

University of Nebraska - Lincoln

## DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Game and Parks Commission: White  
Papers, Conference Presentations, and  
Manuscripts

Nebraska Game and Parks Commission

---

4-30-2010

### 2009 Vascular Plant Surveys in the Central Niobrara River Valley, Nebraska

Mary Ann Feist

Paul B. Marcum

Loy R. Philippe

Brenda Molano-Flores

Valerie Sivicek

Follow this and additional works at: <https://digitalcommons.unl.edu/nebgamewhitepap>



Part of the [Biodiversity Commons](#), [Botany Commons](#), [Natural Resource Economics Commons](#), and the [Natural Resources and Conservation Commons](#)

---

Feist, Mary Ann; Marcum, Paul B.; Philippe, Loy R.; Molano-Flores, Brenda; and Sivicek, Valerie, "2009 Vascular Plant Surveys in the Central Niobrara River Valley, Nebraska" (2010). *Nebraska Game and Parks Commission: White Papers, Conference Presentations, and Manuscripts*. 135.  
<https://digitalcommons.unl.edu/nebgamewhitepap/135>

This Technical Report is brought to you for free and open access by the Nebraska Game and Parks Commission at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Game and Parks Commission: White Papers, Conference Presentations, and Manuscripts by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Technical Report Entitled:  
**2009 Vascular Plant Surveys in the Central Niobrara River Valley, Nebraska**

For Submission To:  
Nebraska Game and Parks Commission  
Attn.: Gerry Steinauer  
1703 L Street  
Aurora, Nebraska 68818

Submitted by:  
Mary Ann Feist, Paul B. Marcum, Loy R. Phillippe, Brenda Molano-Flores,  
and Valerie Sivicek  
Institute of Natural Resource Sustainability  
Illinois Natural History Survey  
1816 South Oak Street  
University of Illinois  
Champaign, Illinois 61820

April 30, 2010

## Introduction

The Niobrara River Valley in northern Nebraska is an important floristic area. It harbours a number of bryophyte, vascular plant, and animal species that are rarely found in close proximity to one another. Many of these species are more typical farther to the north, east, or west, but over time as climates have changed, have come to settle together in this valley (Kaul et al. 1988). The central Niobrara River Valley may be the most botanically diverse region of Nebraska. Approximately 580 of Nebraska's roughly 2,000 vascular plant species have been documented for the Niobrara Valley Preserve (Schneider et al. 2005). This diversity results from the valley's unique geology and geographic location which supports a variety of native communities ranging from western mixedgrass prairie to eastern deciduous woodlands.

Although the composition of the flora of the central Niobrara River Valley is relatively well known, knowledge of the distribution and abundance of species continues to be refined. Information on rare species and new locations for species can be especially valuable to resource managers and can be utilized to map rare species distributions and model habitat suitability. For these reasons, vascular plant surveys were conducted at three sites on the central Niobrara River Valley in Cherry, Brown, and Keya Paha counties, Nebraska in 2009. The sites visited were the Fort Niobrara National Wildlife Refuge (FNNWR), The Nature Conservancy's Niobrara Valley Preserve (NVP), and the property of Martin Vanderploeg known as the Vanderploeg Tract (VT). The Fort Niobrara National Wildlife Refuge, established in 1912, is located in Cherry County approximately 5.5 miles northeast of Valentine. The Vanderploeg Tract, also in Cherry County, is under private ownership and is located approximately 3.5 miles south of Valentine. The Niobrara Valley Preserve, acquired by The Nature Conservancy in 1980, is located 8 miles south of Norden in Brown, Cherry, and Keya Paha counties. The purpose of this study was to: (1) document the vascular plant species present; (2) collect data on rare plant species occurrences; and (3) provide management recommendations for rare plants and plant communities.

## Methods

Personnel from the Illinois Natural History Survey (INHS) and the Nebraska Game and Parks Commission (NGPC) conducted plant surveys at the three sites between 15 and 19 June and 16 and 22 August 2009. Rick Phillippe, Mary Ann Feist, Paul Marcum, and Jim Payne of the Illinois Natural History Survey (INHS) and Gerry Steinauer of the Nebraska Game and Parks Commission (NGPC) conducted the surveys in June. They were joined in August by Brenda Molano-Flores and Valerie Sivicek, also of INHS. Voucher specimens of the vascular plant species encountered were collected and deposited at the Museum Research Collection of the University of Nebraska-Lincoln (NEB), the High Plains Herbarium of Chadron State College (CSCN), and the herbarium of the Illinois Natural History Survey (ILLS). Species lists were compiled for each site (Appendices 1-3). For each species, the community types it was observed in and a frequency rating (abundant, frequent, common, occasional, or rare) is included. Nebraska Natural Heritage Program (NNHP) Rare Plant Survey Forms were completed to document rare plants (S1 or S2 species). One NNHP Ecological Community Survey Form was completed to document a high quality freshwater seep (marsh-type) encountered on the Vanderploeg Tract. Plant community nomenclature follows Rolfsmeier and Steinauer (2010). Vascular plant nomenclature follows Kaul et al. (2006).

## Results

### Plant Communities

Below is a list of the community types encountered during the surveys at each of the three sites.

1. Fort Niobrara National Wildlife Refuge: buckbrush shrubland, basswood-ironwood springbranch canyon forest, cultural, dry upland bur oak woodland, paper birch springbranch canyon forest, perennial sandbar, threadleaf sedge western mixed-grass prairie.
2. Niobrara Valley Preserve: basswood-ironwood springbranch canyon forest, cultural, dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, freshwater seep (spring-type), Great Plains gravel-cobble prairie, paper birch springbranch canyon forest, perennial sandbar, riparian dogwood false-indigobush shrubland, Sandhills dune prairie, Sandhills hardstem bulrush marsh, Sandhills wet meadow, threadleaf sedge western mixed-grass prairie.
3. Vanderploeg Tract: dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, freshwater seep (marsh-type), green ash-elm-hackberry canyon bottomland woodland, ponderosa pine forest, sandbar willow shrubland, Sandhills dune prairie, Sandhills mesic tallgrass prairie, threadleaf sedge western mixed-grass prairie, western sedge wet meadow.

A high quality freshwater seep (marsh-type) community was encountered at the Vanderploeg Tract near the Niobrara River. A NNHP Ecological Community Survey Form was completed and a species list was attached. In addition, six rare plant species (with a total of eight occurrences) were documented for this community. These included *Cardamine bulbosa*, *Carex diandra*, *C. prairea*, *Cicuta bulbifera*, *Ophioglossum pusillum*, and *Pedicularis lanceolata*.

### Vascular Plant Species

A summary of the vascular plant species encountered during the surveys at each of the three sites follows.

1. Fort Niobrara National Wildlife Refuge: A total of 257 species of vascular plants from 65 families were recorded during the surveys. Twenty species (7.8%) are exotic and four (with four occurrences) are NNHP rare species (Table 1). A list of vascular plant species with relative abundance and habitat preference is provided in Appendix 1.
2. Niobrara Valley Preserve: A total of 322 species of vascular plants from 76 families were recorded during the surveys. Twenty-five species (7.8%) are exotic and 15 (with 25 occurrences) are NNHP rare species (Table 1). A list of vascular plant species with relative abundance and habitat preference is provided in Appendix 2.
3. Vanderploeg Tract: A total of 319 species of vascular plants from 67 families were recorded during the surveys. Twenty-eight species (8.8%) are exotic and nine (with 12 occurrences) are NNHP rare species (Table 1). A list of vascular plant species with relative abundance and habitat preference is provided in Appendix 3.

Rare plants encountered at the three sites listed above are given in Table 1. Additional rare plants encountered at other sites within the Niobrara Valley are listed in Table 2. These sites were visited but comprehensive species lists were not developed. NNHP Rare Plant Survey Forms were completed for all rare plants (S1 or S2 species) encountered during the field surveys and turned into Gerry Steinauer (NGPC).

**Table 1. NNHP rare plant species documented on the Fort Niobrara National Wildlife Refuge (FNNWR), the Niobrara Valley Preserve (NVP), and the Vanderploeg Tract (VT) in 2009.**

Species	Common Name	Family	Occurrences by site
<i>Aralia nudicaulis</i>	wild-sarsaparilla	Araliaceae	1 (FNNWR), 4 (NVP)
<i>Arenaria laterflora</i>	bluntleaf sandwort	Caryophyllaceae	1 (FNNWR), 2 (NVP), 2 (VT)
<i>Asclepias languinosa</i>	woolly milkweed	Apocynaceae	2 (NVP), 1 (VT)
<i>Cardamine bulbosa</i>	spring cress	Brassicaceae	1 (VT)
<i>Cardamine pensylvanica</i>	bitter cress	Brassicaceae	1 (NVP)
<i>Carex bebbii</i>	Bebb's oval sedge	Cyperaceae	1 (NVP)
<i>Carex diandra</i>	lesser paniced sedge	Cyperaceae	1 (VT)
<i>Carex peckii</i>	Peck's sedge	Cyperaceae	1 (FNNWR), 2 (NVP)
<i>Carex prairea</i>	prairie sedge	Cyperaceae	1 (VT)
<i>Cicuta bulbifera</i>	bulbous water-hemlock	Apiaceae	1 (NVP), 2 (VT)
<i>Coryphantha missouriensis</i>	Missouri pincushion cactus	Cactaceae	1 (NVP)
<i>Dryopteris carthusiana</i>	spinulose woodfern	Dryopteridaceae	1 (NVP)
<i>Juniperus horizontalis</i>	creeping juniper	Cupressaceae	1 (NVP)
<i>Liparis loeselii</i>	Loesel's twayblade	Orchidaceae	1 (VT)
<i>Ophioglossum pusillum</i>	northern adder's-tongue	Orphioglossaceae	1 (VT)
<i>Pedicularis lanceolata</i>	swamp lousewort	Scrophulariaceae	2 (VT)
<i>Phemeranthus rugospermus</i>	sand fame-flower	Portulacaceae	3 (NVP)
<i>Physocarpus opulifolius</i>	ninebark	Rosaceae	2 (NVP)
<i>Platanthera aquilonis</i>	northern green orchid	Orchidaceae	1 (FNNWR), 2 (NVP)
<i>Ribes hirtellum</i>	gooseberry	Grossulariaceae	1 (NVP)
<i>Scirpus microcarpus</i>	paniced bulrush	Cyperaceae	1 (NVP)

**Table 2. NNHP rare plant species documented at other sites in the area. American Game Marsh Wildlife Management Area (AGMWMA), Willow Lake Wildlife Management Area (WLWMA), Valentine National Wildlife Refuge (VNWR), Steve Hanson's property: large wetland adjacent to Niobrara River (SH).**

Species	Common Name	Family	Occurrences by site
<i>Arenaria laterflora</i>	bluntleaf sandwort	Caryophyllaceae	1 (VNWR)
<i>Cardamine bulbosa</i>	spring cress	Brassicaceae	1 (SH)
<i>Carex bebbii</i>	Bebb's oval sedge	Cyperaceae	1 (SH), 1 (WLWMA)
<i>Eleocharis wolfii</i>	Wolf's spikerush	Cyperaceae	1 (WLWMA)
<i>Liparis loeselii</i>	Loesel's twayblade	Orchidaceae	1 (SH)
<i>Ophioglossum pusillum</i>	northern adder's-tongue	Orphioglossaceae	1 (WLWMA), 1 (VNWR)
<i>Scolochloa festucacea</i>	river grass	Poaceae	1 (AGMWMA)
<i>Triadenum fraseri</i>	Fraser's marsh-St. John's-wort	Clusiaceae	1 (VNWR)
<i>Zizania palustris</i>	interior wild-rice	Poaceae	1 (VNWR), 1 (SH)

Potential county records of plant species documented during the surveys within the Niobrara River Valley are presented in Table 3. These are plants that were not reported in Kaul et al. (2006) as occurring in the counties documented during this study. Five potential new county records were found. No new state records were observed.

<b>Species</b>	<b>Common Name</b>	<b>Family</b>	<b>County/Site</b>
<i>Artemisia filifolia</i>	sandsage	Asteraceae	Cherry Co., VT
<i>Chaenorrhinum minus</i>	lesser toadflax	Scrophulariaceae	Cherry Co., VNWR
<i>Physalis longifolia</i>	common ground-cherry	Solanaceae	Cherry Co., VT
<i>Solanum dulcamara</i>	bittersweet nightshade	Solanaceae	Cherry Co., VT
<i>Veronica catenata</i>	speedwell	Scrophulariaceae	Cherry Co., NVP

## Discussion

### Management Recommendations

This section does not cover all biodiversity management issues for the central Niobrara, only issues that were notable to the authors during the survey work and that include problematic and invasive species (herbaceous and woody) and control measures for these species (herbicide use, prescribed burning, thinning, and grazing).

#### 1. Invasive Herbaceous Plants

##### a. Invasive wetland plants

Two highly aggressive invasive wetland plants that have become established in the central Niobrara valley in recent years: reed canary grass (*Phalaris arundinaceae*) and narrow-leaf cattail (*Typha angustifolia*). These species pose a great threat to the biological diversity and scenic qualities of the river channel and associated wetlands, meadows and stream channels. There is an urgent need to control these species.

##### Reed canary grass (*Phalaris arundinaceae*)

Though one variety of reed canary grass is native to North America, a European form of the grass has become invasive on our continent. The European variety of reed canary grass was seeded into Sandhills wet meadows as early as the 1930s. Reed canary grass is a perennial, which spreads extensively through rhizomes and is a prolific seed producer. Ten years ago reed canary grass had a limited distribution in the central Niobrara River valley. In the last decade it has spread rapidly in wet areas of the floodplain and on low terrace wetlands. In other areas of Nebraska it now dominates the floodplain wetlands (grasslands, woodlands and marshes) of many river and stream valleys where it is beyond control.

East of Valentine, reed canary grass is beginning to form monocultures over much of the Niobrara River's banks and some sandbars. It is also moving up small streams that flow into river and occupying meadows and oxbow marshes on the floodplain and low terraces. One site where the rapid spread of reed canary grass can be observed is the stream-side wetlands of Middle Creek where it is crossed the "river road" about 1/8 of a mile west of the "Norden Road". Not present at this location just a few years ago, reed canary grass now dominates a few hundred square meters of wetland on both sides of the road.

Reed canary forms dense monocultures excluding native vegetation, degrades wildlife habitat and is extremely difficult to control. Herbicide applications over several years are required to reduce populations. Reed canary grass will likely be more damaging to native biodiversity in the valley than present infestations of purple loosestrife (*Lythrum salicaria*), which is somewhat susceptible to biological control. There is no biological control for reed canary grass and since it is a forage grass developing biological controls will be politically difficult.

#### Narrow-leaf cattail (*Typha angustifolia*)

Narrow-leaf cattail is a Eurasian species that has spread rapidly over the state in the last decade invading marshes and other shallow water wetlands. Its rapid spread has likely been facilitated by hybridization with the native broad-leaf cattail (*T. latifolia*). In most areas of the state narrow-leaf or hybrid cattails are rapidly displacing the native cattail. Narrow-leaf cattail has narrower leaves and taller growth form than broad-leaf cattail. It also has a stem gap between the male and female flower heads, whereas there is no gap between the male and female flower heads of broad-leaf cattail.

In wetlands, the native broad-leaf cattail often occurs as somewhat scattered individuals, whereas, narrow-leaf cattail forms dense, near monoculture stands displacing native vegetation and degrading wildlife habitat. Narrow-leaf cattail is becoming prolific in many Sandhills wetlands and elsewhere in the state. Presently, narrow-leaf cattail has a limited distribution in the central Niobrara valley. During this survey, narrow-leaf cattail was found in backwater wetlands on the Marty Vanderploeg and Steve Hanson properties east of Valentine and is likely present in other central Niobrara River valley wetlands. It is probably only a matter of time before it becomes more widespread in the valley.

#### Common reed (European variety) (*Phragmites australis* ssp. *australis*)

The European variety of common reed has invaded sandbars and mudflats on the Platte River and other river systems in southern Nebraska. A population of the invasive common reed was recently found at a Sandhills wetland approximately 25 miles south of Valentine. With the heavy canoe traffic on the central Niobrara (a potential source of seed transport) it is probably only a matter of time before the European variety of common reed reaches the central Niobrara River. It is also a very aggressive species that forms dense monocultures on sandbars and stream banks.

### **b. Invasive upland plants**

Two highly aggressive invasive upland species have become established: garlic mustard (*Alliaria petiolata*) and smooth brome (*Bromus inermis*). These species pose a great threat to the biological diversity of Nebraska's deciduous woodlands (garlic mustard) and prairies (smooth brome).

#### Garlic mustard (*Alliaria petiolata*)

Garlic mustard is a Eurasian species that invades deciduous woodlands. It is spreading rapidly in native woodlands in eastern Nebraska. It is known from as far west as Dixon County on the Missouri River bluffs, Hall County along the Platte River and near Spearfish in the Black Hills. The present distribution of garlic mustard would make one believe that the deciduous woodlands of the Niobrara River valley are suitable habitat for the species and it is likely to reach the area in coming years.

Garlic mustard is a very aggressive biennial that produces a prolific crop of long-lived seeds. It also produces allelopathic chemicals that deter the growth of native plants, including tree seedlings. Once areas are infested, this species spreads rapidly and is very difficult to control.

