11340

Columbia Basin Foothill and Canyon Dry Grassland

BpS Model/Description Version: Aug. 2020

|  |  |  |  |
| --- | --- | --- | --- |
| **Modelers** |  | **Reviewers** |  |
| Rob Taylor | rtaylor@tnc.org | None | None |
| None | None | None | None |
| None | None | None | None |

Vegetation Type

Herbaceous

Map Zone

10

Geographic Range

They occur in the canyons and valleys of the Columbia Basin, particularly along the Snake River canyon, the lower Salmon, lower Clearwater, and lower Grande Ronde, in the lower foothill slopes of the Blue Mountains, and along the main stem of the Columbia River in eastern Washington.

Biophysical Site Description

Occurrences are found on steep open slopes, from 90-1,525m (300-5,000ft) elevation. Annual precipitation is low, ranging from 4-10cm. Settings are primarily long, steep slopes of 100m to well over 400m, with soils derived from residuum and having patchy, thin, wind-blown surface deposits. Colluvial soil movement and slope failures are a common process.

Vegetation Description

These grasslands are similar floristically to Palouse Prairie Grassland (CES304.792) but are distinguished by landform, soil, and process characteristics. Fire frequency is presumed to be <20yrs. The vegetation is dominated by graminoids on hill slopes with shrub-dominated cover occurring in steep swales and toe slopes and at higher elevations. *Pseudoroegneria spicata*, *Festuca idahoensis*, and *Opuntia polyacantha* are common species. *Rhus glabra*, *Celtis reticulate* (*Celtis laevigate*), and sub-shrub *Artemisia rigida* are common elements in the shrubby swales and toe slopes. Deciduous shrubs, including *Symphoricarpos* spp., *Physocarpus malvaceus*, *Holodiscus discolor*, and *Ribes* spp., are infrequent native species that occur in areas protected from fire and may increase with fire exclusion.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| PSSP6 | *Pseudoroegneria spicata* | Bluebunch wheatgrass |
| POSE | *Poa secunda* | Sandberg bluegrass |
| SPCR | *Sporobolus cryptandrus* | Sand dropseed |
| FEID | *Festuca idahoensis* | Idaho fescue |
| ARPUL | *Aristida purpurea* | Fendler threeawn |
| ARRI2 | *Artemisia rigida* | Scabland sagebrush |
| CELAR | *Celtis laevigate* | Netleaf hackberry |

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

Disturbance Description

Fire return interval is 7-15yrs on average. Localized landslides occur throughout this system.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 14 | 100 |  |  |
| Moderate (Mixed) |  |  |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 14 | 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) occurs in very large patches of 10s of 1,000s of hectares.

Adjacency or Identification Concerns

This BpS abuts the Palouse Prairie in some parts of the range.

Issues or Problems

Native Uncharacteristic Conditions

Comments

This model is identical to the model from map zone 18. D. Major made changes to vegetation class structural values in response to MTD v3.1 updates (K Pohl, 18 July 2005 request).

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 | A | A | B | B | B |
| Herb | 0.5-1.0 | A | A | A | A | A | A | A | B | B | B |
| Herb | >1.0 | A | A | A | A | A | A | A | B | B | B |
| Shrub | 0-0.5 | B | B | B | B | B | B | B | B | B | B |
| Shrub | 0.5-1.0 | B | B | B | B | B | B | B | B | B | B |
| Shrub | 1.0-3.0 | B | B | B | B | B | B | B | B | B | B |
| Shrub | >3.0 | B | B | B | B | B | B | B | B | B | B |
| 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 29 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PSSP6 | Pseudoroegneria spicata | Bluebunch wheatgrass | Upper |
| POSE | Poa secunda | Sandberg bluegrass | Upper |
| SPCR | Sporobolus cryptandrus | Sand dropseed | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |

Description

This early seral stage follows a replacement fire that removes the majority of the above-ground tissue of the grasses. The cover of the bunch grasses is reduced for 1-5 growing seasons. Forbs may be more abundant during this period.

*Maximum Tree Size Class*  
None

Class B 71 Late Development 1 - Closed

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PSSP6 | Pseudoroegneria spicata | Bluebunch wheatgrass | Upper |
| POSE | Poa secunda | Sandberg bluegrass | Upper |
| SPCR | Sporobolus cryptandrus | Sand dropseed | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |

Description

Very little bare ground, with bunchgrass cover and cover of litter 75%-100% in areas. Fires rarely cause changes in the distribution or abundance of dominant species, although there are records of minor changes in relative dominance among grass species.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Late1:CLS | 4 |
| Late1:CLS | 5 | Late1:CLS | 504 |

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 | Late1:CLS | Early1:ALL | 0.1 | 10 | Yes | 0 |

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