# *Amorpha herbacea var. crenulata seedling recruitment: Can fire management help?*

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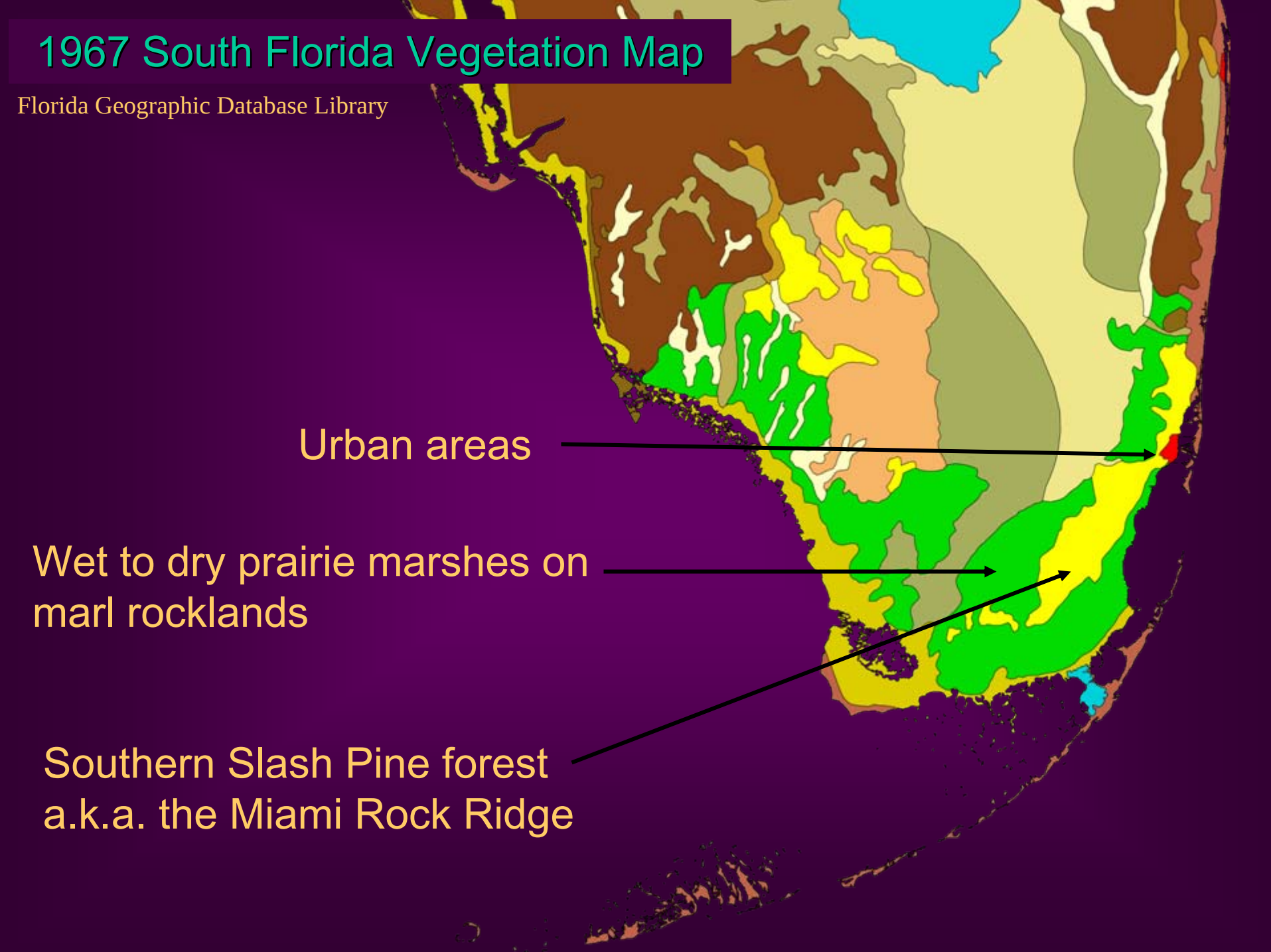
FAIRCHILD TROPICAL BOTANIC GARDEN