#### Smooth brome (*Bromus inermis*)

Smooth brome is an aggressive Eurasian forage grass that occupies lowland prairies and mixedgrass prairies on loamy soils within the central Niobrara River valley. Along with eastern red cedar (*Juniperus*

*virginiana*) it is probably the greatest invasive threat to these habitats in the valley. Overgrazing can promote its spread, but lack of management (active grazing or fire) and subsequent litter accumulation can also promote its spread. Smooth brome appears to be coming more abundant in the valley in recent years.

## **2. Invasive Woody Plants**

### Eastern red cedar (*Juniperus virginiana*)

Eastern red cedar has spread prolifically in recent years in grassland and woodland habitats in the central Niobrara valley due to wildfire suppression. Like other invasive species, cedars displace native vegetation and degrade wildlife habitat. The abundance of cedars and young ponderosa pines (*Pinus ponderosa*) in the valley has also greatly increased the potential for catastrophic wildfires. This is due not only to the increased fuel loads, but smaller cedars and pines provide ladder fuels that can carry fire into the crowns off mature pines.

## **3. Control Measures for Invasive Plants**

### **a. Control measures for invasive wetland plants**

1. Wetlands, including stream banks, sandbars, marshes, seeps, streams and springbranch canyons support a large component of the central Niobrara River's biodiversity. The wetland invasive plants mentioned above threaten the biodiversity values of these habitats. They also threatened the scenic and recreational values of the River. For example, stream banks and sandbars choked with reed canary grass and common reed have little scenic value compared to these same areas when dominated by native grasses, sedges and wildflowers. Because reed canary grass and narrow-leaf cattail have only recently invaded the Niobrara River valley and have not overly proliferated, if eradication efforts are initiated soon these species may still be controllable. The exotic common reed and garlic mustard may not yet have reached the central Niobrara River and prevention and early elimination efforts may be yet effective. Annual surveys for these species are highly recommended.
2. Most private landowners in the valley will likely not have the resources or desire to control most invasive plant species on their property. Controlling many of these invasive species only on conservation lands may not be effective as uncontrolled populations on adjacent or upstream private lands will act as a seed source. A comprehensive, agency-lead (possibly the National Park Service) control effort will likely be needed to fight an effective battle against these invasive species.
3. If a wide-scale, comprehensive control of wetland invasive plants is not soon undertaken in the central Niobrara River Valley, reed canary grass and narrow-leaf cattail will expand beyond the point of control and significantly degrade the River valley's native habitats and biodiversity.
4. Control of the above mentioned species will require extensive, timely spot spraying of herbicide by hand crews. Widespread herbicide application by helicopter will not be effective. Such control also eliminates native vegetation that may compete with the exotics. Control of these species will likely be an ongoing effort. One or a few years of control will likely not be effective.

### **b. Prescribed burning**

The deciduous and pine woodlands on the central Niobrara are heavily infested with eastern red cedar which is degrading native biodiversity. Extensive use of prescribed fire and thinning will be necessary to reduce cedar abundance. On many of the bluff woodlands the cedars have reached the size and density



where they cannot be controlled by prescribed fire alone. In many areas mechanical thinning will also be required to restore native plant communities. If extensive cedar control efforts are not soon undertaken, cedar densities will soon reach the point where they are beyond control or control will be extremely costly.

Prescribed fire needs to be restored to the deciduous (and pine woodlands) on the Niobrara. During the restoration phase of oak woodlands, annual or semi-annual controlled burns appear to be effective in restoring community structure and diversity (Steinauer et al. 2010). Once woodlands have the desired structure and composition the fire return interval can be extended. Cedar (and pine thinning) will likely have to be conducted in tandem on many sites within the valley.

### **c. Grazing**

Fort Niobrara National Wildlife Refuge's winter bison pasture located on the north-side of the River in the Wilderness Area is one of the highest quality mixed-grass prairies in the state. It has high native plant diversity, few invasive herbaceous plants, and low cedar abundance. Winter bison grazing appears to be one of the better methods to maintain and enhance mixedgrass prairie quality.

Most conservation lands in the central Niobrara River valley are grazed conservatively in a manner that promotes prairie quality. On some conservation lands (in the valley and adjacent landscapes) and a few private lands large ungulate grazing has been removed or is implemented at only long intervals. Here, excess litter accumulation has the potential to reduce native plant diversity and promote the expansion of non-native, cool-season grasses, such as smooth brome and Kentucky bluegrass. Increased use of spring prescribed fire and grazing would reduce litter accumulation, stress the exotic grasses and promote native plant diversity.

## **References**

- Kaul, R.B, G. Kankak, and S. Churchill. 1988. The Niobrara River Valley, a postglacial migration corridor and refugium of forest plants and animals in the grasslands of central North America. *Botanical Review* 54: 44-81.
- Kaul, R.B, D.M. Sutherland, and S.B Rolfsmeier. 2006. *The Flora of Nebraska*. Conservation and Survey Division, School of Natural Resources. University of Nebraska-Lincoln. 970 pp.
- Rolfsmeier, S. and G. Steinauer. (2010). *Terrestrial Ecological Systems and Natural Communities of Nebraska* (Vers. 4). Nebraska Game and Parks Commission, Lincoln, NE. 223 pp.
- Schneider, R., M. Humpert, K. Stoner, and G. Steinauer. 2005. *The Nebraska Natural Legacy Project, A Comprehensive Wildlife Conservation Strategy*. The Nebraska Game and Parks Commission. Lincoln, Nebraska. 245 pp.
- Steinauer, G. 2010. *Native Forest and Woodland Management Guidelines for Nebraska's Wildlife Management Areas* (in draft). Nebraska Game and Parks Commission. Lincoln, Nebraska.

## Appendix 1: Vascular Species List

### Fort Niobrara National Wildlife Refuge 2009

**Communities:** buckbrush shrubland, basswood-ironwood springbranch canyon forest, cultural, dry upland bur oak woodland, paper birch springbranch canyon forest, perennial sandbar, threadleaf sedge western mixed-grass prairie

Exotic species are indicated by an asterisk (\*) in front of the species name. Vouchered specimens are followed by the collector's initial and the collection number.

**Collectors:** Mary Ann Feist (F), Paul B. Marcum (M), Loy R. Phillippe (P), Valerie Sivicek (S)

**Frequency ratings:** rare, occasional, common, frequent, abundant

#### Aceraceae

*Acer negundo* L. (box elder): occasional; paperbirch springbranch canyon forest; P41642, S48

#### Agavaceae

*Yucca glauca* Nutt. (yucca): occasional; threadleaf sedge western mixed-grass prairie

#### Anacardiaceae

*Rhus aromatica* Aiton. (fragrant sumac): common; buckbrush shrubland, threadleaf sedge western mixed-grass prairie; M5862, P41611

*Rhus glabra* L. (skunkbrush sumac): common; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest, perennial sandbar; P41654, S69

*Toxicodendron radicans* (L.) Kuntze var. *rydbergii* (Small ex Rydb.) Erskine (western poison-ivy): frequent; buckbrush shrubland, basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest, perennial sandbar, threadleaf sedge western mixed-grass prairie; P41628

#### Apiaceae

*Cicuta maculata* L. (common water-hemlock): occasional; paperbirch springbranch canyon forest; S43

*Heracleum lanatum* Michx. (cow-parsnip): occasional; paperbirch springbranch canyon forest; P41651

*Osmorhiza claytonii* (Michx.) C.B. Clarke (bland sweet cicely): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; P41661

*Sanicula canadensis* L. (Canadian sanicle): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest; F4406, S47

#### Apocynaceae

*Apocynum cannabinum* L. (Indian-hemp): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest

*Asclepias pumila* (A. Gray) Vail (dwarf milkweed): occasional; threadleaf sedge western mixed-grass prairie; M5879, S51

*Asclepias stenophylla* Gray (narrowleaf milkweed): occasional; threadleaf sedge western mixed-grass prairie; F4393

*Asclepias verticillata* L. (whorled milkweed): occasional; threadleaf sedge western mixed-grass prairie; F4371

#### Araliaceae

*Aralia nudicaulis* L. (wild-sarsaparilla): locally common; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; P41663

## Asteraceae

- Ageratina altissima* (L.) R. King & H. Robins. (white snakeroot): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland
- Ambrosia artemisiifolia* L. (annual ragweed): occasional; basswood-ironwood springbranch canyon forest; F4405
- Ambrosia psilostachya* DC. (western ragweed): frequent; threadleaf sedge western mixed-grass prairie; M5855
- Artemisia campestris* L. ssp. *caudata* (Michx.) H.M. Hall & Clem. (western sagewort): common; threadleaf sedge western mixed-grass prairie; M5872
- Artemisia frigida* Willd. (fringed sage): common; threadleaf sedge western mixed-grass prairie; M5860
- Artemisia ludoviciana* Nutt. var. *ludoviciana* (white sage): common; threadleaf sedge western mixed-grass prairie; F4378
- Aster ericoides* L. ssp. *ericoides* (heath aster): common; threadleaf sedge western mixed-grass prairie; F4384
- Aster lanceolatus* Willd. ssp. *lanceolatus* (panicled aster): occasional; paperbirch springbranch canyon forest; S38
- Brickellia eupatorioides* (L.) Shinnery var. *corymbulosa* (Torr. & A. Gray) Shinnery (false boneset): occasional; threadleaf sedge western mixed-grass prairie; M5876
- Cirsium altissimum* (L.) Spreng. (tall thistle): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; F4411
- Cirsium undulatum* (Nutt.) Spreng. (wavy-leaf thistle): occasional; threadleaf sedge western-mixed-grass prairie; S81
- Conyza canadensis* (L.) Cronq. (horseweed): common; cultural, threadleaf sedge western mixed-grass prairie
- Dyssodia papposa* (Vent.) A.S. Hitchc. (fetid marigold): occasional; cultural, threadleaf sedge western mixed-grass prairie; S83
- Echinacea angustifolia* DC. (narrow-leaf purple coneflower): common; threadleaf sedge western mixed-grass prairie; F4375
- Erigeron bellidiastrum* Nutt. (western fleabane): common; threadleaf sedge western mixed-grass prairie
- Erigeron philadelphicus* L. (marsh fleabane): occasional; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest
- Erigeron strigosus* Muhl. ex Willd. (daisy fleabane): common; threadleaf sedge western mixed-grass prairie; F4383
- Eupatorium maculatum* L. (spotted joe pye weed): occasional; perennial sandbar; S58
- Grindelia squarrosa* (Pursh) Dunal (curly cup gumweed): occasional; threadleaf sedge western mixed-grass prairie
- Gutierrezia sarothrae* (Pursh) Britton & Rusby (turpentine weed): occasional; threadleaf sedge western mixed-grass prairie; M5848, S50
- Helenium autumnale* L. (sneezeweed): occasional; basswood-ironwood springbranch canyon forest
- Helianthus annuus* L. (annual sunflower): occasional; threadleaf sedge western mixed-grass prairie; M5857
- Helianthus pauciflorus* Nutt. ssp. *subrhoideus* (Rydb.) O. Spring & E. Schilling (stiff sunflower): common; threadleaf sedge western mixed-grass prairie; M5874
- Helianthus petiolaris* Nutt. (prairie sunflower): common; threadleaf sedge western mixed-grass prairie; M5858
- Helianthus tuberosus* L. (Jerusalem artichoke): occasional; perennial sandbar; S71
- Heliopsis helianthoides* (L.) var. *scabra* (Dunal) Fernald (ox-eye): occasional; basswood-ironwood springbranch canyon forest, perennial sandbar; S59
- Heterotheca villosa* (Pursh) Shinnery (hairy golden-aster): common; buckbrush shrubland, threadleaf sedge western mixed-grass prairie; M5850

*Hymenopappus tenuifolius* Pursh (old plainsman): common; threadleaf sedge western mixed-grass prairie; P41627

*Iva xanthiifolia* Nutt. (giant marsh-elder): occasional; threadleaf sedge western-mixed-grass prairie; S80

*Lactuca canadensis* L. (wild lettuce): occasional; paperbirch springbranch canyon forest; S46

*Liatris punctata* Hook. (dotted gayfeather): common; threadleaf sedge western mixed-grass prairie; M5878

*Liatris squarrosa* (L.) Michx. (plains gayfeather): common; threadleaf sedge western mixed-grass prairie; F4385

*Lygodesmia juncea* (Pursh) D. Don ex Hook. (skeletonplant): common; threadleaf sedge western mixed-grass prairie; F4373

*Ratibida columnifera* (Nutt.) Woot. & Standl. (prairie coneflower): frequent; buckbrush shrubland, threadleaf sedge western mixed-grass prairie

*Senecio integerrimus* Nuttall (groundsel): occasional; dry upland bur oak woodland; P41637

*Solidago canadensis* L. (Canada goldenrod): occasional; cultural, threadleaf sedge western mixed-grass prairie

*Solidago gigantea* Ait. (late goldenrod): common; basswood-ironwood springbranch canyon forest, perennial sandbar

*Solidago missouriensis* Nutt. (Missouri goldenrod): common; threadleaf sedge western mixed-grass prairie

*Solidago mollis* Bartl. (soft goldenrod): common; threadleaf sedge western mixed-grass prairie; M5854

*Solidago nemoralis* Ait. ssp. *decemflora* (DC.) Brammall ex Semple (gray goldenrod): common; threadleaf sedge western mixed-grass prairie; M5853

*Solidago rigida* L. (stiff goldenrod): occasional; threadleaf sedge western mixed-grass prairie; F4401

\**Sonchus arvensis* L. var. *glabrescens* (field sow-thistle): occasional; perennial sandbar; S63

\**Taraxacum officinale* G.H. Weber ex F.H. Wigg. (dandelion): common; basswood-ironwood springbranch canyon forest, cultural; P41642

\**Tragopogon dubius* Scop. (goat's-beard): occasional; basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie

*Xanthisma spinulosum* (Pursh) D. Morgan & R. Hartman var. *glaberrimum* (Rydb.) D. Morgan & R.L. Hartm. (cutleaf ironplant): occasional; threadleaf sedge western mixed-grass prairie; M5883, P41625

### Balsaminaceae

*Impatiens capensis* Meerb. (orange jewelweed): locally common; basswood-ironwood springbranch canyon forest, perennial sandbar

### Betulaceae

*Betula papyrifera* Marsh (paper birch): occasional; paperbirch springbranch canyon forest; F4419

*Ostrya virginiana* (P. Mill.) K. Koch (ironwood): frequent; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; P41636, S39

### Boraginaceae

*Hackelia deflexa* (Wahlenb.) Opiz var. *americana* (A.Gray) Fernald & I.M. Johnston (nodding stickseed): occasional; dry upland bur oak woodland; P41640

*Hackelia virginiana* (L.) I.M. Johnston (common stickseed): occasional; basswood-ironwood springbranch canyon forest

*Lithospermum incisum* Lehm. (fringed puccoon): common; threadleaf sedge western mixed-grass prairie

*Onosmodium molle* Michx. var. *occidentale* (Mack.) I.M. Johnst. (false gromwell): occasional; buckbrush shrubland, basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie; M5875, P41648

### Brassicaceae

*Arabis hirsuta* (L.) Scop. (hairy rockcress): occasional; dry upland bur oak woodland; P41646, P41669

*Draba reptans* (Lam.) Fernald (white whitlow-grass): common; threadleaf sedge western mixed-grass prairie

*Erysimum asperum* (Nutt.) DC. (western wallflower): common; threadleaf sedge western mixed-grass prairie; P41612

*Erysimum cheiranthoides* L. (wormseed wallflower): occasional; perennial sandbar; S76

*Lepidium densiflorum* Schrad. (common pepperwort): occasional; threadleaf sedge western mixed-grass prairie

*Physaria ludoviciana* (Nutt.) O'Kane & Al-Shehbaz (common bladderpod): common; threadleaf sedge western mixed-grass prairie; P41613

### Cactaceae

*Coryphantha vivipara* (Nutt.) Britt. & Rose (plains pincushion cactus): occasional; threadleaf sedge western mixed-grass prairie

*Opuntia fragilis* (Nutt.) Haw. (brittle prickly-pear): common; threadleaf sedge western mixed-grass prairie

*Opuntia humifusa* (Raf.) Raf. (eastern prickly-pear): common; threadleaf sedge western mixed-grass prairie

### Campanulaceae

*Campanula aparinoides* Pursh (marsh bellflower): occasional; perennial sandbar; S65

*Campanula americana* L. (American bellflower): occasional; paper birch springbranch canyon forest; S45

*Campanula rotundifolia* L. (harebell): locally common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest

*Lobelia siphilitica* L. (great blue lobelia): occasional; paper birch springbranch canyon forest; F4415

### Cannabaceae

*Humulus lupulus* L. (common hop): occasional; perennial sandbar; P41665

### Caprifoliaceae

*Lonicera dioica* L. var. *glaucescens* (Rydb.) Butt. (wild honeysuckle): occasional; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; P41656, S41

*Symphoricarpos occidentalis* Hook. (wolfberry): frequent; buckbrush shrubland, basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest, threadleaf sedge western mixed-grass prairie; F4372

### Caryophyllaceae

*Arenaria lateriflora* L. (sandwort): locally common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest; P41634

*Silene antirrhina* L. (sleepy catchfly): occasional; threadleaf sedge western mixed-grass prairie

*Stellaria longifolia* Muhl. ex Willd. (stitchwort): occasional; perennial sandbar

### Celastraceae

*Celastrus scandens* L. (American bittersweet): occasional; paperbirch springbranch canyon forest, F4150, P41650

