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A Vascular Flora Of The Swaledale Railroad Prairie In North Central Iowa

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"Railroad prairies" are remnant native grasslands that grow along railroad right-of-ways. The Swaledale railroad prairie, which is in north central Iowa, occurs along the Chicago and Northwestern Railroad Company right-of-way in Cerro Gordo County.

The railroad right-of-way and an abandoned sand pit, which lies adjacent to the railroad embankment, harbor a collection of tallgrass prairie remnants. The sand pit supplied earthen fill which was used to elevate the original railroad embankment, circa 1887. It is noteworthy that the method of excavation for fill material helped to preserve earthen knolls that are covered with original tallgrass prairie.

Plant collections were acquired from the Swaledale railroad prairie from 1976 to 1986. A total of 247 vascular plants, mainly prairie species, were identified from 64 families. Voucher specimens are housed at the University of Wisconsin-Oshkosh Herbarium (OSH). Some duplicate vouchers were donated to the University of Northern Iowa Herbarium (ISTC).

Based on collections and observations it was discovered that two Iowa threatened species, *Valeriana edulis* Nutt. and *Equisetum fluviatile* L., and one endangered species, *Salix pedicellaris* Pursh, grow on the Swaledale railroad prairie.

To illustrate the impact that late 19th century railroad technology had on settlement and the eventual destruction of the prairie ecosytem, a history of the railroad prairie is presented. Sources used to trace a history of the vegetation from presettlement times, circa 1850, to the present include the original land survey records, old newspaper articles, library references and personal interviews.

INDEX DESCRIPTORS: railroad prairie, vascular flora, presettlement vegetation

In 1887 the Mason City and Fort Dodge Railroad was built through the township and a station possessing the euphonious name of "Swaledale" was established within the borders of Pleasant Valley.

From the *History of Cerro Gordo County Iowa* (1910) by J.H. Wheeler

"Railroad prairies" are remnant native grasslands that grow along railroad right-of-ways. The prairie flora inhabiting the ditches along a railroad embankment is inadvertently protected because the right-of-way ditches are generally unavailable for use that would significantly alter the natural habitat.

The railroad system in Iowa aided land development during the period after 1865 when railroads made use of financial assistance provided by the United States government (Houlette, 1970). Establishment of the railroad hastened the demise of Iowa's prairie ecosytem by destroying the natural vegetation cover where tracks were laid and dividing the unbroken expanses of tallgrass prairie. Nineteenth century railroad technology readily facilitated widespread settlement with concomitant farming and prairie destruction.

Ironically, an important part of Iowa's botanical heritage has been preserved by the railway system. In north central Iowa a collection of prairie remnants occupies the right-of-way ditches north of Swaledale. In addition to a rich flora that is represented in part by state threatened and endangered species, the Swaledale railroad prairie supports a diverse fauna, including a small population of Blanding's turtle, *Emydoidea blandingi,* an Iowa threatened species.

METHODS

The principal feature of this report is a catalog of vascular plants, mainly prairie species, which grow without cultivation along the Swaledale railroad right-of-way. Included in the catalog are common weeds, which are labeled as such, and cultivated species which may have escaped and are reproducing spontaneously. Voucher specimens for some plants were not collected because they are exceedingly common and occur throughout the region.

Plant records for the study site are based upon specimens that I observed or collected from 1976 to 1986. Previous records of plants collected from the Swaledale railroad prairie originate from a private collection that were obtained for a 4-H project between 1967 and 1972 by Carol Ames Witt. Although I've collected vouchers for those species which are part of the 4-H collection, the label WITT and the collection dates appear in the catalog to illustrate which species had been previously collected.

Two plants reportedly observed on the Swaledale railroad prairie between 1972 and 1974 are the white lady slipper, *Cypripedium candidum* Muhl., and hepatica, *Hepatica acutiloba* DC. These records are not listed in the catalog of species for lack of vouchers.

Collection sites were made at numerous points in the ditches of the right-of-way through various times of the growing season. Many plants were photographed with 35mm color slide film to further document their presence on the railroad prairie.

Voucher specimens are housed in the University of Wisconsin-Oshkosh Herbarium (OSH). Duplicate vouchers for some species were donated to the University of Northern Iowa (ISTC) through the courtesy of Neil Harriman, curator of OSH.

Nomenclature for scientific binomials follows Gleason and Cronquist (1963) except where names do not conform to the International Code of Botanical Nomenclature or new evidence presents a convincing argument that different names are appropriate. The Cyperaceae, Gramineae and Juncaceae follow Voss (1972); *Equisetum* follows Mickel (1979) and *Salix* follows Argus (1964).

The catalog of species is organized into the Pteriodophytes, Gymnosperms, Monocotyledons and Dicotyledons. Plant families within these groups are alphabetized, as are the genera and species within a family. Each species is recorded with its scientific name and authority.

Roosa and Eilers (1978) were consulted to ascertain which species are part of Iowa's threatened and endangered flora.

A second objective of this report is to discuss the changes in vegetation since presettlement times for the area surrounding the railroad prairie. "Presettlement" in this context is circa 1850, when the original land surveys were conducted for the area that includes the study site. Transcript copies of the original land surveys were obtained from the State Archives of Iowa, Iowa State Historical Department, Des Moines, Iowa.

Library references, old newspaper articles and personal interviews with local residents, in addition to the survey records, were used to trace a history of the vegetation for the Swaledale railroad prairie from presettlement times to the present.

LOCATION, GEOLOGY, WATER RESOURCES AND SOILS

The Swaledale railroad prairie is located in the southwestern quarter of Cerro Gordo County in Pleasant Valley and Mt. Vernon townships. The site, which extends north and south, is approximately 16 kilometers south of Mason City and lies parallel to the Chicago and Northwestern Railroad tracks between section 3, T94N, R21W of the 5th Prime Meridian and section 34, T95N, R21W. The railroad prairie can be entered from the north off a county gravel road in section 34 or from section 3 off County Trunk B-60 where the road and tracks intersect at the small city of Swaledale.

The study site is approximately 2.4 kilometers long and 20 meters wide, or roughly 4.8 hectares. In addition to the railroad right-of-way, an abandoned sand pit was included as part of the study area. The sand pit, which is approximately four hectares, is adjacent to the right-of-way, occupying the middle of section 34.

The Swaledale railroad prairie is located on the northeastern fringe of the Des Moines Lobe. This landform region corresponds to the extension of Late Wisconsinan ice into central and north central Iowa (Prior, 1976). The underlying glacial till and alluvium that mantles the Upper Devonian bedrock were deposited since the Woodfordian glacial period, 12,500 to 14,000 years before the present.