# *Amorpha*

# 1967 South Florida Vegetation Map

Florida Geographic Database Library

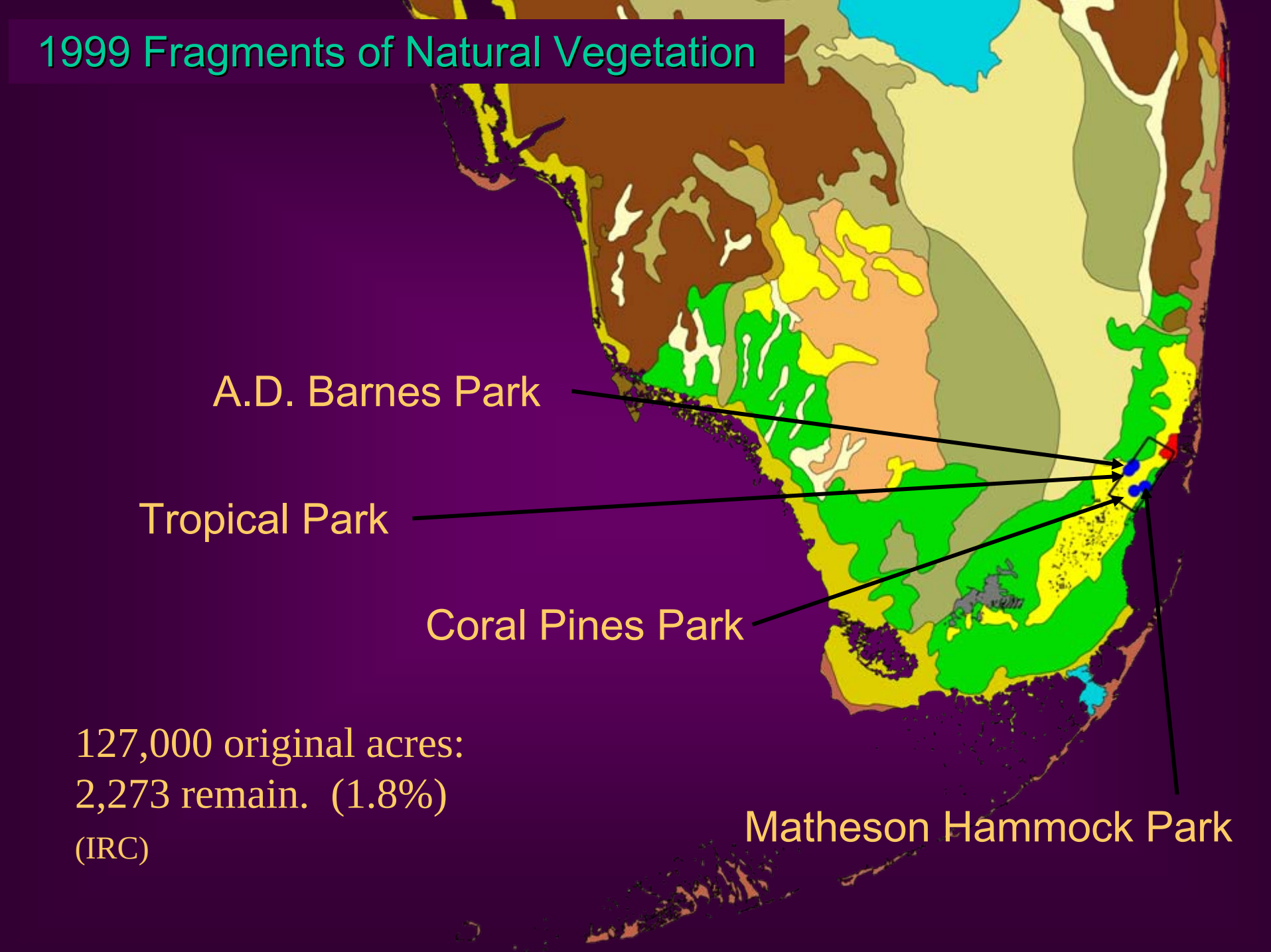


# 1967 South Florida Vegetation Map

*Amorpha's* natural range

8.05 x 19.3 km

# 1999 Fragments of Natural Vegetation




127,000 original acres:
2,273 remain. (1.8%)
(IRC)

# Tropical Park

5 acres

Surveys

| 2000 | 2001 | 2003 |
|---|---|---|
| 85 | 178 | 114 |
| July-August | Spring | September |

# Growth habit of *Amorpha*

Fire adapted….root stock

Multiple underground shoots coming from one plant

Last year's branches

Wendelberger

Wendelberger

# Research Objectives

- What is the life cycle and demography of *A. herbacea* var. *crenulata*?
- Is the population at Tropical Park self-sustaining?
- What are the environmental/management factors limiting the germination and/or survival of *A. herbacea* var. *crenulata* seedlings?

