

Sarcobatus vermiculatus / Pascopyrum smithii Shrub Herbaceous Vegetation

COMMON NAME	Greasewood / Western Wheatgrass Shrub Herbaceous Vegetation
SYNONYM	Greasewood / Western Wheatgrass Shrub Prairie
PHYSIOGNOMIC CLASS	Herbaceous Vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland with a sparse shrub layer (V.A.7)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (V.A.7.N)
FORMATION	Intermittently flooded temperate or subpolar grassland with a sparse xeromorphic (evergreen and/or deciduous) shrub layer (V.A.7.N.n)
ALLIANCE	SARCOBATUS VERMICULATUS INTERMITTENTLY FLOODED SHRUB HERBACEOUS ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM Terrestrial

RANGE

Badlands National Park

The greasewood shrubland vegetation type is uncommon to Badlands NP, with small stands occurring on flats on Cuny Table, along a drainage near Plenty Star Table, and on a small ridge in the Sage Creek Wilderness.

Globally

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

ENVIRONMENTAL DESCRIPTION

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Greasewood shrubland occurs on an alkaline flat, an alkali-affected drainageway, and a small ridge, the last two sites have a strong odor of selenium. It is occasionally flooded on the flat, and occupies areas with subsurface ground water seepage along the small drainage. Within the drainage, greasewood replaces silver sagebrush (*Artemisia cana*), which grows at slightly lower elevations.

Globally

This community is found on flat to gently sloping alluvial fans, terraces, lakebeds, and floodplains (Mueggler and Stewart 1978, Hansen and Hoffman 1988). Dodd and Coupland (1966) found *Sarcobatus vermiculatus* in association with *Pascopyrum smithii* only on the most arid parts of southwest Saskatchewan. The soil is usually deep clay, silty clay, sandy clay, or loam (Hirsch 1985, Jones and Walford 1995), although coarse soils are possible (USFS 1992, Thilenius *et al.* 1995). They are saline or alkaline but salt crusts on the surface are absent (Thilenius *et al.* 1995, but see Steinauer and Rolfsmeier 1997). Parent material is usually alluvium. Flooding during the spring is possible.

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Shrub	<i>Gutierrezia sarothrae</i> , <i>Eriogonum pauciflorum</i> , <i>Sarcobatus vermiculatus</i>
Herbaceous	<i>Cryptantha thyrsofolia</i> , <i>Grindelia squarrosa</i> , <i>Atriplex argentea</i> , <i>Bouteloua curtipendula</i> , <i>Pascopyrum smithii</i>

Globally

<u>Stratum</u>	<u>Species</u>
Short Shrub	<i>Sarcobatus vermiculatus</i>
Graminoid	<i>Pascopyrum smithii</i>

CHARACTERISTIC SPECIES

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Sarcobatus vermiculatus, *Eriogonum pauciflorum*, *Gutierrezia sarothrae*, *Atriplex argentea*, *Grindelia squarrosa*

Globally

Pascopyrum smithii, *Sarcobatus vermiculatus*

OTHER NOTABLE SPECIES

Globally

<u>Stratum</u>	<u>Species</u>
Short Shrub	<i>Artemisia tridentata ssp wyomingensis</i>
Graminoid	<i>Bouteloua gracilis</i> , <i>Distichlis spicata</i> , <i>Poa secunda</i>

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Badlands National Park

VEGETATION DESCRIPTION

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Greasewood shrubland vegetation cover is sparse, generally below 15% cover. Greasewood (*Sarcobatus vermiculatus*) is the dominant large shrub and other species occur in a patchy distribution between individuals and clumps of greasewood. Typical species include the dwarf-shrubs *Eriogonum pauciflorum* and *Gutierrezia sarothrae*, the graminoids *Pascopyrum smithii* and *Bouteloua curtipendula*, and the forbs *Atriplex argentea*, *Grindelia squarrosa*, and *Cryptantha thursifolia*.

Globally

This community has moderate to dense vegetation cover (Jones and Walford 1995, Thilenius *et al.* 1995). Medium-tall (0.5-1.5 m) shrubs are scattered throughout, with a total shrub canopy of 10-25% (Hansen and Hoffman 1988, USFS 1992). The shrub layer is dominated by *Sarcobatus vermiculatus*, with *Atriplex confertifolia*, *A. argentea*, *Artemisia tridentata*, and *Chrysothamnus viscidiflorus* in smaller amounts. *Symphoricarpos occidentalis* and *Rhus aromatica* are sometimes found in more mesic microhabitats within this community (Hirsch 1985). Herbaceous cover is sparse beneath the shrubs and moderate to dense in between. The dominant species are typically 0.5-1 m tall. The most abundant species is *Pascopyrum smithii*, usually accompanied by *Bouteloua gracilis*, *Bromus japonicus*, *B. tectorum*, and *Stipa comata*. Few forbs are found in this community. *Achillea millefolium* and *Opuntia polyacantha* are the only species with high constancy. Other species present may include *Grindella squarrosa*. Overall species diversity in this community is low (Hansen and Hoffman 1988, Von Loh *et al.* 1999).

CONSERVATION RANK G4.

DATABASE CODE CEG001508

MAP UNITS The greasewood shrubland type is mapped as a separate unit, Map Class 39 (Greasewood / Western wheatgrass) on the vegetation map.

SIMILAR ASSOCIATIONS

Sarcobatus vermiculatus / *Elymus elymoides* - *Pascopyrum smithii* Shrubland

COMMENTS

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Stands of greasewood shrubland are small and uncommon in the park. Only stands with shrubs large enough to be observed on aerial photographs are included in the mapping. Stands that occur in small drainages are easily confused with silver sagebrush (*Artemisia cana*) stands on aerial photography. Short-statured greasewood shrubs that are distributed across the badlands landscape are included in Map Class 2, Badlands Sparse Vegetation Complex, for mapping purposes. Greasewood shrublands were surveyed when they were encountered during preparation of the vegetation map.

Globally

Some authors recognize a *Sarcobatus vermiculatus* / *Pseudoroegneria spicata* Shrub Herbaceous Vegetation (Hansen and Hoffman 1988, MTNHP 1988, USFS 1992) in addition to or combined with *S. vermiculatus* / *Pascopyrum smithii* Shrub Herbaceous Vegetation (Brown 1971).

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