The northern boundary of the Swaledale railroad prairie is on an alluvial bench, while the southern boundary marks an upland outwash plain. In between is floodplain that is part of an ancient drainageway, characterized by prairie swales and marshy surfaces.

Typical features of the local topography are the generally flat horizon, low relief and a gently undulating surface formed by long slopes, rounded ridges and a complex drainage pattern. An unnamed stream drains southeasterly, intersecting the railroad tracks in the northern one-quarter of section 3. Gradient changes in habitat and floristic composition are noticeable where floodplain, stream bench and uplands interconnect.

The soils of the Saude-Marshan-Lawler association in section 34 were formed on loamy and sandy alluvium (Soil Survey, 1981). The abandoned sand pit is on the edge of an alluvial bench in the southeastern one-quarter of section 34. Before the railroad began operation in 1887, most of the fill material, Flagler sandy loam, was used to form the original railroad embankment.

An intermittent stream that drains surface runoff enters the sand pit in the northwest corner. At the southwest corner the drainage of the sand pit connects with a wet swale that is underlain by Talcot clay. Dry-mesic prairie growing on the stream bench abruptly intergrades with wetland vegetation in this soil association.

The Clarion-Webster-Nicollet soil association in section 3 includes soils that were formed in glacial till and local alluvium derived from glacial till. A small wet, calcareous swale in the middle of section 3, underlain by Webster silty clay loam, harbors an association of wet-mesic and wet prairie flora that is adapted to the alkaline macroenvironment.

The surrounding uplands are part of an outwash plain which is mantled with various loams of different water-holding capacities. Most of the land surrounding the railroad prairie is under cultivation.

ORIGINAL LAND SURVEY RECORDS

The original survey of town lines for the Swaledale area was completed in 1849. Section lines were platted in 1853 for the present-day civil townships of Pleasant Valley and Mt. Vernon (Land Survey, 1849 & 1853). Among the various kinds of information contained in the original fieldnotes of the surveyors are descriptions of the vegetation along survey lines. Specific plant names were not mentioned in the fieldnotes for the Swaledale area, but entire communities were recognized.

Numerous references to "prarie" and "marsh" were entered in the fieldnotes by the deputy surveyors to describe the Swaledale area in 1853. According to the survey records "prarie" was present at the quarter and corner posts for sections 3 and 10 in Pleasant Valley township. At the south corner posts between sections 3 and 4 the fieldnotes reveal: "Land gently Rolling Soil first Rate, Prarie".

The land between sections 2 and 3 in Pleasant Valley township is described in the fieldnotes as ". . . low levil and wet soil 3d rate Prarie". "3d rate Prarie" suggests the presence of lowland prairies that interconnected with other wetlands along meandering creeks, sloughs and in grassy depressions called swales. "Prarie" was also noted at the quarter and corner posts for section 34 in Mt. Vernon township.

No reference in the fieldnotes to trees being present provides further evidence of a prairie-dominated landscape. Where trees were absent along survey lines a mound of earth was dug to indicate a boundary: "Set quarter section corner on mound of earth and sod. . . "

Marsh was reported to occupy the area between sections 33 and 34 of Mt. Vernon township: "Enter marsh bears SE Over same bears S.E unfit for cult. [cultivation] Enter another marsh bears SE and connects with others".

The fieldnotes report "willow brush" growing on the fringes of some marshes. The phrase "willow brush" refers to a shrub-carr community dominated by various willows, notably *Salix discolor,* and red-stemmed dogwood, *Cornus amomum.* These shrubs are part of the present-day flora. Based on the survey records, water and wetlands were abundant resources in presettlement times.

Deputy surveyors were instructed to write a summary that characterized a township's natural resources, and thus its settlement potential. The following township summary is for that area of present-day Mt. Vernon:

This township is all prarie with the exception of a little scattering timber on the West side Not enough however to be of any utility to settlers It contains numerous small marshes and some of considerable extent, most of them are unfit for cultivation with out a resort to artificial means. but a small proportion of the marshes in the Township is exhibited on the plat they generally have no particular connection with each other some are very small The creek [Beaver Dam Creek] *is very sluggish crooked and muddy and generally has a margin of willow brush it is fit habitation for beaver and other animals The creek has it source in the large marsh* [Zirbel's Slough] *in the North West part of this township and the North East part of Township 95 Range 22.*

The area of present-day Pleasant Valley township was summarized in this manner:

This Township has a gently Rolling surface soil is of good quality. there are portions that are covered with water and unfit for cultivation. There is one stream [Beaver Dam Creek] *running through the south part of sufficient size for power for machinery with a very small portion of timber in places along its Banks. There is also a creek running through this Township that Heads in the N.W. corner and Leaves the Township in Section 13 which is deep and sluggish mud bottom and is about 20 links wide*

With the exception of a few wooded stream banks and widely scattered oak groves, the original vegetation cover for the Swaledale area prior to settlement was tallgrass prairie. Potholes, kettleholes and extinct glacial drainageways interrupt the upland plain. These lowlands were occupied by a wetlands complex comprised of low prairie, marsh, shrub-carr and sedge meadow. Most of these wetlands have been drained and converted to cropland.

EARLY SETTLEMENT TO MODERN TIMES

The presence of a rich prairie flora along certain portions of the Swaledale railroad right-of-way is evidence that these areas were not cultivated or altered significantly by agricultural practices or railroad activity before or after the railroad became established. Those areas

which contain a greater floristic diversity and that appear least disturbed correspond mainly to lowland prairie and sedge meadow habitats. Because these areas were too wet to be utilized as cropland or suitable pasture they were inadvertently preserved.

On October 18, 1887 a deed was obtained by the Mason City and Fort Dodge Railroad Company to establish a 66 foot right-of-way for rail traffic. In addition to the right-of-way, 3.7 acres of adjacent property was acquired. This acreage, located on a sandy alluvial bench, served as a sand pit that supplied earthen fill to elevate the original railroad embankment in lowland areas. The railroad was completed by 1887 (Wheeler, 1910).

In 1897 the railroad company acquired an additional 6.18 acres of land that enlarged the sand pit. Because of the method of excavation by wheel or skid scrapers, two earthen knolls, covered with mesic to dry-mesic prairie, were preserved at the southwest corner of the sand pit.

