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Grasslands

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PLANTS OF THE GRAND RIVER AND CEDAR RIVER NATIONAL GRASSLANDS: 2008



Townsend's Easter Daisy, Photo by Kurt Hansen

By Kurt Hansen

**USDA Forest Service
Dakota Prairie Grasslands**

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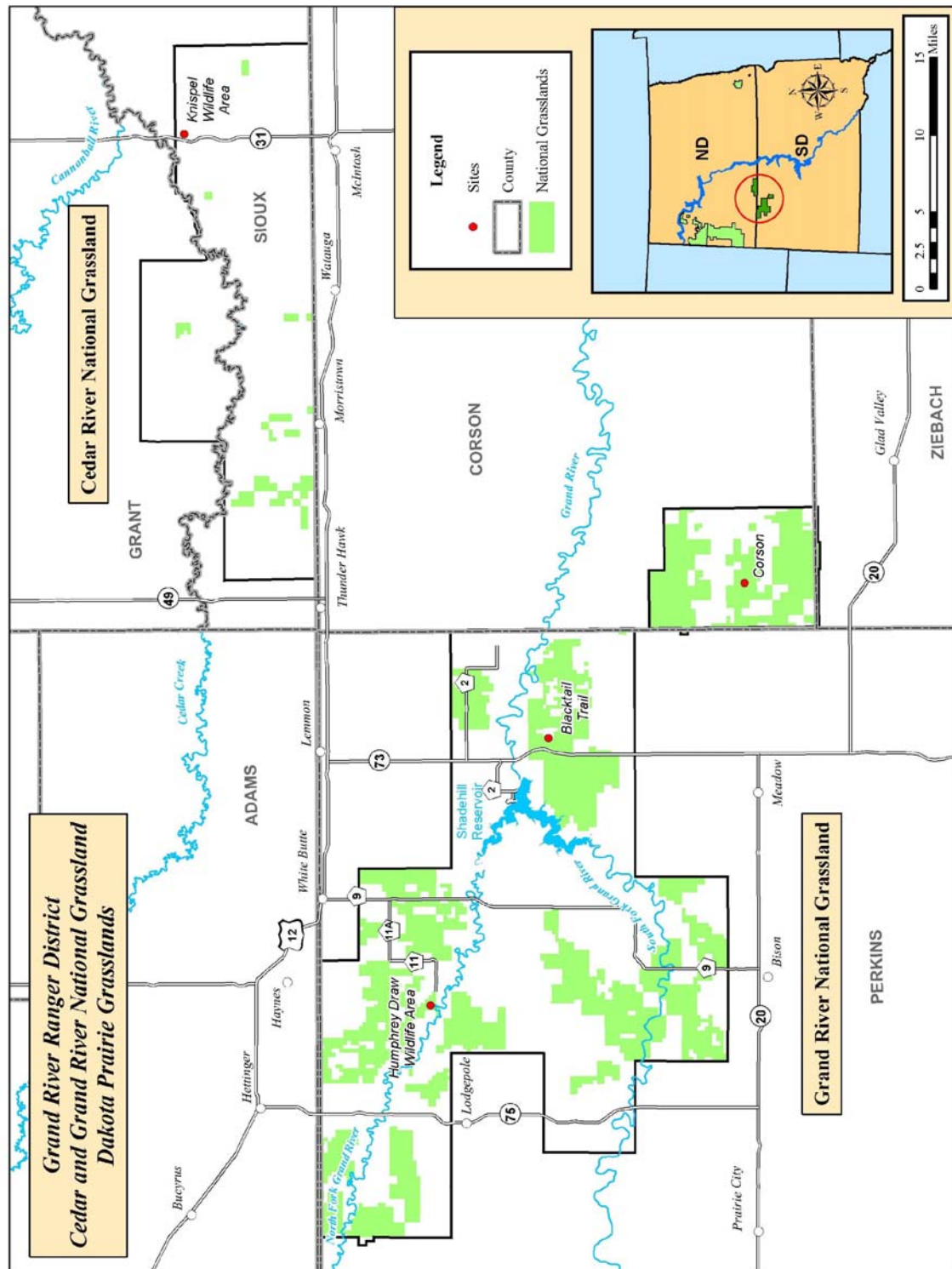
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Figure 1. Map of the Grand River Ranger District.



INTRODUCTION

The USDA Forest Service's Grand River Ranger District manages two national grasslands (Figure 1). The Cedar River National Grassland in southern North Dakota encompasses 6,870 acres in Grant and Sioux counties. The Grand River National Grassland in northwestern South Dakota includes approximately 151,000 acres in Perkins, Corson, and Ziebach counties. Portions of both national grasslands lie within the boundary of the Standing Rock Indian Reservation, whereas a small (~140 acres) portion of the Grand River National Grassland is on the Cheyenne River Indian Reservation.

The Cedar River and Grand River National Grasslands contain a variety of habitats. The mixed-grass prairie, cottonwood riparian, and woody draws characteristic of the Northern Great Plains are all here, as are sandstone ridges, sand dunes, and badlands. Wetlands include remnant depression wetlands, large claypan "playas", stockponds, dugouts, and reservoirs; and temporary, intermittent, and perennial streams. Intermingled private lands provide additional diversity in the form of cropland, hayland, farmsteads, small towns, and lands enrolled in the Conservation Reserve Program. This diversity creates a welcoming site for plant enthusiasts.

The purpose of this book is to summarize the current list of known plant species found on the Grand River Ranger District. This checklist is based primarily on the work of Chris Kopp (2004) who did a floristic study of the Grand River National Grassland in 2002 and 2003. Those two years, particularly 2002, were very dry. Because of this, some plant species were missed during Kopp's fieldwork. With the return of more normal precipitation, I found an additional five plant species. This brought the known number of plant species on the Grand River Ranger District, as of March 29, 2007, to 470 plant species from 78 families. Much remains to be learned. Please, come explore this wonderful place and make discoveries of your own.

Figure 2. South Fork Grand River, Grand River National Grassland, Perkins County, SD.



HISTORY OF THE NATIONAL GRASSLANDS

In the 1860s, the lure of free land brought thousands of homesteaders west. By 1904, nearly 100 million acres of western land had been homesteaded into 500,000 farms. In the 1920s and 1930s, economic hardships for these settlers and their descendents were exacerbated by devastating natural events such as droughts, floods, insect infestations, and erosion. For many, these challenges, along with the advent of the Great Depression and Dust Bowl, were too much. They decided to sell or abandon their homesteads.

In the 1930s, the United States government bought back about 11 million acres of submarginal land through the “Land Utilization Program” and began intensive restoration projects. This program culminated with the passage of the Bankhead-Jones Farm Tenant Act of 1937, which was intended to “correct maladjustments in land use”, and to transfer the land to its most suitable use. Much of the former cropland was reseeded to alfalfa, Canada wildrye, and, especially, crested wheatgrass, by the newly created Soil Conservation Service. These plantings still remain as reminders of that history. The remaining fields were allowed to ‘go-back’ to native grasses.

Figure 3. Old homestead.



In the 1950s, the reclaimed lands were turned over to the USDA Forest Service for permanent management, and were designated as “national grasslands” on June 23, 1960. The Custer National Forest was assigned administrative responsibility for the Cedar River and Grand River National Grasslands. Initially, these two national grasslands were mostly used as grazing pastures for privately-owned permitted livestock, although hunting was also a popular activity. In the decades since their establishment, the Cedar River and Grand River National Grasslands have seen a steady increase in public use. Of particular note have been increased demands for recreation, wildlife conservation, and soil and water protection. Nevertheless, livestock grazing remains the most visible activity. Each year, approximately 10,000 cattle are pastured here, mostly from May through mid-November.

In recognition of the increasing management complexity, the Cedar River and Grand River National Grasslands, along with the Little Missouri and Sheyenne National Grasslands in North Dakota, were separated from the Custer National Forest in 1998. These four national grasslands were then designated as a separate unit, named the “Dakota Prairie Grasslands.”

VISITING THE GRASSLANDS

You should always consider access when visiting the Cedar River and Grand River National Grasslands. Please note that off-road vehicle travel is prohibited. If dry, the two-track prairie trails that bisect the various grazing pastures can greatly aid your exploration in late spring, summer, and early fall. Be aware that use of the two-track roads requires a high clearance vehicle. During winter and early spring, you would be advised to restrict your driving to the main roads. Because of the complicated mix of private and public ownerships, it is very helpful to have a visitor's map to help ensure that you do not trespass on private land. This map is for sale at the District office (see below). Be advised that not all of the two-tracks shown on the visitor map are open to the public. You can pick up a travel map (free) from the District office which shows which ones are.

When entering or leaving a pasture, be sure to leave all gates as you found them (i.e. either open or closed). The entire Grand River Ranger District is available for hiking. A 10-mile trail (Figure 8) is available to aid exploration.

The only poisonous animals on the Grand River Ranger District are western ("prairie") rattlesnake and black widow spider, though you will likely encounter neither. Poison ivy is abundant in draws and drainages. Mosquitoes, ticks, deer flies, and horse flies can be annoying companions during summer, making insect repellent and a stiff breeze helpful. You will likely pick up wood ticks if you step off of the road in spring or early summer. It is a good idea to stop periodically and brush these hitchhikers off.

Food, fuel, and lodging are available in Lemmon and Bison, South Dakota, and Hettinger, North Dakota (Figure 1). Lodging is also available in Watauga, SD (Figure 1). Camping is available at Shadehill Reservoir (Figure 1).

The Grand River Ranger District office (Figure 4) is at 1005 5th Avenue West in Lemmon, SD (605-374-3592). You can purchase a visitor map from this location, and pick up a variety of other material, including a travel map.

If you are visiting in July, August, and September, please check the local fire danger ratings with the National Weather Service office in Rapid City for Fire Zone 261. Check also with the Grand River Ranger District Office as fire restrictions may be in effect, which might affect campfires, vehicle travel, and smoking.

Figure 4. Grand River Ranger District office, Lemmon, SD. April 2007.



WHERE TO VISIT

There is no one best spot for exploring the Grand River Ranger District's flora. Your best strategy is to wander through the wide area available, sampling a diversity of habitats. A few general observations follow.

Cedar River National Grassland

The Cedar River National Grassland (Figure 5) is dominated by mixed-grass prairie, with a large component of planted crested wheatgrass. Intermittent streams, wetlands, scattered trees, and a few badlands and sandstone buttes provide a bit of biodiversity. The single most diverse site is probably the 160-acre Knispel Wildlife Area (Figure 1). This site has a few low hills, a pond and stream, and both native prairie and planted crested wheatgrass stands. To reach this spot, follow ND Highway 31 north from the North Dakota/South Dakota border after zeroing your mileage. At mile 8.2, turn right (east) onto the Selfridge Road. The Knispel Wildlife Area is on the left (north) side of the road between miles 8.3 and 8.8. There is an approach at mile 8.6 that provides a safe place to park. This site is open to foot-traffic only.

Corson County

That portion of the Grand River National Grassland that is in Corson County (Figure 1) offers a large component (48% of the area) of claypan (a.k.a. gumbo) soils (Figure 6). Woody draws, perennial and intermittent streams, prairie dog towns, badlands, playas, and saline seeps can be found in this part of the District as well. Some saline seeps in this area are actually quicksand, so always test the ground before walking across such sites. To reach this area from Lemmon, SD, follow SD Highway 73 south for 25 miles, then turn left (east) onto Perkins County Road #4. You will reach the Athboy intersection in 12 miles. National Grassland lies to both the north and south. See a visitor map for detailed information.

Figure 5. Cedar River National Grassland, Sioux County, ND. September 2007.



Figure 6. Corson County portion of the Grand River National Grassland. September 2007.



Humphrey Draw Wildlife Area

The Grand River National Grassland's Humphrey Draw Wildlife Area (Figure 1) is a relatively mesic and lightly grazed area set back from the North Fork of the Grand River. This site offers a variety of wetland plants not found in abundance elsewhere on the District. To reach the Humphrey Draw Wildlife Area from Lemmon, follow US 12 west 9.5 miles. Zero your mileage, then turn south onto paved Perkins County Road 9. At mile 4.4 turn right (west) onto graveled Perkins County Road 11A. At mile 8.4, turn left (south) onto Perkins County Road 11 (a.k.a. Haynes Road). At mile 11.4, turn right (west) onto 108th Street. You will reach the eastern end of Humphrey Draw Wildlife Area at mile 13.5. You can hike west to Humphrey Draw from this gate.

Shadehill Reservoir Vicinity

Shadehill Reservoir (Figure 1) lies in the midst of the Grand River National Grassland, approximately 20 miles south of Lemmon, South Dakota. Besides the reservoir itself (Figure 7), this area has a variety of habitats including mixed-grass prairie, badlands, woody draws, saline seeps, claypans, and prairie dog towns. The Blacktail Trail (Figure 8) is located here, and provides easy access to a diversity of interesting features. To reach the trailhead, follow South Dakota Highway 73 south from Lemmon for 16 miles, then turn left (east) onto graveled Forest Service Road #5626. After 0.5 mile, turn left (north) onto Forest Service Road #5740. You will reach the Pasture 9 Wildlife Area Day Use Area, and trailhead, in another 0.5 mile.

