

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)

R1MEVGn California Mixed Evergreen

General Information

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Vegetation Type

Forested

General Model Sources

- Literature
 Local Data
 Expert Estimate

Rapid Assessment Model Zones

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

Dominant Species*

PSME
LIDE3
ARME
QUCH

LANDFIRE Mapping Zones

3 6
4
5

Geographic Range

Northern California Coast Range, Klamath Mountains and Northern Sierra Nevada montane.

Biophysical Site Description

PNVG occurs on all aspects at elevations predominately below 3500 feet elevation. The distribution of the PNVG closely correlates with climate variables of relatively higher precipitation and warmer temperatures. On the eastern extremities of the range the PNVG is mostly confined to north aspects.

Vegetation Description

Species composition is primarily determined by the environmental gradients of temperature and moisture availability. Codominants include Douglas-fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), tanoak (*Lithocarpus densiflorus*), canyon live oak (*Quercus chrysolepis*), and California bay (*Umbellularia californica*). California bay is restricted to the maritime-influenced portions of the range or along river canyons. Coastal live oak (*Quercus agrifolia*) is found in the southern part of the coast range associated with this PNVG. Black oak (*Quercus kelloggii*) is found on drier sites of inland portion of range. Sugar pine (*Pinus lambertiana*) is a common conifer associate and ponderosa pine is occasional in the northern range of this type. In NW California, Port-Orford-cedar is a common riparian conifer associate on ultramafic soils

Disturbance Description

Fire is the dominant disturbance event. The vast majority of fires occur in late summer or early fall and are associated with lightning storms. Human-caused fires are currently a relatively minor component, although Native American burns were frequent and extensive prior to 1850. These fires were frequent (2-4 years) and of low severity. Mosaic fires (mixed severity) are now most common, creating patches of varying age and species composition. Hardwoods typically provide the greatest cover after fire due to root-crown sprouting. Depending upon fire severity many hardwoods will also have epicormic sprouting well into the crown. Species composition, density and inter-specific competition within stands, contributes to multiple pathways

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

following disturbance. In stands with high tanoak cover, tanoak may dominate the stand for many years before conifers can re-establish. Typically it may take 15 years or longer before Douglas-fir can establish and emerge through the hardwood canopy. Other disturbance events include wind storms and landslides. Sudden oak disease (SOD; *Phytophthora ramorum*) is well established in the southern portions of the range of the type and is spreading northward. SOD is often lethal to tanoak, but may effect black oak and some shrub species. Low severity fires favor dominance of large old conifers. Moderate severity fires favor development of multi-aged stands of mixed species composition. High severity fires favor development of hardwood dominated stands. Frequent, low severity fires following a high severity fire will maintain a hardwood dominated stand.

Adjacency or Identification Concerns

Adjacent PNVGs include redwood, oak woodland-grassland, mixed hardwood, big-cone Douglas-fir, Douglas-fir - ponderosa pine, ultramafic mixed conifer and other mixed conifer PNVGs. This may be confused with the cedar-hemlock-Douglas-fir PNVG, but differs by not having western red cedar and western hemlock in the species mix.

This PNVG may be similar to the PNVG R#MEVG from the Pacific Northwest model zone. R#MEVG contains conifer-dominated classes and open structures not present in R1MEVGn.

Scale Description

Sources of Scale Data Literature Local Data Expert Estimate

Fires of mixed severity often are large in area due to the high number of ignition points associated with fire events. The 1977 and 1987 fires on Klamath NF covered approximately 50,000 acres and 75,000 acres respectively. During both of these events, hundreds of ignitions occurred within a 24 hour period.

Issues/Problems

The CA Mixed Evergreen could be split into two variants: (1) Northern California coast range and Klamath Mountains and Northern Sierra lower montane, and (2) Southern California coast range. Literature does not address well the pre-settlement distribution of seral stages in this type as related to fire and other disturbances.

Model Evolution and Comments

In-workshop comments suggested that surface fire in class B might be too high. Aboriginal burning might have been that high, but there isn't any fire history data to support the rate. Review comments also suggested lengthening surface and mixed intervals. Shlisky edited original version to reflect longer non-lethal intervals. State percentages did not change from original model.

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

Class A 15 %

Early1 PostRep

Description

Age < 25 years and <10" DBH. Openings within forest with dense cover of hardwood sprouts (tanoak, madrone, and/or canyon live oak). Sprouting shrubs such as Oregon grape, salal, and rhododendron may be significant. Shrub growth from seed banks, e.g. deer brush (*Ceanothus integerrimus*), can also be high. The reference percent of

Dominant Species* and Canopy Position

LIDE3
ARME
QUCH2
PSME

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	100 %
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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this class could be closer to 25%
(Skinner, 1995).

Class B 50 %

Mid1 Closed

Description

Age = 25 to 150 years. DBH range = 10" to 30". Dense hardwood cover with emergent conifers.

Dominant Species* and Canopy Position

LIDE3
PSME
QUCH2
ARME

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	60 %	100 %
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 C 35 %

Late1 Closed

Description

Age greater than 150 years. Tree diameter (dbh) generally greater than 30" for larger species. Sugar pine also occurs.

Dominant Species* and Canopy Position

PSME
LIDE3
ARME
QUCH2

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	60 %	100 %
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 0 %

Late1 Open

Description

Dominant Species* and Canopy Position

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

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

Class E 0 %

Late1 Closed

Description

Dominant Species* and Canopy Position

QUCH2

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
Height	no data	no data
Tree Size Class	no data	

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Upper Layer Lifeform Upper layer lifeform differs from dominant lifeform.
 Height and cover of dominant lifeform are:
 Herbaceous
 Shrub
 Tree

Fuel Model no data

Disturbances

Disturbances Modeled

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

Fire Regime Group: 3

- 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.

Historical Fire Size (acres)

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

Sources of Fire Regime Data

- Literature
- Local Data
- Expert Estimate

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
<i>Replacement</i>	140	65	700	0.00714	10
<i>Mixed</i>	25	10	33	0.04	58
<i>Surface</i>	45	7	15	0.02222	32
<i>All Fires</i>	14			0.06937	

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