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):

R3PGRs   **Shortgrass Prairie**

General Information

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

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Vegetation Type

Grassland

Dominant Species*

BOGR2
SCHIZ4
BUDA

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

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 from the South Central model zone.

Scale Description

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%

Early1 PostRep

Description

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.

Indicator 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%

Mid1 Closed

Description

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.

Indicator 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:

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.

Indicator 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

Indicator Species* and Canopy Position

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

Indicator Species* and Canopy Position

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

Non-Fire Disturbances Modeled

☐ Insects/Disease
☑ Wind/Weather/Stress
☐ Native Grazing
☐ Competition
☐ Other:
☐ Other:

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

Historical Fire Size (acres)

Avg:

Min:

Max:

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.

Sources of Fire Regime Data

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	12	2	35	0.08333	87
Mixed	80			0.0125	13
Surface					
All Fires	10			0.09584	

☑ Literature
☐ Local Data
☐ Expert Estimate

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.