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Mediterranean California Subalpine Woodland

BpS Model/Description Version: Aug. 2020

Modelers		Reviewers	
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None	None	None	None
None	None	None	None

Vegetation Type

Forest and Woodland

Map Zone

12

Geographic Range

This woodland type occurs in the Blue Mountains and in parts of the Oregon, Washington, and California Cascades. It may sporadically occur throughout the Great Basin, too.

Biophysical Site Description

This type occurs at elevations >7,500ft in the Blue Mountains and Great Basin and >5,000ft in the Cascades. In the southern Sierra Nevada, it may occur as high as 9,500ft. Communities are typically on ridge crests, shoulders, or upper slopes on relatively dry, stony soils, often on south aspects.

Vegetation Description

Lodgepole pine (*P. contorta* var. *murrayana*) is the dominant tree throughout the range of this type but may be displaced by var. *latifolia* in the Great Basin. Other species may be locally dominant. In the Blue Mountains, *P. albicaulis* can be dominant, while in northern California, *P. balfouriana* may dominate. Other species include *P. flexilis*, *P. monitcola*, *Juniperus occidentalis* var. *australis*, *salix* spp., and *Vaccinium uliginosum* as indicators. However, subalpine larch, Engelmann spruce or subalpine fir may also occur. The stands are usually open with canopy cover of <60%. Due to landscape position and thin soils, these types often occur as krummholz forms with wind-pruned, prostrate, and/or shrublike appearance.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
PICO	<i>Pinus contorta</i>	Lodgepole pine
PIAL	<i>Pinus albicaulis</i>	Whitebark pine
ABLA	<i>Abies lasiocarpa</i>	Subalpine fir

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

Disturbance Description

The fire regime in this group is highly variable and difficult to document. Lightning strikes are common on the ridges where these communities occur, but discontinuous fuels limit the spread of most fires and produce fires of highly variable severity. Infrequent severe crown fires in fir

Fire Frequency

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.

Fires in this type can occur in very small patches associated with lightning strikes. Ignitions of this type are probably quite common but typically do not spread beyond 10s to 100s of acres. Much larger fires can occur less frequently when extensive crown fires in subalpine fire forests spread upslope into these pine woodlands.

This type usually occurs above subalpine fir or lodgepole pine (seral to subalpine fir) forest and may occur among patches of alpine meadow and grasslands.

We are uncertain about the fire return intervals (FRIs) and succession rates in the group. Several literature sources indicate FRIs of ~30-90yrs, but the proportion of mixed fires versus stand replacement is unknown.

Native Uncharacteristic Conditions

Succession Classes

[illegible]

Tree	0-5	C	C	C	C	C	B	B	B	B	B
Tree	5-10	C	C	C	C	C	B	B	B	B	B
Tree	10-25	C	C	C	C	C	B	B	B	B	B
Tree	25-50	C	C	C	C	C	B	B	B	B	B
Tree	>50	C	C	C	C	C	B	B	B	B	B

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 25 Early Development 1 - All Structures

Upper-layer lifeform is not the dominant lifeform. Seedling and sapling trees may be present but will generally be dominated by shrubs.

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
VACCI	Vaccinium	Blueberry	Middle
PINUS	Pinus	Pine	Mid-Upper

Description

Resprouting shrubs and herbs dominate. Tree seedlings and saplings are often present at low cover. Scattered old whitebark pine are sometimes present.

Maximum Tree Size Class

Sapling >4.5ft; <5" DBH

Class B 22 Late Development 2 - Closed

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PINUS	Pinus	Pine	Upper
ABLA	Abies lasiocarpa	Subalpine fir	Middle
VACCI	Vaccinium	Blueberry	Lower

Description

Pines and firs are present in the overstory. Some of the pines have ages >100yrs (often much older), while the co-dominant firs are younger, sometimes <100yrs. Understory trees (<30cm DBH) are mostly subalpine fir.

Maximum Tree Size Class

Large 21-33" DBH

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PINUS	Pinus	Pine	Upper
ABLA	Abies lasiocarpa	Subalpine fir	Mid-Upper
VACCI	Vaccinium	Blueberry	Lower

Description

Multi-age whitebark pine occurs, with the overstory containing some trees >100yrs old (often much older). Tree seedlings and saplings are subalpine fir and whitebark pine, with the former predominant. Tree seedlings increase with time since fire. The understory is low shrubs and herbs.

Maximum Tree Size Class

Large 21-33" DBH

Model Parameters**Deterministic Transitions**

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Late1:OPN	99
Late1:OPN	100	Late2:CLS	199
Late2:CLS	200	Late2: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	0.003	333	Yes	0
Replacement Fire	Late1:OPN	Early1:ALL	0.002	500	Yes	0
Insects or Disease	Late1:OPN	Late1:OPN	0.005	200	No	0
Mixed Fire	Late1:OPN	Late1:OPN	0.017	59	No	0
Insects or Disease	Late2:CLS	Late2:CLS	0.005	200	No	0
Replacement Fire	Late2:CLS	Early1:ALL	0.005	200	Yes	0
Mixed Fire	Late2:CLS	Late1:OPN	0.017	59	Yes	0

References

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