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Floristic Records in the Platte and Loup River Bottomlands of Platte County, Nebraska

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ABSTRACT

A recent inventory of vascular plants in the Loup and Platte riverbottoms in Platte County has greatly increased knowledge of the area's flora. Of the 542 species of vascular plants now known to grow in the county, 289 were discovered after 1977, with more than 100 of those after 1990. 425 native and 117 naturalized species are known so far. Nearly 700 native and naturalized alien species are expected to occur in the county, based upon totals from nearby counties. Thus, almost 150 years after European settlement, more than 20% of the species remain unverified; of those, many are undoubtedly non-native. The riverbottoms of the county have the best-preserved native flora and are today much richer in species than the uplands, which are more heavily impacted by agriculture.

History of Plant Collecting in Nebraska and Platte County

Published reports of Nebraska's flora begin with explorers Lewis and Clark in 1803-6, Nuttall and Bradbury in 1808, James of the Long Expedition in 1820, the Fremont Expedition in the 1840s, and the Warren Expedition of 1857. Among the early attempts to list Nebraska's complete flora are two catalogues, those of Samuel Aughey (1876) and H. J. Webber (1890). Local studies in the state have produced numerous floristic lists for counties and other areas. A detailed list of such publications from 1804 through 1985 is presented by Kantak and Churchill (1986); others are cited by Kaul et al. (2006). The state's vegetation was mapped at 1:1,000,000 by Kaul and Rolfsmeyer (1993), and some detail was shown for Platte County. Satellite imagery is depicted at 30-meter resolution by the Nebraska Gap-Analysis Project (1993).

The earliest plant collections in Platte County were by Edwin James of the Long Expedition to the Rocky Mountains in 1820, who traveled the Platte Valley across Nebraska and made many original documentations of Nebraska plant life (Goodman and Lawsen 1995). The plants James documented in what is now Platte County are Lithospermum incisum, fringed puccoon; Cirsium sp., a thistle; Vicia americana, American purple vetch (not on our list); Rhus glabra, smooth sumac; Asclepias speciosa, showy milkweed; Toxicodendron radicans, poison ivy;
Apocynum cannabinum, hemp dogbane; Helianthus petiolaris, plains sunflower; Amorpha fruticosa, wild-indigo; Gaura coccinea, scarlet gaura; Monarda pectinata, a mint not on our list; Potamogeton nodosus, floating-leaf pondweed; Rubus occidentalis, black raspberry; Sparganium eurycarpum, bur-reed; Callirhoe involucrata, purple poppy-mallow; Plantago patagonica, woolly plantain; and Anemone canadensis, meadow anemone.

The junction of the Loup and Platte rivers at Columbus was a landmark for Pawnee Indians in the 1820s (Ducey 2000). Warren (1875) noted that the valley of the Loup Fork was well wooded as far up as the Pawnee villages to the west of present-day Platte County. The Platte River at Columbus was described as having a sand bottom and many sandbars, and the floodplain was said to be from two to ten miles wide, as it is today. In 1844, Carleton reached the fork of the Loup and Platte Rivers and remarked:

The bed of the river is but one wide expanse of quicksand, which is formed in bars and these are continually changing and driving about. The channels are innumerable, but are usually only a foot or so deeper than the surrounding water. The river is filled with beautiful islands. They are all well wooded, but only here and there is there any timber growing upon the main banks. Sometimes we found the channels between the islands and the shore, entirely dry, presenting to the eye a wide extent of sand, which as the wind swept over it, was blown about in clouds, as one would notice on a barren coast of the ocean. The bottomlands are what would be called high river prairie (Carleton 1844-1846 (1983)).

Curry (1950) wrote that when the city of Columbus was founded, prior to 1870, the grass “blue joint” grew thick and matted, was taller than a man’s head and common in the area. It was reported to grow between twelve and fifteen feet tall along the sloughs in the area and defied any attempts by primitive plows. (The plant called blue-joint today is Calamagrostis canadensis, which never grows that tall, and perhaps Curry was describing Phragmites australis, common reed, which reaches such height in moist habitats. Calamagrostis canadensis is not on our list of vouchered species, but it is known from several adjacent counties and is undoubtedly in Platte County today.)

The Loup River drains much of the Sandhills, which are less disturbed than most areas of the state, but the substitution of cattle for bison has altered grazing patterns and affected native flora there. The Platte River originates in Colorado and has numerous diversions, with significant irrigation usage and storage along the entire watercourse. Row-crop agriculture dominates its borderlands.

METHODS

Our 12-year sampling period, 1996-2007, documents species within the Platte and Loup River bottoms after 150 years of settlement by Euro-Americans in these watersheds. For completeness and comparison, we list all species ever collected in Platte County, as documented by specimens deposited in various university herbaria, especially that of the University of Nebraska-Lincoln, which houses many specimens we collected. The list was assembled from Atlas of the Flora of the Great Plains (Great Plains Flora Association 1977), The Flora of Nebraska (Kaul et al. 2006), and our own observations and collecting. It consists almost entirely of plants collected in the bottomlands of Platte County, because very little collecting has been done in the much-disturbed, heavily agricultural uplands north of those bottomlands, most of whose species also occur in the bottomlands. This congregation of plants of river bottoms appears to be common in the lower reaches of the Platte River.
Apocynum cannabinum, hemp dogbane; Helianthus petiolaris, plains sunflower; Amorpha fruticosa, wild-indigo; Gaura coccinea, scarlet gaura; Monarda pectinata, a mint not on our list; Potamogeton nodosus, floating-leaf pondweed; Rubus occidentalis, black raspberry; Sparganium eurycarpum, bur-reed; Callirhoe involucrata, purple poppy-mallow; Plantago patagonica, woolly plantain; and Anemone canadensis, meadow anemone.

