora since 1990. A final collaborator, J.D. Thompson, joined this effort in June 1998. Extensive field work by all of us resulted in the discovery of an additional ca. 400 plant taxa between 1996 and 2000.

Our field work resulted in the collection of over 1,500 voucher specimens to document the Ames flora in the past decade. These have been submitted for deposit in the Ada Hayden Herbarium (ISC) at Iowa State University.

Species Historically Reported from Ames

In early 1998, Norris and Lewis conducted an exhaustive inventory of the Iowa collections in the Ada Hayden Herbarium and developed a computer database of all (approximately 4,200) Ames voucher specimens deposited there. We analyzed this database to develop a list of "historic species" not observed by us during the current inventory but documented to have occurred in Ames between 1859 and 1989. We supplemented this list with additional plant species reported by C. E. Bessey (1871) and A. S. Hitchcock (1890). These efforts provided a valuable target list of taxa to help focus our field work during the last two years of this inventory.

Compilation of the Checklist

We compiled a comprehensive checklist of all vascular plant taxa documented to have occurred in Ames between 1859 and 2000. Nomenclature for all plant taxa previously reported in Iowa follows Eilers and Roosa (1994) except for *Rubus* L., which follows Widrlechner (1998). Nomenclature for plant species previously unreported in Iowa follows Gleason and Cronquist (1991), the Great Plains Flora Association (1986), and/or Swink and Wilhelm (1994), with a few exceptions (e.g., *Digitaria bicornis* (Lam.) R.& S., *Poa pratensis* subsp. *angustifolia* (L.) Lej.) in which "expert determinations" were followed.

Modern species. To compile a checklist of Ames plants (1859 to mid-2000), we first listed all native or naturalized plant taxa encountered by us during our field work in the past decade. Crop species with no tendency to persist (e.g., *Zea mays* L.) and ornamental species not demonstrated to spread from their point of introduction (e.g., *Syringa vulgaris* L.) were excluded from the checklist.

We indicated the status of both modern and historic taxa as either native (no symbol), exotic (*) or native to Iowa but probably introduced in Ames (+). The latter category contains species that have spread from their point of introduction in lawns (e.g., *Buchloe dactyloides* (Nutt.) Engelm.), gardens and prairie restorations/reconstructions (e.g., *Echinacea purpurea* (L.) Moench, *Gaillardia pulchella* Fouq., *Ratibida columnifera* (Nutt.) Wooten & Standley), woodland understory restorations (e.g., *Trillium nivale* Riddell), and wildlife or windbreak plantings (e.g., *Physocarpus opulifolius* (L.) Maxim.). This category also encompasses two taxa (*Erythronium americanum* Ker-Gawl, *Napaea dioica* L.) encountered by us during the current inventory whose occurrences in central Iowa are disjunct from known eastern Iowa populations (Eilers and Roosa 1994) and are thus difficult to explain.

In the checklist, we also provided information about the habitat preferences in the Ames area of each plant observed by us during the current inventory. We established habitat codes within four main categories: tree-dominated (T), prairie (P), wetland (W) and open (O); the latter category represents sites primarily associated with human activity. Within each of these main categories, we recognized several subcategories (Table 1). The habitat codes in the checklist represent a consensus of results after we had independently assigned codes to each taxon.

We also assigned an abundance code (common, frequent, infre-

quent, rare) in the Ames area to each plant species found by us in the current survey. Definitions for these codes were borrowed (with slight modifications) from Eilers and Roosa (1994):

Common: widely distributed and often found growing in large quantities in several different habitats.

Frequent: widespread but not abundant and usually found in only one type of habitat.

Infrequent: not widespread and often not found in places where it might be expected to occur.

Rare: found in only one or a few places.

As with assignment of habitat codes, the abundance codes presented in the checklist represent a consensus of results after we independently assigned codes to the taxa.

Historic species. We supplemented the list of our own findings with historic species documented from herbarium specimens (ISC). Before including such taxa, we reexamined at least two specimens (when available) of each species to verify the identification. When we could not verify the identification of a particular species (e.g., *Cuscuta corylii* Engelm.) due to the fragmentary nature of the voucher specimen, we assigned that species to a separate list of "excluded records and observations." Likewise, crop and ornamental species (e.g., *Syringa vulgaris* L., *Zea mays* L.) collected in Ames prior to 1990 were excluded unless label information on voucher specimens provided compelling evidence that the species had in fact escaped cultivation and persisted for a number of years.

A problem with inclusion of historic species from herbarium voucher specimens is uncertain knowledge of collection sites in relation to our inventory boundaries. For example, of the approximately 4,200 voucher specimens collected in Ames prior to 1990, well over half state the place of collection as "Ames" with no further information. We included species reported to be collected in "Ames" on the checklist unless their occurrence in central Iowa is implausible (e.g., *Arabis lyrata* L.) based on current knowledge of plant species distributions (Eilers and Roosa 1994).

We also included historic species reported from two published floras (Bessey 1871, Hitchcock 1890) on the checklist. Here, a daunting task was to uncover synonymies between nomenclature used by Bessey and Hitchcock and modern plant names. We resolved many synonymies by consulting older editions of standard botanical reference books (e.g., Gray et al. 1890, Britton 1901, Robinson and Fernald 1908, Fernald 1950), regional floras and state checklists (Gleason and Cronquist 1991, Eilers and Roosa 1994, Steyermark 1963, Voss 1972, 1985, 1996), taxonomic treatments of specific plant families and genera (Gilly 1946, Hitchcock 1971) and the "Tropicos" database of the Missouri Botanical Garden (W^3Tropicos 2000). Very rarely, we associated a published name with several modern taxa (e.g., "*Ampelopsis quinquefolia* (L.) Michx." = *Parthenocissus quinquefolia* (L.) Planchon and *P. vitacea* (Knerr) A.S. Hitchcock). A number of plant names (e.g., *Rubus villosa* Ait.) remained unresolved to the end; we assigned such species to the excluded list. At least once we assigned a current name, *Polygonum amphibium* L. of Hitchcock (1890), to the excluded list because we could not determine which modern variety (i.e., *P. amphibium* L. var. *emersum* Michx. or *P. amphibium* L. var. *stipulaceum* (Coleman) Fern.) the author intended.

We were also careful to exclude species listed by Bessey and Hitchcock when they left doubt that a particular taxon actually occurred in Ames. Bessey (1871) did not formally define the boundaries of his inventory of the Ames flora, giving "Ames" as the location for most plants with no further description. In a few instances (e.g., "*Camptosorus rhizophyllus* Link.", "*Polypodium vulgare* L.") he reported plants as occurring in Ames in the vicinity of the Des Moines River. We assigned Bessey's reports of such plants to the excluded list because this river is situated more than 16 km west of Ames.

Hitchcock (1890), on the other hand, carefully defined the boundaries of his own inventory work as:

> "... region [in] the vicinity of the Agricultural College at Ames. Quite thorough explorations have been made within a radius of three to four miles about this point. From four to nine miles they have been confined to certain directions; viz., along the railroad from Ames to Gilbert, and from Ames to Nevada; southwest to the 'Big prairie,' and southeast to a small 'lake' about ten miles from the College. A few plants have been included from the Des Moines river west of Boone, eighteen miles distant; several have also been included from Cairo lake and vicinity, about twenty-two miles away. But in all cases it is so stated if the plant has been found only beyond the three-mile circle."

Thus, we assigned all species (e.g., *Aesculus glabra* Willd., *Rumex maritimus* L.) reported by Hitchcock to occur only at Cairo Lake, Big Prairie, etc., to the list of excluded records and observations.

RESULTS

We discovered 916 plant taxa in the study area during the 1990s to mid-2000 (Table 2, Appendix A). The occurrences of almost all (908) of the above taxa in Ames are documented by at least one herbarium voucher specimen collected in Ames since 1859 (ISC). We observed that these taxa occur in a variety of generalized habitat types (Table 3) and also vary in their abundance in the study area (Table 4); the more specific habitat and abundance codes for each of these taxa are found in Appendix A.

We also report 151 historic taxa documented by herbarium voucher specimens and 53 from the two published floras (Bessey 1871, Hitchcock 1890) which occurred in Ames prior to 1990. The grand total, then, is 1,120 taxa; these data from the currently known and historic taxa are summarized in Table 2. Table 2 also contains the listings of numbers of taxa in the largest families and genera found in the survey area. For reasons mentioned in our Methods, we excluded over 100 historic records and current observations (Appendix B) from the official checklist of Ames vascular plants.

[Note: We observed five additional species just outside the inventory boundary in the last decade: *Cephalanthus occidentalis* L., *Cyperus schweinitzii* Torrey, *Elodea canadensis* Michx., *Lobelia cardinalis* L. and *Polygonum hydropiperoides* Michx.]

Significant plant assemblages in Ames are described and mapped in Appendix C and Figure 3.

DISCUSSION

A major result of this study is our discovery that about 1,120 plant taxa have probably resided (at least temporarily) in Ames since 1859. This total exceeds the number of plant taxa reported from the 17 Iowa *counties* inventoried since 1950 (Table 5). How was it possible to discover so many plant species in Ames? This result is due in large part to the intense study this flora has received from botanists who have worked and/or studied at Iowa State University in Ames (described previously). These findings are also due in large part to our "team" approach, which permitted us to draw upon the individual expertise of each team member. In particular, our study benefited from expertise in Scrophulariaceae (Lewis), graminoids (Norris), agricultural weed species (Pope) and woody plants (Widrlechner).

Another contributing factor to our success in finding plant taxa was the long duration (ten years) of this inventory. In contrast, primary field work for many recent county inventories (e.g., Peck et al. 1978, 1980, 1981, 1984) was conducted over one or two field seasons. During the last two full years of the current inventory (1998

Table 2. Floristic composition of the Ames, Iowa, survey area.

A. Species, genera and families in the Ames flora

Major Groups	Species (+Hybrids/ Subspecific Taxa)	Genera	Families
Pteridophytes	14 (2)	11	6
Gymnosperms	2	2	2
Dicotyledons	772 (17)	357	82
Monocotyledons	303 (10)	115	19
Total	1,091 (29)	485	109

B. Current and historic taxa

Origin	Current	Historic	Total	%
Native to Ames	652	158	810	72.3
Elsewhere in IA	15	0	15	1.3
Non-native	249	46	295	26.4
Total	916	204	1,120	100

C. Ten largest families

Family	Native	Elsewhere in Iowa	Non-Native	Total (Hybrid)
Poaceae	95	1	53	149 (2)
Asteraceae	110	3	35	148 (2)
Cyperaceae	78	0	0	78 (1)
Fabaceae	33	1	16	50 (0)
Brassicaceae	16	0	33	49 (0)
Rosaceae	35	1	11	47 (0)
Lamiaceae	25	0	8	33 (1)
Ranunculaceae	25	0	3	28 (0)
Liliaceae	17	2	6	25 (0)
Scrophulariaceae	17	1	7	25 (0)

D. Ten largest genera

Family	Native	Elsewhere in Iowa	Non-Native	Total (Hybrid)
Carex	54	0	0	54 (1)
Aster	19	0	0	19 (2)
Polygonum	11	0	5	16 (0)
Viola	10	1	2	13 (1)
Chenopodium	7	0	5	12 (0)
Euphorbia	9	0	3	12 (0)
Verbena	11	0	0	11 (5)
Cyperus	10	0	0	10 (0)
Dichanthelium	10	0	0	10 (0)
Muhlenbergia	10	0	0	10 (0)

Table 3. Habitats of the Ames, Iowa, flora.

Habitat Type	No. of Taxa	%
Tree-dominated	385	42
Prairie	270	29
Wetland	171	19
Open	440	48
More than one type	289	32

Table 4. Abundance of the Ames, Iowa, flora.

Abundance	No. of Taxa	%
Rare	323	35
Infrequent	196	21
Frequent	194	21
Common	203	22

and 1999), Thompson devoted approximately 40 hours per week to field work for this inventory during the growing season and personally discovered more than 200 new plant species in Ames through his intense survey efforts. We conclude that plant inventories conducted over a 1–2 year period in regions as large or larger than Ames are probably not complete.

Finally, several facilities in Ames associated with Iowa State University have probably served as special sources of introduced, now naturalized, plant species, which expanded our total species count. These include the North Central Regional Plant Introduction Station, the ISU Horticulture Farm and the ISU Campus. Furthermore, the Hillculture Research Station (SCS) may also have contributed additional exotic plant species during the 1930s and 1940s (Widrlechner and Rabeler 1991).

The checklist includes 204 species documented by herbarium specimens and/or reported in past studies of the Ames flora that were not found in our current inventory. Although we feel we were conservative in including these species, our level of confidence in these additions is not as high as for those encountered in the current survey. The species documented by herbarium vouchers are more definitive than those in literature reports. However, especially for 19th century collections, the locality was often cited only as "Ames"; thus we had to assume that the collection was from within the project boundary. Confirmation of the accuracy of the identification of species listed in Bessey's (1871) and Hitchcock's (1890) lists that are not vouchered at ISC is also problematic. However, these species, if not excluded through objective criteria presented in the Methods, help provide insights into the Ames flora of more than a century ago.

Applications of Floristics

There is a general perception that research focused on floristics is no longer in vogue (Lewis 1998, Weber and Wittmann 1992). This paper presents results and analyses in support of an opposing viewpoint; namely, that field-based botanical research remains relevant. Although the Ames flora *per se* is probably not of interest to all botanists, we offer this study as a model to demonstrate how floristic studies can be the focus of interesting academic discussions as well as the foundation of sound conservation practices. Below, we provide some examples to illustrate several analyses of the Ames flora, as well as applications of this study in natural resource management.

Phytogeographic Origins of the Ames Flora. Eilers and Roosa (1994) stated that the Iowa flora has affinities with eastern deciduous forests, boreal forests, Great Plains prairies and Ozarkian (oak-hickory) forests due to its mid-continental location. To illustrate this point, they provided lists of plant species found in Iowa that are representative of these vegetation assemblages. We conclude that the Ames flora has a strong Ozarkian component because 68 of the 76 Iowa plant species considered to be representative of oak-hickory forests occur in Ames. In contrast, only three (*Coeloglossum viride* (L.) Hartman var. *virescens* (Muhl. ex Willd.) Luer, *Liparis loeselii* (L.) L.C. Rich., *Oryzopsis racemosa* (Smith) Ricker) of 44 Iowa taxa listed as having boreal affinities are known from Ames. Likewise, we documented the oc-

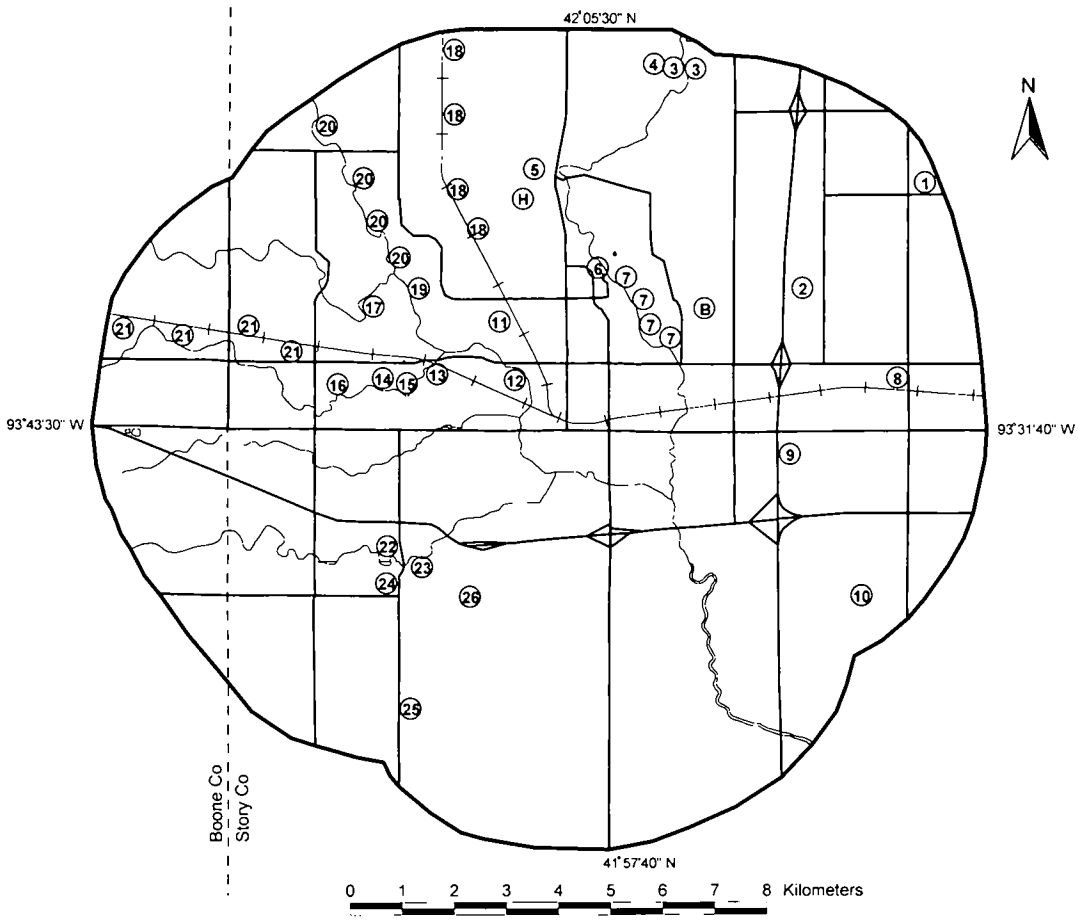

Fig. 3. Map of sites containing significant plant assemblages in Ames, Iowa. The sites are described in Appendix C.

currence of only one (out of 26) Iowa plant species (*Asclepias viridiflora* Raf.) in Ames considered to represent the western Great Plains flora. Note that we draw no conclusions with regard to affinities with the eastern deciduous forest because the list of species provided by Eilers and Roosa (1994) is short (8) and is limited to plant species 'near the end of their range' in Iowa.

Analysis of Floristic Change in Ames. The thorough documentation of the Ames flora, both prior to 1900 and during the 1990s, allows for interesting comparisons between the "pre-1900 flora" and the "1990s flora". For example, one might compare the proportion of each flora that is native, or the proportions of each flora that reside in major habitats (forest, prairie, wetland, disturbed). Such analyses have been conducted for the floras of Staten Island, New York (Robinson et al. 1994) and natural areas on Long Island, New York (Gieller et al. 1990) and Boston, Massachusetts (Drayton and Primack 1996). In all of these studies, the investigators concluded that urbanization had caused a significant decline in the proportion of native species in the respective flora. We are currently conducting similar analyses to those above and will report the results in a separate paper.

Enhanced Knowledge of the Iowa Flora. Obviously, our documentation of the occurrence, relative abundance and habitat preferences of 916 plant taxa in Ames adds to our overall knowledge of these plants in Iowa. Of the 1,120 plant taxa in the Ames checklist, 28 taxa (13 from the current survey) are currently listed as endangered, threatened or of special concern by the Iowa Department of Natural Resources (Table 6; Iowa Administrative Code 1994). *Lespedeza leptostachya* Engelm. and *Boltonia decurrens* (T. & G.) A. Wood are included on the federal list of threatened species (Drewry 1993). Furthermore, 58 taxa (50 from the current survey) are additions to the checklist of Iowa vascular plants (Table 7; Eilers and Roosa 1994). Most (41, 75%) of these new taxa discovered in Ames are not native to the United States, which is not surprising given the widespread invasion of midwestern floras by exotic plant species (Withers et al. 1999).

The collection of *Boltonia decurrens*, federally listed as a threatened species, at Ketelsen Marsh (Appendix C) in 2000 presented an interesting situation because this rare plant had not been collected previously in Iowa. We subsequently learned that this species had inadvertently been included in a prairie seed mix that was planted within the past five years along the right-of-way of Interstate Highway 35, adjacent to the marsh (Thomas Rosburg pers. comm.). Thus we have included the species as "exotic" in the Ames flora.

Applications in Conservation. There is currently great interest in the restoration and reconstruction of native habitats in Iowa and elsewhere in the Midwest (Thompson 1992, Galatowitsch and van der Valk 1994, Shirley 1994, Packard and Mutel 1997). Ideally, one desires to reintroduce plant species typical of a given geographical region and habitat. The habitat codes we assigned to the 916 plant taxa encountered during the current Ames inventory should be a valuable resource to individuals undertaking such projects in central Iowa.

These data have potential value to those charged with evaluating the conservation status of Iowa's vascular plants. For instance, recent

Table 5. Number of taxa in published floras and checklists of Iowa counties completed since 1950 and the Ames checklist (current).

