

## Pinus ponderosa / Juniperus scopulorum Woodland

COMMON NAME Ponderosa Pine / Rocky Mountain Juniper Woodland  
SYNONYM Ponderosa Pine / Rocky Mountain Juniper Woodland  
PHYSIOGNOMIC CLASS Woodland (II)  
PHYSIOGNOMIC SUBCLASS Evergreen woodland (II.A)  
PHYSIOGNOMIC GROUP Temperate or subpolar needle-leaved evergreen woodland (II.A.4)  
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (II.A.4.N)  
FORMATION Rounded-crowned temperate or subpolar needle-leaved evergreen woodland (II.A.4.N.a)  
ALLIANCE PINUS PONDEROSA WOODLAND ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM Terrestrial

### RANGE

#### **Badlands National Park**

Ponderosa pine / Rocky Mountain juniper Woodlands are a rare type in Badlands NP, becoming more common to the south. In Badlands NP, this community occupies the rims of some tables and buttes, i.e., both Cedar Buttes and Red Shirt Table, and the heads of some draws in the Palmer Creek subunit.

#### **Globally**

The range of this community includes southeastern Montana, eastern Wyoming, southwestern North Dakota, western South Dakota, western Nebraska, and possibly northeastern Colorado. A community of this name has been reported in New Mexico but its present status and similarity to this community is uncertain. In southwestern North Dakota this type is restricted to near the Little Missouri River and its tributaries (Girard *et al.* 1989).

### ENVIRONMENTAL DESCRIPTION

#### **Badlands National Park**

Ponderosa pine / Rocky Mountain juniper woodlands occupy the heads of steep draws, and steep slopes of table and butte rims. There is little relationship to aspect, as long as habitat for successful seedling establishment is present.

#### **Globally**

This community has been found primarily on slopes between 16-45 percent with a variety of aspects. In the central and southern portions of its range, it is predominantly on dry-mesic north- or east-facing slopes. In more mesic local climates or with heavier soils this community can exist on south-facing slopes. In North Dakota, Girard *et al.* (1989) found *Pinus ponderosa* stands on level to gently sloping (0-15 percent) mostly south-facing slopes. Throughout its range, the type can be found on bedrock of sandstone, limestone, or shale. Soils are usually well-drained, shallow, very stony, clay loams, silt loams, and sandy loams.

### MOST ABUNDANT SPECIES

#### **Badlands National Park**

<u>Stratum</u>	<u>Species</u>
Tree	<i>Juniperus virginiana</i> , <i>Juniperus scopulorum</i> , <i>Pinus ponderosa</i>
Shrub	<i>Rhus trilobata</i> , <i>Prunus virginiana</i> , <i>Pinus ponderosa</i> , <i>Juniperus virginiana</i> , <i>Juniperus scopulorum</i>
Herbaceous	<i>Thermopsis rhombifolia</i> , <i>Bouteloua curtipendula</i> , <i>Schizachyrium scoparium</i>

#### **Globally**

<u>Stratum</u>	<u>Species</u>
Tree Canopy	<i>Pinus ponderosa</i>
Tree sub-canopy	<i>Juniperus scopulorum</i>

### CHARACTERISTIC SPECIES

#### **Badlands National Park**

*Pinus ponderosa*, *Juniperus scopulorum* (*Juniperus virginiana*), *Schizachyrium scoparium*, *Bouteloua curtipendula*

#### **Globally**

*Juniperus scopulorum*, *Pinus ponderosa*, *Schizachyrium scoparium*

### OTHER NOTABLE SPECIES

#### **Badlands National Park**

#### **Globally**

<u>Stratum</u>	<u>Species</u>
Short Shrub	<i>Cercocarpus montanus</i> , <i>Rhus trilobata</i>
Graminoid	<i>Bouteloua gracilis</i> , <i>Schizachyrium scoparium</i>

## USGS-NPS Vegetation Mapping Program

### Badlands National Park

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#### VEGETATION DESCRIPTION

##### **Badlands National Park**

Stands of ponderosa pine/Rocky Mountain juniper woodland typically have a relatively open canopy along butte and table tops, but are quite closed within draws. Ponderosa pine (*Pinus ponderosa*) forms an open canopy ranging from 10-40% cover, with a subcanopy occasionally present. Canopy cover for Rocky Mountain juniper (*Juniperus scopulorum*) generally ranges from 10-30% when growing in ponderosa pine stands. Shrub cover is sparse, usually less than 15%, with ill-scented sumac (*Rhus trilobata*), western snowberry (*Symphoricarpos occidentalis*), choke cherry (*Prunus virginiana*), and poison ivy (*Toxicodendron rydbergii*) the common species. Herbaceous cover typically ranges from 20-40%, depending on the size of canopy openings. Little bluestem (*Schizachyrium scoparium*) and sideoats grama (*Bouteloua curtipendula*) are common graminoids in the herbaceous layer.

##### **Globally**

This community has a dense to moderately open canopy of *Pinus ponderosa* that is typically 10-20 m high. Most of the trees in the canopy are 20-40 cm dbh (Hoffman and Alexander 1987). *Juniperus scopulorum* forms a subcanopy that is 2-4 m high and is also moderately dense to open. There is usually a shrub layer that contains *Cercocarpus montanus*, *Rhus trilobata*, *Symphoricarpos occidentalis*, and *Yucca glauca*. The herbaceous layer is sparse or absent, especially under areas of dense canopy or on very steep, eroding slopes. Total vegetation cover averaged 33 percent in seven stands in southeastern Montana (Brown 1971). Litter can accumulate to a depth of 10 cm or more where conifers are dense (Thilenius *et al.* 1995). Where the herbaceous stratum is present it is dominated by prairie graminoids. These include *Bouteloua curtipendula*, *B. gracilis*, *Carex filifolia*, *Pseudoroegneria spicata*, and *Schizachyrium scoparium*.

**CONSERVATION RANK** G4. Type is fairly widespread across 4 states, though it is not known to be very extensive in any of its range. Protection status across the range of this type is not known.

**DATABASE CODE** CEG000861

**MAP UNITS** The Ponderosa pine/Rocky Mountain juniper woodland community is mapped as map class 43 (Ponderosa pine/Rocky Mountain juniper Woodland) on the Badlands NP vegetation map.

##### **SIMILAR ASSOCIATIONS**

*Juniperus scopulorum* / *Oryzopsis micrantha* Woodland (Stands dominated by both *Pinus ponderosa* and *Juniperus scopulorum*, but with less than 25% *Pinus ponderosa*, are placed in this type.)

*Juniperus scopulorum* Woodland (is very similar, but the density of *Juniperus scopulorum* is high.)

##### **COMMENTS**

##### **Badlands National Park**

The Ponderosa Pine / Rocky Mountain Juniper/ type often occupies heads of draws, and it quickly intergrades with the Rocky Mountain Juniper / Littleseed Ricegrass Woodland a short distance down the draw. It is difficult to separate these woodland types on aerial photography and it may be necessary to map them together to meet accuracy requirements. Ponderosa pine seedlings and saplings were observed invading adjacent little bluestem - sideoats grama grasslands. A few stands were visited during preparation of the vegetation map.

##### **REFERENCES**

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