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)

R5SOFPrf **Southern Floodplain - Rare Fire**

General Information

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

Modelers		Reviewers	
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Vegetation Type

Forested

Dominant Species*

TADI2 ACRU
TAAS FRPE
NYAQ SANI
QULY

General Model Sources

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

LANDFIRE Mapping Zones

45 58
46 55
37

Rapid AssessmentModel Zones

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

Geographic Range

This PNVG occurs from east Texas to Virginia within the Coastal Plain and lower Piedmont and up the Mississippi River basin to southern Illinois.

Biophysical Site Description

The landscape includes sloughs and abandoned channels which are flooded most or all of a given year as well as backswamps and depressions within the flood plain which are frequently flooded and where soils remain saturated or with water table close to the surface much of the year.

Vegetation Description

The vegetation is generally close canopied forests ranging from standing water to floodplain depressions. The canopy is normally dominated by cypress and tupelo under the wettest conditions and overcup oak or maple and ash on the drier end.

Disturbance Description

Weather, primarily wind and flooding, is the dominant disturbance agent in this type and includes wind damage from hurricanes and tornadoes as well as scouring, changing streamcourses, and inundated young stands. Because of its moisture regime, fire is rare, occurring only during extreme drought conditions. In addition, replacement fire requires not only extended drought but accumulated fuel by drift or deep "duff" development (may be normally submerged). Insect outbreaks would occur infrequently in closed canopy states.

Adjacency or Identification Concerns

Although the Southern Floodplain Forest is included in both Kuchler and coarse scale, a difference in hydroperiod from other, adjacent types often results in a dependence on drought for regeneration and subsequently, stand structure. In the absence of characteristic vegetation, the break in moisture gradient between the drier end of this type and even drier types may be unclear.

*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

The landscape has adequate coverage to encompass natural variation. At either end of the spectrum, large swamps may cover millions of acres (Atchafalaya) while individual oxbows may be less than one hundred.

Issues/Problems

Contains long-lived species with very long fire return interval and, often, uncommon conditions required to complete life history. Literature and documentation of modeled conditions, especially fire, are not readily available.

Model Evolution and Comments

Suggested reviewers: Tom Foti (tom@arkansasheritage.org), Paul Hamel (phamel@fs.fed.us), Charles Klimas (Waterways Exp. Sta.), Rob Evans (? Formerly NatureServe). Insect/disease was added as a disturbance after peer review.

*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 Struct

Description

0-19 years. Seedlings, saplings, and some sprouts on drier sites, in openings created by flood scouring, changed streamcourses, wind damage, or, infrequently, fire. Primarily composed of major overstory species with transient herbaceous plants and shrub, small trees and woody vines; the latter, woody group occurring more often on drier sites.

Dominant Species* and Canopy Position

TADI2 Upper
NYAQ2 Upper
QULY Upper
FRPE Upper

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☑ Tree

Fuel Model 9

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	40 %	80 %
Height	Tree Regen <5m	Tree Short 5-9m
Tree Size Class	Sapling >4.5ft; <5"DBH	

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class B 25 %

Mid1 Closed

Description

20-99 years. Dominated by young to early mature canopy species with a few obligate midstory species on less frequently flooded sites. Longer hydroperiod sites at least seasonally flooded and typically display a single, closed canopy layer.

Dominant Species* and Canopy Position

TADI2 Upper
NYAQ2 Upper
QULY Upper
FRPE Upper

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☑ Tree

Fuel Model 9

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	70 %	100 %
Height	Tree Short 5-9m	Tree Tall 25-49m
Tree Size Class	Medium 9-21"DBH	

☐ 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

100+ years. Early to, more often, late mature open canopy in long-term flooded conditions. Created during wet periods that prevent replacement of mortality.

Dominant Species* and Canopy Position

TADI2 Upper
NYAQ2 Upper
QULY Upper
FRPE Upper

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☑ Tree

Fuel Model 9

Structure Data (for upper layer lifeform)

	Min	Max
Cover	15 %	60 %
Height	Tree Medium 10-24m	Tree Tall 25-49m
Tree Size Class	Large 21-33"DBH	

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class D 45 %

Late1 Closed

Description

100+ years. Early to late mature closed canopy generally occurring as a single overstory layer, particularly on wetter sites. Drier sites will contain some midstory and young overstory species.

Dominant Species* and Canopy Position

TADI2 Upper
NYAQ2 Upper
QULY Upper
FRPE Upper

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☑ Tree

Fuel Model 9

Structure Data (for upper layer lifeform)

	Min	Max
Cover	60 %	90 %
Height	Tree Medium 10-24m	Tree Tall 25-49m
Tree Size Class	Large 21-33"DBH	

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class E 0 %

Late1 All Structu

Description

Dominant Species* and Canopy Position

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:

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: 100
Min: 10
Max: 1000

Sources of Fire Regime Data

- [ ] 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	1000			0.001	41
Mixed					
Surface	714			0.00140	58
All Fires	416			0.00241	

References

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