Location (County unless specified)	Author & Year	Total Taxa	Based on[a]
Ames (city zoning jurisdiction)	Current study	1,120	Field, herb. (ISC), lit.
Allamakee	Peck et al. 1980	1,040	Field, herb., lit. (Hartley 1966)
Emmet	Wolden 1956	1,013	Field, lit.
Johnson	Thorne 1955	966	Field, herb., lit. as verified
Lee	Peck et al. 1981	876	Field, herb., lit. as verified
Des Moines	Lammers 1983	809	Field, herb.
Dickinson	Grant 1950, 1953	800	Lit., herb. (ILH), some field
Cedar	Fay 1951, Fay and Thorne 1953	775	Mainly field, some herb.
Guthrie	Roosa et al. 1991	748	Field, herb., lit.
Page	Wilson 1992	746	Mainly field
Poweshiek	Russell 1956	699	Mainly herb. (GRI)
Iowa	Easterly 1951	679	Mainly field, some herb., lit.
Washington	Wagenknecht 1954	677	Mainly field
Lyon	Peck et al. 1984	561	Field, herb., lit. as verified
Fremont	Peck et al. 1978	550	Field, lit., some herb.
Sioux	Peck et al. 1984	506	Field, herb., lit. as verified
Cherokee	Carter 1962	401	Field

[a] Source of information used to compile checklist as stated or implied in paper. Field = field work; herb. = herbarium voucher specimens (with herbarium acronym if primarily from one herbarium); lit. = literature sources; as verified = only including records from literature if verified by voucher specimens. Herbarium acronyms cited: ISC = Ada Hayden Herbarium, Iowa State University; ILH = Iowa Lakeside Laboratory Herbarium; GRI = Grinnell College Herbarium.

attempts to update the Iowa threatened, endangered and special concern lists of vascular plants (i.e., the Iowa "T&E" list; Iowa Administrative Code 1994) were hampered by a general lack of knowledge among botanists about many species in the state (Pearson 1999). Our checklist provides habitat and abundance information for 916 vascular plant taxa (more than 40% of the state's known vascular flora) in central Iowa and will thus be a valuable resource to individuals attempting future revisions of the Iowa T&E list.

In addition to the potential uses of the data, the findings of this study have already contributed to the conservation efforts within the survey area. It was noted during the survey that the Raymond-Rolling Prairie (Appendix C), containing a population of *Lespedeza leptostachya* (prairie bush-clover, federally listed as threatened), was being encroached upon by *Juniperus virginiana* L. (red cedar) and *Gleditsia triacanthos* L. (honey-locust) trees. More than 50 local volunteers soon became involved in active management of the site. The prairie and the bush-clover population have responded well to this intervention.

CONCLUSIONS

We do not contend that the flora of Ames, Iowa, is especially remarkable; in fact, we suspect that the floras of many Iowa counties are more diverse than this one. Therefore, a major lesson of this investigation is that additional field botanical work is needed to more thoroughly document the Iowa flora. Such efforts would undoubtedly result in the discovery of hundreds of new county records throughout the state. Furthermore, these efforts would probably reveal many plant taxa new to the Iowa checklist of vascular plants (Eilers and Roosa 1994).

This study also stresses the significance of an inventory occurring over an extended number of years in comparison to most surveys. This approach allows not only the accumulation of a large number of hours spent in field study, but also increases the likelihood for observing the impact of climatic fluctuations (such as the higher than average rainfall during the summer of 1993 or the lower than usual rainfall in the spring and early summer of 2000) on the vegetation.

A less obvious but equally important lesson of this plant inventory is the need for a computer database to compile information about voucher specimens deposited in Iowa herbaria. Our search of the Iowa holdings in the Ada Hayden Herbarium (ISC) for plant specimens collected in Ames required more than 160 hours to complete. Nevertheless, this database of Ames voucher specimens has already become obsolete with the submission of new plant specimens to the herbarium. Researchers wishing to repeat this study a century from now would benefit greatly from a continuously maintained database of all Iowa voucher specimens deposited in herbaria throughout the state. Such a database would be especially valuable to organizations and government agencies (The Nature Conservancy, Iowa Department of Natural Resources, etc.) whose mission is the management and preservation of rare plant habitat in Iowa.

In summary, we hope that this study convinces Iowa botanists, conservationists and funding agencies that it is time to revive field botanical research in this state.

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Table 6. Vascular plant species encountered during inventory of the Ames flora (1859–2000) that are listed as Endangered (E), Threatened (T) or of Special Concern (SC) by the Iowa Department of Natural Resources (Iowa Administrative Code 1994). B = Bessey (1871); H = Hitchcock (1890); I = specimen collected prior to 1990 held in the Ada Hayden Herbarium (ISC); C = encountered during current study (1990–2000).

Aster puberior Cronq. [H, I] SC
Carex aggregata Mack. [C] SC
Carex crawei Dewey [C] SC
Chenopodium foggii H.A. Wahl [I] SC
Chenopodium missouriensis Aellen [I] SC
Chenopodium rubrum L. [I] SC
Cirsium hillii (Canby) Fern. [I, C] SC
Cypripedium candidum Muhl. ex Willd. [H, I] SC
Cypripedium reginae Walter [H, I] T
Dalea villosa (Nutt.) Sprengel [H] E
Eriophorum angustifolium Honck. [B, H] SC
Erythronium americanum Ker Gawler [C] T
Euphorbia missurica Raf. [H, I] SC
Lespedeza leptostachya Engelm. [H, C] T
Malaxis unifolia Michx. [I] SC
Muhlenbergia asperifolia (Nees & Meyer) L. Parodi [C] SC
Napaea dioica L. [C] SC
Penstemon tubaeflorus Nutt. [I] SC
Platanthera hookeri (Torr. ex Gray) Lindley [H, I] T
Platanthera hyperborea (L.) R. Br. [H, I] T
Platanthera praeclara Sheviak & Bowles [H, I] T
Poa wolfii Scribn. [I, C] SC
Polygala incarnata L. [H, I] T
Senecio pseudaureus Rydb. var. *semicordatus* (Mack. & Bush) T. Barkley [I, C] SC
Sibara virginica (L.) Rollins [C] SC
Spiranthes magnicamporum Sheviak [C] SC
Spiranthes ovalis Lindl. [C] T
Tomanthera auriculata (Michx.) Raf. [H, I, C] SC

Table 7. Vascular plant taxa encountered during inventory of the Ames flora (1859–2000) that are not listed in Eilers and Roosa (1994). B = Bessey (1871); H = Hitchcock (1890); I = specimen collected prior to 1990 held in the Ada Hayden Herbarium (ISC); C = encountered during current study (1990–2000). '*' = taxon not native to North America.

**Ajuga reptans* L. [C]
**Ampelopsis brevipedunculata* (Maxim.) Trautv. [C]
**Anthemis nobilis* L. [B]
**Arabidopsis thaliana* (L.) Heynh. [C]
Aster cordifolius L. × *A. drummondii* Lindley [I, C]
**Bassia hyssopifolia* (Pallas) Kuntze [C]
Boltonia decurrens (T. & G.) A. Wood. [C]
**Bromus catharticus* Vahl. [I]
Carex atherodes Sprengel × *C. trichocarpa* Schkuhr [C]
Carex mesochorea Mack. [C]
**Carthamus tinctorius* L. [C]
**Centaurium pulchellum* (Schwartz) Druce [C]
**Cleome hassleriana* Chodat [C]
**Cotoneaster multiflora* Bunge [C]
**Crepis capillaris* (L.) Wallr. [I, C]
**Cynodon dactylon* (L.) Pers. [I, C]
**Cynodon transvaalensis* Burt.-Davy [I]
Datura wrightii Regel [C]
**Digitaria bicornis* (Lam.) R. & S. [C]
**Duchesnea indica* (Andrews) Focke [C]
**Epipactis helleborine* (L.) Crantz [C]
**Erysimum diffusum* Ehrh. [C]
**Erysimum hieraciifolium* L. [C]
**Festuca myuros* L. [C]
**Festuca trachyphylla* (Hackel) Krajina [C]
**Geranium sibiricum* L. [C]
**Hieracium piloselloides* Villars. [C]
**Lapsana communis* L. [I, C]
**Lathyrus latifolius* L. [C]
**Ligustrum obtusifolium* Sieb. & Zucc. [C]
**Ligustrum vulgare* L. [C]
**Lonicera* × *bella* Zabel [C]
**Lonicera maackii* (Rupr.) Herder. [C]
Lycopus × *sherardii* Steele [C]
**Metaplexis japonica* (Thunb.) Makino [I]
**Parthenocissus tricuspidata* (Sieb. & Zucc.) Planchon [C]
Physalis hispida (Waterfall) Cronq. [I]
**Poa pratensis* subsp. *angustifolia* (L.) Lej. [C]
**Prunus tomentosa* Thunb. [C]
**Rhamnus utilis* Decne. [C]
Rosa × *rudiuscula* Greene [I]
Rubus ablatus Bailey [I, C]
**Rubus caesius* L. [C]
Rubus frondosus Bigelow [C]
**Rubus parvifolius* L. [I, C]
Rubus roribaccus (Bailey) Rydb. in Britton [I]
**Rumex stenophyllus* Ledeb. [C]
Sagina procumbens L. [C]
Sagittaria australis (J.G. Smith) J.K. Small [I, C]
**Scilla siberica* L. [C]
**Sedum kamtschaticum* Fisch. & C. A. Meyer [C]
**Spergularia marina* (L.) Griseb. [C]
**Ulmus pumila* L. × *U. americana* L. [C]
**Ulmus pumila* L. × *U. rubra* Muhl. [C]
Verbena × *perriana* Moldenke [I]
**Veronica polita* Fries [C]
**Viburnum lantana* L. [C]
**Viola arvensis* Murray [C]

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We dedicate this paper to the memory of two renowned Iowa botanists: Dr. Lawrence J. Eilers (1927–2000) and Dr. Duane Isely

(1918–2000). Dr. Eilers was a great supporter of floristic study in Iowa during the past half century. His efforts culminated in the publication of *The Vascular Plants of Iowa: an Annotated Checklist and Natural History* (1994, co-authored by Dean Roosa), which has provided the baseline for all subsequent floristic study in the state. Dr. Isely spent an equal number of years of research on the Fabaceae (bean family), becoming a nationally recognized scholar of this important plant family. His many years of work resulted in the 1998 publication of *Native and Naturalized Leguminosae (Fabaceae) of the United States (exclusive of Alaska and Hawaii).* The achievements of these two botanists exemplify the two major aspects of plant taxonomy—floristic and monographic research.

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Appendix A. Annotated catalogue of the Ames flora

Voucher specimens are indicated by date and are deposited in the Ada Hayden Herbarium (ISC) at Iowa State University, Ames, IA.

Key

* = Species not native to Iowa
\+ = Species native to Iowa but probably not to Ames
B = Species listed for Ames by Bessey (1871), followed by synonym used by Bessey in brackets
H = Species included in Hitchcock (1890), followed by synonym used by Hitchcock in brackets
= = name as currently used was recognized by Bessey or Hitchcock in addition to synonym listed
Dates are of the earliest and, if not encountered during current survey, the most recent collections
n.d. = No date cited
C = Encountered during the current survey, 1991–2000
Plant Habitat Codes—see Table 1
Abundance Codes—rare, infrequent, frequent, or common; see Methods for further discussion

PTERIDOPHYTES

ADIANTACEAE
Adiantum pedatum L., B, H, 1869–C, **Tmf**—infrequent

ASPLENIACEAE
Asplenium platyneuron (L.) Oakes ex D.C. Eaton, 1999–C, **Tmf,ed**—rare
Athyrium felix-femina (L.) Roth var. *angustum* (Willd.) Moore, H [*Asplenium felix-foemina* (L.) Bernh.], 1869–C, **Tmf,wf**—infrequent
Cystopteris protrusa (Weath.) Blasdell, B[*C. fragilis* Bernh.], H[*C. fragilis* (L.) Bernh.], 1870–C, **Tmf**—common
Dryopteris carthusiana (Vill.) H.P. Fuchs, 1995–C, **Tmf**—rare
Matteuccia struthiopteris (L.) Todaro, 1881–C, **Wsp; Our**—rare
Onoclea sensibilis L., B, H, 1938–1938

DENNSTAEDTIACEAE
Pteridium aquilinum (L.) Kuhn var. *latiusculum* (Desv.) Underw. ex Heller, H[*Pteris aquilina* L.], 1889–1895

EQUISETACEAE
Equisetum arvense L., B, H, 1881–C, **Twf; Our**—common
Equisetum × *ferrissii* Clute, 1998–C, **Pwt; Orw**—frequent
Equisetum hyemale L. var. *affine* (Engelm.) A.A. Eaton, B, 1889–C, **Orw**—common
Equisetum laevigatum A. Br., 1893–C, **Pwt**—frequent

OPHIOGLOSSACEAE
Botrychium dissectum Sprengel f. *dissectum*, 1998–C, **Tmf,wd**—rare
Botrychium dissectum Sprengel f. *obliquum* (Muhl.) Clute, 1998–C, **Tdf,mf,wd**—rare
Botrychium virginianum (L.) Sw., B[*B. virginicum* Swartz.], H, 1881–C, **T**—common

OSMUNDACEAE
Osmunda claytoniana L., H, 1876–1901

GYMNOSPERMS

CUPRESSACEAE
Juniperus virginiana L., H, 1901–C, **Tdf,wd; Pdr; Orw,of,ps**—common

PINACEAE
+*Pinus strobus* L., 2000–C, **Twd,ed**—rare

ANGIOSPERMS

(DICOTYLEDONS)

ACERACEAE
Acer ginnala* Maxim., 1999–C, **Orw—infrequent
Acer negundo L., B[*Negundo aceroides* Moench], H[*Negundo aceroides* Moench], 1892–C, **Tmf,ed; Orw**—common
Acer nigrum Michx., B[*A. saccharinum* Wang.], H[*A. saccharum* Marsh. var. *nigrum* (Michx. f.) Britton], 1892–C, **Tmf,wf**—common
Acer saccharinum Marsh., B[*A. dasycarpum* Ehrhart.], H, 1895–C, **Twf; Our,rw**—common

AIZOACEAE
Mollugo verticillata* L., H, 1892–C, **Wrp; Ocr—frequent

AMARANTHACEAE
Amaranthus albus L., H, 1907–C, **O**—common
Amaranthus graecizans* L., H[*A. blitoides* Wats.], 1897–C, **Our—common
Amaranthus hybridus* L., 2000–C, **Wrp; Our—rare
Amaranthus powellii* S. Watson, 2000–C, **Wrp—rare
Amaranthus retroflexus* L., B, H, 1887–C, **O—common
Amaranthus rudis Sauer, 1877–C, **O**—common
Amaranthus tuberculatus (Moq.) Sauer, H[*Acnida tuberculata* Moq.], 1907–C, **O**—common

ANACARDIACEAE
+*Rhus aromatica* Aiton, 1938–C, **Orw**—rare
Rhus glabra L., B, H, 1907–C, **Twd,ed; Pms; Orw,of**—common
+*Rhus typhina* L., 1948–C, **Our,rw**—rare
Toxicodendron radicans (L.) Kuntze ssp. *negundo* (Greene) Gillis, B[*Rhus toxicodendron* L.], H[*Rhus radicans* L.], 1893–C, **T; Pdr; Orw**—common

APIACEAE
Angelica atropurpurea L., B[*Archangelica atropurpurea* Hoffm.]
Chaerophyllum procumbens (L.) Crantz, B, H, 1897–C, **Twf**—frequent
Cicuta maculata L., H, 1907–C, **Pwt**—frequent
**Conioselinum chinense* (L.) BSP., H
Conium maculata* L., 1926–C, **Orw—frequent
Cryptotaenia canadensis (L.) DC., B, H, 1896–C, **Tmf,wf**—common
Daucus carota* L., H, 1907–C, **Orw,of—common
Eryngium yuccifolium Michx., B, H, 1888–C, **Pwt**—infrequent
Heracleum lanatum Michx., B, H, 1881–C, **Twf**—infrequent
Osmorhiza claytonii (Michx.) C.B. Clarke, B[*Osmorrhiza brevistylis* DC.], H[*Osmorrhiza claytoni* (Michx.) BSP.], 1896–C, **Tmf,wf**—common
Osmorhiza longistylis (Torrey) DC., B, H, 1887–C, **Tmf,wf**—common
Oxypolis rigidior (L.) Raf., B[*Archemora rigida* DC.], H[*Tiedemannia rigida* (L.) C. & R.], 1896–C, **Pwt**—infrequent
Pastinaca sativa* L., B, H, 1907–C, **Orw,of—common
Polytaenia nuttallii DC., H
Sanicula canadenis L., H[=; *S. canadensis* L. var. *marylandica* (L.)], 1942–C, **Tdf,mf**—frequent
Sanicula gregaria Bickn., 1897–C, **Tmf,wf**—common
Sium suave Walter, H[*S. cicutaefolium* Gmel.], 1881–C, **Twf; Pwt**—rare
Taenidia integerrima (L.) Drude, B[*Zizia integerrima* DC.], H[*T. integerrima* (L.) Benth. & Hook.], 1897–C, **Tdf,wd,ed**—rare
Thaspium barbinode (Michx.) Nutt., 1907–1907
Zizea aurea (L.) Koch, B[*Thaspium aureum* Nutt.], H, 1893–C, **Twd,ed; Pms,wt**—frequent

APOCYNACEAE
Apocynum androsaemifolium L., B, H, 1895–C, **Orw**—rare
Apocynum cannabinum L., B, H, 1895–C, **Pms,wt; Orw**—common
Apocynum × *medium* Greene, 1907–1907
Apocynum sibiricum Jacq., 1895–C, **Pms,wt; Orw**—common
Vinca minor* L., 2000–C, **Twf—rare

ARALIACEAE
Aralia nudicaulis L., B, H, 1897–C, **Tdf**—rare
Aralia racemosa L., B, H, 1999–C, **Tmf,es**—rare
Panax quinquefolia L., H[*Aralia quinquefolia* (L.) Decaisne & Planch.], photo, C, **Twf**—rare

ARISTOLOCHIACEAE
Asarum canadense L., B, H, 1881–C, **Tmf,wf**—frequent

ASCLEPIADACEAE
Asclepias amplexicaulis Smith, 1949–C, **Pdr**—rare
Asclepias incarnata L., B, H, 1896–C, **Pms,wt**—frequent
Asclepias ovalifolia Decne., H
Asclepias purpurascens L., B, H, 1897–1897
Asclepias sullivantii Engelm., H, 1907–C, **Pms,wt**—rare
Asclepias syriaca L., B[*A. cornuti* Decaisne.], H, 1881–C, **P; O**—common
Asclepias tuberosa L. ssp. *interior* Woodson, B, H[=; *A. tuberosa* L. var. *decumbens* (L.) Pursh], 1881–C, **Pdr,ms**—rare
Asclepias verticillata L., B, H, 1878–C, **Pms**—frequent
Asclepias viridiflora Raf., B[*Asclepias viridiflora* Ell.], H[*Acerates viridiflora* (Raf.) Ell.; *Acerates viridiflora* (Raf.) Ell. var. *lanceolata* (Ives) Gray], 1894-95–C, **Pdr**—rare
Cynanchum laeve (Michx.) Pers., 1964–C, **Our,rw**—frequent
**Metaplexis japonica* (Thunb.) Makino, 1958–1958