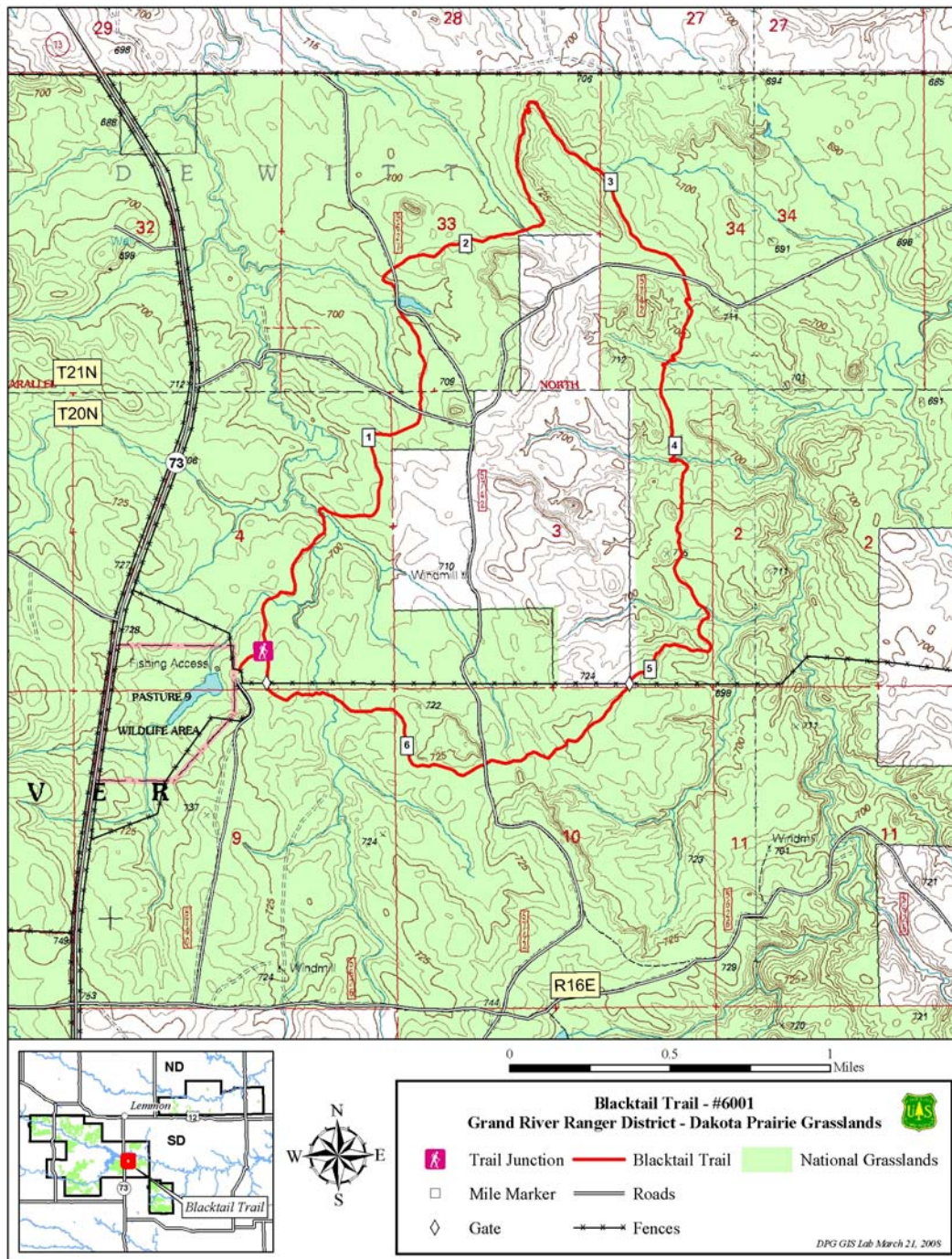
Figure 7. Shadehill Reservoir.



South Fork of the Grand River

The South Fork of the Grand River (Figure 2) bisects the southwestern one-third of the Grand River National Grassland (Figure 1). This region has relatively high biodiversity. This is due to the river itself, as well as the associated riparian forest, badlands, sand dunes, and deeply dissected drainageways of the river's tributaries. To explore here, follow Perkins County Road #9 north from Bison for 5.5 miles, where you will cross the South Fork of the Grand River. Two-track roads provide access onto the National Grassland parcels both upstream and downstream. Please reference the district visitor map and travel map for detailed information.

Figure 8. Map of the Blacktail Trail.



POTENTIAL REFERENCES

A good plant identification book will greatly assist your investigation of the Grand River Ranger District's flora. The following is a list of such books that may be helpful for further identifying plants, and learning the season that they will flower. This list is not meant to be exhaustive. New books, as well as new revisions of existing books, are always emerging. Internet sites such as *plants.usda.gov* and *wikipedia.org* are also a good resource for finding plant information.

- Grassland Plants of South Dakota by Gary Larson and John J. Johnson. 1999. South Dakota State University (SDSU), Brookings, SD.
- Plants of the Black Hills and Bearlodge Mountains and surrounding areas by Gary Larson and John J. Johnson. 1999. SDSU, Brookings, SD.
- Flora of the Great Plains. 1986. University of Kansas Press.
- The Vascular Plants of South Dakota, Second Edition by Theodore Van Bruggen. 1985. Iowa State University Press, Ames, IA.
- Handbook of North Dakota Plants by O.A. Stevens. 1950. North Dakota State University, Fargo, ND.
- Aquatic and Vascular Plants of the Northern Great Plains by Gary Larson. USDA Forest Service, Rocky Mountain Research Station, Ft. Collins, CO.

NOMENCLATURE, WHAT'S IN A NAME?

Many plant species have more than one accepted common name. For example, Visher's buckwheat (Figure 9), a Northern Great Plains endemic, is also known as Dakota buckwheat. The plant names contained in this book follow the latest updates listed on the *plants.usda.gov* website. The fern families in this checklist have been divided into four groups, as opposed to the two groups noted in Kopp's work. This division in the fern families is also based on the website noted above.

Some scientific names have changed over the years due to more research into earlier taxonomic groupings, genetic research, and the history of previous names. The premise, however, has always been that scientific names change very little over time. An example of where further analysis has changed plant names is with the bulrushes. For our area, the five species of bulrush were all formerly in the genus *Scirpus*. However, they are now split into *Bolboschoenus*, *Schoenoplectus*, and *Scirpus*.

Figure 9. Visher's (a.k.a. "Dakota") buckwheat. Grand River National Grassland, Corson County, South Dakota, September 26, 2005.



HOW TO USE THIS BOOK

Area Covered:

This checklist is specific to National Forest System lands within Corson, Perkins, and Ziebach counties, South Dakota; and Grant and Sioux counties, North Dakota. Additional plant species occur on the intermingled private, state, tribal, and USDI Bureau of Reclamation lands, but are not covered in this book.

Habitats:

Repeated reference is made herein to a plant's habitat. I have characterized these habitats into the following general categories. Please note that one habitat often blends into another. Category definitions are not meant to be definitive or technically precise. Most of the habitat categories are self-explanatory, but a few details might be helpful. "Disturbed areas" are sites where the pre-existing vegetation was removed by some event, exposing the soil surface. Prairie dog towns, roadways, erosion sites, and burns are all examples. "Plantings" refer to spots where plants have been transplanted or seeded. Additional details for the most common habitat categories, follows.

BADLANDS & CLAYPANS:

As used here, "badlands" refers to a habitat of highly eroded and sculpted clay buttes, mounds, islands, and ridges. Large expanses of unvegetated, flat "claypans" are typical of this habitat, as are inclusions of mixed-grass prairie. Look in badlands and claypan habitats for species such as gumbo lily and Visser's buckwheat.

DRAWS AND DRAINAGES:

Draws and drainages are linear indentions in the land surface. In my vernacular, "draws" do not have well defined water channels, whereas "drainages" do. Draws and drainages typically contain extra moisture, and so are more likely to support plants with higher moisture requirements such as trees, shrubs, and tallgrass prairie species like big bluestem. This habitat category includes temporary, intermittent, and perennial streams and rivers; the most prominent of which are the South Fork of the Grand River, North Fork of the Grand River, and Grand River.

Figure 10. Badlands habitat, Grand River National Grassland, Corson County, September 2007.



Figure 11. Draw and drainage habitat supporting trees; surrounded by mixed-grass prairie habitat. Grand River National Grassland, Perkins County.



MIXED-GRASS PRAIRIE:

The checklist area's most abundant habitat is mixed-grass prairie, usually referenced hereafter as just "prairie". Primary plant species include blue grama, needle-and-thread grass, needleleaf sedge, prairie Junegrass, western snowberry, and western wheatgrass, along with exotic species such as crested wheatgrass, Kentucky bluegrass, and smooth brome.

SANDSTONE OUTCROPS and BUTTES:

Sandstone outcrops and buttes are mainly found along the North Fork of the Grand River. Some rise 500-600 feet or more in elevation above the river. The shallow soils harbor their own set of plant species adapted to life in dry rocky places. The area northeast of Lodgepole contains a long ridge of sandstone-capped escarpment. White Butte is a prominent expression of this habitat.

WETLANDS:

Wetland habitats are limited in the checklist area. Some small natural temporary, seasonal, and fen wetlands are present. The thousands of small reservoirs (a.k.a. "ponds") built to facilitate livestock management, however, provide the most extensive wetland habitat.

Species Accounts:

The annotated checklist is divided into three sections: 1) Ferns and Fern Allies; 2) Grasses, Sedges, and Rushes; and 3) Forbs, Shrubs, Vines, and Trees. Within these sections, the plant families covered are listed alphabetically. Species are then listed alphabetically within each family discussion, by scientific name. Because of these conventions, the family and species listings do not follow the order set up by Cronquist (1981).

I have made brief comments for each plant family. In many cases, I have suggested a literature reference for that family. These references are listed after the family name. Within each paragraph describing a plant family, I note the family's species that have been documented on the Grand River Ranger District. Each plant's common name is followed by the scientific name, and then by a listing of the counties in which it has been confirmed on National Forest System lands. A brief statement is then made as to the plant species' status and likely habitat. Note: little or no botanical fieldwork has been conducted on the National Forest System lands within Grant County, North Dakota (480 acres total) or Ziebach County, South Dakota (140 acres total). Therefore these counties

Figure 12. Sandstone outcrop and butte habitat, Little Missouri National Grassland, Slope County, ND.



Figure 13. Wetland habitat, Perkins County. Grand River National Grassland, Perkins County.



are listed only rarely within the annotated checklist. It is doubtful that either site supports plants that are not already noted for the better studied adjacent National Forest System lands in Sioux County, North Dakota or Corson County, South Dakota.

Information on plant status herein comes primarily from Kopp (2004) and my own knowledge. I have defined the abundance categories below. I sometimes combine abundance categories (for example “abundant to uncommon”). These combinations refer to plants whose abundance is particularly variable through time and space.

- abundant – plant species found throughout the area in high numbers. These species are usually adapted to many habitats, but it can also be plentiful only in localized areas.
- common – a species that is found in moderate numbers throughout the grasslands or in the specific habitat listed.
- uncommon – a species found in low numbers, usually in specific habitats only.
- rare – a species found in less than 10 populations across the Grand River Ranger District.
- occasional – a species found in low numbers over a large area, never or rarely seen in large populations.

Following the abundance category, I have noted those species that are shrubs, trees, vines, introduced, or noxious weeds.

Species Treated:

Approximately 49 percent of the 160 plant families listed in the Flora of the Great Plains (1986) has been found on the Grand River Ranger District. Although this number is only a fraction of the total number of species found in the entire Great Plains, it is very representative of the northern section.

Abbreviations/definitions:

Abbreviations used in this book include:

- FNA – Flora of North America, includes several volumes covering the flora of North America north of Mexico.
- GPFA – Great Plains Flora Association.
- var. – variety of a certain species of plant.
- subsp. – subspecies of a certain plant species.
- ssp. – species.

CORRECTIONS AND UPDATES

This checklist will be periodically updated. Please report any suggested changes to: Grand River Ranger District, 1005 5th Ave. W., Lemmon, SD 57638. Phone 605-374-3592.

ANNOTATED CHECKLIST

FERNS AND FERN ALLIES

Ferns produce spores from special fruiting structures usually found on the underside of the leaves or produced on special fertile stems produced separately from the main plant. Several fern species have been found on the Grand River National Grassland, but only two, the fragile fern and the small clubmoss, have been documented to date on the Cedar River National Grassland.

The distribution and family information, as well as the family taxonomy presented below comes from FNA, Vol. 2, 1993.

Dryopteridaceae - Wood Fern Family

This family of ferns is represented by two species on the Grand River Ranger District. Both are perennials. Many of the species in this family are found in the eastern and western parts of North America with very few species present in the Great Plains.

- Fragile fern, *Cystopteris fragilis*- Perkins, Corson, Sioux. Occasional, draws and drainages.
- Oregon woodsia, *Woodsia oregana*- Perkins. Uncommon, rock outcrops.

Equisetaceae - Horsetails/Scouring Rush Family

Two species in this family occur on the Grand River Ranger District. These species usually indicates the presence of long-term soil moisture in sandy soils.

- Field horsetail, *Equisetum arvense*- Perkins. Common, draws and drainages.
- Smooth scouring rush, *Equisetum laevigatum*- Perkins, Corson. Common, draws and drainages.

Marsiliaceae - Water Clover Family

This family is represented by one species on the Grand River Ranger District. The plant looks like a four leaf clover and grows in shallow, short-lived ponds. The species we have is the most widespread member of its family found in North America. It spreads by rhizomes. The fertile stems resemble “fiddleheads” characteristic of the ostrich fern, a species not found here.

- Hairy water clover, *Marsilea vestita* - Corson. Uncommon, drainages.

Figure 14. *Dryopteridaceae*.



Figure 15. *Marsiliaceae*.



Pteridaceae - Maidenhair Fern Family

Most of species found in this family are found in the eastern, western, and southern United States. The sole species documented on the Grand River National Grassland is one of the few members of this family that is found on the Great Plains. It is found growing out of cracks in sandstone outcrops, usually on northern and eastern aspects. It has been found on buttes along the North Fork of the Grand River. It is considered an evergreen fern.

- Smooth cliffbrake, *Pellaea glabella* - Perkins. Uncommon, rock outcrops.

Selaginellaceae, the Spikemoss Family

Small clubmoss is found in the western Great Plains and Rocky Mountains in a variety of habitats. It forms cushion-like mats on the ground.

- Small clubmoss, *Selaginella densa*- Perkins, Corson, Sioux. Occasional, prairie, badlands, claypans.

Figure 16. *Selaginellaceae*.



GRASSES, SEDGES, AND RUSHES

The families of *Cyperaceae* and *Poaceae* represent the grass-like sedges and rushes and true grasses that give the national grasslands their namesake and character. The combined number of species in these two families represents the largest single group of plants found on the Grand River Ranger District (85 species). Both families have members found in habitats ranging from dry, rocky thin soils on uplands to shallow water and everything in between.

Cyperaceae - the Sedge Family

This large family encompasses 843 species in North America, including 480 species in the genus *Carex*. The Grand River Ranger District has 5 genera and 22 species. The spikerushes and bulrushes are wetland species important for stabilizing streambanks and resisting water erosion. The sedges are found in dry, moist, or wet habitats; many are grazed by livestock. Of the upland sedge species, threadleaf sedge (*Carex filifolia*) is the most common locally.

- Prairie bulrush, *Bolboschoenus maritimus*- Perkins. Common, prairie.
- Fescue sedge, *Carex brevior*- Perkins, Corson. Common, prairie.
- Needleleaf sedge, *Carex duriuscula*- Corson, Sioux. Occasional, prairie.
- Threadleaf sedge, *Carex filifolia*- Perkins, Corson, Sioux. Common, prairie.
- Heavy sedge, *Carex grvida*- Perkins, Corson. Occasional, draws and drainages.

Figure 17. *Cyperaceae*.



