

Rhus trilobata / Carex filifolia Shrub Herbaceous Vegetation

COMMON NAME Ill-scented Sumac / Threadleaf Sedge Shrub Herbaceous Vegetation
SYNONYM Ill-scented Sumac / Thread-leaved Sedge 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 Medium-tall temperate or subpolar grassland with a sparse cold-deciduous shrub layer (V.A.7.N.g)
ALLIANCE RHUS TRILOBATA SHRUB HERBACEOUS ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM

RANGE

Theodore Roosevelt National Park

This community is found sporadically on moderately steep (10-25%) so somewhat steep (26-49%) slopes of virtually any aspect. Typically, stands occur as long, narrow bands on the upper slopes and shoulders of scoria ridges.

Globally

This community is found in eastern Montana, western North Dakota, and western South Dakota.

ENVIRONMENTAL DESCRIPTION

Theodore Roosevelt National Park

Individual plants of *R. trilobata* can be found associated with a wide variety of shrubland and woodland types. Stands of *Rhus trilobata* / *Carex filifolia* Shrub Herbaceous Vegetation are most common on steep scoria slopes that show little, if any, soil development. Aspect does not appear to play a major role in the development of distinct communities.

Globally

This community occurs on moderate to steep slopes on protected ridgetops and upper slopes of draws (Johnston 1987, USFS 1992). Hansen and Hoffman (1988) found four stands in western South Dakota on sandy loam soil. In Badlands National Park, South Dakota, sparse stands of ill-scented sumac occur most commonly on very steep slopes, where the upper butte cliffs meet the well-vegetated butte top and along the edge of draws. The geologic formation of cliff faces is predominantly Brule siltstone that is rapidly eroding, resulting in small ledges, nearly vertical faces, and steep slopes with rocks and fine sediments. Dense stands of ill-scented sumac occur sporadically within Badlands National Park, but are a regular landscape feature along the breaks of the Cheyenne River, northwest of the park. They typically occupy ridgetops and hillslopes with gravelly to sandy soils, though a few stands are located in old oxbows along the White and Cheyenne Rivers (Von Loh et al. 1999).

MOST ABUNDANT SPECIES

Theodore Roosevelt National Park

<u>Stratum</u>	<u>Species</u>
Shrub	<i>Rhus trilobata</i> , <i>Prunus virginiana</i>
Herbaceous	<i>Muhlenbergia cuspidata</i> , <i>Melilotus officinalis</i>

Globally

<u>Stratum</u>	<u>Species</u>
Short Shrub	<i>Rhus trilobata</i>
Graminoid	<i>Bouteloua curtipendula</i> , <i>Carex filifolia</i>

CHARACTERISTIC SPECIES

Theodore Roosevelt National Park

Rhus trilobata, *Muhlenbergia cuspidata*

Globally

Carex filifolia, *Muhlenbergia cuspidata*, *Rhus trilobata*

VEGETATION DESCRIPTION

Theodore Roosevelt National Park

Rhus trilobata is the dominant species. Individual plants usually appear as fairly large and distinct patches on the ridgeline. Shrub

USGS-NPS Vegetation Mapping Program
Theodore Roosevelt National Park

density and height is fairly low and foliar cover is usually between 15-25%. *Muhlenbergia cuspidata* is the usual associate that dominates the sparse herbaceous layer. *Melilotus officinalis* is also fairly frequent.

Globally

This community is dominated by herbaceous vegetation, overtopped by a shrub canopy of 10-25%. The tallest shrubs are typically 0.6 m tall (Hansen and Hoffman 1988). Total coverage is moderate; exposed mineral soil is common. The USFS (1992) found an average vegetation cover of 70% on 10 stands in western North Dakota, most of that graminoids and shrubs. The most abundant shrub is *Rhus trilobata*, with lesser amounts of *Artemisia frigida*, *Gutierrezia sarothrae*, *Rosa arkansana*, and *Symphoricarpos occidentalis*. The most abundant herbaceous species is *Carex filifolia*, usually accompanied by *Koeleria macrantha*, *Muhlenbergia cuspidata*, and *Stipa comata*. *Carex inops* ssp. *heliophila* and *Elymus lanceolatus* are found in the shade of shrubs. Forbs have very low coverage.

Common forbs include *Artemisia dracunculus*, *Echinacea angustifolia*, *Dalea purpurea*, *Opuntia polyacantha*, and *Phlox anticola*. ^In Badlands National Park, South Dakota, this sparse shrubland is found along with more densely shrubby variant. The dense shrubland variant has moderate to dense vegetative cover, depending on the landscape location. Sites with extra available soil moisture, such as seeps and slumps or old river oxbows, support dense vegetative cover in the 75-100% range. Sites on ridges and hilltops support less vegetative cover, in the 50-75% range. *Rhus trilobata* is typically the overstory dominant, but in terms of vegetative cover, *Symphoricarpos occidentalis*, *Toxicodendron rydbergii*, and *Prunus virginiana* can contribute nearly equal amounts. Understory grasses often include *Schizachyrium scoparium*, *Bouteloua curtipendula*, and *Poa pratensis* (Von Loh et al. 1999).

CONSERVATION RANK G3. This community has a relatively restricted range, being found in three states. It is relatively small patch in scale. It was considered to be an infrequent type in National Forest areas sampled in the western Dakotas and southeastern Montana (Hansen and Hoffman 1988).

DATABASE CODE CEGL001504

SIMILAR ASSOCIATIONS

Rhus trilobata / *Festuca idahoensis* Shrub Herbaceous Vegetation

Rhus trilobata / *Pseudoroegneria spicata* Shrub Herbaceous Vegetation

Rhus trilobata / *Schizachyrium scoparium* Shrub Herbaceous Vegetation

COMMENTS

Although stands of ill-scented sumac in Badlands National Park are classified as the *Rhus trilobata* / *Carex filifolia* Shrub Herbaceous Vegetation type, they appear to contain very little *Carex filifolia*. They may fit better with other *Rhus trilobata* shrublands.

REFERENCES

- Hansen, P.L. 1985. An ecological study of the vegetation of the Grand River/Cedar River, Sioux, and Ashland Districts of the Custer National Forest. Unpublished dissertation, South Dakota State University. 257 pp.
- Hansen, P.L. and G.R. Hoffman. 1986. Selected habitat types of the Custer National Forest. Pages 79-81 in: Clambey, G.K. and R.H. Pemble, eds. The prairie: past, present and future. Proceedings of the Ninth North American Prairie Conference. Tri-College University Center for Environmental Studies, Fargo, ND 264 pp.
- Hansen, P.L. and G.R. Hoffman. 1988. The vegetation of the Grand River/Cedar River, Sioux, and Ashland Districts of the Custer National Forest: a habitat type classification. USDA Forest Service General Technical Report RM-157, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.
- Johnston, B.C. 1987. Plant associations of region two: potential plant communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas. Ed 4. USDA Forest Service, Rocky Mountain Region. R2-Ecol-87-2. 429 pp.
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- Von Loh, J., D. Cogan, D. Faber-Langendoen, D. Crawford, and M. Pucherelli. 1999. USGS-NPS Vegetation Mapping Program, Badlands National Park, South Dakota (Final Report). Technical Memorandum No. 8260-99-02. U.S. Bureau of Reclamation Technical Service Center. Denver Colorado.