ASTERACEAE
Achillea millefolia L. ssp. *lanulosa* (Nutt.) Piper, B, H, 1881–C, **Twd; Pdr; Oof,ps**—frequent
Ambrosia artemisiifolia L., B, H, 1881–C, **Pdr; O**—common
Ambrosia psilostachya DC., B, H, 1942–C, **Pdr**—infrequent
Ambrosia trifida L., B[=; *A. trifida* L. var. *integrifolia*], H[=; *A. trifida* L. var. *integrifolia* (Muhl.) Torr. & Gray], 1888–C, **P; O**—common
Antennaria neglecta Greene, 1887–C, **Tdr,wd; Pdr**—infrequent
Antennaria plantaginifolia (L.) Richardson, B[*A. plantaginifolia* Hook.], H, 1902–C, **Tdr,wd; Pdr**—infrequent
**Anthemis arvensis* L., H
Anthemis cotula* L., B[*Maruta cotula* DC.], H, 1881–C, **Orw,rc,ps—frequent
**Anthemis nobilis* L., B
Arctium minus* Bernh., B[*Lappa officinalis* Allioni var. *major*], H[*A. lappa* L.], 1888–C, **Ted; Wrp; O—common
Artemisia annua* L., 2000–C, **Wrp—infrequent
Artemisia biennis* Willd., B, H, 1898?–C, **Twf—infrequent
Artemisia absinthium* L., 1998–C, **Orw—rare
Artemisia dracunculus L., B[*A. dracunculoides* Pursh], H[*A. dracunculoides* Pursh], 1928–1928
Artemisia ludoviciana Nutt., B, H, 1881–C, **Pdr,ms**—frequent
Artemisia serrata Nutt., H, 1909–1917
Artemisia vulgaris* L., 1999–C, **Orc,ur—rare
Aster × *amethystinus* Nutt., H
Aster azureus Lindley, H, 1876–C, **P**—infrequent
Aster cordifolius L., B, H, 1876–C, **T**—common
Aster cordifolius L. × *A. drummondii* Lindley, 1921–C, **Twd,ed**—infrequent
Aster ericoides L., B[*A. multiflorus* Ait.], H[*A. multiflorus* Ait.], 1876–C, **Pdr,ms; Orw,of**—frequent
Aster laevis L., H, 1902–C, **Pms,wt**—frequent
Aster lanceolatus Willd., B[*A. simplex* Willd.], H[*A. paniculatus* L.], 1909–C, **Pwt**—infrequent
Aster lateriflorus (L.) Britton, B[*A. miser* L.], H, 1876–C, **T**—common
Aster novae-angliae L., B, H[=; *A. novae-angliae* L. var. *roseus* (Desf.) DC.], 1876–C, **Pms,wt**—frequent
Aster oblongifolius Nutt., H[*A. oblongifolius* Nutt. var. *rigidulus* Gray], 1938–1938
Aster ontarionis Wieg., 1876–C, **Twt**—infrequent
Aster pilosus Willd., 1974–C, **P; Orw,of**—common
Aster praealtus Poiret, B[*A. carneus* Nees.], 1999–C, **Pwt**—rare
Aster prenanthoides Muhl. ex Willd., B, H, 1876–C, **Wsp**—rare
Aster pubentior Cronq., H[*A. umbellatus* Mill. var. *pubens* Gray], 1896–1920
Aster puniceus L., H[*A. puniceus* L. var. *lucidulus* (Wendr.) Gray], 1889–1922
Aster sagittifolius Willd., 1993–C, **Ted**—infrequent
Aster sericeus Vent., B, H, 1888–C, **Pdr**—rare
Aster umbellatus Miller, H
Bidens cernua L., B[*B. chrysanthemoides* Michx.], H[=; *B. chrysanthemoides* Michx.], 1897–C, **Wrp**—frequent
Bidens connata (L.) Britton, B, H, 1920–C, **Wrp**—frequent

Bidens frondosa L., B, H, 1888–C, **Wrp**—common
Bidens polylepis Blake, 1917–C, **Pms; Orw**—infrequent
Bidens tripartita L., B[*B. connata* L. var. *comosa*], 1920–C, **Wrp**—infrequent
Bidens vulgata Greene, 1896–C, **Pwt**—infrequent
Boltonia asteroides (L.) L'Her., B[*B. glastifolia* L'Her.], H, 1876–1876
Boltonia decurrens* (T. & G.) A. Wood, 2000–C, **Pwt—rare
Brickellia eupatorioides (L.) Shinners, B[*Kuhnia eupatorioides* L.], H[*Kuhnia eupatorioides* L.; *K. eupatorioides* L. var. *glutinosa* (Ell.)], 1888–C, **Twd,ed; Pdr**—frequent
Cacalia plantaginea (Raf.) Shinners, B[*C. tuberosa* Nutt.], H[*C. tuberosa* Nutt.], 1894–C, **Tes; Pdr,ms**—infrequent
Carduus acanthoides* L., 1999–C, **Oof—rare
Carduus nutans* L., 1894–C, **Ops—infrequent
Carthamus tinctorius* L., 2000–C, **Wrp; Our—rare
**Centaurea cyanus* L., B, 1904–1924
Cichorium intybus* L., 2000–C, **Orw—infrequent
Cirsium altissimum (L.) Sprengel, B, H[*Cnicus altissimus* (L.) Willd.], 1888–C, **P; O**—common
Cirsium arvense* (L.) Scop., H[*Cnicus arvensis* (L.) Hoffm.], 1898–C, **P; O—common
Cirsium discolor (Muhl. ex Willd.) Sprengel, H[*Cnicus altissimus* (L.) Willd. var. *discolor* (Muhl.) Gray], 1896–C, **P; O**—common
Cirsium flodmanii (Rydb.) Arthur, 1910–1910
Cirsium hillii (Canby) Fern., H[*Cnicus odoratus* Muhl.], 1897–C, **Pdr**—rare
Cirsium vulgare* (Savi) Tenore, H[*Cnicus lanceolatus* (L.) Hoffm.], 1896–C, **P; O—common
Conyza canadensis (L.) Cronq., H[*Erigeron canadensis* L.], 1897–C, **O**—common
Conyza ramosissima Cronq., B[*Erigeron divaricatus* Michx.], H[*Erigeron divaricatus* Michx.], 1942–C, **O**—infrequent
Coreopsis palmata Nutt., B, H, 1893–C, **Pms**—frequent
Coreopsis tinctoria* Nutt., 1892–C, **Oof—rare
Coreopsis tripteris L., H, 1912–C, **Twd**—rare
Crepis capillaris* (L.) Wallr., 1948–C, **Our—rare
Crepis tectorum* L., 1999–C, **Our—rare
Dyssodia papposa (Vent.) A.S. Hitchc., B[*Dysodia chrysanthemoides* Lag.], H, 1906–1906
Echinacea pallida Nutt., B[*E. angustifolia* DC.], H[*E. angustifolia* DC.], 1891–C, **Pdr,ms**—infrequent
+*Echinacea purpurea* (L.) Moench, 1998–C, **Orw**—rare
Eclipta alba (L.) Hassk., 1998–C, **Wmd**—rare
Erechtites hieracifolia (L.) Raf. ex DC., B, H, 1943–C, **Our**—infrequent
Erigeron annuus (L.) Pers., B, H, 1880–C, **Pms; O**—common
Erigeron philadelphicus L., B, H, 1884–C, **Tes,ed; Wrp; Our**—infrequent
Erigeron strigosus Muhl. ex Willd., B, H[*E. ramosus* (Walt.) B.S.P.], 1888–C, **Pdr,ms; Orw,of**—common
Eupatorium altissimum L., H, 1907–C, **Orw**—infrequent
Eupatorium maculatum L., H[*E. purpureum* L. var. *maculatum* (L.) Darl.], 1896–1942
Eupatorium perfoliatum L., B, H, 1907–C, **Pwt**—infrequent
Eupatorium purpureum L., B, H, 1897–C, **T**—frequent
Eupatorium rugosum Houtt., B[*E. ageratoides* L.], H[*E. ageratoides* L.], 1896–C, **T**—common
Euthamia graminifolia (L.) Nutt. ex Cass, B[*Solidago lanceolata* L.], H[*Solidago graminifolia* (L.) Ell.], 1884–C, **Pwt**—infrequent
+*Gaillardia pulchella* Foug., 1998–C, **Orw**—rare
Galinsoga quadriradiata* Ruiz & Pavon, 1970–C, **Our,rc,cr—infrequent
Gnaphalium obtusum L., 1942–C, **Twd,ed; Oof**—infrequent
Grindelia squarrosa (Pursh) Dunal, 1904–C, **Orc**—rare
Helenium autumnale L., B, H, 1909–C, **Pwt**—infrequent
Helianthus annuus L., B, H, 2000–C, **O**—frequent
Helianthus decapetalus L., H[*H. trachelifolius* Willd.]
Helianthus grosseserratus Martens, B, H, 1888–C, **Pms,wt; Orw**—common
Helianthus maximiliani Schrader, 2000–C, **Orc**—infrequent
Helianthus rigidus (Cass.) Desf., B[=; *H. laetiflorus* Pers.], H[*H. diffusus* Sims; *H. laetiflorus* Pers.], 1896–C, **Pdr,ms; Orw**—infrequent
Helianthus strumosus L., H, 1897–C, **Twd**—frequent
Helianthus tuberosus L., H, 1890–C, **Twd,ed; Pms; Orw**—frequent
Heliopsis helianthoides (L.) Sweet, B[*H. laevis* Pers.], H[*H. scabra* Dunal], 1888–C, **Pdr,ms**—frequent
Hieracium longipilum Torrey, B, H, 1888–1898
Hieracium piloselloides* Villars., 2000–C, **Wrp—rare
Hieracium scabrum Michx., H, 1902–C, **Tms**—rare
Iva xanthifolia Nutt., 1926–C, **Twd,ed**—rare
Krigia biflora (Walter) Blake, 1907–1907
Lactuca biennis (Moench) Fern., H[*L. spicata* Lam.]
Lactuca canadensis L., B, H, 1897–C, **Pwt; Orw**—common
Lactuca floridana (L.) Gaertner, H, 1873–C, **T**—frequent
Lactuca ludoviciana (Nutt.) Riddell, H, 1888–C, **Oof**—rare
Lactuca serriola* L., B[*L. scariola* L.], H[*L. scariola* L.], 1913–C, **O—frequent
Lactuca tatarica (L.) C.A. Meyer ssp. *puchella* (Pursh) Stebbins, 1927–C, **Pms,wt**—rare
Lapsana communis* L., 1966–C, **Orc—rare
Leucanthemum vulgare* Lam., B, H[*Chrysanthemum Leucanthemum* L.], 1887–C, **O—infrequent
Liatris aspera Michx., B[*L. scariosa* (L.) Willd.], H[*L. scariosa* (L.) Willd.], 1897–C, **Pdr,ms**—infrequent
Liatris cylindracea Michx., B, H, 1888–1907
Liatris pycnostachya Michx., B, H, 1888–C, **Pms,wt**—infrequent
Liatris squarrosa (L.) Michx., 1906–1906
Matricaria matricarioides* (Less.) Porter, 1994–C, **Our,rc—common
Nothocalais cuspidata (Pursh) Greene, B[*Troximon cuspidatum* Pursh.], H[*Troximon cuspidatum* Pursh], 1869–C, **Pdr,ms**—rare
Prenanthes alba L., B[*Nabalus albus* Hook.], H, 1869–C, **T**—common
Prenanthes aspera Michx., B[*Nabalus asper* Torr. & Gray], H, 1877–1906
Prenanthes racemosa Michx., H, 1885–C, **Pwt**—infrequent
+*Ratibida columnifera* (Nutt.) Wooton & Standley, 1998–C, **Orw**—rare
Ratibida pinnata (Vent.) Barnh., H[*Lepachys pinnata* (Vent.) Torr. & Gray], 1888–C, **Pdr,ms**—frequent
Rudbeckia hirta L., B, H, 1897–C, **Twd; Pdr,ms; Orw**—frequent
Rudbeckia laciniata L., B, H, 1920–C, **Twf**—frequent
Rudbeckia subtomentosa Pursh, H, 1897–C, **Pms,wt**—rare
Rudbeckia triloba L., B, H, 1896–C, **Twf,ed; Wrp**—frequent
Senecio aureus L., B, H
Senecio pauperculus Michx., 1873–1907
Senecio plattensis Nutt., 1897–C, Ted; **P**—infrequent
Senecio pseudaureus Rydb. var. *semicordatus* (Mack. & Bush) T. Barkley, 1884–C, **Pwt**—rare
Senecio vulgaris* L., 1998–C, **Wrp; Our,cr—infrequent
Silphium integrifolium Michx., 2000–C, **Pwt**—rare
Silphium laciniatum L., B, H, 1895–C, **Pms,wt**—frequent
Silphium perfoliatum L., B, H, 1897–C, **Pms,wt; Wrp**—frequent
Solidago canadensis L., B, H[=; *S. canadensis* L. var. *procera* (Ait.) Torr. & Gray], 1874–C, **P; O**—common

Solidago flexicaulis L., B[*S. latifolia* L.], H[*S. latifolia* L.], 1876–C, **Tdf,mf**—infrequent
Solidago gigantea Aiton, H[*S. serotina* Ait.; *S. serotina* Ait. var. *gigantea* (Ait.) Gray], 1876–C, **P; O**—common
Solidago missouriensis Nutt., B, H, 1869–C, **Pdr**—rare
Solidago nemoralis Aiton, H, 1895–C, **Twd; Pdr**—frequent
Solidago riddellii Frank ex Riddell, B, H, 1896–C, **Pwt**—rare
Solidago rigida L., B, H, 1876–C, **Pdr,ms**—frequent
Solidago speciosa Nutt., H[*S. speciosa* Nutt. var. *angustata* Torr. & Gray], 1878–C, **Pdr**—rare
Solidago ulmifolia Muhl. ex Willd., B, H, 1869–C, **Tmf**—frequent
Sonchus arvensis* L., 1928–C, **Orw—infrequent
Sonchus asper* (L.) Hill, H, 1885–C, **Our,rw—frequent
Sonchus oleraceus* L., H, 1890–C, **Our,rw—frequent
Tanacetum vulgare* L., H, 1924–C, **Our,rc—rare
Taraxacum laevigatum* (Willd.) DC., 1918–C, **Twd; Our,ps—infrequent
Taraxacum officinale* Weber, B[*T. dens-leonis* Desf.], H, 1873–C, **O—common
Tragopogon dubius* Scop., 1928–C, **Our,rw—frequent
**Tragopogon pratensis* L., 1921–1921
Verbesina alternifolia (L.) Britton, B[*Actinomeris squarrosa* Nutt.], H[*Actinomeris alternifolia* (L.) DC.], 1896–C, **Twf,wd**—rare
Vernonia baldwinii Torrey, 2000–C, **Pdr**—rare
Vernonia fasciculata Michx., B, H, 1895–C, **Pwt**—infrequent
Xanthium strumarium* L., B, H[*X. canadense* Mill.], 1871–C, **Wrp; O—common

BALSAMINACEAE
Impatiens capensis Meerb., B[*I. fulva* Nutt.], H[*I. biflora* Walt.], 1896–C, **Twf; Wrp,sp**—common
Impatiens pallida Nutt., H[*I. aurea* Muhl.], 1907–C, **Twf; Wrp,sp**—frequent

BERBERIDACEAE
Berberis thunbergii* DC., 2000–C, **Tdf,wd; Ops—frequent
**Berberis vulgaris* L., 1922–1923
Caulophyllum thalictroides (L.) Michx., B, H, 1890–C, **Tmf**—rare
Podophyllum peltatum L., B, H, 1881–C, **Tmf,wf**—frequent

BETULACEAE
Corylus americana Walter, B, H, 1893–C, **Tdr,wd,ed; Orw**—infrequent
Ostrya virginiana (P. Miller) K. Koch, B[*O. virginica* Willd.], H, 1891–C, **T**—common

BIGNONIACEAE
Campsis radicans* (L.) Seem. ex Bureau, 1968–C, **Ted—rare
Catalpa speciosa* Warder, 1905–C, **Twf—infrequent

BORAGINACEAE
Cynoglossum officinale* L., B[*C. morissoni* DC.], 1897–C, **Twd—rare
Hackelia virginiana (L.) I.M. Johnston, H[*Echinospermum virginianum* (L.) Lehm.], 1894–C, **T**—common
Lappula echinata* Gilib., B[*Echinospermum lappula* Lehm.], H[*Echinospermum lappula* (L.) Lehm.], 1895–C, **Orw,rc—infrequent
Lithospermum canescens (Michx.) Lehm., B, H, 1881–C, **Pdr,ms**—infrequent
Lithospermum incisum Lehm., B[*L. longiflorum* Spreng.], H[*L. angustifolium* Michx.], 1881–C, **Twd; Pdr**—rare
Lithospermum latifolium Michx., B, H
Mertensia virginica (L.) Pers. ex Link, B[*M. virginica* DC.], H, 1881–C, **Tmf,wf**—frequent
Onosmodium molle Michx. var. *hispidissimum* (Mack.) Cronq., B[*O. carolinianum* DC.], H[*O. carolinianum* (Lam.) DC.], 1895–C, **Pdr**—infrequent

BRASSICACEAE
Alliaria petiolata* (Bieb.) Cavara & Grande, 1998–C, **Tdf,mf,wf—infrequent
Alyssum alyssoides* (L.) L., H[*A. calycinum* L.], 1999–C, **Orc—rare
Arabidopsis thaliana* (L.) Heynh., 2000–C, **Our—rare
Arabis canadensis L., H, 1998–C, **Tdf,ed**—infrequent
Arabis glabra (L.) Bernh., 1999–C, **Ops**—rare
Arabis hirsuta (L.) Scop., H, 1897–C, **Tmf; Orc,ps**—infrequent
Arabis laevigata (Muhl. ex Willd.) Poiret, 1903–1903
Arabis shortii (Fern.) Gl., H[*A. dentata* Torr. & Gray], 1895–C, **Tmf,wf**—infrequent
Armoracia rusticana* (Lam.) Gaertner, Meyer & Schreber, H[*Nasturtium armoracia* (L.) Fries], 1897–C, **Ted—rare
Barbarea vulgaris* R. Br., H, 1890–C, **Twf; Wrp; Orw,cr,of—common
Berteroa incana* (L.) DC., 1927–C, **Orw—infrequent
Brassica campestris* L., 1924–C, **O—infrequent
Brassica juncea* (L.) Czern., 1904–C, **Orw—frequent
Brassica nigra* (L.) W.D.J. Koch, B, H, 1891–C, **O—common
Camelina microcarpa* Andrz. ex DC., 1962–C, **Orc—rare
**Camelina sativa* (L.) Crantz, B, H
Capsella bursa-pastoris* (L.) Medicus, B, H, 1892–C, **O—common
Cardamine bulbosa (Schreber) BSP., B[*C. rhomboidea* DC.], H, 1887–C, **Wrp,sp**—infrequent
Cardamine flexuosa* With., 1998–C, **Our—rare
Cardamine pensylvanica Muhl. ex Willd., H[*C. flexuosa* With.], 1897–C, **Wrp,sp**—rare
Cardaria draba* (L.) Desv., 1927–C, **Our—rare
Chorispora tenella* (Pallas) DC., 1975–C, **Our—rare
**Conringia orientalis* (L.) Dum., 1911–1954
Dentaria laciniata Muhl. ex Willd., B, H, 1887–C, **Tmf,wf**—frequent
Descurainia pinnata (Walter) Britton var. *brachycarpa* (Richardson) Fern., H[*Sisymbrium canescens* Nutt.], 1897–C, **Our,rc**—frequent
Descurainia sophia* (L.) Webb ex Prantl, 1999–C, **Orc—rare
Draba reptans (Lam.) Fern., B[*D. caroliniana* Walt.], H[*D. caroliniana* Walt.], 1892–1937
Erysimum cheiranthoides* L., B, H, 1897–C, **Orc—infrequent
Erysimum diffusum* Ehrh., 1999–C, **Orc—rare
Erysimum hieraciifolium* L., 1999–C, **Orw,rc—rare
Erysimum repandum* L., 1940–C, **Our—frequent
Hesperis matronalis* L., H, 1962–C, **Twf,wd,ed; Orw—frequent
Iodanthus pinnatifidus (Michx.) Steudel, H[*Thelypodium pinnatifidum* (Mich.) Wats.], 1895–C, **Twf**—rare
Lepidium campestre* (L.) R. Br., 1943–C, **O—infrequent
Lepidium densiflorum Schrader, H[*L. intermedium* Gray], 1891–C, **O**—common
**Lepidium perfoliatum* L., 1950–1958
Lepidium virginicum L., B, H, 1912–C, **O**—common
Nasturtium officinale* R. Br., H, 1998–C, **Wrp—rare
Rorippa austriaca* (Crantz) Besser, 1951–C, **Twd—rare
Rorippa palustris (L.) Besser, H[*Nasturtium palustre* (Leys.) DC.], 1897–C, **Pwt; Wrp,md**—common
Rorippa sessiliflora (Nutt.) A.S. Hitchc., H[*Nasturtium sessiliflorum* Nutt.], 2000–C, **Wrp**—rare
**Rorippa sylvestris* (L.) Besser, 1926–1926
Sibara virginica* (L.) Roll., 2000–C, **Wrp—rare
**Sinapis alba* L., H[*Brassica alba* (L.) Boiss.]

