11380

North Pacific Montane Grassland

BpS Model/Description Version: Aug. 2020

Revised Date: 9/17

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| --- | --- | --- | --- |
| **Modelers** |  | **Reviewers** |  |
| John Foster | jfoster@tnc.org | None | None |
| Kori Buford | kbuford@tnc.org | None | None |
| None | None | None | None |

Vegetation Type

Herbaceous

Map Zone

1

Geographic Range

This system includes open, dry meadows and grasslands on the west side of the Cascades Mountains and the northern Sierra Nevada Range.

Biophysical Site Description

The meadows and grasslands occur in montane elevations up to 2,800m (8,500ft). Soils tend to be deeper and more well drained than the surrounding forest soils. Soils can resemble prairie soils in that the A-horizon is dark brown, relatively high in organic matter, slightly acidic, and usually well drained.

Vegetation Description

Dominant species include *Elymus* spp., *Festuca* *idahoensis*, and *Nassella cernua*. These large-patch grasslands are intermixed with matrix stands of red fir, lodgepole pine, and dry–mesic mixed conifer forests and woodlands. In the Klamath, *Abies lasiocarpa* is invading some of these meadows (Schoenherr, 1992).

Franklin and Dyrness (1973) described meadows within the red-fir forests as dominated by *Lupinus latifolius*, *Carex pennsylvanica*, *Sitanion hystrix*, and *Stipa occidentalis*, with occasional *Bromus carinatus* and *Haplopappus bloomeri*. Barbour and Major (1988) included *Haplopappus greenei* among the red fir. Mountain hemlock stands support a different set of graminoids: *Carex* spp., *Scirpus microcarpus*, *Juncus mertensianus*, and a few shrubs.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| ELYMU | *Elymus* | Wildrye |
| FEID | *Festuca idahoensis* | Idaho fescue |
| NACE | *Nassella cernua* | Nodding tussockgrass |
| CAREX | *Carex* | Sedge |

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

Disturbance Description

These meadows are dominated by the surrounding forests, so their fires are frequently carried in. However, lightning strikes on the ridges could be an ignition source. Some nearby fires skip over these meadows due to lack of continuous fuels.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 750 | 100 |  |  |
| Moderate (Mixed) |  |  |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 750 | 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

Tens to hundreds of acres, perhaps constrained by the extent of the patch.

Adjacency or Identification Concerns

This biophysical setting can be surrounded by montane subalpine forests.

Issues or Problems

The modelers were not familiar with this type.

Native Uncharacteristic Conditions

Comments

Jan Henderson, Jimmy Kagan, and Rex Crawford provided input on the fire return interval.

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 | B | B | B | B | B | B | B | B |
| Herb | 0.5-1.0 | A | A | B | B | B | B | B | B | B | B |
| Herb | >1.0 | A | A | B | B | B | B | B | B | B | B |
| Shrub | 0-0.5 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | >3.0 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 0-5 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 5-10 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 10-25 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 25-50 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | >50 | UN | UN | UN | 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 2 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| ELYMU | Elymus | Wildrye | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |
| CAREX | Carex | Sedge | Upper |

Description

Early seral communities show great variation in composition. Dominant species can frequently re-sprout.

*Maximum Tree Size Class*  
None

Class B 98 Late Development 1 - Closed

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| ELYMU | Elymus | Wildrye | Upper |
| FEID | Festuca idahoensis | Idaho fescue | Upper |
| NACE | Nassella cernua | Nodding tussockgrass | Upper |
| CAREX | Carex | Sedge | Upper |

Description

Thick presence of graminoids and herbs. Gopher activity might be visible. Canopy closure rarely achieves 100% closure due to patches of rock, etc.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Late1:CLS | 14 |
| Late1:CLS | 15 | Late1: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 | Early1:ALL | Early1:ALL | 0.0013 | 769 | Yes | 0 |
| Replacement Fire | Late1:CLS | Early1:ALL | 0.0013 | 769 | Yes | 0 |

References

Barbour, M.G. and J. Major. 1988. Terrestrial vegetation of California. California Native Plant Society. Special Publication No. 9: 708-715.

Franklin, Jerry F. and Dyrness, C.T. 1988. Natural Vegetation of Oregon and Washington. Corvallis, OR: Oregon State University Press.

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

Schoenherr, A.A. 1995. A Natural history of California. University of California Press, Berkeley, CA. 200-207.