

**Ecological Assessment  
for the  
SR 429 NW Extension  
Study Area**

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**Working Group Meeting  
December 3, 2003**

# Purpose

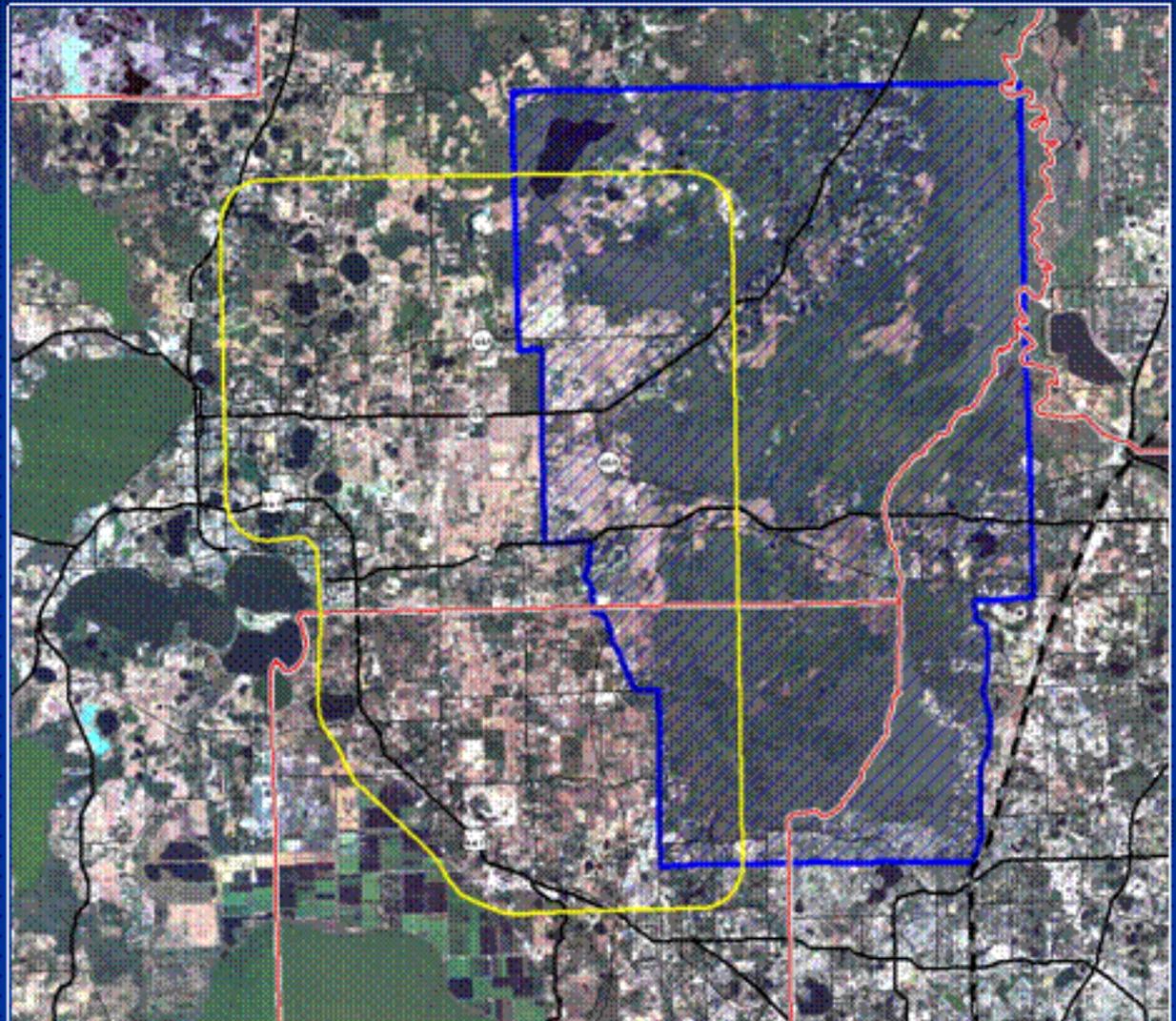
- **Identify natural resources within Study Area**
- **Organize the information as a set of Index Layers within a GIS data base**
- **Illustrate how natural resources are spatially arranged in the Study Area**
- **Assess the relative value of the natural resources within each Index Layer**

