

USGS-NPS Vegetation Mapping Program
Badlands National Park

Symphoricarpos occidentalis Shrubland [Provisional]

COMMON NAME Western Snowberry Shrubland
SYNONYM Western Snowberry Shrubland
PHYSIOGNOMIC CLASS Shrubland (III)
PHYSIOGNOMIC SUBCLASS Deciduous shrubland (III.B)
PHYSIOGNOMIC GROUP Cold-deciduous shrubland (III.B.2)
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (III.B.2.N)
FORMATION Temporarily flooded cold-deciduous shrubland (III.B.2.N.d)
ALLIANCE SYMPHORICARPOS OCCIDENTALIS TEMPORARILY FLOODED SHRUBLAND
ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM Terrestrial

RANGE

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Western snowberry, or wolfberry, shrublands are more common to the South Unit of the park, the largest stands occurring in the Palmer Creek subunit. Small stands are observed in the North Unit, typically less than 300 square meters in size. A giant ragweed - western snowberry stand was observed at one location of approximately 5 hectares along the access road in the Sage Creek Wilderness.

Globally

This community is widespread in western Montana and North Dakota. It is also present in South Dakota, Nebraska, Wyoming, and Saskatchewan.

ENVIRONMENTAL DESCRIPTION

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Western snowberry shrublands occur most commonly in swales, draws, oxbows, and drainage bottoms, that are nearly level. Small stands are also found at the heads of draws on the upper margin of woodlands and mixed shrublands. A few stands were noted on sidehills and slumps, where extra soil moisture is available. Giant ragweed represented the dominant growth form in a drainage channel adjacent to the Park access road.

Globally

This community is found in mesic swales, depressions, ravines and floodplains. Some examples of this community experience intermittent and brief flooding. The soils are fertile and well drained to imperfectly drained silts and loams. The upper soil horizon is usually deep, although a thin layer of sand may be present if the site has been recently flooded (Jones 1995).

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Shrub	<i>Rhus trilobata</i> , <i>Rosa arkansana</i> , <i>Toxicodendron rydbergii</i> , <i>Symphoricarpos occidentalis</i>
Herbaceous	<i>Bromus tectorum</i> , <i>Bromus japonicus</i> , <i>Nassella viridula</i> , <i>Pascopyrum smithii</i> , <i>Artemisia ludoviciana</i>

Globally

<u>Stratum</u>	<u>Species</u>
Short Shrub	<i>Symphoricarpos occidentalis</i>

CHARACTERISTIC SPECIES

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Symphoricarpos occidentalis, *Toxicodendron rydbergii*, *Artemisia ludoviciana*, *Pascopyrum smithii*, *Bromus japonicus*

Globally

Symphoricarpos occidentalis

OTHER NOTABLE SPECIES

Badlands National Park

Globally

<u>Stratum</u>	<u>Species</u>
Forb	<i>Cirsium arvense</i>
Graminoid	<i>Pascopyrum smithii</i> , <i>Poa pratensis</i>

VEGETATION DESCRIPTION

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Western snowberry, or wolfberry, shrublands have dense shrub cover, typically from 70-100%. Often, poison ivy (*Toxicodendron rydbergii*) is the dominant short-shrub in terms of vegetative cover, and this species is always present in the type.

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In the southern portion of the park, particularly in the Palmer Creek subunit, western snowberry (*Symphoricarpos occidentalis*) becomes the dominant shrub, and patches of this vegetation type become more extensive. Coincidentally, this is the area where ponderosa pine begin to appear as part of the Rocky Mountain juniper woodland flora. Other than white sagebrush (*Artemisia ludoviciana*), herbaceous species contribute little vegetative cover, the most common being Japanese brome and cheatgrass (*Bromus japonicus* and *Bromus tectorum*), western wheatgrass (*Pascopyrum smithii*), and wild lettuce (*Lactuca serriola*).

One stand of giant ragweed (*Ambrosia trifida*) with western snowberry was observed, covering approximately 5 hectares within a drainage. Vegetation cover was moderate, between 50-75%, with more than 40% provided by giant ragweed plants that exceeded 2m in height. Another important exotic species observed at this site is Kentucky bluegrass (*Poa pratensis*). Shrubs associated with this drainage include American plum (*Prunus americana*) and currant (*Ribes odoratum*).

Globally

Throughout its range this community is dominated by shrubs approximately 1 m tall. Shrub cover is typically greater than 50%, and in places it can approach 100%. These shrubs form dense clumps that exclude most other species. *Symphoricarpos occidentalis* is the most common shrub, but *Rhus aromatica* (or *Rhus trilobata*) and *Prunus virginiana* can be locally abundant and can grow to 2-3 meters in places. Herbaceous species and smaller shrubs are most abundant at the edge of this community and in gaps between the clumps of taller shrubs where the shading is less complete. *Rosa woodsii* is a typical smaller shrub. Common graminoids include *Pascopyrum smithii* and *Poa pratensis*. *Achillea millefolium*, *Artemisia ludoviciana*, *Galium boreale*, and *Solidago* spp. are common forbs of this community. Woody vines sometimes occur, including *Parthenocissus vitacea*.

