10590

Southern Rocky Mountain Pinyon-Juniper Woodland

BpS Model/Description Version: Aug. 2020

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| --- | --- | --- | --- |
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| None | None | None | None |

Vegetation Type

Forest and Woodland

Map Zones

24, 28

Geographic Range

This biophysical setting (BpS) occurs on dry mountains and foothills in southern Colorado east of the Continental Divide, and in the mountains and plateaus of north-central New Mexico, extending on limestone breaks into the southeastern Great Plains.

Biophysical Site Description

These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. This type is found on many sites, ranging from deep, well-drained soils on nearly flat slopes to shallow, steep, and rocky sites.

Vegetation Description

This type is dominated by JUSC2 and PIED. JUMO may co-dominate or replace JUSC2 at higher elevations. In central New Mexico, JUDE2 is common. Understory layers are variable. The most common shrub associates are ARBI3, QUGA, and CEMO2. It has a sparse to absent understory of grasses, sub-shrubs, and forbs. If JUOS is present, look at BpS 1016, Colorado Plateau.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| PIED | *Pinus edulis* | Twoneedle pinyon |
| JUMO | *Juniperus monosperma* | Oneseed juniper |
| JUSC2 | *Juniperus scopulorum* | Rocky Mountain juniper |
| JUDE2 | *Juniperus deppeana* | Alligator juniper |
| ARBI3 | *Artemisia bigelovii* | Bigelow sage |
| QUGA | *Quercus gambelii* | Gambel oak |

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

Disturbance Description

The fire regime is characterized by somewhat frequent mosaic fire with very infrequent replacement fire (Rondeau 2001).There is frequent fire importation from adjacent types. Some areas have extensive mortality since 2002 due to the drought-induced ips beetle outbreak.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 433 | 29 |  |  |
| Moderate (Mixed) | 199 | 64 |  |  |
| Low (Surface) | 1914 | 7 |  |  |
| All Fires | 127 | 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

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 have replacement fire that burns stands up to thousands of acres. This type may also have mixed-severity fires of tens to hundreds of acres.

Adjacency or Identification Concerns

Issues or Problems

Native Uncharacteristic Conditions

Canopy cover >70% can be considered uncharacteristic for this woodland BpS.

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 | A | A | A | A | A | A | A | A | A | A |
| Shrub | >3.0 | A | A | A | A | A | A | A | A | A | A |
| Tree | 0-5 | A | A | A | A | A | A | A | UN | UN | UN |
| Tree | 5-10 | C | C | C | C | B | B | B | UN | UN | UN |
| Tree | 10-25 | D | D | D | D | B | B | B | UN | UN | UN |
| Tree | 25-50 | D | D | D | D | B | B | B | UN | UN | UN |
| Tree | >50 | D | D | D | D | B | B | B | 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 10 Early Development 1 - All Structures

Upper Layer Lifeform: Tree

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| JUMO | Juniperus monosperma | Oneseed juniper | All |
| PIED | Pinus edulis | Twoneedle pinyon | All |
| JUSC2 | Juniperus scopulorum | Rocky Mountain juniper | All |

Description

Grass/forb/shrub/seedling, usually post-fire.

Class B 4 Mid Development 1 - Closed

Upper Layer Lifeform: Tree

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 |

Description

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

Class C 19 Mid Development 1 - Open

Upper Layer Lifeform: Tree

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PIED | Pinus edulis | Twoneedle pinyon | Upper |
| JUSC2 | Juniperus scopulorum | Rocky Mountain juniper | Upper |
| JUMO | Juniperus monosperma | Oneseed juniper | Upper |

Description

Mid-development, open pinyon-juniper stand with mixed shrub/herbaceous

community in understory.

Class D 67 Late Development 1 - Open

Upper Layer Lifeform: Tree

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| PIED | Pinus edulis | Twoneedle pinyon | Upper |
| JUSC2 | Juniperus scopulorum | Rocky Mountain juniper | Upper |
| JUMO | Juniperus monosperma | Oneseed juniper | Upper |

Description

Late-development, open juniper-pinyon stand with “savannah-like” appearance; mixed

grass/shrub/herbaceous community.

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:OPN | 59 |
| Mid1:OPN | 60 | Late1:OPN | 159 |
| Mid1:CLS | 60 | Late1:OPN | 179 |
| Late1:OPN | 160 | 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** |
| Alternative Succession | Early1:ALL | Mid1:CLS | 0.005 | 200 | Yes | 0 |
| Surface Fire | Early1:ALL | Early1:ALL | 0.005 | 200 | No | 0 |
| Replacement Fire | Early1:ALL | Early1:ALL | 0.005 | 200 | Yes | 0 |
| Insects or Disease | Mid1:OPN | Mid1:OPN | 0.001 | 1000 | No | 0 |
| Replacement Fire | Mid1:OPN | Early1:ALL | 0.002 | 500 | Yes | 0 |
| Mixed Fire | Mid1:OPN | Mid1:OPN | 0.005 | 200 | No | 0 |
| Alternative Succession | Mid1:OPN | Mid1:CLS | 0.005 | 200 | Yes | 0 |
| Replacement Fire | Mid1:CLS | Early1:ALL | 0.0023 | 435 | Yes | 0 |
| Wind or Weather or Stress | Mid1:CLS | Mid1:OPN | 0.007 | 143 | Yes | 0 |
| Insects or Disease | Mid1:CLS | Mid1:OPN | 0.01 | 100 | Yes | 0 |
| Mixed Fire | Mid1:CLS | Mid1:OPN | 0.02 | 50 | 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 | 0.007 | 143 | No | 0 |
| Competition or Maintenance | Late1:OPN | Late1:OPN | 0.01 | 100 | No | 0 |

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