Sinapis arvensis L., B, H[*Brassica sinapistrum* Boiss.], 1893–C, **Our**—rare
Sisymbrium altissimum L., 1898–C, **Our,rw**—frequent
Sisymbrium loeselii L., 1976–C, **Our,rw**—infrequent
Sisymbrium officinale (L.) Scop., B, H, 1897–C, **Our,rw**—frequent
Thlaspi arvensis L., 1909–C, **Our,rc,cr**—common

CAMPANULACEAE
Campanula americana L., B, H, 1888–C, **T; Wrp**—common
Campanula aparinoides Pursh, B, H, 1896–C, **Pwt; Wsp**—rare
Campanula rapunculoides L., 1958–C, **Ted; Our,rw**—infrequent
Lobelia cardinalis L., B, H, 1888–1913
Lobelia inflata L., H, 1896–C, **Twd,ed**—frequent
Lobelia siphilitica L., B, H, 1881–C, **Twf,es,ed; Pwt; Wrp; Orw**—common
Lobelia spicata Lam., B, H[*L. spicata* Lam. var. *hirtella* Gray], 1942–C, **Twd; Pdr,ms**—infrequent
Triodanis perfoliata (L.) Nieuw., B[*Specularia perfoliata* A. DC.], H[*Specularia perfoliata* (L.) A. DC.], 1897–C, **Orc,cr,of**—frequent

CAPPARIDACEAE
Cleome hassleriana Chodat, 2000–C, **Wrp**—rare
Polanisia dodecandra (L.) DC., B[*P. graveolens* Raf.], H, 1892–1962

CAPRIFOLIACEAE
Lonicera × bella Zabel, 1998–C, **Ted**—infrequent
Lonicera dioica L. var. *glaucescens* (Rydb.) Butters, B[*L. parviflora* Lam. var. *douglasii*], H[*L. glauca* Hill], 1881–C, **Tmf,df,wd**—infrequent
Lonicera maackii (Rupr.) Herder, 1993–C, **T; Our,rw**—common
Lonicera tatarica L., 1891–C, **T; Our,rw**—common
Sambucus canadensis L., B, H, 1897–C, **Twf,ed; Orw**—common
Symphoricarpos occidentalis Moench, H, 1998–C, **Pms; Orw**—infrequent
Symphoricarpos orbiculatus Moench, H[*S. vulgaris* Michx.], 1998–C, **Tmf,wd; Oof**—rare
Triosteum perfoliatum L., B, H, 1881–C, **Tdf,wd**—infrequent
Viburnum lantana L., 1998–C, **Tmf,wf; Our**—rare
Viburnum lentago L., B, H, 1881–C, **Tdf,mf,ed; Our,rw**—infrequent
Viburnum opulus L., 1993–C, **Tmf,wf; Our**—infrequent
Viburnum rafinesquianum Schultes, B[*V. pubescens* Pursh], H[*V. pubescens* Pursh], 1895–C, **Tmf**—infrequent

CARYOPHYLLACEAE
Agrostemma githago L., B[*Lychnis githago* Lam.], H[*Lychnis githago* (L.) Lam.], 1895–1895
Arenaria serpyllifolia L., 2000–C, **Wrp**—rare
Cerastium glomeratum Thuill., B[*Cerastium viscosum* L.]
Cerastium nutans Raf., 1897–C, **Orc**—rare
Cerastium vulgatum L., 1924–C, **Our,rw,ps**—common
Dianthus armeria L., 2000–C, **Pdr**—infrequent
Holosteum umbellatum L., 1999–C, **Our**—rare
Myosoton aquaticum (L.) Moench, 1998–C, **Our**—rare
Paronychia canadensis (L.) Wood, H[*Anychia canadensis* (L.) B.S.P.], 1892–C, **Tdf**—rare
Sagina procumbens L., 2000–C, **Wrp**—rare
Saponaria officinalis L., H, 1961–C, **Orw**—common
Silene antirrhina L., B, H, 1894–C, **Orc**—infrequent
Silene cserei Baumg., 1962–C, **Orw,rc**—infrequent
Silene dichotoma Ehrh., 1907–1907
Silene nivea (Nutt.) Otth, H, 1897–C, **Twf; Wsp**—rare
Silene noctiflora L., 1890–C, **Orc**—infrequent
Silene pratensis (Raf.) Gren. & Godrun, 1892–C, **O**—common
Silene stellata (L.) Aiton, B, H, 1879–C, **Tmf,wf,ed; Wrp**—infrequent
Silene vulgaris (Moench) Garcke, 1897–C, **Oof**—rare
Spergula arvensis L., B
Spergularia marina (L.) Griseb., 1999–C, **Our**—rare
Stellaria longifolia Muhl. ex Willd., H
Stellaria media (L.) Vill., H, 1895–C, **Our**—common
Vaccaria pyramidata Medicus, H[*Saponaria vaccaria* L.], 1895–1928

CELASTRACEAE
Celastrus scandens L., B, H, 1897–C, **Tmf,wf,ed; Orw**—frequent
Euonymus alatus (Thunb.) Sieb., 1999–C, **Tmf,wd,ed**—rare
Euonymus atropurpureus Jacq., B, H, 1891–C, **Twf,ed; Orw**—infrequent

CERATOPHYLLACEAE
Ceratophyllum demersum L., H, 1998–C, **Wsz**—frequent

CHENOPODIACEAE
Atriplex patula L., 1907–C, **Wrp; Our,cr**—infrequent
Bassia hyssopifolia (Pallas) Kuntze, 1998–C, **Orc**—rare
Chenopodium album L., B, H, 1888–C, **O**—common
Chenopodium berlandieri Moq., 1897–C, **Twf; Our**—common
Chenopodium botrys L., H, 1892–1895
Chenopodium bushianum Aellen, 1961–C, **Twf**—rare
Chenopodium desiccatum A. Nelson, 1942–1942
Chenopodium foggii H.A. Wahl, 1897–1907
Chenopodium glaucum L., 1999–C, **Orc**—rare
Chenopodium hybridum L., B, H, 1895–C, **Twf; Wrp**—frequent
Chenopodium missouriensis Aellen, 1898–1898
Chenopodium rubrum L., 1960–1960
Chenopodium standleyanum Aellen, B[*C. album* L. var. *boscianum* Gr.], H[*C. boscianum* Moq.], 1896–C, **Twf,ed; Our**—frequent
Chenopodium urbicum L., H, 1894–1894
Cycloloma atriplicifolium (Sprengel) Coulter, 1892–1942
Kochia scoparia (L.) Schrader, 1927–C, **Orw,rc**—infrequent
Monolepis nuttalliana (Roemer & Schultes) Greene, 1917–1917
Salsola collina Pallas, 1959–C, **Orw,rc**—frequent
Salsola iberica Sennen & Pau, 1904–C, **Orw,rc**—rare

CISTACEAE
Helianthemum bicknellii Fern., H, 1897–C, **Tmf,wd; Pdr**—rare

CONVOLVULACEAE
Calystegia sepium (L.) R. Br., B, H[*Convolvulus sepium* L.], 1881–C, **Our,rw**—common
Convolvulus arvensis L., H, 1895–C, **Our,rw**—common
Cuscuta cephalanthii Engelm., H, 1999–C, **Oof**—rare
Cuscuta coryli Engelm., H
Cuscuta glomerata Choisy, B, H, 1888–1942
Cuscuta gronovii Willd., B, H
Cuscuta pentagona Engelm., 1909–C, **Twf**—infrequent
Ipomoea hederacea (L.) Jacq., 1998–C, **Ted; Oof**—rare

CORNACEAE
Cornus alternifolia L.f., H, 1896–C, **Tmf,wf**—frequent
Cornus amomum P. Miller ssp. *obliqua* (Raf.) J.S. Wilson, B[*C. sericea* L.], H[*C. sericea* L.], 1892–C, **Ted; Wrp; Orw**—frequent
Cornus drummondii C.A. Meyer, H[*C. asperifolia* Michx.], 1914–C, **Ted; Orw,of**—frequent
Cornus foemina P. Miller ssp. *racemosa* (Lam.) J.S. Wilson, B[*C.*

paniculata L'Her.], H[*C. candidisima* Marsh.], 1894–C, **Ted**—frequent
Cornus rugosa Lam., B[*C. circinata* L'Her.], H[*C. circinata* L'Her.]
+*Cornus stolonifera* Michx., 2000–C, **Oof**—rare

CRASSULACEAE
Sedum kamtschaticum* Fisch. & C.A. Meyer, 1999–C, **Orw—rare

CUCURBITACEAE
Echinocystis lobata (Michx.) T. & G., B, H[*E. echinata* (Muhl.) B.S.P.], 1885–C, **Twf**—rare
Sicyos angulatus L., B, 1902–C, **Twf**—infrequent

ELAEAGNACEAE
Elaeagnus angustifolia* L., 1951–C, **Our—rare
Elaeagnus umbellata* Thunb., 1891–C, **Twd,ed; Orw,of—frequent

ERICACEAE
Monotropa uniflora L., B, H, 1889–C, **Tdf,mf**—infrequent

EUPHORBIACEAE
Acalypha rhomboidea Raf., 1884–C, **Wrp; Our**—common
Acalypha virginica L., B, H, 1933–C, **Twd**—rare
Croton glandulosus L. var. *septentrionalis* Mueller-Arg., 2000–C, **Pdr**—rare
Euphorbia corollata L., B, H, 1880–C, **P; Orw,rc**—frequent
Euphorbia cyathophora Murray, H[*E. heterophylla* L.], 1933–C, **Orc,of**—infrequent
Euphorbia cyparissias* L., H, 1891–C, **Orc—rare
Euphorbia dentata Michx., 1928–C, **O**—frequent
Euphorbia esula* L., 1907–C, **Pdr—rare
Euphorbia glyptosperma Engelm., H, 1897–C, **Twd; Our**—infrequent
Euphorbia maculata L., B[=; *E. hypericifolia* L.], H[=; *E. hypericifolia* L.], 1907–C, **Our,rw,cr**—common
Euphorbia marginata Pursh, H, 1956–1956
Euphorbia missurica Raf., H[*E. petaloidea* Engel.], n.d.–n.d.
Euphorbia nutans Lag., 1888–C, **Our,rw,cr**—common
Euphorbia serpens HBK., 1998–C, **Our,cr**—frequent
**Euphorbia serpyllifolia* Pers., B

FABACEAE
Amorpha canescens Pursh, B, H, 1897–C, **Twd; Pdr,ms**—infrequent
Amorpha fruticosa L., B, H, 1881–C, **Twf**—infrequent
Amphicarpaea bracteata (L.) Fern., H[*A. comosa* (L.) Riddell], 1897–C, **Twf**—frequent
Apios americana Medicus, B[*A. tuberosa* Moench], H[*A. tuberosa* Moench], 1896–C, **Twf,ed**—infrequent
Astragalus canadensis L., B, H, 1913–C, **Twf,ed**—infrequent
Astragalus crassicarpus Nutt., B[*A. caryocarpus* Ker.], H[*A. caryocarpus* Ker.], 1884–C, **Pdr,ms**—infrequent
Baptisia bracteata Muhl. ex Ell. var. *glabrescens* (Larisey) Isely, B[*B. leucophaea* Nutt.], H[*B. leucophaea* Nutt.], 1881–C, **Pdr,ms**—infrequent
Baptisia lactea (Raf.) Thieret, B[*B. leucantha* Torr. & Gray], H[*B. leucantha* Torr. & Gray], 1897–C, **Pdr,ms**—infrequent
Cassia marilandica L., 1998–C, **Twf,ed**—rare
+*Cercis canadensis* L., 2000–C, **Ted; Our**—infrequent
Chamaecrista fasciculata (Michx.) Greene, B[*Cassia chaemaecrista* L.], H[*Cassia chaemaecrista* L.], 1895–C, **Twd,ed; Pdr; Orw**—frequent
Coronilla varia* L., 1994–C, **Pdr,ms; Orw—frequent
Crotalaria sagittalis L., 1998–C, **Ted**—rare
Dalea candida Willd., B[*Petalostemon candidus* Michx.], H[*Petalostemon candidus* (Willd.) Michx.], 1880–C, **Pdr,ms**—infrequent
Dalea leporina (Aiton) Bullock, H[*D. alopecuroides* Willd.], 1890–1890
Dalea purpurea Vent., B[*Petalostemon violaceus* Michx.], H[*Petalostemon violaceus* (Willd.) Michx.], 1880–C, **Pdr,ms**—frequent
Dalea villosa (Nutt.) Sprengel, H[*Petalostemon villosus* Nutt.]
Desmodium canadense (L.) DC., B, H, 1888–C, **Pdr**—frequent
Desmodium cuspidatum (Muhl. ex Willd.) Louden, 1881–1961
Desmodium glutinosum (Muhl. ex Willd.) Wood, B[*D. acuminatum* DC.], H[*D. grandiflorum* (Walt.) DC.], 1897–C, **Tdf,mf,wd**—infrequent
Desmodium illinoense Gray, H, 1907–C, **Pdr,ms**—infrequent
Desmodium paniculatum (L.) DC., H[*D. dillenii* Darl.]
Desmodium sessilifolium (Torr.) T. & G., B, H
Gleditsia triacanthos L., B, H, 1914–C, **Twf,wd,ed; Our,rw,of,ps**—common
Glycyrrhiza lepidota Pursh, H, 1898–C, **Orw**—rare
Gymnocladus dioica (L.) K. Koch, B[*G. canadensis* Lam.], H, 1906–C, **Tmf,wf**—infrequent
Lathyrus latifolius* L., 1948–C, **Twf—rare
Lathyrus ochroleucus Hooker, 1949–1949
Lathyrus palustris L., B, H, 1897–C, **Pwt; Orw**—infrequent
Lathyrus venosus Muhl. ex Willd., H, 1896–1907
Lespedeza capitata Michx., H[*L. frutescens* (Willd.) Ell.], 1896–C, **Twd; Pdr,ms**—frequent
Lespedeza leptostachya Engelm., H, photo, C, **Pdr**—rare
Lotus corniculatus* L., 1876–C, **Pdr,ms; O—common
Lotus purshianus Clem. & Clem., 1897–1897
Medicago lupulina* L., B, H, 1898–C, **O—common
Medicago sativa* L., H, 1882–C, **Oof,rw—frequent
Melilotus alba* Medicus, H, 1904–C, **Pdr; O—common
Melilotus officinalis* (L.) Pallas, H, 1895–C, **Pdr; O—common
Pediomelum argophyllum (Pursh) Grimes, H[*Psoralea argophylla* Pursh], 1894–C, **Pdr,ms**—rare
Robinia pseudo-acacia* L., H, 1961–C, **Twf,ed; Our,rw—infrequent
Strophostyles helvula (L.) Ell., H[*S. angulosa* (Ort.) Ell.], 1891–C, **Orc**—rare
**Trifolium arvense* L., B, H
**Trifolium aureum* L., H[*T. agrarium* L.]
Trifolium campestre* Schreber, B[*T. procumbens* L.], H[*T. procumbens* L.], 1880–C, **Twd—infrequent
Trifolium hybridum* L., 1895–C, **Our—frequent
Trifolium pratense* L., H, 1880–C, **O—common
Trifolium repens* L., H, 1892–C, **O—common
Vicia americana Muhl. ex Willd., B, H, 1881–C, **Pwt; Orw**—frequent
**Vicia sativa* L. var. *nigra* L., 1963–1963
Vicia villosa* Roth, 1890–C, **Orc,of—rare

FAGACEAE
Quercus alba L., B, H, 1873–C, **Tdf,wd**—common
Quercus borealis Michx.f. var. *maxima* (Marsh.) Ashe, H[*Q. rubra* L.], 1873–C, **Tdf,mf**—common
Quercus macrocarpa Michx., B, H, 1873–C, **T; Ops**—common
Quercus velutina Lam., H[*Q. coccinea* Wang.], 2000–C, **Tdf,ed**—infrequent

GENTIANACEAE
Centaurium pulchellum (Schwartz) Druce, 1999–C, **Our**—rare
Gentiana alba Muhl., B, H[*G. flavida* Gray], 1899–C, **Tdf,wd**—infrequent
Gentiana andrewsii Griseb., B, H, 1899–C, **Tes; Pwt**—infrequent
Gentiana × *billingtonii* Farw., B[*G. saponaria* L.]
Gentiana puberulenta J. Pringle, B[*G. puberula* Michx.], H[*G. puberula* Michx.], 1898–C, **Pdr,ms**—rare
Gentianopsis crinita (Froelich) Ma., B[*Gentiana crinita* Froel.], H
Gentianella quinquefolia (L.) Small ssp. *occidentalis* (A. Gray) J. Gillett, B[*Gentiana quinqueflora* Lam.], H[*Gentiana quinquefolia* L. var. *occidentalis*], 1902–C, **Tes; Pms,wt**—rare

GERANIACEAE
**Erodium cicutarium* (L.) L'Her. 1914–1914
Geranium carolinianum L., 1929–C, **Our**—rare
Geranium maculatum L., B, H, 1881–C, **Tmf,wf**—common
**Geranium pusillum* L., 1929–1929
Geranium sibiricum* L., 1979–C, **Twf; Our,rw—rare

HALORAGIDACEAE
Proserpinaca palustris L., B, H

HIPPOCASTANACEAE
Aesculus glabra Willd., 2000–C, **Twf**—rare

HYDROPHYLLACEAE
Ellisia nyctelea L., B[*E. ambigua* Nutt.], H, 1887–C, **Twf; Our,rw**—frequent
Hydrophyllum virginianum L., B, H, 1881–C, **Tmf,wf**—common

HYPERICACEAE
Hypericum majus (Gray) Britton, H[*H. canadense* L. var. *majus* Gray], 2000–C, **Ted**—rare
Hypericum perforatum* L., 1942–C, **Pwt; Orw,rc,of—infrequent
Hypericum prolificum (Spach) Steudel, 1989–C, **Twd**—rare
Hypericum punctatum Lam., H[*H. maculatum* Walt.], 1951–C, **Tmf,wd**—infrequent
Hypericum pyramidatum Aiton, B, H[*H. ascyron* L.], 1894–C, **Ted; Pdr**—infrequent

JUGLANDACEAE
Carya cordiformis (Wang.) K. Koch, B[*C. amara* Nutt.], H[*Hicoria minima* (Marsh.) Britt.], 1901–C, **Tmf,wf**—common
Carya ovata (P. Miller) K. Koch, B[*C. alba* Nutt.], H[*Hicoria ovata* (Mill.) Britt.], 1897–C, **Tdr,mf,wd**—common
Juglans cinerea L., B, H, 1883–C, **Tmf,wf**—infrequent
Juglans nigra L., B, H, 1897–C, **Tmf,wf; Our,rw**—common

LAMIACEAE
Agastache foeniculum (Pursh) Kuntze, 1948–1948
Agastache nepetoides (L.) Kuntze, H[*Lophanthus nepetoides* (L.) Benth.], 1897–C, **Twf**—frequent
Agastache scrophulariifolia (Willd.) Kuntze, B[*Lophanthus scrophulariaefolius* Benth.], H[*Lophanthus scrophulariaefolius* (Willd.) Benth.], 1884–C, **Twd,ed**—rare
Ajuga reptans* L., 1999–C, **Twd—rare
Blephilia hirsuta Benth., B
Dracocephalum parviflorum Nutt., 1914–C, **Orc**—rare
Glechoma hederacea* L., H[*Nepeta hederacea* (L.) B.S.P.], 1919–C, **Twf; Wrp; O—common
Hedeoma hispidum Pursh, H, 1907–C, **Twd; Orc**—frequent
Hedeoma pulegioides (L.) Pers., H, 1889–C, **Tdf,wd**—rare
Lamium amplexicaule* L., 1998–C, **Our,rw—infrequent
Leonurus cardiaca* L., H, 1895–C, **Twf,ed; Wrp—common
Lycopus americanus Muhl. ex Barton, B[*L. europaeus* L. var. *sinuatus* Gr.], H[*L. sinuatus* Ell.], 1889–C, **Pwt; Wrp; Orw**—frequent
Lycopus × *sherardii* Steele, 1999–C, **Wrp**—rare
Lycopus uniflorus Michx., 1889–C, **Pwt**—rare
Lycopus virginicus L., H[=; *L. rubellus* Moench (ISC specimen misidentified)], 1907–C, **Pwt**—frequent
Mentha arvensis L., B[*M. canadensis* L.], H[*M. canadensis* L.; *M. canadensis* L. var. *borealis* (Michx.) Wood], 1917–C, **Pwt; Wrp**—frequent
Monarda fistulosa L., B, H, 1881–C, **P**—common
Nepeta cataria* L., B, H, 1881–C, **O—common
Perilla frutescens* (L.) Britton, C, **Ops—rare
Physostegia parviflora Nutt. ex Gray, 1907–C, **Wrp,md**—infrequent
Physostegia virginiana (L.) Bentham, B, H, 1999–C, **Wrp**—rare
Prunella vulgaris* L., B[*Brunella vulgaris* L.], H[*Brunella vulgaris* L.], 1888–C, **T; O—frequent
Prunella vulgaris L. var. *lanceolata* (Bartram) Fern., 1897–C, **Twf**—rare
Pycnanthemum virginianum (L.) Dur. & Jackson, B[*P. lanceolatum* Pursh], H, 1881–C, **Pms,wt**—frequent
Salvia nemorosa* L., 1999–C, **Ocr—rare
Salvia reflexa Hornem., H[*S. lanceolata* Willd.], 1895–C, **Orc**—rare
Scutellaria galericulata L., H, 1897–1942
Scutellaria lateriflora L., B, H, 1961–C, **Pwt; Wrp**—frequent
Scutellaria leonardii Epling, B[*S. parvula* Michx.], H[*S. parvula* Michx.], 1895–C, **Pdr,ms; Ops**—infrequent
Stachys palustris L., H, 1894–95–C, **Pms,wt; Wrp**—frequent
Stachys tenuifolia Willd., H[*S. aspera* Michx.; *S. aspera* Michx. var. *tenuiflora* (Willd.)], 1907–C, **Twf**—frequent
Teucrium canadense L., B, H, 1896–C, **Twd,ed**—frequent
Teucrium canadense L. var. *boreale* (Bickn.) Shinners, 1897–C, **Twd,ed**—frequent

LENTIBULARIACEAE
Utricularia vulgaris L., H, 1999–C, **Wsz,md**—infrequent

LINACEAE
Linum sulcatum Riddell, B, H, 1894–C, **Pdr; Ops**—rare

LYTHRACEAE
Ammania coccinea Rottb., H, 1999–C, **Wmd; Ocr**—frequent
Lythrum alatum Pursh, B, H, 1895–C, **Pms,wt**—frequent
Lythrum salicaria* L., 1998–C, **Pwt—rare

MALVACEAE
Alcea rosea* L., 1927–C, **Our—rare
Abutilon theophrasti* Medicus, B[*A. avicennae* Gaertn.], H[*A. avicennae* Gaertn.], 1881–C, **O—common
Callirhoe involucrata (Nutt. ex T. & G.) Gray, 1890–1969
Hibiscus laevis All., 1940–C, **Wmd**—rare
Hibiscus trionum* L., H, 1881–C, **O—frequent
Malva neglecta* Wallr., 1895–C, **Our,rc,cr—frequent
Malva rotundifolia* L., B, H, 1907–C, **Our—infrequent
**Malva sylvestris* L., B, H, 1881–1881
+*Napaea dioica* L., 1998–C, **Twf**—rare
Sida spinosa* L., 1998–C, **Our,cr—rare

MENISPERMACEAE
Menispermum canadense L., B, H, 1907–C, **Tmf,wf,ed**—rare

MORACEAE
Cannabis sativa L., B, H, 1881–C, O—frequent
Humulus japonicus* Sieb., 1944–C, **Ted—rare
Humulus lupulus L., B, H, 1881–C, **Twd,ed**—frequent
Maclura pomifera* (Raf. ex Sarg.) Schneider, 2000–C, **Twf—rare
Morus alba* L., 1960–C, **Twf,ed; Our,rw,ps—common
Morus rubra L., B, H, 1895–C, **Tmf,wf**—infrequent

NYCTAGINACEAE
Mirabilis albida (Walter) Heimerl, 1992–C, **Ted; Pdr**—rare
Mirabilis hirsuta (Pursh) MacM., 1892–C, **Ted; Pdr**—rare
Mirabilis nyctaginea (Michx.) MacM., H[*Oxybaphus nyctagineus* (Michx.) Sweet], 1897–C, **O**—common

NYMPHAEACEAE
Nymphaea tuberosa Paine, B[*N. odorata* Ait.]
Nuphar luteum (L.) Smith, B[*N. advena* Ait.]

