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 2004-2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.

Potential Natural Vegetation Group (PNVG):

R#MCONms   **Mixed Conifer - Eastside Mesic**

General Information

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

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Vegetation Type

Forested

Dominant Species*

ABGR
PSME
PIPO
LAOC

General Model Sources

☑ Literature
☑ Local Data
☑ Expert Estimate

LANDFIRE Mapping Zones

1	8
2	9
7	

Rapid Assessment Model Zones

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

Geographic Range

Whole Eastside of Cascades and throughout the Blue Mountains, Ochoco Mountains, Wallowa/Snake Province.

Biophysical Site Description

This PNVG occurs above 25" precipitation zones in the Blue Mountains, between 25-45" in the Oregon Cascades, and between 20-40" in the Washington Cascades.

Vegetation Description

Includes ABGR, ABCO, and PSME with various amounts of LAOC, PIPO, CADE3, PIEN, or PICO. ABCO replaces ABGR south of McKenzie Pass, Oregon in the Oregon Cascades. Western Larch is absent south of Bend, Oregon. Important understory associates are ASCA3, CLUN, ACTR, LIBO2, VAME, ACCI, BENE, CACH, and PHMA.

Disturbance Description

Fire Regime is mixed (III). Average Fire return intervals range from approximately 45 years at the warm dry end of this PNVG to approximately 100 years at their transitions to ABAM/TSHE or TSME in the Cascades and ABLA2 in the Blue Mountains. Insect and disease interactions are important in the mid and late closed conditions.

Adjacency or Identification Concerns

This PNVG occurs below Subalpine Fir and above Dry Mixed Conifer (Pine Dominated) in the Blue Matins. It occupies sites below Silver Fir/ Western Hemlock or Mountain Hemlock in both the Oregon and Washington Cascades.

This PNVG may be similar to the PNVGs R0GFDF and R0GFLP from the Northern and Central Rockies model zone.

Scale Description

| Sources of Scale Data | ☑ Literature | ☑ Local Data | ☑ Expert Estimate |

Stand Replacement fire occurs in large events covering 1,000 - 10,000 acre patches.

Issues/Problems

Model Evolution and Comments

One reviewer was satisfied with the model but felt that the vegetation description should include the following: "Occurs as a mix of any of the following conifers: PSME, ABGR, ABCO, or PIPO. Various amounts of LAOC, CADE3, PIEN, or PICO. ABCO is prevalent south of McKenzie Pass, Oregon (replacing ABGR in the model). In the Oregon Cascades. Western Larch is absent south of Bend, Oregon. Important understory associates are ASCA3, CLUN, ACTR, LIBO2, VAME, ACCI, BENE, CACH, and PHMA." In this way, this PNVG would successfully include the Douglas fir dominated mixed conifer sites. A parallel distinction may need to be made in the dry mixed conifer (MCON-dy) PNVG, which can have fire intervals less than 20 years. An anonymous reviewer expected more surface fires, and felt that White fir in this type is overlooked. Furthermore, this type may overlook the presence of a red fir type above this in the South Oregon Cascades. Another reviewer suggested that some western hemlock plant associations might belong in this PNVG. Other comments included the observation that root rot and fir engraver outbreaks were not mentioned, but can cause small openings 10-100 acres.

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

Shrub Communities usually dominate following stand replacement disturbance. Important species vary by ecoregion. ACGL, CEVE and PHMA are important in the Blue Mountains. ARPA, CEVE, ACCI, BENE, HODI, and CACH are typical in the Cascades. [Succession to class B after 30 years. Replacement fire MFRI 500 years. Alternate succession to class C (probability/yr 0..2).]

Indicator Species* and Canopy Position

CEVE
ARPA
ACCI
PHMA

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	40 %	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 B   40%

Mid1 Closed

Description

This class is the major direction of succession from class A. Class B is Pole to Small in size (5-20"). These sites have prolific reproduction and quickly close. Class B is dominated by various mixtures of shade tolerant and intolerant conifers. Species vary by ecoregion. PSME and/or ABGR have higher cover than LAOC, PIPO, PIMO or PICO. [Succession to E after 70 years in this class.   Replacement fire MFRI 250 years. Mixed fire opens it up to class C (MFRI 250 years). Other disturbances (insect/disease, wind/stress) also open up the stands class C (probability/yr .003).]

Indicator Species* and Canopy Position

PSME
ABGR
PIPO
LAOC

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	55%	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   15%

Mid1 Open

Description

Small amounts of this PNVG do not immediately close or are created by mixed fire and insect/disease in Class B. Class C is Pole -Small in size (5-20") with Shade intolerant species are dominant. PIPO, LAOC are more important components than PSME and ABGR or ABCO in this Class. [Succession to class D after 50 years in this class. Replacement fire MFRI 100 years. Surface (MFRI 50 years) and Mixed (MFRI 60-70 years) fires maintain the patch in class C. If there has been no fire for 40 years, the patch will transition to class B.]

Indicator Species* and Canopy Position

PIPO
LAOC
PSME
ABGR

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0%	55%
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 %

Late1 Open
Description

Class D is created by mixed fire and insect/ disease in class E or development of Class C. Size of this class is large (over 20") but canopy closure is low and sites may be single or multiple canopied. PSME, PIPO, and LAOC are more important than ABGR or ABCO in this Class. [Succession to class E after 50 years in this class. Replacement fire MFRI 350 years. Mixed fire MFRI 100 years maintains in class D. Insect/disease (probability/yr 0.008) attacks the older trees and transitions the stand to class C.]]

Indicator Species* and Canopy Position

PSME
PIPO
LAOC
ABGR

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	55 %
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   20 %

Late1 Closed
Description

Large trees dominate class E. Stands typically have multiple canopies. Species composition may be mixed shade tolerant species or include minor amounts of shade intolerant pines or larch. [Replacement fire MFRI 150 years. Mixed fire (MFRI 100 years) opens up the stand and transitions it to class D. Insect/disease is more likely to merely open the stand up to class D, but older trees are more at risk (transitions to class C.]

Indicator Species* and Canopy Position

ABGR
PSME
PIPO
LAOC

Upper Layer Lifeform
☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model   no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	55 %	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:

Disturbances

Non-Fire Disturbances Modeled

☑ 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

Historical Fire Size (acres)

Avg:
Min:
Max:

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 the 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.

Sources of Fire Regime Data

☑ Literature
☑ Local Data
☑ Expert Estimate

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	200			0.005	35
Mixed	150			0.00667	47
Surface	400			0.0025	18
All Fires	71			0.01417	

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