11210

Apacherian-Chihuahuan Semi-Desert Grassland and Steppe

BpS Model/Description Version: Aug. 2020

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| --- | --- | --- | --- |
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Vegetation Type

Steppe/Savanna

Map Zone

25

Geographic Range

Borderland of Arizona, New Mexico, Texas, and northern Mexico. Extends from Sonoran Desert to the Mogollon Rim and much of the Chihuahuan Desert.

Biophysical Site Description

Gently sloping, on mesas, foothill slopes, piedmonts, narrow-fingered draws, and loamy broad swales; 1,100-1,800m elevations.

Vegetation Description

Perennial grasses, herbs with shrubs as the upper lifeform. Perennial grass dominated with scattered shrubs. Perennial herbaceous cover values range from 16-25%. Bare ground can make up 50% of the ground cover. Bare ground patch sizes should be small <0.5m in diameter.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| BOER4 | *Bouteloua eriopoda* | Black grama |
| PLMU3 | *Pleuraphis mutica* | Tobosagrass |
| MUPO2 | *Muhlenbergia porteri* | Bush muhly |
| SPAI | *Sporobolus airoides* | Alkali sacaton |
| BOGR2 | *Bouteloua gracilis* | Blue grama |
| LATR2 | *Larrea tridentata* | Creosote bush |
| PRGL2 | *Prosopis glandulosa* | Honey mesquite |
| RHUS | *Rhus* | Sumac |

Species names are from the NRCS PLANTS database. Check species codes at http://plants.usda.gov.

Disturbance Description

One camp believes that fire has a major impact in these systems. There is another camp that believes that fire is less important in the control of woody species than maintenance of perennial grass cover in the systems. Historical fire data in this system are lacking. Uncertain what role fire plays in maintaining these systems.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement |  |  |  |  |
| Moderate (Mixed) | 82 | 100 |  |  |
| Low (Surface) |  |  |  |  |
| All Fires | 82 | 100 |  |  |

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. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

1,000-100,000 of ha.

Adjacency or Identification Concerns

NRCS Ecological Site Descriptions are SD-2 Draw, Loamy and Gravelly Loam. Excludes SD-2 Limy, which may be more similar in vegetation and disturbance dynamics to SD-2 Gravelly and to the map zone (MZ) 15 Grama Creosote BpS. The SD-2 Bottomland is also excluded from this Biophysical Setting (BpS).

Issues or Problems

Moisture following fire has significant impact on plant response/recovery.

Native Uncharacteristic Conditions

Comments

It may be useful to separate similar sites found in Arizona into their own BpS. Keith Schulz was an additional LANDFIRE National reviewer. This model was based on model for MZ15. Original model for MZ15 reviewed and modified in Las Cruces, 29 June 2005, to reflect conditions in MZ15. Adapted from FRCC Model DGRA3, Hann, 25 September 2003. This model is based on grass shrub community and does not address large tree savanna community.

Succession Classes

**Mapping Rules**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Upper Layer Lifeform** | **Height (m)** | **Canopy Cover (%)** | | | | | | | | | |
| **0-10** | **11-20** | **21-30** | **31-40** | **41 - 50** | **51-60** | **61-70** | **71-80** | **81-90** | **91-100** |
| Herb | 0-0.5 | A | A | B | B | B | UN | UN | UN | UN | UN |
| Herb | 0.5-1.0 | A | A | B | B | B | UN | UN | UN | UN | UN |
| Herb | >1.0 | A | A | B | B | B | UN | UN | UN | UN | UN |
| Shrub | 0-0.5 | B | B | C | C | C | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | B | B | C | C | C | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | B | B | C | C | C | UN | UN | UN | UN | UN |
| Shrub | >3.0 | B | B | C | C | C | UN | UN | UN | UN | UN |
| Tree | 0-5 | C | C | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 5-10 | C | C | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 10-25 | C | C | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 25-50 | C | C | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | >50 | C | C | UN | UN | UN | UN | UN | UN | UN | UN |

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

**Description**

Class A 18 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| BOER4 | Bouteloua eriopoda | Black grama | Upper |
| PLMU3 | Pleuraphis mutica | Tobosagrass | Upper |
| PAOB | Panicum obtusum | Vine mesquite | Upper |
| SPAI | Sporobolus airoides | Alkali sacaton | Upper |

Description

Grass and herbs. Early succession post-fire grass and herb community. Perennial bunchgrasses, annual grass and herb community. Upper layer of shrubs, canopy cover <5%.

*Maximum Tree Size Class*  
None

Class B 34 Mid Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| BOER4 | Bouteloua eriopoda | Black grama | Middle |
| PLMU3 | Pleuraphis mutica | Tobosagrass | Middle |
| SPAI | Sporobolus airoides | Alkali sacaton | Middle |
| LATR2 | Larrea tridentata | Creosote bush | Upper |

Description

Perennial bunchgrasses regenerated, and young, low shrubs begin growing. Perennial grass species dominate with 35-50% canopy cover; <0.5m height. Canopy cover of shrubs is 5-10%.

*Maximum Tree Size Class*  
None

Class C 48 Late Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| BOER4 | Bouteloua eriopoda | Black grama | Middle |
| PLMU3 | Pleuraphis mutica | Tobosagrass | Middle |
| SPAI | Sporobolus airoides | Alkali sacaton | Middle |
| LATR2 | Larrea tridentata | Creosote bush | Upper |

Description

Species are perennial bunchgrasses and shrubs. Shrubs continue to increase in size and/or number of individuals. Perennial grass species dominate with 10-35% canopy cover; 1-2m height. Canopy cover of shrubs is 10-20%. Shrub cover will be similar to species composition found in the Ecological System Apacherian-Chihuahuan Mesquite Upland Scrub.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:ALL | 15 |
| Mid1:ALL | 16 | Late1:ALL | 50 |
| Late1:ALL | 51 | Late1:ALL | 999 |

Probabilistic Transitions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Disturbance Type** | **Disturbance occurs In** | **Moves vegetation to** | **Disturbance Probability** | **Return Interval (yrs)** | **Reset Age to New Class Start Age After Disturbance?** | **Years Since Last Disturbance** |
| Mixed Fire | Mid1:ALL | Early1:ALL | 0.015 | 67 | Yes | 0 |
| Wind or Weather or Stress | Mid1:ALL | Mid1:ALL | 0.02 | 50 | No | 0 |
| Mixed Fire | Late1:ALL | Early1:ALL | 0.015 | 67 | Yes | 0 |
| Wind or Weather or Stress | Late1:ALL | Late1:ALL | 0.02 | 50 | No | 0 |

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