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Figure 2. Aerial view of sites. Top: Witchey's Island Site, by the Platte River. North is at the top. The river was dry when the photograph was taken, and its braided bed is evident in the lower half of the picture. Bottom: Loup River Site. North is at the top, and Columbus is just out of range to the north. 1 inch = .17 mile
The focus for observations and collection were two primary sites on the Platte and Loup Rivers, where two of the largest watersheds in Nebraska unite (Fig. 1). The Platte River site is Witchey’s Island (Fig. 2), a heavily wooded area (but not now a true island) on the north bank of the Platte River, equidistant between Duncan and Columbus on a parcel of property almost a mile in length. Witchey’s Island has been grazed only minimally by livestock and natural deer populations, has not had fire for over 100 years, and has never been cultivated or farmed. It was homesteaded in 1864 by John Witchey, and according to historical record he maintained only a small garden and orchard. The Loup River site (Fig. 2) is on the south bank of the river and includes dense bottomland forest with open prairies, all on sandy soil.

The coordinates for most plants collected are as follows:

**Witchey’s Island-Platte River Site (Fig. 2 Top)**

<table>
<thead>
<tr>
<th>Corner of Site</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE corner of the site</td>
<td>41.3834823</td>
<td>-97.430938</td>
</tr>
<tr>
<td>NW corner of the site</td>
<td>41.3809542</td>
<td>-97.445221</td>
</tr>
<tr>
<td>SE corner of the site</td>
<td>41.3779800</td>
<td>-97.430747</td>
</tr>
<tr>
<td>SW corner of the site</td>
<td>41.3765672</td>
<td>-97.444935</td>
</tr>
</tbody>
</table>

**Loup River Site (Fig. 2 Bottom)**

<table>
<thead>
<tr>
<th>Corner of Site</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE corner of the site</td>
<td>41.4139801</td>
<td>-97.354334</td>
</tr>
<tr>
<td>NW corner of the site</td>
<td>41.4162131</td>
<td>-97.367379</td>
</tr>
<tr>
<td>SE corner of the site</td>
<td>41.4083231</td>
<td>-97.354334</td>
</tr>
<tr>
<td>SW corner of the site</td>
<td>41.4079510</td>
<td>-97.366522</td>
</tr>
</tbody>
</table>

Lake Babcock, three miles northwest of Columbus, was another sampling location, as was Buck Island on the Loup River southeast of the city. But most collecting was at the established Loup and Platte River study sites because of their ease of access and the intact nature of their flora. The sampling locations were walked during the spring, summer and fall growing seasons, typically on a weekly basis, to identify species not previously vouchered.

**Table 1. Species of native and naturalized trees, shrubs, woody vines, and herbs**

<table>
<thead>
<tr>
<th></th>
<th>Trees</th>
<th>Shrubs</th>
<th>Lianas</th>
<th>Herbs</th>
<th>totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native</td>
<td>13</td>
<td>20</td>
<td>7</td>
<td>385</td>
<td>425</td>
</tr>
<tr>
<td>Introduced</td>
<td>8</td>
<td>10</td>
<td>1</td>
<td>98</td>
<td>117</td>
</tr>
<tr>
<td><strong>totals</strong></td>
<td><strong>21</strong></td>
<td><strong>30</strong></td>
<td><strong>8</strong></td>
<td><strong>483</strong></td>
<td><strong>542</strong></td>
</tr>
</tbody>
</table>
RESULTS AND DISCUSSION

The native and naturalized species known so far are summarized in Table 1 above, and the full list of those species follows the text, as Table 2.

The Witchey's Island site is representative of an eastern Nebraska riparian forest with a mixed-hardwood community, where the tree canopy is Celtis occidentalis, hackberry; Fraxinus pennsylvanica, green ash; Morus alba, white mulberry; Quercus macrocarpa, bur oak; and Ulmus americana, American elm. Cottonwoods, Populus deltoids, are present, but not to the large size of those in the Loup River site. The representative shrubs for this community are Cornus drummondi, rough-leaf dogwood; Ribes missouriense, Missouri gooseberry; Symphoricarpos occidentalis and S. orbiculatus, wolfberry and coralberry; and Zanthoxylum americanum, prickly-ash. Abundant woody vines (lianas) form jungle-like tangles: Parthenocissus quinquefolia, Virginia creeper, and P. vitacea, woodbine; Smilax hispida, green brier; Toxicodendron radicans, poison ivy; Menispernum canadense, moonseed; and Vitis riparia, riverbank grape. The herbaceous plants in this community include Carex spp., sedges; Elymus canadensis, Canada wild rye; Ageratina altissima, white snakeroot; Muhlenbergia spp., muhly grasses; Sanicula canadensis, Canada sanicle; and Viola sororia, sister violet. This community occurs in the floodplains of rivers and streams in the eastern fourth of the state and extends only slightly westward into central Nebraska, along the Loup and Platte River systems. Western wild rose, Rosa woodsii, is more typical of central and western Nebraska, but it is abundant and robust here.

The Loup River site is also representative of eastern-Nebraska riparian woodland, where the tree canopy is represented by cottonwood, many of them 10-30 m in height. The subcanopy contains Acer negundo, boxelder; Gleditsia triacanthos, honey locust; Fraxinus pennsylvanica, green ash; Ulmus americana, American elm; and Morus alba, white mulberry—all common at this site. Shrubs include Cornus drummondi, Ribes missouriense, Sambucus canadensis (elderberry), and Symphoricarpos orbiculatus. Parthenocissus quinquefolia, Toxicodendron radicans and Vitis riparia are also common. Representative herbaceous plants include Ageratina altissima, white snakeroot; Galium aparine, bedstraw; Geum canadense, white avens; Poa pratensis, Kentucky bluegrass; Rudbeckia laciniata, cutleaf coneflower; and Viola sororia, sister violet—all common to abundant.