- Bottlebrush sedge, *Carex hystericina*- Perkins. Common, drainages with seeps.
- Sun sedge, *Carex inops*- Corson, Perkins, Sioux. Occasional, sandy prairie.
- Woolly sedge, *Carex pellita*- Perkins, Corson, Sioux. Common, wet drainages.
- Clustered-field sedge, *Carex praegracilis*- Perkins, Corson. Common, drainages.
- Ross' sedge, *Carex rossii*- Perkins. Occasional, draws and drainages.
- Rocky Mountain sedge, *Carex saximontana*, Perkins. Uncommon, draws and drainages.
- Longbeak sedge, *Carex sprengelii*- Perkins, Corson. Common, draws and drainages, shade loving.
- Fox sedge, *Carex vulpinoidea*. Sioux. Uncommon, moist draws and drainages.
- Redrooted cyperus, *Cyperus erythrorhizos*- Corson. Occasional, margins of ponds.
- Schweinitz flatsedge, *Cyperus schweinitzii*- Perkins. Uncommon, sand dunes.
- Needle spikerush, *Eleocharis acicularis*- Perkins, Corson, Sioux. Common, ponds.
- Bald spikerush, *Eleocharis erythropoda*- Perkins, Corson, Sioux. Occasional, wetlands especially those with standing water.
- Small's spikerush, *Eleocharis palustris*- Corson. Occasional, wetlands especially those with standing water.
- Hardstem bulrush, *Schoenoplectus acutus* var. *acutus*- Perkins. Occasional, ponds.
- Common threesquare, *Schoenoplectus pungens* var. *pungens* – Perkins, Corson, Sioux. Occasional, drainages, tolerant of alkali conditions.
- Softstem bulrush, *Schoenoplectus tabernaemontani*- Perkins, Corson. Occasional, wetlands.
- Cloaked bulrush, *Scirpus pallidus*- Perkins. Occasional, spring fed draws and drainages

Poaceae - the Grass Family

The Grand River Ranger District contains 64 known grasses. These species occupy a variety of dry, moist, and wet habitats, and include both annuals and perennials. Several species have been introduced; some are considered weeds. Crested wheatgrass is the most common introduced grass encountered on the Grand River Ranger District. Grasses are well adapted to grazing, as their growing points are concealed at ground level and not at the tips of stems or branches.

- Indian ricegrass, *Achnatherum hymenoides*- Perkins, Corson. Common, sandy prairie.
- Crested wheatgrass, *Agropyron cristatum*- Perkins Corson, Sioux. Common, plantings on former cropland. Introduced.
- Ticklegrass, *Agrostis scabra*- Corson. Occasional, draws and drainages.

Figure 18. *Poaceae*.



- Creeping foxtail, *Alopecurus arundinaceus*- Perkins. Occasional, floodplains along perennial rivers. Introduced.
- Carolina foxtail, *Alopecurus carolinianus*- Corson. Occasional, ponds.
- Big bluestem, *Andropogon gerardii*- Perkins, Corson, Sioux. Occasional, draws and drainages.
- Sand bluestem, *Andropogon hallii*- Perkins, Corson. Occasional, sandy prairie.
- Red three-awn, *Aristida purpurea* var. *robusta*- Perkins, Corson, Sioux. Common, prairie.
- American sloughgrass, *Beckmannia syzigachne*- Perkins, Corson. Occasional, ponds.
- Sideoats grama, *Bouteloua curtipendula*- Perkins, Corson, Sioux. Occasional, draws and drainages especially north slopes.
- Blue grama, *Bouteloua gracilis*- Perkins, Corson, Sioux. Common, prairie, claypans.
- Smooth brome, *Bromus inermis* subsp. *inermis*- Perkins, Corson, Sioux. Common, disturbed areas especially roadsides. Introduced.
- Japanese brome, *Bromus japonicus*- Perkins, Corson, Sioux. Occasional, badlands and claypans, prairie especially clay soils. Noxious weed.
- Downy brome, *Bromus tectorum*- Perkins, Corson, Sioux. Occasional, prairie, claypans. Noxious weed.
- Buffalo grass, *Buchloe dactyloides*- Perkins, Corson, Sioux. Common, prairie especially clay soils.
- Slimstem reedgrass, *Calamagrostis stricta*- Perkins. Occasional, common, draws and drainages.
- Prairie sandreed, *Calamovilfa longifolia*- Perkins, Corson, Sioux. Common, sandy prairie.
- Field sandbur, *Cenchrus longispinus*- Corson. Uncommon, disturbed areas especially sandy soils.
- Scribner rosette grass, *Dichanthelium oligosanthos* var. *scribnerianum*- Corson, Sioux. Occasional to common, prairie.
- Inland saltgrass, *Distichlis spicata* var. *stricta*- Perkins, Corson, Sioux. Common, alkaline areas of prairie.
- Cockspur grass, *Echinochloa muricata* var. *microstachya*- Perkins, Corson, Sioux. Occasional, ponds.
- Macoun's barley, *Elyhordeum macounii*- Perkins, Corson. Common to occasional, ponds.
- Canada wildrye, *Elymus canadensis*- Perkins, Corson, Sioux. Occasional, draws and drainages.

Figure 19. *Poaceae*.



Figure 20. *Poaceae*.



- Squirreltail, *Elymus elymoides* var. *brevifolius*- Perkins, Corson. Occasional, badlands.
- Thickspike wheatgrass, *Elymus lanceolatus*- Perkins, Corson. Common to occasional, prairie, badlands.
- Slender wheatgrass, *Elymus trachycaulus* subsp. *trachycaulus*- Perkins, Corson, Sioux. Occasional, prairie.
- Virginia wildrye, *Elymus virginicus*- Perkins, Corson. Occasional, draws and drainages.
- Intermediate wheatgrass, *Elytrigia intermedia*- Perkins. Occasional near ponds. Introduced.
- Quackgrass, *Elytrigia repens*- Perkins, Corson. Occasional, draws and drainages. Introduced. Noxious weed.
- Stinkgrass, *Eragrostis cilianensis*- Perkins, Corson, Sioux. Occasional, disturbed areas. Introduced.
- Fowl mannagrass, *Glyceria striata*- Perkins, Corson. Occasional, moist draws and drainages.
- Needle-and-thread, *Hesperostipa comata*- Perkins, Corson, Sioux. Common, prairie.
- Foxtail barley, *Hordeum jubatum*- Perkins, Corson, Sioux. Occasional, mudflats of ponds, draws and drainages.
- Little barley, *Hordeum pusillum*- Perkins, Corson. Occasional, disturbed areas.
- Junegrass, *Koeleria macrantha*- Perkins, Corson, Sioux. Occasional, prairie.
- Bearded sprangletop, *Leptochloa fusca* subsp. *fascicularis*- Corson. Occasional, draws and drainages.
- Scratchgrass, *Muhlenbergia asperifolia*- Perkins, Sioux. Occasional, draws and drainages, alkaline areas and near ponds.
- Plains muhly, *Muhlenbergia cuspidata*- Perkins, Sioux. Occasional, draws and drainages, sandstone outcrops and buttes.
- Marsh muhly, *Muhlenbergia racemosa*- Perkins. Occasional, intermittent draws and drainages.
- Mat muhly, *Muhlenbergia richardsonis*- Perkins. Occasional, intermittent drainages.
- False buffalo grass, *Munroa squarrosa*- Perkins, Corson. Uncommon, disturbed areas particularly roadsides.
- Green needlegrass, *Nassella viridula*- Perkins, Corson, Sioux. Common, mesic prairie.
- Common witchgrass, *Panicum capillare*- Corson. Occasional, mudflats of ponds.

Figure 21. *Poaceae*.



- Switchgrass, *Panicum virgatum*- Perkins, Corson, Sioux. Common, moist draws and drainages.
- Western wheatgrass, *Pascopyrum smithii*- Perkins, Corson, Sioux. Abundant, prairie.
- Common reed, *Phragmites australis*- Perkins. Common, wetlands, draws and drainages especially at freshwater seepage areas.
- Little-seed ricegrass, *Piptatherum micranthum*- Perkins. Occasional, draws and drainages.
- Plains bluegrass, *Poa arida*- Perkins. Occasional, margins of ponds in moist draws and drainages.
- Canada bluegrass, *Poa compressa*- Perkins, Corson. Common, moist prairie and draws and drainages. Introduced.
- Fowl bluegrass, *Poa palustris*- Corson. Occasional, drainages.
- Kentucky bluegrass, *Poa pratensis*- Perkins, Corson, Sioux. Occasional, prairie.
- Sandberg's bluegrass, *Poa secunda*- Perkins, Corson, Sioux. Occasional, badlands and claypans.
- Bluebunch wheatgrass, *Pseudoroegneria spicata*- Corson. Occasional, prairie, badlands, usually dry sites.
- Cusick's alkaligrass, *Puccinellia cusickii*- Perkins. Occasional, alkaline seeps in draws and drainages.
- Nuttall's alkaligrass, *Puccinellia nuttalliana*- Perkins, Corson, Sioux. Occasional, alkaline seeps in draws and drainages.
- Tumblegrass, *Schedonnardus paniculatus*- Perkins, Corson, Sioux. Occasional to common, ponds and mudflats.
- Little bluestem, *Schizachyrium scoparium*- Perkins, Corson, Sioux. Occasional, draws and drainages, north-facing slopes of prairie.
- Green foxtail, *Setaria viridis*- Perkins, Corson, Sioux. Occasional, disturbed areas. Introduced.
- Indiangrass, *Sorghastrum nutans*- Perkins. Uncommon, alkaline seeps in draws and drainages.
- Alkali cordgrass, *Spartina gracilis*- Perkins, Corson. Occasional, ponds and draws and drainages.
- Prairie cordgrass, *Spartina pectinata*- Perkins, Corson, Sioux. Occasional, ponds, draws and drainages, especially intermittent drainages.
- Wedgegrass, *Sphenopholis obtusata*- Perkins. Occasional, intermittent drainages and draws.
- Composite/Tall Dropseed, *Sporobolus compositus*, var. *compositus*. Sioux. Uncommon, sandy prairie.
- Sand dropseed, *Sporobolus cryptandrus*- Perkins, Sioux. Occasional, sandy prairie.
- Sixweeks fescue, *Vulpia octoflora*- Perkins, Corson, Sioux. Occasional to common, prairie, disturbed areas.

FORBS, SHRUBS, VINES, and TREES

Various citations and my own knowledge were utilized for the brief descriptions of each family below. The bibliography at the end of this book gives full details of each of the citations.

Aceraceae - the Maple Family (Jones, Jr. and Luchsinger, 1986)

The maple family consists of a number of tree species more commonly found in the eastern U.S. Only boxelder is native to the Grand River Ranger District. The silver maple record comes from a homestead site southwest of White Butte.

- Boxelder, *Acer negundo*- Perkins, Corson. Occasional, draws and drainages, especially large, deeply incised draws. Tree.
- Silver maple, *Acer saccharinum*- Perkins (homestead site). Rare, plantings. Introduced. Tree.

Agavaceae - the Agave Family (FNA, Vol. 3, 1997)

Some members of this family provide fiber and food and drink in the southwest U.S. Most of the species are very hardy and drought tolerant. Tequila and soap are derived from plants in this family. The yucca found on the Grand River Ranger District depends on one insect, the yucca moth, to pollinate its flowers.

In exchange, the moth's young get to hide in the flowers as they grow and develop.

- Yucca, *Yucca glauca* - Perkins, Corson, Sioux. Common, prairie especially xeric slopes and sandy ridges.

Alismataceae - the Water Plantain Family (FNA, Vol. 22, 2000)

The species of this family found on the Grand River Ranger District are all aquatic plants. Most members of this family are found elsewhere in North America, especially the eastern U.S. Arrowhead has very distinctive arrow-shaped leaves that make it easy to identify. All three local species are perennial.

- Narrowleaf water plantain, *Alisma gramineum*- Perkins. Occasional, margins of wetlands.
- Large-flowered water plantain, *Alisma plantago-aquatica* - Perkins, Corson, Sioux. Occasional, wetlands.
- Arrowhead, *Sagittaria cuneata*- Perkins, Corson. Uncommon, ponds in intermittent draws and drainages.

Amaranthaceae - the Pigweed Family (FNA, Vol. 4, 2003)

The species found on the Grand River Ranger District are all weedy, annual species. This family contains many species that tolerate severe soil conditions where little other plant life will grow. Some species of this family are grown as ornamentals.

- Tumbleweed, *Amaranthus albus*- Perkins. Occasional, disturbed areas.
- Prostate pigweed, *Amaranthus blitoides*- Perkins, Corson, Sioux. Common to occasional, disturbed areas especially roadsides.

Figure 22. *Agavaceae*.



- Rough pigweed, *Amaranthus retroflexus*- Perkins, Corson, Sioux. Occasional, disturbed areas.

Anacardiaceae - the Cashew Family (Jones, Jr. and Luchsinger, 1986)

Most members of this family have resin on the bark. Poison ivy is well known for irritating human skin. This family also contains plants that produce edible nuts and fruits such as pistachios, cashews, and mangos.

- Fragrant or skunkbush sumac, *Rhus aromatica*- Perkins, Corson, Sioux. Common, prairie, draws and drainages. Shrub.
- Poison ivy, *Toxicodendron rydbergii*- Perkins, Corson, Sioux. Abundant, draws and drainages particularly on the draw slopes. Shrub.

Figure 23. *Apiaceae*.



Apiaceae - the Carrot Family (Jones, Jr. and Luchsinger, 1986)

A number of foods, spices and garnishes come from this family including carrots, parsley, celery, fennel, coriander, dill, parsnip and anise. On the Grand River Ranger District, several species of wild parsley grow on claypans and are some of the earliest spring flowers. Anise root is occasionally seen in woodlands. Water hemlock is a poisonous wetland plant. Hemlock is related to the plant species from which the poison Socrates was forced to drink and kill himself was derived.

- Common water hemlock, *Cicuta maculata*- Perkins, Corson. Uncommon, wetlands.
- Wild parsnip, *Cymopterus acaulis*- Perkins, Corson. Occasional, draws and drainages, wetlands.
- Cow parsnip, *Heracleum maximum subsp. montanum* – Perkins. Uncommon, wetlands. This species has been found in the Humphrey Draw Wildlife Area.
- Wild parsley, *Lomatium foeniculaceum*- Perkins, Corson, Sioux. Common, badlands, prairie, claypans.
- Wild parsley, *Lomatium orientale*- Perkins, Corson, Sioux. Common, badlands, prairie, claypans.
- Leafy wild parsley, *Musineon divaricatum*- Perkins, Corson, Sioux. Common, prairie, badlands, claypans.
- Anise root, *Osmorhiza longistylis*- Perkins. Occasional, draws and drainages especially moist and shady draws.

Figure 24. *Apocynaceae*.