# Wekiva Planning Area

SR 429 NW  
Extension Study  
Area – Yellow

Wekiva River  
Protection Area –  
Blue

County  
Boundaries - Red



# **Landscape Index Layers**

**Rich Doty, GIS Associates**

**Tom Hoctor, the University of  
Florida and Pandion Systems**

# Landscape Level Index Layers

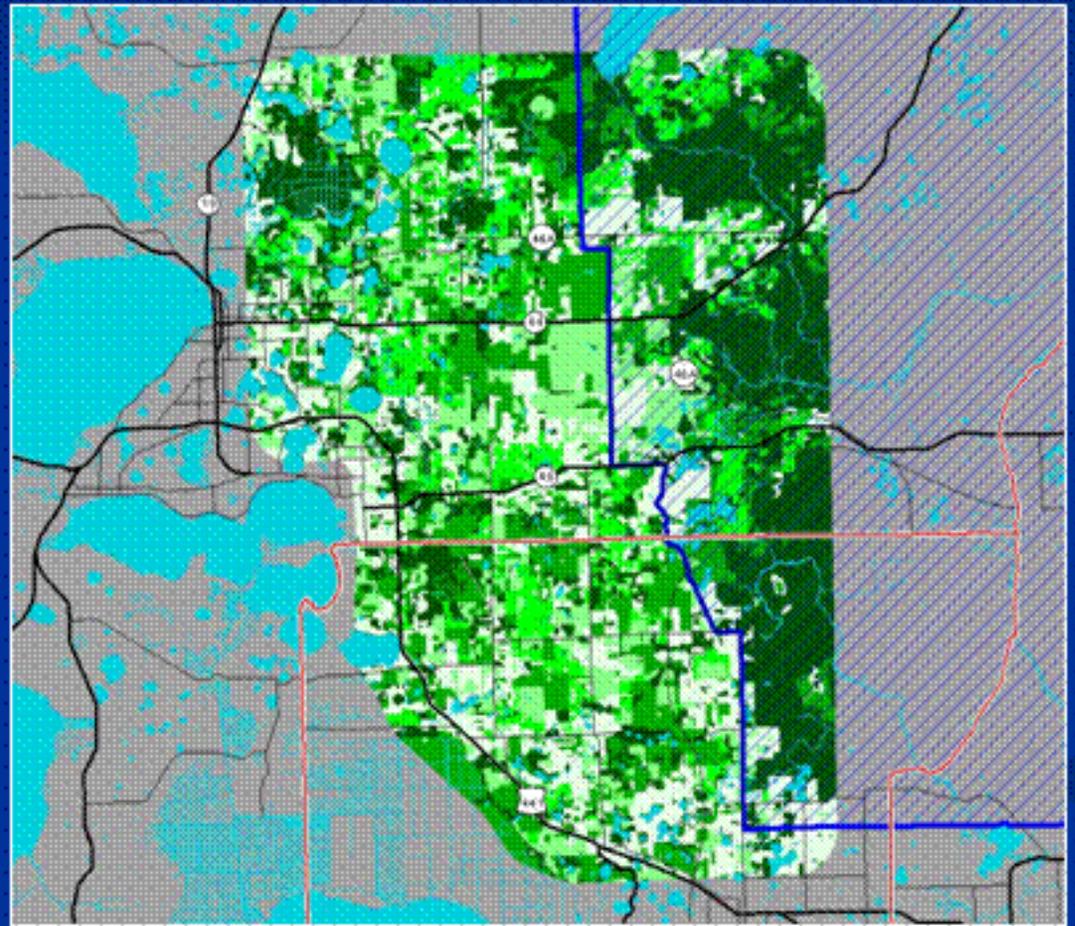
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**Significance:** *Landscape properties such as context, size, and connectivity are critical for determining ecological integrity.*

- Natural Integrity
- Landscape Contextual Analysis
- Patch Size
- Combined Proximity to Uplands, Wetlands, and Lakes
- Proximity to Fire Adapted Communities

