11230

Columbia Plateau Steppe and Grassland

BpS Model/Description Version: Aug. 2020 21/14

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| --- | --- | --- | --- |
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Vegetation Type

Steppe/Savanna

Map Zones

1, 7, 8, 9

Geographic Range

Eastern Washington, eastern Oregon, western Idaho, and northern Nevada.

Biophysical Site Description

Sagebrush steppe habitats where fire has removed the sagebrush and local seed sources. Occurs on plains and foothills, in the range of habitats that support sagebrush. (Varied soils but always with some soil development, rainfall 8-15in, all aspects and most non-canyon slopes.)

Vegetation Description

Grassland dominated by *Pseudoregnaria spicata*, *Festuca idahoensis*, *Poa secunda*, and *Achnatherum thurberianum* (see Ecological System CES304.083 [NatureServe 2004]). These are in a shrub steppe environment.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| PSSP6 | *Pseudoroegneria spicata* | Bluebunch wheatgrass |
| POSE | *Poa secunda* | Sandberg bluegrass |
| ACTH7 | *Achnatherum thurberianum* | Thurber's needlegrass |
| FEID | *Festuca idahoensis* | Idaho fescue |

Species names are from the NRCS PLANTS database. Check species codes at http://plants.usda.gov.

Disturbance Description

Fire is the primary disturbance factor. Historically, fire resulted in local removal of sagebrush, but repeated, high-frequency fire has eliminated the sagebrush and the seed sources of sagebrush, creating extensive grasslands. Currently, cheatgrass and other introduced grasses often invade these habitats after fire. The historic frequency was 30-100yrs.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 39 | 100 | 25 | 100 |
| Moderate (Mixed) |  |  |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 39 | 100 |  |  |

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

This Biophysical Setting (BpS) can occur in large landscapes. Patch and disturbance sizes limited in canyons by broken topography and limited by extensive riparian areas.

Adjacency or Identification Concerns

This type occurs in a mosaic with steppe vegetation. In the early 1900s, heavy sheep and cattle grazing led to an increase of shrubs into much of the area, although shrubs generally don't occur in the canyon grassland. Fescue dominates more heavily on north aspects and moist sites, which have a lower fire frequency.

Issues or Problems

Too much fire has turned this into annual grasslands in many areas and has turned large areas of shrubland into grasslands.

Native Uncharacteristic Conditions

Class C >30% closure would be uncharacteristic.

Comments

Map zones 01, 07, 08, 09 were combined during 2015 BpS Review.

Succession Classes

**Mapping Rules**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Upper Layer Lifeform** | **Height (m)** | **Canopy Cover (%)** | | | | | | | | | |
| **0-10** | **11-20** | **21-30** | **31-40** | **41 - 50** | **51-60** | **61-70** | **71-80** | **81-90** | **91-100** |
| Herb | 0-0.5 | A | A | A | A | A | B | B | B | B | B |
| Herb | 0.5-1.0 | A | A | A | A | A | B | B | B | B | B |
| Herb | >1.0 | A | A | A | A | A | B | B | B | B | B |
| Shrub | 0-0.5 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Shrub | >3.0 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Tree | 0-5 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Tree | 5-10 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Tree | 10-25 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Tree | 25-50 | C | C | C | UN | UN | UN | UN | UN | UN | UN |
| Tree | >50 | C | C | C | UN | UN | UN | UN | UN | UN | UN |

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

**Description**

Class A 3 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PSSP | Psilostrophe sparsiflora | Greenstem paperflower | Upper |
| POSE | Poa secunda | Sandberg bluegrass | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |

Description

Grassland having just burned. Young, green vegetation.

*Maximum Tree Size Class*  
None

Class B 81 Mid Development 1 - Closed

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PSSP | Psilostrophe sparsiflora | Greenstem paperflower | Upper |
| POSE | Poa secunda | Sandberg bluegrass | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |
| ACTH7 | Achnatherum thurberianum | Thurber's needlegrass | Upper |

Description

Perennial bunchgrass with solid cryptogam cover, large bluebunch grasses, lower POSE and forb cover, greater forb diversity.

*Maximum Tree Size Class*  
None

Class C 16 Late Development 1 - Open

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| ARTRW8 | Artemisia tridentata ssp. wyomingensis | Wyoming big sagebrush | Upper |
| CHVI4 | Chloris virgata | Feather fingergrass | Upper |
| ERNA10 | Ericameria nauseosa | Rubber rabbitbrush | Upper |
| PSSPS | Pseudoroegneria spicata ssp. spicata | Bluebunch wheatgrass | Lower |

Description

Native grassland with shrubs beginning to get a foothold or small pockets of remnants from the original fire expanding into the grassland. It equals the early seral states in Wyoming Big Sagebrush Steppe Ecological System. Grasses dominate with the same grass height range as in Class B. The class is “Open” due to the shrub component. Patches within this matrix die back due to competition/maintenance.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:CLS | 1 |
| Mid1:CLS | 2 | Late1:OPN | 50 |
| Late1:OPN | 51 | Late1:OPN | 999 |

Probabilistic Transitions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Disturbance Type** | **Disturbance occurs In** | **Moves vegetation to** | **Disturbance Probability** | **Return Interval (yrs)** | **Reset Age to New Class Start Age After Disturbance?** | **Years Since Last Disturbance** |
| Replacement Fire | Mid1:CLS | Early1:ALL | 0.02 | 50 | Yes | 0 |
| Competition or Maintenance | Late1:OPN | Late1:OPN | 0.05 | 20 | No | 0 |
| Replacement Fire | Late1:OPN | Early1:ALL | 0.06 | 17 | Yes | 0 |

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