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)

R0SPFI **Upper Subalpine Spruce-Fir - Central Rockies**

General Information

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

Modelers

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Vegetation Type

Forested

Dominant Species*

PIEN
ABLA
PICO

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

Central Rockies (Wyoming).

Biophysical Site Description

Upper subalpine zone in the central Rockies.

Vegetation Description

Engelmann spruce and subalpine fir dominate on most aspects with lodgepole pine comprising a greater component on dryer sites or earlier successional stages. Vaccinium scoparium is a common understory associate.

Disturbance Description

Fire Regime Group V is most likely, primarily long-interval (e.g.200+ year) stand replacement fires. In some areas, spruce beetle can influence successional stage, species composition and stand density. Spruce beetle may act to accelerate succession.

Adjacency or Identification Concerns

Adjacent to lower subalpine forests (Lodgepole-spruce-fir) and to krummholz, subalpine meadows, and alpine tundra types. Has more precipitation and longer winters than lower subalpine types.

Climate (severely dry conditions) is the primary driver of fire regimes in this system. Long-term changes in climate as well as interannual climate variability will affect the frequency of fire in this system.

This PNVG may be similar to the PNVGs R#SPFI from the Pacific Northwest model zone, R2SPFI from the Great Basin model zone, and R3SPFI from the Southwest model zone.

*Dominant 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

Fires could range from 1,000's to 10,000's of acres. Variability of climate, topography and other site factors can result in a wide range of representation of successional stages on the landscape. Equilibrium landscapes are not likely to develop in areas <500,000 acres.

Issues/Problems

Model Evolution and Comments

Workshop code was USAL3.

Peer review was incorporated on 4/30/2005. Reviewers agreed that the model parameters were satisfactory and slight modifications were made to enhance the description.

*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

Early succession stage after long interval replacement fires. There can be extended periods (as long as 300 years) of grass/seedling stage after fire replacement events. This stage may occupy 3-50% of the landscape depending upon climatic conditions and variability of fire return intervals

Dominant Species* and Canopy Position

PIEN
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 25 %

Mid1 Closed

Description

High density saplings to poles. May occupy 5-50% to of the landscape.

Dominant Species* and Canopy Position

PIEN
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:

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

Class C 20 %

Late1 Open

Description

Low density saplings to poles. Primarily occurs after insects, disease or weather stress thins denser stands. This occupies 3-50% of landscape.

Dominant Species* and Canopy Position

PIEN
PICO
ABLA

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 40 %

Late1 Closed

Description

Pole- to larger diameter trees. This stage occupies 15 to 50% of the landscape.

Dominant Species* and Canopy Position

PIEN
ABLA

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

Class E 0 %

Late1 Closed

Description

Dominant Species* and Canopy Position

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
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

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

Disturbances Modeled

- [x] Fire
- [x] Insects/Disease
- [x] 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
- [x] 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	300	100	600	0.00333	99
Mixed					
Surface					
All Fires	300			0.00335	

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