### Celtidaceae

*Celtis occidentalis* L. (hackberry): common; dry upland bur oak woodland, paperbirch springbranch canyon forest

### Chenopodiaceae

*Chenopodium simplex* (Torr.) Raf. (maple-leaf goosefoot): occasional; perennial sandbar; S74

*Chenopodium standleyanum* Aellen (smooth goosefoot): occasional; basswood-ironwood springbranch canyon forest; F4410

*Cycloloma atriplicifolium* (Spreng.) J.M. Coult. (winged-pigweed): common; threadleaf sedge western mixed-grass prairie; M5870

\**Salsola* sp. (Russian thistle): occasional; threadleaf sedge western mixed-grass prairie

### **Commelinaceae**

*Tradescantia occidentalis* (Britt.) Smyth (prairie spiderwort): common; threadleaf sedge western mixed-grass prairie

### **Convolvulaceae**

\**Convolvulus arvensis* L. (field bindweed): occasional; threadleaf sedge western mixed-grass prairie

*Ipomoea leptophylla* Torr. (bush morning-glory): occasional; threadleaf sedge western mixed-grass prairie; M5873

### **Cornaceae**

*Cornus sericea* L. (redosier): locally common; perennial sandbar; S68

### **Cucurbitaceae**

*Echinocystis lobata* (Michx.) Torr. & A. Gray (wild cucumber): occasional; perennial sandbar; S70

### **Cupressaceae**

*Juniperus virginiana* L. (eastern red-cedar): abundant; basswood-ironwood springbranch canyon forest, buckbrush shrubland, dry upland bur oak woodland, paper birch springbranch canyon forest

### **Cyperaceae**

*Carex blanda* C. Dewey (sedge): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest

*Carex brevior* (Dewey) Mackenzie (short-beak sedge): common; threadleaf sedge western mixed-grass prairie

*Carex eleocharis* Bailey (needleleaf sedge): occasional; threadleaf sedge western mixed-grass prairie

*Carex filifolia* Nutt. (threadleaf sedge): common; threadleaf sedge western mixed-grass prairie

*Carex gravida* L.H. Bailey (sedge): occasional; dry upland bur oak woodland

*Carex heliophila* Mackenzie (sun sedge): common; threadleaf sedge western mixed-grass prairie

*Carex peckii* Howe (Peck's sedge): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest; P41641

*Carex saximontana* Mack. (sedge): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest: P41635

*Carex sprengelii* Dewey ex Spreng. (long-beak sedge): locally common; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest

*Schoenoplectus tabernaemontani* (K.C. Gmel.) Palla (soft-stem bulrush): occasional; perennial sandbar; S79

*Scirpus pallidus* (Britton) Fernald (bulrush): occasional; basswood-ironwood springbranch canyon forest; F4404

### **Dryopteridaceae**

*Cystopteris fragilis* (L.) Bernh. (brittle bladder fern): occasional; basswood-ironwood springbranch canyon forest; S64

### **Equisetaceae**

*Equisetum arvense* L. (common horsetail): locally common; paperbirch springbranch canyon forest, perennial sandbar,

*Equisetum hyemale* L. var. *affine* (Engelm.) A.A. Eaton (common scouringrush): locally common; basswood-ironwood springbranch canyon forest; P41652

*Equisetum laevigatum* A. Braun (smooth scouringrush): locally common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; paper birch springbranch canyon forest; P41633

### Euphorbiaceae

*Croton texensis* (Klotzsch) Muell.-Arg. (Texas croton): occasional; threadleaf sedge western mixed-grass prairie; F4391

\**Euphorbia cyathophora* Murray (wild poinsetta): occasional; basswood-ironwood springbranch canyon forest; F4420

*Euphorbia hexagona* Nutt. ex Spreng. (six-angle spurge): occasional; threadleaf sedge western mixed-grass prairie; F4386

*Euphorbia glyptosperma* Engelm. (ridge-seed spurge): occasional; threadleaf sedge western mixed-grass prairie; F4390

*Euphorbia missurica* Raf. var. *petaloidea* (Engelm.) L.C. Dorn (prairie spurge): common; threadleaf sedge western mixed-grass prairie; M5868, P41629

### Fabaceae

*Amorpha canescens* Nutt. ex Pursh (leadplant): common; threadleaf sedge western mixed-grass prairie; M5864

*Amorpha fruticosa* L. (false indigo-bush): locally common; paper birch springbranch canyon forest, perennial sandbar

*Amphicarpaea bracteata* (L.) Fernald (hog-peanut): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest; F4414

*Apios americana* Medikus (ground-nut): occasional; perennial sandbar; S56

*Astragalus canadensis* L. (Canada milkvetch): occasional; perennial sandbar; S55

*Astragalus lotiflorus* Hook. (lotus milkvetch): occasional; threadleaf sedge western mixed-grass prairie; P41619

*Astragalus missourienseis* Nutt. (Missouri milkvetch): occasional; threadleaf sedge western mixed-grass prairie

*Dalea aurea* Nutt. ex Pursh (golden prairie-clover): rare; threadleaf sedge western mixed-grass prairie; M5881

*Dalea candida* Michx. ex Willd. var. *oligophylla* (Torr.) Shinners (white prairie-clover): common; threadleaf sedge western mixed-grass prairie; M5849

*Dalea enneandra* Nutt. (nine-anther dalea): occasional; threadleaf sedge western mixed-grass prairie; M5847

*Dalea purpurea* Vent. (purple prairie-clover): common; threadleaf sedge western mixed-grass prairie; M5882

*Desmodium canadense* (L.) DC. (Canada tick-clover): occasional; perennial sandbar; S57

*Glycyrrhiza lepidota* Pursh (wild licorice): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; F4423

*Lathyrus polymorphus* Nutt. (showy vetchling): occasional; threadleaf sedge western mixed-grass prairie; P41615

\**Melilotus albus* Medik. (white sweet-clover): occasional; cultural, threadleaf sedge western mixed-grass prairie; M5859

\**Melilotus officinalis* (L.) Lam. (yellow sweet-clover): occasional; cultural, threadleaf sedge western mixed-grass prairie; P41609

*Oxytropis lambertii* Pursh (purple locoweed): occasional; threadleaf sedge western mixed-grass prairie; P41608

*Pedimelum argophyllum* (Pursh) J. Grimes (silver-leaf scurfpea): common; threadleaf sedge western mixed-grass prairie

*Pedimelum esculentum* (Pursh) Rydb. (Indian scurfpea): occasional; threadleaf sedge western mixed-grass prairie; P41620

*Psoralidium tenuiflorum* (Pursh) Rydb. (slender-flowered scurf-pea): occasional; threadleaf sedge western mixed-grass prairie; M5877

### Fagaceae

*Quercus macrocarpa* Michx. (bur oak): frequent; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest

### Grossulariaceae

*Ribes odoratum* H. Wendl. (buffalo currant): common; dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie; P41649

### Hydrophyllaceae

*Ellisia nyctelea* (L.) L. (Aunt Lucy): common; dry upland bur oak woodland; P41644

### Lamiaceae

*Hedeoma hispida* Pursh (rough false-pennyroyal): common; threadleaf sedge western mixed-grass prairie

*Lycopus asper* Greene (western water-horehound): occasional; paper birch springbranch canyon forest

*Monarda fistulosa* L. (wild bergamot): common; basswood-ironwood springbranch canyon forest, buckbrush shrubland, dry upland bur oak woodland, paper birch springbranch canyon forest, perennial sandbar; F4381, S72

\**Nepeta cataria* L. (catnip): occasional; basswood-ironwood springbranch canyon forest

*Scutellaria lateriflora* L. (mad-dog skullcap): occasional; paper birch springbranch canyon forest; F4416

### Liliaceae

*Polygonatum biflorum* (Walter) Elliott (giant Solomon's-seal): occasional; basswood-ironwood springbranch canyon forest; P41664

*Smilacina stellata* (L.) Desf. (starry false Solomon's seal): occasional; basswood-ironwood springbranch forest, dry upland bur oak woodland, paperbirch springbranch canyon forest

### Linaceae

*Linum compactum* A. Nelson (bushy flax): occasional; threadleaf sedge western mixed-grass prairie; P41617

*Linum rigidum* Pursh (stiff flax): common; threadleaf sedge western mixed-grass prairie; P41614

### Loasaceae

*Mentzelia nuda* (Pursh) Torr. & Gray (sand-lily): rare; threadleaf sedge western mixed-grass prairie; S52

### Lythraceae

*Lythrum salicaria* L. (purple loosestrife): occasional; perennial sandbar; S62

### Malvaceae

*Sphaeralcea coccinea* (Nutt.) Rydb. (Cowboy's delight): occasional; threadleaf sedge western mixed-grass prairie; P41621

### Nyctaginaceae

*Mirabilis hirsuta* (Pursh) MacM. (pale four-o'clock): occasional; threadleaf sedge western mixed-grass prairie; F4377

*Mirabilis linearis* (Pursh) Heimerl (narrow-leaf four o'clock): occasional; threadleaf sedge western mixed-grass prairie; F4374

*Mirabilis nyctaginea* (Michx.) MacMill. (wild four-o'clock): occasional; threadleaf sedge western mixed-grass prairie; P41647



### Oleaceae

*Fraxinus pennsylvanica* Marsh. (green ash): frequent; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paperbirch springbranch canyon forest, perennial sandbar, perennial sandbar; P41668, S60

### Onagraceae

*Calylophus serrulatus* (Nutt.) Raven (plains yellow primrose): common; threadleaf sedge western mixed-grass prairie

*Epilobium ciliatum* Raf. (fringed willowherb): occasional; paper birch springbranch canyon forest; F4417

*Gaura coccinea* Pursh (scarlet gaura): occasional; threadleaf sedge western mixed-grass prairie; P41616

### Orchidaceae

*Platanthera aquilonis* Sheviak (northern green orchid): rare; paper birch springbranch canyon forest; F4418

### Oxalidaceae

*Oxalis stricta* L. (yellow wood-sorrel): occasional; basswood-ironwood springbranch canyon forest; F4422

### Papaveraceae

*Argemone polyanthemus* (Fedde) G.B. Ownbey (prickly poppy): occasional; threadleaf sedge western mixed-grass prairie; F4396

### Phrymaceae

*Phryma leptostachya* L. (lopseed): occasional; paperbirch springbranch canyon forest; S44

### Pinaceae

*Pinus ponderosa* P.& C. Lawson (ponderosa pine): common; buckbrush shrubland, dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie

### Plantaginaceae

\**Plantago major* L. (common plantain): occasional; basswood-ironwood springbranch canyon forest; F4424

*Plantago patagonica* Jacq. (woolly plantain): frequent; threadleaf sedge western mixed-grass prairie

### Poaceae

\**Agrostis stolonifera* L. var. **major** (Gaud.) Farw. (redtop): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; F4413

*Andropogon gerardii* Vitman ssp. **gerardii** (big bluestem): common; threadleaf sedge western mixed-grass prairie

*Andropogon gerardii* Vitman ssp. **hallii** (Hack.) J. Wipff (sand bluestem): common; threadleaf sedge western mixed-grass prairie; M5863

*Aristida purpurea* Nutt. (purple three-awn): occasional; threadleaf sedge western mixed-grass prairie; M5880, P41618

*Bouteloua curtipendula* (Michx.) Torr. (sideoats grama): common; basswood-ironwood springbranch canyon forest, buckbrush shrubland, threadleaf sedge western mixed-grass prairie; M5852

*Bouteloua gracilis* (Willd. ex Kunth) Lag. ex Griffiths (blue grama): common; threadleaf sedge western mixed-grass prairie; M5867

*Bouteloua hirsuta* Lag. (hairy grama): common; threadleaf sedge western mixed-grass prairie; M5866

\**Bromus inermis* Leyss. (smooth brome): common; basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie; F4408

\**Bromus japonicus* Thunb. ex Murr. (Japanese brome): occasional; threadleaf sedge western mixed-grass prairie

*Bromus latiglumis* (Shear) A.S. Hitchc. (ear-leaf brome): occasional; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; S42

\**Bromus tectorum* L. (downy brome): occasional; threadleaf sedge western mixed-grass prairie

*Buchloë dactyloides* (Nutt.) Engelm. (buffalo grass): occasional; threadleaf sedge western mixed-grass prairie

*Calamagrostis stricta* (Timm) Koel. (northern reedgrass): occasional; perennial sandbar; P41666

*Calamovilfa longifolia* (Hook.) Scribn. (prairie sandreed): frequent; threadleaf sedge western mixed-grass prairie; M5851, S53

*Cenchrus longispinus* (Hack.) Fern. (sandbur): occasional; threadleaf sedge western mixed-grass prairie; F4388

*Elymus canadensis* L. (Canada wildrye): common; basswood-ironwood springbranch canyon forest, buckbrush shrubland, perennial sandbar, threadleaf sedge western mixed-grass prairie; F4376, S61

*Elymus villosus* Muhl. ex Willd. (hairy wildrye): locally common; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; F4407

*Elymus virginicus* L. (Virginia wildrye): occasional; perennial sandbar

*Eragrostis spectabilis* (Pursh) Steud. (purple lovegrass): occasional; threadleaf sedge western mixed-grass prairie; F4379

*Eragrostis trichodes* (Nutt.) Wood (sand lovegrass): occasional; basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie

*Festuca subverticillata* (Pers.) Alexeev (nodding fescue): occasional; basswood-ironwood springbranch canyon forest

*Glyceria striata* (Lam.) A.S. Hitchc. (fowl mannagrass): occasional; basswood-ironwood springbranch canyon forest

*Koeleria macrantha* (Ledeb.) J.A. Schultes (junegrass): frequent; threadleaf sedge western mixed-grass prairie; P41630

*Leersia oryzoides* (L.) Sw. (rice cutgrass): occasional; basswood-ironwood springbranch canyon forest

*Muhlenbergia cuspidata* (Torr. ex Hook.) Rydb. (plains muhly): occasional; threadleaf sedge western mixed-grass prairie; M5856, S54

*Muhlenbergia mexicana* (L.) Trin. (Mexican muhly): occasional; basswood-ironwood springbranch, paper birch springbranch canyon forest, perennial sandbar; F4403, S49, S78

*Muhlenbergia racemosa* (Michx.) B.S.P. (marsh muhly): occasional; threadleaf sedge western mixed-grass prairie; F4382

*Munroa squarrosa* Torr. (false buffalo-grass): rare; threadleaf sedge western mixed-grass prairie; F4400

*Oryzopsis micrantha* (Trin. & Rupr.) Thurb. (little-seed ricegrass): locally common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P41639

*Panicum capillare* L. (witchgrass): common; threadleaf sedge western mixed-grass prairie; F4399

*Panicum oligosanthos* J.A. Schultes var. *scribnerianum* (Nash) Fern. (Scribner's panicum): frequent; threadleaf sedge western mixed-grass prairie; P41631

*Panicum virgatum* L. (switchgrass): frequent; basswood-ironwood springbranch canyon forest, buckbrush shrubland, perennial sandbar, threadleaf sedge western mixed-grass prairie; M5871

*Panicum wilcoxianum* Vasey (Wilcox's spring panicum): common; threadleaf sedge western mixed-grass prairie

\**Phalaris arundinacea* L. (reed canarygrass): occasional; perennial sandbar

\**Phragmites australis* (Cav.) Trin. ex Steud. (common reed): occasional; perennial sandbar; P41667

\**Poa compressa* L. (Canada bluegrass): common; basswood-ironwood springbranch canyon forest; P41657

\**Poa pratensis* L. (Kentucky bluegrass): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, perennial sandbar, threadleaf sedge western mixed-grass prairie, perennial sandbar

*Schizachyrium scoparium* (Michx.) Nash (little bluestem): frequent; threadleaf sedge western mixed-grass prairie; M5861

\**Setaria viridis* (L.) Beauv. (green foxtail): occasional; basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie; F4409

*Sorghastrum nutans* (L.) Nash (Indian grass): occasional; basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie; F4402

*Spartina pectinata* Bosc ex Link (prairie cordgrass): occasional; paper birch springbranch canyon forest

*Sporobolus cryptandrus* (Torr.) A. Gray (sand dropseed): common; threadleaf sedge western mixed-grass prairie; F4392

*Stipa comata* Trin. & Rupr. (needle-and-thread): frequent; threadleaf sedge western mixed-grass prairie; P41622

*Stipa spartea* Trin. (porcupine grass): common; threadleaf sedge western mixed-grass prairie; P41624

*Stipa viridula* Trin. (green needle grass): occasional; threadleaf sedge western mixed-grass prairie

*Triplasis purpurea* (Walt.) Chapman (purple sandgrass): common; threadleaf sedge western mixed-grass prairie

*Vulpia octoflora* (Walt.) Rydb. (six-weeks fescue): frequent; threadleaf sedge western mixed-grass prairie

### **Polemoniaceae**

*Ipomopsis longiflora* (Torr.) V. Grant (showy ipomopsis): occasional; threadleaf sedge western mixed-grass prairie; F4387

*Phlox andicola* E. Nels. (plains phlox): occasional; threadleaf sedge western mixed-grass prairie; P41610

### **Polygalaceae**

*Polygala alba* Nutt. (white milkwort): occasional; threadleaf sedge western mixed-grass prairie; P41626

*Polygala verticillata* L. var. *isocycla* Fernald (whorled milkwort): occasional; threadleaf sedge western mixed-grass prairie; F4370

