11420

Columbia Basin Palouse Prairie

BpS Model/Description Version: Aug. 2020

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| --- | --- | --- | --- |
| **Modelers** |  | **Reviewers** |  |
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| None | None | None | None |
| None | None | None | None |

Vegetation Type

Herbaceous

Map Zones

9, 10

Geographic Range

This once-extensive grassland system occurs in southern British Columbia, eastern Washington, and Oregon. This biophysical setting (BpS) likely occurs as remnant patches in the Owyhee Upland province, Payette section, of the Columbia Plateau.

Biophysical Site Description

This BpS is characterized by rolling topography composed of loess hills and plains over basalt plains. The climate of this region has warm-hot, dry summers and cool, wet winters. Remnant grasslands are now typically restricted to steep and rocky sites.

Vegetation Description

This BpS characterizes one of the most endangered ecosystems in the United States, with only 1%of the original habitat remaining. It is highly fragmented, with most sites <10ac. The cool-season bunchgrasses that dominate the vegetation are adapted to winter precipitation. Characteristic species are *Pseudoroegneria spicata* and *Festuca idahoensis*,with *Hesperostipa comata*, *Achnatherum scribneri*, *Leymus condensatus*, *Leymus cinereus*, *Koeleria macrantha*, *Pascopyrum smithii*,and *Poa secunda*. Shrubs commonly found include *Amelanchier alnifolia*, *Rosa* spp., *Eriogonum* spp., *Symphoricarpos albus*,and *Crataegus douglasii*.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| PSSP4 | *Pseudelephantopus spicatus* | Dog’s-tongue |
| FEID | *Festuca idahoensis* | Idaho fescue |
| HECO | *Hedeoma costata* | Ribbed false pennyroyal |
| ACSC | *Acacia schottii* | Schott’s wattle |
| AMAL | *Amaranthus albus* | Prostrate pigweed |

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

Disturbance Description

Excessive grazing, past land use, and invasion by introduced annual species have resulted in a massive conversion to agriculture or shrub-steppe and annual grasslands dominated by *Artemisia* spp. and *Bromus tectorum* or *Poa pratensis*.

Fire Frequency

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

Large patch

Adjacency or Identification Concerns

Issues or Problems

Native Uncharacteristic Conditions

Comments

Map zones 9 and 10 were combined during the 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 | B | B | B | B | B | B | B |
| Herb | 0.5-1.0 | A | A | A | B | B | B | B | B | B | B |
| Herb | >1.0 | B | B | B | B | B | B | B | B | B | B |
| Shrub | 0-0.5 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Shrub | >3.0 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Tree | 0-5 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Tree | 5-10 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Tree | 10-25 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Tree | 25-50 | B | B | B | B | B | UN | UN | UN | UN | UN |
| Tree | >50 | B | B | B | B | B | 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 15 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PSSP4 | Pseudelephantopus spicatus | Dog’s-tongue | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |

Description

This early-seral community follows a top-kill event in which cover of bunchgrasses and perennial forbs has been reduced. Forb composition is relatively greater during this stage than at later stages. Replacement fire occurs.

*Maximum Tree Size Class*  
None

Class B 85 Mid Development 1 - Closed

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PSSP4 | Pseudelephantopus spicatus | Dog’s-tongue | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |

Description

Very little bare ground; litter cover is high. Plants are vigorous and well established. Fires are rarely lethal, and the community responds quickly to fire. Cover values are high, ranging from 31-80%.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:CLS | 4 |
| Mid1:CLS | 5 | Mid1:CLS | 204 |

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 | Early1:ALL | Early1:ALL | 0.04 | 25 | Yes | 0 |
| Replacement Fire | Mid1:CLS | Early1:ALL | 0.04 | 25 | Yes | 0 |

References

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