The knolls were formed as the surrounding bench was excavated. Later, draft animals, pulling a scraper filled with soil, were driven across a wooden platform that connected the knolls. Midway across the platform the scraper was tripped and the dirt was deposited through a hole in the platform to a waiting wagon below.

The narrow lane separating the two knolls is not very apparent because of some filling in from past erosion and an overgrown vegetation cover, noticeably *Populus tremuloides*. Tallgrass prairie occupies the top of the knolls because here the original vegetation cover was not scraped away.

Smaller knobs that occur further northeast in the sand pit are vegetated with *Agropyron repens* and *Bromus inermis*. The presence of these weedy grasses indicates that these lesser mounds are "spoil piles" composed of unused fill material.

Seasonal ponding occurs on the eastern side of the sand pit where the fill removal has created a shallow seepage. Portions on the west side of the sand pit also become seasonably ponded, although here the soils contain a greater amount of organic muck. Unlike the seasonal pools on the east side of the pit which formed as a result of being excavated, most of the low area on the west side appears to be part of the original landscape surface.

Periodic grass fires along the railroad right-of-way were common in the days of the steam locomotive, especially in the spring. Between 1915 and 1930 two freights and two passenger trains stopped in Swaledale every day. By destroying shrubs and trees the fires may have reduced competition with prairie species. In many instances it was a deliberate practice for the railroad company to begin fires in the ditches of the right-of-way to reduce the amount of woody growth.

The lands surrounding the railroad right-of-way eventually were placed under cultivation or pastured. Cereal crops that were grown then would have included corn, oats, rye and wheat, while flax and hemp were also planted at different times.

An 1894 newspaper article published in the *The Mason City Daily Times-Herald* summarizes the state of agricultural affairs near the turn of the century:

It was only a little over twenty years ago that they commenced to farm it [Pleasant Valley]. *Ten years ago it was practically a prairie. Now nearly every acre of it is fenced and under cultivation. Loaded with big crops this year — oats from 30 to 90 bushels and corn from 20 to 40 bushels — it is indeed a pleasant sight to look upon. Its farmers are making money, fast improving their condition, buying improved strains of stock and learning improved methods of farming. The next few years will see even greater changes. It is good to be a Pleasant Valley farmer.*

The same news article continues with "Land selling for from $30 to $40 an acre in these times means that it is valuable."

Even at the turn of the century there was evidence of enough prairie acres to support a prairie chicken population along the right-of-way. Between 1910 and 1915 local Swaledale residents Alfred Christiensen, Bill Kruggel and Carl "Buck" Leinhaas bagged prairie chickens along the Swaledale railroad prairie.

In 1935 or 1936 my father, Leo Eddy, observed prairie chickens while hunting pheasants along the railroad embankment. Virgil Rice explained that when his family moved to the Swaledale area in 1936, he too observed prairie chickens on the 70 to 75 acres of lowland prairie that lay parallel to the railroad tracks. Today only a few acres of this prairie remain.

In more recent times the Swaledale railroad prairie has supplied some local residents with plants for decorative and medicinal uses.

It is with some irony that the railroad, which divided the unbroken expanses of tallgrass prairie and helped to facilitate early settlement of the land, led to the preservation of the small but significant prairie relicts north of Swaledale today.

RESULTS AND DISCUSSIONS

Of the total number of plants that were collected along the Swaledale railroad prairie from 1976 to 1986, 247 species were identifed from 64 families. Of these there are four pteridophytes, all of of which belong to the genus *Equisetum;* one gymnosperm, *Juniperus virginiana;* 62 monocotyledons and 180 dicotyledons.

The monocots are largely represented by 27 grasses or about 11.0% of the total railroad prairie flora, and 21 Cyperaceae, or 8.5%. The largest dicot family is the Compositae with 45 species, or 18.2% of the total prairie flora. The second largest dicot family is represented by 14 Leguminosae, or 5.7% of the total flora.

Two state threatened and one endangered species grow on the Swaledale railroad prairie. All three are wetland plants. The two threatened species are water horsetail, *Equisetum fluviatile* and valerian, *Valeriana edulis*. Bog willow, *Salix pedicellaris* is a state endangered species.

It is possible that a relict population of the state endangered white lady slipper, *Cypripedium candidum,* could be present on the Swaledale railroad prairie since associated species grow there and two reliable sitings were made between 1972 and 1974.

The Swaledale railroad prairie is comprised of an assortment of discontinuous remnants because the original vegetation cover has been disturbed at various points along the right-of-way. Although the prairie habitats have varying soils and moisture-holding capacities, five basic prairie types are represented along the railroad right-of-way. In the order from driest to wettest they are: dry, dry-mesic, mesic, wet-mesic and wet.

Dry to dry-mesic prairie elements grow on the earthen knolls at the abandoned sand pit and along other well-drained places of the right-of-way. Associated forbs and legumes found here include *Sisyrinchium campestre, Aster azureus, Coreopsis palmata, Rudbeckia hirta, Liatris aspera, Solidago nemoralis, S. rigida, Lithospermum canescens, Amorpha canescens, Lespedeza capitata, Petalostemum purpureum, Anenome cylindrica, Potentilla arguta, Rosa carolina, Physalis longifolia, P. pubescens, Verbena stricta* and *Viola pedata.*

Some of the grasses growing on the dryer sites are *Andropogon gerardi* and *A. scoparius, Panicum lanuginosum, P. oligosanthes, P. leibergii, Sorghastrum nutans* and *Stipa spartea.*

Rare plants that were found growing on dry to dry-mesic prairie remnants included *Asclepias viridiflora, Lechea stricta* and *Psoralea argophylla.*

In contrast to a dry prairie flora, species that inhabit the mesic remnants include *Hypoxis hirsuta, Allium canadense, Tradescantia ohiensis, Aster ericodes, A. novae-angliae, A. simplex, Cirsium discolor, Echinacea pallida, Helianthus grosseserratus, Heliopsis helianthoides, Liatris pycnostachya, Ratibida pinnata, Senecio pauperculus, Silphium laciniatum, S. integrifolium, Solidago graminifolia, Veronia fasiculata, Monarda fistulosa, Pycnanthemum flexuosum, Desmodium canadense, Petalostemum candidum,*

Phlox pilosa, Dodecatheon meadia, Lysimachia quadriflora, Anenome canadensis and *Zizia aptera.*

Some of the mesic to wet-mesic rarities that were found include *Lilium philadelphicum, Cacalia tuberosa, Prenanthes racemosa, Ceanothus americanus* and *Eryngium yuccifolium.*

