

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)

R3PGRs Shortgrass Prairie

General Information

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

Modelers

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Vegetation Type

Grassland

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*

BOGR
SCHIZ
BUDA

LANDFIRE Mapping Zones

14	24	28
15	25	
23	27	

Geographic Range

Occurs in the southern Great Plains, in southern Colorado and eastern New Mexico.

Biophysical Site Description

This type typically occurs on plains and draws, or on gently rolling uplands of the southern Great Plains. Elevations range from 3,500-6,800 ft. Precipitation ranges from 12 to 20 inches, and occurs predominantly during the summer.

Vegetation Description

This type typically occurs on the rolling uplands of the Great Plains. Vegetation is mid and short grass dominated little bluestem, blue gramma, buffalo grass, and needle-and-thread, with intermingled forbs and scattered half-shrubs. This type correlates with Kuchler's (1964) types 65, 66, 67, 68,

Disturbance Description

Fire regime dominated by frequent replacement fires associated with productive grass fuels and cycles of moisture and drought. Patchy fires (causing 25-75% top-kill) were less frequent and were modeled here as mixed severity, although there is some debate about how often this type of patchy fire might actually occur.

Drought can cause a transition from closed to open conditions (class B to class C). Return interval for fire could be extended by ungulate grazing, but is not modeled here. Episodic disturbance caused by insect infestation (grasshoppers, range caterpillars, mormon crickets) is also not modeled here.

Adjacency or Identification Concerns

Higher elevation sites of this type borders the juniper steppe type.

This PNVG may be similar to the PNVGs R4PRMGs from the Northern Plains model zone and R5PRSG

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

from the South Central model zone.

Scale Description

Sources of Scale Data Literature Local Data Expert Estimate

Issues/Problems

Model Evolution and Comments

This model is based on the original FRCC model PGRA4, but adjusted to conform to Rapid Assessment modeling rules. Final results are different by 10% in classes B and C. This model is also used for the Northern Plains region and replaces the model Great Plains Shortgrass Prairie (R4PRSG).

Peer review suggested that that all plains grassland types be combined (R3PGm, R3PGmst, R3PGRs, R3PGRsws, R3PGRswt), mixed fire eliminated, and replacement fire interval set at 20 years. Because the workshop participants in two different modeling zones identified these separate types, they were not lumped together and fire regimes were left as-is, although descriptions were expanded to clarify use of mixed severity fire.

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

Class A 5%

Description
 Early1 PostRep
 Dominated by resprouts and seedlings of grasses and post-fire associated forbs. Low to medium height with variable canopy cover. This type typically occurs where fires burn relatively hot in classes B and C.

Dominant Species* and Canopy Position
 Bogr2
 Buda

Upper Layer Lifeform
 Herbaceous
 Shrub
 Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	5 %
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%

Description
 Mid1 Closed
 Greater than 35 percent herb cover. Generally associated with more productive soils, but can be caused by cumulative high moisture seasons increasing the cover and productivity of class C. Low to medium height.

Dominant Species* and Canopy Position
 Bogr2
 Buda
 Schiz4

Upper Layer Lifeform
 Herbaceous
 Shrub
 Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	30 %	65 %
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 65%

Mid1 Open
Description

Less than 35 percent herb cover. Generally associated with less productive cobbly and gravelly soils, but can also be caused by cumulative drought shifting class B to this class. Low to medium height.

Dominant Species* and Canopy Position

Bogr2
Buda

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	30 %
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%

Late1 Open
Description

Dominant Species* and Canopy Position

Bogr2
Buda

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
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 0%

Late1 Closed
Description

Dominant Species* and Canopy Position

Bogr2
Buda

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
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:
- 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: 2

- 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>	12	2	35	0.08333	87
<i>Mixed</i>	80			0.0125	13
<i>Surface</i>					
<i>All Fires</i>	10			0.09584	

References

Dick-Peddie, W.A. 1993. New Mexico vegetation, past, present and future. Albuquerque, NM: Univ. New Mexico Press. Xxxii, 244 p.

Ford, P. L. 1999. Response of buffalograss (*Buchloe dactyloides*) and blue grama (*Bouteloua gracilis*) to fire. Great Plains Research 9:261-276.

Miller, Greg et al. (1993) Terrestrial Ecosystem Survey of the Santa Fe National Forest USDA Forest Service Southwestern Region.

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