

LANDFIRE Biophysical Setting Model

Biophysical Setting 2811490

Western Great Plains Shortgrass Prairie

☐ This BPS is lumped with:

☐ This BPS is split into multiple models:

General Information

Contributors (also see the Comments field)

Date 10/25/2004

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Reviewer

Vegetation Type

Upland

Grassland/Herbaceous

Dominant Species

BOGR2

BUDA

Map Zone

28

Model Zone

☐ Alaska

California

☐

☐ Great Basin

☐ Great Lakes

☐ Hawaii

☐ Northeast

☐ Northern Plains

N-Cent.Rockies

☐

☐ Pacific Northwest

☐ South Central

☐ Southeast

☐ S. Appalachians

☒ Southwest

General Model Sources

☒ Literature

☒ Local Data

☒ Expert Estimate

BOHI2

HECO26

BOCU

MUTO

PASM

YUCCA

Geographic Range

Geographic Area: Occurs in the southern Great Plains from southeastern CO east through KS and south through western OK, eastern NM and west TX.

Biophysical Site Description

This type typically occurs on plains and draws, or on gently rolling uplands of the southern Great Plains. In NM and CO, elevations range from 1500-2060m. Precipitation ranges from 12-14in, and occurs predominantly during the summer.

Vegetation Description

Vegetation is short grass dominated with mid grass inclusions. little bluestem, blue grama, buffalo grass, needle-and-thread and three-awns, with intermingled forbs and scattered patches of shrubs, such as four-wing saltbush, broom snakeweed rubber rabbitbrush and several prickly pear species (Opuntia), with isolated pockets of sandsage, and winterfat occurs on calcareous soil. Western wheatgrass occurs in swales.

Disturbance Description

Return interval for fire could be extended by ungulate grazing. Concentrations of ungulates could increase the percent of the landscape dominated by shrubs and forbs compared with reference conditions. Fire return intervals are now in the range of 30yrs plus. Episodic disturbance caused by insect infestation (grasshoppers, range caterpillars and Mormon crickets).

Adjacency or Identification Concerns

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

**Fire Regime Groups are: I: 0-35 year frequency, surface severity; II: 0-35 year frequency, replacement severity; III: 35-100+ year frequency, mixed severity; IV: 35-100+ year frequency, replacement severity; V: 200+ year frequency, replacement severity.

Native Uncharacteristic Conditions

Scale Description

Issues/Problems

Comments

This model is based on the Rapid Assessment model R3PGRS, which was reviewed by B Baker (bakerwl@wyo.edu). Minor edits made on 5/6/2005 by Mike Babler, mbabler@tnc.org, changed some species and class B: 15% to 20%, class C: 75% to 65%, and class: D 5% to 10% to better match VDDT model output.

The Rapid Assessment model was originally based on the FRCC model PGRA6. Review suggest combining all plains grasslands. Because of species composition and class differences, 1147 and 1149 were not combined.

Vegetation Classes

Class A	5 %	<u>Indicator Species and Canopy Position</u>	<u>Structure Data (for upper layer lifeform)</u>
Early Development 1 All Structure		BOGR2	
<u>Upper Layer Lifeform</u>		All	
☒ Herbaceous		BUDA	
☐ Shrub		All	
☐ Tree			
<u>Fuel Model</u>			
	1		

	<i>Min</i>	<i>Max</i>
<i>Cover</i>	0 %	10 %
<i>Height</i>	Herb 0m	Herb 0.5m
<i>Tree Size Class</i>	None	

☐ Upper layer lifeform differs from dominant lifeform.

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, where grazing has been heavy.

Class B	25 %	<u>Indicator Species and Canopy Position</u>	<u>Structure Data (for upper layer lifeform)</u>
Mid Development 1 Closed		BOGR2	
<u>Upper Layer Lifeform</u>		Upper	
☒ Herbaceous		BUDA	
☐ Shrub		Upper	
☐ Tree			
<u>Fuel Model</u>			
	1		

	<i>Min</i>	<i>Max</i>
<i>Cover</i>	31 %	70 %
<i>Height</i>	Herb 0m	Herb 0.5m
<i>Tree Size Class</i>	None	

☒ Upper layer lifeform differs from dominant lifeform.

Scattered shrubs may be present.

Description

Greater than 30 percent herb and shrub cover combined. 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.

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Class C 60 %

Mid Development 1 Open

Upper Layer Lifeform

- ☒ Herbaceous
☐ Shrub
☐ Tree

Fuel Model

2

Indicator Species and Canopy Position

BOGR2

Upper

BUDA

Upper

Structure Data (for upper layer lifeform)

	Min	Max
Cover	21 %	30 %
Height	Herb 0.6m	Herb 1.0m
Tree Size Class	None	

- ☒ Upper layer lifeform differs from dominant lifeform.

Scattered shrubs may be present.

Description

Greater than 20 percent herb cover of medium to taller height. Typically located on the ridges, rocky areas or on the more cobbly or gravelly soils where patches may be missed by fire. Scattered shrubs may be present.

Class D 10 %

Late Development 1 Open

Upper Layer Lifeform

- ☒ Herbaceous
☐ Shrub
☐ Tree

Fuel Model

2

Indicator Species and Canopy Position

BOGR2

Upper

BUDA

Upper

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	20 %
Height	Herb 0.6m	Herb 1.0m
Tree Size Class	None	

- ☒ Upper layer lifeform differs from dominant lifeform.

Scattered shrubs may be present.

Description

Five to 15% herbaceous cover of medium height. Typically located on the ridges, rocky areas or on more cobbly or gravelly soil where patches may be missed by fire. Scattered shrubs may be present.

Class E 0 %

[Not Used] [Not Used]

Upper Layer Lifeform

- ☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model**Indicator Species and Canopy Position****Structure Data (for upper layer lifeform)**

	Min	Max
Cover	%	%
Height		
Tree Size Class		

- ☐ Upper layer lifeform differs from dominant lifeform.

Description**Disturbances**

**Fire Regime Groups are: I: 0-35 year frequency, surface severity; II: 0-35 year frequency, replacement severity; III: 35-100+ year frequency, mixed severity; IV: 35-100+ year frequency, replacement severity; V: 200+ year frequency, replacement severity.

Fire Regime Group:** II

Historical Fire Size (acres)

Avg 0

Min 0

Max 0

Sources of Fire Regime Data

- ☒ Literature
☒ Local Data
☒ Expert Estimate

Additional Disturbances Modeled

- ☐ Insects/Disease ☐ Native Grazing ☐ Other (optional 1)
☒ Wind/Weather/Stress ☐ Competition ☐ Other (optional 2)

Fire Intervals

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	12	2	35	0.08333	85
Mixed	70			0.01429	15
Surface					
All Fires	10			0.09763	

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.

References

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