Apocynaceae - the Dogbane Family (Jones, Jr. and Luchsinger, 1986)

This family of herbaceous perennials has a milky sap. Many species, such as oleander, are poisonous. This family also contains ornamentals (myrtle and periwinkle) as well as species that produce drugs useful for regulating blood pressure.

- Spreading dogbane, *Apocynum androsaemifolium*- Perkins. Occasional, draws and drainages.
- Indian hemp dogbane, *Apocynum cannabinum*- Perkins, Corson. Common, moist drainages and draws.
- Dogbane, *Apocynum x Medium (hybrid)*- Perkins. Rare, badlands, draws and drainages.

Asclepiadaceae - the Milkweed Family (Jones, Jr. and Luchsinger, 1986)

Milkweed is one of several plant families with plants that have a milky sap. The monarch butterfly larvae feeds on these species. Some milkweeds are showy and are used for ornamentals. During World War II, the silky hair of the seed pods was used a substitute for filling in life jackets when other materials were in short supply. Green milkweed has highly variable leaf shapes.

- Showy milkweed, *Asclepias speciosa*- Perkins, Corson. Occasional, eroded slopes, disturbed areas.
- Whorled milkweed, *Asclepias verticillata*- Perkins, Corson, Sioux. Occasional, prairie, especially sandy soils.
- Green milkweed, *Asclepias viridiflora*- Perkins, Corson, Sioux. Occasional, rocky and sandy prairie.

Asteraceae - the Sunflower Family (Jones, Jr. and Luchsinger, 1986)

The sunflower family has the highest number (78) of species on the Grand River Ranger District.

Many are showy wildflowers, while others, such as ragweed, are well known as common allergy producers. Knapweed and Canada thistle, both noxious weeds, are also found in this family, as are the sages and sagebrush species. Dandelions, prickly lettuce, sow thistle, and goatsbeard all have milky sap. Broom snakeweed and rubber rabbitbrush are shrubs. Fetid marigold is a foul-smelling plant usually found on roadsides and prairie dog towns. The goldenrods bloom in late July and early August. The ragworts are found blooming in May and June.

- Common yarrow, *Achillea millefolium subsp. lanulosa*- Perkins, Corson, Sioux. Common, prairie.
- Russian knapweed, *Acroptilon repens*- Perkins. Uncommon, prairie. Introduced. Noxious weed.
- False dandelion, *Agoseris glauca*- Perkins, Corson. Uncommon, prairie.
- Annual bursage, *Ambrosia acanthicarpa*- Perkins. Occasional, sand dunes.
- Common ragweed, *Ambrosia artemisiifolia*- Perkins, Corson, Sioux. Occasional, draws and drainages, disturbed areas especially roadsides.
- Western ragweed, *Ambrosia psilostachya*- Perkins, Sioux. Common to occasional, draws and drainages, prairie.
- Giant ragweed, *Ambrosia trifida*- Perkins, Corson. Common, ponds in draws and drainages, disturbed area.

Figure 25. *Asteraceae*.



- Pink pussytoes, *Antennaria microphylla*- Perkins. Occasional, prairie, draws and drainages.
- Pussytoes, *Antennaria parvifolia*- Perkins, Corson, Sioux. Occasional, prairie, draws and drainages.
- Common burdock, *Arctium minus*- Perkins, Corson. Occasional, draws and drainages, disturbed areas. Introduced.
- Biennial wormwood, *Artemisia biennis*- Perkins. Uncommon, ponds, wetlands, mudflats.
- Western sagewort, *Artemisia campestris subsp. caudata*- Perkins, Corson, Sioux. Common, prairies especially on hillsides.
- Silver sagebrush, *Artemisia cana*- Perkins, Corson, Sioux. Common, badlands; occasional, prairie. Shrub.
- Green sagewort, *Artemisia dracunculus*- Perkins, Corson, Sioux. Common, prairie especially buttes, prefers sandy soils.
- Prairie sagewort, *Artemisia frigida*- Perkins, Corson, Sioux. Common, prairie. Shrub.
- Long-leaved sage, *Artemisia longifolia*- Perkins, Corson. Occasional, badland slopes. Shrub.
- Cudweed sagewort, *Artemisia ludoviciana var. ludoviciana*- Perkins, Corson, Sioux. Common, prairie.
- Nodding beggartick, *Bidens cernua*- Perkins. Occasional, drying ponds.
- False boneset, *Brickellia eupatorioides var. eupatorioides*- Perkins, Corson, Sioux. Occasional, slopes of prairie.
- Canada thistle, *Cirsium arvense*- Perkins, Corson, Sioux. Occasional, draws and drainages, moist disturbed areas. Introduced. Noxious weed.
- Floodman's thistle, *Cirsium flodmanii*- Perkins, Corson, Sioux. Occasional, draws and drainages, prairie.
- Wavyleaf thistle, *Cirsium undulatum*- Perkins, Corson, Sioux. Occasional, prairie.
- Bull thistle, *Cirsium vulgare*- Perkins. Uncommon, disturbed woody draws and drainages. Introduced.
- Horseweed, *Conyza canadensis*- Perkins, Corson, Sioux. Occasional, disturbed draws and drainages.
- Plains coreopsis, *Coreopsis tinctoria*- Perkins. Uncommon. Isolated swales in prairie.
- Largeflower hawkbeard, *Crepis occidentalis*- Perkins. Occasional, prairie.
- Hawkbeard, *Crepis runcinata*- Perkins. Occasional, moist draws and drainages.
- Marsh elder, *Cyclachaena xanthifolia*- Perkins. Occasional, disturbed areas in draws and drainages.
- Fetid marigold, *Dyssodia papposa*- Perkins, Corson, Sioux. Occasional, disturbed areas especially roadsides and prairie dog towns.

Figure 26. *Asteraceae*.



- Purple coneflower, *Echinacea angustifolia*- Perkins, Corson, Sioux. Common, prairie.
- Rubber rabbitbrush, *Ericameria nauseosa*- Perkins, Corson, Sioux. Occasional, badlands. Shrub.
- Streamside fleabane, *Erigeron glabellus subsp. pubescens*- Corson. Common, intermittent draws and drainages.
- Low fleabane, *Erigeron pumilus*- Perkins, Corson. Occasional, prairie.
- Daisy fleabane, *Erigeron strigosus*- Perkins, Corson. Uncommon, prairie.
- Diffuse cudweed, *Gnaphalium palustre*- Perkins, Corson. Uncommon, prairie especially near badlands.
- Curly-top gumweed, *Grindelia squarrosa*- Perkins, Corson, Sioux. Common, heavily grazed prairie.
- Broom snakeweed, *Gutierrezia sarothrae*- Perkins, Corson, Sioux. Common, badlands, claypan. Shrub.
- Thrift mock goldenweed, *Haplopappus armerioides*- Perkins. Occasional, rocky ridges.
- Common sunflower, *Helianthus annuus*- Perkins, Corson, Sioux. Occasional, prairie, disturbed areas.
- Maximilian sunflower, *Helianthus maximiliani*- Perkins, Corson, Sioux. Occasional, moist draws and drainages.
- Stiff sunflower, *Helianthus pauciflorus*- Perkins, Corson. Occasional, prairie especially near draws and drainages.
- Plains sunflower, *Helianthus petiolaris*- Perkins, Corson, Sioux. Occasional, sandy prairie.
- Hairy false goldenaster, *Heterotheca canescens*- Perkins, Corson, Sioux. Occasional, prairie, buttes.
- Manyhead hymenopappus, *Hymenopappus filifolius var. polycephalus*- Perkins, Corson, Sioux. Occasional, prairie.
- Poverty weed, *Iva axillaries*- Perkins, Corson. Occasional, prairie, disturbed areas.
- Prickly lettuce, *Lactuca serriola*- Perkins, Corson, Sioux. Occasional, moist draws and drainages, disturbed areas. Introduced.
- Blue lettuce, *Lactuca tatarica var. pulchella*- Perkins, Corson, Sioux. Occasional, moist draws and drainages, mesic prairie.
- Dotted blazing star, *Liatris punctata*- Perkins, Corson, Sioux. Occasional, prairie.
- Skeletonweed, *Lygodesmia juncea*- Perkins, Corson, Sioux. Common, sandy prairie.
- Hoary tansyaster, *Machaeranthera canescens*- Perkins, Corson. Occasional, badlands.
- Cutleaf ironweed, *Machaeranthera pinnatifida ssp. pinnatifida var. pinnatifida*- Perkins, Corson. Occasional, prairie.

Figure 27. *Asteraceae*.



- False dandelion, *Nothocalais cuspidata*- Perkins, Corson. Uncommon, prairie.
- Sneezewort aster, *Oligoneuron album*- Perkins. Occasional, prairie, butte tops, slopes.
- Rigid goldenrod, *Oligoneuron rigidum*- Perkins, Corson, Sioux. Occasional to common, draws and drainages.
- Gray ragwort, *Packera cana*- Perkins, Corson. Common, rocky prairie.
- Prairie ragwort, *Packera plattensis*- Perkins. Occasional, prairie.
- Oppositeleaf bahia, *Picradeniopsis oppositifolia*- Perkins. Occasional, ridge tops, buttes.
- Prairie coneflower, *Ratibida columnifera*- Perkins, Corson, Sioux. Occasional, prairie, slopes of draws and drainages.
- Lambstongue ragwort, *Senecio integerrimus*- Perkins. Occasional, prairie.
- Canada goldenrod, *Solidago canadensis*- Perkins, Corson, Sioux. Occasional, draws and drainages.
- Late goldenrod, *Solidago gigantea*- Perkins, Corson. Occasional, moist draws and drainages.
- Prairie goldenrod, *Solidago missouriensis*- Perkins, Corson, Sioux. Common, prairie.
- Soft goldenrod, *Solidago mollis*- Perkins, Corson. Occasional, prairie.
- Field sow thistle, *Sonchus arvensis*- Perkins. Occasional, moist disturbed areas. Introduced. Noxious weed.
- Prickly sow thistle, *Sonchus asper*- Perkins. Uncommon, moist disturbed areas. Introduced.
- White aster, *Symphyotrichum ericoides* var. *ericoides*- Perkins, Corson, Sioux. Common to occasional, upland prairie.
- Panicked aster, *Symphyotrichum lanceolatum* subsp. *hesperium* var. *hesperium*- Perkins, Corson, Sioux. Occasional, draws and drainages.
- Aromatic aster, *Symphyotrichum oblongifolium*- Perkins, Corson, Sioux. Occasional, sandy prairie.
- Red-seeded dandelion, *Taraxacum laevigatum*- Perkins. Common, prairie. Introduced.
- Common dandelion, *Taraxacum officinale*- Perkins, Corson, Sioux. Common, mesic prairie, draws and drainages. Introduced.
- Stemless hymenoxys, *Tetraneuris acaulis* var. *acaulis*- Perkins, Corson. Common, bare ridges, slopes.
- Townsend's easter daisy, *Townsendia exscapa*- Perkins, Sioux. Uncommon, rocky slopes and ridges.
- Goat's beard, *Tragopogon dubius*- Perkins, Corson, Sioux. Common, prairie, draws and drainages. Introduced.
- Cocklebur, *Xanthium strumarium*- Perkins, Corson, Sioux. Common, disturbed areas.

Boraginaceae - the Borage Family

The borage family consists of some weedy annuals and several perennial wildflowers. The stickweeds produce numerous little seeds that stick to clothing like Velcro as your

leg brushes the matured seedheads. The narrowleaf puccoon and bluebells can be found blooming in the spring-time or early summer on upland prairies. Buttecandle grows on thin, rocky soils on hills.

- Buttecandle, *Cryptantha celosioides*- Perkins, Corson, Sioux. Occasional, rocky buttes and ridges.
- Little cryptantha, *Cryptantha minima*- Perkins. Uncommon, disturbed areas especially prairie dog towns.
- Nodding stickweed, *Hackelia deflexa*- Perkins. Occasional, disturbed areas in draws and drainages.
- Low stickweed, *Lappula occidentalis*- Perkins, Corson, Sioux. Common, disturbed areas, badlands.
- Blue stickweed, *Lappula squarrosa*- Perkins. Common, disturbed areas, badlands.
- Narrowleaf puccoon, *Lithospermum incisum*- Perkins, Corson. Common, prairie, buttes, ridges.
- Prairie bluebells, *Mertensia lanceolata*- Perkins, Corson, Sioux. Occasional, prairie.
- Popcorn flower, *Plagiobothrys scouleri*- Perkins, Corson. Occasional, dry ponds of alkaline sandy soils.

Figure 28. *Boraginaceae*.



Brassicaceae - the Mustard Family (Jones Jr. and Luchsinger, 1986)

On the Grand River Ranger District, the mustard family consists of weedy annuals and some perennials. Most of the annuals can be found on disturbed soils. The wallflowers are biennials that have showy yellow flowers in the summer. Dame's rocket is an escaped ornamental occasionally found in wooded areas. It has showy purple flowers. The bladderpods have small yellow flowers and grow on thin, rocky soils on hills. This family also contributes radishes, broccoli, cabbage, and cauliflower to our food supply.

- Alyssum, *Alyssum desertorum*- Perkins, Corson, Sioux. Common, claypans, disturbed areas. Introduced.
- Rock cress, *Arabis holboellii*- Perkins, Corson, Sioux. Occasional, sandy prairie.
- Small-seeded false flax, *Camelina microcarpa*- Perkins. Occasional, prairie especially moist sandy or rocky sites. Introduced.
- Blue mustard, *Chorispora tenella*- Perkins, Sioux. Common, disturbed sites especially near ponds. Introduced.
- Tansy mustard, *Descurainia pinnata subsp. brachycarpa*- Perkins, Corson, Sioux. Occasional, disturbed areas.
- Flixweed, *Descurainia sophia*- Perkins, Corson, Sioux. Common, disturbed areas.
- Yellow whitlowort, *Draba nemorosa*- Perkins, Corson. Uncommon, prairie, plantings especially crested wheatgrass stands.

