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 2004-2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.

Potential Natural Vegetation Group (PNVG):

R3PPGRsw   **Ponderosa Pine Grassland Southwest**

General Information

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

Modelers		Reviewers	
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Vegetation Type

Woodland

Dominant Species*

PIPO
FEAR
MUMO

General Model Sources

☑ Literature
☐ Local Data
☐ Expert Estimate

LANDFIRE Mapping Zones

14	24	28
15	25	
23	27	

Rapid Assessment Model Zones

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

Geographic Range

Central and northern New Mexico and Arizona, Southern Colorado, possibly Southern Utah.

Biophysical Site Description

6,500-8,500 feet in elevation on a variety of topographic features, including mountains, mesas, and canyons. Mean annual precipitation ranges from about 16-25".

Vegetation Description

Overstory canopy of ponderosa pine with a grassy understory, predominantly the bunchgrasses Arizona fescue and mountain muhly. May include sites with minor cover of Gambel oak (less than 15% cover).

Disturbance Description

Mean composite surface fire intervals have been found to be 5-15 years (Swetnam and Baisan 1996). Infrequent stand-replacement fire on the order of a few hundred years possible (300-500?). Drought and other weather events (e.g., blowdown), parasites, and disease may play a minor role, have very long rotations. Insects may be a significant, but infrequent occurrence.

Adjacency or Identification Concerns

Scale Description

Sources of Scale Data   ☑ Literature   ☐ Local Data   ☑ Expert Estimate

Landscape scale (thousands to tens of thousands of acres) (Swetnam and Baisan 1996).

Issues/Problems

Replacement fire rotation uncertain, and this affects the amount of forest in each class.

Model Evolution and Comments

Peer review was mixed. One reviewer suggested cutting the surface fire frequency in half from 10 years to

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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.*

20 years, but reviews generally agreed with model parameters.

Succession Classes

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

Class A   10%

Early1 PostRep
Description
Bunchgrass dominated (0-49 years). Some ponderosa pine individuals also becoming established. Min and Max cover values pertain to combined grass cover.

Indicator Species* and Canopy Position
FEAR2
MUMO
PIPO

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	90 %
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 B   5%

Mid1 Closed
Description
Small and medium sized ponderosa pine (50-149 years), still with high bunchgrass cover. Closed canopy defined as greater than 50%.

Indicator Species* and Canopy Position
PIPO
FEAR

MUMO

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	50 %	100 %
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   25%

Mid2 Open
Description
Small and medium sized ponderosa pine (50-149 years), with moderate bunchgrass cover. Open canopy defined as 10-49%.

Indicator Species* and Canopy Position
PIPO
FEAR
MUMO

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	49 %
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   55 %

Late1 Open
Description
Large and very large old growth ponderosa pine, with medium to high cover of bunchgrasses. Old growth attributes prominent, including down wood, snags, diseased trees.

Indicator Species* and Canopy Position
PIPO
FEAR
MUMO

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	25 %	49 %
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 E   5 %

Late2 Closed
Description
Large and very large old growth ponderosa pine, with medium cover of bunchgrasses. Old growth attributes prominent, including down wood, snags, diseased trees.

Indicator Species* and Canopy Position
PIPO
FEAR
MUMO

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	50 %	100 %
Height	no data	no data
Tree Size Class	no data	

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

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

Fire Regime Group: 1

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.

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	300			0.00333	3
Mixed					
Surface	10			0.1	97
All Fires	10			0.10334	

References

Swetnam, T. W. and C. H. Baisan. 1996. Historical fire regime patterns in the southwestern United States since AD 1700. Pages 11-32 In: Fire effects in southwestern forests: proceedings of the second La Mesa fire symposium, Edited by C.D. Allen. USDA Forest Service General Technical Report RM-GTR-286, Rocky Mountain Forest and Range Experiment Station, Fort Collins.