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):

R9PIRO **Pine Rocklands**

General Information

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

Modelers		Reviewers	
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Vegetation Type

Woodland

Dominant Species*

PIELD ANCA2
SERE2 SCRH
THRIN RAPU2
GUSC

General Model Sources

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

LANDFIRE Mapping Zones

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Rapid Assessment Model Zones

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

Geographic Range

Pine rocklands occur in extreme south Florida and the lower Florida Keys.

Biophysical Site Description

Pine rocklands occur on alkaline limestone bedrock.

Vegetation Description

The overstory consists primarily of south Florida slash pine (pinus elliotti var. densa) with crown closure ranging from 10 to 60%. A sometimes sparse, but often species-rich understory consists of shrubby tropical evergreen hardwoods, palms, forbs, and graminoids. Common palms include thatch palm (Thrinax morrisii, T. radiata), silver palm (Coccothrinax argentata), saw palmetto (Serenoa repens), and cabbage palm (Sabal palmetto). Common shrubs or subcanopy species include live oak (Quercus virginiana), wild tamarind (Lysiloma latisiliquum), poisonwood (Metopium toxiferum), indigo berry (Randia aculeata), varnish leaf (Dodonea viscosa), myrsine (Rapanea punctata), rough velvet seed (Guettarda scabra) coco-plum (Chrysobalanus icaco), willow bustic (Bumelia salicifolia), and marlberry (Ardisia escallonoides). Typical graminoid and forb species include splitbeard bluestem (Andropogon cabanisii), little bluestem (Schizachyrium rhizomatum), showy milkwort (Polygala grandiflora), pineland heliotrope (Heliotropium polyphyllum), silver dwarf morning glory (Evolvulus sericeus), and rabbitbells (Crotalaria rotundifolia).

Disturbance Description

This PNVG is classified as a Fire Regime Group I, 1-5 year mean fire return interval, with frequent, low intensity fires occurring at any time of year. Most acreage burns from April to June during the early lightning season. Less common (1-2 /decade) moderately severe fires associated with drought occur primarily in March to May. Anthropogenic fire was considered but is not expected to change reference class composition.

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

Bergh, in his review of the model, stated that a 1-5 year mean fire return interval may be too frequent. His estimate ranged from 3-10 years.

Adjacency or Identification Concerns

Pine rocklands are often interrupted by patches of tropical hardwood hammock, which will invade into the pinelands in the absence of fire.

Scale Description

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

This PNVG occurs in patches ranging in size from 200 to 10,000 acres in areas where the soil depth is minimal due to the presence of pinnacle rock. These patches were likely fragmented by the presence of tropical hardwood stands, everglades marsh, and cypress domes or savannahs.

Issues/Problems

The natural fire regime is currently altered by urbanization and artificially controlled water levels. Invasive exotics include Burma reed and Brazilian pepper.

Model Evolution and Comments

FRCC model (SFSP1) developed by Caroline Noble for Pine Rocklands and South Florida Slash Pine was used with no changes to the VDDT model. Information in the database was edited to specifically address Pine Rocklands.

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 All Structures

Description

Class A, 0-15 years post replacement, includes seedlings, saplings, and poles of south Florida slash pine. Individual tree gaps and clusters interspersed throughout the landscape result from mortality from wind or lightning.

Indicator Species* and Canopy Position

ANCA2	Lower
SCRH	Lower
GUSC	Low-Mid
SERE2	Low-Mid

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☑ Tree

Fuel Model 2

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	50 %
Height	Tree Regen <5m	Tree Short 5-9m
Tree Size Class	Pole 5-9" DBH	

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

The dominant life form includes grasses, forbs, and small shrubs with a canopy closure of 50 to 75% and a height of less than 0.5m.

Class B 5 %

Mid1 Closed

Description

Class B occurs from 16-49 years post replacement and includes mid-story development of a shrub layer. Hardwood and palm encroachment is becoming increasingly dense. This class may be the result of mosaic hammock

Indicator Species* and Canopy Position

PIELD	Upper
SAPA	Mid-Upper
THRIN	Middle
SERE2	Middle

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☑ Tree

Structure Data (for upper layer lifeform)

	Min	Max
Cover	10 %	30 %
Height	Tree Short 5-9m	Tree Medium 10-24m
Tree Size Class	Pole 5-9" DBH	

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

The dominant life form begins to transition to the shrub layer, primarily saw palmetto and tropical hardwoods. Canopy closure in the

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fire.

shrub layer increases to 25 to 40% with an average height of 1m.

Fuel Model 5

Class C 25 %

Mid1 Open

Description

Class C occurs from 16-49 years post replacement. There is less than 40% tree canopy closure represented by scattered individual slash pines. The understory is comprised of grasses, forbs, low shrubs and palms.

Indicator Species* and Canopy Position

PIELD	Upper
SERE2	Middle
ANCA2	Lower
SCRU	Lower

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☑ Tree

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	10 %	40 %
Height	Tree Short 5-9m	Tree Medium 10-24m
Tree Size Class	Medium 9-21"DBH	

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

The dominant lifeform remains the grasses and forbs mixed with small isolated patches of shrubs.

Fuel Model 2

Class D 50 %

Late1 Open

Description

Trees in Class D are 50+ years old. There is less than 30% tree canopy closure, with tree diameters up to 21" dbh. The understory is comprised of grasses, forbs, low shrubs
and palms.

Indicator Species* and Canopy Position

PIELD	Upper
SERE2	Middle
ANCA2	Lower
SCRU	Lower

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☑ Tree

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	10 %	30 %
Height	Tree Medium 10-24m	Tree Medium 10-24m
Tree Size Class	Medium 9-21"DBH	

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

The dominant lifeform remains the grasses and forbs mixed with small isolated patches of shrubs.

Fuel Model 2

Class E 5 %

Late1 Closed

Description

Trees in Class E are 50+ years old. With continued exclusion of fire, the transition to tropical hardwood hammock will begin. The dominant species include slash pine, cabbage palm, and tropical hardwoods.

Indicator Species* and Canopy Position

PIELD	Upper
SAPA	Mid-Upper
LYLA3	Mid-Upper
QUVI	Mid-Upper

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☑ Tree

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	40 %	60 %
Height	Tree Medium 10-24m	Tree Medium 10-24m
Tree Size Class	Medium 9-21"DBH	

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

Fuel Model 5

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Disturbances

Non-Fire Disturbances Modeled

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

Fire Regime Group: 1

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

Historical Fire Size (acres)

Avg: 1500
Min: 1000
Max: 5000

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

- ☑ Literature
- ☐ Local Data
- ☑ Expert Estimate

	Avg FI	*Min FI*	*Max FI*	*Probability*	*Percent of All Fires*
Replacement	800			0.00125	0
Mixed	330			0.00303	1
Surface	3	1	5	0.33333	99
All Fires	3			0.33761	

References

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