- Yellow whitlowort, *Draba reptans*- Perkins, Corson, Sioux. Occasional, prairie, plantings especially crested wheatgrass stands.
- Dog mustard, *Erucastrum gallicum*- Corson. Common, disturbed sites. Introduced.
- Western wallflower, *Erysimum capitatum* var. *capitatum*- Perkins, Corson, Sioux. Occasional, prairie.
- Wormseed wallflower, *Erysimum cheiranthoides*- Perkins, Corson. Occasional, draws and drainages. Introduced
- Smallflower wallflower, *Erysimum inconspicuum*- Perkins. Occasional, prairie.
- Dame's rocket, *Hesperis matronalis*- Perkins. Occasional, draws and drainages. This species has been found in the Humphrey Draw Wildlife Area. Introduced.
- Peppergrass, *Lepidium densiflorum*- Perkins, Sioux. Occasional, disturbed areas.
- Clasping peppergrass, *Lepidium perfoliatum*- Perkins. Uncommon, disturbed areas. Introduced.
- Alpine bladderpod, *Lesquerella alpina*- Perkins. Uncommon, rocky ridges.
- Foothill bladderpod, *Lesquerella ludoviciana*- Perkins, Corson, Sioux. Occasional, rocky ridges.
- Bog yellow cress, *Rorippa palustris*- Perkins, Corson. Occasional, margins of ponds and perennial rivers.
- Spreading yellow cress, *Rorippa sinuata*- Perkins. Occasional, margins of ponds and perennial rivers.
- Tumbling mustard, *Sisymbrium altissimum*- Perkins, Corson, Sioux. Occasional, disturbed areas, prairie, ridges. Introduced.
- Field pennycress, *Thlaspi arvense*- Perkins, Corson. Occasional, disturbed areas especially moist sites. Introduced.

Figure 29. *Brassicaceae*.



Cactaceae - the Cactus Family (FNA, Vol. 4, 2004)

This very distinct family consists of four drought-tolerant species on the Grand River Ranger District. The pincushion or ball cactus' have showy violet or yellow flowers in the summer. The prickly pear species usually grow in groups, especially on claypan soils.

- Missouri pincushion cactus, *Escobaria missouriensis* var. *missouriensis*- Perkins, Corson, Sioux. Occasional, prairie.
- Pincushion cactus, *Escobaria vivipara* var. *vivipara*- Perkins, Corson. Uncommon, prairie.
- Brittle pricklypear, *Opuntia fragilis*- Perkins, Corson, Sioux. Common, badlands and claypans.
- Plains pricklypear, *Opuntia polyacantha*- Perkins, Corson, Sioux. Common, prairie, badlands.

Figure 30. *Cactaceae*.



Caesalpiniaceae - the Caesalpinia Family (GPFA, 1986)

Honey locust is known from one homestead location near White Butte. It is the only tree species with large thorns on the stem. It is not considered native to South Dakota but was widely planted by homesteaders across the state.

- Honey locust, *Gleditsia triacanthos*- Perkins (homestead site). Introduced. Rare, plantings. Tree.

Figure 31. *Caesalpiniaceae*.



Callitrichaceae - the Water Starwort Family (plants.usda.gov 2006)

Water starwort is an aquatic plant. It is an indicator of fresh water, as it has no salinity tolerance.

- Vernal water starwort, *Callitriche palustris*- Perkins. Occasional, ponds.

Campanulaceae - the Bellflower Family (Jones Jr. and Luchsinger, 1986)

The two species of this family found on the Grand River Ranger District have blue-violet flowers that are small but showy. Both are perennials.

- Harebell, *Campanula rotundifolia*- Perkins. Occasional, rocky buttes and ridges.
- Slimpod Venus' looking-glass, *Triodanis leptocarpa*- Perkins, Corson. Uncommon to occasional, prairie, plantings especially crested wheatgrass stands.

Cannabaceae - the Hemp Family (FNA, Vol. 3, 1997)

One native species occurs on the Grand River Ranger District that is occasionally found in wooded areas. Related species are harvested to make beer. As the family name suggests, marijuana is also in this family.

- Common hops, *Humulus lupulus*- Perkins. Uncommon, woody draws and drainages. Vine.

Capparaceae - the Caper Family (GPFA, 1986)

Both members of this family found on the Grand River Ranger District are annuals that can be found on sandy soils. Rocky Mountain bee plant can form large groups. It has fragrant flowers and attracts numerous pollinators. Clammy weed looks like a smaller version of Rocky mountain bee plant and is usually only found as single plants.

- Rocky Mountain bee plant, *Cleome serrulata*- Perkins, Corson, Sioux. Occasional, moist draws and drainages.
- Clammy-weed, *Polanisia dodecandra subsp. trachysperma*- Perkins. Occasional, swales and sand dunes.

Caprifoliaceae - the Honeysuckle Family (Jones Jr. and Luchsinger, 1986)

Western snowberry or buckbrush is one of the most common shrubs found on the Grand River Ranger District. The berries are an important food source for wildlife. Ornamentals such as honeysuckle and viburnum are also members of this family.

- Western snowberry, *Symphoricarpos occidentalis*- Grant, Perkins, Corson, Sioux, Ziebach. Common, draws and drainages, moist prairie. Shrub.

Figure 32. *Caprifoliaceae*.



Caryophyllaceae - the Pink Family (Jones, Jr. and Luchsinger, 1986)

The members of this family are generally inconspicuous, small herbaceous plants. Chickweed can form small groups where grazing pressure has been heavy. Some members of this family are grown as ornamentals.

- Prairie chickweed, *Cerastium arvense*- Perkins. Occasional, prairie.
- Nodding chickweed, *Cerastium brachypodum*- Perkins, Corson, Sioux. Common, claypans.
- Whitlowort, *Paronychia sessiliflora*- Perkins. Occasional, rock outcrops.
- Sleepy catchfly, *Silene antirrhina*- Perkins, Corson. Occasional, badlands.

Figure 33. *Celastraceae*.



Celastraceae - the Staff Tree Family (J. Smith, Jr., 1977)

One member of this family is found on the Grand River Ranger District. Several members of this family are used as ornamentals.

- American bittersweet, *Celastrus scandens*- Perkins. Occasional, woody draws and drainages. Vine.

Ceratophyllaceae - the Hornweed Family (FNA, Vol. 3, 1997)

This small family of submerged, aquatic plants is represented by one species on the Grand River Ranger District. This plant is an indicator of fresh water and has no salinity tolerance. Fossil evidence from this family dates back to the early to mid Cretaceous period. The plants of this family are considered highly adapted to their environments and are water pollinated.

- Coontail, *Ceratophyllum demersum*- Perkins, Sioux. Occasional, ponds.

Chenopodiaceae - the Goosefoot Family (FNA, Vol. 4, 2003)

On the Grand River Ranger District, this family consists of weedy annuals and shrubby perennials. Some of the species grow in soil conditions too extreme for other plants to tolerate, such as alkaline or saline soils. Winter fat is highly palatable to livestock and wildlife. Spinach, chard, and beets are members of this family also.

- Silver-scale saltbush, *Atriplex argentea*- Perkins, Corson. Occasional, badlands.
- Twoscale saltbush, *Atriplex micrantha*- Perkins. Occasional, disturbed areas in draws and drainages.
- Moundscale, *Atriplex nuttallii*- Perkins, Corson. Occasional, badlands. Shrub.
- Spear saltbush, *Atriplex patula*- Corson. Uncommon, disturbed areas in draws and drainages.
- Spearscale, *Atriplex subspicata*- Perkins. Common, moist disturbed sites, ponds. Shrub.
- Lamb's quarters, *Chenopodium album*- Perkins, Corson, Sioux. Common, badlands, disturbed areas. Introduced.
- Pitseed goosefoot, *Chenopodium berlandieri*- Corson. Common, badlands, disturbed areas.
- Sandhill goosefoot, *Chenopodium desiccatum*- Perkins. Occasional, prairie, disturbed areas.
- Oakleaf goosefoot, *Chenopodium glaucum*- Perkins, Corson. Common to occasional, badlands. Introduced.
- Hoary goosefoot, *Chenopodium incanum*- Perkins, Corson. Uncommon, badlands.
- Aridland goosefoot, *Chenopodium pratericola*- Perkins, Corson, Sioux. Common, prairie, disturbed areas.
- Alkali blite, *Chenopodium rubrum*- Perkins, Corson, Sioux. Occasional, claypans, ponds.
- Mapleleaf goosefoot, *Chenopodium simplex*- Perkins. Occasional, dry ponds.
- Smooth goosefoot, *Chenopodium subglabrum*- Perkins. Uncommon, sand dunes.

Figure 34. *Chenopodiaceae*.



- Hyssopleaf tickseed, *Corispermum americanum* var. *rydbergii*- Perkins. Uncommon, sand dunes.
- Silkscale, *Endolepis dioica*- Perkins. Occasional, badlands.
- Winter fat, *Krascheninnikovia lanata*- Perkins, Corson, Sioux. Common, badlands. Shrub.
- Kochia, *Kochia scoparia*- Perkins, Corson, Sioux. Occasional, disturbed areas. Introduced.
- Russian-thistle, *Salsola tragus*- Perkins, Corson, Sioux. Occasional, disturbed areas. Introduced.
- Sea blite, *Suaeda calceoliformis*- Perkins, Corson, Sioux. Common to occasional, alkali seeps and drainages.

Commelinaceae - the Spiderwort Family (FNA, Vol. 22, 2000)

The two spiderwort species found on the Grand River Ranger District prefer sandy upland soils. The blue-violet flowers are showy and short-lived. Spiderworts are sometime planted as ornamentals.

- Spiderwort, *Tradescantia bracteata*- Perkins, Corson, Sioux. Occasional, sandy prairie.
- Prairie spiderwort, *Tradescantia occidentalis*- Perkins, Corson. Uncommon, sandy prairie.

Figure 35. *Commelinaceae*.



Convolvulaceae - the Morning Glory Family (Jones Jr. and Luchsinger, 1986)

The bindweeds are herbaceous weedy, perennials. Some species of morning glory are grown as ornamentals. Field bindweed was introduced from Europe. Sweet potato is also a member of this family.

- Hedge bindweed, *Calystegia sepium* subsp. *angulata*- Perkins. Occasional, grassy draws and drainages. Noxious weed.
- Field bindweed, *Convolvulus arvensis*- Perkins, Corson, Sioux. Common, disturbed areas especially roadsides. Introduced. Noxious weed.

Figure 36. *Cornaceae*.



Cornaceae - the Dogwood Family (J. Smith, Jr. 1977)

Red osier dogwood is a distinctive shrub with red stems and showy clusters of white flowers. Many species in this family, including red osier dogwood, are used as ornamentals.

- Red osier, *Cornus sericea*- Perkins. Occasional, moist draws and drainages. Shrub.

Cupressaceae - the Cypress or Redwood Family (FNA, Vols. 1&2, 1993)

One small tree and two shrubs from this family are found on the Grand River Ranger District. This family includes the giant redwood trees of California and the bald cypress in the swamps of Alabama and Mississippi. The fossil record for this family dates back to the Jurassic period. Members of this family have been present in the vicinity of the Grand River Ranger District since the late Cretaceous period when dinosaurs such as triceratops were roaming the area. This is evidenced by the discovery of *Metasequoia* (dawn redwood) cones in the exposed Hell Creek formation on the Grand River Ranger District. Dawn redwood disappeared from North America with the dinosaurs and is now only native to China.

- Creeping juniper, *Juniperus horizontalis*- Perkins. Common, slopes of buttes and draws and drainages. Shrub.
- Rocky Mountain juniper, *Juniperus scopulorum*- Perkins, Corson. Uncommon, badlands. Tree.
- Red Cedar, *Juniperus virginiana* – Perkins, Corson. Occasional, draws and drainages, plantings. Shrub.

Elaeagnaceae - the Oleaster/Silverberry Family (plants.usda.gov)

Russian olive is an introduced species that has been planted for its hardiness. The seeds are important for wildlife. Russian olive can be found along waterways having been spread by wildlife. Its water use is high if available. It has been declared a noxious weed in several western states for its ability to invade riverbanks and stream channels. It has been planted in several areas on the Grand River Ranger District and has invaded into other areas where water was available. Buffaloberry is a native shrub important for food and cover for birds and other wildlife.

- Russian olive, *Elaeagnus angustifolia*- Perkins, Corson. Occasional, draws and drainages, plantings. Introduced.
- Buffaloberry, *Shepherdia argentea*- Perkins, Corson, Sioux. Common to occasional, slopes of draws and drainages.

Figure 37. *Elaeagnaceae*.



Euphorbiaceae - the Spurge Family (J. Smith, Jr., 1977)

Worldwide this family includes trees such as the Brazilian rubber tree, shrubs, and the Christmas poinsetta. Locally, the family is most famous for containing the noxious weed leafy spurge. Most of the local members of this family are small annuals or perennials. The annuals are usually found on sandy soils. All the species found on the Grand River Ranger District have a distinct, milky sap when the stem is broken.

- Ridgeseed spurge, *Chamaesyce glyptosperma*- Corson. Occasional, disturbed areas especially trails and road edges.
- Missouri spurge, *Chamaesyce missurica*- Perkins, Corson, Sioux. Occasional, sandy prairie, sandy draws and drainages.
- Thymeleaf spurge, *Chamaesyce serpyllifolia* ssp. *serpyllifolia* - Corson. Uncommon, disturbed areas.
- Leafy spurge, *Euphorbia esula*- Perkins, Corson, Sioux. Occasional, prairie, draws and drainages. Introduced. Noxious weed.
- Snow-on-the-mountain, *Euphorbia marginata*- Corson. Uncommon, disturbed prairie.
- Prairie spurge, *Euphorbia spathulata*- Perkins, Corson. Occasional, disturbed areas, draws and drainages.

Fabaceae - the Bean Family (Jones, Jr. and Luchsinger, 1986)

This is one of our larger plant families on the Grand River Ranger District. The family is famous for its ability to fix nitrogen from the air and store it in the plants themselves. Alfalfa is a popular high protein forage crop for livestock. Alfalfa's legacy on the Grand River Ranger District dates back to the days of reclaiming old cropland. Alfalfa is found mixed with stands of crested wheatgrass, which was also planted to get cover back on old fields after these lands were purchased by the federal government. Alfalfa and the clovers are good nectar producers and make good-tasting honey. Edible peas, beans, soybeans, and peanuts are other member of this economically important family. Most of the plants found on the Grand River Ranger District are perennial forbs, several shrubby species are also present. Two grooved milkvetch is poisonous to livestock due its high selenium content. Lemon scurfpea lives up to its name when you crush the leaves.

- Lead plant, *Amorpha canescens*- Corson, Sioux. Occasional, slopes of prairie. Shrub.
- False indigo, *Amorpha fruticosa*- Perkins, Corson, Sioux. Occasional, moist draws and drainages, banks of perennial rivers. Shrub.
- Dwarf wild indigo, *Amorpha nana*- Corson. Common, intermittent draws and drainages. Shrub.
- Field milkvetch, *Astragalus agrestis*- Perkins. Occasional, prairie.
- Two-grooved milkvetch, *Astragalus bisulcatus*, var. *bisulcatus*- Perkins. Uncommon, selenium soils of prairie and badlands.
- Painted milkvetch, *Astragalus ceramicus* var. *filifolius*- Perkins, Corson. Occasional, sandy prairie and sand dunes.
- Groundplum, *Astragalus crassicaupus* var. *crassicaupus*- Perkins, Corson, Sioux. Occasional, prairie.
- Plains orophaca, *Astragalus gilviflorus*- Perkins, Corson, Sioux. Occasional, rocky hilltops and badlands.

