

Rapid Assessment Reference Condition Model

The Rapid Assessment is a component of the LANDFIRE project. Reference condition models for the Rapid Assessment were created through a series of expert workshops and a peer-review process in 2004 and 2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.

Potential Natural Vegetation Group (PNVG)

R#JUPlse Western Juniper Pumice

General Information

Contributors (additional contributors may be listed under "Model Evolution and Comments")

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Vegetation Type

Woodland

General Model Sources

- Literature
- Local Data
- Expert Estimate

Rapid Assessment Model Zones

- California
- Great Basin
- Great Lakes
- Northeast
- Northern Plains
- N-Cent.Rockies
- Pacific Northwest
- South Central
- Southeast
- S. Appalachians
- Southwest

Dominant Species*

JUOC
FEID
ACOC
PSSP6

LANDFIRE Mapping Zones

1	8
2	9
7	

Geographic Range

This PNVG occurs in central and south-central Oregon. The zone is included in the Mazama Ecological Province as identified by Bailey and others(1994). Soils derived from pumice ash are the common edaphic characteristic of this group. Origins of the pumice sands are Mount Mazama and Newberry Crater (Miller et al 1999).

Biophysical Site Description

This zone represents the largest contiguous pre-settlement western juniper woodlands in central and eastern Oregon. This zone is characterized by poorly developed soils derived from volcanic ash. Soils may be deep to shallow. Rock outcrops are common features.

Vegetation Description

Vegetation in this area is characterized by an open stand of western juniper with an understory of perennial bunchgrasses (Miller et al 1999). Trees are characterized by an open, irregular canopy shape. Portions of the canopy may be dead and spike-topped trees are common. Tree cover rarely exceeds 10%. Tree density is also very low, less than 30 individuals per acre. One standing dead individual may be found per acre, but this is a maximum. A bright yellow lichen (Letharia sp.) can be found on bole and branches throughout the canopy.

Grasses may be found primarily beneath the trees in an halo restricted to the drip line of the canopy. In other areas grasses may be found in the interspace as well as the canopy area.

Bluebunch wheatgrass is thin in the heavier pumice soils in the NW part of the range (north Lake county, OR), and increases to the south and east. A number of shrubs may be found in these stands, but they do not form a continuous vegetation layer. Mountain big sagebrush, rabbitbrush, and bitterbrush are the most common shrubs found.

*Dominant Species are from the NRCS PLANTS database. To check a species code, please visit <http://plants.usda.gov>.

Disturbance Description

Woodlands in this area experienced both large and small scale disturbances. Small-scale fires (less than 5 acres), insects and disease are common disturbances throughout these woodlands. Single trees to small patches of trees are killed by these disturbances throughout the stand on a fairly frequent interval. Large-scale fires (>1,000 ac) are less common, occurring once every 500+ years (Miller et al 1999).

Adjacency or Identification Concerns

This woodland borders mountain big sagebrush, low sagebrush and ponderosa pine plant communities.

Scale Description

Sources of Scale Data Literature Local Data Expert Estimate

Stands are found throughout central and southcentral Oregon. Patches may be 100 to over 10,000 acres in size. The largest patch occurs in central Oregon, east of Bend/Redmond and south of Prineville.

Issues/Problems

Currently, disturbance in this type drives the system to a dominance of rabbitbrush and cheatgrass. These western juniper woodlands may represent a small portion of the landscape, but are ecologically significant.

Model Evolution and Comments

These areas contain some of the largest concentration of ancient trees. Individuals may exceed 2000 years of age. Miller and others (1999) identified one individual just over 1,600 years old. These ancient western juniper woodlands provide important wildlife habitat. Cavities form in older trees and are important for many neotropical migrants. Berries also are important for many wildlife species.

Succession Classes**
Succession classes are the equivalent of "Vegetation Fuel Classes" as defined in the Interagency FRCC Guidebook (www.frcc.gov).

Class A 3%

Early1 PostRep

Description

Herbaceous plants dominate this stage immediately following disturbance. Perennial bunchgrasses dominate the plant community. However, in the first few years following disturbance annual plants may dominated while perennial grasses and forbs recover.

Dominant Species* and Canopy Position

FEID
ACOC3
PSSP6
CHRYS

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	1 %	5 %
Height	no data	no data
Tree Size Class	no data	

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class B 12%

Early1 Open

Description

Shrubs dominate this stage. The composition of the shrub layer will be dependent on soil depth and climatic factors. Rabbitbrush will most likely be the dominant shrub following disturbance. However, big sagebrush, bitterbrush, wax current may also be found.

Dominant Species* and Canopy Position

CHRYS
FEID
PSSP6
ACOC3

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	5 %	10 %
Height	no data	no data
Tree Size Class	no data	

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

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Class C 15%

Early1 Closed

Description

Western juniper seedlings and saplings are present throughout the shrub layer. Western juniper has established below the canopy of the shrub layer. Shrub cover is approaching 20% on more productive sites, but is most likely less than 15%. Herbaceous plants are being suppressed by the increase in woody plants.

Dominant Species* and Canopy Position

CHRY
ARTRV
JUOC
FEID

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	20 %
Height	no data	no data
Tree Size Class	no data	

- Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class D 10%

Mid1 Open

Description

Western juniper forms an even-aged woodland. Trees are characterized by fairly regular conical shapes. Shrubs are being suppressed by the emerging woodland. Herbaceous vegetation is also being suppressed by the competition from woody plants

Dominant Species* and Canopy Position

JUOC
CHRY
ARTRV

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	5 %	10 %
Height	no data	no data
Tree Size Class	no data	

- Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class E 60%

Late1 Closed

Description

Ancient western juniper woodland composed of multiple structural layers. Some western juniper trees have dead portions in their canopies. Canopies are irregular in shape. Young trees can be found in open areas where recent small scale disturbances occurred. FEID and PSSP6 are in decline leaving shallow rooted grasses like POSE.

Dominant Species* and Canopy Position

JUOC
ACOC3

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	35 %
Height	no data	no data
Tree Size Class	no data	

- Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Disturbances

*Dominant Species are from the NRCS PLANTS database. To check a species code, please visit <http://plants.usda.gov>.

Disturbances Modeled

- Fire
- Insects/Disease
- Wind/Weather/Stress
- Native Grazing
- Competition
- Other:
- Other

Historical Fire Size (acres)

Avg: no data
 Min: no data
 Max: no data

Sources of Fire Regime Data

- Literature
- Local Data
- Expert Estimate

Fire Regime Group: 5

- I: 0-35 year frequency, low and mixed severity
- II: 0-35 year frequency, replacement severity
- III: 35-200 year frequency, low and mixed severity
- IV: 35-200 year frequency, replacement severity
- V: 200+ year frequency, replacement severity

Fire Intervals (FI)

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is central tendency modeled. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inverse of fire interval in years and is used in reference condition modeling. Percent of all fires is the percent of all fires in that severity class. All values are estimates and not precise.

	<i>Avg FI</i>	<i>Min FI</i>	<i>Max FI</i>	<i>Probability</i>	<i>Percent of All Fires</i>
<i>Replacement</i>	1000			0.001	33
<i>Mixed</i>	500			0.002	66
<i>Surface</i>					
<i>All Fires</i>	333			0.00301	

References

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