CONSERVATION RANK G4G5. This type is common throughout the northern Great Plains. Historically, it may never have been very extensive. It has been observed to grow out from forest or woodland edges and shade out the grasses. It is tolerant of both grazing and fire (Hansen and Hoffman 1988), and is under no threat from human activities. In some cases, heavily grazed pastures may favor this type. Many examples are somewhat weedy; thus the type is not demonstrably secure.

DATABASE CODE C EGL001131

MAP UNITS The western snowberry type corresponds to map class 37 (Western snowberry Shrubland) on the vegetation map. The giant ragweed type was not mapped separately; rather, upon request by TNC it was included with this Western Snowberry Shrubland Map Unit.

SIMILAR ASSOCIATIONS

Fraxinus pennsylvanica - *Ulmus americana* / *Prunus virginiana* Woodland (Related in terms of habitat; floristically distinct.)

COMMENTS

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The western snowberry type consists of generally small patches through most of the park, except for the South Unit. It often forms an extension of mixed shrub communities up the heads of draws and a rim around green ash and Rocky Mountain juniper woodlands. Several stands were visited during the course of the study, and the structure and composition of stands is very consistent. The giant ragweed stand was observed at only one location, where plot data were recorded.

Globally

The *Symphoricarpos occidentalis* shrubland type occurs as thickets throughout its range. These thickets are surrounded by grasslands or occasionally by tall shrublands (e.g., *Prunus virginiana*). *Symphoricarpos occidentalis* Shrublands often have a significant component of exotic species, especially where grazing has been heavy. *Bromus inermis*, *Cirsium arvense*, and *Poa pratensis* are among the most abundant of these exotics. Overgrazing of prairies can lead to the expansion of degraded forms of this community. *Symphoricarpos occidentalis* seems to thrive in disturbed areas (Hansen and Hoffman 1988), especially those subject to disturbance by fire and cattle grazing.

REFERENCES

- Christy, S. 1973. An analysis of the woody vegetation on the South Platte River flood plain in northeastern Colorado. Unpublished thesis, University of Northern Colorado, Greeley. 82 pp.
- Clark, S. J. V. 1977. The vegetation of Rocky Flats, Colorado. Unpublished thesis, University of Colorado, Boulder.
- Clark, S. V., P. J. Webber, V. Komarkova, and W. A. Weber. 1980. Map of mixed prairie grassland vegetation-Rocky Flats, Colorado. University of Colorado, Institute of Arctic and Alpine Research Occasional Paper 35. 66 pp.
- Hansen, P. L., G. R. Hoffman, and A. J. Bjugstad. 1984. The vegetation of Theodore Roosevelt National Park, North Dakota: A habitat type classification. U. S. Dep. Agric., For. Serv., Rocky Mt. For. and Range Exp. Sta., Gen. Tech. Rep. RM-113. Fort Collins, Colo. 35 p.
- Hansen, P., K. Boggs, R. Pfister. 1991. Classification and management of riparian and wetland sites in Montana. Unpublished draft version prepared for Montana Riparian Association, Montana Forest and Conservation Experiment Station, School of Forestry, University of Montana, Missoula, MT. 478 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.

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- Johnston, B. C. 1987. Plant associations of region two: potential plant communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas. Edition 4. USDA Forest Service, Rocky Mountain Region. R2-Ecol-87-2. 429 pp.
- Jones, G. 1992. Wyoming plant community classification (Draft). Wyoming Natural Diversity Database, Laramie, WY. 183 pp.
- Jones, G. P., and G. M. Walford. 1995. Major riparian vegetation types of eastern Wyoming. A Report Submitted to the Wyoming Department of Environmental Quality, Water Quality Division. Grant 9-01136. 244 pp.
- Kittel, G., R. Rondeau, N. Lederer and D. Randolph. 1994. A classification of the riparian vegetation of the White and Colorado River basins, Colorado. Final report submitted to Colorado Department of Natural Resources and the Environmental Protection Agency. Colorado Natural Heritage Program, Boulder, Colorado. 166 pp.
- McAdams, A.G., D.A. Stutzman, and D. Faber-Langendoen. 1998. Black Hills Community Inventory, unpublished data. The Nature Conservancy, Midwest Regional Office, Minneapolis, MN.
- Meyer, M. I. 1985. Classification of native vegetation at the Woodworth Station, North Dakota. *Prairie Nat.* 17(3):167-175.
- Osborn, R., G. Kittel, and M. Reid. 1998. Colorado Riparian Plant Associations and Western States Vegetation Classification. CDROM. U.S. Geological Survey, Mid-Continent Ecology Research Center, Fort Collins, CO.
- Steinauer, G. and S. Rolfsmeier. 1997. Terrestrial natural communities of Nebraska. Draft - October 28, 1997. Nebraska Game and Parks Commission, Lincoln, NE. 117 p.