

## Schizachyrium scoparium - Bouteloua (curtipendula, gracilis) - Carex filifolia Herbaceous Vegetation

COMMON NAME Little Bluestem - (Sideoats Grama, Blue Grama) - Threadleaf Sedge Herbaceous Vegetation  
SYNONYM Northern Great Plains Little Bluestem Prairie  
PHYSIOGNOMIC CLASS Herbaceous Vegetation (V)  
PHYSIOGNOMIC SUBCLASS Perennial graminoid vegetation (V.A)  
PHYSIOGNOMIC GROUP Temperate or subpolar grassland (V.A.5)  
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (V.A.5.N)  
FORMATION Medium-tall sod temperate or subpolar grassland (V.A.5.N.c)  
ALLIANCE SCHIZACHYRIUM SCOPARIUM - BOUTELOUA CURTIPENDULA HERBACEOUS ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Terrestrial

### RANGE

#### **Badlands National Park**

Little bluestem grassland occurs in patches along drainageways and along the edges and at the heads of draws, where thin, gravelly soils occur within the Park. The most extensive stands occur in the Palmer Creek Unit associated with stands of short-statured ponderosa pine. Large areas of little bluestem - sideoats grama grassland occur in the environs south of the Palmer Creek Unit and along the breaks of the Cheyenne River in the northwestern project environs.

#### **Globally**

This community is found in western North Dakota, western South Dakota, eastern and northern Wyoming, central and eastern Montana, southern Saskatchewan, and southern Manitoba.

### ENVIRONMENTAL DESCRIPTION

#### **Badlands National Park**

Little bluestem stands occur in drainages and on slopes of variable steepness and aspect, as well as on rolling sites. However, sites generally are drier, steeper and/or have shallower soils than sites that support western wheatgrass types. Soils supporting little bluestem stands tend to be gravelly, while those supporting blue grama and western wheatgrass are sandy, silty, or clayey.

#### **Globally**

This community is usually found on gentle to steep slopes with variable aspects (Hansen *et al.* 1984, Johnston 1987, Hansen and Hoffman 1988). The soil may be loamy sand, sandy loam, loam, or clay loam. There may be a substantial component of gravel. Hansen *et al.* (1984) found 7-36% gravel by weight in 16 stands in western North Dakota. The soils are typically shallow and occur over sandstone or limestone (Johnston 1987, Thilenius *et al.* 1995).

### MOST ABUNDANT SPECIES

#### **Badlands National Park**

<u>Stratum</u>	<u>Species</u>
Herbaceous	<i>Bouteloua curtipendula</i> , <i>Schizachyrium scoparium</i>

#### **Globally**

<u>Stratum</u>	<u>Species</u>
Graminoid	<i>Bouteloua curtipendula</i> , <i>Bouteloua gracilis</i> , <i>Schizachyrium scoparium</i>

### CHARACTERISTIC SPECIES

#### **Badlands National Park**

*Schizachyrium scoparium*, *Bouteloua curtipendula*, *Solidago missouriensis*, *Calamovilfa longifolia*, *Symphoricarpos occidentalis*, *Rhus trilobata*

#### **Globally**

*Bouteloua curtipendula*, *Bouteloua gracilis*, *Carex filifolia*, *Schizachyrium scoparium*

### OTHER NOTABLE SPECIES

#### **Badlands National Park**

#### **Globally**

<u>Stratum</u>	<u>Species</u>
Graminoid	<i>Bromus inermis</i> , <i>Bromus tectorum</i> , <i>Poa pratensis</i>

### VEGETATION DESCRIPTION

#### **Badlands National Park**

Little bluestem grasslands typically have moderate to dense cover, ranging from 40 to 90%, with all ground surfaces covered by dense litter. Little bluestem (*Schizachyrium scoparium*) is strongly dominant, and sideoats grama (*Bouteloua curtipendula*) is

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almost always present. Other frequently occurring graminoids include prairie sandreed (*Calamovilfa longifolia*) and plains muhly (*Muhlenbergia cuspidata*). Some forbs may be present, but only Missouri goldenrod (*Solidago missouriensis*) and white sagebrush (*Artemisia ludoviciana*) regularly occur in little bluestem stands. The shrubs western snowberry (*Symphoricarpos occidentalis*) and ill-scented sumac (*Rhus trilobata*) may be present. Ill-scented sumac may appear dominant on aerial photos, causing this type to occasionally be identified as a shrubby grassland community.