Figure 38. *Fabaceae*.



- Standing milkvetch, *Astragalus laxmannii* var. *robustior* - Perkins, Corson. Common, prairie.
- Missouri milkvetch, *Astragalus missouriensis*- Perkins, Corson, Sioux. Occasional, prairie.
- Alkali milkvetch, *Astragalus racemosus*- Perkins, Corson. Common, badlands.
- Pulse milkvetch, *Astragalus tenellus*- Perkins, Corson. Occasional, banks of perennial rivers, rocky ridges.
- Siberian pea-shrub, *Caragana arborescens*- Perkins and Sioux (homestead sites), . Occasional, plantings. Introduced. Shrub.
- White prairie clover, *Dalea candida*- Perkins, Corson. Occasional, prairie.
- Purple prairie clover, *Dalea purpurea*- Perkins, Corson, Sioux. Occasional, prairie.
- Wild licorice, *Glycyrrhiza lepidota*- Perkins, Corson, Sioux. Common, draws and drainages.
- Hoary vetchling, *Lathyrus polymorphus*- Perkins. Uncommon, woody draws and drainages.
- Prairie trefoil, *Lotus unifoliolatus* var. *unifoliatus*- Perkins, Sioux. Uncommon, prairie.
- Silvery lupine, *Lupinus argenteus*- Perkins. Occasional, draws and drainages.
- Small lupine, *Lupinus pusillus*- Perkins, Corson. Occasional, sandy prairie.
- Black medick, *Medicago lupulina*- Perkins, Corson. Occasional, prairie. Introduced.
- Alfalfa, *Medicago sativa*- Perkins, Corson, Sioux. Occasional, plantings especially crested wheatgrass stands. Introduced.
- Yellow-blossom alfalfa, *Medicago sativa* subsp. *falcata*- Perkins. Uncommon, prairie, plantings especially crested wheatgrass stands. Introduced.
- White sweet clover, *Melilotus alba*- Perkins, Corson. Uncommon, prairie, draws and drainages, badlands and claypans. Introduced.
- Yellow sweet clover, *Melilotus officinalis*- Perkins, Corson, Sioux. Common, prairie, draws and drainages, badlands and claypans. Introduced.
- Purple locoweed, *Oxytropis lambertii*- Perkins, Corson, Sioux. Occasional, prairie.
- White locoweed, *Oxytropis sericea*- Perkins. Common, prairie.
- Silverleaf scurfpea, *Pedimelum argophyllum*- Perkins, Corson, Sioux. Occasional to common, prairie.
- Breadroot scurfpea, *Pedimelum esculentum*- Perkins, Corson, Sioux. Occasional, prairie.
- Lemon scurfpea, *Psoraleidium lanceolatum*- Perkins. Common, sand dunes.

Figure 39. *Fabaceae*.



- Prairie buck bean, *Thermopsis rhombifolia*- Perkins, Corson, Sioux. Common, north slopes in prairie, badlands.
- American vetch, *Vicia americana* var. *minor*- Perkins, Corson, Sioux. Common, prairie, draws and drainages.

Geraniaceae - the Geranium Family (J. Smith, Jr., 1977)

The geranium family has one representative found on the Grand River Ranger District. Many of the species in this family are considered ornamentals.

- Carolina cranesbill, *Geranium carolinianum*- Perkins, Corson. Uncommon, moist prairie.

Grossulariaceae - the Currant Family

The currant or gooseberry family has three species present on the Grand River Ranger District. Currants can be distinguished from gooseberries by the absence of thorny stems, a feature common on gooseberries. The fruits are edible; currant berries are less bitter than the gooseberries.

- Wild black currant, *Ribes americanum*- Perkins, Sioux. Common, draws and drainages. Shrub.
- Buffalo currant, *Ribes aureum* var. *villosum*- Perkins, Corson. Occasional, draws and drainages, rock outcrops. Shrub.
- Bristly gooseberry, *Ribes oxycanthoides*- Perkins. Uncommon, draws and drainages. This species has been documented in Humphrey Draw Wildlife Area. Shrub.

Haloragaceae - Water Milfoil Family (Smith, Jr., 1977)

American milfoil is a native aquatic plant usually found floating just under the surface of the water. This plant should not be confused with Eurasian water milfoil, an introduced, weedy species of the family. Eurasian water milfoil has the ability to spread rapidly and choke bodies of water; it has not yet been documented on the Grand River Ranger District.

- American milfoil, *Myriophyllum sibiricum*- Perkins. Common, ponds.

Hydrophyllaceae - the Waterleaf Family (Smith, Jr., 1977)

This is a family of aquatic plants. The scientific name of the family translates to ‘water-leaf’.

- Waterpod, *Ellisia nyctelea*- Perkins, Corson. Occasional, prairie, draws and drainages, disturbed areas.

Iridaceae - the Iris Family (FNA, Vol. 26, 2002)

This large family of showy plants is represented by one species on the Grand River Ranger District. Many species of this family are used for ornamentals.

- Strict blue-eyed grass, *Sisyrinchium montanum*- Perkins, Corson. Uncommon, moist prairie.

Figure 40. *Iridaceae*.



Juncaceae - the Rush Family (FNA, Vol. 22, 2000)

The rushes are usually found associated with wet areas, shorelines, or stream margins. Dudley rush is sometimes found in sandy or clayey upland soils but can also be found near water with other rush species. Baltic rush and Torrey's rush are two of the more widespread rush species in the United States.

- Baltic rush, *Juncus articus* var. *balticus*- Perkins, Sioux. Common, wet soils of draws and drainages, prairie.
- Toad rush, *Juncus bufonius*- Perkins. Occasional to common, mudflats, ponds.
- Dudley rush, *Juncus dudleyi*- Perkins, Sioux. Common, draws and drainages; uncommon, prairie near claypans.
- Inland rush, *Juncus interior*- Perkins, Corson. Occasional, draws and drainages.
- Longstyle rush, *Juncus longistylis* – Perkins. Uncommon, saturated soils of draws and drainages.
- Knotted rush, *Juncus nodosus*- Perkins. Occasional, margins of ponds.
- Torrey's rush, *Juncus torreyi*- Perkins. Occasional, saturated soils of draws and drainages.

Figure 41. *Juncaceae*.



Juncaginaceae - the Arrowgrass Family (FNA, Vol. 22, 2000)

One species, a perennial, of this family is found on the Grand River Ranger District. Seaside arrowgrass is the most common of the family members in the North America; it is of concern because it produces cyanide.

- Seaside arrowgrass, *Triglochin concinnum* var. *debilis* – Perkins. Occasional, alkaline soils.

Lamiaceae - the Mint Family (Smith, 1987)

This large family of fragrant herbs has both upland species (false pennyroyal) and wetland species. All of the species found on the Grand River Ranger District have a distinct, minty fragrance and square stems. Several other plant families have square stemmed plants but lack the distinct 'minty' odor. This is a large family worldwide and contains many common species used as spices such as spearmint, peppermint, basil, oregano, and thyme.

- Drummond false pennyroyal, *Hedeoma drummondii*- Perkins, Corson. Uncommon to occasional, prairie, rocky ridges.
- Rough false pennyroyal, *Hedeoma hispida*- Perkins, Corson, Sioux. Occasional to common, prairie, rocky ridges.
- Motherwort, *Leonurus cardiaca*- Perkins. Occasional, draws and drainages. This species has been found in the Humphrey Draw Wildlife Area. Introduced.
- American bugleweed, *Lycopus americanus*- Perkins, Corson, Sioux. Occasional to common, moist draws and drainages, ponds.
- Rough bugleweed, *Lycopus asper*- Perkins, Corson, Sioux. Occasional, moist draws and drainages.

Figure 42. *Lamiaceae*.



- Field mint, *Mentha arvensis*- Perkins, Corson, Sioux. Occasional, moist draws and drainages, ponds.
- Wild bergamot or horsemint, *Monarda fistulosa*- Perkins, Corson, Sioux. Occasional to common, draws and drainages.
- Catnip, *Nepeta cataria*- Perkins. Uncommon, draws and drainages, disturbed sites. Introduced.

Lemnaceae - the Duckweed Family (FNA, Vol. 22, 2000)

This family of floating aquatic plants represents the smallest flowering plants on the Grand River Ranger District. Large groups of duckweed plants can give the surface of water a 'green' appearance. It is a source of protein for ducks and other wildlife. The leaves can have up to 45% of their dry weight comprised of amino acids. This family is also used to aid wastewater purification.

- Turion duckweed, *Lemna turionifera*- Perkins. Common, pools in draws and drainages.

Liliaceae - the Lily Family (FNA, Vol. 26, 2002)

Several species in this family are used as ornamentals. Others, such as onions and asparagus, are important food items for people. In contrast, all parts of death camas are toxic to people and livestock. Most of the plants found on the Grand River Ranger District are spring wildflowers. The wild onion is common on claypans in the springtime but the stems usually disappear by mid-summer. Leopard lily is at the eastern edge of its range on the Grand River Ranger District.

- White wild onion, *Allium textile*- Perkins, Corson, Sioux. Common, prairie, badlands.
- Asparagus, *Asparagus officinalis*- Perkins, Sioux. Uncommon, moist draws and drainages. Introduced.
- Leopard lily, *Fritillaria atropurpurea*- Perkins, Corson. Uncommon to occasional, slopes, buttes, badlands.
- Mountain lily, *Leucocrinum montanum*- Perkins. Uncommon, sandy hilltops.
- Spikenard, *Maianthemum stellatum*- Perkins, Corson. Occasional, draws and drainages.
- Death camas, *Zigadenus venenosus*- Perkins. Uncommon, sandy prairie.

Figure 43. *Liliaceae*.



Linaceae - the Flax Family (Jones, Jr. and Luchsinger, 1986)

The flax family has been cultivated for centuries for its fiber and linseed oil. The native species are found occasionally on upland prairie sites. Stiffstem flax has yellow flowers and it usually a smaller plant than blue flax.

- Blue flax, *Linum perenne* var. *lewisii*- Perkins. Uncommon, draws and drainages.
- Stiffstem flax, *Linum rigidum*- Perkins, Corson, Sioux. Occasional, prairie.

Loasaceae - the Stickleaf Family (GPFA, 1986)

Tenpetal blazingstar is a striking plant with flowers that open in the evening and close in the morning. It has showy, cream-colored flowers and grows on thin rocky soils on hills and ridges and roadsides.

- Tenpetal blazingstar, *Mentzelia decapetala*- Perkins. Uncommon, eroding slopes of sandstone outcrops and buttes.

Malvaceae - the Mallow Family (Jones, Jr. and Luchsinger, 1986)

Red false mallow is also known as scarlet globemallow. It forms large groups of showy orange flowers in June. This family also includes cotton, hibiscus, hollyhock, and the original source for marshmallow flavoring.

- Common mallow, *Malva rotundifolia*- Perkins, Corson. Occasional to common, disturbed areas especially roads. Introduced.
- Red false mallow, *Sphaeralcea coccinea*- Perkins, Corson, Sioux. Common, prairie.

Nyctaginaceae - the Four-o'clock Family (J. Smith, Jr., 1977)

This family is mainly known for several ornamental species. The leaves of the four-o'clocks have a typical purple splotchiness to them as the plants mature.

- Hairy four-o'clock, *Mirabilis hirsuta*- Perkins, Corson. Uncommon, prairie.
- Narrowleaf four-o'clock, *Mirabilis linearis*- Perkins, Corson, Sioux. Occasional, prairie.
- Wild four-o'clock, *Mirabilis nyctaginea*- Perkins. Uncommon, prairie.
- Sand puffs, *Tripterocalyx micranthus*- Perkins. Common, sand dunes.

Oleaceae - the Olive Family (Jones Jr. and Luchsinger, 1986)

Green ash is the only native member of this family on the Grand River Ranger District. This family contains the edible olives and some ornamental species.

- Green ash, *Fraxinus pennsylvanica*- Perkins, Corson. Common, woody draws and drainages.
- Common lilac, *Syringa vulgaris*- Perkins (homestead site). Rare, plantings. Introduced.

Onagraceae - the Evening Primrose Family (Jones Jr. and Luchsinger, 1986)

Figure 44. *Nyctaginaceae*.



Figure 45. *Onagraceae*.



This family of showy flowers can be found in a variety of habitats on the Grand River Ranger District. Most of the species grow on upland settings in thin, rocky to loamy soils. The gumbo evening primrose is a low growing species found in badlands settings. The Willowherbs are found in and around wetland areas. Common evening primrose is a tall biennial that can get somewhat weedy.

- Plains yellow primrose, *Calylophus serrulatus*- Perkins, Corson, Sioux. Uncommon to occasional, prairie, slopes of draws and drainages.
- Fringed willowherb, *Epilobium ciliatum*- Perkins, Corson. Occasional, wet draws and drainages.
- Narrowleaf willowherb, *Epilobium leptophyllum*- Perkins. Uncommon, wet areas of draws and drainages. This species has been found in the Humphrey Draw Wildlife Area.
- Scarlet gaura, *Gaura coccinea*- Perkins, Corson, Sioux. Occasional, butte slopes, prairie.
- Prairie evening primrose, *Oenothera albicaulis*- Perkins, Corson. Uncommon, prairie.
- Common evening primrose, *Oenothera biennis*- Perkins, Corson, Sioux. Uncommon, moist draws and drainages, disturbed areas.
- Gumbo evening primrose, *Oenothera caespitosa*- Perkins, Corson, Sioux. Occasional, badlands and claypans.
- Yellow evening primrose, *Oenothera flava*- Perkins. Uncommon, draws and drainages near perennial rivers.
- Whitestem evening primrose, *Oenothera nuttallii*- Perkins, Corson. Uncommon, sandy prairie.
- Common evening primrose, *Oenothera villosa*- Perkins, Corson. Uncommon, moist sandy prairie.

Orobanchaceae - the Broomrape Family (GPFA, 1986)

Louisiana broomrape is the only true parasitic plant found on the Grand River Ranger District. It completely lacks chlorophyll. The plant parasitizes various species of sage and sagebrush. Like downy paintbrush, it sends out false roots to tap into the roots of other plants to get its nutrients. The plant appears above ground when it sends up pale-colored flowering stalks. When these stems dry up, they shrivel into a rust colored clump. Local flowering appears to be very moisture dependent.

- Louisiana broomrape, *Orobanche ludoviciana*- Perkins, Corson, Sioux. Uncommon, sandy prairie, sometimes near sand dunes.