### **Polygonaceae**

*Eriogonum annuum* Nutt. (annual wild buckwheat): common; threadleaf sedge western mixed-grass prairie; M5869

\**Polygonum convolvulus* L. (black bindweed): occasional; basswood-ironwood springbranch canyon forest; F4412

*Polygonum ramosissimum* Michx. (bushy knotweed): common; threadleaf sedge western mixed-grass prairie; F4389

*Polygonum punctatum* Ell. (dotted smartweed): occasional; basswood-ironwood springbranch canyon forest

### **Portulacaceae**

*Phemeranthus parviflorus* (Nutt.) Kiger. (prairie fame-flower): rare; threadleaf sedge western-mixed-grass prairie; S82

*Portulaca oleracea* L. (purslane): occasional; cultural

### **Ranunculaceae**

*Anemone cylindrica* Gray (candle anemone): occasional; dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie; P41623

*Aquilegia canadensis* L. (wild columbine): occasional; basswood-ironwood springbranch canyon forest; P41663

*Delphinium virescens* Nutt. (prairie larkspur): occasional; threadleaf sedge western mixed-grass prairie

*Ranunculus abortivus* L. (kidney-leaf buttercup): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P41662

*Thalictrum dasycarpum* Fisch. & Avé-Lall. (meadow rue): occasional; paper birch springbranch canyon forest, perennial sandbar; P41660, S67

### Rosaceae

*Agrimonia gryposepala* Wallr. (tall agrimony): occasional; basswood-ironwood springbranch canyon forest; F4421

*Geum canadense* Jacq. (white avens): occasional; basswood-ironwood springbranch canyon forest, perennial sandbar; S66

*Prunus americana* Marsh. (wild plum): common; threadleaf sedge western mixed-grass prairie; P41632

*Prunus virginiana* L. (choke cherry): common; basswood-ironwood springbranch canyon forest, buckbrush shrubland, threadleaf sedge western mixed-grass prairie; M5865

*Rosa arkansana* Porter (prairie rose): common; threadleaf sedge western mixed-grass prairie

*Rosa woodsii* Lindl. (western wild rose): common; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest

*Rubus occidentalis* L. (black raspberry): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest

### Rubiaceae

*Galium aparine* L. (annual bedstraw): occasional; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; P41638

*Galium triflorum* Michx. (sweet-scented bedstraw): common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; S40

### Salicaceae

*Salix amygdaloides* Anderss. (peach-leaf willow): common; perennial sandbar; P41659

*Salix exigua* Nutt. (sandbar willow): common; perennial sandbar; P41658

### Santalaceae

*Comandra umbellata* (L.) Nutt. (toad flax): occasional; threadleaf sedge western mixed-grass prairie

### Scrophulariaceae

*Mimulus glabratus* Kunth var. *jamesii* (Torr. & A. Gray): A. Gray (round-leaf monkey-flower), occasional; basswood-ironwood springbranch canyon forest

*Scrophularia lanceolata* Pursh (American figwort): occasional; basswood-ironwood springbranch canyon forest; S75

\**Verbascum thapsus* L. (common mullein): occasional; cultural

### Smilacaceae

*Smilax lasioneura* Hook. (common carrion-flower): occasional; paperbirch springbranch canyon forest,

### Solanaceae

*Physalis heterophylla* Nees (clammy ground-cherry): occasional; threadleaf sedge western mixed-grass prairie; F4380

*Physalis hispida* (Waterfall) Cronq. (Sandhills ground-cherry): occasional; threadleaf sedge western mixed-grass prairie; F4398

### Ulmaceae

*Ulmus americana* L. (American elm): locally common; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest, perennial sandbar

### Urticaceae

*Boehmeria cylindrica* (L.) Sw. (false nettle): occasional; perennial sandbar; S73

*Parietaria pensylvanica* Muhl. ex Willd. (Pennsylvania pellitory): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie; F4397, P41645

*Pilea fontana* (Lunell) Rydb. (northern clearweed): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest

*Urtica dioica* L. (stinging nettle): common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest

#### **Verbenaceae**

*Verbena bracteata* Lag. & J. Rodriguez (prostrate vervain): occasional; threadleaf sedge western mixed-grass prairie; F4394

*Verbena stricta* Vent. (hoary vervain): common; basswood-ironwood springbranch canyon forest, threadleaf sedge western mixed-grass prairie; F4395

*Verbena urticifolia* L. (white vervain): occasional; basswood-ironwood springbranch canyon forest, perennial sandbar; S77

#### **Violaceae**

*Viola canadensis* L. var. *rugulosa* (Greene) C.L. Hitchc. (tall white violet): occasional; basswood-ironwood springbranch canyon forest, paperbirch springbranch canyon forest; P41653

#### **Vitaceae**

*Parthenocissus vitacea* (Knerr) A.S. Hitchc. (woodbine): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest, perennial sandbar, threadleaf sedge western mixed-grass prairie

*Vitis riparia* Michx. (riverbank grape): common; basswood-ironwood springbranch canyon forest, buckbrush shrubland, dry upland bur oak woodland, paperbirch springbranch canyon forest, perennial sandbar

## Appendix 2. Vascular Plant Species List

### Niobrara Valley Preserve 2009

**Communities:** basswood-ironwood springbranch canyon forest, cultural, dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, freshwater seep (spring-type), Great Plains gravel-cobble prairie, paper birch springbranch canyon forest, perennial sandbar, riparian dogwood false-indigobush shrubland, Sandhills dune prairie, Sandhills hardstem bulrush marsh, Sandhills wet meadow, threadleaf sedge western mixed-grass prairie

Exotic species are indicated by an asterisk (\*) in front of the species name. Vouchered specimens are followed by the collector's initial and the collection number.

**Collectors:** Mary Ann Feist (F), Paul B. Marcum (M), Loy R. Phillippe (P)

**Frequency ratings:** rare, occasional, common, frequent, abundant

#### Aceraceae

*Acer negundo* L. (box elder): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest, perennial sandbar

#### Agavaceae

*Yucca glauca* Nutt. (yucca): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41675

#### Alismataceae

*Sagittaria latifolia* Willd. (common arrowhead): occasional; perennial sandbar, Sandhills hardstem bulrush marsh; P42047

#### Amaranthaceae

*Amaranthus arenicola* I.M. Johnston (Sandhills pigweed): occasional; Sandhills dune prairie; P42056

*Froelichia floridana* (Nutt.) Moq. (plains snake-cotton): occasional; Sandhills dune prairie; P41932

#### Anacardiaceae

*Rhus aromatica* Ait. (skunkbrush sumac): common; dry upland bur oak woodland, Sandhills dune prairie

*Rhus glabra* L. (smooth sumac): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41959

*Toxicodendron radicans* (L.) O. Kuntze var. *rydbergii* (Small ex Rydb.) Erskine (western poison-ivy): frequent; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest, Sandhills wet meadow, Sandhills dune prairie; P41549

#### Apiaceae

*Berula erecta* (Huds.) Coville (cutleaf-water-parsnip): occasional; freshwater seep (spring-type), paper birch springbranch canyon forest

*Cicuta bulbifera* L. (bulbous water-hemlock): rare; Sandhills hardstem bulrush marsh

*Heracleum lanatum* Michx. (cow-parsnip): occasional; paper birch springbranch canyon forest; M5625

*Sanicula canadensis* L. (Canadian sanicle): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; M5614

#### Apocynaceae

*Apocynum cannabinum* L. (Indian-hemp): common; Sandhills dune prairie; P41550

*Asclepias arenaria* Torr. (sand milkweed): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie, Sandhills dune prairie; P41977

*Asclepias incarnata* L. (swamp milkweed): occasional; freshwater seep (spring-type)

*Asclepias lanuginosa* Nutt. (wooly milkweed): occasional; Sandhills dune prairie; P41563

*Asclepias stenophylla* Gray (narrowleaf milkweed): occasional; Sandhills dune prairie

*Asclepias viridiflora* Raf. (green milkweed): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41674

### Araliaceae

*Aralia nudicaulis* L. (wild-sarsaparilla): locally common; basswood-ironwood springbranch canyon forest, paper birch spring branch canyon forest; P41602

### Asteraceae

*Ambrosia artemisiifolia* L. (annual ragweed): occasional; perennial sandbar, Sandhills dune prairie

*Ambrosia psilostachya* DC. (western ragweed): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41939

*Antennaria howellii* Greene ssp. *neodioica* (Greene) R.J. Bayer (Howell's pussytoes): occasional; paper birch springbranch canyon forest; M5624

*Antennaria neglecta* Greene (field pussytoes): occasional; Sandhills dune prairie

*Antennaria parvifolia* Nutt. (littleleaf pussytoes): occasional; Sandhills dune prairie; P41554

\**Arctium minus* (Hill) Bernh. (common burdock): occasional; dry upland bur oak woodland, perennial sandbar

*Artemisia campestris* L. (western sagewort): common; Sandhills dune prairie

*Artemisia filifolia* Torr. (sand sage): rare; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P42026

*Artemisia frigida* Willd. (fringed sage): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41963

*Artemisia ludoviciana* Nutt. var. *ludoviciana* (white sage): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie, Sandhills dune prairie

*Aster ericoides* L. ssp. *ericoides* (heath aster): common; Sandhills dune prairie

*Aster laevis* L. (smooth blue aster): occasional; paper birch spring branch canyon forest; P42055

*Aster oblongifolius* Nutt. (aromatic aster): common; Sandhills dune prairie

*Brickellia eupatorioides* (L.) Shinnars (false boneset): occasional; Sandhills dune prairie; P41994

*Cirsium altissimum* (L.) Spreng. (tall thistle): occasional; dry upland bur oak woodland, Sandhills dune prairie, Sandhills wet meadow; P42027

*Cirsium canescens* Nutt. (platte thistle): common; Great Plains gravel-cobble prairie; M5589

\**Cirsium vulgare* (Sav.) Tenore (bull thistle): occasional; cultural; P42031

*Conyza canadensis* (L.) Cronquist (horseweed): common; dry upland bur oak woodland, Sandhills dune prairie; P41943

*Echinacea angustifolia* DC. (narrow-leaf purple coneflower): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41993

*Erigeron bellidiastrum* Nutt. (western fleabane): frequent; Sandhills dune prairie; M5611, P41538

*Erigeron philadelphicus* L. (marsh fleabane): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest; P41572

*Erigeron strigosus* Muhl. ex Willd. (daisy fleabane) common; Sandhills dune prairie, Sandhills dune prairie

*Eupatorium maculatum* L. (spotted joe pye weed): occasional; perennial sandbar, freshwater seep (spring-type), Sandhills hardstem bulrush marsh; P42037

*Eupatorium perfoliatum* L. (common boneset): occasional; perennial sandbar, Sandhills hardstem bulrush marsh, Sandhills wet meadow; P42036

*Helenium autumnale* L. (sneezeweed): occasional; perennial sandbar; P42035

*Helianthus annuus* L. (common sunflower): common; cultural, Sandhills dune prairie

*Helianthus pauciflorus* Nutt. (stiff sunflower): common; Sandhills dune prairie; P41965  
*Helianthus petiolaris* Nutt. (prairie sunflower): common; cultural, Sandhills dune prairie; P41938  
*Heliopsis helianthoides* (L.) Sweet (false sunflower): occasional; perennial sandbar; P42040  
*Heterotheca stenophylla* (A. Gray) Shinnery var. *stenophylla* (narrow-leaf golden-aster): occasional; Sandhills dune prairie, Sandhills dune prairie; P41976  
*Heterotheca villosa* (Pursh) Shinnery (hairy golden-aster): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41991  
*Hymenopappus tenuifolius* Pursh (old plainsman): common; Great Plains gravel-cobble prairie, Sandhills dune prairie  
*Liatris squarrosa* (L.) Michx. (plains gayfeather): common; Sandhills dune prairie; P41933  
*Lygodesmia juncea* (Pursh) D. Don ex Hook. (skeletonplant): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie  
*Ratibida columnifera* (Nutt.) Wootton & Standl. (prairie coneflower): frequent; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41973  
*Senecio integerrimus* Nutt. (groundsel): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P41571  
*Senecio tridenticulatus* Rydb. (Sandhills ragwort): occasional; Great Plains gravel-cobble prairie; M5590  
*Shinneryoseris rostrata* (A. Gray) Tomb (beaked-skeletonplant): occasional; Sandhills dune prairie; P41960  
*Solidago canadensis* L. (Canada goldenrod): common; freshwater seep (spring-type)  
*Solidago gigantea* Ait. (late goldenrod) common; perennial sandbar, Sandhills wet meadow  
*Solidago missouriensis* Nutt. (Missouri goldenrod): common; dry upland bur oak woodland, Sandhills dune prairie; P42029  
*Solidago mollis* Bartl. (soft goldenrod): common; Sandhills dune prairie; P42023  
*Solidago rigida* L. (stiff goldenrod): occasional; perennial sandbar; P42041  
\**Taraxacum officinale* G.H. Weber ex Wiggers (dandelion): occasional; dry upland bur oak woodland  
*Thelesperma filifolium* (Hook.) A. Gray (greenthread): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; M5591, P41603, P42014  
\**Tragopogon dubius* Scop. (goat's-beard): occasional; Sandhills dune prairie; P41556  
*Xanthisma spinulosum* (Pursh) D. Morgan & R. Hartman var. *glaberrimum* (Rydb.) D. Morgan & R.L. Hartm. (cutleaf ironplant): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4251  
*Xanthium strumarium* L. (cocklebur): occasional, perennial sandbar; P42045

#### Balsaminaceae

*Impatiens capensis* Meerb. (orange jewelweed): locally common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest, perennial sandbar; P42037

#### Betulaceae

*Betula papyrifera* Marsh (paper birch): occasional; paper birch springbranch canyon forest; F4263  
*Corylus americana* Walt. (American hazelnut): occasional; paper birch springbranch canyon forest; F4258, M5630  
*Ostrya virginiana* (P. Mill.) K. Koch (ironwood): frequent; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest; P42003

#### Boraginaceae

*Cryptantha minima* Rydb. (little cryptantha): occasional; Sandhills dune prairie; P41565  
*Hackelia deflexa* (Wahlenb.) Opiz (nodding stickseed): occasional; dry upland bur oak woodland; P41568  
*Lappula redowskii* (Hornem.) Greene (hairy sheepburr): occasional; Sandhills dune prairie



*Lithospermum caroliniense* (Walter ex J.F. Gmel.) MacMill. (plains puccoon): common; dry ponderosa pine open woodland and savanna, Great Plains gravel-cobble prairie, Sandhills dune prairie; M5592, P41536

*Lithospermum incisum* Lehm. (fringed puccoon): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41557

*Onosmodium molle* Michx. var. *occidentale* (Mack.) I.M. Johnst. (false gromwell): occasional; Sandhills dune prairie

### Brassicaceae

*Cardamine pensylvanica* Muhl. ex Willd. (bitter cress): occasional; basswood-ironwood springbranch canyon forest, freshwater seep (spring-type); P41598

*Draba reptans* (Lam.) Fernald (white whitlow-grass): common; Great Plains gravel-cobble prairie, threadleaf sedge western mixed-grass prairie; P41606

*Erysimum asperum* (Nutt.) DC. (western wallflower): common; Sandhills dune prairie; P41558

*Erysimum cheiranthoides* L. (wormseed wallflower): occasional; paper birch springbranch canyon forest; M5623

*Lepidium densiflorum* Schrader (pepper-grass): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41541

\**Nasturtium officinale* R. Br. (water cress): occasional; freshwater seep (spring-type); M5603

*Physaria ludoviciana* (Nutt.) O'Kane & Al-Shehbaz (bladderpod): frequent; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41546

### Cactaceae

*Coryphantha missouriensis* (Sweet) Britton & Rose (Missouri pincushion cactus): rare; Great Plains gravel-cobble prairie; F4253

*Coryphantha vivipara* (Nutt.) Britt. & Rose (plains pincushion cactus): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie; M5598

*Opuntia fragilis* (Nutt.) Haw. (brittle prickly-pear): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

*Opuntia humifusa* (Raf.) Raf. (eastern prickly-pear): common; dry ponderosa pine open woodland and savanna, Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

### Campanulaceae

*Campanula americana* L. (American bellflower): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland ; P42060

*Campanula aparinoides* Pursh (marsh bellflower): occasional; bur oak-basswood-ironwood forest, Sandhills hardstem bulrush marsh, Sandhills wet meadow

*Campanula rotundifolia* L. (harebell): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; M5608

*Lobelia siphilitica* L. (great blue lobelia): occasional; basswood-ironwood springbranch canyon forest, perennial sandbar; P42042

*Triodanis perfoliata* (L.) Nieuwl. (clasping-leaf Venus'-looking-glass): occasional; Great Plains gravel-cobble prairie; F4261

### Cannabaceae

\**Cannabis sativa* L. (hemp): common; cultural; P42010

### Caprifoliaceae

*Lonicera dioica* L. var. *glaucescens* (Rydb.) Butt. (wild honeysuckle): occasional; paper birch springbranch canyon forest; M5629

*Symphoricarpos occidentalis* Hook. (wolfberry): frequent; basswood-ironwood springbranch canyon forest, Sandhills dune prairie; P41968

### **Caryophyllaceae**

*Arenaria lateriflora* L. (bluntleaf sandwort): locally common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P41576

\**Cerastium fontanum* Baumg. (common chickweed): occasional; basswood-ironwood springbranch canyon forest; P41601