# Methods

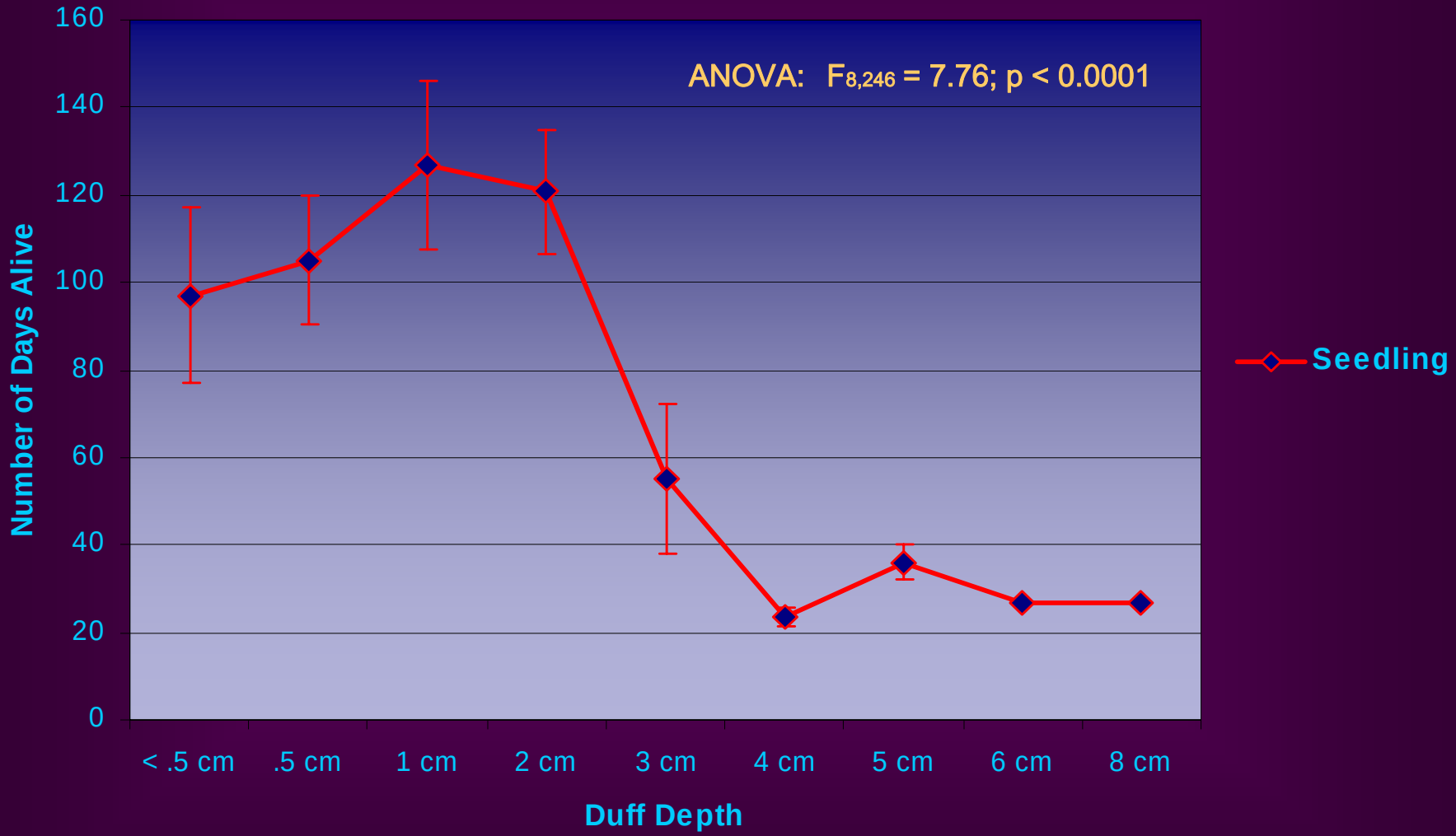
9
11
Wendelberger

255

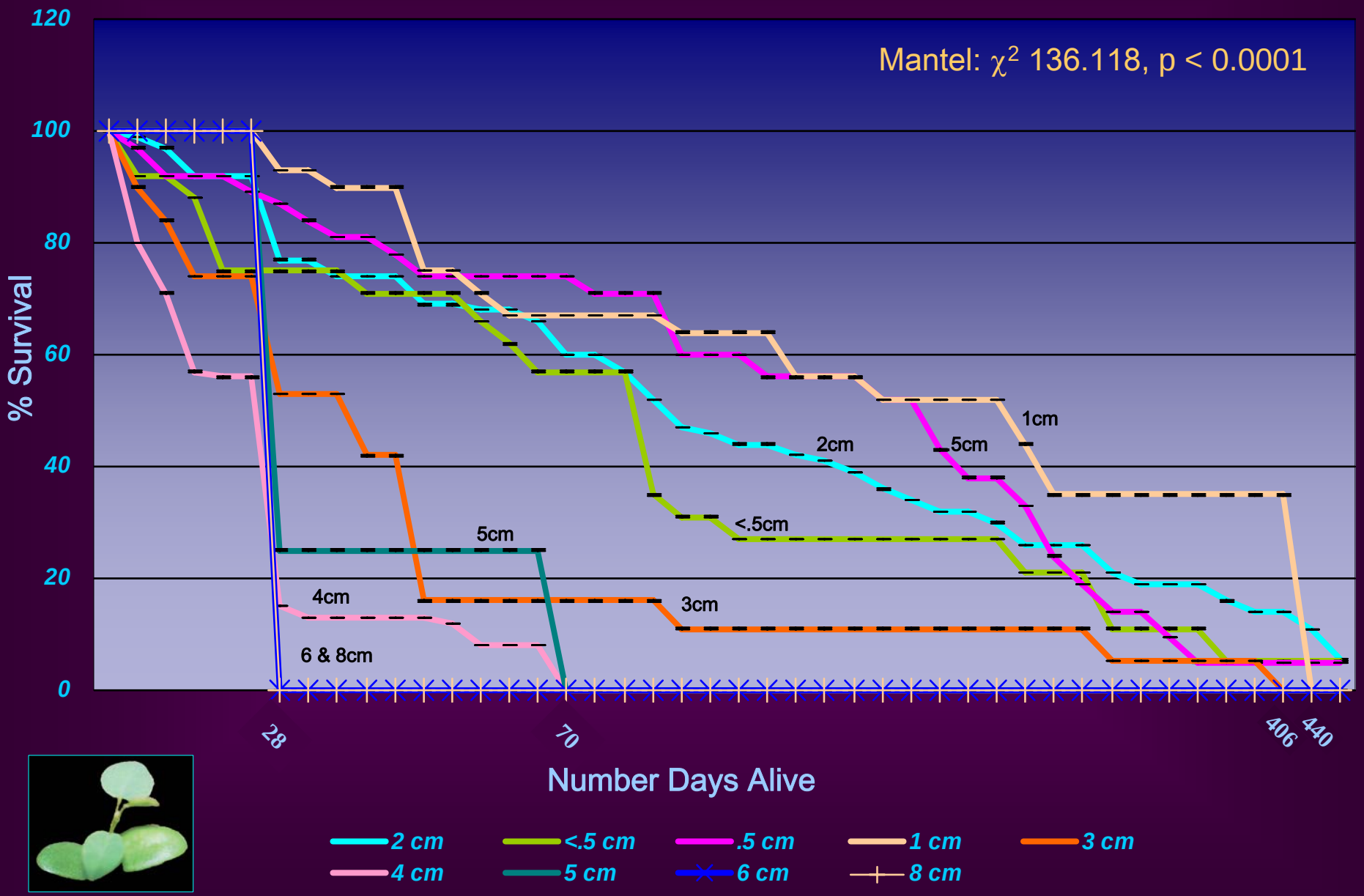