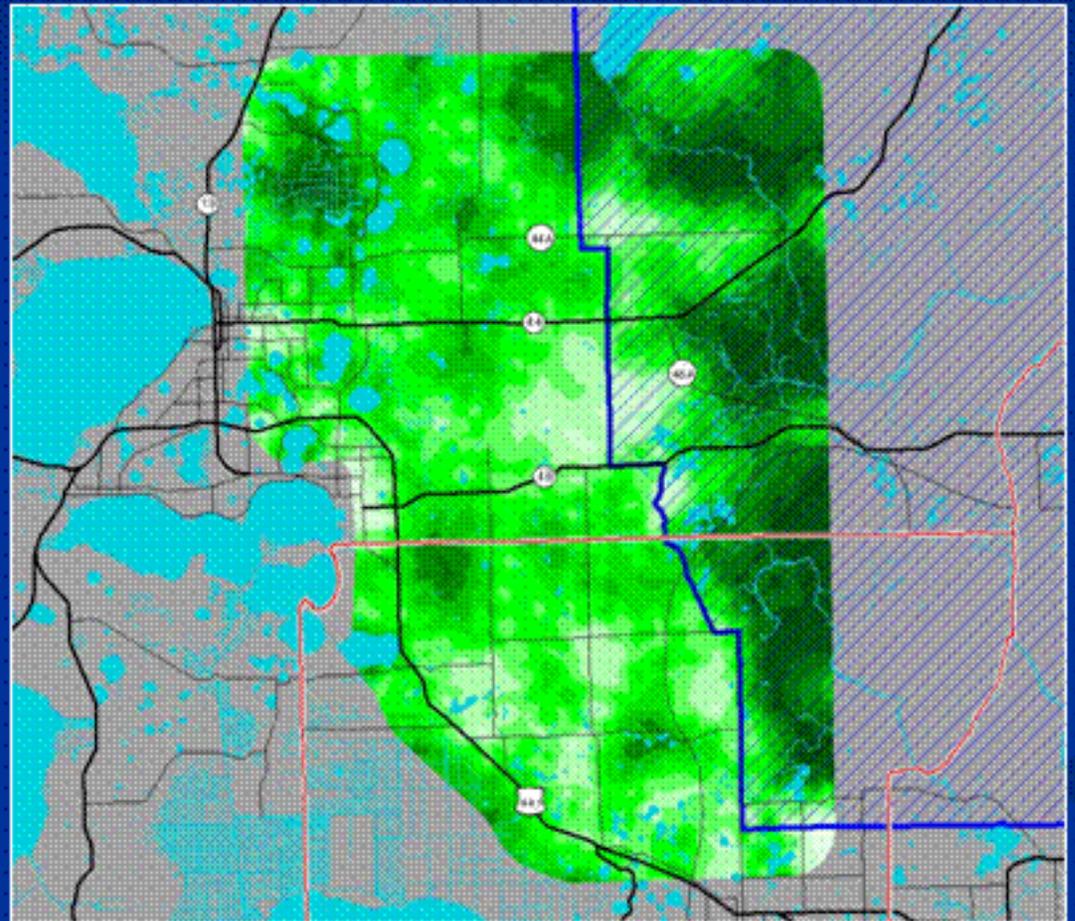
# Natural Integrity Layer

- Degree of “naturalness” based on the SJRWMD 2000 Land Use/Land Cover Data



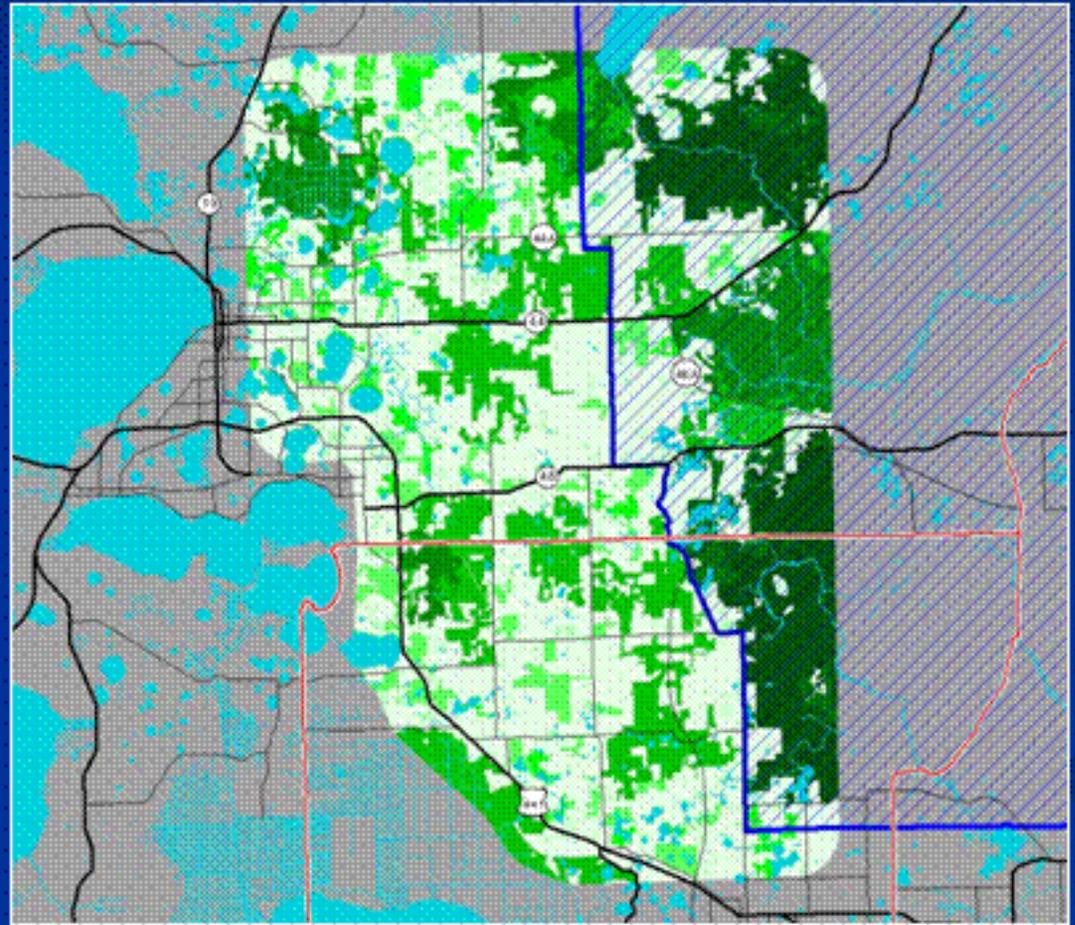
# Contextual Analysis Layer

- Combining the natural integrity value of a site with the values of its neighboring sites



