**Potential Natural Vegetation Group (PNVG):**

**R3PICOif**  
Central Rocky Mountains Lodgepole Pine - Infrequent Fire

### General Information

**Contributors** (additional contributors may be listed under "Model Evolution and Comments")

**Modelers**
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**Reviewers**
- William L. Baker  
  bakerwl@uwyo.edu

#### Vegetation Type
- Forested

#### Dominant Species*
- PICO
- VACCI

#### Biophysical Site Description
Subalpine cold climate, relatively moist but water usually not available in liquid form, usually excessively well-drained, residual or glacial, coarse fraction 20-30% in soil, shallow soil (effectively 1-2 in) to broken rock or bedrock. Precipitation 400-900 mm/yr, soil pH usually slightly basic.

#### Vegetation Description
Lodgepole pine, usually persistent and not being replaced by other trees, although sometimes aspen may be seral to it. Sometimes with sparse understories. Tree cover averages 70-90% at later stages.

#### Disturbance Description
Fire rotation for surface fires is 7,587 yr and 346 yr for crown fires (Buechling and Baker 2004).

#### Adjacency or Identification Concerns
Persistent lodgepole pine stands in the Montane and lower Subalpine Zones, that are on less well-drained soils, are usually seral to Douglas-fir (or spruce-fir) or disclimax in Douglas-fir (or Spruce-fir) potential groups.

#### Scale Description
Isodiametric stands, mostly large (100s of acres), sometimes very large (1000s of acres). Patches of this PNVG usually correspond to patches of habitat (well-drained to excessively well-drained soils) in the subalpine zone.

#### Issues/Problems

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

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8/11/2008

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**Model Evolution and Comments**
Quality control revealed one rule violation which was deleted with minor affects on results (5% change in classes C and D).

Peer review agreed with modeled parameters.

Basic model developed by local expert team on Grand Mesa-Uncompahgre-Gunnison National Forest, October 2003. Four-stage model.

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**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>%</th>
<th>Early</th>
<th>All Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class A</strong></td>
<td>10%</td>
<td>Mid1</td>
<td>Closed</td>
</tr>
</tbody>
</table>

**Description**
Lead initiation (RMLANDS):
Grasses, forbs, low shrubs, lodgepole seedlings-saplings. This class doesn't last long, young lodgepole grows fast. If aspen is present, it grows faster and dominates lodgepole. Cover of trees (seedlings-saplings) varies widely.

<table>
<thead>
<tr>
<th>Indicator Species* and Canopy Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>VASC</td>
</tr>
<tr>
<td>VAMYO</td>
</tr>
<tr>
<td>CAGE2</td>
</tr>
<tr>
<td>PICO</td>
</tr>
</tbody>
</table>

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

**Fuel Model**
no data

<table>
<thead>
<tr>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Cover</td>
</tr>
<tr>
<td>Height</td>
</tr>
<tr>
<td>Tree Size Class</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Class</th>
<th>%</th>
<th>Mid1</th>
<th>Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class B</strong></td>
<td>25%</td>
<td>Closed</td>
<td></td>
</tr>
</tbody>
</table>

**Description**
Stem exclusion (RMLANDS):
Moderate to dense pole-sized trees, sometimes very dense (dog-hair); longest time in this class without disturbance. Aspen usually not present.

<table>
<thead>
<tr>
<th>Indicator Species* and Canopy Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>PICO</td>
</tr>
<tr>
<td>VASC</td>
</tr>
<tr>
<td>CAGE2</td>
</tr>
<tr>
<td>VAMYO</td>
</tr>
</tbody>
</table>

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

**Fuel Model**
no data

<table>
<thead>
<tr>
<th>Structure Data (for upper layer lifeform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Cover</td>
</tr>
<tr>
<td>Height</td>
</tr>
<tr>
<td>Tree Size Class</td>
</tr>
</tbody>
</table>

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**Class C**  30%

**Description**
Understory reinitiation (RMLANDS): Variety of lodgepole size classes, some mature trees, often somewhat patchy. If aspen is present, lodgepole usually dominates it.

**Indicator Species** and **Canopy Position**
- PICO
- VAMYO
- VASC
- CAGE2

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

**Fuel Model**  no data

**Structure Data (for upper layer lifeform)**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Height</td>
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<td>no data</td>
</tr>
<tr>
<td>Tree Size Class</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

**Class D**  35%

**Description**
Many mature lodgepole pine, somewhat patchy, variety of lodgepole size classes, open canopies overall but patches of denser trees.

**Indicator Species** and **Canopy Position**
- PICO
- VAMYO
- VASC
- CAGE2

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

**Fuel Model**  no data

**Structure Data (for upper layer lifeform)**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>50%</td>
<td>80%</td>
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<td>Height</td>
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<td>no data</td>
</tr>
<tr>
<td>Tree Size Class</td>
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<td>no data</td>
</tr>
</tbody>
</table>

**Class E**  0%

**Description**
Late1 Closed

**Indicator Species** and **Canopy Position**
- PICO
- VAMYO
- VASC
- CAGE2

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

**Fuel Model**  no data

**Structure Data (for upper layer lifeform)**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>0%</td>
<td>%</td>
</tr>
<tr>
<td>Height</td>
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<td>no data</td>
</tr>
<tr>
<td>Tree Size Class</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

**Disturbances**

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

- **Fire Regime Group**: 5
  - 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

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


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**Sources of Fire Regime Data**

<table>
<thead>
<tr>
<th>Fire Intervals (FI):</th>
<th>Avg FI</th>
<th>Min FI</th>
<th>Max FI</th>
<th>Probability</th>
<th>Percent of All Fires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement</td>
<td>300</td>
<td>250</td>
<td>500</td>
<td>0.00333</td>
<td>82</td>
</tr>
<tr>
<td>Mixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface</td>
<td>1400</td>
<td>1000</td>
<td>8000</td>
<td>0.00071</td>
<td>18</td>
</tr>
<tr>
<td>All Fires</td>
<td>247</td>
<td></td>
<td></td>
<td>0.00406</td>
<td></td>
</tr>
</tbody>
</table>

**Historical Fire Size (acres)**

<table>
<thead>
<tr>
<th></th>
<th>Avg:</th>
<th>Min:</th>
<th>Max:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg FI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min FI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max FI</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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