Recent intrusions of exotic, invasive species are evident: Lythrum salicaria, purple loosestrife; Euphorbia esula, leafy spurge; and introduced genotypes of Phragmites australis, common reed. We witnessed their rapid proliferation, but Tamarix ramosissima (salt-cedar) is not yet known in the study area, although it is rampant to the west, along the Platte. Some species apparently are moving upriver, east to west, such as Robinia pseudoacacia, black locust; Catalpa speciosa, northern catalpa; and Lonicera tatarica, Tatarian honeysuckle. The invasive exotics Amur honeysuckle (Lonicera maackii) and autumn-olive (Elaeagnus umbellata) were not present in or near our study sites, but their currently aggressive westward spread across Nebraska assures eventual arrival in Platte County.

The Loup River site has naturalized species such as Rhamnus cathartica, buckthorn; Convallaria majalis, lily-of-the-valley; and Lonicera tatarica, which are common there but not at the Witchey's Island site. The latter site harbors such natives as Hibiscus laevis, halberd-leaf rosemallow; Mimulus glabratrus, roundleaf monkey flower; Quercus macrocarpa, bur oak, and the introduced Lysimachia nummularia, moneywort—all rare or absent at the Loup River site. Prickly-ash, Zanthoxylum americanum, and rough-leaf dogwood, Cornus drummondi, both native to the area, are increasingly abundant in the understory at Witchey's Island, especially in heavily grazed places because livestock do not eat them. Black locust, Robinia pseudoacacia, and northern catalpa, Catalpa speciosa, both native to southeastern North America, are invading the forests near the confluence of the rivers. Siberian elm, Ulmus pumila, and white mulberry, Morus alba, both introduced to North America from Asia long ago, are established and abundant. A native invasive tree, red-cedar (Juniperus virginiana), is abundant in fields and even in deep forests, and here as almost everywhere across the state, it overwhelms native ecosystems.

Some species reach their western limits in or near these sites, e.g., Arisaema triphyllum (jack-in-the-pulpit), Zanthoxylum americanum (prickly-ash), Erythronium albium (prairie fawnlily), Viola pubescens (smooth yellow violet), and Parthenocissus quinquefolia (Virginia creeper). Others reach their eastern limits in the same area, e.g., Opuntia fragilis, little prickly-pear.
Table 2. Platte County families and species of vascular plants documented. New records (boldface) are as compared to mapped records in *Atlas of the Flora of the Great Plains* (Great Plains Flora Assn. 1977). Some of these new records are mapped in *The Flora of Nebraska* (Kaul et al. 2006), whose nomenclature is used below. Introduced, naturalized species are indicated by an asterisk (*). Most of the vouchering specimens are in the Bessey Herbarium of the University of Nebraska State Museum, Lincoln.