OLEACEAE
Fraxinus americana L., B, H, 1924–C, **Tdf,mf**—frequent
Fraxinus nigra Marsh, H[*F. sambucifolia* Lam.], 1914–C, **Tmf,wf**—infrequent
Fraxinus pensylvanica Marsh., H[*F. viridis* Michx.f. var. *pubescens*], 2000–C, **Twf**—rare
Fraxinus pensylvanica Marsh. var. *lanceolata* (Borkh.) Sarg., H[*F. viridis* Michx.f.], 1896–C, **Tmf,wf; Our,rw**—common
Ligustrum obtusifolium* Siebold & Zucc., 1999–C, **Ted—rare
Ligustrum vulgare* L., 1909–C, **Wrp; Ops—rare

ONAGRACEAE
Calylophus serrulatus (Nutt.) Raven, B[*Oenothera serrulata* Nutt.], H[*Oenothera serrulata* Nutt.], 1895–C, **Pdr**—rare
Circaea lutetiana L. ssp. *canadensis* (L.) Ascherson & Magnus, B[*C. lutetiana* L.], H[*C. lutetiana* L.], 1895–C, **Tmf,wf**—common
Epilobium ciliatum Raf., H[*E. adenocaulum* Haussku.]
Epilobium coloratum Biehler, B, H, 1897–C, **Tes; Pwt; Wrp**—frequent
Epilobium leptophyllum Raf., H[*E. lineare* Muhl.]
Gaura biennis L., 1923–C, **Orw**—rare
Gaura parviflora Douglas, 1892–1988
Ludwigia polycarpa Short & Peter, B, H, 1897–1907
Oenothera laciniata Hill, 1963–1963
Oenothera parviflora L., 1999–C, **Orc,of**—infrequent
Oenothera rhombipetala Nutt. ex T. & G., 1924–1924
Oenothera villosa Thunb., B[*O. biennis* L.], H[*O. biennis* L.], 1881–C, **O**—common

OROBANCHACEAE
Orobanche uniflora L., H[*Aphyllon uniflorum* (L.) Gray], n.d.[1800's]–n.d.

OXALIDACEAE
Oxalis dillenii Jacq., 1897–C, **Our**—infrequent
Oxalis stricta L., B, H[*O. corniculata* L.], 1881 C, **O**—common
Oxalis violacea L., B, H, 1881–C, **P**—rare

PAPAVERACEAE
Chelidonium majus* L., 1958–C, **Twf—rare
Corydalis micrantha (Engelm.) Gray, 1890–C, **Orc**—infrequent
Dicentra cucullaria (L.) Bernh., B, H[*Dyclyptra cucullaria* (L.) DC.], 1881–C, **Tmf**—frequent
Fumaria officinalis* L., 1999–C, **Orc—rare
Sanguinaria canadensis L., B, H, 1881–C, **Tmf**—frequent

PHRYMACEAE
Phryma leptostachya L., H, 1894–C, **T**—common

PHYTOLACCACEAE
Phytolacca americana L., 1907–C, **Our**—rare

PLANTAGINACEAE
Plantago aristata Michx., 1896–1968
Plantago lanceolata* L., B, H, 1890–C, **Our,ps—common
Plantago major* L., B, H, 1961–C, **Our—frequent
Plantago patagonica Jacq., 1998–C, **Orc**—rare
Plantago rugelii Dcne., H, 1909–C, **Pdr,ms; O**—common
Plantago virginica L., 1924–1955

PLATANACEAE
Platanus occidentalis L., B, H, 1897–C, **Twf**—frequent

POLEMONIACEAE
Phlox divaricata L., B[*P. procumbens* Lehm.], H, 1881–C, **Tmf,wf**—common
Phlox maculata L., H, 1907–1907
Phlox paniculata* L., 1909–C, **Our,rw—rare
Phlox pilosa L., B, H, 1881–C, **P**—frequent
Polemonium reptans L., H, 1890–C, **Tmf; Ops**—infrequent

POLYGALACEAE
Polygala incarnata L., B, H, 1907–1907
Polygala sanguinea L., B, H, 1907–1907
Polygala senega L., H, 1898–1898
Polygala verticillata L., B, H, 1896–C, **Twd,es; Pms**—rare

POLYGONACEAE
Polygonum achoreum Blake, 1998–C, **Orw,cr**—frequent
Polygonum amphibium L. var. *emersum* Michx., B[*P. amphibium* L. var. *terrestre* Willd.], H[*P. amphibium* L.; *P. muhlenbergii* Wats.], 1897–C, **Pwt; Wez**—common
Polygonum amphibium L. var. *stipulaceum* (Coleman) Fern., H[*P. hartwrightii* Gray], 1947–1947
Polygonum aviculare* L., B, H, 1897–C, **O—common
Polygonum convolvulus* L., B, H, 1892–C, **Ocr—frequent
Polygonum cuspidatum* Sieb. & Zucc., 1947–C, **Twf,ed; Our—rare
Polygonum erectum L., H, 1895–C, **O**—common
Polygonum hydropiper L., B, H, 1888–C, **Twf; Wrp,md**—frequent
Polygonum lapathifolium L., H[*P. lapathifolium* L. var. *incarnatum* (Ell.) Watson], 1877–C, **Pwt; Wez,rp; Ocr**—frequent
**Polygonum orientale* L., B, H, 1902–1928
Polygonum pensylvanicum L. var. *laevigatum* Fern., B[*P. pennsylvanicum* L.], H[*P. pennsylvanicum* L.], 1903–C, **Pwt; Wez,rp; Ocr**—common
Polygonum persicaria* L., B, H, 1888–C, **O—common
Polygonum punctatum Ell., H[*P. acre* HBK.], 1907–C, **Pwt; Wrp**—frequent
Polygonum ramosissimum Michx., B, H, 1902–C, **Orc**—rare
Polygonum scandens L., H[*P. dumetorum* L. var. *scandens* (L.) Gray], 1890–C, **Twf,ed; Our**—common
Polygonum virginianum L., B, H, 1897–C, **Tmf,wf**—common
Rumex acetosella* L., B, H, 1897–C, **Our—frequent
Rumex altissimus Wood, H, 1897–C, **Pwt; Wez,rp; O**—common
Rumex crispus* L., B, H, 1888–C, **Pms,wt; Wez,rp,md; O—common
Rumex mexicanus Meisner, 1904–C, **Twf; Pwt**—rare
**Rumex obtusifolius* L., 1912–1912
Rumex orbiculatus Gray, B[*Rumex brittanica* L.]
Rumex patientia* L., 1937–C, **Ops—rare

Rumex stenophyllus Ledeb., 1999–C, **Pwt; Oof**—infrequent
Rumex verticillatus L., H, 1999–C, **Twf**—rare

PORTULACACEAE
Claytonia virginica L., B, H, 1893–C, **Tmf,wf** –common
Portulaca oleracea* L., H, 1888–C, **Our—common

PRIMULACEAE
Androsace occidentalis L., 1998–C, **Our,rc**—rare
Lysimachia ciliata L., B, H[*Steironema ciliatum* (L.) Raf.], 1988–C, **Twd,ed; Pms; Wrp; Orw,of**—frequent
Lysimachia hybrida Michx., H[*Steironema lanceolatum* (Walt.) Gray var. *hybridum* (Michx.) Gray], 1907–C, **Oof**—rare
Lysimachia nummularia* L., 1892–C, **Twf—rare
Lysimachia quadriflora Sims, B[*L. longifolia* Pursh.], H[*Steironema quadriflorum* (Sims)], 1878–C, **Pms,wt**—infrequent
Lysimachia terrestris (L.) BSP., 1907–1907
Lysimachia thyrsiflora L., B, H, 1998–C, **Pwt; Wez**—rare

RANUNCULACEAE
Actaea pachypoda Ell., B[*A. alba* Bigel.], H[*A. alba* (L.) Bigel.], 1881–1890
Actaea rubra (Aiton) Willd., H[*A. spicata* L. var. *rubra* Ait.], 1907–C, **Tmf**—rare
Anemone canadensis L., B[*A. pennsylvanica* L.], H[*A. pennsylvanica* L.], 1881–C, **Ted; Pwt; Orw**—common
Anemone caroliniana Walter, B, H, 1894–1942
Anemone cylindrica Gray, B, H, 1897–C, **Twd; Pdr**—frequent
Anemone quinquefolia L., B[*A. nemorosa* L.], H[*A. nemorosa* L.], 1881–C, **Tdf,mf**—frequent
Anemone virginiana L., H, 1895–C, **Tdf,mf,ed; Pdr**—frequent
Aquilegia canadensis L., B, H, 1881–C, **T; Our**—common
Caltha palustris L., B, H, 1887–C, **Wsp**—rare
Clematis pitcheri T. & G., B[*C. viorna* L.], H, 1902–C, **Ted; Orc**—infrequent
Clematis virginiana L., B, H, 1881–C, **Twf,ed; Orw**—infrequent
Consolida ambigua* (L.) Ball & Heywood, 1902–C, **Wrp—rare
Delphinium tricorne Michx., 1968–1968
Delphinium virescens Nutt., B[*D. azureum* Michx.], H[*D. azureum* Michx.], 1897–C, **Pdr; Ops**—infrequent
Hepatica nobilis P. Miller var. *acuta* (Pursh) Steyerm., B[*H. acutiloba* DC.], H[*Anemone hepatica* L. var. *acuta* (Pursh)], 1881–C, **Tmf**—frequent
Isopyrum biternatum (Raf.) T. & G., B, H, 1881–C, **Tmf,wf**—frequent
Pulsatilla patens (L.) P. Miller ssp. *multifida* (Pritz.) Zemels, H[*Anemone patens* L. var. *hirsutissima* (Pursh)], 1898–1919
Ranunculus abortivus L., H, 1892–C, **Tmf,wf; Our**—common
Ranunculus cymbalaria Pursh, B, H, 1907–1907
Ranunculus flabellaris Raf., B[*R. multifidus* Pursh.], H[*R. lacustris* Beck & Tracy], 1881–C, **Wsz**—rare
Ranunculus pensylvanicus L.f., 2000–C, **Wrp**—rare
Ranunculus repens* L., B, 1994–C, **Orw—rare
Ranunculus sceleratus L., B, 1998–C, **Twf; Wrp**—frequent
Ranunculus septentrionalis Poiret, H, 1881–C, **Tmf,wf**—frequent
Ranunculus testiculatus* Crantz, 1999–C, **Orc—rare
Thalictrum dasycarpum Fischer & Ave-Lall., B[*T. purpurascens* L.; *T. cornuti* L.], H[*T. purpurascens* L.], 1894–C, **Twf; Pms,wt; Orw**—frequent
Thalictrum dioicum L., B, H, 1892–C, **Tmf,wf**—frequent
Thalictrum thalictroides (L.) Eames & Boivin, B[*T. anemonoides* Michx.], H[*Anemonella thalictroides* (L.) Spach], 1887–C, **Tdf,mf**—frequent

RHAMNACEAE
Ceanothus americanus L. var. *pitcheri* T. & G., B, H, 1888–C, **Twd; Pdr,ms**—rare
Ceanothus herbaceus Raf. var. *pubescens* (T. & G.) Shinners, B[*C. ovatus* Bigelow], H[*C. ovatus* Desf. var. *pubescens* Torr. & Gray], 1881–1907
Rhamnus cathartica* L., 1961–C, **T; Our,rw—common
Rhamnus utilis* Decne., 1999–C, **Tes, wf—frequent

ROSACEAE
**Agrimonia eupatoria* L., B, H, 1907–1907
Agrimonia gryposepala Wallr., 1888–C, **Tdf,wd,ed**—frequent
Agrimonia pubescens Wallr., 1881–C, **Tdf**—infrequent
Agrimonia striata Michx., 1894–1907
Amelanchier arborea (Michx.) Fern., B[*A. canadensis* (L.) Torr. & Gray], H[*A. canadensis* (L.) Torr. & Gray], 1882–C, **Tdf,mf,wd,ed**—infrequent
Amelanchier humilis Wieg., 1875–1914
Cotoneaster multiflora* Bunge, 1999–C, **Twd—rare
Crataegus calpodendron (Ehrh.) Medicus, 1891–C, **Twd,ed; Ops**—rare
Crataegus mollis (T. & G.) Scheele, H[*C. coccinea* L. var. *mollis* Torr. & Gray], 1884–C, **Twf,wd,ed; Wrp; Ops**—frequent
Crataegus punctata Schrader ex Link, B[*C. tomentosa* L. var. *punctata* Gray], H, 1893–C, **Twd,ed**—infrequent
Crataegus succulenta Schrader ex Link, 1999–C, **Ops**—rare
Duchesnea indica* (Andrews) Focke, 1994–C, **Tmf,wf; Our—infrequent
Fragaria vesca L. var. *americana* Porter, 1929–C, **Twd**—rare
Fragaria virginiana Duchesne, B, H[*F. virginiana* Duch. var. *illinoensis* (Prince) Gray], 1881–C, **T; P; O**—common
Geum aleppicum Jacq. var. *strictum* (Aiton) Fern., 1998–C, **P; Orc**—rare
Geum canadense Jacq., B[*G. album* Gmel.], H[*G. album* Gmel.], 1883–C, **Tmf,df,ed; Pms,wt**—common
Geum laciniatum Murray, H[*G. virginianum* L.], 1889–1897
Malus ioensis (Wood) Britton, B[*Pyrus coronaria* L.], H[*Pirus coronaria* L.], 1883–C, **Twd,ed; Pdr; Ops**—infrequent
Malus sylvestris* (L.) P. Miller, 1899–C, **Twd,ed; O—frequent
+*Physocarpus opulifolius* (L.) Maxim., 1998–C, **Orw,of**—rare
Potentilla argentea* L., 1948–C, **Our,ps—rare
Potentilla arguta Pursh, B, H, 1894–C, **Pdr,ms**—infrequent
Potentilla norvegica L., B, H, 1888–C, **Pdr,ms; Orw,rc,of**—common
Potentilla recta* L., 1933–C, **O—frequent
Potentilla rivalis Nutt., H[*P. rivalis* Nutt. var. *pentandra* (Engel.) Watson], 1889–1889
Potentilla simplex Michx., B[*P. canadensis* L.], H[*P. canadensis* L.], 1897–C, **Twd,ed; Pms,wt**—frequent
Prunus americana Marsh., B, H, 1887–C, **Ted; Pwt; Orw,of**—common
Prunus pensylvanica L.f., B, H, 1887–1887
Prunus mexicana S. Watson, 1998–C, **Ted; Wrp**—frequent
Prunus serotina Ehrh., B, H, 1881–C, **Tdf,mf,ed; Orw**—common
Prunus tomentosa* Thunb., 1998–C, **Twd,ed; Our—infrequent
Prunus virginiana L., B, H, 1887–C, **Tdf,mf,wd,ed; Orw**—common
Rosa arkansana Porter var. *suffulta* (Greene) Cockerell, H[*Rosa blanda* Ait. var. *arkansana* (Porter) Best], 1902–C, **Pdr,ms; Orw**—frequent
Rosa blanda Aiton, B, 1895–C, **Ted; Pdr,ms; Orw**—frequent
Rosa carolina L., 2000–C, **Ted; Pms; Orw**—frequent
Rosa eglanteria* L., 1926–C, **Twd—rare

Rosa multiflora Thunb. ex Murray, 2000–C, **Twd,ed; Orw,ps**—common
Rosa × *rudiuscula* Greene, 1928–1933
Rosa setigera Michx., 1999–C, **Ted**—rare
Rubus ablatus Bailey, 1924–C, **Ted; Orw**—infrequent
Rubus allegheniensis Porter ex Bailey, 1989–C, **Ted; Wrp; Orw**—infrequent
Rubus caesius* L., 1998–C, **T; Wrp; Oof—rare
Rubus frondosus Bigel., 1993–C, **Ted**—rare
Rubus idaeus L. var. *strigosus* (Michx.) Maxim., B[*R. strigosus* Michx.], 1924–C, **Tes**—rare
Rubus occidentalis L., B, H, 1904–C, **T; P; O**—common
Rubus parvifolius* L., 1888–C, **Tmf,wf,ed; Orw—frequent
Rubus roribaccus (L.H. Bailey) Rydb. in Britton, 1924–1931

RUBIACEAE
Cephalanthus occidentalis L., B, H, 1870–1889
Galium aparine L., H, 1871–C, **T**—common
Galium boreale L., 1998–C, **Tdf,mf**—rare
Galium circaezans Michx., 2000–C, **Tdf,wd**—rare
Galium concinnum T. & G., H, 1873–C, **Tmf,wf**—common
Galium obtusum Bigelow, 1873–C, **Pwt**—frequent
Galium tinctorium L., H[*G. trifidum* L. var. *latifolium* Torr.]
Galium trifidum L., B, H
Galium triflorum Michx., H, 1887–C, **Tmf,wf**—common

RUTACEAE
Ptelea trifoliata L., 1998–C, **Ted**—rare
Zanthoxylum americanum P. Miller, B, H, 1883–C, **T**—common

SALICACEAE
Populus alba* L., 1913–C, **Our,rw—infrequent
Populus deltoides Bartram ex Marsh., B[*P. angulata* Ait.; *P. monilifera* Ait.], H[*P. monilifera* Ait.], 1878–C, **Tmf,wf; Our,rw**—common
Populus grandidentata Michx., H, 1906–C, **Tdf,wd,ed**—infrequent
Populus tremuloides Michx., B, H, 1906–1914
Salix amygdaloides Andersson, 1891–C, **Twf; Wrp; Orw**—frequent
Salix bebbiana Sarg., 1874–C, **Wsp**—rare
Salix discolor Muhl., H, 1874–C, **Pwt; Wrp; Orw**—infrequent
Salix exigua Nutt. ssp. *interior* (Rowlee) Cronq., H[*S. longifolia* Muhl.], 1872–C, **Twf,ed; Pwt; Wrp,md; Orw**—common
Salix fragilis* L., 1913–C, **Wrp; Orw—rare
Salix humilis Marsh., H, 1874–1937
Salix nigra Marsh., H, 1901–C, **Twf; Pwt; Wrp; Orw**—frequent
Salix petiolaris Smith, 1874–1938
Salix rigida Muhl., H[*S. cordata* Muhl.], 1874–C, **Twf,ed; Pwt,rp; Orw**—common

