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#DFWV **Douglas-fir Willamatte Valley Foothills**

General Information

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

Modelers		Reviewers	
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Vegetation Type

Forested

Dominant Species*

PSME
TSHE
ABGR

General Model Sources

- [x] Literature
- [x] 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 forested type occurs in the foothills around the rim of the Willamette Valley, Oregon. It more abundant at the south end of the valley.

Biophysical Site Description

The type occurs in the lower hills of both the Coast range and Cascades. Precipitation averages 50-55 in per year. Elevation 1000-1800 ft.

Vegetation Description

Douglas-fir with western hemlock and grand fir, particularly in later seral stages. Willamette Valley grasses may be present in the post-replacement and open classes. Dry sites may contain Incense cedar.

Disturbance Description

Fire Regime III overall. Mix of IIIA and I. Burns more frequently than Douglas-fir-Hemlock. Since the type spans between the frequent fires of the Willamette Valley grasslands and forested hills, the range of fire return is wide.

Adjacency or Identification Concerns

Affected by fires in adjacent oak woodland.
Burns more frequently than Douglas-fir-Hemlock PNVG.

Scale Description

Sources of Scale Data [ ] Literature [x] Local Data [x] Expert Estimate

Relatively small abundance. Probably too finely distributed for the rapid assessment.

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

Issues/Problems

Louisa Evers suggested that wind-damage is significant and should be modeled.

Both reviewers thought that the fire freq was too high. One thesis showed an MFRI of 28 years (cross-dated) in the southern Willamette Valley foothills, while another showed 50-60 in the Coburg Hills (not cross-dated). The cross-dated fire history informed this model, and may reflect the detection of lower severity fires than those that non-cross-dated results may show.

Model Evolution and Comments

Can also be thought of as the driest Douglas-fir-Hemlock type. Native American burning may have increased the frequency of fire in certain locations, especially at lower elevations where the grasslands fire regime impinges.

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

Grasses, forbs, and seedling to pole-sized Douglas-fir.

Indicator Species* and Canopy Position

PSME

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	90 %
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

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

Fuel Model no data

Class B 15 %

Mid1 Closed

Description

>40% pole- to small-sized Douglas-fir with some grand fir and western hemlock. In certain conditions, growth rates may produce larger diameters than noted.

Indicator Species* and Canopy Position

PSME
TSHE

ABGR

Structure Data (for upper layer lifeform)

	Min	Max
Cover	40 %	100 %
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

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

Fuel Model no data

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Class C 10 %

Mid1 Open

Description

<40% Douglas-fir pole-sized to small-sized with open understory (including grand fir and western hemlock). In certain conditions, growth rates may produce larger diameters than noted.

Indicator Species* and Canopy Position

PSME
TSHE
ABGR

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	40 %
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

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

Fuel Model no data

Class D 30 %

Late1 Open

Description

<40% medium and large Douglas-fir with open understory of western hemlock and grand fir.

Indicator Species* and Canopy Position

PSME
TSHE
ABGR

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	40 %
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

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

Fuel Model no data

Class E 30 %

Late1 Closed

Description

>40% medium and large, even-aged Douglas-fir with some grand fir and western hemlock in overstory, little understory.

Indicator Species* and Canopy Position

PSME
TSHE
ABGR

Structure Data (for upper layer lifeform)

	Min	Max
Cover	40 %	90 %
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

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

Fuel Model no data

Disturbances

Non-Fire Disturbances Modeled

☐ Insects/Disease
☐ Wind/Weather/Stress
☐ Native Grazing
☐ Competition
☐ Other:
☐ Other:

Fire Regime Group: 1

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

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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	150	100	400	0.00667	18
Mixed	90	40	150	0.01111	29
Surface	50	20	80	0.02	53
All Fires	26			0.03778	

References

Kertis, J. 2004. Valley fringe fire history study. Unpub. Data on file, USDA Forest Service. Siuslaw National Forest, Corvallis, OR

Robbins, D. 2005. Temporal and Spatial Variability of Historic Fire Frequency in the Southern Willamette Valley Foothills of Oregon. M.S. Thesis, Oregon State University.

Weisberg, P.J. 1998. Fire History, Fire Regimes and Develoment of Forest Structure in the Central Western Oregon Cascades. PhD dissertation. Oregon State University. 256 pp