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACERACEAE</td>
<td><em>Acer ginnala</em>, Amur maple*</td>
<td></td>
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<tr>
<td></td>
<td><em>Acer negundo</em>, box elder</td>
<td></td>
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<tr>
<td></td>
<td><em>Acer saccharinum</em>, silver maple, soft maple</td>
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<tr>
<td>ADOXACEAE</td>
<td><em>Viburnum opulus</em>, highbush-cranberry*</td>
<td></td>
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<tr>
<td>AGAVACEAE</td>
<td><em>Yucca glauca</em>, yucca</td>
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<tr>
<td>ALISMATACEAE</td>
<td><em>Sagittaria cuneata</em>, arrowhead, duck-potato</td>
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<tr>
<td></td>
<td><em>Sagittaria latifolia</em>, arrowhead</td>
<td></td>
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<tr>
<td>AMARANTHACEAE</td>
<td><em>Amaranthus albus</em>, pale amaranth</td>
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<tr>
<td></td>
<td><em>Amaranthus retroflexus</em>, redroot pigweed</td>
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<td></td>
<td><em>Amaranthus tuberculatus</em>, water-hemp</td>
<td></td>
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<td></td>
<td><em>Froelichia floridana</em>, snake-cotton</td>
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<td></td>
<td><em>Froelichia gracilis</em>, slender snake-cotton</td>
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<tr>
<td>ANACARDIACEAE</td>
<td><em>Rhus aromatica</em>, fragrant sumac*</td>
<td></td>
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<td></td>
<td><em>Rhus glabra</em>, smooth sumac</td>
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<td></td>
<td><em>Rhus typhina &quot;Laciniata&quot;</em>, staghorn sumac*</td>
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<td></td>
<td><em>Toxicodendron radicans negundo</em>, poison ivy</td>
<td></td>
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<tr>
<td></td>
<td><em>Toxicodendron radicans rydbergii</em>, poison ivy</td>
<td></td>
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<tr>
<td>APIACEAE</td>
<td><em>Berula erecta</em>, water-parsnip</td>
<td></td>
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<tr>
<td></td>
<td><em>Cicuta maculata</em>, common water-hemlock</td>
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<tr>
<td></td>
<td><em>Conium maculatum</em>, poison-hemlock*</td>
<td></td>
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<tr>
<td></td>
<td><em>Osmorhiza longystylis</em>, long-styled sweet cicely</td>
<td></td>
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<td></td>
<td><em>Polytaenia nuttalii</em>, prairie-parsley</td>
<td></td>
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<tr>
<td></td>
<td><em>Sanicula canadensis</em>, Canada sanicle</td>
<td></td>
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<td></td>
<td><em>Sanicula odorata</em>, cluster sanicle</td>
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<td></td>
<td><em>Spermolepis inermis</em>, scaleseed</td>
<td></td>
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<tr>
<td>APOCYNACEAE</td>
<td><em>Apocynum cannabinum</em>, hemp dogbane</td>
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<tr>
<td></td>
<td><em>Asclepias arenaria</em>, sand milkweed</td>
<td></td>
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<tr>
<td></td>
<td><em>Asclepias engelmanniana</em>, slender-leaf milkweed</td>
<td></td>
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<tr>
<td></td>
<td><em>Asclepias incarnata</em>, swamp milkweed</td>
<td></td>
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<tr>
<td></td>
<td><em>Asclepias speciosa</em>, showy milkweed</td>
<td></td>
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<tr>
<td></td>
<td><em>Asclepias speciosa x syriaca</em>, hybrid milkweed</td>
<td></td>
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<tr>
<td></td>
<td><em>Asclepias syriaca</em>, common milkweed</td>
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<tr>
<td></td>
<td><em>Asclepias verticillata</em>, whorled milkweed</td>
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<tr>
<td></td>
<td><em>Asclepias viridiflora</em>, green milkweed</td>
<td></td>
</tr>
<tr>
<td>ARACEAE</td>
<td><em>Arisamea triphyllum</em>, jack-in-the-pulpit</td>
<td></td>
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<tr>
<td>ASTERACEAE</td>
<td><em>Achillea millefolium</em>, yarrow</td>
<td></td>
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<tr>
<td></td>
<td><em>Ageratina altissima</em>, white snakeroot</td>
<td></td>
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<td></td>
<td><em>Ambrosia artemisiifolia</em>, common ragweed</td>
<td></td>
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<td></td>
<td><em>Ambrosia psilostachya</em>, western ragweed</td>
<td></td>
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<td></td>
<td><em>Ambrosia trifida</em>, giant ragweed</td>
<td></td>
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<tr>
<td></td>
<td><em>Antennaria neglecta</em>, pussytoes</td>
<td></td>
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<tr>
<td></td>
<td><em>Antennaria parvifolia</em>, pussytoes</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Arctium minus</em>, burdock*</td>
<td></td>
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<tr>
<td></td>
<td><em>Artemisia dracunculus</em>, silky wormwood</td>
<td></td>
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<tr>
<td></td>
<td><em>Artemisia ludoviciana</em>, Louisiana sage</td>
<td></td>
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<td></td>
<td><em>Aster novae-angliae</em>, New England aster</td>
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<tr>
<td></td>
<td><em>Aster oblongifolius</em>, aromatic aster</td>
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<tr>
<td></td>
<td><em>Aster praealtus nebraskensis</em>, willowleaf aster</td>
<td></td>
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<tr>
<td></td>
<td><em>Bidens bipinnatus</em>, Spanish needles</td>
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<td><em>Bidens cernuus</em>, bur-marigold</td>
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<td><em>Bidens conosus</em>, beggarticks</td>
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<td></td>
<td><em>Bidens connatus</em> (both varieties), beggarticks</td>
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<td><em>Bidens frondosus</em>, beggarticks</td>
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<td></td>
<td><em>Bidens trichosperma</em>, tickseed sunflower</td>
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<td><em>Bidens vulgatus</em>, beggarticks</td>
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<td><em>Brickellia eupatorioides corymbulosa</em>, false boneset</td>
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<td></td>
<td><em>Carduus nutans</em>, musk thistle*</td>
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<tr>
<td></td>
<td><em>Cirsium altissimum</em>, tall thistle</td>
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<tr>
<td></td>
<td><em>Cirsium canescens</em>, Platte thistle</td>
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<tr>
<td></td>
<td><em>Coryza canadensis</em>, horseweed, marestail</td>
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<tr>
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<td><em>Coreopsis lanceolata</em>, lanceleaf tickseed*</td>
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<td><em>Coreopsis tinctoria</em>, plains coreopsis</td>
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<td><em>Dyssodia papposa</em>, fetid marigold</td>
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<td></td>
<td><em>Echinacea angustifolia</em>, narrow-leaf purple coneflower</td>
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</tbody>
</table>
Eclipta prostrata, yerba de tajo
Erechtites hieraciifolia, fireweed
Erigeron annuus, annual fleabane
Erigeron philadelphicus, marsh fleabane
Erigeron strigosus, daisy fleabane
Eupatorium altissimum, tall boneset
Eupatorium maculatum v. brunerii, spotted Joe Pye weed
Eupatorium perfoliatum, boneset
Euthamia gymnospermoides, golden-top
Gnaphalium obtusifolium, fragrant cudweed
Grindelia squarrosa, curly-cup gumweed
Helenium autumnale, sneezeweed
Helianthus annuus, common sunflower
Helianthus grosseserratus, sawtooth sunflower
Helianthus petiolaris, plains sunflower
Helianthus tuberosus, Jerusalem artichoke
Heliopsis helianthoides, false sunflower
Heterotheca latifolia, camphor-weed
Heterotheca villosa, golden-aster
Hymenopappus tenuifolius
Iva annua, marsh-elder
Lactuca serriola, prickly lettuce*
Leucanthemum vulgare, oxeye daisy*
Liatris punctata, gayfeather
Liatris squarrosa glabrata, gayfeather
Matricaria matricarioides, pineapple weed*
Nothocalais cuspidata, false dandelion
Rudbeckia hirta, black-eyed Susan
Rudbeckia laciniata, cutleaf coneflower
Senecio plattensis, prairie ragwort
Silphium integrifolium v. laeve, rosinweed
Silphium laciniatum, compass plant
Silphium perfoliatum, cup plant
Solidago canadensis, Canada goldenrod
Solidago gigantea, tall goldenrod
Solidago mollis, soft goldenrod
Solidago nemoralis, gray goldenrod
Taraxacum officinale, dandelion*
Thelesperma megapotamicum, greenthread
Tragopogon dubius, goat’s-beard*
Vernonia baldwinii, interior, western ironweed
Xanthium strumarium, spiny cocklebur