Wendelberger

# Results

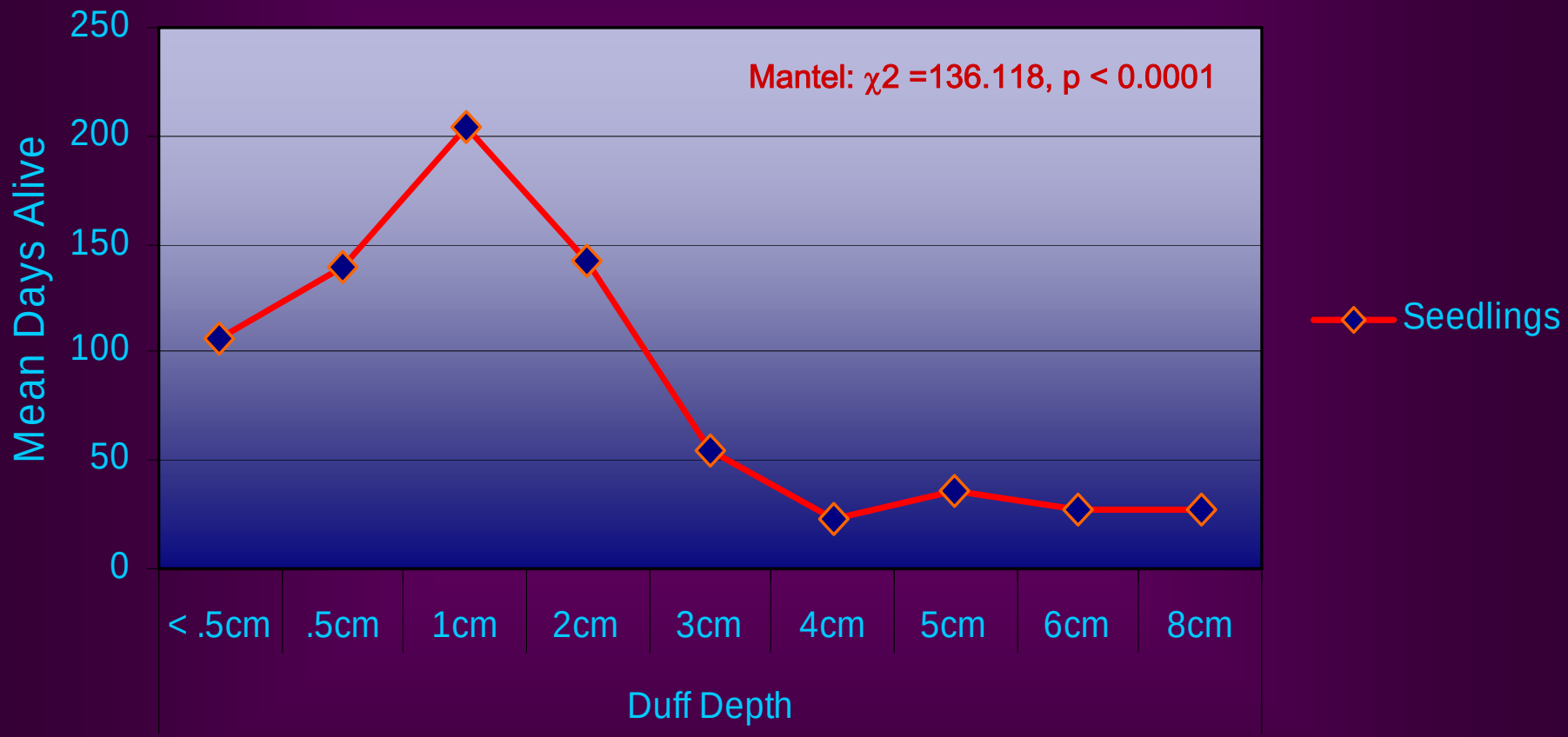
# Seedling Survival Compared to Duff