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):

R3PICOif **Central Rocky Mountains Lodgepole Pine - Infrequent Fire**

General Information

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

Modelers

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Vegetation Type

Forested

Dominant Species*

PICO
VACCI

General Model Sources

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

LANDFIRE Mapping Zones

14 24 28
15 25
23 27

Rapid Assessment Model Zones

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

Geographic Range

South-central Wyoming, south in the Front Ranges and interior ranges to Highway 50, west to the White River Plateau and northern Gunnison Basin. Also occurs in the Northern Rockies, north of the Red Desert.

Biophysical Site Description

Subalpine cold climate, relatively moist but water usually not available in liquid form, usually excessively well-drained, residual or glacial, coarse fraction 20-30% in soil, shallow soil (effectively 1-2 in) to broken rock or bedrock. Precipitation 400-900 mm/yr, soil pH usually slightly basic.

Vegetation Description

Lodgepole pine, usually persistent and not being replaced by other trees, although sometimes aspen may be seral to it. Sometimes with sparse understories. Tree cover averages 70-90% at later stages.

Disturbance Description

Fire rotation for surface fires is 7,587 yr and 346 yr for crown fires (Buechling and Baker 2004).

Adjacency or Identification Concerns

Persistent lodgepole pine stands in the Montane and lower Subalpine Zones, that are on less well-drained soils, are usually seral to Douglas-fir (or spruce-fir) or disclimaxes in Douglas-fir (or Spruce-fir) potential groups.

Scale Description

Sources of Scale Data ☐ Literature ☑ Local Data ☑ Expert Estimate

Isodiametric stands, mostly large (100s of acres), sometimes very large (1000s of acres). Patches of this PNVG usually correspond to patches of habitat (well-drained to excessively well-drained soils) in the subalpine zone.

Issues/Problems

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

Model Evolution and Comments

Quality control revealed one rule violation which was deleted with minor affects on results (5% change in classes C and D).

Peer review agreed with modeled parameters.

Basic model developed by local expert team on Grand Mesa-Uncompahgre-Gunnison National Forest, October 2003. Four-stage model.

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 All Structures

Description

Stand initiation (RMLANDS): Grasses, forbs, low shrubs, lodgepole seedlings-saplings. This class doesn't last long, young lodgepole grows fast. If aspen is present, it grows faster and dominates lodgepole. Cover of trees (seedlings-saplings) varies widely.

Indicator Species* and Canopy Position

VASC
VAMYO
CAGE2
PICO

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	80 %
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

Stem exclusion (RMLANDS): Moderate to dense pole-sized trees, sometimes very dense (dog-hair); longest time in this class without disturbance. Aspen usually not present.

Indicator Species* and Canopy Position

PICO
VASC
CAGE2
VAMYO

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	60 %	95 %
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 30 %

Mid2 Open

Description

Understory reinitiation (RMLANDS): Variety of lodgepole size classes, some mature trees, often somewhat patchy. If aspen is present, lodgepole usually dominates it.

Indicator Species* and Canopy Position

PICO
VAMYO
VASC
CAGE2

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	30 %	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 D 35 %

Late1 Open

Description

Many mature lodgepole pine, somewhat patchy, variety of lodgepole size classes, open canopies overall but patches of denser trees.

Indicator Species* and Canopy Position

PICO
VASC
VAMYO
CAGE2

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	50 %	80 %
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 0 %

Late1 Closed

Description

Indicator Species* and Canopy Position

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
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

Non-Fire Disturbances Modeled

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

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

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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

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

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	300	250	500	0.00333	82
Mixed					
Surface	1400	1000	8000	0.00071	18
All Fires	247			0.00406	

References

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