Oxalidaceae - the Wood Sorrel Family (Jones Jr.

Figure 46. *Orobanchaceae*.



and Luchsinger, 1986)

The wood sorrels are small plants usually found in open wooded areas and disturbed, moist areas. The crushed leaves give off a faint lemon smell.

- Gray-green wood sorrel, *Oxalis dillenii*- Perkins, Corson. Occasional, prairie.
- Yellow wood sorrel, *Oxalis stricta*- Corson. Uncommon, disturbed areas of draws and drainages.

Pinaceae - the Pine Family (FNA, Vol. 2, 1993)

Both of the species in this family listed below are native to South Dakota, but neither occurs naturally on the Grand River Ranger District. Native ponderosa pine stands are found on buttes about 50 miles west of the Grand River Ranger District, whereas the closest native populations of Black Hills spruce are located approximately 150 miles to the south-southwest, in the Black Hills.

- White or Black Hills spruce, *Picea glauca*- Perkins (homestead site). Rare, plantings.
- Ponderosa pine, *Pinus ponderosa*- Perkins (homestead site). Rare, plantings.

Plantaginaceae - the Plantain Family (GPFA, 1986)

This family consists of wetland and upland species. Common plantain can become weedy. Patagonian plantain is an annual that can form large patches of small, very hairy plants. It is also called Indian plantain or Indian wheat.

- Slender plantain, *Plantago elongata*- Perkins, Corson. Occasional to common, alkali claypans in prairie.
- Alkali plantain, *Plantago eriopoda*- Perkins. Occasional, wet alkaline soils.
- Common plantain, *Plantago major*- Perkins, Corson, Sioux. Occasional, moist prairie, ponds. Introduced.
- Patagonian plantain, *Plantago patagonica*- Perkins, Corson, Sioux. Occasional, prairie, disturbed areas.

Figure 47. *Plantaginaceae*.



Polemoniaceae - the Polemonium Family (Jones Jr. and Luchsinger, 1986)

This family is important as ornamentals. On the Grand River Ranger District, Hood's phlox has white, very fragrant flowers in the spring and has a ground hugging growth form. Phlox blooms in the springtime and early summer. The flowers attract many pollinators.

- Collomia, *Collomia linearis*- Perkins, Corson. Occasional, prairie.
- Plains phlox, *Phlox andicola*- Perkins. Occasional to common, rock outcrops, badlands.
- Hood's phlox, *Phlox hoodii*- Perkins, Corson, Sioux. Common, rock outcrops, badlands; occasional prairie.

Figure 48. *Polygalaceae*.

Polygalaceae - the Milkwort Family

The milkworts are small plants found in upland prairie areas in the spring and early summer. The plants usually have thin green branches with clusters of white to pinkish flowers on the ends of the stems.

- White milkwort, *Polygala alba*- Perkins, Corson, Sioux. Uncommon, rocky ridges, rock outcrops.
- Whorled milkwort, *Polygala verticillata*- Corson. Uncommon, rocky ridges, prairie.



Polygonaceae - the Buckwheat Family (FNA, Vol. 5, 2005)

This family includes both annuals and perennials on the Grand River Ranger District. Most of the species of this family are weedy. The smartweeds are usually found near water. Annual buckwheat is showy as a plant in the fall with its white stems and cinnamon colored seed capsules contrasting with the yellow and tan grass species that have cured out for the year. Annual buckwheat prefers sandy soil. Visher's buckwheat is an annual that is only found in North Dakota, South Dakota, and southeastern Montana. It is considered rare globally but is found in abundance on badlands in the Grand River Ranger District. Visher's buckwheat grows in soils either too high in pH or selenium for most plants. It is not known from the Cedar River National Grassland although habitat exists there.

- Annual buckwheat, *Eriogonum annuum*- Perkins, Corson, Sioux. Occasional, sand dunes, sandy prairie.
- Yellow buckwheat, *Eriogonum flavum*- Perkins, Corson, Sioux. Common to occasional, rocky ridges, buttes.
- Fewflower buckwheat, *Eriogonum pauciflorum* var. *pauciflorum*- Perkins, Corson. Occasional, rocky ridges, buttes.
- Visher's (Dakota) buckwheat, *Eriogonum visherii*- Perkins, Corson. Common, badlands.
- Water smartweed, *Polygonum amphibium* var. *stipulaceum*- Perkins, Corson, Sioux. Uncommon to common, ponds, draws and drainages.
- Knotweed, *Polygonum arenastrum*- Corson. Occasional, disturbed areas, badlands.
- Knotweed, *Polygonum aviculare*- Perkins, Corson, Sioux. Common, disturbed areas, badlands.
- Wild buckwheat, *Polygonum convolvulus*- Perkins, Corson, Sioux. Common, cliffs near perennial rivers, disturbed areas especially roadsides. Introduced.
- Knotweed, *Polygonum douglasii*- Corson. Uncommon, trails.
- Pale smartweed, *Polygonum lapathifolium*- Perkins, Corson. Occasional, ponds, draws and drainages.
- Knotweed, *Polygonum ramosissimum*- Perkins, Corson. Common, disturbed areas, badlands.

- Curly dock, *Rumex crispus*- Perkins, Corson, Sioux. Occasional, draws and drainages, plantings especially moist crested wheatgrass areas. Introduced.
- Golden dock, *Rumex maritimus*- Perkins. Occasional to common, ponds, draws and drainages.
- Willow-leaved dock, *Rumex salicifolius* var. *mexicanus*- Perkins, Corson, Sioux. Occasional, draws and drainages, plantings especially crested wheatgrass stands.
- Wild begonia, *Rumex venosus*- Perkins, Corson. Common, sand dunes; occasional, disturbed areas.

Figure 49. *Portulacaceae*.



Portulacaceae - the Purslane Family (FNA, Vol. 4, 2005)

One introduced species (purslane) and one native species are present on the Grand River Ranger District. Common purslane is a weedy species with juicy stems. Fameflower is a small plant with fleshy leaves that grows on claypans; it is often found near cacti. The small pinkish flowers are showy on an otherwise inconspicuous plant. The proper genus for prairie fameflower is regarded by some botanists as *Talinum*.

- Prairie fameflower, *Phameranthus parviflorus*- Perkins, Corson, Sioux. Uncommon, claypans, prairie.
- Common purslane, *Portulaca oleracea*- Perkins, Corson, Sioux. Occasional, disturbed areas. Introduced.

Potamogetonaceae - the Pondweed Family (FNA, Vol. 22, 2000)

This family of floating or submerged aquatic plants is important as food and habitat for aquatic animals. Some species can become weedy. They are also important for stabilizing streambeds and removing particulate matter from water. Members of this family are likely to be in Sioux County, but have yet to be confirmed there.

- Waterthread pondweed, *Potamogeton diversifolius*- Corson. Occasional, ponds.
- Leafy pondweed, *Potamogeton foliosus*- Perkins. Uncommon, ponds.
- Longleaf pondweed, *Potamogeton nodosus*- Perkins. Uncommon to occasional, ponds.
- Sago pondweed, *Potamogeton pectinatus*- Perkins, Corson. Abundant, ponds.
- Baby pondweed, *Potamogeton pusillus* var. *pusillus*- Perkins. Common, ponds.
- Claspingleaf pondweed, *Potamogeton richardsonii*- Perkins. Common, ponds.

Primulaceae - the Primrose Family (usda.plants.gov)

The local members of this family are perennials or annuals. Western rock jasmine is also known as fairy candelabra due to its small size and shape. Sea milkwort was not reported for Perkins County until Kopp's (2004) surveys. Fringed loosestrife is not be confused with the aquatic weed purple loosestrife, which is in a different family. Fringed loosestrife has yellow flowers and a squarish stem.

- Western rock jasmine, *Androsace occidentalis*- Perkins, Corson, Sioux. Common, prairie.

- Sea milkwort, *Glaux maritime*- Perkins. Uncommon, alkaline or saline seepage areas along perennial rivers.
- Fringed loosestrife, *Lysimachia ciliata*- Corson. Uncommon, draws and drainages.

Ranunculaceae - the Buttercup Family (FNA, Vol. 3, 1997)

Our representation of this family includes 6 genera with 13 species. Our plants are perennials and annuals. All are forbs except for western clematis, a woody vine. Several species in the genus *Ranunculus* are usually found in or near water and all are somewhat poisonous. The pasqueflower or crocus is a member of this family and is an indicator that spring has arrived. Pasqueflower is the state flower of South Dakota. Many species of clematis are sold as ornamental vines. Western clematis is the most common one found in the western U.S. Some species of meadow rue have been found to contain compounds with anti-microbial properties or blood pressure regulating properties.

- Meadow anemone, *Anemone canadensis*- Perkins. Occasional, springs in draws and drainages.
- Candle anemone, *Anemone cylindrica*- Perkins, Corson, Sioux. Occasional, north slopes of draws and drainages and prairies.
- Pacific anemone, *Anemone multifida*- Perkins. Uncommon, moist slopes of draws and drainages.
- Western clematis, *Clematis ligusticifolia*- Perkins. Uncommon, draws and drainages. Vine.
- Mousetail, *Myosurus minimus*- Corson. Common to occasional, mudflats of ponds.
- Pasque flower, *Pulsatilla patens subsp. multifida*- Perkins, Corson, Sioux. Common, north slopes of draws and drainages, prairie.
- Shore buttercup, *Ranunculus cymbalaria*- Perkins, Corson, Sioux. Occasional, mudflats, banks of ponds.
- White water crowfoot, *Ranunculus longirostris*- Perkins, Sioux. Occasional, ponds.
- Macoun's buttercup, *Ranunculus macounii*- Perkins. Occasional, moist draws and drainages.
- Cursed crowfoot, *Ranunculus sceleratus*- Perkins. Common, ponds.
- White water crowfoot, *Ranunculus subrigidus*- Perkins. Occasional, ponds.
- Purple meadow rue, *Thalictrum dasycarpum*- Perkins, Corson. Occasional, woody draws and drainages
- Early meadow rue, *Thalictrum venulosum*- Perkins, Corson. Occasional, woody draws and drainages

Figure 50. *Ranunculaceae*.



Rhamnaceae - the Buckthorn Family (Jones Jr. and Luchsinger, 1986, plants.usda.gov)

Buckthorn was brought to this country as an ornamental. The berries are eaten and readily spread by birds. The plants found on the Grand River Ranger District were likely of this origin. Buckthorn has been declared a noxious weed in several eastern states. Another member of this family is *Ceanothus*, which is cultivated for its showy flowers.

- Common buckthorn, *Rhamnus cathartica*- Perkins, Corson. Uncommon, draws and drainages. Introduced. Shrub.

Figure 51. *Rhamnaceae*.



Rosaceae - the Rose Family (Jones, Jr. and Luchsinger, 1986)

The rose family has many common species found throughout the Grand River Ranger District. Prairie wild rose is especially common. The other rose species are usually found associated with trees and other shrubs in drainages. Chokecherries, plums, and junberries (serviceberry) are also found across the Grand River Ranger District. Plums, peaches, apricots, apples, raspberries, strawberries, and pears are all from this family.

- Striate agrimony, *Agrimonia striata*- Corson. Uncommon, draws and drainages.
- Saskatoon serviceberry, *Amelanchier alnifolia*- Perkins, Corson. Occasional, draws and drainages especially north slopes. Shrub.
- Silverweed, *Argentina anserina*- Perkins. Occasional, moist disturbed sites.
- Coteaster, *Cotoneaster integerrimus* – Perkins. Uncommon, most draws and drainages. This species has been found in the Humphrey Draw Wildlife Area. Introduced.
- Northern hawthorn, *Crataegus chrysocarpa*- Perkins, Corson. Occasional, woody draws and drainages. Shrub.
- Yellow avens, *Geum aleppicum*- Perkins. Uncommon, moist draws and drainages. This species has been found in the Humphrey Draw Wildlife Area.
- Tall cinquefoil, *Potentilla arguta*- Perkins, Corson. Uncommon, slopes on prairie.
- Norwegian cinquefoil, *Potentilla norvegica* – Perkins, Corson. Uncommon to occasional, near ponds; uncommon, prairie.
- Pennsylvania cinquefoil, *Potentilla pennsylvanica*- Perkins, Corson. Uncommon, prairie.
- Brook cinquefoil, *Potentilla rivalis* – Perkins, Corson. Occasional, ponds.

Figure 52. *Rosaceae*.



- Wild plum, *Prunus americana*- Perkins, Corson. Common, draws and drainages. Shrub.
- Sand cherry, *Prunus pumila* var. *besseyi* - Perkins, Corson. Common, rocky ridges, buttes. Shrub.
- Nanking cherry, *Prunus tomentosa*- Perkin. Rare, plantings. Introduced. Shrub.
- Chokecherry, *Prunus virginiana*- Perkins, Corson, Sioux. Common, draws and drainages. Shrub.
- Prickly wild rose, *Rosa acicularis* subsp. *sayi* - Perkins, Corson. Common, prairie, draws and drainages. Shrub.
- Prairie wild rose, *Rosa arkansana*- Perkins, Corson, Sioux. Common, prairie. Shrub.
- Western wild rose, *Rosa woodsii*- Perkins, Corson. Common, woody draws and drainages, sand dunes. Shrub.

Rubiaceae - the Coffee or Madder Family (Jones, Jr. and Luchsinger, 1986)

The bedstraws are low growing herbaceous plants of wooded areas. Catchweed bedstraw has stems like Velcro that cling to your clothes as you walk by it. The most famous member of this family is coffee. Another member of this family produces quinine, which has been important in treating malaria.

- Catchweed bedstraw, *Galium aparine*- Perkins, Corson, Sioux. Occasional to common, disturbed draws and drainages.
- Northern bedstraw, *Galium boreale*- Corson. Occasional, north slopes of prairie and draws and drainages.

Figure 53. *Salicaceae*.



Salicaceae - the Willow Family (Jones Jr. and Luchsinger, 1987)

This family of trees and shrubs are most often found near water. This family is interesting in that individuals can be divided into separate male and female plants. The inner bark of willows was the original source for aspirin (salicylic acid) and thus the family name. Lanceleaf cottonwood is known from only one location east of Shadehill reservoir. Only one parent of this hybrid is present on the Grand River Ranger District and it is not known if it was planted or not. Quaking aspen is known from only two locations on the Grand River Ranger District.

- Lanceleaf cottonwood, *Populus x acuminata* (hybrid), Perkins. Uncommon, draws and drainages. Tree.