BERBERIDACEAE
Berberis vulgaris, European barberry*

BIGNONIACEAE
Catalpa speciosa, northern catalpa*

BORAGINACEAE
Hackelia virginiana, stickseed
Lithospermum caroliniense, plains pucoon
Lithospermum incisum, fringed pucoon
Onosmodium molle occidentale, false gromwell

BRASSICACEAE
Arabis hirsuta pycnocarpa, rock cress
Barbarea vulgaris, winter cress*
Capsella bursa-pastoris, shepherd’s-purse*
Cardamine pensylvanica, bitter cress
Chorispora tenella, blue mustard*
Descurainia pinnata, tansy mustard
Descurainia sophia, tansy mustard*
Erysimum repandum, bushy wallflower*
Hesperis matronalis, dame’s rocket*
Lepidium densiflorum, pepper-grass
Physaria ludoviciana, bladderpod
Rorippa palustris glabra, bog yellow-cress
Rorippa sessiliflora, yellow-cress
Sisymbrium loeselii, tall hedge-mustard*
Thlaspi arvense, field penny-cress*

CACTACEAE
Opuntia fragilis, little prickly-pear
Opuntia humifusa, eastern prickly-pear

CAESALPINIACEAE
Chamaecrista fasciculata, showy partidge-pea
Gleditsia triacanthos, honey-locust
Gymnocladus dioica, Kentucky coffee tree

CAMPANULACEAE
Lobelia siphilitica, great blue lobelia
Lobelia spicata, palespike lobelia
Triodanis perfoliata, Venus’s looking-glass

CANNABACEAE
Cannabis sativa, marijuana*
Humulus lupulus, hop

CAPRIFOLIACEAE
Lonicera japonica, Japanese honeysuckle*
Lonicera morrowii, Morrow's honeysuckle
Lonicera tatarica, Tatarian honeysuckle
Sambucus canadensis, elderberry
Symphoricarpos occidentalis, wolfberry
Symphoricarpos orbiculatus, coralberry

CARYOPHYLLACEAE
Agrostemma githago, corn-cockle
Arenaria serpyllifolia, thyme-leaf sandwort
Cerastium brachypodum, chickweed
Cerastium fontanum vulgare, chickweed
Dianthus armeria, Deptford pink
Holosteum umbellatum, jagged chickweed
Saponaria officinalis, soapweed, bouncing Bet
Stellaria media, common chickweed

CELASTRACEAE
Celastrus scandens, American bittersweet
Euonymus atropurpureus, wahoo

CELTIDACEAE
Celtis occidentalis, hackberry

CERATOPHYLLACEAE
Ceratophyllum demersum, coontail

CHENOPODIACEAE
Chenopodium glaucum, oakleaf goosefoot
Chenopodium simplex, maple-leaf goosefoot
Chenopodium standleyanum, Standley's goosefoot
Chenopodium strictum, goosefoot
Corispermum americanum, American bugseed
Cycloloma atriplicifolium, winged pigweed
Kochia scoparia kochia, summer cypress
Salsola tragus = S. iberica, Russian thistle

CISTACEAE
Lechea mucronata, pinweed

CLEOMACEAE
Polanisia jamesii, James's clammyweed

CLUSIACEAE
Hypericum perforatum, common St. John's-wort

COMMELINACEAE
Commelina communis, dayflower
Tradescantia occidentalis, spiderwort

CONVOLVULACEAE
Calystegia macounii, Macoun's bindweed
Calystegia sepium angulata, hedge bindweed
Convolvulus arvensis, field bindweed
Ipomoea hederacea, ivyleaf morning-glory
Ipomoea purpurea, common morning-glory

CORNACEAE
Cornus drummondii, rough-leaf dogwood
Cornus sericea, red-osier dogwood

CRASSULACEAE
Penthorum sedoides, ditch stonecrop

CUCURBITACEAE
Echinocystis lobata, wild-cucumber
Sicyos angulatus, bur-cucumber

CUPRESSACEAE
Juniperus virginiana, eastern red-cedar

CYPERACEAE
Bolboschoenus fluitatilis, river bulrush
Carex bebbii, sedge
Carex blanda, sedge
Carex brevior, sedge
Carex comosa, sedge
Carex crawei, sedge
Carex davisi, sedge
Carex eleocharis, sedge
Carex emoryi, sedge
Carex granularis haleana, sedge
Carex gravida, sedge
Carex heliophila, sunsedge
Carex hystericonia, sedge
Carex laeviconica, sedge
Carex meadii, sedge
Carex molesta, sedge
Carex pellita, sedge
Carex praegracilis, sedge
Carex sartwellii, sedge
Carex scoparia, sedge
Carex stipata, sedge
Carex tetanica, sedge
Carex vulpinoidea, sedge
Cyperus acuminatus, flatsedge
Cyperus bipartitus, brook flatsedge
Cyperus erythrorhizos, redroot flatsedge
Cyperus lupulinus lupulinus, flatsedge
Cyperus lupulinus × schweinitzii, flatsedge
Cyperus odoratus, rusty flatsedge
Cyperus schweinitzii, Schweinitz's flatsedge
Cyperus squarrosus, flatsedge
Cyperus strigosus, false nutsedge, umbrella sedge
Eleocharis compressa, spikerush
Eleocharis ehrhropoda, redstem spikerush
Schoenoplectus pungens, common threequare
Schoenoplectus tabernaemontani, softstem bulrush
Scirpus pallidus, bulrush
Scirpus pendulus, bulrush