*Silene antirrhina* L. (sleepy catchfly): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie; F4257, M5610

*Stellaria longifolia* Muhl. ex Willd. (stitchwort): occasional; freshwater seep (spring-type), Sandhills wet meadow; M5638, P41588

### **Celastraceae**

*Celastrus scandens* L. (American bittersweet): occasional; perennial sandbar

### **Celtidaceae**

*Celtis occidentalis* L. (hackberry): common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest

### **Ceratophyllaceae**

*Ceratophyllum demersum* L. (coontail): occasional; Sandhills hardstem bulrush marsh

### **Chenopodiaceae**

*Chenopodium simplex* (Torr.) Raf. (maple-leaf goosefoot): occasional; cultural; P42033

*Chenopodium stanleyanum* Aellen (smooth goosefoot): occasional; cultural; P42034

*Cycloloma atriplicifolium* (Spreng.) J.M. Coult. (winged-pigweed): common; Sandhills dune prairie; P41952

### **Cleomaceae**

*Polanisia jamesii* (Torr. & A. Gray) Iltis (James' clammyweed): common; Sandhills dune prairie; P41956

### **Commelinaceae**

*Commelina erecta* L. (narrow-leaf dayflower): occasional; Great Plains gravel-cobble prairie, threadleaf sedge western mixed-grass prairie; P41951

*Tradescantia occidentalis* (Britton) Smyth (prairie spiderwort): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; M5596, P41537

### **Convolvulaceae**

*Evolvulus nuttallianus* J.A. Schultes (Nuttall's evolvulus): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; M5653, P41987

*Ipomoea leptophylla* Torr. (bush morning-glory): occasional; Sandhills dune prairie

### **Cupressaceae**

*Juniperus horizontalis* Moench (creeping juniper): rare; dry upland bur oak woodland; P42030

*Juniperus virginiana* L. (eastern red-cedar): abundant; basswood-ironwood springbranch canyon forest, dry ponderosa pine open woodland and savanna, paper birch springbranch canyon forest, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

### **Cyperaceae**

*Carex aurea* Nutt. (golden sedge): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; F4262, M5631

*Carex bebbii* (L.H. Bailey) Olney ex Fernald (Bebb's oval sedge): rare; Sandhills wet meadow; M5643

*Carex blanda* C. Dewey (eastern woodland sedge): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest; M5618, P41573

*Carex brevior* (C. Dewey) Mack. ex Lunell (short-beak sedge): common; Sandhills dune prairie; P41551

*Carex comosa* Boott (bearded sedge): occasional; Sandhills hardstem bulrush marsh; M5647

*Carex eburnea* F. Boott (bristleleaf sedge): occasional; basswood-ironwood springbranch canyon forest, paper birch spring branch canyon forest; P41580

*Carex eleocharis* H. Bailey (needleleaf sedge): occasional; Sandhills dune prairie; P41560

*Carex emoryi* C. Dewey (Emory's sedge): common; freshwater seep (spring-type), Sandhills wet meadow; P41586

*Carex filifolia* Nutt. (threadleaf sedge): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41604

*Carex granularis* Muhl. ex Willd. (limestone meadow sedge): occasional; basswood-ironwood springbranch canyon forest, freshwater seep (spring-type); P41587

*Carex heliophila* Mack. (sun sedge): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41535

*Carex hystericina* Muhl. ex Willd. (bottlebrush sedge): occasional; freshwater seep (spring-type), paper birch springbranch canyon forest; M5632, P41589

*Carex interior* L.H. Bailey (prairie star sedge): rare; basswood-ironwood springbranch canyon forest; P41600

*Carex oligocarpa* Willd. (richwoods sedge): rare; dry upland bur oak woodland; P41569

*Carex peckii* Howe (Peck's sedge): occasional; basswood-ironwood springbranch canyon forest; P41581

*Carex pellita* Muhl. ex Willd. (woolly sedge): common; paperbirch springbranch canyon forest, freshwater seep (spring-type), Sandhills wet meadow; M5640, P41590

*Carex praegracilis* W. Boott (clustered field sedge): occasional; freshwater seep (spring-type), Sandhills wet meadow; P41592

*Carex saximontana* Mack. (Rocky Mountain sedge): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; M5617, P41570

*Carex scoparia* Schkuhr ex Willd. (pointed broom sedge): occasional; paper birch springbranch canyon forest

*Carex sprengei* C. Dewey ex Spreng. (long-beak sedge): common; basswood-ironwood springbranch canyon forest; P41582

*Carex stipata* Muhl. ex Willd. (sawbeak sedge): occasional; paper birch springbranch canyon forest, freshwater seep (spring-type), Sandhills wet meadow; M5637, P41585

*Cyperus schweinitzii* Torr. (Schweinitz's flatsedge): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie; F4260, P41566

*Eleocharis acicularis* (L.) Roemer & J.A. Schultes (needle spikerush): occasional; Sandhills wet meadow; M5648

*Eleocharis erythropoda* Steud. (bald spikerush): locally common; freshwater seep (spring-type), Sandhills hardstem bulrush marsh, Sandhills wet meadow; M5601

*Schoenoplectus acutus* (Muhl. ex Bigelow) A. & D. Löve (hardstem bulrush): occasional; Sandhills hardstem bulrush marsh

*Schoenoplectus pungens* (Vahl) Palla (three-square bulrush): occasional; freshwater seep (spring-type)

*Schoenoplectus tabernaemontani* (K.C. Gmel.) Palla (soft-stem bulrush): locally frequent; Sandhills hardstem bulrush marsh; M5636

*Scirpus microcarpus* J. Presl & C. Presl (panicled bulrush): unknown abundance; Sandhills hardstem bulrush marsh; M5639

*Scirpus pallidus* (Britton) Fernald (bulrush): occasional; freshwater seep (spring-type)

### Dryopteridaceae

*Cystopteris fragilis* (L.) Bernh. (brittle bladder fern): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; M5619

*Dryopteris carthusiana* (Villars) H.P. Fuchs (spinulose woodfern): rare; paper birch springbranch canyon forest; M5626

*Woodsia oregana* D.C. Eaton (Oregon cliff fern): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P41998

### Equisetaceae

*Equisetum arvense* L. (common horsetail): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest

*Equisetum hyemale* L. (common scouring-rush): locally common; basswood-ironwood springbranch canyon forest, paper birch spring branch canyon forest; P42049

*Equisetum laevigatum* A. Braun (smooth scouringrush): locally common; freshwater seep (spring-type), paper birch springbranch canyon forest; F4265, M5605

### Euphorbiaceae

*Croton texensis* (Klotzsch) Müll. Arg. (Texas croton): occasional; cultural, Sandhills dune prairie, cultural; P41984, P42001

*Euphorbia hexagona* Nutt. ex Spreng. (six-angle spurge): occasional; cultural; P41999

*Euphorbia geyeri* Engelm. (Geyer's spurge): common; Sandhills dune prairie; P41950

*Euphorbia missurica* Raf. var. *petaloidea* (Engelm.) L.C. Dorn (prairie spurge): common; Sandhills dune prairie; P41929

### Fabaceae

*Amorpha canescens* Nutt. ex Pursh (leadplant): common; dry ponderosa pine open woodland and savanna, Great Plains gravel-cobble prairie, Sandhills dune prairie; P41935

*Amorpha fruticosa* L. (false indigo-bush): locally common; perennial sandbar, riparian dogwood false-indigobush shrubland, Sandhills wet meadow; M5642, P42006

*Amphicarpaea bracteata* (L.) Fernald (hog-peanut): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest, Sandhills wet meadow; P42052

*Apios americana* Medikus (ground-nut): occasional; basswood-ironwood springbranch canyon forest, perennial sandbar, Sandhills wet meadow; P42039

*Astragalus ceramicus* Sheldon (bird's-egg milkvetch): occasional; Sandhills dune prairie; M5607

*Astragalus lotiflorus* Hook. (lotus milk-vetch): occasional; Great Plains gravel-cobble prairie; P41607

*Astragalus missouriensis* Nutt. (Missouri milk-vetch): occasional; Great Plains gravel-cobble prairie, threadleaf sedge western mixed-grass prairie; P41670

*Dalea candida* Michx. ex Willd. (white prairie-clover): common; Sandhills dune prairie; P41995

*Dalea purpurea* Venten (purple prairie-clover): common; Sandhills dune prairie; P41990

*Dalea villosa* (Nutt.) Sprengel (silky prairie-clover): common; Sandhills dune prairie; P41949

*Desmodium glutinosum* (Muhl. ex Willd.) A. Wood (large-flowered tick-clover): occasional; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P42048

*Lathyrus polymorphus* Nutt. var. *polymorphus* (showy vetchling): common; Sandhills dune prairie; M5612

*Lotus purshianus* (Benth.) F. Clements & E. Clements ex Otley (deer vetch): occasional; Sandhills dune prairie; P41957

\**Medicago lupulina* L. (black medick): occasional; paper birch springbranch canyon forest, perennial sandbar

\**Melilotus albus* Medikus (white sweet-clover): occasional; dry upland bur oak woodland, perennial sandbar; P41996

*Oxytropis lambertii* Pursh (purple locoweed): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; M5595, P41559

*Psoraleidum lanceolatum* (Pursh) Rydb. (lemon scurfpea): occasional; threadleaf sedge western mixed-grass prairie

*Strophostyles leiosperma* (Torr. & A. Gray) Piper (slick-seed wild pea): occasional; Sandhills dune prairie; P41958

### Fagaceae

*Quercus macrocarpa* Michx (bur oak): frequent; basswood-ironwood springbranch canyon forest, dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, paper birch springbranch canyon forest; M5634

### Grossulariaceae

*Ribes americanum* P. Mill. (American black current): common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; M5627

*Ribes hirtellum* Michx. (gooseberry): unknown abundance; paper birch springbranch canyon forest; M5633

*Ribes missouriense* Nutt. (Missouri gooseberry): occasional; paper birch springbranch canyon forest

### Hydrocharitaceae

*Elodea canadensis* Michx. (common waterweed): locally common; Sandhills hardstem bulrush marsh; M5651

### Juglandaceae

*Juglans nigra* L. (black walnut): cultural (planted around Wolbach Ranch homesite)

### Juncaceae

*Juncus arcticus* Willd. var. *balticus* (Willd.) Traut. (Baltic rush): occasional; freshwater seep (spring-type); M5604

*Juncus dudleyi* Wieg. (Dudley's rush): occasional; Sandhills wet meadow

### Lamiaceae

*Hedeoma hispida* Pursh (rough false pennyroyal): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41552

*Lycopus americanus* Muhl. ex W. Bart. (common water-horehound): occasional; basswood-ironwood springbranch canyon forest

*Lycopus asper* Greene (western water-horehound): occasional; perennial sandbar; P42043

*Mentha arvensis* L. (field mint): occasional; paperbirch springbranch canyon forest, Sandhills wet meadow

*Monarda fistulosa* L. (wild bergamot): occasional; cultural

\**Nepeta cataria* L. (catnip): occasional; cultural; P42032

*Pycnanthemum virginianum* (L.) T. Dur. & B.D. Jackson ex B.L. Robins. & Fern. (Virginia mountain mint): occasional; Sandhills wet meadow

*Scutellaria lateriflora* L. (mad-dog skullcap): occasional; freshwater seep (spring-type)

### Lemnaceae

*Lemna minor* L. (common duckweed): locally common; freshwater seep (spring-type), Sandhills hardstem bulrush marsh

*Spirodela polyrrhiza* (L.) Schleid. (greater duckweed): locally common; Sandhills hardstem bulrush marsh; M5649

### Liliaceae

*Smilacina stellata* (L.) Desf. (starry false Solomon's seal): occasional; basswood-ironwood springbranch canyon forest; M5615

### Linaceae

*Linum rigidum* Pursh (stiff flax): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41548

### Lythraceae

\**Lythrum salicaria* L. (purple loosestrife): occasional; basswood-ironwood springbranch canyon forest, perennial sandbar, Sandhills hardstem bulrush marsh, Sandhills wet meadow

### **Molluginaceae**

\**Mollugo verticillata* L. (carpet-weed): occasional; cultural; P42057

### **Nyctaginaceae**

*Mirabilis nyctaginea* (Michx.) MacMill. (wild four-o'clock): occasional; basswood-ironwood springbranch canyon forest

### **Oleaceae**

*Fraxinus pennsylvanica* Marshall (green ash): frequent; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest; P41594

### **Onagraceae**

*Calylophus serrulatus* (Nutt.) P.H. Raven (plains yellow primrose): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41678

*Circaea lutetiana* L. (enchanter's nightshade): common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; P42050

*Epilobium leptophyllum* Raf. (fen willowherb): occasional; freshwater seep (spring-type)

*Gaura coccinea* Pursh (scarlet gaura): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41680

*Oenothera biennis* L. (common evening-primrose): occasional; perennial sandbar

*Oenothera rhombipetala* Nutt. ex Torr. & A. Gray (fourpoint evening primrose): common; Sandhills dune prairie; P41954

### **Ophioglossaceae**

*Botrychium virginianum* (L.) Sw. (rattlesnake fern): rare; basswood-ironwood springbranch canyon forest

### **Orchidaceae**

*Platanthera aquilonis* Sheviak (northern green orchid): occasional; paper birch springbranch canyon forest; F4262

### **Papaveraceae**

*Argemone polyanthemus* (Fedde) G. Ownbey (prickly poppy): occasional; Sandhills dune prairie; P41983

### **Pinaceae**

*Pinus ponderosa* P.& C. Lawson (ponderosa pine): common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland

### **Plantaginaceae**

\**Plantago major* L. (common plantain): occasional; paper birch springbranch canyon forest

*Plantago patagonica* Jacq. (woolly plantain): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4252, P41539

### **Poaceae**

\**Agrostis stolonifera* L. var. *major* (Gaud.) Farw. (redtop): occasional; perennial sandbar

*Andropogon gerardii* Vitman ssp. *gerardii* (big bluestem): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

*Andropogon gerardii* Vitman ssp. *hallii* (Nash) D.J. Banks (sand bluestem): frequent; Sandhills dune prairie; P41941

*Aristida basiramea* Engelm. ex Vasey (forktip three-awn): common; cultural, Sandhills dune prairie; P41948, P42004

*Aristida purpurea* Nutt. (purple three-awn): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P42016

*Buchloë dactyloides* (Nutt.) Engelm. (buffalo grass): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

*Bouteloua curtipendula* (Michx.) Torr. (sideoats grama): common; dry upland bur oak woodland, Great Plains gravel-cobble prairie, Sandhills dune prairie; P41992

*Bouteloua gracilis* (Willd. ex Kunth) Lag. ex Griffiths (blue grama): common; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41944

*Bouteloua hirsuta* Lag. (hairy grama): common; Sandhills dune prairie; P41930

\**Bromus inermis* Leyss. (smooth brome): common; basswood-ironwood springbranch canyon forest, cultural, Sandhills dune prairie

\**Bromus japonicus* Thunb. ex Murr. (Japanese brome): occasional; cultural

*Bromus latiglumis* (Shear) A.S. Hitchc. (ear-leaf brome): occasional; dry upland bur oak woodland

\**Bromus squarrosus* L. (one-way brome): occasional; Sandhills dune prairie; P42011

*Calamagrostis canadensis* (Michx.) Beauv. (bluejoint): locally common; Sandhills wet meadow; M5645

*Calamagrostis stricta* (Timm) Koel. (northern reedgrass): occasional; Sandhills wet meadow; M5644

*Calamovilfa longifolia* (Hook.) Scribn. (prairie sandreed): abundant; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41937

*Catabrosa aquatica* (L.) P. Beauv. (brookgrass): locally common; freshwater seep (spring-type); M5599

*Cenchrus longispinus* (Hack.) Fernald (sandbur): occasional; cultural, Sandhills dune prairie; P41971

*Elymus canadensis* L. (Canada wildrye): common; dry upland bur oak woodland, Sandhills dune prairie; P41972

*Elymus smithii* (Rydb.) Gould (western wheatgrass): occasional; Sandhills dune prairie; P41985

*Elymus villosus* Muhl. ex Willd. (hairy wildrye): locally common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland

\**Eragrostis cilianensis* (All.) Vignolo ex Janch. (stinkgrass): occasional; cultural; P42005

*Eragrostis spectabilis* (Pursh) Steud. (purple lovegrass): occasional; Sandhills dune prairie

*Eragrostis trichodes* (Nutt.) A.W. Wood (sand lovegrass): common; Sandhills dune prairie; P41964

*Glyceria grandis* S. Wats. (tall mannagrass): occasional; Sandhills hardstem bulrush marsh; M5646

*Glyceria striata* (Lam.) A.S. Hitchc. (fowl mannagrass): common; basswood-ironwood springbranch canyon forest, freshwater seep (spring-type), paper birch springbranch canyon forest; P41593

*Koeleria macrantha* (Ledeb.) Schult. (junegrass): frequent; dry ponderosa pine open woodland and savanna, Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; M5597, P41542

*Leersia oryzoides* (L.) Sw. (rice cutgrass): locally common; Sandhills hardstem bulrush marsh

*Muhlenbergia cuspidata* (Torr. ex Hook.) Rydb. (plains muhly): occasional; dry upland bur oak woodland, Sandhills dune prairie; P42021

*Muhlenbergia pungens* Thurb. ex A. Gray (sand muhly): common; Sandhills dune prairie; P41953

