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)

R0WLLPDF Western Larch, Lodgepole Pine, and Douglas-Fir Mix

General Information

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

Modelers

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Vegetation Type

Forested

Dominant Species*

LAOC
PSEU
PICO
ABLA

General Model Sources

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

LANDFIRE Mapping Zones

10 21
19 22
20 29

Rapid AssessmentModel Zones

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

Geographic Range

Western Montana and northern Idaho, west of the Continental Divide.

Biophysical Site Description

Montane and lower subalpine zones, approximately 3000-6000 feet primarily on north-facing aspects west of the Continental Divide. Lower subalpine sites typically occur as relatively moist subalpine fir habitat types (e.g. ABLA/CLUN) (Pfister et al. 1977).

Vegetation Description

Western larch occurs on more moist/northerly Douglas-fir habitat types and more productive subalpine fir habitat types. Larch is mixed in with seral Douglas-fir, lodgepole pine, or ponderosa pine in the overstory. Long fire intervals promote the development of Engelmann spruce and subalpine fir stands with an increase in root disease. Mountain pine beetles often reduce the lodgepole pine component, possibly promoting mixed severity fires.

Disturbance Description

Fire Regime Group III, with a mean fire return interval of approximately 70 years. Mountain pine beetle will reduce canopy cover of lodgepole pine.

Adjacency or Identification Concerns

Equates with Pfister et al. (1977) moist Douglas-fir and subalpine fir habitat types. It may be difficult to differentiate this PNVG from R0GFLP and R0GFDF, as the three types commonly overlap. The other two PNVGs are limited to grand fir habitat types.

Scale Description

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

Scale can be in small patches of 50 acres but generally is hundreds to thousands of acres (due to stand replacing fires requiring dry conditions or being wind driven).

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

Issues/Problems

Model Evolution and Comments

Workshop code was WLLPDF.

Split out from old (FRCC Guidebook) SPFI1 and DFIR2. Pure stands of western larch occur in northwest Montana and Northern Idaho, and it occurs in mixed stands on edge of range.

Review comments incorporated on 3/16/2005. As a result of the peer-review process, this type was modified to increase the amount of mixed severity fire to 70% (from 60%) and the age ranges of late-development classes were adjusted to begin at 80 years (from 65 years). The end result was more late-development conditions (E) and more closed conditions (B and E).

*Succession Classes***

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

Class A 10 %

Early1 PostRep

Description

Young larch and lodgepole establish on site with some Douglas-fir.

Dominant Species* and Canopy Position

LAOC
PSEUD
PICO
ABLA

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:

Class B 50 %

Mid1 Closed

Description

Larch, lodgepole and Douglas-fir (poles to medium trees) continue to dominate. Without disturbance, Douglas-fir can increase in understory. Subalpine fir may be present.

Dominant Species* and Canopy Position

LAOC
PSEUD
PICO
ABLA

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:

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Class C 15 %

Mid1 Open

Description

Larch, with some Douglas-fir, lodgepole, or subalpine fir. Open condition is created by disturbance (fire, insect, or disease), which opens up more closed conditions (i.e., B or E).

Dominant Species* and Canopy Position

LAOC
PSEUD
PICO
ABLA

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	40 %
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 5 %

Late1 Open

Description

Large larch and Douglas-fir, favored by disturbance. Subalpine fir and lodgepole will be reduced or eliminated by fire or insect or disease.

Dominant Species* and Canopy Position

LAOC
PSEUD
PICO
ABLA

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	40 %
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 diameter larch and Douglas-fir dominate overstory, subalpine fir is present in the middle and understory. Lodgepole pine will be largely absent.

Dominant Species* and Canopy Position

LAOC
PSEUD
PICO
ABLA

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:

Disturbances

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Disturbances Modeled

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

Historical Fire Size (acres)

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

Sources of Fire Regime Data

- [x] Literature
- [x] Local Data
- [x] 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	200	50	250	0.005	33
Mixed	100	20	140	0.01	67
Surface					
All Fires	67			0.01501	

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