11060

Northern Rocky Mountain Montane-Foothill Deciduous Shrubland

BpS Model/Description Version: Aug. 2020

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

Vegetation Type

Shrubland

Map Zones

18

Geographic Range

This BpS is found in the lower montane and foothill regions of the Columbia River Basin, Northern Great Basin and Northern Rocky Mountains. This system occupies steep canyon and mountain slopes.

Biophysical Site Description

In MZ18 this system is found at elevations ranging from 1500-2400m (5000-8000ft). This system likely occurs in all canyon/foothill locations within MZ18. Soils range from well-developed loess to colluvial residuum to talus garlands. This system occurs on all aspects, with larger stands represented on northern and eastern aspects. Distribution of this ecological system is primarily limited by adequate soil moisture required to meet its high evapotranspiration demand, and secondarily is limited by the length of the growing season or low temperatures.

Vegetation Description

These are upland shrublands dominated by deciduous shrubs. Common shrubs include *Acer glabrum*, *Amelanchier alnifolia*, *Prunus virginiana*, *Prunus emarginatum*, *Rosa woodsii*, *Spiraea betulifolium*, *Physocarpus malvaceus*, and *Symphoricarpos oreophilus*. The herbaceous layers may be lush and diverse. Common graminoids may include *Bromus carinatus*, *Calamagrostis rubescens*, *Carex siccata* (=*Carex foenea*), *Carex geyeri*, *Carex rossii*, *Elymus glaucus*, *Elymus trachycaulus*, and *Festuca idahoensis*. Associated forbs may include *Achillea millefolium*, *Eucephalus engelmannii* (=*Aster engelmannii*), *Delphinium* spp., *Geranium viscosissimum*, and *Lupinus argenteus*.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| PRVI | *Prunus virginiana* | Chokecherry |
| PREM | *Prunus emarginata* | Bitter cherry |
| ACGL | *Acer glabrum* | Rocky mountain maple |
| PHMA5 | *Physocarpus malvaceus* |  |
| SYOR2 | *Symphoricarpos oreophilus* | Mountain snowberry |
| FEID | *Festuca idahoensis* | Idaho fescue |
| CARU | *Calamagrostis rubescens* | Pinegrass |
| CAGE | *Carex geophila* | White mountain sedge |

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

Disturbance Description

Disturbance types include fire and soil slips. Fire types include replacement, mixed and surface fire.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 102 | 44 | 50 | 300 |
| Moderate (Mixed) | 79 | 56 |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 44 | 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 size (100-1000s of acres). Patch configuration dependent on physiography of ridge and slope terrain.

Adjacency or Identification Concerns

In MZ18, Intermountain Basins Montane Sagebrush Steppe is adjacent on down slope or on hotter drier slopes. Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest is adjacent upslope or on cooler wetter sites.

Issues or Problems

Note to MFSL (D. Major) - May be difficult to differentiate from the early seral Class (A) of the Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest (BpS 1045).

Native Uncharacteristic Conditions

Comments

D Major made changes to vegetation class structural values in response to MTD v3.1 updates (K Pohl 7/18/05 request). These changes have not been reviewed and accepted by model developers as of 7/24/05.

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 | A | A | A |
| Herb | 0.5-1.0 | A | A | A | A | A | A | A | A | A | A |
| Herb | >1.0 | A | A | A | A | A | A | A | A | A | A |
| 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 1 Early Development 3 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| FEID | Festuca idahoensis | Idaho fescue | Upper |
| CARU | Calamagrostis rubescens | Pinegrass | Upper |
| CAGE | Carex geophila | White mountain sedge | Upper |
| SYOR2 | Symphoricarpos oreophilus | Mountain snowberry | Low-Mid |

Description

Post-replacement fire this BpS is dominated by grass and forbs. Replacement fire infrequent and typically related to amount/volume of standing dead/down necromass from previous replacement fire.

*Maximum Tree Size Class*  
None

Class B 99 Late Development 3 - Closed

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| SYOR2 | Symphoricarpos oreophilus | Mountain snowberry | Upper |
| PHMA5 | Physocarpus malvaceus | Mallow ninebark | Upper |
| PRVI | Prunus virginiana | Chokecherry | Upper |
| AMAL | Amaranthus albus | Prostrate pigweed | Upper |

Description

Shrub canopy initially dominated by lower and faster growing medium-tall rhizomatous shrubs (e.g., *Symphoricarpos oreophilus* and *Physocarpus malvaceus*). With further development in this class, tall shrubs (e.g., *Acer glabrum*, *Amelanchier alnifolia*, *Prunus virginiana*, and *Prunus emarginatum*) co-dominate.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early3:ALL | 0 | Late3:CLS | 1 |
| Late3:CLS | 2 | Late3:CLS | 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 | Early3:ALL | Early3:ALL | 0.007 | 143 | Yes | 0 |
| Replacement Fire | Late3:CLS | Early3:ALL | 0.01 | 100 | Yes | 0 |
| Mixed Fire | Late3:CLS | Late3:CLS | 0.013 | 77 | No | 0 |

References

Johnson, C.G. and S.A. Simon. 1987. Plant associations of the Wallowa-Snake Province. USDA Forest Service Tech. Pap. R6-ECOLTP-255B-86. 272 pp.

NatureServe. 2007. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, VA. Data current as of 10 February 2007.