SANTALACEAE
Comandra umbellata (L.) Nutt., B, H, 1882–C, **Twd; Pdr,ms**—frequent

SAXIFRAGACEAE
Heuchera richardsonii L. var. *hirsuticaulis* (Wheelock) Rosend., Butters & Lak., B[*H. hispida* Pursh], H[*H. hispida* Pursh.], 1884–C, **Tdf,ms,wd,es; Pms**—infrequent
Mitella diphylla L., 1897–1897
Parnassia glauca Raf., B[*P. caroliniana* Michx.]
Penthorum sedoides L., B, H, 1892–C, **Twf; Wrp,md; Orw**—infrequent
Ribes americanum P. Miller, B[*R. floridum* L.], H[*R. floridum* L'Her.], 1881–C, **Pwt; Wrp,sp; Orw**—rare
Ribes cynosbati L., H, 1914–C, **Tmf**—rare
Ribes missouriense Nutt. ex T. & G., H[*R. gracile* Michx.], 1887–C, **T; Ops**—common

SCROPHULARIACEAE
Agalinis purpurea (L.) Pennell, B[*Gerardia purpurea* L.], 1907–1907
Agalinis tenuifolia (Vahl) Raf., B[*Gerardia tenuifolia* Vahl.], H[*Gerardia tenuifolia* Vahl.], 1897–C, **Pwt**—infrequent
Castilleja sessiliflora Pursh, B, H, 1886–1927
Chaenorrhinum minus* (L.) Lange, 1943–C, **Orc—infrequent
Chelone glabra L., 1998–C, **Wsp**—rare
Dasistoma macrophylla (Nutt.) Raf., 1942–C, **Ted**—rare
Linaria vulgaris* Hill, H, 1881–C, **Our,rw—rare
Lindernia anagallidea (Michx.) Pennell, 1999–C, **Wmd**—rare
Lindernia dubia (L.) Pennell, H[*Ilysanthes gratioloides* (L.) Bentham], 1883–C, **Wrp,md; Oof**—frequent
Mimulus ringens L., B, H, 1884–C, **Wrp,md**—frequent
Pedicularis canadensis L., B, H, 1881–C, **Tmf,wd**—infrequent
Pedicularis lanceolata Michx., B, H, 1897–C, **Pwt**—rare
+*Penstemon digitalis* Nutt., 1927–C, **Ted; Oof**—rare
Penstemon tubiflorus Nutt., 1951–1951
Scrophularia lanceolata Pursh, 1927–1927
Scrophularia marilandica L., B[*S. nodosa* L.], H[*S. nodosa* L. var. *marilandica* (L.) Gray], 1883–C, **Tmf,wf,wd,ed**—frequent
Tomanthera auriculata (Michx.) Raf., B[*Gerardia auriculata* Michx.], H[*Gerardia auriculata* Michx.], 1883–C, **Pwt**—rare
Verbascum blattaria* L., H, 1889–C, **Twd,ed—rare
Verbascum thapsus* L., B, H, 1888–C, **O—common
Veronica anagallis-aquatica* L., B[*V. anagallis* L.], H[*V. anagallis* L.], 1999–C, **Wsp,rp—rare
Veronica arvensis* L., H, 1998–C, **Our—common
Veronica catenata Pennell, 1883–C, **Wrp,sp**—rare
Veronica peregrina L., B, H, 1873–C, **Twf; Wrp; Ocr**—common
Veronica polita* Fries, 1998–C, **Orw—rare
Veronicastrum virginicum (L.) Farw., B[*Veronica virginica* L.], H[*Veronica virginica* L.], 1888–C, **Tmf,wd,ed; Pms,wt**—frequent

SIMAROUBACEAE
Ailanthus altissima* (P. Miller) Swingle, 2000–C, **Our,rw—infrequent

SOLANACEAE
Datura stramonium* L., B, H[=; *Datura tatula* L.], 1881–C, **Orc—rare
Datura wrightii* Regel, 2000–C, **Wrp—rare
Lycium halimifolium* P. Miller, 1999–C, **Our—rare
**Nicandra physalodes* (L.) Gaertner, 1906–1957
Petunia axillaris* (Lam.) BSP., 1932–C, **Our—rare
Physalis heterophylla Nees, 1889–C, **P; Orw,rc,of**—frequent
**Physalis hispida* (Waterfall) Cronq., H[*P. lanceolata* Michx.], 1942–1942
**Physalis pubescens* L. var. *integrifolia* (Dunal) Waterfall, H[*P. pubescens* L.], 1932–1942
Physalis virginiana P. Miller, B[*P. pennsylvanica* L.], H[=; *P. philadelphica* Lam.], 1881–C, **P; Orw**—common
Solanum americanum P. Miller, B[*S. nigrum* L.], H[*S. nigrum* L.], 1881–C, **O**—common
Solanum carolinense L., H, 1890–C, **O**—frequent
Solanum dulcamara* L., 1914–C, **Twf; Wrp; Our,rw—infrequent
Solanum rostratum* Dunal, 1902–C, **Wrp; Our,rw,rc,of—infrequent

STAPHYLEACEAE
Staphylea trifolia L., B, H, 1881–C, **Tmf**—infrequent

TILIACEAE
Tilia americana L., B, H, 1897–C, **Tmf,wf**—common

ULMACEAE
Celtis occidentalis L., B, H, 1897–C, **Twf**—common
Ulmus americana L., B, H, 1895–C, **Tmf,wf; Our**—common
Ulmus pumila* L., 1973–C, **Ted; Our,rw—common
Ulmus pumila* L. × *U. americana* L., 2000–C, **Ted—rare
Ulmus pumila* L. × *U. rubra* Muhl., 2000–C, **Ted; Our,rw—infrequent
Ulmus rubra Muhl., B[*U. fulva* Michx.], H[*U. fulva* Michx.], 1895–C, **Tmf,wf**—common
Ulmus thomasii Sarg., 1902–1911

URTICACEAE
Boehmeria cylindrica (L.) Sw., 1999–C, **Twf**—rare
Laportea canadensis (L.) Wedd., B[*L. canadensis* Gaudich.], H, 1897–C, **Twf**—common
Parietaria pensylvanica Muhl. ex Willd., H, 1897–C, **Twd; Our,cr**—common
Pilea pumila (L.) Gray, B, H, 1907–C, **Twf; Wsp**—frequent
Urtica dioica L., H[*U. gracilis* Ait.], 1942–C, **Twf; Orw,of**—frequent

VERBENACEAE
Phyla lanceolata (Michx.) Greene, 1907–C, **Twf; Wrp**—infrequent
Verbena bracteata Lag. & Rodr., B[*V. bracteosa* Michx.], H[*V. bracteosa* Michx.], 1882–C, **Our**—common
Verbena canadensis (L.) Britton, H[*V. aubletia* L.f.], 2000–C, **Orc**—rare
Verbena × *deamii* Moldenke, 1999–C, **Orc**—rare
Verbena × *engelmannii* Moldenke, 1909–C, **Wrp; Ops**—rare
Verbena hastata L., B, H, 1882–C, **Pwt; Wrp; Orw**—frequent
Verbena × *moechina* Moldenke, 1894–C, **Orc**—rare
Verbena × *perriana* Moldenke, 1896–1896
Verbena × *rydbergii* Moldenke, 1902–C, **Wrp; Orc**—infrequent
Verbena simplex Lehm., 1952–1952
Verbena stricta Vent., B, H, 1880–C, **Pdr; Orc,ps**—common
Verbena urticifolia L., B, H, 1882–C, **Pwt; Orc,of**—frequent

VIOLACEAE
Viola arvensis* Murray, B, 1998–C, **Orw—rare
+*Viola canadensis* (L.) Britton, 1903–C, **Our**—rare
Viola missouriensis Greene, H[*V. palmata* L. var. *obliqua* (Hill)], 1932–C, **Twf; Our**—rare
Viola nephrophylla Greene, 1907–1931
Viola pedata L., B, H, 1884–1947
Viola pedatifida G. Don, B[*V. delphinifolia* Nutt.], H[*V. pinnatifida* Don], 1881–C, **Pdr**—infrequent
Viola pratincola Greene, H[*V. palmata* L. var. *obliqua* (Hill)], 1897–C, **Our**—rare
Viola pubescens Aiton, B, H, 1881–C, **Tmf,wf**—frequent
Viola rafinesquii Greene, 1999–C, **Our**—rare
Viola sororia Willd., B[*V. cucullata* Ait.], H[*V. palmata* L. var. *obliqua* (Hill)], 1891–C, **Tmf,wf; Our**—common
Viola sororia Willd. × *V. pedatifida* G. Don, 1999–C, **Pdr; Ops**—rare
Viola tricolor* L., 1999–C, **Our—rare
Viola viarum Pollard, H[*V. palmata* L.], 1897–C, **Pdr**—rare

VITACEAE
Ampelopsis brevipedunculata* (Maxim.) Trautv., 2000–C, **Our—rare
Parthenocissus quinquefolia (L.) Planchon, B[*Ampelopsis quinquefolia* (L.) Michx.], H[*Ampelopsis quinquefolia* (L.) Michx.], 1897–C, **T; Wrp; Orw**—frequent
Parthenocissus tricuspidata* (Sieb. & Zucc.) Planchon, 1999–C, **Our—rare
Parthenocissus vitacea (Knerr) A.S. Hitchc., B[*Ampelopsis quinquefolia* (L.) Michx.], H[*Ampelopsis quinquefolia* (L.) Michx.], 1897–C, **T; Pms; Orw**—common
Vitis riparia Michx., H, 1881–C, **T; Orw**—common

ZYGOPHYLLACEAE
**Tribulus terrestris* L., 1940–1962

(MONOCOTS)

ALISMATACEAE
Alisma plantago-aquatica L., B[*A. plantago* L. var. *americanum*], H[*A. plantago* L.], 1907–C, **Wez,md**—infrequent
Echinodorus cordifolius (L.) Griseb., 1998–C, **Wmd**—rare
Sagittaria australis (J.G. Smith) J.K. Small, 1907–C, **Wez,sz; Orw**—rare
Sagittaria brevirostra Mack. & Bush, B[*S. variabilis* Engelm.], H[*S. variabilis* Engelm.], 1871–C, **Wez,sz,rp; Orw**—infrequent
Sagittaria graminea Michx., B, H, 1883–1889
Sagittaria rigida Pursh, H[*S. heterophylla* Pursh]

ARACEAE
Acorus calamus L., H, 2000–C, **Wez**—rare
Arisaema dracontium (L.) Schott, B, H, 1883–C, **Tdf,mf,wf**—infrequent
Arisaema triphyllum (L.) Schott, B[*A. triphyllum* Torr.], H, 1881–C, **Tmf,wf**—common

COMMELINACEAE
Commelina communis* L., 1925–C, **Our,rc—infrequent
Tradescantia bracteata Small, B[*T. virginica* L.], H[*T. virginiana* L.], 1887–C, **Pms,wt; Orw**—infrequent

CYPERACEAE
Bulbostylis capillaris (L.) C.B. Clarke, 1959–1966
Carex aggregata Mack., 1999–C, **Twd**—rare
Carex albursina Sheldon, H[*C. laxiflora* Lam. var. *latifolia* Boott.], 1930–C, **Tmf**—rare
Carex amphibola Steudel var. *turgida* Fern., B[*C. grisea* Wahl.], H[*C. grisea* Wahl.], 1898–C, **Tmf,wf**—common
Carex annectens (Bickn.) Bickn. var. *xanthocarpa* (Bickn.) Wieg., C, **Pwt**—infrequent
Carex atherodes Sprengel, H[*C. trichocarpa* Muhl. ex Willd. var. *imberbis* Gray; *C. trichocarpa* Muhl. ex Willd. var. *aristata* (R. Br.) Bailey], 1938–C, **Pwt; Wez**—frequent
Carex atherodes Sprengel × *C. trichocarpa* Schkuhr, 1999–C, **Wez**—rare
Carex bebbii (Bailey) Fern., 1998–C, **Pwt**—infrequent
Carex bicknellii Britton, H[*C. straminea* Willd. var. *alata* (Torr.) Bailey], 1898–C, **P**—frequent
Carex blanda Dewey, 1897–C, **T**—common
Carex brevior (Dewey) Mack. ex Lunell, H[*C. straminea* Willd. var. *festucacea* (Willd.)], 1928–C, **Ted; P**—common
Carex buxbaumii Wahl., H[*Carex fusca* All.], 1923–C, **Pwt**—rare
Carex cephalophora (Dewey) Dewey, B[*C. cephalophora* Muhl.], H, 1898–C, **Tdf,mf**—frequent
Carex conjuncta Boott, H, n.d.[1890's]–C, **Twf**—infrequent

Carex convoluta Mack., B[*C. rosea* Schk.], 1902–C, **Tdf,mf**—common
Carex crawei Dewey, 1999–C, **Pms; Orw**—rare
Carex crawfordii Fern., 1999–C, **Pwt**—rare
Carex cristatella Britton, H[*C. tribuloides* Wahl. var. *cristata* (Schwein.) Bailey], n.d.[1880's]–C, **Pwt; Orw**—frequent
Carex davisii Schwein. & Torrey, H, 1895–C, **Twf,ed; Wrp**—frequent
Carex eburnea Boott, H, n.d.[1800's]–C, **Tdf,es**—rare
Carex frankii Kunth, 1994–C, **Pwt**—rare
Carex gravida Bailey, H[*C. gravida* Bailey var. *laxifolia* Bailey], 1897–C, **Ted; Orw**—frequent
Carex grayi Carey, B[*C. folliculata* L.], H, 1897–C, **Twf**—common
Carex haydenii Dewey, 1993–C, **Pwt**—infrequent
Carex hirtifolia Mack., H[*C. pubescens* Muhl. in Willd.], 1902–C, **Tmf**—infrequent
Carex hitchcockiana Dewey, 1992–C, **Tmf**—infrequent
Carex hystericina Muhl. ex Willd., B, H[*C. lurida* Wahl. (ISC specimen misidentified)], 1886–C, **Wsp**—rare
Carex jamesii Schwein., 1930–C, **Tdf,mf**—frequent
Carex lacustris Willd., H[*C. riparia* W. Curtis], 1880–C, **Pwt; Orw**—common
Carex laeviconica Dewey, H[*C. trichocarpa* Muhl. var. *laeviconica* (Dewey)], 1878–C, **Twf; Pwt; Orw**—frequent
Carex lanuginosa Michx., B, H, 1879–C, **Pwt; Orw,of**—common
Carex lasiocarpa Ehrh. var. *americana* Fern., H[*C. filiformis* L.], n.d.[1880's]–n.d.
Carex leavenworthii Dewey, 1999–C, **Ted; Ops**—rare
Carex lupulina Muhl. ex Willd., H, 1880–C, **Twf**—rare
Carex meadii Dewey, B[*C. straminea* Schk. var. *meadii*], H[*C. tetanica* Schkuhr var. *meadii* (Dewey) Bailey], 1898–C, **Pdr,ms**—frequent
Carex mesochorea Mack., 1998–C, **Ops**—rare
Carex molesta Mack., 1897–C, **Pwt**—frequent
Carex muskingumensis Schwein., H, 1880–1887
Carex normalis Mack., 1877–C, **Tmf**—infrequent
Carex oligocarpa Willd., 1896–C, **Tmf**—frequent
Carex pensylvanica Lam., H, 1891–C, **Tdf,mf**—common
Carex prairea Dewey, 1938–C, **Pwt**—rare
Carex projecta Mack., 1890–C, **Tmf**—rare
Carex sartwellii Dewey, B[*C. disticha* Huds.], H, 1994–C, **Pwt**—infrequent
Carex sparganioides Muhl. ex Willd., B, H, 1992–C, **Tmf**—infrequent
Carex sprengelii Dewey, B[*C. longirostris* Torr.], H[*C. longirostris* Torr.], 1879–C, **T**—common
Carex stipata Muhl. ex Willd., 1962–C, **Wsp**—rare
Carex stricta Lam., B, H, 1998–C, **Pwt; Wsp**—infrequent
Carex suberecta (Olney) Britton, n.d.–C, **Pwt**—infrequent
Carex tenera Dewey, 1888–C, **Twf**—rare
Carex tetanica Schkuhr, 1993–C, **Pwt**—rare
Carex tribuloides Wahl, B[*C. lagopodioides* Schk.], 1895–C, **Pwt**—infrequent
Carex trichocarpa Schkuhr, H, 1999–C, **Orw**—rare
Carex vesicaria L., C, **Pwt; Wez**—frequent
Carex vulpinoidea Michx., B, H, n.d.[1880's]–C, **Pwt; Orw**—common
Cyperus acuminatus Torrey & Hooker, 1998–C, **Orw,rc**—infrequent
Cyperus aristatus Rottb., H, 1897–C, **Wrp; Our,rc**—frequent
Cyperus diandrus Schrank, H
Cyperus erythrorhizos Muhl., H, 1998–C, **Wrp**—rare
Cyperus esculentus L., H, 1909–C, **Wrp; Our,rc**—common
Cyperus filiculmis Vahl., H, 1993–C, **Ted**—rare
Cyperus odoratus L. var. *squarrosus* (Britton) Gilly, B[*C. michauxianus* Schultes.], 1920–C, **Wrp**—common
Cyperus rivularis Kunth, H[*C. diandrus* Torr. var. *castaneus* (Pursh) Torr.], 1897–C, **Wrp; Orw**—frequent
Cyperus schweinitzii Torrey, H, 1934–1934
Cyperus strigosus L., H[=; *C. strigosus* L. var. *robustior* Kunth], 1881–C, **Wrp; Our,rw**—frequent
Eleocharis acicularis (L.) R. & S., B[*E. acicularis* R. Br.], H
Eleocharis engelmannii Steudel, 1998–C, **Oof**—rare
Eleocharis erythropoda Steudel, B[*E. palustris* R. Br.], H[*E. palustris* (L.) R. Br.], 1998–C, **Pwt; Wez; Orw**—common
Eleocharis macrostachya Britton, 1998–C, **Pwt; Wez; Orw**—infrequent
Eleocharis obtusa (Willd.) Schultes, 1998–C, **Orw**—infrequent
Eriophorum angustifolium Honck., B[*Eleocharis polystachyon* L.], H[*Eleocharis polystachyon* L.]
Hemicarpha micrantha (Vahl) Pax, H, 1951–C, **Wrp**—infrequent
Scirpus acutus Muhl. ex Bigelow, 1974–C, **Pwt**—rare
Scirpus americanus Pers., H[*S. pungens* Vahl.], 1897–1897
Scirpus atrovirens Willd., B[*S. atrovirens* Muhl.], H, 1873–C, **Pwt; Orw,of**—common
Scirpus fluviatilis (Torrey) Gray, H, 2000–C, **Wez**—frequent
Scirpus pendulus Muhl., H[*Eriophorum lineatum* (Michx.) Benth. & Hook.], 1938–C, **Pwt; Orw,of**—frequent
Scirpus validus Vahl var. *creber* Fern., B, H[*S. lacustris* L.], 1881–C, **Pwt; Wez**—frequent

DIOSCOREACEAE
Dioscorea villosa L., B, H, 1898–C, **Tmf**—infrequent

HYDROCHARITACEAE
Elodea canadensis Michx., H
Elodea nuttallii (Planchon) St. John, 1886–C, **Wsz**—rare

IRIDACEAE
Belamcanda chinensis* (L.) DC., H, n.d.[1800's]–C, **Tmf,wd—rare
Iris shrevei Small, B[*I. versicolor* L.], H[*I. versicolor* L.], 1881–C, **Pwt**—frequent
Sisyrinchium campestre Bickn., B[*S. bermudiana* L. var. *anceps*; *S. bermudiana* L.var. *albidum*; *S. bermudiana* L. var. *mucronatum*], H[*S. angustifolium* Mill.], 1877–C, **Pdr,ms; Oof**—frequent

JUNCACEAE
Juncus balticus Willd. var. *littoralis* Engelm., 1998–C, **Pwt**—rare
Juncus dudleyi Wieg., 1891–C, **Pwt**—frequent
Juncus nodosus L., 1998–C, **Pwt**—rare
Juncus tenuis Willd., B, H, 1929–C, **Ted; Our,rw**—common
Juncus torreyi Cov., H[*J. nodosus* L. var. *megacephalus* Torr.], 1891–C, **Pwt**—frequent
Luzula multiflora (Retz.) Lej., 1901–1901