**Globally**

This community is predominantly composed of graminoid species less than 1 m tall. Occasional *Pinus ponderosa* are scattered throughout the type. The vegetation cover is moderate to high. Thilenius *et al.* (1995) found that vegetation cover was 44 percent in Wyoming, and Hansen and Hoffman (1988) found 75 percent cover in North Dakota. The dominant species is *Schizachyrium scoparium*, with *Bouteloua curtipendula*, *Bouteloua gracilis*, and *Carex filifolia* as associates or codominants. *Andropogon gerardii*, *Carex inops* ssp. *heliophila*, *Carex duriuscula* (= *Carex eleocharis*), *Koeleria macrantha* and *Calamovilfa longifolia* are often present. *Calamovilfa longifolia* may be abundant on sandier soils. *Muhlenbergia cuspidata*, *Stipa comata*, *Pascopyrum smithii*, and *Nassella viridula* may also be present. *Pseudoroegneria spicata* may be found in the western portions of this community (Jones 1992). In Manitoba, the graminoids *Festuca ovina* and *Elymus trachycaulus* and the lichen *Selaginella densa* are more abundant (Greenall 1995). Forbs do not contribute greatly to the canopy, but many species may be found in this community (Hansen and Whitman 1938). Among the forbs that may be found are *Echinacea angustifolia*, *Aster oblongifolius*, *Aster ericoides*, *Gaura coccinea*, *Lygodesmia juncea*, *Helianthus pauciflorus* ssp. *pauciflorus*, *Rosa arkansana*, *Liatris punctata*, *Pediomelum argophyllum* (= *Psoralea argophyllum*), *Dalea purpurea*, *Phlox hoodii*, and *Campanula rotundifolia*. There are very few woody species; those that are present are usually short shrubs such as *Artemisia frigida*, *Juniperus horizontalis*, and *Yucca glauca*. Litter often accumulates and may cover more than 50 percent of the ground (Hirsch 1985).

CONSERVATION RANK G3G4.

DATABASE CODE CEG001681

MAP UNITS The little bluestem - sideoats grama grassland corresponds to Map Class 15 (Little bluestem - Grama grasses - Threadleaf Sedge Grassland) on the Badlands NP vegetation map.

**SIMILAR ASSOCIATIONS**

*Pinus ponderosa* / *Schizachyrium scoparium* Woodland (has similar composition to this type; the presence of *Pinus ponderosa* is the best distinguishing characteristic.)

**COMMENTS**

**Badlands National Park**

Significant amounts of little bluestem can be found in other grassland types, particularly along intermittent drainages and in some swales. This intermixing usually occurs within grasslands dominated by western wheatgrass and/or green needlegrass. Little bluestem vegetation is relatively uncommon in the Park, except for the area of the Palmer Creek Unit. In the environs surrounding the Park, particularly the breaks of the Cheyenne River and the ridges south of the Palmer Unit, little bluestem grasslands are very common.

Several stands were visited in preparing the vegetation map; however, aerial photo signatures were variable and only reliable on steep, gravelly slopes.

**Globally**

This type occurs on variable aspects throughout its range. Hansen *et al.* (1984) and McAdams *et al.* (1998) report this type on southerly aspects for western South Dakota and southwestern North Dakota. In southeast Montana and the Cheyenne River Basin, Butler *et al.* (1986) found that, in a ravine in western North Dakota, the most abundant species on a south-facing footslope were *Bouteloua curtipendula* and *Carex filifolia*. Other species that were abundant were *Schizachyrium scoparium*, *Calamovilfa longifolia*, *Stipa comata*, and *Artemisia frigida*. *Pascopyrum smithii*, *Bouteloua gracilis*, and *Koeleria macrantha* were also present. Fire probably played a major role in this type, whereby periodic fires would increase graminoid production and deter tree growth.

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