

11190

Southern Rocky Mountain Juniper Woodland and Savanna

BpS Model/Description Version: Aug. 2020

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Vegetation Type

Steppe/Savanna

Map Zones

24, 25

Geographic Range

Found throughout the region. This type is usually the lowest elevation tree-dominated type in the area, and is found on lower mountain slopes, mesas and on adjacent plains. Found along the east and south slopes of the southern Rockies and mountains in central Arizona and New Mexico.

Biophysical Site Description

This ecological system occupies the lower and warmest elevations. It is best represented just below the lower elevational range of ponderosa pine and often intermingles with grasslands and shrublands. This system is best described as a savanna that has widely spaced, mature (>150yrs) juniper trees and occasionally *Pinus edulis*.

Vegetation Description

Juniperus monosperma and *Juniperus scopulorum* (at higher elevations) are the dominant tall shrubs or short trees. *Pinus edulis* may be present. Graminoid species are similar to those found in Western Great Plains Shortgrass Prairie (CES303.672), with *Bouteloua gracilis* and *Pleuraphis jamesii* being most common. In addition, succulents such as species of *Yucca* and *Opuntia* are typically present.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
PIED	<i>Pinus edulis</i>	Twoneedle pinyon
JUMO	<i>Juniperus monosperma</i>	Oneseed juniper
JUSC2	<i>Juniperus scopulorum</i>	Rocky mountain juniper
BOGR2	<i>Bouteloua gracilis</i>	Blue grama
PLJA	<i>Pleuraphis jamesii</i>	James' galleta
YUCCA	<i>Yucca</i>	Yucca

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

Disturbance Description

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.

The most common disturbance in this type is very small-scale, either single-tree or small groups. If the conditions are just right, then it will burn whole stands up to 1,000s of acres.

Higher elevation sites of this type borders the juniper steppe type. It is replaced upward by ponderosa pine and/or Gambel oak / Cercocarpus shrubland, and desert scrub on the lower end.

Note that open and closed classes are reversed from the standard in this model (i.e., B/E are open and C/D are closed canopy).

Comments

[illegible]

Class C	8	Mid Development 1 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PIED	Pinus edulis	Twoneedle pinyon	Upper
JUMO	Juniperus monosperma	Oneseed juniper	Upper
JUSC2	Juniperus scopulorum	Rocky mountain juniper	Upper
BOGR2	Bouteloua gracilis	Blue grama	Lower

Description

Mid-development, dense pinyon-juniper woodland; understory being lost.

Maximum Tree Size Class

Medium 9-21"DBH

Class D	6	Late Development 1 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PIED	Pinus edulis	Twoneedle pinyon	Upper
JUMO	Juniperus monosperma	Oneseed juniper	Upper
JUSC2	Juniperus scopulorum	Rocky mountain juniper	Upper
BOGR2	Bouteloua gracilis	Blue grama	Lower

Description

Dense, old-growth stands with multiple layers. Late-development, closed pinyon-juniper forest. May have all-aged, multi-storied structure. Moderate mortality within stand. Occasional shrubs with few grasses and forbs and often much rock.

Maximum Tree Size Class

Large 21-33"DBH

Class E	76	Late Development 1 - Open
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PIED	Pinus edulis	Twoneedle pinyon	Upper
JUMO	Juniperus monosperma	Oneseed juniper	Upper
JUSC2	Juniperus scopulorum	Rocky mountain juniper	Upper
BOGR2	Bouteloua gracilis	Blue grama	Lower

Description

Late-development, open juniper-pinyon stand with savannah-like appearance; mixed grass/shrub/herbaceous community.

Maximum Tree Size Class

None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Mid1:OPN	69
Mid1:CLS	50	Late1:CLS	149
Mid1:OPN	70	Late1:OPN	239
Late1:CLS	195	Late1:CLS	259
Late1:OPN	240	Late1:OPN	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	0.0025	400	Yes	0
Competition or Maintenance	Early1:ALL	Early1:ALL	0.01	100	No	0
Alternative Succession	Early1:ALL	Mid1:CLS	0.015	67	Yes	0
Alternative Succession	Mid1:OPN	Late1:CLS	0.002	500	Yes	0
Replacement Fire	Mid1:OPN	Early1:ALL	0.002	500	Yes	0
Mixed Fire	Mid1:OPN	Mid1:OPN	0.003	333	No	0
Competition or Maintenance	Mid1:OPN	Mid1:OPN	0.007	143	No	0
Surface Fire	Mid1:OPN	Late1:OPN	0.04	25	Yes	0
Surface Fire	Mid1:CLS	Mid1:CLS	0.001	1000	No	0
Mixed Fire	Mid1:CLS	Mid1:CLS	0.001	1000	No	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.002	500	Yes	0
Mixed Fire	Mid1:CLS	Mid1:OPN	0.005	200	Yes	0
Replacement Fire	Late1:OPN	Early1:ALL	0.002	500	Yes	0
Mixed Fire	Late1:OPN	Late1:OPN	0.005	200	No	0
Insects or Disease	Late1:OPN	Late1:OPN	0.005	200	No	0
Surface Fire	Late1:OPN	Late1:OPN	0.04	25	No	0
Surface Fire	Late1:CLS	Late1:CLS	0.0005	2000	No	0
Replacement Fire	Late1:CLS	Early1:ALL	0.0015	667	Yes	0
Mixed Fire	Late1:CLS	Late1:OPN	0.005	200	Yes	0
Insects or Disease	Late1:CLS	Late1:OPN	0.005	200	Yes	0

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