*Munroa squarrosa* Torr. (false buffalo-grass): occasional; cultural; M5846

*Oryzopsis micrantha* (Trin. & Rupr.) Thurb. (little-seed ricegrass): locally common; dry upland bur oak woodland; P41578

*Panicum capillare* L. (witchgrass): occasional; Sandhills dune prairie; P41946

*Panicum oligosanthos* Schult. var. *scribnerianum* (Nash) Fernald (Scribner panicum): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41540

*Panicum virgatum* L. (switchgrass): common; perennial sandbar, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41936

*Panicum wilcoxianum* Vasey (Wilcox's spring panicum): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; F4255, M5613, P41547

*Paspalum setaceum* Michx. (sand paspalum): common; Sandhills dune prairie; P41942

\**Phalaris arundinacea* L. (reed canarygrass): occasional; perennial sandbar, Sandhills hardstem bulrush marsh

\**Poa compressa* L. (Canada bluegrass): common; paper birch springbranch canyon forest, Sandhills dune prairie

\**Poa pratensis* L. (Kentucky bluegrass): common; dry upland bur oak woodland, freshwater seep (spring-type), paper birch springbranch canyon forest, perennial sandbar, Sandhills wet meadow, Sandhills dune prairie; P41575

*Redfieldia flexuosa* (Thurb. ex A. Gray) Vasey (blowout grass): locally common; Sandhills dune prairie; P41982

*Schizachyrium scoparium* (Michx.) Nash (little bluestem): frequent; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41940

\**Setaria pumila* (Poir.) Roem. & Schult. (yellow foxtail): occasional; dry upland bur oak woodland

\**Setaria viridis* (L.) P. Beauv. (green foxtail): occasional; basswood-ironwood springbranch canyon forest

*Sorghastrum nutans* (L.) Nash (Indian grass): common; Sandhills dune prairie; P41961

*Sporobolus cryptandrus* (Torr.) A. Gray (sand dropseed): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41945

*Sporobolus vaginiflorus* (Torr. ex A. Gray) A.W. Wood (poverty grass): occasional; cultural; P42058

*Stipa comata* Trin. & Rupr. (needle-and-thread): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41605, P41681

*Stipa spartea* Trin. (porcupine grass): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41544

*Triplasis purpurea* (Walter) Chapm. (purple sandgrass): common; cultural, Sandhills dune prairie; P41934

*Vulpia octoflora* (Walter) Rydb. (sixweeks-fescue): frequent; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; P41545

\**Zea mays* L. (corn): rare; Sandhills dune prairie

#### **Polemoniaceae**

*Ipomopsis longiflora* (Torr.) V.E. Grant (showy ipomopsis): occasional; Sandhills dune prairie; P41975

#### **Polygalaceae**

*Polygala alba* Nutt. (white milkwort): occasional; Great Plains gravel-cobble prairie, threadleaf sedge western mixed-grass prairie; P41671

*Polygala verticillata* L. var. *isocycla* Fernald (whorled milkwort): occasional; dry upland bur oak woodland; P41997

#### **Polygonaceae**

*Eriogonum annuum* Nutt. (annual wild buckwheat): common; Sandhills dune prairie; P41931

*Polygonum coccineum* Muhl. ex Willd. (swamp smartweed): locally common; Sandhills hardstem bulrush marsh

*Polygonum ramosissimum* Michx. (bushy knotweed): common; Sandhills dune prairie; P41986

#### **Portulacaceae**

*Phemeranthus parviflorus* (Nutt.) Kiger (prairie fame-flower): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie; F4254, F4259, P41564

*Phemeranthus rugospermus* (J.M. Holz.) Kiger (sand fame-flower): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4266, M5609, P41980

#### **Potamogetonaceae**

*Potamogeton nodosus* Poir. (longleaf pondweed): locally common; Sandhills hardstem bulrush marsh; M5650

*Potamogeton zosteriformis* Fernald (flatstem pondweed): locally common; Sandhills hardstem bulrush marsh; M5654



### Primulaceae

*Lysimachia thrysiflora* L. (water loosestrife): occasional; Sandhills hardstem bulrush marsh

### Ranunculaceae

*Delphinium virescens* Nutt. (prairie larkspur): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4250, P41673

*Ranunculus abortivus* L. (kidney-leaf buttercup): occasional; basswood-ironwood springbranch canyon forest

*Ranunculus longirostris* Godr. (longbeak white crow's-foot): locally common; Sandhills hardstem bulrush marsh; M5652

### Rosaceae

*Agrimonia gryposepala* Wallr. (tall agrimony): occasional; basswood-ironwood springbranch canyon forest; P42051

*Fragaria vesca* L. ssp. *americana* (Porter) Staudt (strawberry): occasional; dry upland bur oak woodland; P41574

*Geum canadense* Jacq. (white avens): occasional; dry upland bur oak woodland

*Physocarpus opulifolius* (L.) Maxim. (ninebark): rare; paper birch spring branch canyon forest; M5635, P42054

\**Potentilla recta* L. (sulfur cinquefoil): rare; cultural; P42059

*Prunus americana* Marsh. (wild plum): occasional; Sandhills dune prairie; P41969

*Prunus virginiana* L. (choke cherry) common; dry upland bur oak woodland, paper birch springbranch canyon forest, Sandhills dune prairie

*Rosa arkansana* Porter ex Porter & J.M. Coult. (prairie rose): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; P41555

*Rosa woodsii* Lindl. (western wild rose): occasional; freshwater seep (spring-type); M5606

*Rubus occidentalis* L. (black raspberry): common; basswood-ironwood springbranch canyon forest, paper birch spring branch canyon forest; M5628

### Rubiaceae

*Galium aparine* L. (annual bedstraw): occasional; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; P41583

*Galium tinctorium* (L.) Scop. (stiff marsh bedstraw): occasional; Sandhills hardstem bulrush marsh, Sandhills wet meadow

*Galium triflorum* Michx. (sweet-scented bedstraw): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest

### Rutaceae

*Zanthoxylum americanum* P. Mill. (prickly-ash): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland; P41577

### Salicaceae

*Populus deltoides* Bartr. ex Marsh. (plains cottonwood): occasional; dry upland bur oak woodland

*Salix amygdaloides* Anderss. (peach-leaf willow): common; freshwater seep (spring-type)

*Salix exigua* Nutt. (sandbar willow): common; freshwater seep (spring-type), Sandhills wet meadow

### Saxifragaceae

*Heuchera richardsonii* R. Br. (prairie alumroot): occasional; basswood-ironwood springbranch canyon forest; P41591

### Scrophulariaceae

*Agalinis tenuifolia* (Vahl) Raf. (slender false foxglove): occasional; perennial sandbar; P42046

*Mimulus glabratus* Kunth var. *jamesii* (Torr. & A. Gray) A. Gray (round-leaf monkey-flower): locally common; freshwater seep (spring-type); F4152, M5600

*Penstemon albidus* Nutt. (white beardtongue): occasional; Great Plains gravel-cobble prairie, Sandhills dune prairie; F4256, P41561

*Penstemon gracilis* Nutt. (slender beardtongue): occasional; Sandhills dune prairie; P41595

*Penstemon grandiflorus* Nutt. (large beardtongue): common; Great Plains gravel-cobble prairie, Sandhills dune prairie; M5594, P41562

*Scrophularia lanceolata* Pursh (American figwort): occasional; dry upland bur oak woodland; P41567

\**Verbascum thapsus* L. (common mullein): occasional; Sandhills dune prairie; P42022

*Veronica americana* (Raf.) Schwein. ex Benth. (American speedwell): occasional; paperbirch springbranch canyon forest

*Veronica catenata* Pennell (water speedwell): locally common; freshwater seep (spring-type); M56002

### Selaginellaceae

*Selaginella rupestris* (L.) Spring (spike-moss): frequent; dry upland bur oak woodland, Great Plains gravel-cobble prairie, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; M5593, P41553

### Smilacaceae

*Smilax lasioneura* Hook. (common carrion-flower): occasional; basswood-ironwood springbranch canyon forest; P41596

### Solanaceae

*Physalis heterophylla* Nees (clammy ground-cherry): occasional; Sandhills dune prairie; P41966

*Physalis hispida* (Waterfall) Cronquist (Sandhills ground-cherry): occasional; Sandhills dune prairie; P41947

*Physalis longifolia* Nutt. (common ground-cherry): occasional; Sandhills dune prairie; P41543

*Solanum interius* Rydb. (plains black nightshade): occasional; cultural; P42009

*Solanum rostratum* Dunal (buffalo-bur): occasional; cultural; P42012

### Sparganiaceae

*Sparganium eurycarpum* Engelm. (large-fruited bur-reed): occasional; Sandhills hardstem bulrush marsh; M5641

### Thelypteridaceae

*Thelypteris palustris* Schott (marsh fern): occasional; basswood-ironwood springbranch canyon forest; P41599

### Tiliaceae

*Tilia americana* L. (basswood): locally common; basswood-ironwood springbranch canyon forest, paper birch springbranch canyon forest; P41597

### Typhaceae

\**Typha angustifolia* L. (narrow-leaved cattail): occasional; freshwater seep (spring-type)

*Typha latifolia* L. (broad-leaved cattail): occasional; freshwater seep (spring-type)

### Ulmaceae

*Ulmus americana* L. (American elm): locally common; basswood-ironwood springbranch canyon forest, freshwater seep (spring-type)

### Urticaceae

*Boehmeria cylindrica* (L.) Sw. (false nettle): occasional; freshwater seep (spring-type), Sandhills wet meadow

*Laportea canadensis* (L.) Wedd. (wood-nettle): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest; P42053

*Parietaria pensylvanica* Muhl. ex Willd. (Pennsylvania pellitory): common; basswood-ironwood springbranch canyon forest, cultural, Sandhills dune prairie; P41974, P42017

*Pilea fontana* (Lunell) Rydb. (lesser clearweed): occasional; freshwater seep (spring-type)  
*Urtica dioica* L. (stinging nettle): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, freshwater seep (spring-type)

#### **Verbenaceae**

*Verbena hastata* L. (blue vervain): occasional; perennial sandbar, Sandhills wet meadow; P42044  
*Verbena stricta* Vent. (hoary vervain): common; cultural, Sandhills dune prairie; P42000  
*Verbena urticifolia* L. (white vervain): occasional; dry upland bur oak woodland

#### **Violaceae**

*Viola canadensis* L. var. *rugulosa* (Greene) C.L. Hitchc. (tall white violet): occasional; paperbirch springbranch canyon forest

#### **Vitaceae**

*Parthenocissus vitacea* (Knerr) A. Hitchc. (woodbine): locally common; dry upland bur oak woodland, paper birch springbranch canyon forest; P42018  
*Vitis riparia* Michx. (riverbank grape): common; basswood-ironwood springbranch canyon forest, dry upland bur oak woodland, paper birch springbranch canyon forest, Sandhills wet meadow

### Appendix 3. Vascular Plant Species List Vanderploeg Property 2009

**Communities:** dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, freshwater seep (marsh-type), green ash-elm-hackberry canyon bottomland woodland, ponderosa pine forest, sandbar willow shrubland, Sandhills dune prairie, Sandhills mesic tallgrass prairie, threadleaf sedge western mixed-grass prairie, western sedge wet meadow

Exotic species are indicated by an asterisk (\*) in front of the species name. Vouchered specimens are followed by the collector's initial and the collection number.

**Collectors:** Mary Ann Feist (F), Paul B. Marcum (M)

**Frequency ratings:** rare, occasional, common, frequent, abundant

#### Agavaceae

*Yucca glauca* Nutt. (soapweed): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed grass prairie

#### Alismataceae

*Alisma triviale* Pursh (water-plantain): occasional; freshwater seep (marsh-type)

*Sagittaria latifolia* Willd. (arrowhead): occasional; freshwater seep (marsh-type), western sedge wet meadow

#### Anacardiaceae

*Rhus aromatica* Aiton (fragrant sumac): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed grass prairie; M5534

*Rhus glabra* L. (smooth sumac): common; freshwater seep (marsh-type), sandbar willow shrubland, Sandhills dune prairie; F4343

*Toxicodendron radicans* (L.) O. Kuntze var. *rydbergii* (Small ex Rydb.) Erskine (western poison ivy): occasional; dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie, western sedge wet meadow

#### Apiaceae

*Berula erecta* (Huds) Cov. var. *incisa* (Torr.) Cronq. (water-parsnip): locally common; freshwater seep (marsh-type), western sedge wet meadow

*Cicuta bulbifera* L. (bulbous water-hemlock): rare; freshwater seep (marsh-type); F4369, M5576

*Cicuta maculata* L. (common water-hemlock): rare; sandbar willow shrubland

*Cymopterus acaulis* (Pursh) Raf. (plains spring-parsley): common; dry ponderosa pine open woodland and savanna, ponderosa pine forest, Sandhills dune prairie

*Sanicula canadensis* L. (Canadian sanicle): occasional; dry upland bur oak woodland

*Sium suave* L. (water-parsnip): occasional; freshwater seep (marsh-type)

#### Apocynaceae

*Apocynum androsaemifolium* L. (spreading dogbane): occasional; green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest

*Apocynum cannabinum* L. (Indian-hemp): common; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, Sandhills dune prairie

*Asclepias lanuginosa* Nutt. (woolly milkweed): rare; threadleaf sedge western mixed-grass prairie; F4189

*Asclepias arenaria* Torr. (sand milkweed): occasional; Sandhills dune prairie

*Asclepias pumila* (A. Gray) Vail (dwarf milkweed): rare; threadleaf sedge western mixed-grass prairie; F4278.1

*Asclepias stenophylla* A. Gray (narrow-leaf milkweed): occasional; dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie; F4308  
*Asclepias syriaca* L. (common milkweed): occasional; dry upland bur oak woodland  
*Asclepias verticillata* L. (whorled milkweed): occasional; ponderosa pine forest, threadleaf sedge western mixed-grass prairie; F4278.2  
*Asclepias viridiflora* Raf. (green milkweed): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

### Asteraceae

*Ambrosia artemisiifolia* L. (common ragweed): occasional; cultural, Sandhills mesic tallgrass prairie  
*Ambrosia psilostachya* DC. (western ragweed): frequent; cultural, dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4269  
*Antennaria neglecta* Greene (field pussytoes): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie  
*Antennaria* sp. (pussytoes): occasional; dry ponderosa pine open woodland and savanna  
*\*Arctium minus* (Hill) Bernh. (common burdock): ponderosa pine forest  
*Artemisia filifolia* Torr. (sandsage): rare; threadleaf sedge western mixed-grass prairie; F4319  
*Artemisia frigida* Willd. (fringed sage): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4315  
*Artemisia ludoviciana* Nutt. (Louisiana sage): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie  
*Aster ericoides* L. ssp. *ericoides* (heath aster): common; ponderosa pine open woodland and savanna, Sandhills dune prairie  
*Aster novae-angliae* L. (New England aster): occasional; freshwater seep (marsh-type),  
*Aster oblongifolius* Nutt. (aromatic aster): common; ponderosa pine open woodland and savanna, Sandhills dune prairie  
*Bidens trichosperma* (Michx.) Britt. (crowned beggarticks): occasional; sandbar willow shrubland  
*Brickellia eupatorioides* (L.) Shinnery (false boneset): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie  
*Cirsium altissimum* (L.) Spreng. (tall thistle): occasional; freshwater seep (marsh-type), Sandhills mesic tallgrass prairie; F4334; F4360  
*Cirsium canescens* Nutt. (platte thistle): occasional; threadleaf sedge western mixed-grass prairie; F4186  
*Cirsium undulatum* (Nutt.) Spreng. (wavy-leaf thistle): occasional; dry upland bur oak woodland, Sandhills dune prairie  
*Conyza canadensis* (L.) Cronquist (horseweed): common; cultural, dry upland bur oak woodland, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie  
*Echinacea angustifolia* DC. (narrow-leaf purple coneflower): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie  
*Erigeron bellidiastrum* Nutt. (western fleabane): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4185  
*Erigeron philadelphicus* L. (marsh fleabane): common; dry upland bur oak woodland, freshwater seep (marsh-type), green ash-elm-hackberry canyon bottom woodland, sandbar willow shrubland, western sedge wet meadow; M5571  
*Erigeron strigosus* Muhl. ex Willd. (daisy fleabane): occasional; dry ponderosa pine open woodland and savanna, ponderosa pine forest  
*Eupatorium maculatum* L. ssp. *bruneri* (A. Gray) G.W. Douglas (spotted Joe Pye weed): occasional; freshwater seep (marsh-type), Sandhills mesic tallgrass prairie; F4336  
*Eupatorium perfoliatum* L. (boneset): occasional; freshwater seep (marsh-type), sandbar willow shrubland; F4338  
*Euthamia gymnospermoides* Greene (viscid goldentop): occasional; sandbar willow shrubland

*Gutierrezia sarothrae* (Pursh) Britton & Rusby (snakeweed): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4313

*Helenium autumnale* L. (sneezeweed): occasional; freshwater seep (marsh-type), sandbar willow shrubland; F4365

*Helianthus pauciflorus* Nutt. ssp. *subrhomboides* (Rydb.) O. Spring & E. Schilling (stiff sunflower): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4316

*Helianthus petiolaris* Nutt. (plains sunflower): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4296

*Heterotheca villosa* (Pursh) Shinnars (hairy golden-aster): common; threadleaf sedge western mixed-grass prairie; F4317