The flora of the lowland prairies and related wetlands, which are elements of the Swaledale railroad prairie, includes *Asclepias incarnata, Bidens cernua, Gentiana andrewsii, Stachys palustris, Lythrum alatum, Phlox maculatum, Geum aleppicum, Spirea alba, Veronicastrum virginicum, Oxypolis rigidor* and *Verbena hastata.*

A wet, calcareous swale at one site harbors a fen-like association, including *Zygadenus elegans, Aster umbellatus, Eupatorium perfoliatum* and *E. maculatum, Thalictrum dasycarpum, Galium boreale, Pedicularis lanceolata, Zizia aurea* and *Valeriana edulis.*

Alisma subcordatum, Iris versicolor, Cardamine bulbosa, Caltha palustris, Penthorum sedoides, Lycopus americanus, Polygonum amphibium, Rumex altissimus, R. crispus and *Cicuta maculata* thrive in the ponded areas where the watertable seeps above the soil layers. There are a variety of sedges here, including *Scirpus acutus* and *S. atrovirens,* three *Eleocharis* species and numerous *Carex* species. *Salix discolor* grows along the margins of these wet areas where it is slightly better drained.

In addition to big bluestem, grasses growing in the wetter soils include *Calamagrostis canadensis, Muhlenbergia racemosa, Phragmites australis, Poa palustris* and *Spartina pectinacea.* At one location along the right-of-way, stolons from a pure stand of *Phragmites australis* have spread from a wet ditch and crossed beneath the railroad tracks to the opposite embankment.

The abandoned sand pit is timbered mainly with *Populus deltoides* and *Populus tremuloides.* Two particularly large cottonwood trees, the largest which measures over 18 feet circumference, probably became established in the sand pit shortly after the railroad company had finished scraping for fill material, circa 1900.

Also present is *Acer saccharinum,* which frequents the low ground on the south side of the sand pit and more recently has become well established along the upper southeastern perimeter. *Acer negundo* is a common tree throughout the sand pit and in more recent years has spread considerably along the upper northeastern perimeter. Also present, but only as incidentals, are *Fraxinus pennsylvanica, Robinia pseudoacacia* and *Juniperus virginiana.*

In the better drained areas of the sand pit the shrub layer is dominated by *Lonicera tatarica. Ribes americanum* and *R. missouriense,* and *Rubus allegheniensis* form a brambly groundlayer, especially along the shaded banks of the sand pit. Growing along the upper eastern perimeter of the sand pit are dense thickets of *Rhus glabra* and *Prunus americana. Sambucus canadensis, Morus alba* and *Prunus virginiana* are incidentals along fencerows and in the wooded openings of the sand pit.

The moist depressions along the west side of the sand pit are occupied by dense patches of *Equisetum hyemale,* a prevalent groundlayer species that appears to be spreading eastward in the sand pit. The wetter depressions are also inhabited by various mosses, notably *Sphagnum* species.

Where the water becomes ponded, a broken canopy is formed by a scattering of *Salix fragilis.* Also present here are thickets formed by *Salix interior,* and to a lesser extent, *Cornus amomum.*

The surface waters of the seepages become colonized by *Lemna minor,* while *Phalaris arundinacea* grows along the pond margins and on the pond beds when the waters dry up. A remnant population of *Typha angustifolia,* surrounded by a willow and dogwood thicket, grows in a wet seepage along the west side of the sand pit.

It is apparent that the woodland in the sand pit is a haven to many plants which must have become established after the woods came into existence. A few noteworthy woodland species that occur there are *Eupatorium rugosum, Amphicarpa bracteata, Sanguinaria canadensis, Phryma leptostachya, Aquilegia canadensis* and *Geum canadense.*

Many common weeds grow on the railroad right-of-way gravel and in other disturbed habitats of the study area. *Ulmus pumila* is a woody invader of the railroad right-of-way ditches. Once established it eventually shades out the native prairie flora. A dramatic example of this occurs on the edge of Swaledale where the railroad right-of-way intersects with county road B-60. An occasional burn or cutting would help check the spread of *U. pumila* and encourage growth of prairie vegetation.

Aggressive weeds that colonize waste ground and other disturbed habitats include *Amaranthus albus, Arctium minus, Ambrosia trifida* and *A. artemisiifolia, Taraxacum officinalis, Lychnis alba, Chenopodium album, Convolvulus arvense, Capsella bursa-pastoris, Thlaspi arvense, Setaria glauca* and *S. viridis, Glecoma hederacea, Leonurus cardiaca, Abutilon theophrasti, Mirabilis nyctaginea, Plantago major, Pastinaca sativa* and *Urtica diocia.*

In the ditches along certain stretches of the right-of-way excessive mound building by pocket gophers coincides with a weedy infestation of the ubiquitous Canada thistle, *Cirsium arvense.* Periodically controlled burns in thistle-infested areas could help alleviate the spread of this noxious weed.

CATALOG OF SPECIES

The terms *frequent, infrequent* and *rare* are used qualitatively to describe how often a plant occurs on the Swaledale railroad prairie.

PTERIDOPHYTES

EQUISETACEAE (Horsetail Family)

Equisetum arvense L. Common horsetail. Railroad right-of-way gravel, ditches, moist areas in sand pit. Frequent.

E. fluviatile L. Water horsetail. Wet ditches; observed at one location. Rare.

IOWA THREATENED SPECIES

E. hyemale L. Scouring rush. Forming a dense, extensive groundlayer on damp, sandy soils of the sand pit. Frequent.

E. laevigatum A. Br. Smooth scouring rush. Wet ditches and swales. Infrequent.

GYMNOSPERMS

CUPRESSACEAE (Bald Cypress Family)

Juniperus virginiana L. Red cedar. Infrequent tree in sand pit.

MONOCOTYLENDONS

ALISTAMACEAE (Water Plantain Family)

Alisma subcordatum Raf. Water plantain. Wet ditches and swales. Infrequent.

AMARYLLIDACEAE (Amaryllis Family)

Hypoxis hirsuta (L.) Cov. Yellow stargrass. Mesic prairie and wooded openings in sand pit. Frequent.

COMMELINACEAE (Spiderwort Family)

Tradescantia ohiensis Raf. Spiderwort. Dry-mesic to mesic prairies. Frequent.

CYPERACEAE (Sedge Family)

Carex alopecoidea Tuckerman Foxtail sedge. Lowland prairies, wet swales. Frequent.

