

11080

Sonora-Mojave Semi-Desert Chaparral

BpS Model/Description Version: Aug. 2020

Modelers		Reviewers	
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Vegetation Type

Shrubland

Map Zone

17

Geographic Range

This ecological system is composed of evergreen shrublands on side slopes that transition from low-elevation desert landscapes up into woodlands of the western Mojave and Sonoran deserts. It extends from northeast Kern County, California, into Baja Norte.

Biophysical Site Description

This system includes chaparral on side slopes that transition from low-elevation desert landscapes up into pinyon-juniper and ponderosa pine woodlands of the western and central Great Basin, between 4,000ft and 7,000ft.

Vegetation Description

Associated species include *Quercus john-tuckeri*, *Quercus cornelius-mulleri*, *Quercus berberidifolia*, *Arctostaphylos patula*, *Arctostaphylos pungens*, *Arctostaphylos glauca*, *Rhus ovata*, *Juniperus californica*, *Cercocarpus montanus* var. *glaber* (= *Cercocarpus betuloides*), *Ceanothus greggii*, *Garrya flavescens*, and *Nolina parryi*.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
QUJO3	<i>Quercus john-tuckeri</i>	Tucker oak
QUCO7	<i>Quercus cornelius-mulleri</i>	Muller oak
QUBE5	<i>Quercus berberidifolia</i>	Scrub oak
ARPA6	<i>Arctostaphylos patula</i>	Greenleaf manzanita
ARPU5	<i>Arctostaphylos pungens</i>	Pointleaf manzanita
ARGL4	<i>Arctostaphylos glauca</i>	Bigberry manzanita
CEMOG	<i>Cercocarpus montanus</i> var. <i>glaber</i>	Birchleaf mountain-mahogany
GAFL2	<i>Garrya flavescens</i>	Ashy silktassel

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

Disturbance Description

Typical fire regime in these systems varies with the amount of organic accumulation. The only significant disturbance to the system is stand-replacing fire occurring every 50-100yrs on average. Shrubs resprout rapidly after fire, often making the vegetation impenetrable.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	50	100	10	90
Moderate (Mixed)				
Low (Surface)				
All Fires	50	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

Vegetation found in small patches of 10ac to whole mountain slopes of 5,000ac.

Adjacency or Identification Concerns

Biophysical setting (BpS) 1108 is difficult to distinguish from BpS 1103 (Great Basin Semi-Desert Chaparral) and BpS 1104 (Mogollon Semi-Desert Chaparral).

Issues or Problems

None of the experts consulted were familiar with this chaparral.

Issues with selection of proper mean fire return interval: tested both 50yrs and 75yrs (retained).

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	A	A	A	A	A	A	A
Herb	0.5-1.0	A	A	A	A	A	A	A	A	A	A
Herb	>1.0	A	A	A	A	A	A	A	A	A	A
Shrub	0-0.5	A	A	A	A	A	A	A	A	A	A
Shrub	0.5-1.0	A	A	A	A	A	A	A	A	A	A
Shrub	1.0-3.0	B	B	B	B	B	B	B	B	B	B
Shrub	>3.0	B	B	B	B	B	B	B	B	B	B
Tree	0-5	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	5-10	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	10-25	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	25-50	B	B	B	B	B	UN	UN	UN	UN	UN
Tree	>50	B	B	B	B	B	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	63	Early Development 1 - All Structures
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARPA6	Arctostaphylos patula	Greenleaf manzanita	Upper
ARPU5	Arctostaphylos pungens	Pointleaf manzanita	Upper
QUJO3	Quercus john-tuckeri	Tucker oak	Upper
CEMOG	Cercocarpus montanus var. glaber	Birchleaf mountain-mahogany	Upper

Description

After fire, shrubs resprout vigorously from roots or from the base of plants. Shrubs can cause stands to become impenetrable.

Maximum Tree Size Class

None

Class B	37	Late Development 1 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARPA6	Arctostaphylos patula	Greenleaf manzanita	Upper
ARPU5	Arctostaphylos pungens	Pointleaf manzanita	Upper
QUJO3	Quercus john-tuckeri	Tucker oak	Upper
CEMOG	Cercocarpus montanus var. glaber	Birchleaf mountain-mahogany	Upper

Description

Dense shrubs, with grasses present in the few openings. Shrub composition same as in Class A. Canopy cover generally exceeds 50%.

Maximum Tree Size Class

None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	1	Late1:CLS	50
Late1:CLS	51	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
Replacement Fire	Early1:ALL	Early1:ALL	0.02	50	Yes	0
Replacement Fire	Late1:CLS	Early1:ALL	0.02	50	Yes	0

References

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