10160

Colorado Plateau Pinyon-Juniper Woodland

BpS Model/Description Version: Aug. 2020

Vegetation Type

Forest and Woodland

Map Zone

17

Geographic Range

This ecological system occurs in dry mountains and foothills of the Colorado Plateau region including the western slope of Colorado to the Wasatch Range, south to the Mogollon Rim, and east into the northwestern corner of New Mexico.

Biophysical Site Description

These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. The system is typically found at lower elevations, ranging from 1,500-2,440m. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay.

Vegetation Description

*Pinus edulis* and/or *Juniperus osteosperma* dominate the tree canopy. *Pinus monophylla* may be present. *Juniperus scopulorum* may co-dominate or replace *Juniperus osteosperma* at higher elevations.

Understory layers are variable and may be dominated by shrubs or graminoids or be absent. Associated species include *Arctostaphylos patula*, *Artemisia tridentata*, *Cercocarpus intricatus*, *Cercocarpus montanus*, *Coleogyne ramosissima*, *Purshia stansburiana*, *Purshia tridentata*, *Quercus gambelii*, *Bouteloua gracilis*, *Pleuraphis jamesii*, or *Poa fendleriana*.

BpS Dominant and Indicator Species

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 mixed-severity fire (mean fire return interval [MFRI] of 150-200yrs) with very infrequent replacement fires (MFRI of 200-500yrs) (Rondeau 2001). Surface fire occurs only in the earliest successional class. There is frequent fire importation from adjacent types.

Weather-related stress thins trees in more closed stands. Insects/disease have a similar effect, with a greater frequency in closed stands than open ones. Competition from grasses and older trees in late-open stands maintains open conditions.

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.

Scale Description

This ecological system occupies small fire-proof sites (1ac+) to mid-elevation mountain slopes >1,000ac. 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 fires that burn stands up to 1,000s of acres. This type may also have mixed-severity fires of 10-100s of acres.

Adjacency or Identification Concerns

This system occurs at higher elevations than Great Basin Pinyon-Juniper Woodland (1019) and Colorado Plateau shrubland systems where sympatric.

Issues or Problems

Native Uncharacteristic Conditions

Comments

Alternative succession is used in the model to represent tree invasion.

Succession Classes

**Mapping Rules**

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 9 Early Development 1 - All Structures

Indicator Species

Description

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

*Maximum Tree Size Class*  
None

Class B 21 Mid Development 1 - Closed

Indicator Species

Description

Mid-development, dense pinyon-juniper woodland; understory is sparse.

*Maximum Tree Size Class*  
Pole 5-9" DBH

Class C 24 Mid Development 1 - Open

Indicator Species

Description

Mid development-open pinyon-juniper stand with mixed shrub/herbaceous community in understory.

*Maximum Tree Size Class*  
Pole 5-9" DBH

Class D 38 Late Development 1 - Open

Indicator Species

Description

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

grass/shrub/herbaceous community.

*Maximum Tree Size Class*  
Medium 9-21"DBH

Class E 8 Late Development 1 - Closed

Indicator Species

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 rock or bare soil.

*Maximum Tree Size Class*  
Medium 9-21"DBH

Model Parameters

Deterministic Transitions

Probabilistic Transitions

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