11220

Chihuahuan Gypsophilous Grassland and Steppe

BpS Model/Description Version: Aug. 2020

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

Steppe/Savanna

Map Zone

27

Geographic Range

In map zone (MZ) 27: This occurs on the east end of Manzanos Mountains. The center of Torrance County. This is in ECOMAP (Cleland et al. 2007) subsections M313Bf and east of Estancia in subsection 315Ad.

Biophysical Site Description

This is a closed basin system that includes alkali flats devoid of vegetation. This ecological system is restricted to gypsum outcrops or sandy gypsiferous and/or often alkaline soils that occur in basins and slopes. Elevation range is from 5,500-6,000ft. These typically sparse grasslands, steppes, or dwarf-shrublands are dominated by a variety of gypsophilous plants, many of which are endemic to these habitats. Lower sideslopes and gypsiferous hills contain gypsophilous plants, and bottom flats have no vegetation. Precipitation: 14-16in annually -- occurring mostly in summer.

Low productivity, salty sites.

Vegetation Description

Characteristic indicator species include Gyp grama (*Bouteloua breviseta*), Gyp muhly (not sure of NRCS code/species name), Gyp dropseed (*Sporobulus nealleyi*), *Atriplex canescens*, and *Ephedra torreyana*. Threeawn will occur but only if surface horizon -- loam texture for surface.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| BOBR | *Bouteloua breviseta* | Gypsum grama |
| MUPU2 | *Muhlenbergia pungens* | Sandhill muhly |
| SPNE | *Sporobolus nealleyi* | Gyp dropseed |
| EPTO | *Ephedra torreyana* | Torrey's jointfir |
| ATCA2 | *Atriplex canescens* | Fourwing saltbush |

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

Disturbance Description

Disturbances that impact this system don’t typically cause a state change. Wind would be a disturbance factor; it moves the patches -- they change position. Drought can occur, but it doesn't affect system too much -- reduces production and ground cover. This system is resilient to flooding also. There might have been some historical grazing by pronghorn, small mammals.

Fire is not a disturbance factor. It would be near impossible for it to occur. Fuel is not present. This Biophysical Setting (BpS) is considered fire-proof.

Fire Frequency

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

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

Highly patchy distribution, patch size variable from 1-100s of acres.

Adjacency or Identification Concerns

This system is not departed. This is a one-box model.

Human disturbance can be a factor. Livestock grazing may be a disturbance factor currently but not much because not productive -- livestock stay off of it, and water not drinkable.

This system should not be confused with the surrounding vegetation. It's very unique. This system should not be confused with Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub, BpS 1076, even though this BpS 1122 has dunes within it.

This system is surrounded by Shortgrass Prairie. On the extreme south end in MZ27, might be adjacent to pinyon-juniper (PJ) because PJ creeping into the shortgrass prairie.

Issues or Problems

Native Uncharacteristic Conditions

If >20% cover or >1m in height, would be uncharacteristic.

Comments

For LANDFIRE National, this model for MZ27 was adapted from a draft model from MZ26 developed by Don Ellsworth, Jony Cockman, and Tim Christiansen and reviewed by John Karges and Lee Elliott. For MZ27, significant changes to the MZ26 model resulted in a change in modeler names. Other modeler for MZ27: Lee Elliot.

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 | UN | UN | UN | UN | UN | UN | UN | UN |
| Herb | 0.5-1.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Herb | >1.0 | UN | UN | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 0-0.5 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | >3.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 0-5 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 5-10 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 10-25 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 25-50 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | >50 | A | A | 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 100 Late Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| BOBR | Bouteloua breviseta | Gypsum grama | Upper |
| MUPU2 | Muhlenbergia pungens | Sandhill muhly | Upper |
| SPNE | Sporobolus nealleyi | Gyp dropseed | Upper |
| EPTO | Ephedra torreyana | Torrey's jointfir | Upper |

Description

Fire plays little to no role in this BpS. Edaphic factors dominate. This is a ustic-aridic zone. Shrubs will generally be <0-5% cover in this class.

Indicator species include Gyp grama (*Bouteloua breviseta*), Gyp muhly (not sure of NRCS code/species name), Gyp dropseed (*Sporobulus nealleyi*), *Atriplex canescens*, and *Ephedra torreyana*.

Drought occurs frequently.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Late1:ALL | 0 | 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** |
| Wind or Weather or Stress | Late1:ALL | Late1:ALL | 0.8 | 1 | No | 0 |

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