*Hymenopappus tenuifolius* Pursh (old plainsman): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie; F4169

*Iva xanthifolia* Nutt. (big marsh-elder): locally common; cultural; F4324

*Lactuca* sp. (wild lettuce): occasional; green ash-elm-hackberry canyon bottom woodland

*Liatis punctata* Hook. (dotted gayfeather): occasional; cultural, ponderosa pine forest, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4294.2, F4321

*Liatis squarrosa* (L.) Michx. (plains gayfeather): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4294.1

*Lygodesmia juncea* (Pursh) D. Don ex Hook. (skeletonweed): occasional; dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie, sandhills dune prairie; F4299

*Ratibida columnifera* (Nutt.) Wooton & Standl. (prairie coneflower): common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie; F4273

*Senecio integerimus* Nutt. (groundsel): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

*Senecio plattensis* Nutt. (prairie ragwort): occasional; dry upland bur oak woodland; M5557

*Senecio riddellii* Torr. & A. Gray (Riddell's groundsel): occasional; Sandhills dune prairie

*Solidago canadensis* L. (Canada goldenrod): common; dry upland bur oak woodland, sandbar willow shrubland, Sandhills dune prairie, Sandhills mesic tallgrass prairie; F4332

*Solidago gigantea* Aiton (late goldenrod): common; freshwater seep (marsh-type), sandbar willow shrubland, Sandhills mesic tallgrass prairie, western sedge wet meadow; F4331

*Solidago missouriensis* Nutt. (Missouri goldenrod): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4297

*Solidago mollis* Bartl. (soft goldenrod): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

*Solidago rigida* L. (stiff goldenrod): occasional; Sandhills mesic tallgrass prairie; F4330

*Solidago speciosa* Nutt. var. *rigidiuscula* (showy-wand goldenrod): occasional; cultural, Sandhills mesic tallgrass prairie; F4322, F4330

\**Taraxacum officinale* G.H. Weber ex F.H. Wigg. (dandelion): occasional; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland

\**Tragopogon dubius* Scop. (goat's-beard): occasional; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna

*Xanthisma spinulosum* (Pursh) D. Morgan & R.L. Hartm. (cutleaf ironplant): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

#### Balsaminaceae

*Impatiens capensis* Meerb. (spotted touch-me-not): locally common; freshwater seep (marsh-type), western sedge wet meadow

#### Boraginaceae

*Cryptantha minima* Rydb. (cryptantha): occasional; Sandhills dune prairie

*Hackelia deflexa* (Wahlenb.) Opiz var. *americana* (A.Gray) Fernald & I.M. Johnston (nodding stickseed): occasional; dry upland bur oak woodland

*Lappula redowski* (Hornem.) Greene var. *redowski* (stickseed): occasional; dry upland bur oak woodland; M5523

*Lithospermum caroliniense* (Walter ex J.F. Gmel.) MacMill. (plains puccoon): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4127

*Lithospermum incisum* Lehm. (fringed puccoon): common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland

*Onosmodium molle* Michx. var. *occidentale* (Mack.) I.M. Johnst. (western marbledseed): occasional; dry upland bur oak woodland, Sandhills mesic tallgrass prairie; F4333

### Brassicaceae

*Cardamine bulbosa* (Schreb. ex Muhl.) Britton, Sterns, & Poggenb. (spring cress): rare; freshwater seep (marsh-type); M5559

*Draba reptans* (Lam.) Fernald (white whitlow-grass): occasional; western sedge wet meadow; F4171

*Lepidium densiflorum* Schrader (pepper-grass): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, threadleaf sedge threadleaf sedge western mixed-grass prairie; F4180

\**Nasturtium officinale* R. Br. (water cress): locally common; freshwater seep (spring-type), freshwater seep (marsh-type), western sedge wet meadow; F4158, M5581

*Physaria ludoviciana* (Nutt.) O'Kane & Al-Shehbaz (bladder-pod): occasional; Sandhills dune prairie

### Cactaceae

*Coryphantha vivipara* (Nutt.) Britton & Rose (purple pincushion cactus): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed grass prairie; M5584

*Opuntia fragilis* (Nutt.) Haw. (brittle prickly-pear): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

*Opuntia humifusa* (Raf.) Raf. (eastern prickly-pear): occasional; Sandhills dune prairie

### Campanulaceae

*Campanula aparinoides* Pursh (marsh bellflower): occasional; freshwater seep (marsh-type)

*Campanula rotundifolia* L. (harebell): occasional; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest; M5580

*Lobelia siphilitica* L. (great blue lobelia): occasional; freshwater seep (marsh-type), Sandhills mesic tallgrass prairie; F4354

### Cannabaceae

\**Cannabis sativa* L. (hemp): occasional; green ash-elm-hackberry canyon bottom woodland

### Caprifoliaceae

*Symphoricarpos occidentalis* Hook. (western snowberry): common; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, Sandhills dune prairie, western sedge wet meadow

### Caryophyllaceae

*Arenaria lateriflora* L. (sandwort): locally common; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest; F6166, M5524

\**Cerastium fontanum* Baumg. (common chickweed): occasional; western sedge wet meadow; F4153

*Stellaria longifolia* Muhl. ex Willd. (stitchwort): occasional; western sedge wet meadow; F4165

### Caesalpinaceae

\**Gleditsia triacanthos* L. (honey locust): occasional; dry upland bur oak woodland

### **Celastraceae**

*Celastrus scandens* L. (American bittersweet): common; sandbar willow shrubland, western sedge wet meadow; F4150, F4342

### **Celtidaceae**

*Celtis occidentalis* L. (hackberry): locally common; dry upland bur oak woodland; M5531

### **Chenopodiaceae**

\**Chenopodium album* L. (lamb's-quarters): occasional; dry upland bur oak woodland

*Chenopodium berlandieri* Moq. (pitseed goosefoot): occasional; threadleaf sedge western mixed grass prairie; F4312

*Chenopodium pratericola* Rydb. (desert goosefoot): occasional; Sandhills dune prairie

*Chenopodium* cf. *simplex* (Torr.) Raf. (goosefoot): occasional; dry ponderosa pine open woodland and savanna

\**Salsola* sp. (Russian thistle): occasional; threadleaf sedge western mixed-grass prairie

### **Cleomaceae**

*Cleome serrulata* Pursh (Rocky Mountain beeplant): occasional; cultural, threadleaf sedge western mixed-grass prairie; F4267

*Polanisia jamesii* (Torr. & A. Gray) Iltis (James' clammyweed): occasional; cultural; F4347

### **Clusiaceae**

*Hypericum majus* (Gray) Britt. (Canadian St. John's-wort): occasional; sandbar willow shrubland; F4341

### **Commelinaceae**

*Commelina erecta* L. var. *angustifolia* (Michx.) Fernald (narrow-leaf dayflower): occasional; threadleaf sedge western mixed-grass prairie; F4291

*Tradescantia occidentalis* (Britton) Smyth (prairie spiderwort): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4289

### **Convolvulaceae**

*Ipomoea leptophylla* Torrey (bush morning-glory): common; dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie; F4318

### **Cornaceae**

*Cornus sericea* L. (redosier): occasional; green ash-elm-hackberry canyon bottom woodland, western sedge wet meadow; F4163

### **Cupressaceae**

*Juniperus virginiana* L. (eastern red-cedar): abundant; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, threadleaf sedge western mixed-grass prairie, western sedge wet meadow; F4174

### **Cyperaceae**

*Carex aurea* Nutt. (golden sedge): occasional; sandbar willow shrubland; F4196

*Carex blanda* C. Dewey (eastern woodland sedge): common; dry upland bur oak woodland; M5532

*Carex brevior* (C. Dewey) Mack. ex Lunell (shortbeak sedge): common; cultural, dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, threadleaf sedge western mixed grass prairie, sandhills dune prairie; M5530, M5539

*Carex comosa* Boott (bearded sedge): occasional; freshwater seep (marsh-type); F4202

*Carex crawei* C. Dewey (Crawe's sedge): rare; sandbar willow shrubland; F4193

*Carex diandra* Schrank (lesser paniced sedge): rare; freshwater seep (marsh-type); M5562

*Carex eleocharis* Bailey (needleleaf sedge): occasional; dry upland bur oak woodland, Sandhills dune prairie



*Carex emoryi* C. Dewey (Emory's sedge): common; freshwater seep (marsh-type), western sedge wet meadow; M5574

*Carex filifolia* Nutt. (threadleaf sedge; blackroot): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie; M5549

*Carex granularis* Muhl. ex Willd. (pale sedge): occasional; freshwater seep (marsh-type), sandbar willow shrubland; F4197, M5575

*Carex gravida* L.H. Bailey (heavy sedge): occasional; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, western sedge wet meadow

*Carex heliophila* Mack. (sun sedge): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie; M5543

*Carex hystericina* Muhl. ex Willd. (bottlebrush sedge): common; freshwater seep (marsh-type), sandbar willow shrubland, western sedge wet meadow; M5566

*Carex interior* L.H. Bailey (prairie star sedge): occasional; freshwater seep (marsh-type); M5561

*Carex nebrascensis* C. Dewey (Nebraska sedge): common; freshwater seep (marsh-type), western sedge wet meadow; M5563

*Carex pellita* Willd. (woolly sedge): locally common; freshwater seep (marsh-type), sandbar willow shrubland; M5568

*Carex praegracilis* W. Boott (clustered field sedge): occasional; dry upland bur oak woodland, freshwater seep (marsh-type); M5526

*Carex prairea* C. Dewey (prairie sedge): rare; freshwater seep (marsh-type); F4203

*Carex sartwellii* Dewey (Sartwell's sedge): occasional; freshwater seep (marsh-type)

*Carex saximontana* Mack. (Rocky Mountain sedge): occasional; dry upland bur oak woodland; M5528

*Carex scoparia* Schkuhr ex Willd. (pointed broom sedge): occasional; sandbar willow shrubland, western sedge wet meadow; F4157

*Carex sprengei* C. Dewey ex Spreng. (Sprengel's sedge): locally abundant; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest; M5522

*Carex stipata* Muhl. ex Willd. (awlfuit sedge): occasional; freshwater seep (marsh-type), western sedge wet meadow; M5565

*Carex vulpinoidea* Michx. (fox sedge): occasional; freshwater seep (marsh-type)

*Cyperus schweinitzii* Torr. (sand flatsedge): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

*Cyperus strigosus* L. (straw-colored flatsedge): occasional; freshwater seep (marsh-type); F4358

*Eleocharis compressa* Sullivant (flatstem spikerush): dry upland cultural, dry upland bur oak woodland; M5520

*Eleocharis erythropoda* Steud. (redstem spikerush): locally common; freshwater seep (marsh-type); F4159, M5569

*Fimbristylis puberula* (Michx.) Vahl (hairy fimbry): occasional; sandbar willow shrubland; F4344

*Schoenoplectus acutus* (Muhl. ex Bigelow) Á. Löve & D. Löve (hardstem bulrush): locally common; freshwater seep (marsh-type), sandbar willow shrubland; F4367

*Schoenoplectus pungens* (Vahl) Palla (common threesquare): occasional; freshwater seep (marsh-type), sandbar willow shrubland; M5567

*Schoenoplectus tabernaemontani* (K.C. Gmel.) Palla (soft-stem bulrush): locally common; freshwater seep (marsh-type), western sedge wet meadow; F4162

### Dryopteridaceae

*Cystopteris fragilis* (L.) Bernh. (fragile fern): occasional; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna

*Woodsia oregana* D.C. Eaton ssp. *cathcartiana* (B.L. Robins.) Windham (Oregon cliff fern): occasional; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland; M5554

### Equisetaceae

*Equisetum laevigatum* A. Braun (smooth scouringrush): locally common; dry upland bur oak woodland, sandbar willow shrubland, western sedge wet meadow

*Equisetum arvense* L. (common horsetail): locally common; green ash-elm-hackberry canyon bottom woodland, western sedge wet meadow

### Euphorbiaceae

*Croton texensis* (Klotzsch) Müll. Arg. (Texas croton): common; cultural, dry ponderosa pine open woodland and savanna, ponderosa pine forest, threadleaf sedge western mixed-grass prairie; F4268

\**Euphorbia cyathophora* Murray (fire-on-the-mountain): occasional; cultural

*Euphorbia geyeri* Engelm. (Geyer's spurge): occasional; threadleaf sedge western mixed-grass prairie

*Euphorbia glyptosperma* Engelm. (ridge-seed spurge): occasional; threadleaf sedge western mixed-grass prairie; F4282

*Euphorbia hexagona* Nutt. ex Spreng. (six-angle spurge): occasional; cultural; F4348

*Euphorbia missurica* Raf. (prairie spurge): common; threadleaf sedge western mixed-grass prairie; F4281

### Fabaceae

*Amorpha canescens* Nutt. ex Pursh (leadplant): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

*Amorpha fruticosa* L. (false indigo-bush): common; freshwater seep (marsh-type), sandbar willow shrubland; F4191

*Amphicarpa bracteata* (L.) Fernald (hog-peanut): occasional; oak woodland, Sandhills mesic tallgrass prairie, western sedge wet meadow

*Apios americana* Medikus (ground-nut): occasional; sandbar willow shrubland, western sedge wet meadow

*Astragalus crassicaarpus* Nutt. (ground-plum): occasional; Sandhills dune prairie

*Astragalus lotiflorus* Hook. (lotus milkvetch): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

*Astragalus missouriensis* Nutt. (Missouri milkvetch): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4181, M5550

*Dalea candida* Michx. ex Willd. (white prairie clover): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4314

*Dalea purpurea* Venten. (purple prairie clover): occasional; cultural, dry ponderosa pine open woodland and savanna, Sandhills dune prairie

*Dalea villosa* (Nutt.) Sprengel (silky prairie-clover): occasional; Sandhills dune prairie

*Desmodium canadense* (L.) DC. (showy ticktrefoil): occasional; freshwater seep (marsh-type); F4366

*Glycyrrhiza lepidota* Pursh (wild licorice): common; dry upland bur oak woodland, Sandhills mesic tallgrass prairie; F4335

*Lathyrus polymorphus* Nutt. (hoary vetchling): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie; M5547

\**Medicago lupulina* L. (black medick): occasional; dry upland bur oak woodland

\**Melilotus* sp. (sweetclover): occasional; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna

*Oxytropis lambertii* Pursh (purple locoweed): occasional; sandhills dune prairie, dry ponderosa pine open woodland and savanna; F4175, M5548

*Pediomelum argophyllum* (Pursh) Grimes (silver-leaf scurfpea): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4283, M5541

*Pediomelum digitatum* (Nutt. ex Torr. & A. Gray) Isley (palm-leaf scurfpea): occasional; Sandhills dune prairie

*Pediomelum esculentum* (Pursh) Rydb. (Indian scurfpea): occasional; Sandhills dune prairie

*Psoralidium lanceolatum* (Pursh) Rydb. (lemon scurfpea): occasional; dry ponderosa pine open woodland and savanna; M5552

*Psoralidium tenuiflorum* (Pursh) Rydb. (slender-flowered scurf-pea): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie

\**Trifolium repens* L. (white clover): occasional; western sedge wet meadow

### Fagaceae

*Quercus macrocarpa* Michx. (bur oak): frequent; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland

### Hydrophyllaceae

*Ellisia nyctelea* (L.) L. (Aunt Lucy): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna

### Iridaceae

*Sisyrinchium campestre* E.P. Bicknell (blue-eyed grass): occasional; ponderosa pine forest

*Sisyrinchium montanum* Greene (meadow blue-eyed grass): occasional; dry upland bur oak woodland, Sandhills dune prairie; M5540, M5558

### Juncaceae

*Juncus arcticus* Willd. var. *balticus* (Willd.) Traut. (Baltic rush): occasional; sandbar willow shrubland; F4194

*Juncus dudleyi* Wieg. (Dudley's rush): common; freshwater seep (marsh-type), sandbar willow shrubland, western sedge wet meadow; F4161, F4198

*Juncus nodosus* L. (knotted rush): occasional; freshwater seep (marsh-type); F4353.1

*Juncus torreyi* Coville (Torrey's rush): occasional; freshwater seep (marsh-type); F4353.2, F4357

### Lamiaceae

*Hedeoma hispida* Pursh (rough false pennyroyal): common; Sandhills dune prairie

*Lycopus americanus* Muhl. ex W. Bart. (common water-horehound): occasional; freshwater seep (marsh-type); F4364

*Lycopus asper* Greene (western water-horehound): occasional; freshwater seep (marsh-type); F4359

*Mentha arvensis* L. (field mint): occasional; freshwater seep (marsh-type); F4355.2

*Monarda fistulosa* L. (wild bergamot): common; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest, Sandhills mesic tallgrass prairie

\**Nepeta cataria* L. (catnip): occasional; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, western sedge wet meadow

*Pycnanthemum virginianum* (L.) T. Dur. & B.D. Jackson ex B.L. Robins. & Fern. (Virginia mountain mint): occasional; freshwater seep (marsh-type), Sandhills mesic tallgrass prairie, western sedge wet meadow; F4356

*Scutellaria galericulata* L. (marsh skullcap): occasional; freshwater seep (marsh-type); F4205

*Scutellaria lateriflora* L. (mad-dog skullcap): occasional; freshwater seep (marsh-type); F4350

*Stachys pilosa* Nutt. (common hedge-nettle): occasional; sandbar willow shrubland