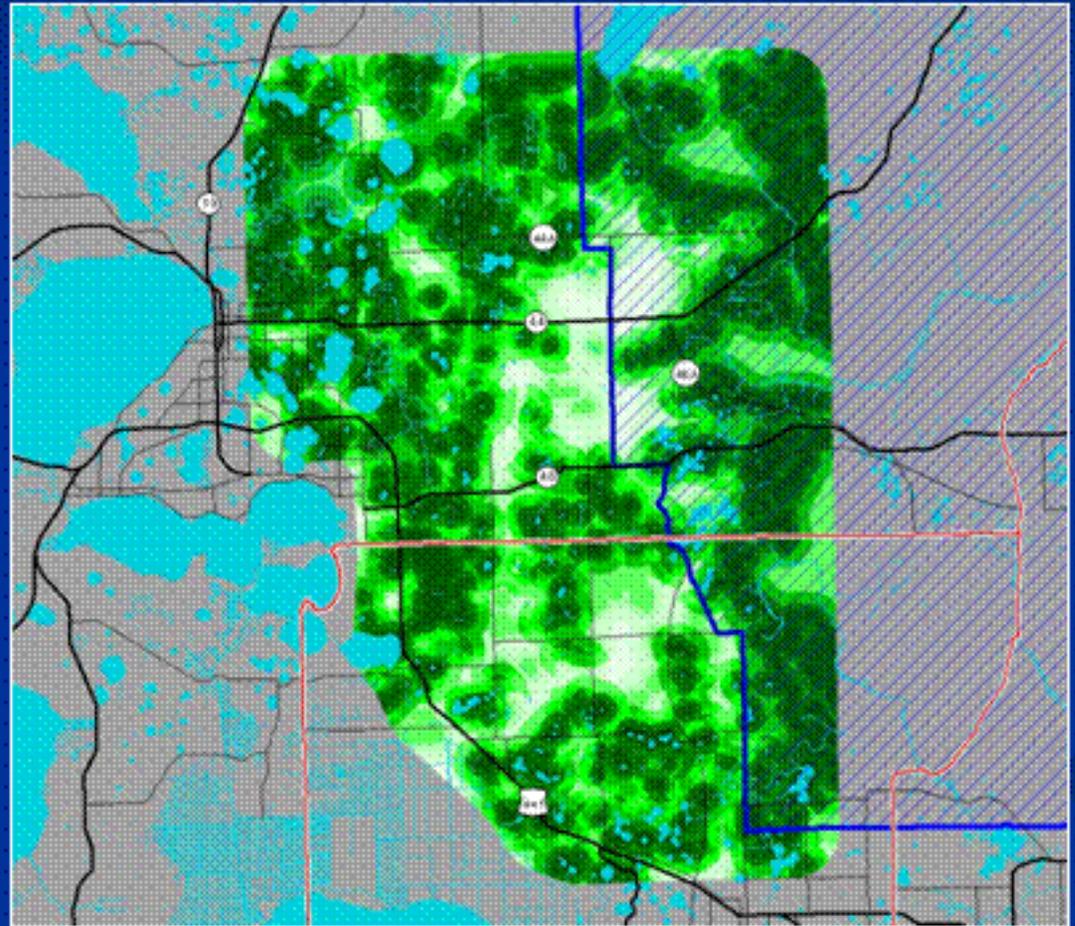
# Patch Size Layer

- A patch is a relatively homogenous area different from its surroundings. The larger it is, the more value it provides.



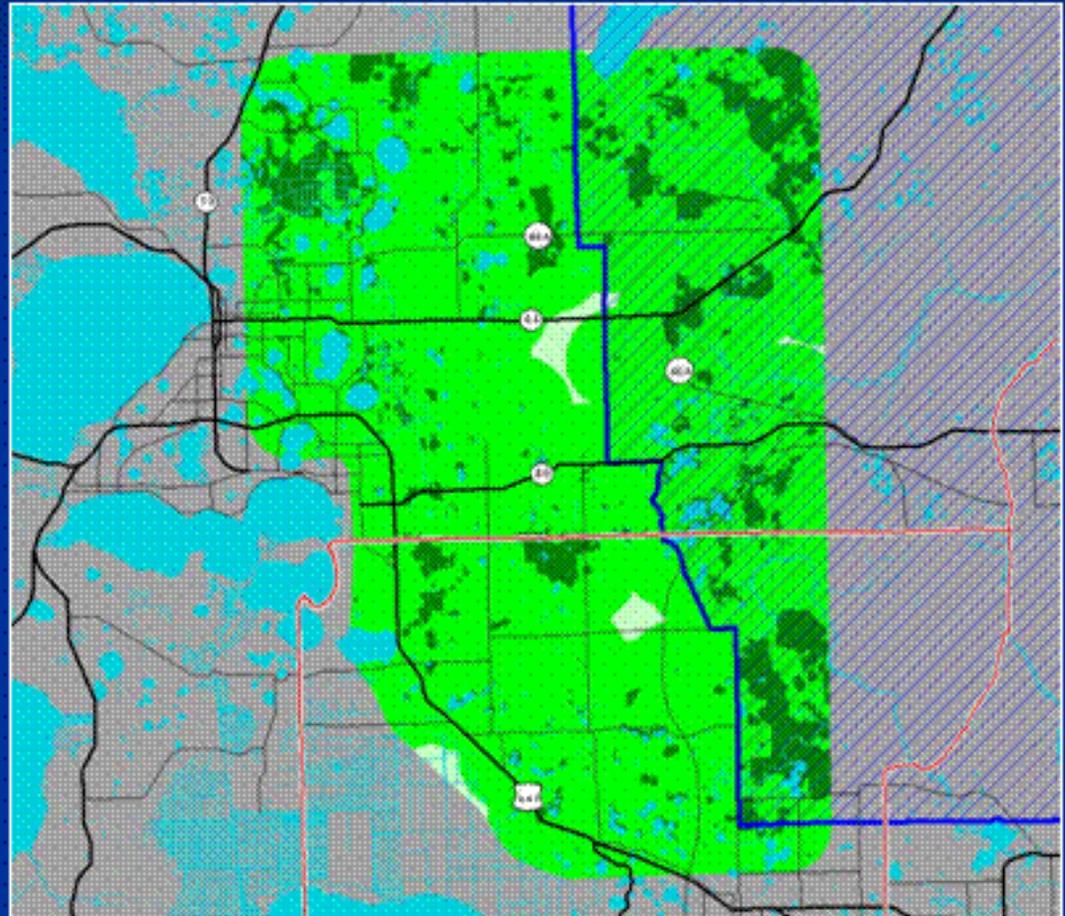
# Combined Proximity to Natural Uplands, Wetlands & Lakes Layer

- Emphasizes identification of areas close to both natural uplands and wetlands/lakes



