

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)

R3MEBO Mesquite Bosques

General Information

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

Modelers

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Reviewers

Vegetation Type

Woodland

General Model Sources

- Literature
 Local Data
 Expert Estimate

Rapid Assessment Model Zones

- | | |
|--|---|
| <input type="checkbox"/> California | <input type="checkbox"/> Pacific Northwest |
| <input type="checkbox"/> Great Basin | <input type="checkbox"/> South Central |
| <input type="checkbox"/> Great Lakes | <input type="checkbox"/> Southeast |
| <input type="checkbox"/> Northeast | <input type="checkbox"/> S. Appalachians |
| <input type="checkbox"/> Northern Plains | <input checked="" type="checkbox"/> Southwest |
| <input type="checkbox"/> N-Cent. Rockies | |

Dominant Species*

PROS
POFR
SALIX
BACC

LANDFIRE Mapping Zones

14	24	28
15	25	
23	27	

Geographic Range

Southwest (NM, AZ)

Biophysical Site Description

This type typically occurs in the valleys, with minor extents across the Southwest. It would be found along intermittent streams and major drainages (eg. Colorado, Rio Grande, Gila, San Pedro Rivers) Vegetation is woodland dominated by mesquite, cottonwood, catclaw, other associated shrubs and understory grasses and forbs.

Vegetation Description

Vegetation is a riparian woodland dominated by mesquite, cottonwood, catclaw, other associated shrubs and understory grasses and forbs. When the PNVG is surrounded by R3DESH shrubs like atriplex and arrowweed would be more commonly intermixed within the mesquite bosque. It fits in the Ecological Systems: North American Warm Desert Riparian Systems group (CES302.752).

Disturbance Description

Fire regime group III, infrequent mixed. The mean fire interval is about 45 years with high variation due to complex influences of adjacent fire regime, floods, drought, herbivory, and native anthropogenic ignitions. Fire years are typically correlated with drought. Grazing of the understory green shrubs, grasses, and forbs during the hot season can open the understory and increase or decrease chance of surface fire depending on amount of residual grassy understory fuels. When this PNVG is surrounded by Desert Shrub (R3DESH) flooding would have been the overriding disturbance with fire return intervals much longer on the order of 100 - 500 years.

Adjacency or Identification Concerns

Much of the original mesquite bosque areas are heavily degraded by saltcedar. Mesquite has also encroached out into adjacent grasslands to a large extent. Anthropogenic changes in hydrology along many

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

of the major southwestern drainages has also reduced the range of the community especially in the western portion of its range.

Scale Description

Sources of Scale Data Literature Local Data Expert Estimate

Fire disturbance could be rather large scale (1,000 to 10,000 acres sizes) for mesquite bosques embedded within grassland systems (eg. NM and SE AZ) where as fire would be more limited (10's to 100's of acres) for mesquite located within desert shrublands. Flood disturbance would create large patch sizes on the order of 1,000's to 10,000's of acres.

Issues/Problems

This type is often adjacent to potentially suitable SWFL habitat. Where it is found in WUI situations it often currently has a fire regime on the order of every 5 to 10 years.

This model could be broadened and called Warm Desert Riparian Systems to incorporate some of the more mesic riparian systems.

Model Evolution and Comments

This model was based on the original FRCC model MBNM by Wendel Hann.

Quality control of this model resulted in elimination of rule violations and slight changes to the percent in each class.

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

Dominated by resprouts and seedlings of shrubs and trees. This type typically occurs where flooding has occurred or fires have burned relatively hot.

Dominant Species* and Canopy Position

PROSO
POFR
SALIX
BACCH

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	20 %
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 30 %

Mid1 Closed

Description

Greater than 40 percent immature tree and shrub cover; generally associated with more productive soils.

Dominant Species* and Canopy Position

PROSO
POFR
BACCH
SALIX

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	41 %	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:

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Class C 25%

Mid1 Open
Description

Less than 40 percent immature tree and shrub cover generally associated with less productive cobbly and gravelly soils.

Dominant Species* and Canopy Position

PROSO

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	21 %	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 D 15%

Late1 Open
Description

Less than 40 percent mature tree and tall shrub cover generally associated with less productive cobbly and gravelly soils, herbivory, light flooding, or surface and mosaic fires.

Dominant Species* and Canopy Position

PROSO

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	21 %	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 E 20%

Late1 Closed
Description

Greater than 40 percent mature tree and tall shrub cover generally associated with more productive soils, lack of floods, lack of herbivory, and lack of surface and mosaic fires.

Dominant Species* and Canopy Position

PROSO
POFR
SALIX
BACCH

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	41 %	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

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Disturbances Modeled

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

Historical Fire Size (acres)

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

Sources of Fire Regime Data

- Literature
- Local Data
- Expert Estimate

Fire Regime Group: 3

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.

	<i>Avg FI</i>	<i>Min FI</i>	<i>Max FI</i>	<i>Probability</i>	<i>Percent of All Fires</i>
<i>Replacement</i>	135			0.00741	32
<i>Mixed</i>	65			0.01538	67
<i>Surface</i>					
<i>All Fires</i>	44			0.02280	

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