JUNCAGINACEAE
Triglochin maritimum L., H

LEMNACEAE
Lemna minor L., B, H, 1878–C, **Wez,sz,md**—common
Lemna trisulca L., H, 1986–C, **Wez,sz,md**—frequent
Spirodela polyrhiza (L.) Schleiden, B[*Lemna polyrrhiza* L.], H, 1998–C, **Wez,sz**—rare
Wolffia columbiana Karsten, 1998–C, **Wsz**—rare

LILIACEAE
Allium canadense L., B[*A. canadense* Kalm.], H, 1895–C, **Tmf,wf; Pms,wt**—frequent

Allium tricoccum Aiton, B, H, n.d.[1800's]–C, **Tmf**—infrequent
Allium vineale* L., 1998–C, **Our,rw—rare
Asparagus officinalis* L., H, 1892–C, **Pdr,ms; Orw—infrequent
Convallaria officinalis* L., 1998–C, **Ted; Our—rare
Erythronium albidum Nutt., B, H, 1884–C, **Tmf,wf**—common
+*Erythronium americanum* Ker-Gawl., 1997–C, **Tmf**—rare
Hemerocallis fulva* (L.) L., 1998–C, **Orw—frequent
Hypoxis hirsuta (L.) Cov., B[*Hypoxys erecta* L.], H[*H. erecta* L.], 1884–C, **Pms,wt**—rare
Lilium michiganense Farw., B[*L. superbum* L.], H[*L. canadense* L.; *L. superbum* L.], 1885–C, **Tmf; Pwt**—rare
Lilium philadelphicum L. var. *andinum* (Nutt.) Ker-Gawl., B, H, 1909–1929
Maianthemum canadense Desf., H
Ornithogalum umbellatum* L., 1999–C, **Tmf—rare
Polygonatum biflorum (Walter) Ell., B[*P. giganteum* Dietrich.], H[*P. commutatum* (Schyult.) Dietr.], 1881–C, **Tmf,wf,wd,ed; Orw**—common
Scilla siberica* Andr., 1969–C, **Our—infrequent
Smilacina racemosa (L.) Desf., B, H, 1881–C, **Tmf,wf,wd**—common
Smilacina stellata (L.) Desf., B, H, 1878–C, **Twf**—frequent
Smilax ecirrhata (Engelm. ex Kunth) S. Wats., 1895–C, **Tmf,wf,wd**—frequent
Smilax herbacea L., B, H[=; *S. herbacea* var. *pulverulenta* (Michx.) Gray], 1877–C, **Tmf,wf,wd**—infrequent
Smilax hispida Muhl., B, H, 1892–C, T; **Wrp**—common
Trillium cernuum L., H
Trillium flexipes Raf., H[*T. erectum* L.]
+*Trillium nivale* Riddell, 2001–C, **Tmf**—rare
Trillium recurvatum Beck, 1958–1958
Uvularia grandiflora Small, B[*U. grandiflora* Smith], H, 1881–C, **Tmf,wf**—infrequent

NAJADACEAE
Najas flexilis (Willd.) Rostk. & Schmidt, H, 1886–C, **Wsz**—rare
Najas guadalupensis (Sprengel) Magnus, 1999–C, **Wsz**—rare

ORCHIDACEAE
Coeloglossum viride (L.) Hartman var. *virescens* (Muhl. ex Willd.) Luer, B[*Habenaria viridis* R. Br. var. *bracteata* Richenbach.], H[*Habenaria bracteata* (Willd.) R. Br.], 1886–C, **Tmf,es,ed**—rare
Corallorhiza odontorhiza (Willd.) Nutt., 1972–C, **Tdf,mf**—rare
Cypripedium calceolus L. var. *pubescens* (Willd.) Correll, B[*C. pubescens* Willd.], H[*C. pubescens* Willd.], 1870–1907
Cypripedium candidum Muhl. ex Willd., B, H, 1881–1924
Cypripedium reginae Walter, B[*C. spectabile* Swartz.], H, 1870–1883
Epipactis helleborine* (L.) Crantz, 2000–C, **Our—rare
Galearis spectabilis (L.) Raf., B[*Orchis spectabilis* L.], H[*Orchis spectabilis* L.], 1873–C, **Tmf,wf**—infrequent
Liparis loeselii (L.) L.C. Rich., 2000–C, **Twd**—rare
Malaxis unifolia Michx., n.d.–n.d.
Platanthera hookeri (Torrey ex Gray) Lindley, n.d.–n.d.
Platanthera hyperborea (L.) R. Br. var. *huronensis* (Nutt.) Luer, 1890–1890
Platanthera praeclara Sheviak & Bowles, B[*Habenaria leucophaea* Gr.], H[*Habenaria leucophaea* (Nutt.) Gray], 1873–1907
Spiranthes cernua (L.) L.C. Rich. B, H, 1877–C, **Pwt**—rare
Spiranthes magnicamporum Sheviak, 1993–C, **Pwt**—rare
Spiranthes ovalis Lindley, 1993–C, **Twd,ed; Orc**—rare

POACEAE
×*Agrohordeum macounii* (Vasey) LePage, 1962–1964
**Agropyron cristatum* (L.) Gaertner, 1966–1966
**Agropyron pectiniforme* R. & S., 1961–1961
Agropyron repens* (L.) Beauv., B[*Triticum repens* L.], H, 1871–C, **Pms; Orw—common
Agropyron smithii Rydb., 1874–C, **Orw,of**—infrequent
Agropyron trachycaulum (Link) Malte, 1890–1962
Agrostis gigantea* Roth, B[*A. vulgaris* With.], H[*A. alba* L.; *A. alba* L. var. *vulgaris* (With.) Thurb. in Watson], 1890–C, **Pms,wt; Oof—frequent
Agrostis hyemalis (Walter) BSP., 1895–C, **Tes**—rare
Agrostis hyemalis (Walter) BSP. var. *tenuis* (Tuckerman) Gl., H[*A. hyemal* (Walt.) B.S.P.], 1942–1942
Agrostis perennans (Walter) Tuckerman, H, 1878–C, **Tdf,wd,ed**—frequent
Agrostis stolonifera* L. var. *palustris* (Hudson) Farw., 2000–C, **Twf; Wrp—infrequent
Alopecurus aequalis Sobol., 2000–C, **Wrp**—rare
Alopecurus carolinianus Walter, 1920–1920
Alopecurus pratensis* L., 1890–C, **Wrp—rare
Andropogon gerardii Vitman, B[*A. furcatus* Muhl.], H[*A. provincialis* Lam.], 1871–C, **Twd,ed; P; Orw**—common
**Anthoxanthum odoratum* L., B
Aristida basiramea Engelm. ex Vasey, 1896–1896
Aristida longespica Poiret, H[*A. gracilis* Ell.]
Aristida oligantha Michx., 1934–C, **Orw,rc**—frequent
**Arrhenatherum elatius* (L.) Presl, 1891–1900
Avena fatua* L., 1896–C, **Orc—rare
Bouteloua curtipendula (Michx.) Torrey, B[*B. curtipendula* Gray], H, 1987–C, **Ted; Pdr**—infrequent
Bouteloua hirsuta Lag., B, H, 1871–C, **Pdr**—rare
Brachyeletrum erectum (Schreber) Beauv., H, 1896–C, **Tmf**—rare
**Bromus catharticus* Vahl, 1890–1890
**Bromus commutatus* Schrader, 1859–1897
Bromus japonicus* Thunb. ex Murray, 1890–C, **Orc,cr,of—frequent
Bromus inermis* Leysser, 1890–C, **Ted,wd; P; O—common
Bromus kalmii Gray, B, H
Bromus latiglumis (Shear) A.S. Hitchc., 1887–C, **Tmf,wf**—rare
Bromus pubescens Muhl. ex Willd., B[*B. ciliatus* L. var. *purgans*], H[*B. ciliatus* L. var. *purgans* (L.) Gray], 1871–C, **Tdf**—rare
**Bromus secalinus* L., B, H, 1871–1898
Bromus tectorum* L., 1894–C, **Orc,cr,of—frequent
+*Buchloe dactyloides* (Nutt.) Engelm., 1959–C, **Our**—infrequent
Calamagrostis canadensis (Michx.) Beauv., H, 1894–C, **Pwt**—frequent
Calamagrostis inexpansa Gray, 1999–C, **Pwt**—rare
Calamovilfa longifolia (Hooker) Scribner, H, 1889–1889
Cenchrus longispinus (Hackel) Fern., H[*C. tribuloides* L.], 1875–C, **Orw,rc**—infrequent
Chloris verticillata* Nutt., 1947–C, **Our,rw—rare
Cinna arundinacea L., H, 1873–C, **Twf**—common
Cynodon dactylon* (L.) Pers., 1923–C, **Wrp; Our—rare
**Cynodon transvaalensis* Burtt-Davy., 1934–1934
Dactylis glomerata* L., B, H, 1882–C, **O—common
Diarrhena americana Beauv. var. *obovata* Gl., H[*D. diandra* (Michx.)], 1998–C, **Tdf,mf,wf**—infrequent
Dichanthelium acuminatum (Sw.) Gould & Clark, 1999–C, **Oof**—rare
Dichanthelium acuminatum (Sw.) Gould & Clark var. *implicatum* (Scribner) Gould & Clark, B[*Panicum dichotomum* L.], H[*Panicum dichotomum* L.], 1871–C, **Twd; P; Orc**—frequent

Dichanthelium acuminatum (Sw.) Gould & Clark var. *villosum* (Gray) Gould & Clark, 1871–C, **Pwt**—infrequent
Dichanthelium depauperatum (Muhl.) Gould, 1877–1877
Dichanthelium latifolium (L.) Gould & Clark, B[*Panicum latifolium* L.], H[*Panicum latifolium* L.], 1871–C, **Tdf,wd**—rare
Dichanthelium leibergii (Vasey) Freckm., 1870–C, **Pwt**—rare
Dichanthelium oligosanthes (Schultes) Gould, 1999–C, **Pdr**—rare
Dichanthelium oligosanthes (Schultes) Gould var. *scribnerianum* (Nash) Gould, H[*Panicum scoparium* Lam.], 1870–C, **Twd; P; Orw,rc,of**—common
Dichanthelium oligosanthes (Schultes) Gould var. *wilcoxianum* (Vasey) Gould & Clark, 1965–C, **Pdr**—rare
Dichanthelium perlongum (Nash) Freckm., 1896–1907
Digitaria bicornis* (Lam.) R. & S., 1998–C, **Ocr—rare
Digitaria ischaemum* (Schreber ex Schweigger) Schreber ex Muhl., B[*Panicum glabrum* Gaudin], H[*Panicum glabrum* (Schrad.) Gand.], 1887–C, **Our—common
Digitaria sanguinalis* (L.) Scop., B[*Panicum sanguinale* L.], H[*Panicum sanguinale* L.], 1875–C, **Our,cr—common
Echinochloa crusgalli* (L.) Beauv., B[*Panicum crus-galli* L.], H[*Panicum crus-galli* L.], 1888–C, **Pwt; Wrp; Orw,cr,of—common
Echinochloa muricata (Beauv.) Fern., 1871–C, **Pwt; Wrp; Orw,cr,of**—frequent
Eleusine indica* (L.) Gaertner, 1890–C, **Our,cr,ps—rare
×*Elyhordeum iowense* Pohl, 1964–1965
Elymus canadensis L., B, H[=; *E. canadensis* L. var. *glaucifolius* (Muhl.) Gray], 1871–C, **P; Orw**—common
Elymus riparius Wieg., 2000–C, **Twf; Wrp**—rare
Elymus villosus Muhl. ex Willd., H[*E. striatus* Willd.], 1888–C, **Tmf,wf**—common
Elymus virginicus L., H[=; *E. canadensis* L. var. *glabrifolius* Vasey], 1886–C, **Tmf,wf; Pms; Orc**—common
Eragrostis cilianensis* (All.) Link ex E. Mosher, B[*E. poaeoides* Beauv. var. *megastachya*], H[*E. major* Host.], 1871–C, **Our—frequent
Eragrostis frankii C.A. Meyer ex Steudel, B, H, 1875–C, **Wrp**—infrequent
Eragrostis hypnoides (Lam.) BSP., B[*E. reptans* Nees], H, 1870–C, **Wrp**—common
Eragrostis pectinacea (Michx.) Nees, H[=; *E. purshii* Schrad.], 1871–C, **Wrp; Our**—common
Eragrostis poaeoides* Beauv. ex R. & S., B, 1875–C, **Our—infrequent
Eragrostis spectabilis (Pursh) Steudel, 1942–C, **Pdr**—rare
Eragrostis trichodes (Nutt.) Wood, 1951–C, **Orc**—rare
Eriochloa villosa* (Thunb.) Kunth, 1998–C, **Ocr,of—infrequent
Festuca arundinacea* Schreber, 1956–C, **Orw—infrequent
Festuca myuros* L., 2000–C, **Wrp—rare
Festuca obtusa Biehler, H[*F. nutans* Willd.], 1924–C, T—common
Festuca octoflora Walter var. *tenella* (Willd.) Fern., B[*F. tenella* Willd.], H, 1888–1945
Festuca ovina L., 1900–C, **Wrp**—rare
Festuca paradoxa Desv., H[*F. shortii* Kunth], 1871–1871
Festuca pratensis* Hudson, 1902–C, **Wrp—rare
Festuca rubra* L., 2000–C, **Wrp—rare
Festuca trachyphylla* (Hackel) Krajina, 2000–C, **Wrp—rare
Glyceria grandis S. Watson, 1900–C, **Pwt; Wsp**—infrequent
Glyceria septentrionalis A.S. Hitchc., H[*G. fluitans* (L.) R. Br.], 1884–C, **Wez**—rare
Glyceria striata (Lam.) A.S. Hitchc., B[*G. nervata* Trin.], H[*G. nervata* (Willd.) Trin.], 1875–C, **Twf; Pwt**—frequent
Hierochloe odorata (L.) Beauv., B[*Hierochloa borealis* Roem & Schultes]
**Holcus lanatus* L., 1893–1893
Hordeum jubatum L., B, H, 1894–C, **Our,rw,cr**—common
Hordeum pusillum* Nutt., 1917–C, **Orc—infrequent
Hystrix patula Moench, B[*Gymnostichum hystrix* Schreb.], H[*Asprella hystrix* (L.) Willd.], 1895–C, **Tmf**—frequent
Koeleria macrantha (Ledeb.) Schultes, H, 1895–C, **Pdr**—infrequent
Leersia oryzoides (L.) Sw., H[*Homalocenchrus oryzoides* (L.) Poll.], 1884–C, **Pwt; Wez,rp**—common
Leersia virginica Willd., H[*Homalocenchrus virginica* (Willd.) Britt.], 1875–C, **Twf**—common
Leptochloa fascicularis (Lam.) Gray var. *acuminata* (Nash) Gl., 1965–C, **Orc**—infrequent
Lolium perenne* L., H, 1888–C, **Our—infrequent
Lolium perenne* L. var. *italicum* Parn., H[*L. perenne* L. var. *italicum* Vasey], 2000–C, **Wrp—rare
**Lolium temulentum* L., 1880–1880
Miscanthus sacchariflorus* (Maxim.) Hackel, 2000–C, **Orw—infrequent
Muhlenbergia asperifolia (Nees & Meyer) Parodi, 1999–C, **Pwt**—rare
Muhlenbergia bushii Pohl, 1960–C, **Tdf,mf**—infrequent
Muhlenbergia cuspidata (Torrey) Rydb., 1889–C, **Pdr**—rare
Muhlenbergia frondosa (Poiret) Fern., 1889–C, **Ted; Pwt**—common
Muhlenbergia mexicana (L.) Trin., 1889–C, **Tdf; Pdr**—frequent
Muhlenbergia racemosa (Michx.) BSP., B[*M. glomerata* Trin.], H, 1889–C, **Pwt; Orw,rc**—frequent
Muhlenbergia schreberi J.F. Gmelin, H[*M. diffusa* Schreb.], 1896–C, **Ted; Our**—frequent
Muhlenbergia sobolifera (Muhl. ex Willd.) Trin., H
Muhlenbergia sylvatica (Torrey) Torrey ex Gray, H
Muhlenbergia tenuiflora (Willd.) BSP., H, 1889–C, **Tmf**—rare
Oryzopsis racemosa (Smith) Ricker, H[*O. melanocarpa* Muhl.], 1889–C, **Tdf**—rare
Panicum capillare L., B, H, 1934–C, **Pwt; Wrp; Orw,cr,of**—common
Panicum dichotomiflorum Michx., H[*P. proliferum* Lam.], 1875–C, **Pwt; Wrp; Orw,cr,of**—common
Panicum miliaceum* L., 1911–C, **Wrp—rare
Panicum virgatum L., H, 1934–C, **Pmf,wf; Orw**—common
Paspalum setaceum Michx. var. *ciliatifolium* (Michx.) Vasey, 1964–C, **Orw**—rare
Phalaris arundinacea L., H, 1907–C, **Pwt; Wez,rp; Orw**—common
Phleum pratense* L., B, H, 1891–C, **Our,rw—frequent
Phragmites australis (Cav.) Trin. ex Steudel, B[*P. communis* Trin.], H[*P. vulgaris* (Lam.) B.S.P.], 1998–C, **Pwt; Orw**—infrequent
Poa annua* L., 1932–C, **Wrp; Our—common
**Poa bulbosa* L., 1929–1929
Poa compressa* L., H, 1907–C, **Pdr,ms—frequent
Poa languida A.S. Hitchc., 1897–1897
Poa palustris L., H[*P. serotina* Ehr.], 1871–C, **Orw**—rare
Poa pratensis* L., B, H, 1880–C, **P; O—common
Poa pratensis* L. ssp. *angustifolia* (L.) Lej., 2000–C, **Wrp—rare
Poa sylvestris Gray, 1871–C, **Twf**—rare
Poa trivialis* L., 1960–C, **Orw—rare
Poa wolfii Scribner, 1897–C, **Wsp**—rare
Puccinellia distans* (L.) Parl., 2000–C, **Wrp—rare
Schizachyrium scoparium (Michx.) Nash, B[*Andropogon scoparius* Michx.], H, 1871–C, **Ted,wd; Pdr**—frequent
Sclerochloa dura* (L.) Beauv., 2000–C, **Wrp—rare
Setaria faberi* Herrm., 1949–C, **O—common
Setaria glauca* (L.) Beauv., H, 1883–C, **O—common
Setaria italica* (L.) Beauv., H, 1888–C, **Pms; Ocr—infrequent
Setaria viridis* (L.) Beauv., B, H, 1900–C, **O—common
Setaria verticillata* (L.) Beauv., 1927–C, **Our,cr—rare

Sorghastrum nutans (L.) Nash, B[*Sorghum nutans* Gray], H[*Chrysopogon nutans* (L.) Benth.], 1883–C, **Ted**; **P**—common
Sorghum bicolor* (L.) Moench, 1890–C, **Oof,cr; **Wrp**—rare
**Sorghum halepense* (L.) Pers., 1890–1890
Spartina pectinata Link, B[*S. cynosuroides* Willd.], H[*S. cynosuroides* (L.) Willd.], 1870–C, **Pwt**; **Orw**—frequent
Sphenopholis obtusata (Michx.) Scribner, H[*Eatonia obtusata* (L.) Pers.], 1962–C, **Tes**; **Pwt**—frequent
Sphenopholis obtusata (Michx.) Scribner var. *major* (Torrey) K.S. Erdman, 1871–C, **Twf,wd**; **Orc**—frequent
Sporobolus asper (Michx.) Kunth, H, 1896–C, **Pdr**; **O**—frequent
Sporobolus cryptandrus (Torrey) Gray, H, 1972–C, **Orw,rc**—rare
Sporobolus heterolepis (Gray) Gray, H, 1875–C, **P**—infrequent
Sporobolus neglectus Nash, 1873–C, **Our,rw,rc**—rare
Sporobolus vaginiflorus (Torrey ex Gray) Wood, H[*S. vaginaeflorus* (Torr.) Vasey], 1896–C, **Our,rw,rc**—rare
Stipa spartea Trin., B, H, 1875–C, **Pdr**; **Orw**—frequent
Stipa viridula Trin., 1891–1976
Tridens flavus (L.) A.S. Hitchc., 1980–C, **Twd**; **Oof**—rare
Zizania aquatica L., H, 1887–1892

PONTEDERIACEAE
Heteranthera dubia (Jacq.) MacM., 1880–1889
Pontederia cordata L., H, n.d.[1880's]–n.d.

