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Sonoran Mid-Elevation Desert Scrub

BpS Model/Description Version: Aug. 2020

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Vegetation Type

Shrubland

Map Zones

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Geographic Range

The northern edge of the Sonoran Desert in an elevational band along the lower slopes of the Mogollon Rim/Central Highlands region. Also in the Bradshaw, Hualapai and Superstition mountains.

Biophysical Site Description

Between 750-1,300m. Sites range from a narrow strip on steep slopes to very broad areas such as the Verde Valley. Climate is too dry for chaparral species to be abundant, and freezing temperatures during winter are too frequent and prolonged for many of the frost-sensitive species that are characteristic of Sonoran Paloverde-Mixed Cacti Desert Scrub. Substrates are generally rocky soils derived from parent materials such as limestone, granitic rocks or rhyolite.

Vegetation Description

The vegetation is typically composed of an open shrub layer of *Larrea tridentata*, *Ericameria linearifolia*, or *Eriogonum fasciculatum* with taller shrub such as *Canotia holacantha* (limestone or granite) or *Simmondsia chinensis* (rhyolite). The herbaceous layer is generally sparse.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
EFRA2	<i>Penstemon fruticosus</i> var. <i>albus</i>	Littleleaf bush penstemon
ERLI6	<i>Ericameria linearifolia</i>	Narrowleaf goldenbush
ISTE2	<i>Isocoma tenuisecta</i>	Burroweed
CAHO3	<i>Canotia holacantha</i>	Crucifixion thorn
GUTIE	<i>Gutierrezia</i>	Snakeweed
SICH	<i>Simmondsia chinensis</i>	Jojoba
LATR2	<i>Larrea tridentata</i>	Creosote bush

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

Disturbance Description

Fire is unusual in this BpS.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	351	100		
Moderate (Mixed)				
Low (Surface)				
All Fires	351	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

50-2,000 ha

Adjacency or Identification Concerns

Above Sonoran Paloverde-Mixed Cacti Desert Scrub (CES302.761) and below Mogollon Chaparral (CES302.741) in elevation.

Non-native, weedy annuals may be present to dominant in Class A.

Issues or Problems

Native Uncharacteristic Conditions

Comments

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	A	UN	UN	UN	UN	UN	UN	UN
Herb	0.5-1.0	A	A	A	UN	UN	UN	UN	UN	UN	UN
Herb	>1.0	A	A	A	UN	UN	UN	UN	UN	UN	UN
Shrub	0-0.5	A	B	B	B	B	B	UN	UN	UN	UN
Shrub	0.5-1.0	A	B	B	B	B	B	UN	UN	UN	UN
Shrub	1.0-3.0	A	B	B	B	B	B	UN	UN	UN	UN
Shrub	>3.0	A	B	B	B	B	B	UN	UN	UN	UN
Tree	0-5	B	B	UN	UN	UN	UN	UN	UN	UN	UN
Tree	5-10	B	B	UN	UN	UN	UN	UN	UN	UN	UN
Tree	10-25	B	B	UN	UN	UN	UN	UN	UN	UN	UN
Tree	25-50	B	B	UN	UN	UN	UN	UN	UN	UN	UN
Tree	>50	B	B	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 14

Early Development 1 - Open

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ERFA2	Eriogonum fasciculatum	Eastern mojave buckwheat	All
ERLI6	Ericameria linearifolia	Narrowleaf goldenbush	All
ISTE2	Isocoma tenuisecta	Burroweed	All
GUTIE	Gutierrezia	Snakeweed	All

Description

High percent bare ground, with shrub seedlings or resprouts. Patchy burn may result in scattered larger plants remaining from original community. ISTE2 and GUTIE are highest percentage.

Maximum Tree Size Class

None None None None

Class B 86

Late Development 1 - Closed

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ERFA2	Eriogonum fasciculatum	Eastern mojave buckwheat	Upper
CAHO3	Canotia holacantha	Crucifixion thorn	Upper
SICH	Simmondsia chinensis	Jojoba	Upper
LATR2	Larrea tridentata	Creosotebush	Upper

Description

Acacia may occur in patches. Sparse herbaceous layer, high percent of bare ground. *Larrea*, *Eriogonum*, *Simmondsia*, *Ericameria*, and *Canotia* species, found throughout. Fire is very rare in this system.

Maximum Tree Size Class

None None None None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:OPN	0	Late1:CLS	49
Late1:CLS	50	Late1:CLS	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
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Replacement Fire	Late1:CLS	Early1:OPN	0.0033	303	Yes	0
Wind or Weather or Stress	Late1:CLS	Late1:CLS	0.01	100	No	0

References

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