C. aquatilis Wahl. Water sedge. Marshy habitats, wet ditches and swales. Frequent.

C. bebbii (Bailey) Fern. Bebb's sedge. Lowland prairies. Frequent.

C. buxbaumii Wahl. Brown sedge. Lowland prairies. Frequent.

C. cephalantha (Bailey) Bickn. Wet ditches and swales. Infrequent.

C. comosa Boott Bristly sedge. Wet ditches and swales. Rare.

C. festucacea Willd. Fescue sedge. Dry-mesic to mesic prairies and wooded openings in sand pit. Frequent.

C. haydenii Dewey Hayden's sedge. Lowland prairies. Rare.

C. lasiocarpa Ehrh. Slender sedge. Wet ditches, swales and marshy habitats. Infrequent.

C. laxiflora Lam. Loose-flowered sedge. Wet ditches and swales. Frequent.

C. projecta Mack. Lowland prairies. Necklace sedge. Rare

C. sartwellii Dewey Sartwell's sedge. Lowland prairies, marshy habitats. Infrequent.

C. sparganoides Muhl. ex Willd. Burr-reed sedge. Damp thickets and woods. Infrequent.
C. tetanica Schk. Wood's sedge. Damp thickets and wet woods in sand pit. Infrequent.
C. tribuloides Wahl. Wet ditches and seepage ponds in sand pit. Rare.
Cyperus strigosus L. Cyperus sedge. Marshy habitats. Infrequent.
Eleocharis compressa Sulliv. Flat-stemmed spikerush. Wet ditches, swales and seepage ponds in sand pit. Infrequent.
E. ovata (Roth) R. & S. Ovoid spikerush. Wet ditches and swales. Rare.
E. smallii Britt. Small's spikerush. Wet ditches, swales, and seepage ponds. Infrequent.
Scirpus acutus Muhl. ex Bigelow Hardstem bulrush. Marshy habitats, wet ditches and seepage ponds in sand pit. Infrequent.
S. atrovirens Willd. Bulrush. Marshy habitats, wet ditches and seepage ponds in sand pit. Infrequent.

GRAMINEAE (Grass Family)
Agropyron repens (L.) Beauv. Quack grass. Various habitats. Frequent weed.
Agrostis gigantea Roth. Redtop. Various habitats. Frequent.
Andropogon gerardi Vitm. Big bluestem. Dry-mesic to wet prairies. Frequent.
A. scoparius Michx. Little bluestem. Dry to dry-mesic prairies. Less frequent than the preceding species.
Bromus inermis Leyss. Smooth brome. Frequent weed of disturbed habitats.
Calamagrostis canadensis (Michx.) Beauv. Bluejoint. Lowland prairies. Frequent.
Digitaria sanguinalis (L.) Scop. Crabgrass. Frequent weed.
Echinochola muricata (Beauv.) Fern. Barnyard grass. Infrequent weed.
Elymus virginicus L. Virginia wild rye. Dry-mesic to mesic prairies. Infrequent.
Festuca pratensis Hudson Meadow fescue. An introduciton; various habitats.
Hordeum jubatum L. Squirrel tail grass. Infrequent weed.
Muhlenbergia racemosa (Michx.) BSP. Lowland prairies. Frequent.
Panicum lanuginosum Ell. Wooly panic grass. Dry prairie. Infrequent.
P. leibergii (Vasey) Scribn. Dry prairie. Infrequent.
P. oligosanthes Schult. Dry to dry-mesic prairies. Infrequent.
P. philadelphicum Bernh. ex Trin. Wet habitats. Infrequent.
P. virgatum L. Switchgrass. Mesic to wet-mesic prairies. Frequent.
Phalaris arundinacea L. Reed canary grass. Bordering stream banks and forming dense patches in low areas of sand pit. Frequent.
Phleum pratense L. Timothy hay. An introduction; disturbed habitats. Frequent.
Phragmites australis (Cav.) Trin. ex Steudel (= *P. communis* Trin. See Clayton, 1968) Reed grass. Forming a dense cover in wet ditches. Frequent.
Poa palustris L. Fowl meadowgrass. Lowland prairies.
P. pratensis L. Kentucky bluegrass. Escape from lawns.
Setaria glauca (L.) beauv. (=*S. lutescens* (Weigel) Hubb. See Reeder, 1951) Foxtail grass. Frequent weed.
S. viridis (L.) Beauv. Foxtail grass. Frequent weed.
Sorghastrum nutans (L.) Nash Indian grass. Dry-mesic to mesic prairies. Infrequent.
Spartina pectinata Link Cordgrass. Wet prairie. Infrequent.
Stipa spartea Trin. Needlegrass. Dry prairie. Infrequent.

IRIDACEAE (Iris Family)
Iris versicolor L. Large blue flag. Wet ditches, swales and marshy habitats. Frequent.
Sisyrinchium campestre Bickn. Blue-eyed grass. Dry-mesic prairie. Infrequent. WITT - June 17, 1969.

JUNCACEAE (Rush Family)
Juncus canadensis Gay ex La harpe Canada rush. Wet ditches and swales. Infrequent.
Juncus dudleyi Wieg. Dudley's rush. Damp soils in sand pit. Frequent.
J. torreyi Cov. Torrey's rush. Lowland prairies. Rare.

LEMNACEAE (Duckweed Family)
Lemna minor L. Common duckweed. Colonizing surface waters of seepage ponds in sand pit and water-filled ditches. Frequent.

LILIACEAE (Lily Family)
Allium canadense L. Wild garlic. Wet-mesic prairie and bordering stream banks. Infrequent.
Asparagus officinalis L. Wild asparagus. An introduction; ditches and wooded openings in sand pit. Infrequent.
Lilium philadelphicum L. Wood lily. Edge of damp woods and wet ditch; observed at two sites. Rare. WITT - June 30, 1968.
Zygadenus elegans Pursh White camas. A small population found at one site; calcareous lowland prairie. Rare.

TYPHACEAE (Cattail Family)
Typha angustifolia L. Cattail. A small population observed in wet seepage of sand pit. Rare.

DICOTYLEDONS

ACERACEAE (Maple Family)
Acer negundo L. Box elder. Scattered throughout sand pit and occasionally along fencerows. Frequent.
A. saccharinum L. Silver maple. Low places in sand pit, especially along the south bank. Frequent.

AMARANTHACEAE (Amaranth Family)
Amaranthus albus L. Pigweed. A native weed; railroad right-of-way gravel and other disturbed ground. Frequent.

ANACARDIACEAE (Cashew Family)
Rhus glabra L. Smooth sumac. Forming thickets on northeast perimeter of sand pit. Frequent.