Depth



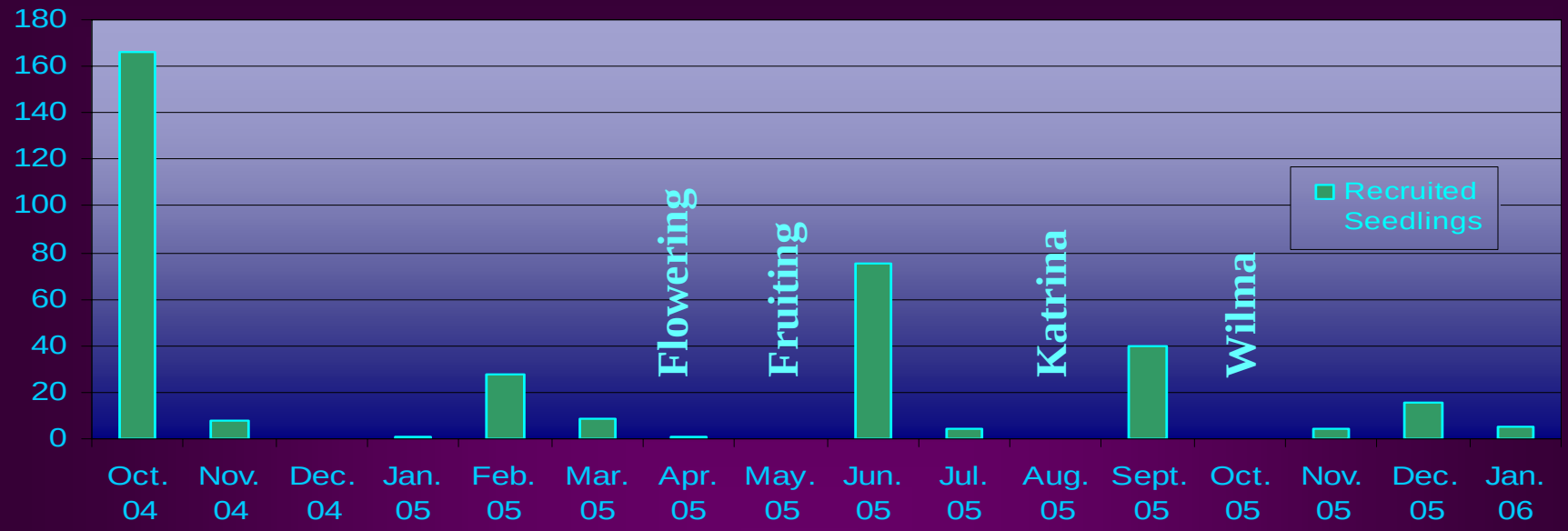
# Number of Days Seedlings Survive Compared to Duff Depth



