

Rapid Assessment Reference Condition Model

The Rapid Assessment is a component of the LANDFIRE project. Reference condition models for the Rapid Assessment were created through a series of expert workshops and a peer-review process in 2004 and 2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.

Potential Natural Vegetation Group (PNVG)

R0MNTSB Mountain Shrub--non Sagebrushes

General Information

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

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Vegetation Type

Shrubland

General Model Sources

- Literature
 Local Data
 Expert Estimate

Rapid Assessment Model Zones

- California Pacific Northwest
 Great Basin South Central
 Great Lakes Southeast
 Northeast S. Appalachians
 Northern Plains Southwest
 N-Cent.Rockies

Dominant Species*

AMEL
PURS
SYMP
PRUN

LANDFIRE Mapping Zones

10	21
19	22
20	29

Geographic Range

Minor but relatively widespread. Occurs throughout the Intermountain West and Northern Rockies.

Biophysical Site Description

This PNVG occupies draws and foothills (all aspects) in the transition zone between grasslands/shrublands and forests, including Aspen and montane forests. Ranges widely in elevation (3000-9000 ft) throughout its geographic range.

Vegetation Description

Various mixes of shrubs such as serviceberry, Prunus spp., snowberry, snowbrush, bigtooth maple, and Rocky Mountain maple. (Society of Range Management Cover Types 317-319, 418-421.) In southwestern Wyoming, Symphoricarpos oreophilus may dominate, though in northern Wyoming, S. occidentalis or S. albus may dominate.

Disturbance Description

Fire Regime Group IV, dominated by replacement fire (80%), but may have a small component of mixed severity fires (20%). The average fire return interval for this system may range from 60 to 100+ years, and there is some debate about the role of mixed severity fire. Fire regimes of adjacent PNVGs will have significant impact on the frequency and severity of this PNVG. This PNVG will have significant variation in plant response to disturbance.

Drought, insects/disease, and native grazing may all impact this PNVG. However, little or no data exist to attribute these disturbances, and they were not included in this model.

Adjacency or Identification Concerns

The fire regime of adjacent PNVGs will dominate the fire regime here. This system is widespread and may be adjacent to many shrubland systems, mountain grassland systems, and forested types including montane

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

aspen, ponderosa pine, and Douglas-fir forests.

This PNVG may be similar to the PNVG R3MSHB for the Southwest model zone, but fire frequencies are different due to geographic and climatic changes. This PNVG may also be similar to the PNVG R2MSHBwt for the Great Basin model zone, but the Great Basin model has much more frequent fire and more mixed severity fire. There is discrepancy among experts about the amount of mixed severity fire in this system.

Scale Description

Sources of Scale Data Literature Local Data Expert Estimate

Variance in scale is a result of topography and localized moisture variability.

Issues/Problems

Extreme variability in fire regime, scale, and adjacency make this type difficult to model.

Model Evolution and Comments

Workshop code was MSHB01.

Local opinion is that there is only replacement fire in this PNVG. This is a major revision from the FRCC Draft MSHB1 dated 11/4/03.

Peer review incorporated on 4/11/2005. Additional reviewers included Thor Stephenson (thor_stephenson@blm.gov), Curt Yanish (curt_yanish@blm.gov), and Gavin Lovell (gavin_lovell@blm.gov). Peer review resulted in the addition of some mixed severity fire in classes B and C. There were disparate opinions about the frequency of fire in this type, ranging from an average fire return interval of 60-100 years. Adjusting the MFI either direction resulted in only slight adjustments (+/- 5%) in the resulting percent in each class. The model was left at an 80 year MFI.

Succession Classes**														
<i>Succession classes are the equivalent of "Vegetation Fuel Classes" as defined in the Interagency FRCC Guidebook (www.frcc.gov).</i>														
<p>Class A 10 %</p> <p>Early1 PostRep</p> <p>Description</p> <p>Early succession, usually after frequent stand replacement fires. Dominated by grasses and forbs, with some shrubs sprouting. Grass/forb canopy cover will be high and variable (0-100%), but cover of shrubs will be <15%.</p>	<p>Dominant Species* and Canopy Position</p> <p>AMEL SYMPH</p> <p>Upper Layer Lifeform</p> <p><input type="checkbox"/> Herbaceous <input type="checkbox"/> Shrub <input type="checkbox"/> Tree</p> <p>Fuel Model no data</p>	<p>Structure Data (for upper layer lifeform)</p> <table border="1" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">Min</th> <th style="text-align: center;">Max</th> </tr> </thead> <tbody> <tr> <td>Cover</td> <td style="text-align: center;">0 %</td> <td style="text-align: center;">15 %</td> </tr> <tr> <td>Height</td> <td style="text-align: center;">no data</td> <td style="text-align: center;">no data</td> </tr> <tr> <td>Tree Size Class</td> <td colspan="2" style="text-align: center;">no data</td> </tr> </tbody> </table> <p><input type="checkbox"/> Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:</p>		Min	Max	Cover	0 %	15 %	Height	no data	no data	Tree Size Class	no data	
	Min	Max												
Cover	0 %	15 %												
Height	no data	no data												
Tree Size Class	no data													

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Class B 50 %

Mid1 Open

Description

15-40% shrub cover (line intercept method), with sprouting shrubs dominant in scattered openings.

Dominant Species* and Canopy Position

AMEL
SYMPH

LUPIN

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	15 %	40 %
Height	no data	no data
Tree Size Class	no data	

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

Class C 40 %

Late1 Closed

Description

>40% shrub cover (line intercept method); all age classes present but dominated by overmature shrubs and sparse understory except in gaps.

Dominant Species* and Canopy Position

AMEL
SYMPH
LUPIN

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	40 %	60 %
Height	no data	no data
Tree Size Class	no data	

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

Class D 0 %

Description

Dominant Species* and Canopy Position

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

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

Class E 0 %

Late1 Closed

Description

Dominant Species* and Canopy Position

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

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

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Disturbances

Disturbances Modeled

- Fire
 Insects/Disease
 Wind/Weather/Stress
 Native Grazing
 Competition
 Other:
 Other

Historical Fire Size (acres)

Avg: no data
 Min: no data
 Max: no data

Fire Regime Group: 4

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 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.

Sources of Fire Regime Data

- Literature
 Local Data
 Expert Estimate

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
<i>Replacement</i>	100	20	150	0.01	80
<i>Mixed</i>	400			0.0025	20
<i>Surface</i>					
<i>All Fires</i>	80			0.01251	

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