APOCYNACEAE (Dogbane Family)
Apocynum androsaemifolium L. Dogbane. Ditches and wooded openings in sand pit. Frequent.
A. sibericum Jacq. Indian hemp. Wet-mesic prairie. Rare.

ASCLEPIDACEAE (Milkweed Family)
Asclepias incarnata L. Swamp milkweed. Open, wet habitats. Frequent.
A. syriaca L. Common milkweed. Ditches. Frequent.
A. verticillata L. Whorled-leaved milkweed. Railroad right-of-way gravel and other disturbed sites. Frequent.
A. viridiflora Raf. Green milkweed. Dry to dry-mesic prairie remnants; observed at three different sites. Rare.

BALSAMINACEAE (Touch-Me-Not Family)
Impatiens biflora Walt. Jewel weed. Marsh habitat and stream banks. Infrequent.

BORAGINACEAE (Borage Family)
Cynoglossum officinale L. Hound's tongue. A weed of dry, wooded openings. Rare.
Lithospermum canescens (Michx.) Lehm. Hoary puccoon. Dry to dry-mesic prairie habitats. Frequent.

CAPRIFOLIACEAE (Elderberry Family)
Lonicera tatarica L. Honeysuckle. Escape from cultivation; throughout the sand pit. Frequent.
Sambucus canadensis L. Elderberry. Moist ditches, fencerows and eastern perimeter of sand pit.

CAROPHYLLACEAE (Pink Family)
Lychnis alba P. Miller Evening lychnis. Frequent weed of open, disturbed habitats.
Saponaria officinalis L. Soapwort. Frequent weed.
Silene antirrhina L. Sleepy catchfly. Railroad right-of-way gravel and waste places. Frequent.
Stellaria longifolia Muhl. ex Willd. Chickweek. Moist places. Frequent.

CHENOPODIACEAE (Goosefoot Family)
Chenopodium album L. Lamb's quarters. Frequent weed.

CISTACEAE (Rockrose Family)
Lechea stricta Leggett. Pinweed. Dry prairie habitats. Rare.

COMPOSITAE (Composite Family)
Achillea millefolium L. ssp. *lanulosa* (Nutt.) Piper Yarrow. Dry-mesic to mesic prairies. Frequent.
Ambrosia artemisiifolia L. Ragweed. A native weed. Frequent.
A. trifida L. Giant ragweed. A native weed. Frequent.
Arctium minus Schk. Common burdock. Frequent weed.
Artemisia ludoviciana Nutt. Silver sage. Dry-mesic to mesic prairies. Frequent.
Aster azureus Lindl. Azure aster. Dry-mesic prairies and open woods. Infrequent.
A. ericodes L. Heath aster. Mesic to wet-mesic prairies. Infrequent.
A. novae-angliae L. New England aster. Mesic to wet-mesic prairies. Infrequent.
A. simplex Willd. Marsh aster. Wet ditches. Frequent.
A. umbellatus Mill. Flat-topped aster. Lowland prairies. Frequent.

Bidens cernua L. Sticktights. Wet ditches. Frequent.
Cacalia tuberosa Nutt. Indian plantain. Lowland prairie; observed at one location. Rare.
Cirsium arvense (L.) Scop. Canada thistle. Frequent weed.
C. discolor (Muhl. ex Willd.) Spreng. Prairie thistle. Mesic prairie. Frequent.
Conyza canadensis (L.) Cronq. Horseweed. A native weed. Frequent.
Coreopsis palmata Nutt. Coreopsis. Dry to dry-mesic prairies. Frequent. WITT - July 19, 1969.
Echinacea pallida Nutt. Pale coneflower. Dry-mesic to mesic prairies. Frequent. WITT - July 28, 1968.
Erigeron philadelphicus L. Fleabane. Ditches and wooded openings in sand pit. Frequent.
E. strigosus Muhl. ex Willd. Daisy fleabane. A native weed. Frequent.
Eupatorium maculatum L. Joe-Pye-weed. Lowland prairies. Frequent.
E. perfoliatum L. Boneset. Lowland prairies. Frequent.
E. rugosum Houtt. White snakeroot. Damp woods in sand pit; observed at one location. Rare.
Helianthus grosseserratus Martens. Sawtooth sunflower. Lowland prairies. Infrequent.
H. maximiliani Schrad. Mesic prairie. Rare.
H. strumosus L. Pale-leaved sunflower. Wooded openings in sand pit. Infrequent.
Heliopsis helianthoides (L.) Sweet, Ox-eye. Dry-mesic to mesic prairies. Infrequent.
Lactuca canadensis L. Wild lettuce. Various habitats. Frequent.
Liatris aspera Michx. Blazing star. Dry-mesic to mesic prairies. Frequent. WITT - August 13, 1967.
L. pycnostachya Michx. Gayfeather. Mesic prairie. Frequent. WITT - July 28, 1968.
Matricaria matricarioides (Less.) Porter Pineapple weed. Infrequent weed.
Prenanthes racemosa Michx. Rattlesnake root. Wet-mesic to wet prairie; observed at one location. Rare.
Ratibida pinnata (Vent.) Barnh. Prairie coneflower. Dry-mesic to mesic prairies. Frequent.
Rudbeckia hirta L. Black-eyed Susan. Dry-mesic to mesic prairies. Frequent.
Senecio pauperculus Michx. Northern ragwort. Lowland prairies. Infrequent.
Silphium integrifolium Michx. Rosinweed. Mesic prairie. Infrequent.
S. laciniatum L. Compass plant. Mesic prairie. Infrequent.
Solidago canadensis L. Canada goldenrod. Dry-mesic to mesic prairies. Frequent.
S. graminifolia (L.) Salisb. Grass-leaved goldenrod. Mesic prairie. Infrequent.
S. missouriensis Nutt. Missouri goldenrod. Lowland prairies. Frequent.
S. nemoralis Ait. Dyer's weed. Dry-mesic prairie and wooded openings in sand pit. Frequent.
S. rigida L. Stiff-leaved goldenrod. Dry-mesic to mesic prairie. Frequent.
Taraxacum officinale Weber Common dandelion. Frequent weed.
Tragopogon dubis Scop. Goat's beard. Frequent weed.
Veronia fasiculata Michx. Ironweed. Lowland prairies. Frequent.
Xanthium strumarium L. Cocklebur. Frequent weed of cultivated fields and other disturbed soils.

CONVOLVULACEAE (Morning Glory Family)
Convolvulus arvensis L. Field bindweed. Frequent weed in ditches.
C. sepium L. Hedge bindweed. Frequent weed in ditches.

