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)

R3PGRswt   **Shorgrass Prairie with Trees**

General Information

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

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Vegetation Type

Grassland

Dominant Species*

BOGR
BUDA
SCHIZ

General Model Sources

☑ Literature
☑ Local Data
☑ Expert Estimate

LANDFIRE Mapping Zones

14	24	28
15	25	
23	27	

Rapid AssessmentModel 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 from southeastern 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. In New Mexico, Colorado, elevations range from 5,000-6,800 ft. Precipitation ranges from 12 to 16 inches, and occurs predominantly during the summer.

Vegetation Description

Vegetation is short grass dominated with mid grass inclusions. little bluestem, blue gramma, buffalo grass, needle-and-thread, and three-awns, with intermingled forbs, scattered patches of shrubs, and trees.

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. Concentrations of ungulates could increase the percent of the landscape dominated by shrubs and forbs compared with reference conditions. 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.

Scale Description

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

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

Issues/Problems

Model Evolution and Comments

This model is based on the original FRCC model PGRA5, but adjusted to conform to Rapid Assessment modeling rules. Results changed slightly for some classes (class B was 20%, C was 70%, D was 4%, and E was 1%).

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 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.

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   15 %

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.

Dominant Species* and Canopy Position

Bogr2
Buda

Gusa

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.

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	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:

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

Class D   10 %

Late1 Closed
Description
Less than 35 percent tree cover. Savannah aspect of scattered trees and shrubs with grass. Typically located on gentle slopes or less productive soils where fire intensity allows scattered tree seedlings to survive.

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 %	35 %
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 %

Late1 Closed
Description
Greater than 35 percent tree cover. Typically located on the ridges, more moist north aspects, or other areas where patches may be missed by fire.

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	35 %	70 %
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

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.

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	15	2	35	0.06667	80
Mixed	60			0.01667	20
Surface					
All Fires	12			0.08334	

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.