# Proximity to Fire Adapted Communities Layer

- Within 300m of Scrub, and within 90m of all other fire adapted communities



# **Water Resources Index Layers**

**Rich Doty, GIS Associates**

# Water Resources Layers

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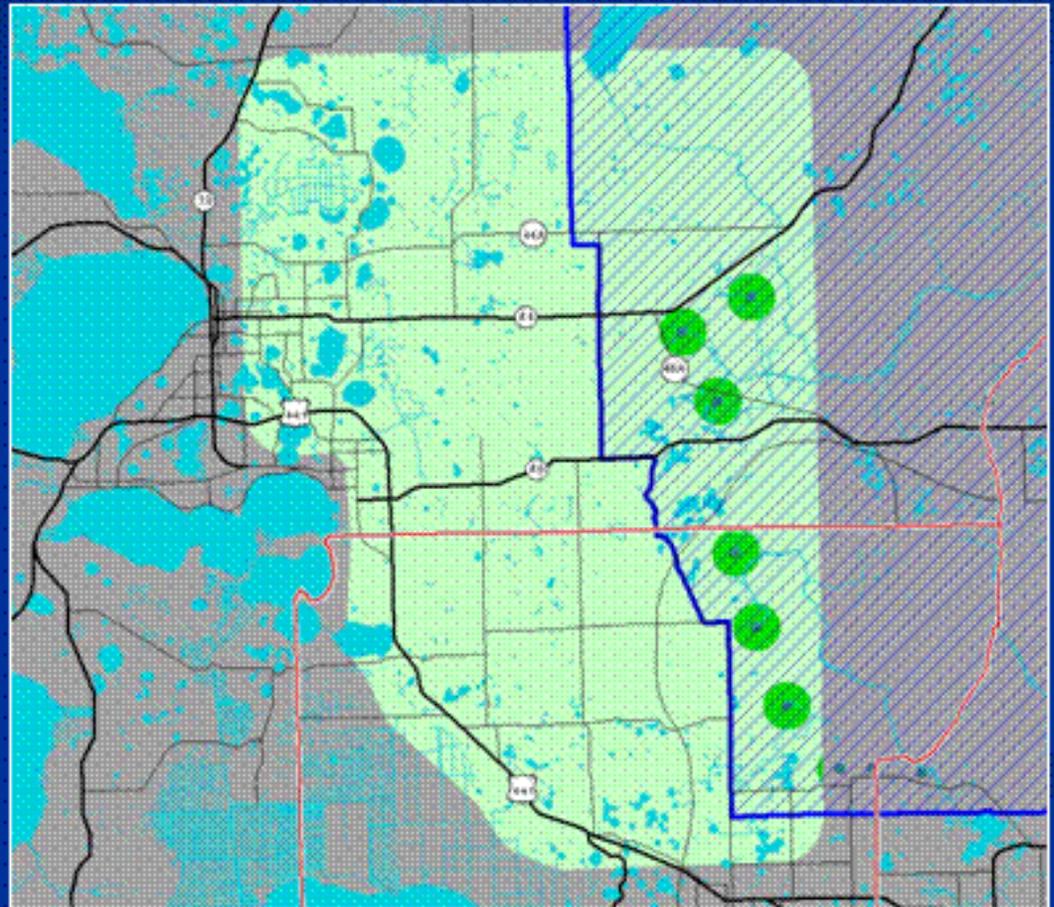
## Springs Layer

**Significance:** *Springs themselves are unique habitats. The areas surrounding springs also are important for water quality protection.*

- Geographic location of the spring itself is given highest value
- Consider area within 1/2 mile of spring as sensitive for springs protection

# Springs Layer

- Highest values are the spring locations, and slightly lower values are within a 1/2-mile buffer of spring locations



# Water Resources Layers

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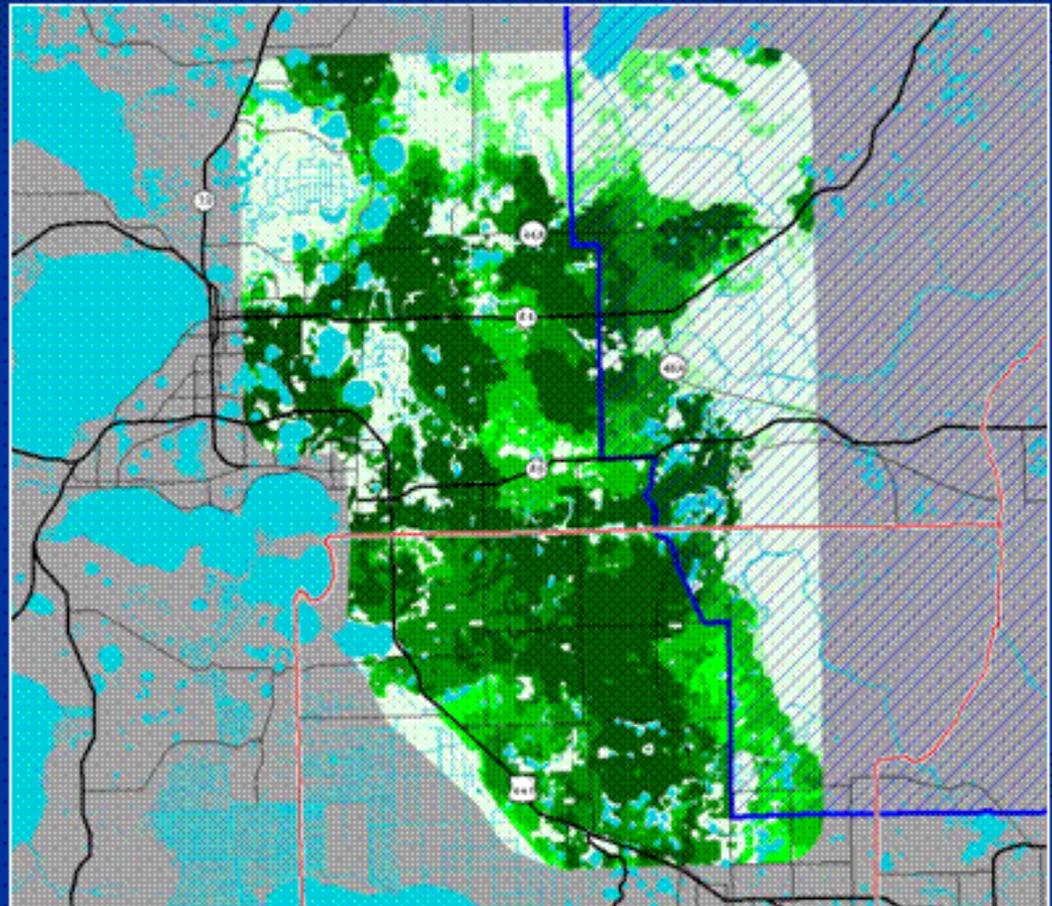
## Recharge Layer

**Significance:** *Recharge to the Floridan Aquifer is of critical importance to springs protection and can take place at a considerable distance from a spring head.*

- SJRWMD recharge layer considers subsurface characteristics: hydraulic pressure differences, leakance of upper confining unit. Does not consider soil characteristics.
- Combined layer takes soils characteristics into account, with high value placed on 3 highest drainage categories (extremely, moderately and well drained) combined with high and moderate recharge areas.

