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)

R3SPFI **Spruce - Fir**

General Information

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

Modelers		Reviewers	
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Vegetation Type

Forested

Dominant Species*

PIEN
ABLA
PICO
POTR

General Model Sources

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

LANDFIRE Mapping Zones

14 24 28
15 25
23 27

Rapid AssessmentModel Zones

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

Geographic Range

Colorado, northern New Mexico and parts of Arizona and Utah. Elevations typically range from 9500-11,000 feet.

Biophysical Site Description

PNVG occurs in the subalpine zone on gentle to moderately steep terrain (e.g., 10-60% slope).

Vegetation Description

The overstory is typically dominated by Engelmann spruce and/or subalpine fir.. Other tree species may include lodgepole pine, aspen, limber pine, bristlecone pine, and Douglas-fir. Cork bark fir occurs in the southern part of the zone. Lodgepole pine does not occur in this PNVG south of 38 degrees 30 minutes (approximate). Common understory species include Vaccinium myrtillus, Polemonium pulchemimum, Ligularia, and Erigeron eximus.

Disturbance Description

Fire Regimes V and IV: Primarily long-interval (e.g., 150-300 yr) stand replacement fires, with very minor amount of terrain influenced by mixed severity fires. Disturbances also include insect/disease and windthrow events.

Adjacency or Identification Concerns

This PNVG may be similar to the PNVGs R0SPFI from the Northern and Central Rockies model zone and R2SPFI from the Great Basin model zone.

Scale Description

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

Patch sizes vary but are mostly in the hundreds of acres, with occasional very large patches (disturbances) in the thousands of acres. There may be frequent small disturbances in the 10s of acres or less.

Issues/Problems

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

Model Evolution and Comments

This model is based on the original FRCC model SPFI 5 with quantitative changes made in distribution of vegetation classes and description of vegetation.

Peer review suggested aligning this PNVG with similar types from other modeling zones. As a result, this type was remodeled and more closely reflects models for high elevation spruce-fir in other zones.

*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

Early succession after moderately long- to long interval replacement fires

Dominant Species* and Canopy Position

PIEN
ABLA

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	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

Class B 15 %

Mid1 Closed

Description

Shade tolerant- and mixed conifer saplings to poles (>60% canopy cover)

Dominant Species* and Canopy Position

PIEN
ABLA

Structure Data (for upper layer lifeform)

	Min	Max
Cover	50 %	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

Class C 20 %

Mid1 Open

Description

Primarily moderately tolerant saplings to poles (1" - 6.9" dbh) and <50% canopy cover

Dominant Species* and Canopy Position

PIEN
ABLA

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	50 %
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 D 20 %

Late1 Open

Description

Poles (5" dbh+)- and larger diameter moderately shade tolerant conifer species (<50% canopy cover) in small- to moderate size patches, generally on south aspects

Dominant Species* and Canopy Position

PIEN
ABLA

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	50 %
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 40 %

Late1 Closed

Description

Pole- and larger diameter moderately to shade tolerant conifer species (>50% canopy cover), in moderate to large size patches, all aspects

Dominant Species* and Canopy Position

PIEN
ABLA

Structure Data (for upper layer lifeform)

	Min	Max
Cover	50 %	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

Disturbances

Disturbances Modeled

☑ Fire
☑ 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

☐ Literature
☐ Local Data
☑ Expert Estimate

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

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	210	150	300	0.00476	96
Mixed	5000	35	100	0.0002	4
Surface					
All Fires	201			0.00497	

References

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