DRYOPTERIDACEAE
Onoclea sensibilis, sensitive fern

ELAEAGNACEAE
Elaeagnus angustifolia, Russian olive*

EQUISETACEAE
Equisetum arvense, field horsetail
Equisetum hyemale v. affine, scouring-rush
Equisetum laevigatum, scouring-rush

EUPHORBIACEAE
Acalypha rhomboidea, three-seeded mercury
Croton texensis, Texas croton
Euphorbia davidii, western toothed spurge
Euphorbia esula esula, leafy spurge*
Euphorbia geyeri, Geyer's spurge
Euphorbia glyptosperma, spurge
Euphorbia hexagona, six-angle spurge
Euphorbia marginata, snow-on-the-mountain
Euphorbia missurica intermedia, Missouri spurge
Euphorbia nutans, eyebane
Euphorbia stictospora, spurge

FABACEAE
Amorpha canescens, leadplant
Amorpha fruticosa, wild-indigo
Apis americana, ground-nut

Astragalus canadensis, Canadian milkvetch
Astragalus crassicarpus, ground-plum
Crotalaria sagittalis, rattlebox
Dalea leporina, hare's-foot dalea
Dalea purpurea purpurea, purple prairie-clover
Dalea villosa, silky prairie-clover
Desmodium glutinosum, large-flowered tick-clover
Glycyrrhiza lepidota, wild licorice
Lathyrus polymorphus, hoary vetch
Lespedeza capitata, round-head lespedeza
Lotus corniculatus, bird's-foot trefoil*
Lotus purshianus, prairie trefoil
Medicago lupulina, black medick*
Medicago sativa sativa, alfalfa*
Melilotus albus, white sweet-clover*
Melilotus officinalis, yellow sweet-clover*
Oxytropis lambertii, purple locoweed
Pediomelum argophyllum, silver-leaf scurfpea
Pediomelum digitatum, palmleaf scurfpea
Psoralidium lanceolatum, lemon scurfpea
Robinia pseudoacacia, black-locust*
Strophostyles helvula, wild bean
Strophostyles leiosperma, slickseed wild bean
Trifolium hybridum, Alsike clover*
Trifolium pratense, red clover*
Trifolium repens, white clover*
Vicia villosa, hairy vetch*

FAGACEAE
Quercus macrocarpa, bur oak

GENTIANACEAE
Gentiana andrewsii dakotica, bottle gentian
Gentiana puberulenta, downy gentian

GROSSULARIACEAE
Ribes missouriense, Missouri gooseberry

HYDROCHARITACEAE
Elodea nuttallii, elodea
Naias guadalupensis, naiad

HYDROPHYLLACEAE
Ellisia nyctelea, waterpod

IRIDACEAE
Belamcanda chinensis, blackberry lily*
Iris germanica, bearded iris
Iris pseudacorus, yellow iris, yellow flag
Sisyrinchium campestre, blue-eyed grass
Sisyrinchium montanum, blue-eyed grass

JUGLANDACEAE
Juglans nigra, black walnut

JUNCACEAE
Juncus arcticus balticus, Baltic rush
Juncus brachyphyllus, shortleaf rush
Juncus dudleyi, Dudley's rush
Juncus interior, inland rush
Juncus torreyi, Torrey's rush

LAMIACEAE
Hedeoma hispida, rough false pennyroyal
Leonurus cardiaca, motherwort
Lycopus americanus, American water-horehound
Lycopus asper, western water-horehound
Monarda fistulosa, wild-bergamot
Monarda punctata occidentalis, horsemint
Nepeta cataria, catnip
Prunella vulgaris lanceolata, American heal-all
Prunella vulgaris vulgaris, European heal-all
Pycnanthemum virginianum, Virginia mountain-mint
Salvia reflexa, Rocky Mountain salvia
Scutellaria galericulata, marsh skullcap
Scutellaria lateriflora, mad-dog skullcap
Scutellaria parvula missouriensis, little skullcap
Teucrium canadense canadense, American germander
Teucrium canadense occidentale, American germander

LEMNACEAE
Lemna spp., duckweed
Spirodela polyrrhiza, greater duckweed
Wolfia columbiana, Columbian watermeal

LILIACEAE
Allium canadense canadense, wild onion
Allium canadense fraseri, wild onion
Allium canadense lavandulare, wild onion
Allium per dulce, fragrant onion
Asparagus officinalis, asparagus
Convallaria majalis, lily-of-the-valley
Erythronium albidum, prairie fawnlily
Hemerocallis fulva, daylily
Hypoxis hirsuta, yellow star-grass
Polygonatum biflorum, Solomon's seal
Smilacina stellata, starry false Solomon's seal

LINACEAE
Linum rigidum simulans, stiff flax
Linum sulcatum, grooved flax

LYTHRACEAE
Ammannia robusta, toothcup
Lythrum alatum, winged loosestrife
Lythrum salicaria, purple loosestrife

MALVACEAE
Abutilon theophrasti, velvet leaf
Callirhoe alcaeoides, pink poppy-mallow
Callirhoe involucrata, purple poppy-mallow
Hibiscus laevis, halberd-leaf rose-mallow