# Floridan Aquifer Recharge Layer

- Composite of the SJRWMD's Recharge Layer and Detailed Soils
- Darkest green has highest recharge potential (due to combination of high soil percolation rates and favorable subsurface geology)



# Species Index Layers

**Tom Hoctor, the University of  
Florida and Pandion Systems**

# Xeric Species Habitat Layers

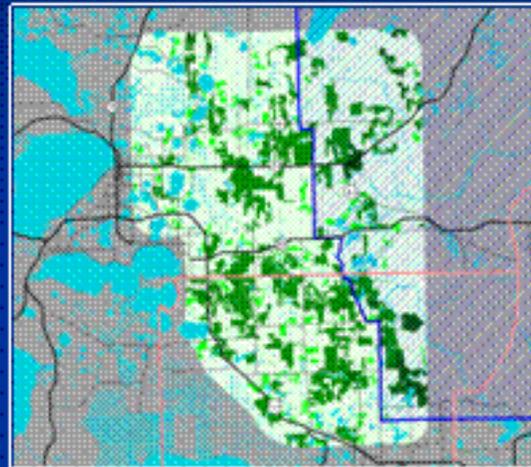
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**Significance:** *This landscape contains large areas of well drained soils and remnant habitat patches that could be habitat for various species of conservation interest.*

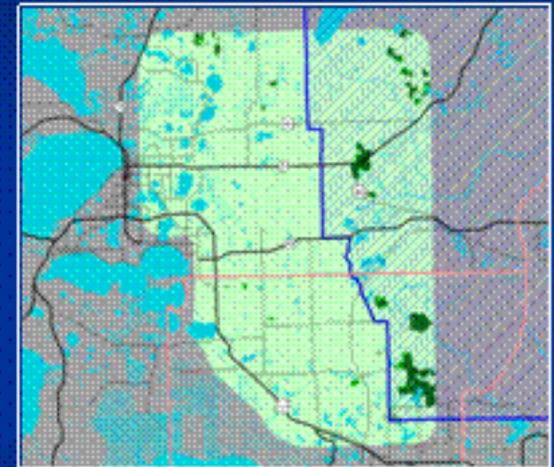
- **Florida Scrub-jay and Sand skink** (federal threatened species)
- **Short-tailed snake** (state threatened species)
- **Gopher tortoise, Sherman's fox squirrel, Gopher frog, Florida mouse and Florida pine snake** (state species of special concern)
- **Florida scrub lizard** (FCREPA species)

# Xeric Species Layer Examples

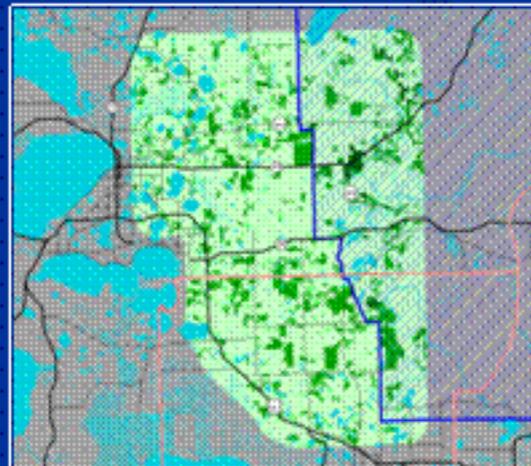
- Areas in darker greens are potential habitat