POTAMOGETONACEAE
Potamogeton foliosus Raf., 1889–C, **Wsz**—rare
Potamogeton gramineus L., H[*P. heterophyllus* Schreb.; *P. obtusifolius* Mertens and Koch (ISC specimen misidentified)], n.d.[1800's]–n.d.
Potamogeton illinoensis Morong, H[=; *P. lucens* L.]
Potamogeton nodosus Poiret, n.d.[1800's]–C, **Wsz,md**—frequent
Potamogeton pectinatus L., 1998–C, **Wsz**—infrequent
Potamogeton pusillus L., 1998–C, **Wsz**—rare
Potamogeton zosteriformis Fern., H[*P. zosteraefolius* Schum.], 1999–C, **Wsz**—rare

SPARGANIACEAE
Sparganium chlorocarpum Rydb., H[*S. simplex* Huds. (ISC specimen misidentified)], 1885–C, **Wez**—rare
Sparganium eurycarpum Engelm., H, 1889–C, **Wez**—frequent

TYPHACEAE
Typha angustifolia L., 1998–C, **W**; **Orw**—frequent
Typha × *glauca* Godron, 2000–C, **W**; **Orw**—frequent
Typha latifolia L., B, H, 1889–C, **W**; **Orw**—common

ZANNICHELLIACEAE
Zannichellia palustris L., H, 1889–C, **Wsz**—rare

Appendix B. Historic reports, ISC specimens and plant species observations excluded from official list of Ames vascular plant species. Names in brackets indicate nomenclature not in current usage. Reason for exclusion: 1 = unable to resolve synonymy; 2 = no evidence for naturalization; 3 = reported in Ames by Bessey (1871) or Hitchcock (1890) at a site outside our current (1990–2000) inventory boundary; 4 = known from Iowa but occurrence in central Iowa is unlikely; 5 = occurrence in Iowa is unlikely; 6 = unable to verify identification of species from herbarium material.

A) Published reports in Bessey (1871)

Asplenium rhizophyllum L. [*Camptosorus rhizophyllus* Link.] 3
Aster dumosus L. 4
Aster patens Aiton 5
Athyrium thelypterioides (Michx.) Desv. [*Asplenium thelypteroides* Michx.] 4
[*Arabis hesperidoides* Gray] 1
Carex adusta Boott. 5
Carex bromoides Willd. [*Carex bromoides* Schk.] 5
[*Crataegus tomentosa* L.] 1
Dichanthelium xanthophysum (Gray) Freckmann [*Panicum xanthophysum* Gray] 5
Equisetum palustre L. 5
Fagopyrum esculentum Moench. 2
Helianthus giganteus L. × *mollis* Lam. [*Helianthus doronicoides* Lam.] 5
Lepidium ruderale L. 5
Linum usitatissimum L. 2
[*Lappa officinalis* All. var. *major*] 1
Lobelia paludosa Nutt. 5
Panicum rigidulum Nees [*Panicum agrostoides* L.] 5
[*Phaseolus diversifolius* Pers.] 1
[*Phaseolus perennis* Walt.] 1
[*Physalis viscosa* L.] 1
Polypodium virginianum L. [*Polypodium vulgare* L.] 3
Prenanthes crepidinea Michx. [*Nabalus crepidinus* DC.] 5
[*Ribes rotundifolium* Michx.] 5
[*Rosa lucida* Ehrhart] 1
[*Rubus villosus* Ait.] 1
Sambucus racemosa L. ssp. *pubens* (Michx.) House [*Sambucus pubens* Michx.] 4
Sanicula marilandica L. 4
Vitis vulpina L. [*Vitis cordifolia* Michx.] 4

B) Published reports in Hitchcock (1890)

Agalinis nuttallii Shinners [*Gerardia longifolia* Benth.] 5
Asclepias engelmanniana Woodson [*Acerates floridana* (Lam.)] 5
Aesculus glabra Willd. 3
Artemisia campestris L. ssp. *caudata* (Michx.) Hall & Clem [*Artemisia caudata* Michx.] 3
Beckmannia syzigachne (Steudel) Fern. [*Beckmannia erucaeformis* (L.) Host var. *uniflorus* Scrib. in Vasey] 4
Blephilia hirsuta (Pursh) Bentham 3
Brasenia schreberi J.F. Gmelin [*Brasenia nymphoides* (Thunb.) Ball] 3
Bromus ciliatus L. 4
Carex intumescens Rudge 4
Crataegus tomentosa L. 1
Eleocharis cyperinum L. 1
Fagopyrum esculentum Moench 2
Foeniculum vulgare Hill [*Foeniculum officinale* L.] 2
[*Helianthus strumosus* L. var. *mollis* (Willd.) Torr. & Gray] 1
[*Heteranthera graminea* (Michx.) Vahl.] 1
Hydrophyllum appendiculatum Michx. 3
Ipomoea purpurea (L.) Roth 2
Lechea minor L. 5
Linum usitatissimum L. 2
Lycopus rubellus Moench. 5
Megalondonta beckii (Torrey ex Sprengel) Greene [*Bidens beckii* Torr. in Sprengel] 3
Myriophyllum spicatum L. 3
Nuphar luteum (L.) Sibth. and Smith ssp. *variegatum* (Engelm. ex Dur.) E. O. Beal [*Nymphaea advena* Solander] 3
Nymphaea tuberosa Paine [*Castalia tuberosa* (Paine) Greene] 3
Oenothera rhombipetala Nutt. ex T. & G. 3
Parnassia glauca Raf. [*Parnassia caroliniana* Michx.] 3
Phalaris canariensis L. 2
[*Polygonum amphibium* L.] 1
Potamogeton nodosus Poiret [*Potamogeton fluitans* Roth.] 3
Potentilla anserina L. 3
Quercus muhlenbergii Engelm. 3
Ranunculus acris L. 2
Raphanus sativus L. 2
[*Rubus villosus* Ait.] 1
Rumex maritimus L. 3
Senecio obovatus Muhl. ex Willd. [*Senecio aureus* L. var. *obovatus* (Muhl.) Torr. & Gray] 5
Senecio pauperculus Michx. [*Senecio aureus* L. var. *balsamitae* (Muhl.) Torr. & Gray] 3
Silphium integrifolium Michx. 3
Sphenopholis nitida (Biehler) Scribn. [*Eatonia pennsylvanica* (Sprengel)] 5
Trillium nivale Riddell 3
Vallisneria americana Michx. [*Vallisneria spiralis* L.] 3

C) Herbarium Voucher Specimens (ISC)

Amaranthus hybridus L. 2
Anaphalis margaritacea (L.) Bentham & Hooker 6
Anethum graveolens L. 2
Arabis lyrata L. 4
Berberis amurensis Rupr. 2
Berberis esculenta 2
Berberis fischeri 2
Berberis macrophylla 2
Carum carvi L. 2
Centaurea calcitrapa L. 1, 2
Cicer arietinum L.
Cotinus obovatus Raf. 2
Crataegus monogyna Jacq. 2
Cucurbita maxima Duches. ex Lam. 2
Cucurbita pepo L. 2
Cuscuta coryli Engelm. 6
Elymus submuticus (Hook.) Smyth 6
Foeniculum vulgare Hill 2
Gentiana alba Muhl. × *G. puberulenta* J. Pringle 6
Hordeum vulgare L. 2
Linum usitatissimum L. 2
Lonicera prolifica (Kirchner) Rehder 2

Appendix B. Continued.

Morus nigra L. 1, 6
Nothoscordum bivalve (L.) Britton 6
[*Oenothera biennis* L.] 1, 6
Phalaris canariensis L. 2
Raphanus sativus L. 2
Salix alba L. 2
Secale cereale L. 2
Shepherdea argentea (Pursh) Nutt. 2
Silene gallica L. 5, 6
Sisyrinchium angustifolium Miller 6
Smilax rotundifolia L. 5, 6

D) Observations (1990–2000)

Avena sativa L. 2
Borago vulgaris L. 2
Brassica oleracea L. 2
Filipendula rubra (Hill) B.L. Robinson 2
Glycine max (L.) Merr.
Lycopersicon esculentum P. Miller 2
Raphanus sativus L. 2
Syringa vulgaris L. 2
Taxus sp. 2
Triticum aestivum L. 2
Zea mays L. 2
Solanum jamesii Torr. 2
Sorghum sudanense (Piper) Stapf 2
Symphoricarpos albus (L.) Blake 2
Syringa persica L. 2
Syringa vulgaris L. 2
Tragopogon porrifolius L. 6
Trifolium medium L. 2
Trifolium striatum L. 2
Tripsacum dactyloides (L.) L. 2
Viburnum dentatum L. 4
Vicia cracca L. 2

Appendix C. Descriptions and map (fig. 3) of sites containing significant plant assemblages in Ames, Iowa. Sites 1–26 currently exist; the plant communities of sites B and H have largely been destroyed. All sites occur in Story County except for the west end of site 21.

No.	Site Name	Location	Habitat Types	Rare and Infrequent Plant Species
1	Cooper's Marsh	T84N R23W sec 21 se1/4 sw1/4 sw1/4; 42°03′50″N, 93°32′10″W	Pwt; Wsz, ez	*Agalinis tenuifolia, Campanula aparinoides, Carex atherodes* × *trichocarpa, C. crawei, C. crawfordii, Potamogeton zosteriformis, Tomanthera auriculata, Utricularia vulgaris*
2	Ketelsen Marsh	T84N R23W sec 31 ne1/4; 42°02′40″N, 93°34′00″W	Pwt; Wsz, ez	*Bidens vulgata, Boltonia decurrens, Carex bebbii, C. stricta, C. suberecta, Echinodorus cordifolius, Eleocharis macrostachya, Eupatorium perfoliatum, Glyceria septentrionalis, Hibiscus laevis, Juncus nodosus, Lysimachia thyrsiflora, Pedicularis lanceolata, Scirpus fluviatilis, Solidago riddellii, Sparganium chlorocarpum, S. eurycarpum, Spirodela polyrhiza*
3	Peterson Pits	T84N R24W sec 13 w1/2 and ne1/4; 42°05′10″N, 93°35′40″W	Twf, wd; Pdr; Wez, sz, rp; Orc	*Agastache scrophulariifolia, Androsace occidentalis, Arisaema dracontium, Boehmeria cylindrica, Carex leavenworthii, Clematis pitcheri, Dracocephalum parviflorum, Echinocystis lobata, Eragrostis trichodes, Geum aleppicum* var. *strictum, Hemicarpha micrantha, Lilium michiganense, Najas guadalupensis, Plantago patagonica, Potamogeton foliosus, Sium suave, Spiranthes ovalis, Strophostyles helvula, Verbena* × *deamii, V.* × *rydbergii, V.* × *moechina, Zannichellia palustris*
4	Raymond-Rolling Prairie	T84N R24W sec 14 e1/2; 42°05′10″N, 93°36′10″W	Pdr, ms	*Asclepias viridiflora, Asplenium rhizophyllum, Aster azureus, Astragalus crassicarpus, Cirsium hillii, Croton glandulosa, Dalea candida, Eragrostis spectabilis, Gentiana puberulenta, Helianthemum bicknellii, Lespedeza leptostachya, Linum sulcatum, Mirabilis albida, M. hirsuta, Nothocalais cuspidata, Viola pedatifida, V. viarum*
5	Hallett's Quarry	T84N R24W sec 22; 42°04′00″N, 93°37′30″W	Twd; Orc	*Cuscuta cephalanthii, Dichanthelium acuminatum* var. *acuminatum, Eclipta alba, Eleocharis engelmannii, Helianthemum bicknellii, Lactuca ludoviciana, Lysimachia hybrida, Verbena canadensis*
6	Inis Grove Park	T84N R24W sec 26 and 35; 42°03′00″N, 93°36′50″W	Tdf, mf, wf, es; Wsp	*Arabis hirsuta, Aralia nudicaulis, Astragalus canadensis, Carex conjuncta, C. normalis, Lilium michiganense, Lonicera dioica* var. *glaucescens, Polygala verticillata, Spiranthes ovalis*
7	North River Valley Park	T84N R24W sec 35 e1/2 and 36 sw1/4; 42°02′20″N, 93°36′00″W	Twf	*Arabis shortii, Botrychium dissectum* f. *dissectum, Botrychium dissectum* f. *obliquum, Panax quinquefolius*
8	Holub Prairie	T83N R23W sec 5 ne1/4; 42°01′50″N, 93°32′30″W	Twd; Pwt	*Agalinis tenuifolia, Carex frankii, Scirpus acutus, Spiranthes cernua, S. magnicamporum*
9	Interstate 35 East–Between Lincoln Way and Highway 30	T83N R23W sec 7 e1/2; 42°01′00″N, 93°34′00″W	Twf, wd	*Asplenium rhizophyllum, Botrychium dissectum* f. *dissectum, Botrychium dissectum* f. *obliquum, Galearis spectabilis, Liparis loeselii*
10	Stargrass Prairie	T83N R23W sec 17 sw1/4; 41°59′40″N, 93°33′10″W	Prairie reconstruction with some natural prairie	*Asclepias amplexicaulis, Cassia marilandica, Paspalum setaceum* var. *ciliatifolium, Prunus mexicana, Rudbeckia subtomentosa*
11	Pohl Memorial State Preserve at Ames High School	T84N R24W sec 34 nw1/4 sw1/4; 42°02′20″N, 93°38′20″W	Pdr, ms	*Asclepias tuberosa* ssp. *interior, A. viridiflora, Aster azureus, A. sericeus, Astragalus crassicarpus, Baptisia bracteata* var. *glabrescens, B. lactea, Bouteloua hirsuta, Calylophus serrulata, Carex meadii, Ceanothus americanus* var. *pitcheri, Dichanthelium oligosanthes* var. *oligosanthes, D. oligosanthes* var. *wilcoxianum, Echinacea pallida, Gentiana puberulenta, Hypoxis hirsuta, Koeleria macrantha, Linum sulcatum, Lithospermum incisum, Pediomelum argophyllum, Nothocalais cuspidata, Tridens flavus, Vernonia baldwinii, Viola pedatifida, V. pedatifida* × *sororia*

Appendix C. Continued.

No.	Site Name	Location	Habitat Types	Rare and Infrequent Plant Species
12	Brookside Park	T83N R24W sec 3 n1/2; 42°01′50″N, 93°37′50″W	Twf	*Carex grayi, Cuscuta pentagona, Juglans cinerea*
13	Pammel Woods	T83N R24W sec 4 nw1/4; 42°02′00″N, 93°39′10″W	Tdf, mf, wf	*Arisaema dracontium, Brachyeletrum erectum, Diarrhena americana* var. *obovata*
14	Emma McCarthy Lee Park	T83N R24W sec 5 ne1/4; 42°01′50″N, 93°39′40″W	Twf, mf, ed	*Arisaema dracontium*
15	Clear Creek Woods	T83N R24W sec 5 ne1/4; 42°01′40″N, 93° 40′10″W	Tdf, mf, wf	*Arisaema dracontium, Napaea dioica*
16	Munn Woods	T83N R24W sec 5 sw1/4; 42°01′30″N, 93°40′30″W	Tdf, mf, wf, es	*Agrostis hyemalis, Campanula aparinoides, Corallorhiza odontorhiza, Gentiana quinquefolia* var. *occidentalis, Monotropa uniflora, Muhlenbergia tenuiflora, Polygala verticillata*
17	Reactor Woods	T84N R24W sec 32; 42°02′40″N, 93°39′50″W	Tdf, mf, wf, es	*Actaea rubra, Arabis canadensis, Aralia racemosa, Asplenium platyneuron, Athyrium felix-femina* var. *angustum, Bromus pubescens, Carex albursina, C. conjuncta, C. hirtifolia, C. hitchcockiana, C. sparganioides, Coeloglossum viride* var. *virescens, Diarrhena americana* var. *obovatus, Dichanthelium latifolium, Dryopteris carthusiana, Galearis spectabilis, Gentiana alba, G. andrewsii, Hieracium scabrum, Juglans cinerea, Lonicera dioica* var. *glaucescens, Oryzopsis racemosa, Panax quinquefolius, Populus grandidentata, Taenidia intergerrima*
18	Union Pacific Railroad (North)	T84N R24W sec 16, 21 and 28; 42°03′50″N, 93°38′50″W	Pms, wt	*Carex sartwellii, Lilium michiganense, Oxypolis rigidior, Sium suave, Symphoricarpos occidentalis*
19	Northridge Seep	T84N R24W sec 33 nw1/4 nw1/4 nw1/4; 42°02′50″N, 93°39′20″W	Wsp, rp	*Aster prenanthoides, Caltha palustris, Campanula aparinoides, Carex stipata, C. stricta, C. tenera* var. *echinoides, Chelone glabra, Poa sylvestris, P. wolfii, Salix bebbiana, Silene nivea*
20	Squaw Creek	T84N R24W sec 29 e1/2 and sec 20 w1/2; 42°03′50″N, 93°40′10″W	Tdf, mf, wf, es, ed; Pdr; Wrp	*Asplenium rhizophyllum, Botrychium dissectum* f. *obliquum, Calylophus serrulata, Carex conjuncta, C. grayi, C. lupulina, Cuscuta pentagona, Elodea nuttallii, Gnaphalium obtusifolium, Hedeoma pulegioides, Hemicarpha micrantha, Iodanthus pinnatifidus, Lilium michiganense, Linum sulcatum, Mirabilis albida, M. hirsuta, Muhlenbergia bushii, Paronychia canadensis, Spiranthes ovalis, Veronica anagallis-aquatica, V. catenata*
21	Union Pacific Railroad (West)	T84N R24W sec 31 sw1/4; T84N R25W sec 36; 42°02′20″N, 93°42′00″W	Pms, wt	*Agalinis tenuifolia, Aster praealtus, Calamagrostis inexpansa, Carex lacustris, C. prairea, C. sartwellii, C. tetanica, C. trichocarpa, Dichanthelium leibergii, Eryngium yuccifolium, Gentiana andrewsii, Gentianella quinquefolia* var. *occidentalis, Geum aleppicum, Helenium autumnale, Lactuca tatarica* ssp. *pulchella, Lilium michiganense, Liatris pycnostachya, Oxypolis rigidior, Prenanthes racemosa, Senecio pseudaureus, Solidago missouriensis, Spiranthes magnicamporum, Symphoricarpos occidentalis, Tomanthera auriculata, Verbena* × *engelmannii*
22	Worle Creek (West)	T83N R24W sec 17 se1/4; 41°59′50″N, 93°39′50″W	Wrp; Ops	*Agastache scrophulariifolia, Carex aggregata, C. eburnea, C. leavenworthii, C. lupulina, Crataegus calpodendron, C. succulenta, Fragaria vesca* var. *americana*
23	Worle Creek (East)	T83N R24W sec 16 w1/2; 42°00′00″N, 93°39′20″W	Tdf, mf, wf, wd, es; Pdr	*Actaea rubra, Arisaema dracontium, Brachyeletrum erectum, Coreopsis tripteris, Dichanthelium latifolium, Oryzopsis racemosa, Ribes cynosbati, Rubus idaeus* var. *strigosus*

Appendix C. Continued.

No.	Site Name	Location	Habitat Types	Rare and Infrequent Plant Species
24	Zumwalt Station City Park	T83N R24W sec 16; 41°59′40″N, 93°40′00″W	Tdf, mf, wd; Ops	*Carex hirtifolia, Fragaria vesca* var. *americana, Hypericum prolificum, Monotropa uniflora, Ribes cynosbati*
25	Black's Prairie	T83N R24W sec 28 nw1/4 nw1/4 sw1/4; 41°58′20″N, 93°39′30″W	Pwt	*Asclepias sullivantii, Carex tetanica, Dichanthelium leibergii, Eryngium yuccifolium, Hypoxis hirsuta, Oxalis violacea, Oxypolis rigidior*
26	Adam's Prairie	T83N R24W sec 21 ne1/4 ne1/4 ne1/4; 41°59′40″N, 93°38′20″W	Pwt	*Carex annectens* var. *xanthocarpa, C. buxbaumii, C. haydenii, C. sartwellii, Eryngium yuccifolium, Gentiana puberulenta, Hypoxis hirsuta*
B	Ames Peat Bog	T84N R24W sec 36 n1/2; 42°02′50″N, 93°35′10″W	Tdf, mf, wf	*Aster puniceus, A. umbellatus, Botrychium dissectum* f. *obliquum, Corallorhiza odontorhiza, Epilobium coloratum, Eupatorium maculatum, Monotropa uniflora, Pedicularis lanceolata, Populus tremuloides*
H	Hayden Farm	T84N R24W sec 27 e1/2 nw1/4; 42°03′40″N, 93°37′50″W	Pdr, ms, wt; Wsp; Orc	*Acorus calamus, Agalinis purpurea, Asclepias sullivantii, Astragalus crassicarpus, Bouteloua hirsuta, Caltha palustris, Cypripedium candidum, Dichanthelium perlongum, Glyceria septentrionalis, Koeleria macrantha, Liatris cylindracea, Lilium michiganense, L. philadelphicum* var. *andinum, Lysimachia terrestris, Pediomelum argophylla, Polygala incarnata, Sagittaria australis, Sium suave*