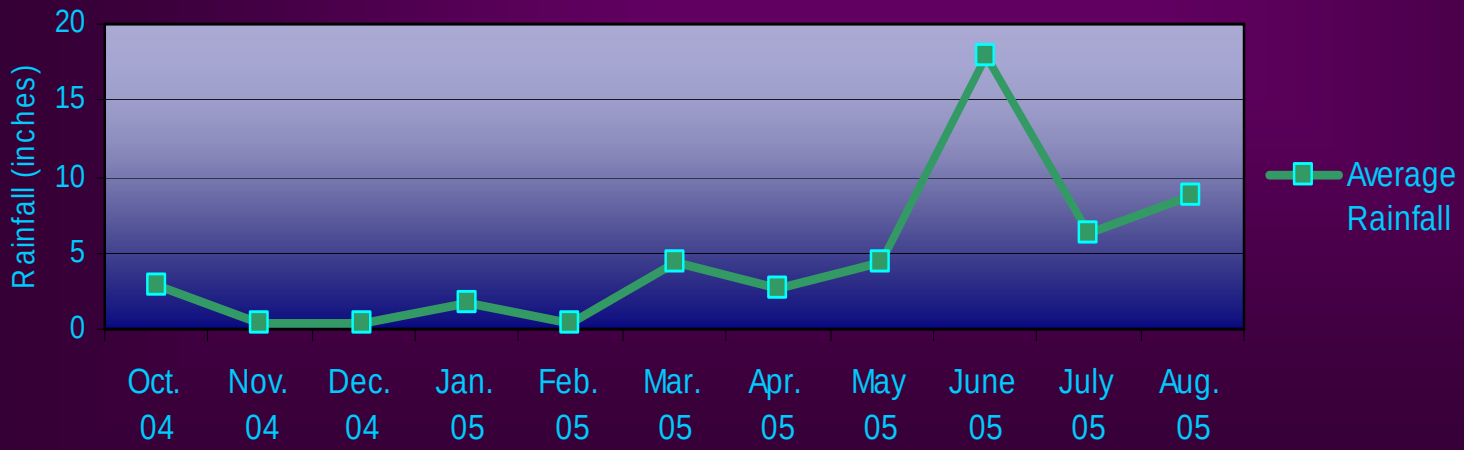
# Mean Seedling Survival Time



## Mean Seedling Recruitment Compared to Month Germinated




## Average Monthly Rainfall



# Conclusions

# Like mother, like daughter!

# Fall where they may!

# Conclusions

- Thanks to this demographic study, we better understand the biology of this endangered species

- The population is dynamic

- Seedling survival is dependent on litter depth; 3cm or more is too deep for good root establishment

- Even small seedlings can be deciduous

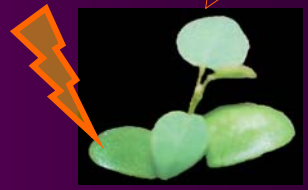
- Most seeds drop and germinate below the infructescence

# Management Implications

# Fire Management Can Help!

## Maintain a thin duff layer

*Fire*



# Future Research Needs

- Study the effects of fire on both adult and seedling survival
- Study the effects of fire on reproductive demography of *Amorpha*

## Thanks to: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**Florida Geographic Database Library:**
http://www.fgdl.org/fgdl.htm

**South Florida Water Management District:**
http://www.sfwmd.gov/site/index.php?