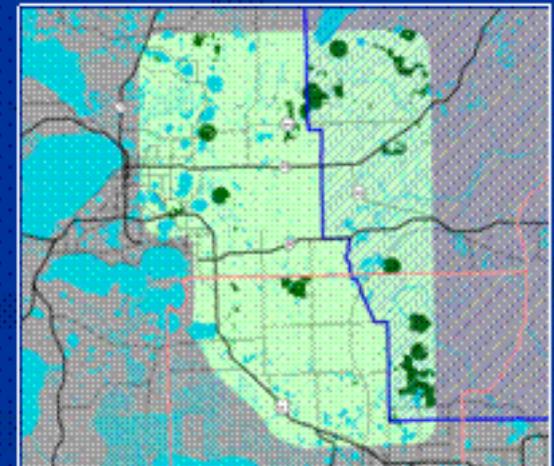
Gopher Tortoise



Sand Skink



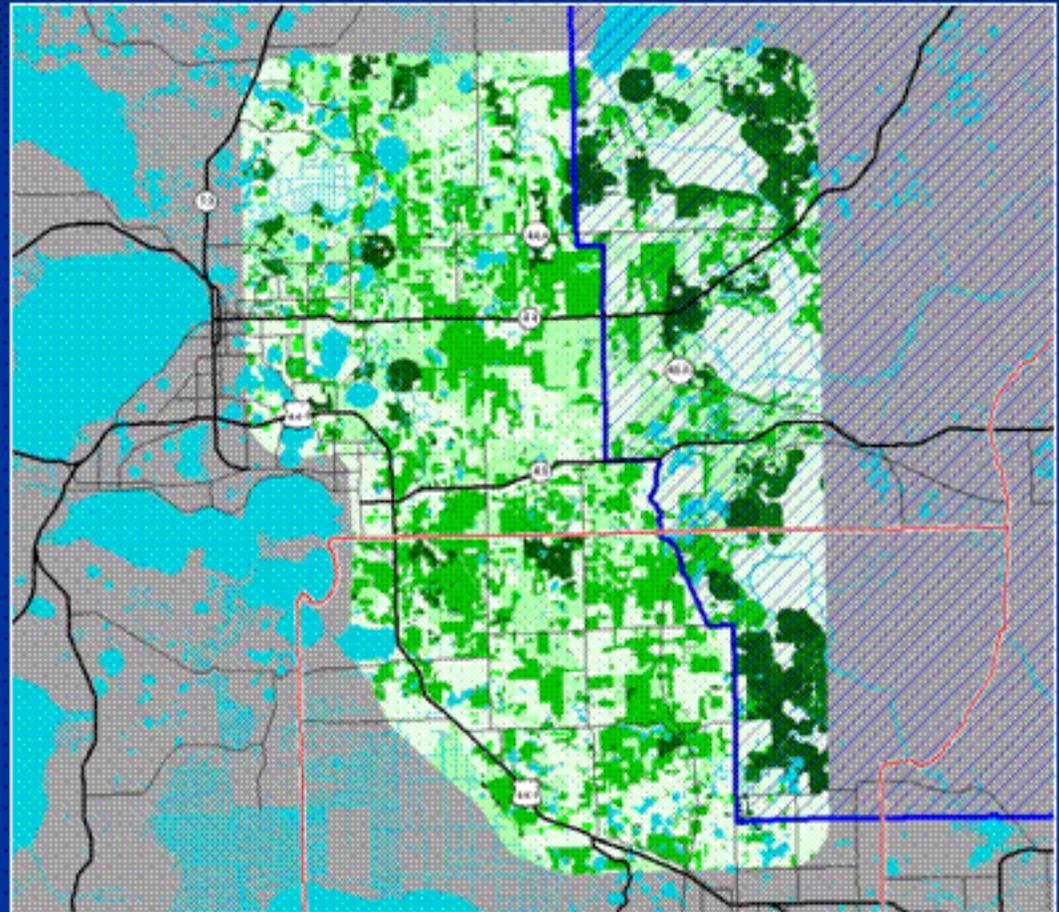
Short-tailed Snake



Scrub Jay

# Aggregation of Xeric Species Habitat Layers

- Disjunctive combination of all 9 Habitat Layers (where highest values always take precedence)



## Other Species Habitat Layers

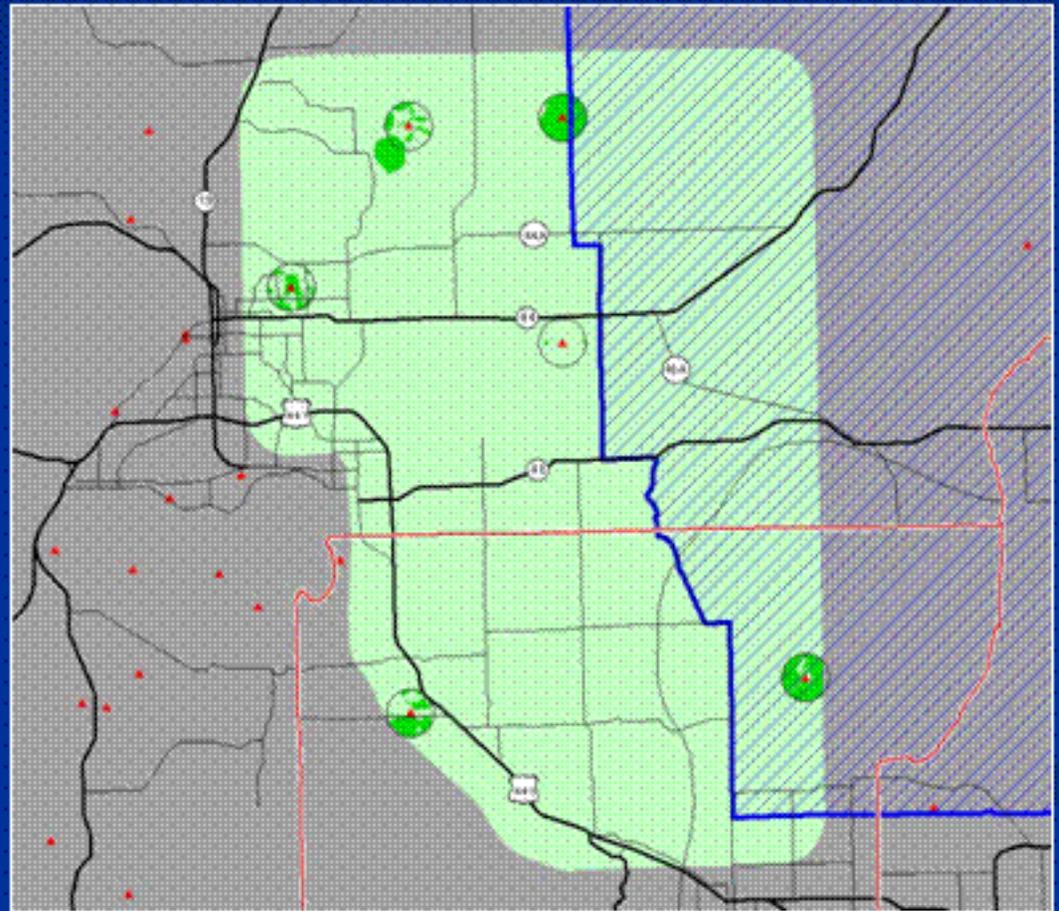
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**Significance:** *These species require either large, intact landscapes to support viable populations, **or** the protection of specific locations or habitats.*

- **Bald Eagle** (federal threatened species)
- **Eastern indigo snake** (federal threatened species)
- **Florida black bear** (state threatened species)
- **Wading birds** (federal endangered species—Wood Stork; state species of special concern)

