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#DFHEwt **Douglas-fir Hemlock-Wet Mesic**

General Information

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Vegetation Type

Forested

Dominant Species*

PSME
TSHE
THPL

General Model Sources

- [x] Literature
- [ ] Local Data
- [x] Expert Estimate

LANDFIRE Mapping Zones

1 8
2 9
7

Rapid Assessment Model Zones

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

Geographic Range

This type occupies low montane elevations of western Washington and Oregon. In Washington it occurs on the north, south and west side of the Olympic Peninsula and along the low to moderate elevation western slopes of the Cascade Range. In Oregon this type is found in mesic to wet microsites, on northerly slopes and upper elevations of the Cascades, and on the west side and upper east side of the Coast Range.

Biophysical Site Description

Soils vary from well-drained to clay. This type commonly occupies mesic to wet to cool microsites on all aspect at elevations up to 4000 feet in elevation.

Vegetation Description

Douglas-fir and western hemlock dominate this PNVG. Western red cedar is a common associate. Common understory herbs and shrubs include Devil's club, various huckleberry species, vine maple, rhododendron, Oregon oxalis, bear grass, swordfern and bunchberry dogwood.

Disturbance Description

Fire plays a major role in infrequently resetting landscapes within this PNVG, with intervals ranging roughly from 300 to 800 years. Mixed severity fires occur less frequently in this regime than in the Douglas-fir Hemlock mesic dry regime.

Insects, pathogens and windthrow occur in this type at variable intervals, creating fine scale variability on the landscape.

Adjacency or Identification Concerns

The Silver fir low type bounds this PNVG at higher elevations, and the Douglas-fir Hemlock mesic dry can bound it at lower elevations and drier microsites.

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

Scale Description

Sources of Scale Data ☐ Literature ☐ Local Data ☐ Expert Estimate

Although fires are often large (100s-1000 acres), fire severity patterns are quite variable, ranging from underburns to high severity patches within single events. Wind, insects and pathogens can create gaps of various sizes.

Issues/Problems

Model Evolution and Comments

Succession Classes

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

Class A 5%

Early1 PostRep

Description

Post-stand replacement community consisting of herbs, and/or shrubs such as bracken fern, fireweed, ceanothus. Douglas-fir, western hemlock and western red cedar seedlings may be present.

Indicator Species* and Canopy Position

PTERI
CHAN9
PSME
TSHE

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	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 15%

Mid1 Closed

Description

Closed-canopy young forest stands with trees up to 20 inches in diameter, usually conifers (especially Douglas-fir and western hemlock), but with hardwoods in some cases (e.g., bigleaf maple, red alder). Understory tends to be minimal because of low light levels.

Indicator Species* and Canopy Position

PSME
TSHE
ALRU2
ACMA3

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 1%

Mid1 Open

Description

These are young forest stands that have been opened up by mixed-severity fire. Trees are up to 20 inches in diameter. The dominant tree species is Douglas-fir, although western hemlock may be present. Shrubs such as huckleberry, rhododendron, vine

Indicator Species* and Canopy Position

PSME
GASH
VACCI
POMU

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	20 %	60 %
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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maple and Devils club dominate the understory, although herbs such as Oregon oxalis, , and swordferrn may have appreciable cover.

Class D 4 %

Late1 Open

Description

These are mature to old-growth forest stands that have been opened up by mixed-severity fire. The largest trees are greater than 20 inches in diameter. The degree of canopy opening may be sufficient to permit recruitment of shade-intolerant species (e.g., Douglas-fir), or may only permit recruitment of western hemlock and other shade-tolerant species. This class has a diverse understory with essentially the same species as class E.

Indicator Species* and Canopy Position

PSME
TSHE
GASH
POMU

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	20 %	60 %
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 75 %

Late1 Closed

Description

These are mature to old-growth forest stands dominated by large individuals (>20 inches in diameter) of Douglas-fir and western hemlock, with advanced regeneration of western hemlock. Understories can be a mixed of shrubs such as huckleberry and vine maple, and herbs such as Oregon oxalis, bunchberry dogwood, swordfern, and twinflower.

Indicator Species* and Canopy Position

PSME
TSHE
GASH
MANE2

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:

Disturbances

Non-Fire Disturbances Modeled

- [x] Insects/Disease
- [ ] Wind/Weather/Stress
- [ ] Native Grazing
- [ ] Competition
- [ ] Other:
- [ ] Other:

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

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

- [x] Literature
- [ ] Local Data
- [ ] Expert Estimate

	Avg FI	*Min FI*	*Max FI*	*Probability*	*Percent of All Fires*
Replacement	400			0.0025	71
Mixed	1000			0.001	28
Surface					
All Fires	286			0.00351	

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