CORNACEAE (Dogwood Family)
Cornus amomum P. Mill. Red-stemmed dogwood. Forming thickets in low areas of sand pit. Frequent.
C. stolonifera Michx. Red osier dogwood. Infrequent shrub of wet ditches.

CRASSULACEAE (Orpine Family)
Penthorum sedoides L. Ditch stonecrop. Muddy ditches and marshy habitats. Rare.

CRUCIFERAE (Mustard Family)
Brassica kaber (DC.) L.C. Wheeler Charlock. Frequent weed.
Capsella bursa-pastoris (L.) Medic. Frequent weed.
Cardamine bulbosa (Schreb.) BSP. Springcress. Marshy habitats, wet ditches and swales. Frequent.
Lepedium densiflorum Schrad. Peppergrass. Varied habitats. Frequent.
Thlaspi arvense L. Pennycress. Frequent weed.

CUCURBITACEAE (Gourd Family)
Echinocystis lobata (Michx.) T. & G. Wild cucumber. Climbing vine in woods of sand pit. Infrequent.

EUPHORBIACEAE (Spurge Family)
Euphorbia corallata L. Flowering spurge. Dry to dry-mesic prairies. Frequent.
E. serpyllifolia Pers. Thyme-leaved spurge. Dry prairie. Rare.

GENTIANACEAE (Gentian Family)
Gentiana andrewsii Griesb. Bottle gentian. Lowland prairies. Frequent. WITT - No collection date.

LABIATE (Mint Family)
Glecoma hederacea L. Ground ivy. Frequent weed in sand pit.
Leonurus cardiaca L. Motherwort. Frequent weed.
Lycopus americanus Muhl. ex Bart. Water horehound. Wet ditches and marshy habitats. Frequent.
Monarda fistulosa L. Wild bergamot. Mesic to wet-mesic prairies. Frequent. WITT - July 25, 1969.
Nepeta cataria L. Catnip. Frequent weed.
Prunella vulgaris L. Self heal. Damp, disturbed soils. Infrequent.
Pycnanthemum flexuosum (Walt.) BSP. Mountain mint. Mesic prairie. Infrequent.
P. virginianum (L.) Durand & Jackson. Mountain minr. Mesic prairie. Frequent.

LEGUMINOSAE (Legume Family)
Amorpha canescens Pursh Lead plant. Dry-mesic to mesic prairie. Frequent.
Amphicarpa bracteata (L.) Fern. Hog peanut. Woods and thickets in sand pit. Frequent.
Desmodium canadense (L.) DC. Showy tick-trefoil. Mesic prairie. Frequent.
Lespedeza capitata Michx. Bush clover. Dry to dry-mesic prairies. Frequent.
Medicago lupulina L. Black medic. Frequent weed.
Melilotus alba Medic. White sweet clover. An introduction; disturbed habitats. Frequent.
M. officinalis (L.) Pallas Yellow sweet clover. An introduction; disturbed habitats. Frequent.
Petalostemum candidum (Willd.) Michx. White prairie clover. Mesic prairie. Infrequent.
P. purpureum (Vent.) Rydb. Purple prairie clover. Dry-mesic to mesic prairies. Frequent.
Psoralea argophylla Pursh Silverleaf scurf-pea. A small population observed on a dry-mesic knoll at southwest corner of sand pit. Rare.
Robinia pseudoacacia L. Black locust. Escape from cultivation; scattered locations on damp soils in sand pit. Infrequent.
Trifolium hybridum L. Alsike clover. Frequent weed of disturbed habitats. Frequent.
T. pratense L. Red clover. Frequent weed of disturbed habitats.
T. repens L. White clover. Frequent weed of disturbed habitats.

LOBELIACAE (Lobelia Family)
Lobelia spicata Lam. Pale-spiked lobelia. Dry-mesic to mesic prairies. Frequent.

LYTHRACEAE (Loosestrife Family)
Lythrum alatum Pursh Loosestrife. Lowland prairies. Frequent.

MALVACEAE (Mallow Family)
Abutilon theophrasti Medic. Velvetleaf. Frequent weed of cultivated fields.
Malva neglecta Wallr. Common mallow. Infrequent weed.

MENISPERMACEAE (Moonseed Family)
Menispermum canadense L. Moonseed. Thickets and fencerows. Frequent.

MORACEAE (Mulberry Family)
Morus alba L. Mulberry. Escape from cultivation; fencerows and along perimeter of sand pit. Infrequent.

NYCTAGINACEAE (Four O'Clock Family)
Mirabilis nyctaginea (Michx.) MacM. Four o'clock. Railroad right-of-way gravel. Frequent.

OLEACEAE (Olive Family)
Fraxinus pennsylvanica Marsh. Green ash. Infrequent tree in the sand pit.

ONAGRACEAE (Evening Primrose Family)
Oenothera biennis L. Evening primrose. Frequent.

OXALIDACEAE (Wood Sorrel Family)
Oxalis stricta L. Yellow wood sorrel. Various open habitats. Frequent.

PAPVERACEAE (Poppy Family)
Sanguinaria canadensis L. Bloodroot. One clump of seven plants observed along a shaded bank in sand pit. Rare.

PHRYMACEAE (Lopseed Family)
Phryma leptostachya L. Lopseed. Damp woods in sand pit. Infrequent.

PLANTAGINACEAE (Plantain Family)
Plantago major L. Large plantain. Frequent weed.
P. rugelii Dcne. Common plantain. A native weed. Frequent.

POLMONIACEAE (Phlox Family)
Phlox maculata L. Wild sweet William. Damp ditches, bordering western edge of woods in sand pit. Frequent.
P. pilosa L. Downy phlox. Dry-mesic to mesic prairies. Frequent.

POLYGONACEAE (Smartweed Family)
Polygonum amphibium L. (=*P. coccinea* and *P. natans*, illegitimate names. See Godfrey et al., 1981). Water smartweed. Water-filled ditches and marshy habitats. Frequent.
P. aviculare L. Bindweed. Frequent weed.
P. convolvulus L. Black bindweed. Frequent weed.
P. persicaria L. Lady's thumb. Infrequent weed of open, wet habitats.
Rumex altissimus Wood Water dock. Wet ditches and swales. Infrequent.
R. crispus L. Sourdock. Frequent weed of open, wet habitats.

PORTULACEAE (Purslane Family)
Portulaca oleracea L. Purslane. Frequent weed.