### Lemnaceae

*Lemna minor* L. (common duckweed): occasional; in Schlagel Creek; M5583

*Lemna* sp. (duckweed): occasional; freshwater seep (marsh-type)

### Liliaceae

\**Asparagus officinalis* L. (asparagus): occasional; dry ponderosa pine open woodland and savanna

*Smilacina stellata* (L.) Desf. (starry false Solomon's seal): occasional; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest

### Linaceae

*Linum sulcatum* Riddell (grooved yellow flax): occasional; dry ponderosa pine open woodland and savanna

### Lythraceae

*Lythrum alatum* Pursh (winged loosestrife): occasional; freshwater seep (marsh-type), sandbar willow shrubland; F4340

\**Lythrum salicaria* L. (purple loosestrife): occasional; freshwater seep (marsh-type), sandbar willow shrubland

### Nyctaginaceae

*Mirabilis hirsuta* (Pursh) MacMill. (hairy four-o'clock): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie; F4176, F4285, F4300, M5551

*Mirabilis linearis* (Pursh) Heimerl (narrow-leaf four o'clock): occasional; threadleaf sedge western mixed-grass prairie; F4284

### Oleaceae

*Fraxinus pennsylvanica* Marshall (green ash): common; dry upland bur oak woodland, ponderosa pine forest, freshwater seep (marsh-type)

### Onagraceae

*Calylophus serrulatus* (Nutt.) P.H. Raven (plains yellow primrose): common; Sandhills dune prairie; M5535

*Epilobium leptophyllum* Raf. (narrow-leaf willowherb): occasional; freshwater seep (marsh-type), sandbar willow shrubland; F4339

*Gaura coccinea* Pursh (scarlet gaura): occasional; Sandhills dune prairie; M5536

*Ludwigia palustris* (L.) Elliott (many-fruited seedbox): occasional; freshwater seep (marsh-type); F4368

### Ophioglossaceae

*Ophioglossum pusillum* Raf. (northern adder's-tongue): rare; freshwater seep (marsh-type); F4204

### Orchidaceae

*Liparis loeselii* (L.) Rich. (Loesel's twayblade): rare; sandbar willow shrubland; F4200

### Oxalidaceae

*Oxalis dillenii* Jacq. (yellow wood-sorrel): occasional; cultural, Sandhills dune prairie

### Papaveraceae

*Argemone polyanthemus* (Fedde) G. Ownbey (prickly poppy): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4178, F4272

### Pinaceae

*Pinus ponderosa* Douglas ex P. Laws. & C. Laws. var. *scopulorum* Engelm. (Rocky Mountain ponderosa pine): abundant; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest, threadleaf sedge western mixed-grass prairie

### Plantaginaceae

*Plantago patagonica* Jacq. var. *patagonica* (woolly plantain): frequent; dry upland bur oak woodland, Sandhills dune prairie; M5538

### Poaceae

*Agrostis hyemalis* (Walt.) B.S.P. (tickle grass): occasional; sandbar willow shrubland

\**Agrostis stolonifera* L. var. **major** (Gaud.) Farw. (redtop): occasional; sandbar willow shrubland, Sandhills mesic tallgrass prairie; F4327

*Alopecurus aequalis* Sobol. (short-awn meadow foxtail): occasional; Sandhills mesic tallgrass prairie, western sedge wet meadow; F4151

\**Alopecurus arundinaceus* Poir. (Garrison's creeping foxtail): occasional; sandbar willow shrubland; F4199

*Andropogon gerardii* Vitman ssp. *gerardii* (big bluestem): common; dry ponderosa pine open woodland and savanna, Sandhills mesic tallgrass prairie, threadleaf sedge western mixed-grass prairie; F4329

*Andropogon gerardii* Vitman ssp. *hallii* (Hack.) J. Wipff (sand bluestem): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4293

*Aristida longispica* Poir. var. *geniculata* (Raf.) Fern. (slim-spike three-awn): occasional; cultural; F4362

*Aristida oligantha* Michx. (old-field three-awn): occasional; cultural; F4362

*Aristida purpurea* Nutt. var. *robusta* (Merr.) A.H. Holmgren & N.H. Holmgren (purple three-awn): occasional; threadleaf sedge western mixed-grass prairie; F4288

*Bouteloua curtipendula* (Michx.) Torr. (sideoats grama): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie, western sedge wet meadow; F4160, F4274

*Bouteloua gracilis* (Willd. ex Kunth) Lag. ex Griffiths (blue grama): occasional; cultural, Sandhills dune prairie; F4325

*Bouteloua hirsuta* Lag. (hairy grama): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4292

\**Bromus inermis* Leyss. (smooth brome): occasional; dry upland bur oak woodland

\**Bromus japonicus* Thunb. ex Murr. (Japanese brome): common; cultural, threadleaf sedge western mixed-grass prairie

\**Bromus tectorum* L. (downy brome): occasional; cultural, dry upland bur oak woodland

*Calamagrostis canadensis* (Michx.) Beauv. (bluejoint): locally common; freshwater seep (marsh-type); F4201

*Calamovilfa longifolia* (Hook.) Scribn. (prairie sandreed): frequent; cultural, dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4277

*Cenchrus longispinus* (Hack.) Fernald (sandbur): occasional; cultural, threadleaf sedge western mixed-grass prairie; F4304

*Elymus canadensis* L. (Canada wildrye): common; cultural, dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie; F4301

*Elymus smithii* (Rydb.) Gould (western wheatgrass): occasional; Sandhills dune prairie

*Elymus villosus* Muhl. ex Willd. (hairy wildrye): locally common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, ponderosa pine forest

\**Eragrostis cilianensis* (All.) Vign. ex Janchen (stinkgrass): occasional; threadleaf sedge western mixed-grass prairie; F4305

*Eragrostis spectabilis* (Pursh) Steud. (purple lovegrass): occasional; threadleaf sedge western mixed-grass prairie; F4271

*Festuca subverticillata* (Persoon) E. Alexeev. (nodding fescue): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland; F4168

*Glyceria striata* (Lam.) A.S. Hitchc. (fowl manna grass): occasional; freshwater seep (marsh-type), western sedge wet meadow; M5572

*Koeleria macrantha* (Ledeb.) Schult. (Junegrass): common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, Sandhills dune prairie; M5533

*Leersia oryzoides* (L.) Sw. (rice cutgrass): occasional; western sedge wet meadow

*Muhlenbergia cuspidata* (Torr. ex Hook.) Rydb. (plains muhly): occasional; dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie; F4302

*Muhlenbergia mexicana* (L.) Trin. (Mexican muhly): occasional; freshwater seep (marsh-type)

*Muhlenbergia racemosa* (Michx.) B.S.P. (marsh muhly): occasional; threadleaf sedge western mixed-grass prairie; F4287

*Oryzopsis micrantha* (Trin. & Rupr.) Thurb. (little-seed ricegrass): locally common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, ponderosa pine forest, threadleaf sedge western mixed-grass prairie, western sedge wet meadow; F4173, M5521

*Panicum acuminatum* Sw. (tapered spring panicum): occasional; sandbar willow shrubland; F4195

*Panicum capillare* L. (witchgrass): occasional; threadleaf sedge western mixed-grass prairie; F4306

*Panicum oligoanthos* Schult. var. *scribnerianum* (Nash) Fernald (Scribner's panicum): frequent; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; M5525

*Panicum virgatum* L. (switchgrass): frequent; cultural, dry ponderosa pine open woodland and savanna, sandbar willow shrubland, Sandhills mesic tallgrass prairie, threadleaf sedge western mixed-grass prairie

*Panicum wilcoxianum* Vasey (Wilcox's panicum): common; Sandhills dune prairie

*Paspalum setaceum* Michx. var. *stramineum* (Nash) D.J. Banks (thin paspalum): common; dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie; F4298

\**Phalaris arundinacea* L. (reed canary grass): occasional; sandbar willow shrubland

\**Poa pratensis* L. (Kentucky bluegrass): common; dry ponderosa pine open woodland and savanna, freshwater seep (marsh-type), dry upland bur oak woodland, ponderosa pine forest, sandbar willow shrubland, Sandhills dune prairie, western sedge wet meadow; M5544

*Redfieldia flexuosa* (Thurb. ex A. Gray) Vasey (blowout grass): locally common; Sandhills dune prairie

*Schizachyrium scoparium* (Michx.) Nash (little bluestem): frequent; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, sandbar willow shrubland, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4276

\**Setaria viridis* (L.) Beauv. (green foxtail): occasional; threadleaf sedge western mixed-grass prairie; F4303

*Sorghastrum nutans* (L.) Nash (Indian grass): common; sandbar willow shrubland, Sandhills mesic tallgrass prairie

*Spartina pectinata* Link (prairie cordgrass): occasional; freshwater seep (marsh-type), Sandhills mesic tallgrass prairie; F4326

*Sphenopholis obtusata* (Michx.) Scribn. var. *major* (Torr.) Erdman (wedge grass): occasional; freshwater seep (marsh-type); M5578

*Sporobolus cryptandrus* (Torr.) A. Gray (sand dropseed): common; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4275

*Stipa comata* Trin. & Rupr. (needle-and-thread): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed grass prairie; M5542

*Stipa viridula* Trin. (green needle grass): occasional; dry upland bur oak woodland; F4206, M5529

*Vulpia octoflora* (Walter) Rydb. (sixweeks fescue): frequent; dry upland bur oak woodland, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4184, M5537

#### Polemoniaceae

*Phlox andicola* E.E. Nelson (plains phlox): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie; M5545

#### Polygalaceae

*Polygala alba* Nutt. (white milkwort): occasional; dry ponderosa pine open woodland and savanna, threadleaf sedge western mixed-grass prairie; F7179, M5546

*Polygala verticillata* L. var. *isocycla* Fernald (whorled milkwort): occasional; cultural; F4361

#### Polygonaceae

*Eriogonum annuum* Nutt. (annual wild buckwheat): common; threadleaf sedge western mixed-grass prairie; F4320

\**Polygonum aviculare* L. (wireweed): occasional; cultural; F4349.1

\**Polygonum convolvulus* L. (black bindweed): occasional; cultural

*Polygonum ramosissimum* Michx. (bushy knotweed): occasional; threadleaf sedge western mixed-grass prairie

*Polygonum scandens* L. (climbing false buckwheat): occasional; dry upland bur oak woodland

*Rumex britannica* L. (great water dock): occasional; freshwater seep (marsh-type); F4355.1

\**Rumex crispus* L. (curly dock): occasional; western sedge wet meadow

### Primulaceae

*Androsace occidentalis* L. (tufted loosestrife): occasional; dry upland bur oak woodland

*Lysimachia thrysiiflora* L. (tufted loosestrife): locally common; freshwater seep (marsh-type); M5560

### Ranunculaceae

*Anemone cylindrica* A. Gray (candle anemone): occasional; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, Sandhills dune prairie

*Aquilegia canadensis* L. (columbine): occasional; green ash-elm-hackberry canyon bottom woodland; F4167

*Clematis ligusticifolia* Nutt. (western virgin's-bower): occasional; freshwater seep (spring-type)

*Delphinium virescens* Nutt. (prairie larkspur): occasional; Sandhills dune prairie

*Ranunculus longirostris* Godron (white water crow's-foot): occasional; in Schlagel Creek; M5582

*Ranunculus sceleratus* L. (cursed crow's-foot): occasional; freshwater seep (marsh-type); M5573

*Thalictrum dasycarpum* Fisch. & Avé-Lall. (meadow rue): occasional; dry upland bur oak woodland

### Rosaceae

*Agrimonia gryposepala* Wallr. (tall agrimony): occasional; green ash-elm-hackberry canyon bottom woodland, western sedge wet meadow

*Fragaria* sp. (strawberry): occasional; green ash-elm-hackberry canyon bottom woodland

*Potentilla pensylvanica* L. (cinquefoil): occasional; threadleaf sedge western mixed-grass prairie; F4183

*Prunus virginiana* L. (chokecherry): common; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest; M5555

*Rosa arkansana* Porter ex Porter & J.M. Coult. (dwarf prairie rose): common; Sandhills dune prairie

*Rosa woodsii* Lindl. (western wild rose): occasional; green ash-elm-hackberry canyon bottom woodland, sandbar willow shrubland; F4156, F4192

*Rubus occidentalis* L. (black raspberry): occasional; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest

### Rubiaceae

*Galium aparine* L. (annual bedstraw): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, western sedge wet meadow

*Galium tinctorium* L. (stiff marsh bedstraw): occasional; freshwater seep (marsh-type); M5570

*Galium triflorum* Michx. (sweet-scented bedstraw): occasional; dry upland bur oak woodland

### Salicaceae

*Populus deltoides* Bartr. ex Marsh. var. *occidentalis* Rydb. (plains cottonwood): occasional; dry upland bur oak woodland

*Salix amygdaloides* N.J. Andersson (peach-leaf willow): common; freshwater seep (marsh-type), sandbar willow shrubland

*Salix exigua* Nutt. (sandbar willow): common; sandbar willow shrubland

### Scrophulariaceae

*Agalinis tenuifolia* (Vahl) Raf. (slender false foxglove): occasional; sandbar willow shrubland; F4337

*Mimulus glabratus* Kunth var. *jamesii* (Torr. & A. Gray ex Benth.) A. Gray (roundleaf monkey-flower): locally common; freshwater seep (marsh-type), western sedge wet meadow; F4152

*Pedicularis lanceolata* Michx. (swamp lousewort): rare; freshwater seep (marsh-type); F4349.2, M5577

*Penstemon albidus* Nutt. (white beardtongue): occasional; dry ponderosa pine open woodland and savanna, Sandhills dune prairie, threadleaf sedge western mixed-grass prairie; F4182, M5553  
*Penstemon angustifolius* Nutt. ex Pursh (narrow-leaf beardtongue): occasional; Sandhills dune prairie  
*Penstemon gracilis* Nutt. (slender beardtongue): occasional; dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, Sandhills dune prairie; M5556  
*Penstemon grandiflorus* Nutt. (large beardtongue): common; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie  
*Veronica americana* (Raf.) Schwein. ex Benth. (American speedwell): occasional; western sedge wet meadow; F4155

### Selaginellaceae

*Selaginella rupestris* (L.) Spring (spike-moss): occasional; Sandhills dune prairie, threadleaf sedge western mixed-grass prairie

### Smilacaceae

*Smilax lasioneura* Hook. (carrion-flower): occasional; dry upland bur oak woodland, green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest

### Solanaceae

*Physalis heterophylla* Nees (clammy ground-cherry): occasional; dry upland bur oak woodland, threadleaf sedge western mixed-grass prairie; F4188, F4295  
*Physalis hispida* (Waterfall) Cronquist (Sandhills ground-cherry): occasional; threadleaf sedge western mixed-grass prairie; F4190, F4309  
*Physalis longifolia* Nutt. (common ground-cherry): occasional; threadleaf sedge western mixed-grass prairie; F4280; F4310  
\**Solanum dulcamara* L. (bittersweet nightshade): occasional; freshwater seep (marsh-type); M5579 (County Record)

### Sparganiaceae

*Sparganium eurycarpum* Engelm. (large-fruited bur-reed): occasional; freshwater seep (marsh-type); M5564

### Typhaceae

\**Typha angustifolia* L. (narrow-leaf cattail): locally common; freshwater seep (marsh-type)  
*Typha latifolia* L. (broad-leaf cattail): locally common; freshwater seep (marsh-type), western sedge wet meadow

### Ulmaceae

*Ulmus americana* L. (American elm): occasional; dry ponderosa pine open woodland and savanna, freshwater seep (marsh-type), green ash-elm-hackberry canyon bottom woodland

### Urticaceae

*Boehmeria cylindrica* (L.) Swartz (false nettle): occasional; freshwater seep (marsh-type); F4352  
*Parietaria pensylvanica* Muhl. ex Willd. (Pennsylvania pellitory): common; dry ponderosa pine open woodland and savanna, dry upland bur oak woodland, western sedge wet meadow, threadleaf sedge western mixed-grass prairie; F4172, F4286  
*Pilea fontanum* (Lunell) Rydb. (clear weed): occasional; western sedge wet meadow  
*Urtica dioica* L. ssp. *gracilis* (Aiton) Selander (stinging nettle): occasional; cultural, western sedge wet meadow

### Verbenaceae

*Verbena bracteata* Lag. & J. Rodriguez (prostrate vervain): occasional; threadleaf sedge western mixed-grass prairie; F4307



*Verbena hastata* L. (blue vervain): occasional; freshwater seep (marsh-type), Sandhills mesic tallgrass prairie, western sedge wet meadow; F4328

*Verbena stricta* Vent. (hoary vervain): common; dry upland bur oak woodland, Sandhills mesic tallgrass prairie, threadleaf sedge western mixed-grass prairie; F4279

#### **Vitaceae**

*Parthenocissus vitacea* (Knerr) A. Hitchc. (woodbine): common; dry upland bur oak woodland, dry ponderosa pine open woodland and savanna, green ash-elm-hackberry canyon bottom woodland, threadleaf sedge western mixed-grass prairie; F4270

*Vitis riparia* Michx. (riverbank grape): common; cultural, dry upland bur oak woodland, freshwater seep (marsh-type), green ash-elm-hackberry canyon bottom woodland, ponderosa pine forest, western sedge wet meadow; F4170

#### **Zygophyllaceae**

\**Tribulus terrestris* L. (puncture vine): occasional; cultural; F4290