MARSILEACEAE
Marsilea vestita, pepperwort, water-clover

MENISPERMACEAE
Menispermum canadense, moonseed

MIMOSACEAE
Desmanthus illinoensis, Illinois tick-clover

MOLLUGINACEAE
Mollugo verticillata, carpet-weed

MORACEAE
Morus alba, white mulberry

NELUMBONACEAE
Nelumbo lutea, American lotus, chinkapin

NYCTAGINACEAE
Mirabilis hirsuta, hairy four-o'clock
Mirabilis nyctaginea, wild four-o'clock

NYMPHAEACEAE
Nymphaea odorata s.l., white waterlily

OLEACEAE
Fraxinus pennsylvanica, green ash
ONAGRACEAE
Calylophus serrulatus, plains evening-primrose
Gaura coccinea, scarlet gaura
Oenothera biennis, common evening-primrose
Oenothera rhombipetala, fourpoint evening-primrose

ORCHIDACEAE
Cypripedium candidum, white lady's-slipper

OXALIDACEAE
Oxalis dillenii, gray oxalis

PAPAVERACEAE
Argemone polyanthemos, prickly poppy

PHRYMACEAE
Phryma leptostachya, lopseed

PLANTAGINACEAE
Plantago lanceolata, English plantain*
Plantago patagonica patagonica, woolly plantain
Plantago rugelii, American plantain
Plantago virginica, plantain

POACEAE
Agropyron cristatum, crested wheatgrass*
Agrostis hyemalis, tickle-grass
Agrostis stolonifera, redtop*
Andropogon gerardii gerardii, big bluestem
Andropogon gerardii hallii, sand bluestem
Aristida basiramea, forktip three-awn
Aristida oligantha, oldfield three-awn
Bouteloua curtipendula, sideoats grama
Bouteloua gracilis, blue grama
Bouteloua hirsuta, hairy grama
Bromus inermis, smooth brome*
Bromus japonicus, hairy chess, Japanese brome*
Bromus pubescens, Canada brome
Bromus tectorum, cheatgrass*
Buchloe dactyloides, buffalo grass
Calamovilfa longifolia, prairie sandreed
Cenchrus longispinus, sandbur
Chloris verticillata, windmill grass
Dactylis glomerata, orchard grass*
Digitaria cognata, fall witchgrass
Digitaria ischaemum, smooth crabgrass*
Digitaria sanguinalis, hairy crabgrass*
Echinochloa crusgalli, barnyard grass*
Echinochloa muricata microstachya, barnyard grass
Eleusine indica, gooseegrass*
Elymus canadensis, Canada wild rye
Elymus elongatus, tall wheatgrass*
Elymus hispidus, intermediate wheatgrass
Elymus repens, quackgrass*
Elymus smithii, western wheatgrass
Elymus trachycaulus trachycaulus, slender wheatgrass
Elymus villosus, hairy wild-rye
Elymus virginiticus, Virginia wild-rye
Eragrostis cilianensis, stinkgrass*
Eragrostis pectinacea, Carolina lovegrass
Eragrostis spectabilis, purple lovegrass
Eragrostis trichodes, sand lovegrass
Eriochloa contracta, prairie cupgrass
Glyceria grandis, tall manna-grass
Glyceria striata, fowl manna-grass
Hordeum jubatum, foxtail barley
Hordeum pusillum, little barley
Koeleria macrantha, Junegrass
Leersia virginica, Virginian cutgrass
Lolium arundinaceum, tall-fescue
Lolium perenne, perennial ryegrass*
Miscanthus saccharifolius, silver grass, miscanthus*
Muhlenbergia frondosa, wirestem muhly
Muhlenbergia glomerata, muhly
Muhlenbergia mexicana, wirestem muhly
Muhlenbergia pungens, blowout
Muhlenbergia racemosa, marsh muhly
Panicum acuminatum, panic grass
Panicum capillare, common witchgrass
Panicum dichotomiflorum, fall panicum
Panicum leibergii, Leiberg panicum
Panicum oligosanthes scribnerianum, Scribner's panicum
Panicum virgatum, switchgrass
Paspalum setaceum stramineum, paspalum
Phalaris arundinacea, reed canary-grass*
Phleum pratense, timothy*
Phragmites australis, common reed
Poa annua, annual bluegrass*
Poa compressa, Canada bluegrass
Poa pratensis, Kentucky bluegrass (*)
Polypogon monspeliensis, rabbitfoot grass*
Redfieldia flexuosa, blowout grass
Schedonnardus paniculatus, tumblegrass
Schizachyrium scoparium, little bluestem
Secale cereale, rye*
Setaria italica, foxtail millet*
Setaria pumila, yellow foxtail*
Setaria verticillata, bristly foxtail*
Setaria viridis, green foxtail*
Sorghastrum nutans, switchgrass
Sorghum bicolor, sorghum, milo*
Spartina pectinata, prairie cordgrass
Sphenopholis obtusata major, wedgegrass
Sphenopholis obtusata obtusata, wedgegrass
Sporobolus cryptandrus, sand dropseed
Sporobolus vaginiflorus, poverty grass
Stipa spartea, porcupine grass
Tridens flavus, purpletop grass
Triplasis purpura, purple sandgrass
Tripsacum dactyloides, eastern gamagrass
Triticum aestivum, wheat*
Vulpia octoflora, six-weeks fescue
Zizania palustris interior, interior wild-rice

