

Pascopyrum smithii - Bouteloua gracilis - Carex filifolia Herbaceous Vegetation

COMMON NAME	Western Wheatgrass - Blue Grama - Threadleaf Sedge Herbaceous Vegetation
SYNONYM	Western Wheatgrass - Blue Grama - Threadleaf Sedge 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	PASCOPYRUM SMITHII HERBACEOUS ALLIANCE
CLASSIFICATION CONFIDENCE LEVEL	2
USFWS WETLAND SYSTEM	Terrestrial

RANGE

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Areas of western wheatgrass - blue grama vegetation are found throughout the Refuge and the project environs on mesic sites. Associations of this type occupy clay, silt, loam, and sandy soils of flats, swales, drainages, hills, and slopes. The type adjoins little bluestem stands in drainages and on steeper slopes. In some areas stands of western wheatgrass has been converted to exotic perennial grasses, including smooth brome, Kentucky bluegrass, and crested wheatgrass.

Globally

This community is found in Colorado, Wyoming, Montana, North Dakota, South Dakota, and Saskatchewan.

ENVIRONMENTAL DESCRIPTION

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Sites are found on flat to moderately steep slopes and occur on all aspects. Blue grama and threadleaf sedge may appear on drier soils, and Kentucky bluegrass on more mesic sites.

Globally

This community is found on flat or gently sloping terrain. Many stands are on floodplains or gentle valley slopes, others are on uplands. Surface layers of soils are usually clay loams, although stands of this type may also be found on loams, silt loams, silty clays and clays (Hanson and Whitman 1938, Hansen and Hoffman 1988). In Alberta and Saskatchewan this association grows on solonchic soils (with an alluvial horizon above a dense clay horizon high in sodium salts) developed on thin glacial till over Cretaceous shale (Coupland 1961). This community does not appear to be found in mountain valleys (Hanson and Dahl 1956, Jones 1992).

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Herbaceous	<i>Bromus japonicus</i> , <i>Poa pratensis</i> , <i>Nassella viridula</i> , <i>Bouteloua gracilis</i> , <i>Pascopyrum smithii</i>

Globally

Stratum

Species

Graminoid *Bouteloua gracilis*, *Carex filifolia*, *Elymus lanceolatus*, *Pascopyrum smithii*

CHARACTERISTIC SPECIES

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Pascopyrum smithii, *Bouteloua gracilis*, *Nassella viridula*, *Bromus japonicus*

Globally

Bouteloua gracilis, *Buchloe dactyloides*, *Carex filifolia*, *Elymus lanceolatus*, *Pascopyrum smithii*

OTHER NOTABLE SPECIES

Globally

Stratum

Species

Graminoid *Bromus inermis*, *Bromus tectorum*, *Poa pratensis*

VEGETATION DESCRIPTION

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Stands of the western wheatgrass - grama type range from moderate to complete herbaceous cover, between 40-100%. Western wheatgrass (*Pascopyrum smithii*) is strongly dominant in ungrazed stands, less so in stands subjected to annual grazing by livestock. Species dominance can vary locally within a stand, dependent on soils and land use factors. Dominant graminoids are western wheatgrass, blue grama (*Bouteloua gracilis*), buffalograss (*Buchloe dactyloides*), and Japanese brome (*Bromus japonicus*). Other common herbaceous species include green needlegrass (*Nassella viridula*), wild alfalfa (*Psoraleidum tenuiflorum*), poverty cactus (*Opuntia polyacantha*), and white sagebrush (*Artemisia ludoviciana*). In western wheatgrass - grama stands within Lacreek, species dominance varies within the stand. Western wheatgrass, blue grama, and buffalograss all can be locally dominant, often to the exclusion of other species. For this reason, multiple sample points were taken to characterize this vegetation type.

Globally

This community is dominated by medium and short graminoids. Total vegetation cover is usually high (Hanson and Dahl 1956, Hansen *et al.* 1984). *Pascopyrum smithii* or *Elymus lanceolatus* or both (the two species are similar both morphologically and ecologically) and *Bouteloua gracilis* usually contribute the most cover; however, *Bouteloua gracilis* may contribute little cover and it may be absent locally. *Carex filifolia*, *Carex duriuscula* (= *Carex eleocharis*), and *Carex pensylvanica* often are secondary species, but in many stands they contribute little cover and they may be absent locally. *Hesperostipa comata* usually is present as a secondary species, but it often codominates on sandy loam soils.. In Alberta and Saskatchewan, *Hesperostipa spartea* var. *curtiseta* may be as common as *Hesperostipa comata*. *Koeleria macrantha* is present in most stands and may contribute substantial cover. The forbs most likely to be found in this association are *Phlox hoodii*, *Sphaeralcea coccinea*, *Polygonum ramosissimum*, *Plantago patagonica*, *Opuntia polyacantha*, *Artemisia frigida*, *Antennaria microphylla*, and *Hedeoma hispida*. In southeastern Montana, western North Dakota, and northeastern Wyoming, stands of this association often contain *Artemisia tridentata* ssp.

wyomingensis. Exotic brome grasses, especially *Bromus commutatus* and *B. tectorum*, are present in many stands of this association and they commonly contribute substantial cover (Hanson and Dahl 1956, Coupland 1961, Hansen *et al.* 1984, Hansen and Hoffman 1988).

CONSERVATION RANK G4. The G4 rank is based on the broad geographic range of this type, and its status as a common vegetation type within that geographic range.

DATABASE CODE CEGL001579

SIMILAR ASSOCIATIONS

Pascopyrum smithii - *Bouteloua gracilis* Herbaceous Vegetation (is similar to this type but occurs in the southern portion of the Great Plains (where *Carex filifolia* is not as prevalent.)

Pascopyrum smithii - *Nassella viridula* Herbaceous Vegetation (Drier graminoids, such as *Bouteloua gracilis* or *Carex filifolia* are rare or absent in this type.)

Pascopyrum smithii - *Hesperostipa comata* Central Mixedgrass Herbaceous Vegetation

Hesperostipa comata - *Bouteloua gracilis* - *Carex filifolia* Herbaceous Vegetation (*Hesperostipa comata* contributes more cover than do *Pascopyrum smithii* or *Elymus lanceolatus*, and the association grows on soils of loam or coarser textural classes.)

COMMENTS

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The western wheatgrass - blue grama type ranges from very low diversity on clay flats to high diversity on clay-loam and sandy-loam soils. Where this type intergrades with little bluestem and Kentucky bluegrass it can become very difficult to classify. Difficulty in classification can also occur on sites grazed, because the cool-season western wheatgrass is grazed initially, resulting in warm-season grasses like blue grama appearing to be the stand dominant. During some years, this type will be covered with very tall yellow sweetclover (*Melilotus officianalis*) plants.

Globally

The coverage of *Pascopyrum smithii* varies more with use than geographic range. *Bouteloua gracilis* and *Buchloe dactyloides* have been observed to increase with grazing as *Pascopyrum smithii* decreases. This type, as currently understood by MRO, is equivalent to the *Pascopyrum smithii* / *Carex filifolia* Herbaceous Vegetation in the Western Region's 1994 classification (Bourgeron and Engelking 1994). Fire was likely a common event in this type historically.

REFERENCES

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