The Biophysical Site Description: 

Elevation range in eastside Oregon about 2400 feet to about 6500 feet, but most stands occur between 3500 and 5000 feet. Elevation range in Washington Cascades somewhat lower, typically ranging 1000 to 4000 feet.

This forest type occurs just above ponderosa types on a moisture gradient.

Vegetation Description: 

Ponderosa pine overstory is typical in fire-maintained stands. Older stands tend to be of large, widely spaced ponderosa pine. Some areas have more Douglas fir on these dry sites, especially to the north, where grand fir drops out and PIPO becomes less dominant. Early seral forests are often open stands of mostly ponderosa pine. Lack of wildfire causes fill in of understory conifers, mainly ponderosa pine, Douglas-fir, and grand fir. Western larch is locally important.

Disturbance Description: 

Typical disturbance regimes under natural conditions include frequent, low-intensity under-burns that maintain open stands of fire resistant trees. Much more infrequent mixed-severity and stand replacement wildfire occurred and tended to generate mosaics of older, larger trees and younger regeneration. Endemic bark beetles produced patch mortality. Rarer epidemic bark beetle outbreaks caused larger-scale overstory mortality and released understory trees. Defoliator outbreaks also caused fir mortality in some areas. Root diseases may play a significant role in later seral forests in this environment.
**Adjacency or Identification Concerns**
This PNVG occurs below the mesic MCON (fir dominated) forest types, and often occurs above mesic ponderosa forests.

This PNVG includes the following plant association groups: PIPO/elk sedge, PIPO/pinegrass, PIPO/snowberry, PIPO/ninebark and similar types, PSME with the same associated species list, grand fir with similar associated species, white fir with similar associated species. It does not include more mesic PSME (e.g. PSME/oceanspray, PSME/ACGL, PSME/CLUN, PSME/huckleberry, and similar moist types). White fir occurs in this type south of about Bend in Oregon.

**Scale Description**
Dry mixed conifer forests that often occur in large areas (hundreds to thousands of acres) that, due to fire and insect disturbances, often contained mosaics of older, larger trees and smaller trees.

**Issues/Problems**
Landfire should map a more PSME dominated dry forest to the north, esp. north of Wenatchee.

There are differing opinions on this type. Dave Swanson proposed an extended shrub dominated stage. Jim Merzenich observed that the current model does not explain why the mid-open condition has one-fourth the probability of replacement fires than the late stages. This model is recommended for further refinement. One anonymous reviewer commented that the model shows a northern bias, and has overlooked how the type changes species to the south end of its range (Abco replacing Abgr, etc.)

**Model Evolution and Comments**
Beth Willhite (bwillhite@fs.fed.us) also helped build the model. This type is similar to PPDF1 in the RA book. Our size breaks are based on dominant and co-dominant trees.

---

**Succession Classes**
Succession classes are the equivalent of "Vegetation Fuel Classes" as defined in the Interagency FRCC Guidebook (www.frcc.gov).

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
<th>Indicator Species* and Canopy Position</th>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Early PostRep</td>
<td>PIPO, PSME, LAOC, CAGE2</td>
<td>Cover: 5% - 20% Height: no data Tree Size Class: no data</td>
</tr>
</tbody>
</table>

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.
### Class B 1%

**Mid1 Closed**

**Description**
Closed stands of 5” to 20" DBH early seral tree species. Forests in this PNVG rarely if ever exceed 80% canopy closure even in closed, dense conditions.

**Indicator Species** and **Canopy Position**
- PIPO
- PSME
- LAOC
- ABGR

**Upper Layer Lifeform**
- Herbaceous
- Shrub
- Tree

**Fuel Model** no data

<table>
<thead>
<tr>
<th>Structure Data (for upper layer lifeform)</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>40%</td>
<td>80%</td>
</tr>
<tr>
<td>Height</td>
<td>no data</td>
<td>no data</td>
</tr>
<tr>
<td>Tree Size Class</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

- Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

### Class C 30%

**Mid1 Open**

**Description**
Open stands of 5” to 20" DBH early seral tree species. Dominant understory plants include elk sedge, pinegrass, common snowberry, rose, mountain mahogany (wetter), heartleaf arnica, lupines.

**Indicator Species** and **Canopy Position**
- PIPO
- PSME
- LAOC
- ABGR

**Upper Layer Lifeform**
- Herbaceous
- Shrub
- Tree

**Fuel Model** no data

<table>
<thead>
<tr>
<th>Structure Data (for upper layer lifeform)</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
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<td>40%</td>
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<tr>
<td>Height</td>
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<td>no data</td>
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<tr>
<td>Tree Size Class</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

- Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

### Class D 40%

**Late1 Open**

**Description**
Open stands of 20+" DBH early seral tree species. Dominant understory plants include elk sedge, pinegrass, common snowberry, rose, mountain mahogany (wetter), heartleaf arnica, lupines.

**Indicator Species** and **Canopy Position**
- PIPO
- PSME
- LAOC
- ABGR

**Upper Layer Lifeform**
- Herbaceous
- Shrub
- Tree

**Fuel Model** no data

<table>
<thead>
<tr>
<th>Structure Data (for upper layer lifeform)</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>10%</td>
<td>40%</td>
</tr>
<tr>
<td>Height</td>
<td>no data</td>
<td>no data</td>
</tr>
<tr>
<td>Tree Size Class</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

- Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.*
**Disturbances**

**Non-Fire Disturbances Modeled**
- Insects/Disease
- Wind/Weather/Stress
- Native Grazing
- Competition
- Other:
- Other:

**Historical Fire Size (acres)**
- Avg:
- Min:
- Max:

**Sources of Fire Regime Data**
- Literature
- Local Data
- Expert Estimate

<table>
<thead>
<tr>
<th>Fire Regime Group</th>
<th>Avg FI</th>
<th>Min FI</th>
<th>Max FI</th>
<th>Probability</th>
<th>Percent of All Fires</th>
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</thead>
<tbody>
<tr>
<td>Replacement</td>
<td>115</td>
<td>70</td>
<td>200</td>
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<tr>
<td>Mixed</td>
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<td>70</td>
<td>175</td>
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<tr>
<td>Surface</td>
<td>25</td>
<td>20</td>
<td>35</td>
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<tr>
<td>All Fires</td>
<td>16</td>
<td>20</td>
<td>35</td>
<td>0.06203</td>
<td></td>
</tr>
</tbody>
</table>

**Fire Regime Group:**
- I: 0-35 year frequency, low and mixed severity
- II: 0-35 year frequency, replacement severity
- III: 35-200 year frequency, low and mixed severity
- IV: 35-200 year frequency, replacement severity
- V: 200+ year frequency, replacement severity

**Fire Intervals (FI):**
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. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inverse of fire interval in years and is used in reference condition modeling. Percent of all fires is the percent of all fires in that severity class. All values are estimates and not precise.

**References**


*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.*
004. Pacific Northwest Region, Portland Oregon. 106 p., illus.


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