- Cottonwood, *Populus deltoides*- Perkins, Corson, Sioux. Occasional, draws and drainages, perennial rivers. Tree.
- Quaking aspen, *Populus tremuloides*- Perkins. Uncommon, draws and drainages. Tree.
- Yellowstem white willow, *Salix alba* var. *vitellina*- Perkins (homestead site). Plantings. Introduced. Shrub.
- Peachleaf willow, *Salix amygdaloides*- Perkins, Corson. Uncommon to occasional, draws and drainages, ponds. Tree.
- Missouri willow, *Salix eriocephala* – Corson. Uncommon, draws and drainages. Shrub.
- Sandbar willow, *Salix exigua*- Perkins, Corson, Sioux. Occasional, draws and drainages, ponds. Shrub.
- Yellow willow, *Salix lutea*- Perkins. Uncommon, draws and drainages. Shrub.

Santalaceae - the Sandalwood Family (GPFA, 1986)

Toadflax, a perennial forb, spreads by extensive rhizomes and is documented to be partially parasitic on a number of plant species. It does this by extending ‘false’ roots that tap into the roots of other plants. Toadflax does have chlorophyll so it is not totally dependent on its parasitism for growth.

- Bastard toadflax, *Comandra umbellata*- Perkins, Corson, Sioux. Common, prairie, badlands; Occasional, rocky ridges.

Scrophulariaceae - the Figwort Family (Jones Jr. and Luchsinger 1987)

On the Grand River Ranger District, the beardtongues, also known as penstemons, are the most common members of this family. Downy paintbrush is partially parasitic on the roots of other plants (GPFA, 1986). Water hyssop is a floating aquatic plant. Ornamentals such as snapdragons and foxglove (*Digitalis*) are also members of this family. Tube-like flowers are very characteristic of this family.

- Water hyssop, *Bacopa rotundifolia*- Corson. Uncommon, ponds in draws

Figure 54. *Scrophulariaceae*.



and drainages.

- Downy paintbrush, *Castilleja sessiliflora*- Perkins, Sioux. Uncommon to occasional, sandy prairie.
- Hedge hyssop, *Gratiola neglecta*- Corson. Occasional, mudflats of ponds.
- Texas toadflax, *Nuttallanthus canadensis*- Corson. Occasional, badlands.
- Owl clover, *Orthocarpus luteus*- Perkins, Corson, Sioux. Common, prairie.
- White beardtongue, *Penstemon albidus*- Perkins, Corson, Sioux. Uncommon to occasional, gravelly and sandy slopes prairie.
- Narrow beardtongue, *Penstemon angustifolius*- Perkins, Corson. Occasional, sand dunes, sandy prairie.
- Crested beardtongue, *Penstemon eriantherus*- Perkins, Corson. Uncommon to occasional, rocky ridges, badlands.
- Slender beardtongue, *Penstemon gracilis*- Perkins, Corson, Sioux. Occasional, gravelly or sandy slopes in prairie.
- Purslane speedwell, *Veronica peregrina*- Perkins, Corson. Occasional, ponds including mudflats.

Solanaceae - the Potato or Nightshade Family
(Jones Jr. and Luchsinger, 1987)

This family contains many species that are either edible or poisonous. Buffalo-bur and nightshade are poisonous. The ground cherry is not poisonous. This family contains many species that produce foods and drugs. Tomatoes, peppers, chili peppers, potatoes, tobacco and eggplant are all members of this family. The drug atropine is derived from one member of this family. Matrimony vine is the only shrub in this family found on the grassland. It was found at one homestead site.

Figure 55. *Solanaceae*.



- Matrimony vine, *Lycium barbarum*- Perkins (homestead site). Uncommon, plantings. Introduced. Shrub.
- Clammy ground cherry, *Physalis heterophylla*- Perkins, Corson, Sioux. Occasional, sandy prairie.
- Common ground cherry, *Physalis longifolia*- Perkins, Corson. Uncommon to occasional, disturbed areas especially prairie dog towns.
- Buffalo bur, *Solanum rostratum*- Perkins, Corson, Sioux. Occasional, disturbed areas.
- Cut-leaved nightshade, *Solanum triflorum*- Corson. Uncommon, prairie dog towns.

Sparganiaceae - the Bur-reed Family (FNA, Vol. 22, 2000)

This small family of aquatic plants is represented on the Grand River Ranger District its most widespread species. Without the distinct seed clusters, it resembles a small, stunted cattail species approaching 2-3 feet in height.

- Giant bur-reed, *Sparganium eurycarpum*- Perkins. Occasional, ponds.

Typhaceae - the Cattail family (FNA, Vol. 22, 2000)

This family consists of one genus with three species in North America. Only broadleaf cattail has been documented on the Grand River Ranger District, though narrowleaf cattail may be present as well. Both species are known to form several hybrids. Cattails provide important wildlife food and are useful for removing water pollutants. They can also become weedy and crowd out other aquatic species.

- Broadleaf cattail, *Typha latifolia*- Perkins, Corson, Sioux. Common, wetlands, draws and drainages.

Ulmaceae - the Elm Family (FNA, Vol. 3, 1997)

All of the locally occurring members of this family are wind pollinated. Hackberry, a drought tolerant tree, is known from only one area on the Grand River Ranger District, where it is at the northwestern edge of its range. The American elm is North Dakota's state tree. Populations on the Grand River Ranger District have so far been little infected with Dutch elm disease, probably due to their isolation. Siberian elm usually marks the site of old homesteads, where it was planted for its ability to grow fast.

- Hackberry, *Celtis occidentalis*- Perkins. Uncommon, draws and drainages. Tree.
- American elm, *Ulmus americana*- Perkins, Corson, Sioux. Uncommon, draws and drainages. Tree.
- Siberian elm, *Ulmus pumila*- Perkins, Sioux. Uncommon, plantings. Introduced. Tree.

Urticaceae - the Nettle Family (FNA, Vol. 3, 1997)

The two members of this family found on the Grand River Ranger District include the perennial, stinging nettle and the annual, pellitory. Both species can be weedy. Your skin can become irritated by contact with stinging nettle. Pellitory is usually found on the Grand River Ranger District in disturbed shady areas with many individuals covering a small area.

- Pennsylvania pellitory, *Parietaria pensylvanica*- Perkins. Occasional, disturbed areas in draws and drainages.
- Stinging nettle, *Urtica dioica*- Perkins, Corson. Occasional, disturbed areas in draws and drainages.

Verbenaceae - the Vervain Family (Jones, Jr. and Luchsinger, 1986)

Vervain is a somewhat weedy perennial forb on the Grand River Ranger District. Members of this family are more commonly found in the tropics and include some tropical tree and shrub species.

- Prostrate vervain, *Verbena bracteata*- Perkins, Corson. Occasional, disturbed areas in draws and drainages.

Figure 56. *Violaceae*.



Violaceae - the Violet Family (Jones, Jr. and Luchsinger, 1986)

The native violets are showy little plants. Yellow prairie violet is the only local family member with yellow flowers. It blooms in April and May. The other species have blue tinged or violet colored flowers.

- Northern bog violet, *Viola nephrophylla*- Perkins, Corson, Sioux. Occasional, moist draws and drainages.
- Yellow prairie violet, *Viola nuttallii*- Perkins, Corson, Sioux. Common, prairie.
- Prairie violet, *Viola pedatifida*- Perkins. Occasional, prairie, draws and drainages.
- Blue prairie violet, *Viola pratincola*- Perkins. Occasional, draws and drainages. This species has been found in the Humphrey Draw Wildlife Area.

Vitaceae - the Grape Family (Jones, Jr. and Luchsinger, 1986)

Thicket creeper and river grape are both viny species usually found twisted up the stems of shrubs or small trees. Thicket creeper has distinct red foliage in the fall and several species are sold as ornamentals. Wine grapes are also part of this family.

- Thicket creeper, *Parthenocissus vitacea*- Perkins. Uncommon to occasional, draws and drainages. Vine.
- River-bank grape, *Vitis riparia*- Perkins, Corson. Uncommon, draws and drainages. Vine.

Figure 57. *Vitaceae*.



Zannichelliaceae - the Horned Pondweed Family

This species is very widespread across the central and western U.S. Horned pondweed is always submersed and has long thin leaves. It tolerates fresh or brackish water.

- Horned pondweed, *Zannichellia palustris*- Perkins, Corson. Common, ponds.

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Agavaceae – Norman G. Flaigg, Lady Bird Johnson Wildflower Center.

Apiaceae – Mrs. W. D. Bransford, Lady Bird Johnson Wildflower Center.

Apocynaceae – Thomas G. Barnes @USDA-NRCS PLANTS Database / Barnes, T. G. and S. W. Francis. 2004. Wildflowers and Ferns of Kentucky. University Press of Kentucky.

Asteraceae – Michael Dana, Lady Bird Johnson Wildflower Center.

Boraginaceae – Clarence A. Rechenthin @ USDA-NRCS PLANTS Database.

Brassicaceae – Norman G. Flaigg, Lady Bird Johnson Wildflower Center.

Cactaceae – Kurt Hansen, USDA Forest Service.

Caesalpiniaceae- USDA-NRCS PLANTS Database / Herman, D. E. et.al. 1996. North Dakota Tree Handbook. USDA NRCS ND State Soil Conservation Committee; NDSU Extension and Western Area Power Administration, Bismarck, ND.

Caprifoliaceae – W.L. Wagner @ USDA-NRCS PLANTS Database.

Celastraceae – Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center.

Chenopodiaceae – Mrs. W. D. Bransford, Lady Bird Johnson Wildflower Center.

Commelinaceae – Doug Sherman, Lady Bird Johnson Wildflower Center.

Cornaceae – Mrs. W.D. Bransford, Lady Bird Johnson Wildflower Center.

Cyperaceae – Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center.

Dryopteridaceae – T.G. Barnes @ USDA-NRCS PLANTS Database / Barnes, T. G. and S. W. Francis. 2004. Wildflowers and Ferns of Kentucky. University Press of Kentucky.

Elaeagnaceae – Kurt Hansen, USDA Forest Service.

Fabaceae – Kurt Hansen, USDA Forest Service.

Iridaceae – Mrs. W. D. Bransford, Lady Bird Johnson Wildflower Center.

Juncaceae – USDA-NRCS PLANTS Database /Hurd, E. G., S. Goodrich, and N.L. Shaw. 1997. Field guide to Intermountain Rushes. General Technical Report INT-306. USDA Forest Service, RMRS Boise Aquatics Lab.

Lamiaceae – George H. Bruso, Lady Bird Johnson Wildflower Center.

Liliaceae – Gary A. Monroe @USDA-NRCS PLANTS Database.

Marsiliaceae – Joseph A. Marcus, Lady Bird Johnson Wildflower Center.

Nyctaginaceae – Joseph A. Marcus, Lady Bird Johnson Wildflower Center.

Onagraceae – Norman G. Flaigg, Lady Bird Johnson Wildflower Center.

Orobanchaceae- Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center.

Plantaginaceae – James H. Miller @ USDA-NRCS PLANTS Database/ Miller, J.H. and K.V. Miller. 2005. Forest Plants of the southeast and their wildlife uses. University of Georgia Press, Athens.

Poaceae – Jennifer Anderson @ USDA-NRCS PLANTS Database.

Poaceae – Stacy Swenson, USDA Forest Service.

Poaceae – Dan Svingen, USDA Forest Service. .

Polygalaceae – Mrs. W. D. Bransford, Lady Bird Johnson Wildflower Center.

Portulacaceae – Donald R. Kurz @ USDA-NRCS PLANTS Database.

Ranunculaceae – Phyllis Weyand, Lady Bird Johnson Wildflower Center.

Rhamnaceae – J. S. Peterson @ USDA-NRCS PLANTS Database.

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South Fork Grand River –Terry Jones, USDA Forest Service.

Verbenaceae – Gary A. Monroe @USDA-NRCS PLANTS Database.

Visher's buckwheat – David Schmoller.

Vitaceae – Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database / USDA NRCS.
1992. Western wetland flora: Field Office Guide to plant species. West Region,
Sacramento

BIBLIOGRAPHY

Cronquist, A. 1981. An integrated system of classification of flowering plants.
Columbia University Press, New York. *In* Flora of the Great Plains. 1986. Great Plains
Flora Association. University Press of Kansas, Lawrence, Kansas.

Flora of North America Association. 1993. Flora of North America, Vol. 1:Introduction.
Oxford University Press, Inc. 200 Madison Ave. New York, NY. 10016.

Flora of North America Association. 1993. Flora of North America, Vol. 3
:Magnoliophyta:Magnoliidae and Hamamelidae. Oxford University Press, Inc. 200
Madison Ave., New York, NY. 10016.

Flora of North America Association. 1997. Flora of North America, Vol. 2
:Pteridiophytes and Gymnosperms. Oxford University Press, Inc. 200 Madison Ave.,
New York, NY. 10016.

- Flora of North America Association. 2000. Flora of North America, Vol. 22 : Magnoliophyta:Alismatidae, Arecideae, Commelinidae (in part), and Zingerberidae. Oxford University Press, Inc. 200 Madison Ave., New York, NY. 10016.
- Flora of North America Association. 2002. Flora of North America, Vol. 23 : Magnoliophyta:Cyperaceae. Oxford University Press, Inc. 200 Madison Ave., New York, NY. 10016.
- Flora of North America Association. 2002. Flora of North America, Vol. 26 : Magnoliophyta: Liliidae: Lilliales and Orchidales. Oxford University Press, Inc. 200 Madison Ave., New York, NY. 10016.
- Flora of North America Association. 2003. Flora of North America, Vol. 4, Magnoliophyta:Caryophyllidae, part 1. Oxford University Press, Inc. 200 Madison Ave., New York, NY. 10016.
- Flora of North America Association. 2005. Flora of North America, Vol. 5, Magnoliophyta:Caryophyllidae, part 2. Oxford University Press, Inc. 200 Madison Ave., New York, NY. 10016.
- Great Plains Flora Association. 1986. Flora of the Great Plains. Univ. Press of Kansas, Lawrence, Kansas 66045.
- Jones, Jr., S. and A. Luchsinger. 1986. Plant Systematics. Mcgraw-Hill Inc.
- Kopp, C. 2004. Floristic and Vegetational Analysis of the Grand River National Grassland. South Dakota State University, Brookings, SD.
- Smith, Jr., S. 1979. Vascular Plant Families. Mad River Press, Inc. Rt. 1, Box 151-B, Eureka, CA 95501.
- USDA-NRCS. 2006. *The PLANTS Database*. 6 March 2006. (<http://plants.usda.gov>). Data compiled from various sources by Mark Skinner. National Plant Data Center. Baton Rouge, LA 70784-4490 USA.
- Utah State University. 2003. Flora of North America, Vol. 25 : Magnoliophyta: Commelinidae (in part): Poaceae, part 2. Oxford University Press, Inc. 200 Madison Ave., New York, NY. 10016.