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#DFHEdy Douglas-fir Hemlock-Dry Mesic

General Information

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

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Vegetation Type

Forested

Dominant Species*

PSME
TSHE
THPL
ALRU

General Model Sources

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

LANDFIRE Mapping Zones

1 2 7 8 9

Rapid AssessmentModel 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 east side of the Olympic Peninsula and along the Ross Lake drainage of the North Cascades. In Oregon this type is found along the upper foothills of the Willamette Valley, and in the eastern Coast Range and western Cascades in Oregon.

Biophysical Site Description

Soils are typically well drained. This type is most common on warm, southerly aspects up to 4000 ft in elevation.

Vegetation Description

Douglas-fir is the most common tree species found in this type. Western hemlock, western red cedar, grand fir, white pine, lodgepole pine, chinquapin are seral associates of this type.

Common understory herbs and shrubs include salal, dwarf Oregon grape, rhododendron, twinflower, vanilla leaf, and swordfern.

Disturbance Description

Fire is the major disturbance process. Mixed severity fires are more common than stand replacing events, occurring at 50-150 year frequencies. Stand replacement fires that reset large landscapes occur at 250-500 year frequencies. This fire regime is largely responsible for the dominance of Douglas-fir in these landscapes.

Insects, pathogens and windthrow also occur in this type at variable intervals, often interacting with drought and other extreme weather conditions. These disturbances affect smaller areas than fire.

Adjacency or Identification Concerns

This type is bounded to the south in the Cascades, in lower elevations in the Willamette Valley, and in drier

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

microsites in the Ross Lake drainage by the mixed conifer type. The Douglas-fir Hemlock mesic/wet type occurs upslope and in moist topographic positions within this type's range.

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

One reviewer suggested that red alder (ALRU2) occurs at wetter sites, and may not be present throughout the PNVG.

*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.

Dominant 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	0 %	70 %
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., chinquapin, bigleaf maple, or cascara). Understory tends to be minimal because of low light levels.

Dominant Species* and Canopy Position

PSME
TSHE
ALRU2
ACMA

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:

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Class C 5 %

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. Shrubs such as salal and Oregon grape dominate the understory, although herbs such as vanilla leaf, twinflower, and swordferrn may have appreciable cover.

Dominant Species* and Canopy Position

PSME
GASH
MANE2
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 D 15 %

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 western white pine), 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.

Dominant 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	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 60 %

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 salal and Oregon grape, and herbs such as vanilla leaf, twinflower, swordfern, and path finder.

Dominant 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:

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

Disturbances

Disturbances Modeled

- [x] Fire
- [x] 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

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

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.

	Avg FI	*Min FI*	*Max FI*	*Probability*	*Percent of All Fires*
Replacement	300	250	500	0.00333	25
Mixed	100	50	150	0.01	75
Surface					
All Fires	75			0.01334	

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