

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)

R3RIPAfo Riparian Forest with Conifers

General Information

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

Modelers

Barry C. Johnston bcjohnston@fs.fed.us

Reviewers

William L. Baker bakerwl@uwyo.edu

Vegetation Type

Forested

General Model Sources

- Literature
- Local Data
- Expert Estimate

Rapid Assessment Model Zones

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

Dominant Species*

POAN

POTR1

PIPU

POTR1

LANDFIRE Mapping Zones

14	24	28
15	25	
23	27	

Geographic Range

Common through the Rocky Mountains from southern Canada through Montana, Idaho, Wyoming, Utah, and Colorado to northern New Mexico.

Biophysical Site Description

Bottomland or toeslope landforms, also on benches with perched water tables. Soils are somewhat well-drained, fluvaquentic (water-deposited in sorted layers) for cottonwood stands, coarse to very coarse for spruce stands, intermediate in mixed stands. Often associated with a stream channel, stream gradient usually >2.5%.

Vegetation Description

Includes: 1) Riparian forest types with cottonwood alone dominant, sometimes with aspen mixed; 2) Riparian forest types with cottonwood mixed with spruce; 3) Riparian forest types dominated by spruce alone. "Spruce" is usually blue spruce at middle elevations in the mountains in this geographic region, but may include Engelmann spruce or hybrid spruce (PIEN x PIGL) farther north or at upper elevations. "Cottonwood" is often narrowleaf cottonwood throughout the Rockies, but may also include the stable hybrid between narrowleaf and one of the broadleaf cottonwoods (*Populus acuminata* on the eastern slope in Colorado); may also include *Populus trichocarpa* to the north of this region. In cottonwood stands, willows include Pacific willow (SALUL) and several others; there are many other shrub, graminoid, and forb species that may be prominent in this type, not possible to list them all here. Willow riparian and herbaceous wetlands must be modeled separately -- they would have very different reference fire regimes.

Disturbance Description

In spruce stands, "hot crown fires occur over long intervals, perhaps 300-400 yr" (Johnston et al. 2001). In cottonwood stands, fire does not often occur, but hot fires carrying through adjacent tree stands can top-kill cottonwood stands (Schoonover Fire of 2002).

Adjacency or Identification Concerns

*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

Long, narrow or narrow-oblong sites, varying from 0.1-2 mi wide.

Issues/Problems

Model Evolution and Comments

Peer review agreed with model parameters.

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

Willows, serviceberry, alder, snowberry, other shrubs, seedlings-saplings of cottonwood and/or spruce. Or pole-sized tree stand with shrubs or not.

Dominant Species* and Canopy Position

ALINT
SALIX
AMEL

Upper Layer Lifeform

- Herbaceous
- Shrub
- Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
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 5 %

Mid1 Closed

Description

Tall, closed-canopy cottonwood stand, with depleted shrubs: no tall shrubs and shorter shrubs all unpalatable or resistant.

Dominant Species* and Canopy Position

POAN3
SYMPH

ROWO

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:

Class C 15 %

Mid2 Cwood-Spr

Description

Mixed cottonwood and spruce stand, with cottonwood >40% of tallest layer; or cottonwood 40-60% alone.

Dominant Species* and Canopy Position

POAN3
PIPU
PIEN

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:

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Class D 35 %

Late1 Closed

Description

Late-seral closed-canopy (>60%) cottonwood stand, with several layers of shrubs.

Dominant Species* and Canopy Position

POAN3
SALIX

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
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 %

Late2 Closed

Description

Late-seral closed-canopy (>60% cover) spruce stand, sometimes with some tall or medium shrubs in patches in the stand (dogwood, alder, honeysuckle).

Dominant Species* and Canopy Position

PIPU
SWSE
ALINT

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
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

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.

Historical Fire Size (acres)

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

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement	435	300	550	0.0023	99
Mixed					
Surface					
All Fires	435			0.00232	

Sources of Fire Regime Data

- Literature
- Local Data
- Expert Estimate

References

De Velice, Robert L.; John A. Ludwig; William H. Moir; and Frank Ronco, Jr. 1986. A classification of forest habitat types of northern New Mexico and southern Colorado. General Technical Report RM-131, 59 pp. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.

Hansen, Paul L.; Steve W. Chadde; and Robert D. Pfister. 1988. Riparian dominance types of Montana.

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

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Johnston, Barry C.; Laurie Huckaby; Terry J. Hughes; and Joseph Pecor. 2001. Ecological types of the Upper Gunnison Basin: Vegetation-Soil-Landform-Geology-Climate-Water land classes for natural resource management. Technical Report R2-RR-2001-01, 858 pp. Lakewood, CO: USDA Forest Service, Rocky Mountain Region.

Kovalchik, Bernard L. 1987. Riparian zone associations: Deschutes, Ochoco, Fremont, and Winema National Forests. Region 6 Ecology Technical Paper [No.] 279-97, 171 pp. Portland, OR: USDA Forest Service, Pacific Northwest Region.

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