

10960

California Maritime Chaparral

BpS Model/Description Version: Aug. 2020

Original Report Date: 8/2014

Revision Date: 9/2017

Modelers		Reviewers	
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None	None	None	None
None	None	None	None

Vegetation Type

Shrubland

Map Zones

3

Geographic Range

This Biophysical Setting (BpS) occurs from Mendocino County in the north, then patchily south to San Diego County and on the islands in the Santa Barbara Channel. This system occurs only in the fog zone.

Biophysical Site Description

This type only occurs in the fog zone, usually less than 1,000ft (300m). Rainfall is variable due to the large latitudinal range. Sandy soils with low nutrient levels tend to occur, usually within a few km of the ocean.

Vegetation Description

Chaparral is composed of woody, sclerophyllous shrubs that generally vary from 3-15ft in height. Shrub cover is usually dense and continuous, covering vast areas of land. Typical chaparral structure may thin out in sandy soils and dunes. *Ceanothus* and *Arctostaphylos* are the dominant indicator genera, with many locally endemic species within patches of this type. *Adenostoma* could be present in many of these patches, and it becomes more common further south in the range, along with *Quercus agrifolia*. In the north of this BpS's range *A. sensitiva*, *C. gloriosus*, and *C. thyrsiflorus* could be present. In the central-south end of the range, *A. tomentosa* (crustacea), *C. griseus*, and *C. verrucosus* may be present. Within the latitudinal range there may be patches of endemics such as *A. andersonii* and its relatives, or *A. montereyensis* and its relatives.

In the south and central parts of its range, this BpS often occurs near *Q. Agrifolia* and closed or semi-closed cone species (*Pinus torreyana*, *P. radiata*, *P. muricata*, *Cupressus* spp.), while in the northern sections it may be associated with redwoods and Douglas-fir may invade.

The following species are minor components of coastal chaparral. In central and southern CA xeric areas, high-insolation aspects typically support species such as chamise, redshank, obligate-seeding manzanitas, chaparral yucca, redberry, sugar bush and *Ceanothus* spp. In more mesic, low solar insolation settings, common dominants are scrub oak, toyon, poison oak, coffeeberry,

and *Prunus* spp. Scrub oak readily sprouts after fire. Resprouting manzanitas, shrub interior live oak, birchleaf mountain mahogany and canyon live oak are common associates in some sites.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
ARCTO3	<i>Arctostaphylos</i>	Manzanita
CEANO	<i>Ceanothus</i>	Ceanothus
ADFA	<i>Adenostoma fasciculatum</i>	Chamise

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

Disturbance Description

Chaparral burns with high-intensity, stand-replacing crown fires across large acreages in a single event. However, there is a considerable range in the flammability of shrub species (e.g., chamise is "flashier" than manzanita). Large stand-replacement events can interact with seed availability and influence post-fire successional pathways differently than can smaller, less severe fires. Mean fire return intervals are variable and longer than intervals of other chaparral types. Fire intervals can exceed 100yrs, and the specimens can grow to large size.

Season of burning plays a large part in species composition. Occasionally, frost affects mortality and increases fuel buildup.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	108	100	90	150
Moderate (Mixed)				
Low (Surface)				
All Fires	108	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

This type occurs in patches of 100s to 1,000s of acres between patches of forested stands. Flammability of species suggests that the whole patch could burn, but the cool, moist environment could limit fire spread.

Adjacency or Identification Concerns

Closed-cone conifer stands and coastal scrub may occur nearby, in addition to mixed evergreen forest.

Develop is the current primary threat to this type. Fire suppression has not had outstanding effects, except where Douglas-fir has been able to invade. Invasives can be an issue in sandy soils.

Issues or Problems

There are some post-fire issues. Some species have poor recovery despite a large seed bank. (contact Dennis Odion).

Native Uncharacteristic Conditions

Comments

This model can be used for map zones 03 and 04.

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Mid1:CLS	9
Mid1:CLS	10	Late1:CLS	99
Late1:OPN	100	Late1:OPN	999
Late1:CLS	100	Late1:CLS	999

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Mid1:CLS	9
Late1:CLS	100	Late1:CLS	999
Late1:OPN	100	Late1:OPN	999
Mid1:CLS	10	Late1:CLS	99

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	0.004	250	Yes	0
Alternative Succession	Mid1:CLS	Late1:OPN	0.0015	667	Yes	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.01	100	Yes	0
Replacement Fire	Late1:OPN	Early1:ALL	0.007	143	Yes	0
Replacement Fire	Late1:CLS	Early1:ALL	0.01	100	Yes	0

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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ReplacementFire	Early1:ALL	Early1:ALL	0.0040	250	No	0
ReplacementFire	Late1:CLS	Early1:ALL	0.0100	100	Yes	0
ReplacementFire	Late1:OPN	Early1:ALL	0.0070	143	Yes	0
ReplacementFire	Mid1:CLS	Early1:ALL	0.0100	100	Yes	0
AltSuccession	Mid1:CLS	Late1:OPN	0.0015	667	Yes	0

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	A	A	A	A	A	A	A	B	B	B
Shrub	>3.0	A	A	A	A	A	A	A	B	B	B
Tree	0-5	C	C	C	C	C	C	C	C	C	C
Tree	5-10	C	C	D	D	D	D	D	D	D	D
Tree	10-25	D	D	D	D	D	D	D	D	D	D
Tree	25-50	D	D	D	D	D	D	D	D	D	D
Tree	>50	D	D	D	D	D	D	D	D	D	D

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 8 Early Development 1 - All Structures

Upper Layer Lifeform: Shrub

Upper Layer Canopy Cover: 0 - 100%

Upper Layer Canopy Height: Shrub 0m - Shrub 1.0m

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARCTO3	Arctostaphylos	Manzanita	Upper
PHACE	Phacelia	Phacelia	Low-Mid
CRYPT	Cryptantha	Cryptantha	Lower

Description

These stands are 100yrs or older. Replacement fires are rare. Shrubs are large, with herbs in the openings. Oaks (QUAG) can occasionally overtop the shrubs, especially in the south, but usually they are leaning due to salt spray. In the north, PSME is a more likely associate.

Maximum Tree Size Class

Pole 5-9" DBH

Class D 11 Late Development 1 - Open

Upper Layer Lifeform: Tree

Upper Layer Canopy Cover: 0 - 30%

Upper Layer Canopy Height: Tree 5.1m - Tree 50m

Upper Layer Lifeform is not the dominant lifeform

Conifers overtop the dominant shrubs. Shrub cover is the dominant lifeform and canopy closure of the shrubs would be between 51-70% closed, and 3m height. The overtopping conifers usually won't exceed 30% closure, and it's possible to have 30% closure of these conifers.

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARCTO3	Arctostaphylos	Manzanita	Middle
PINUS	Pinus	Pine	Upper

Description

These stands represent marginal conditions. The shrubs are 100yrs old or older. Replacement fire is rare. The shrubs are large, and conifers (*Cupressus*, *Pinus*) have invaded. In extreme situations, the conifers could move the landscape to a forest type. ADFA can disappear as the stand becomes more mesic. Other species include *Pseudotsuga menziesii*, *Cupressus* spp., and *Sequoia sempervirens*.

Maximum Tree Size Class

Medium 9-21"DBH

Model Parameters

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