POLEMONIACEAE
Phlox paniculata, summer phlox*

POLYGONACEAE
Eriogonum annuum, annual wild-buckwheat
Polygonum achoreum, knotweed
Polygonum aviculare, knotweed, wireweed*
Polygonum bicorne, pink smartweed
Polygonum coccineum, scarlet smartweed
Polygonum convolulus, black-bindweed*
Polygonum lapathifolium, nodding smartweed
Polygonum pensylvanicum, Pennsylvania smartweed
Polygonum persicaria, smartweed*
Polygonum punctatum, water smartweed
Polygonum ramosissimum (all vars.), bushy knotweed
Polygonum scandens, climbing false-buckwheat
Polygonum tenue, slender knotweed
Rumex acetosella, sheep sorrel*
Rumex altissimus, pale dock, tall dock
Rumex patientia orientalis, patience dock*
Rumex stenophyllus, narrowleaf dock*

PONTEDERAICEAE
Heteranthera limosa, mud-plantain

PORTULACEAE
Phemeranthus parviflorus, prairie fame-flower
Phemeranthus rugospermus, sand fame-flower

POTAMOGETONACEAE
Potamogeton foliosus, leafy pondweed
Potamogeton illinoensis, Illinois pondweed
Potamogeton nodosus, floating-leaf pondweed
Potamogeton pectinatus, sago pondweed
Potamogeton pusillus, small pondweed

PRIMULACEAE
Androsace occidentalis, western rock-jasmine
Lysimachia nummularia, moneywort*

RANUNCULACEAE
Anemone canadensis, meadow anemone
Anemone caroliniana, Carolina anemone
Aquilegia canadensis, columbine
Delphinium virescens, prairie larkspur
Ranunculus abortivus, kidney-leaf buttercup
Ranunculus flabellaris, yellow water-crowfoot
Ranunculus longirostris, white water-crowfoot
Ranunculus seleratus, cursed crowfoot
Thalictrum dasycarpum, purple meadow-rue

RHAMNACEAE
Rhamnus cathartica, buckthorn*

ROSACEAE
Agrimonia gryposepala, agrimony
Geum canadense, white avens
Potentilla recta, sulfur cinquefoil
Prunus americana, American plum
Prunus pumila besseyi, sand cherry
Prunus tomentosa, Nanking cherry, bush cherry*
Prunus virginiana, chokecherry
Rosa arkansana, dwarf prairie-rose
Rosa multiflora, multiflora rose*
Rosa woodsii, western wild rose
Rubus occidentalis, black raspberry
RUBIACEAE
Galium aparine, cleavers
Galium circaezans, woods bedstraw
Galium obtusum, bluntleaf bedstraw

RUTACEAE
Zanthoxylum americanum, prickly-ash

SALICACEAE
Populus alba, silver poplar*
Populus deltoides occidentalis, Plains cottonwood
Salix amygdaloides, peach-leaf willow
Salix eriocephala famelica, diamond willow
Salix exigua interior, sandbar willow

SANTALACEAE
Comandra umbellata umbellata, comandra, bastard toadflax

SCROPHULARIACEAE
Agalinis tenuifolia parvifolia, gerardia
Bacopa rotundifolia, water-hyssop
Graziola neglecta, hedge-hyssop
Leucospora multifida, leucospora
Lindernia dubia, false pimpemel
Mimulus glabratus, roundleaf monkey-flower
Mimulus ringens, Allegheny monkey-flower
Penstemon albidos, white beardtongue
Penstemon angustifolius angustifolius, narrowleaf beardtongue
Penstemon buckleyi, Buckley's penstemon
Penstemon grandiflorus, large beardtongue
Scrophularia marilandica, eastern figwort
Verbascum blattaria, moth mullein*
Verbascum thapsus, common mullein*
Veronica anagallis-aquatica, water speedwell*
Veronica catenata, water speedwell*
Veronica peregrina peregrina, purslane speedwell*
Veronica peregrina xalapensis, purslane speedwell*
Veronica polita, veronica*

SIMAROUBACEAE
Ailanthus altissima, tree-of-heaven*

SMILACACEAE
Smilax hispida, greenbriar, prickly catbrier

SOLANACEAE
Datura wrightii, angel's trumpet*
Physalis heterophylla, ivyleaf ground-cherry
Physalis longifolia, common ground-cherry
Solanum carolinense, horse-nettle
Solanum interius, Plains black nightshade
Solanum ptycanthum, black nightshade
Solanum rostratum, buffalo bur

SPARGANIACEAE
Sparganium eurycarpum, bur-reed

TYPHACEAE
Typha angustifolia, narrowleaf cattail
Typha latifolia, broadleaf cattail

ULMACEAE
Ulmus americana, American elm
Ulmus pumila, Siberian elm*
Ulmus rubra, red elm, slippery elm

URTICACEAE
Boehmeria cylindrica, false nettle
Parietaria pensylvanica, pellitory
Urtica dioica, stinging nettle

VERBENACEAE
Lippia lanceolata, northern fogfruit
Verbena bracteata, prostrate vervain
Verbena hastata, common vervain
Verbena stricta, hoary vervain
Verbena urticifolia, white vervain

VIOLACEAE
Viola pubescens eriocarpa, smooth yellow violet
Viola sororia, sister violet

VITACEAE
Parthenocissus quinquefolia, Virginia creeper
Parthenocissus vitacea, woodbine
Vitis riparia, riverbank grape

ZANNICHELLIACEAE
Zannichellia palustris, horned pondweed

ZYGOPHYLLACEAE
Tribulus terrestris, puncture vine*
LITERATURE CITED


Nebraska Gap-Analysis Project. 1993. *Land Cover Classification of Nebraska.* Map 1:1,500,000. Center for Advanced Land Management Information Technologies, University of Nebraska-Lincoln.