PRIMULACEAE (Primrose Family)
Dodecatheon meadia L. Shooting star. Mesic to wet-mesic prairies. Rare.
Lysimachia quadriflora Sims Prairie loosestrife. Mesic to wet-mesic prairies. Frequent.

RANUNCULACEAE (Buttercup Family)
Aneome canadensis L. Canada anenome. Dry-mesic to mesic prairies. Frequent. WITT — June 7, 1972.
A. cylindrica Gray Thimbleweed. Dry-mesic prairie. Infrequent.
Aquilegia canadensis L. Columbine. A few clumps observed on a shaded bank in sand pit. Rare.
Caltha palustris L. Marsh marigold. Wet ditches and marshy habitats. Frequent.
Thalictrum dasycarpum Fisch. & Ave-Lall. Meadow rue. Mesic prairie. Frequent.

RHAMNACEAE (Buckthorn Family)
Ceanothus americanus L. New Jersey tea. A vigorous-growing clump of plants observed at one mesic location. Rare.
Rhamnus catharticus L. European buckthorn. Escape from cultivation. Infrequent shrub in the right-of-way ditches.

ROSACEAE (Rose Family)
Agrimonia striata Michx. Agrimony. Woods in sand pit. Infrequent.
Fragaria virginiana Duchesne Wild strawberry. Railroad right-of-way gravel, mesic prairie, wooded openings in sand pit. Frequent.
Geum aleppicum Jacq. Avens. Edge of woods in sand pit. Infrequent.
G. canadense Jacq. White avens. Woods in sand pit. Infrequent.
Potentilla arguta Pursh Rough cinquefoil. Dry-mesic prairie. Infrequent.
Prunus americana Marsh. Wild plum. Forming thickets along eastern perimeter of sand pit. Frequent.
P. virginiana L. Chokecherry. Woods in sand pit and fencerows. Infrequent.
Rosa carolina L. Pasture rose. Throughout ditches and fencerows. Frequent.
Rubus allegheniensis Porter ex Bailey Common blackberry. Forming brambles throughout woods in sand pit. Frequent.
R. strigosus Michx. Red raspberry. Woods in sand pit. Not as frequent as the preceding species.
Spirea alba DuRoi Meadow sweet. Lowland prairies. Infrequent.

RUBIACEAE (Madder Family)
Galium boreale L. Northern bedstraw. Lowland prairies. Frequent.

SALICACEAE (Willow Family)
Populus deltoides Bartram ex Marsh. Cottonwood. Dominant tree of woods in sand pit.
P. tremuloides Michx. Popple or quaking aspen. Co-dominant tree of woods in sand pit. Forming dense stands in various locations throughout the sand pit.
Salix discolor Muhl. Pussywillow. Frequent shrub of lowland habitats.
S. fragilis L. Crack willow. An introduction; wet places in sand pit. Infrequent.
S. interior Rowlee. Sandbar willow. Edges of stream banks and forming dense thickets in seepage ponds of sand pit. Frequent.
S. pedicellaris Pursh Bog willow. Wet-mesic prairie; observed at one location. Rare. ***IOWA ENDANGERED SPECIES.***
S. rigida Muhl. Heart-leaved willow. Lowland prairies. Infrequent.
S. sericea Marsh. Silky willow. Lowland prairies. Frequent.

SAXIFRAGACEAE (Gooseberry Family)
Ribes americanum P. Mill. Gooseberry. Woods in sand pit. Frequent.
R. missouriense Nutt. ex T. & G. Missouri gooseberry. Woods in sand pit. Frequent.

SCROPHULARIACEAE (Snapdragon Family)
Pedicularis lanceolata Michx. Lousewort. Wet, calcareous swale and wet open woods in sand pit. Infrequent.
Scropularia lanceolata Pursh Figwort. Observed at one location; in wet ditch at edge of woods. Rare.
Veronica catenata Pennell Speedwell. Wet ditch. Rare.
Veronicastrum virginicum (L.) Farw. Culver's root. Mesic to wet-mesic prairies. Frequent.

SOLANACEAE (Nightshade Family)
Physalis longifolia Nutt. Ground cherry. Dry to dry-mesic prairies. Frequent.
P. pubescens L. var. *integrifolia* (Dunal) Waterfall Dry to dry-mesic prairies. Frequent.
Solanum americanum P. Mill. Nightshade. Disturbed habitats. Infrequent.

ULMACEAE (Elm Family)
Ulmus pumila L. Siberian elm. Escape from cultivation; invading railroad right-of-way ditches and well established. Frequent.

UMBELLIFERAE (Parsley Family)
Cicuta maculata L. Spotted water hemlock. Marshy habitats. Infrequent.
Daucus carota L. Queen Anne's lace. Infrequent weed.
Eryngium yuccifolium Michx. Rattlesnake master. Mesic prairie; observed at two locations. Rare.
Oxypolis rigidor (L.) Raf. Cowbane. Wet ditches. Infrequent.
Pastinaca sativa L. Meadow parsnip. Frequent weed of ditches.
Zizia aptera (Gray) Fern. Golden Alexanders. Mesic to wet-mesic prairies. Infrequent.
Z. aurea (L.) W. Koch Golden Alexanders. Mesic to wet-mesic prairies. Infrequent.

URTICACEAE (Nettle Family)
Urtica dioica L. Stinging nettle. Frequent weed.

VALERIANACEAE (Valerian Family)
Valeriana edulis Nutt. ex T. & G. (=*V. ciliata* T. & G.) Valerian. Two clumps of plants observed at one location; calcareous swale. Rare. ***IOWA THREATENED SPECIES.***

VERBENACEAE (Vervain Family)
Verbena hastata L. Blue vervain. Marshy habitats. Infrequent.
V. stricta Vent. Hoary vervain. Dry to dry-mesic prairies. Frequent.

VIOLACEAE (Violet Family)
Viola nephrophylla Greene Northern bog violet. Marshy habitats. Infrequent.
V. papilionacea Pursh Meadow violet. Moist habitats. Infrequent.
V. pedata L. Bird's-foot violet. Dry-mesic prairie. Rare.

VITACEAE (Grape Family)
Parthenocissus quinquefolia (L.) Planch. Virginia creeper. Woods of sand pit. Frequent.
Vitis riparia Michx. Wild grape. Fencerows and thickets. Frequent.

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The year 1987 marks the centennial birthday of my hometown, Swaledale, Iowa. As a token of my affections for a little town where I learned about my prairie heritage, this paper is dedicated to Swaledale.

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