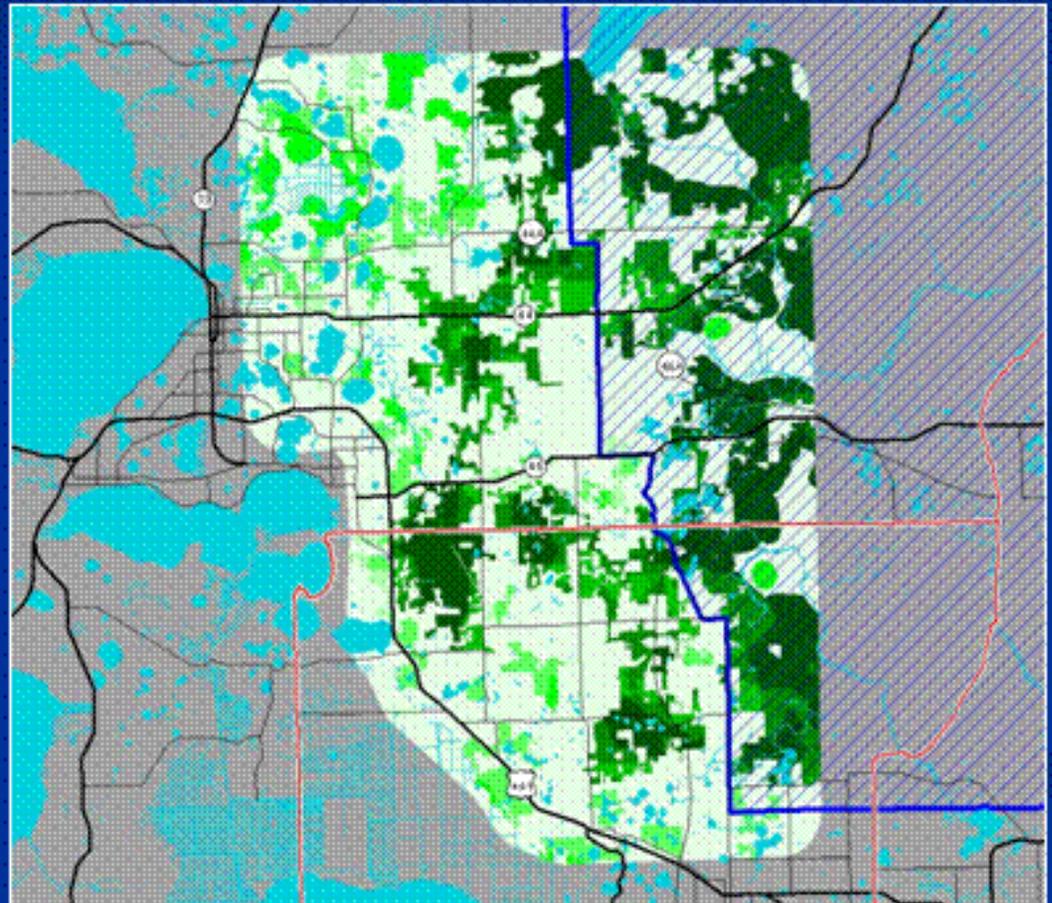
# Bald Eagle Layer

- Suitable foraging and nesting habitat within 1 mile of existing nests, or large water bodies touching that 1 mile buffer



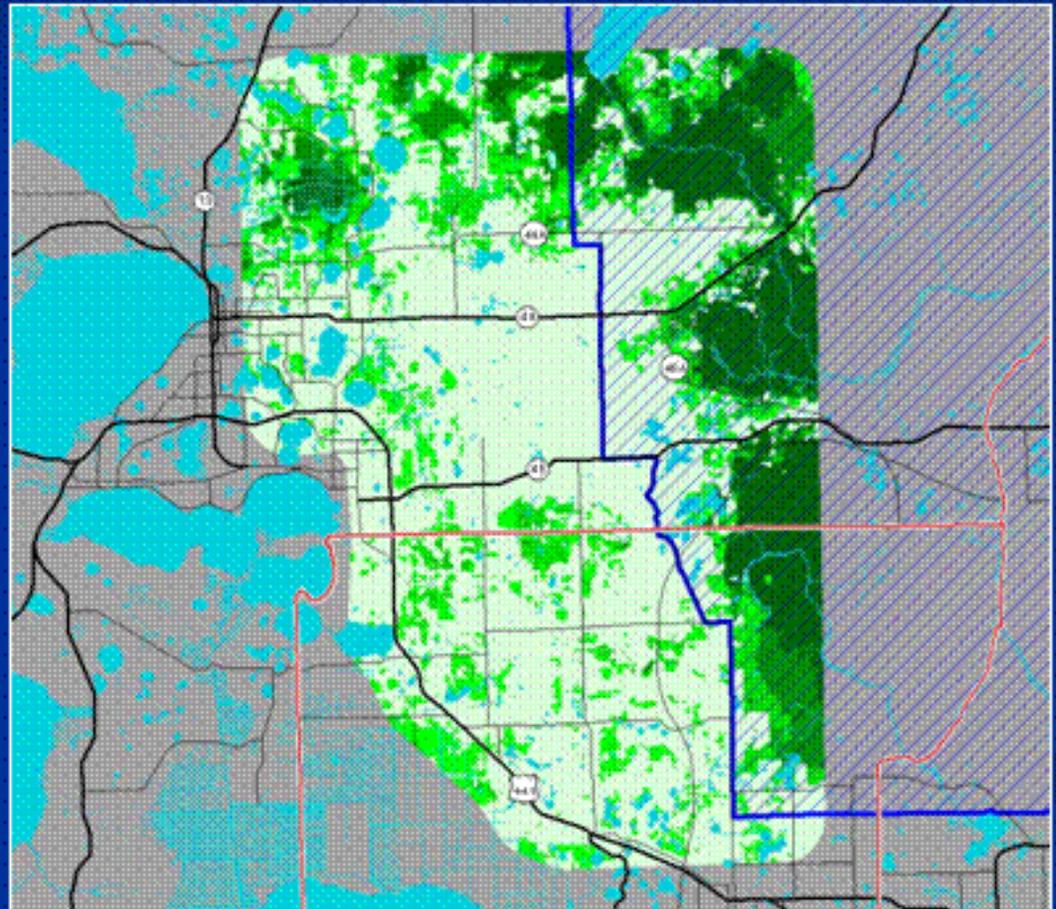
# Eastern Indigo Snake Layer

- Model emphasizes large blocks of uplands and adjacent wetlands with low road densities



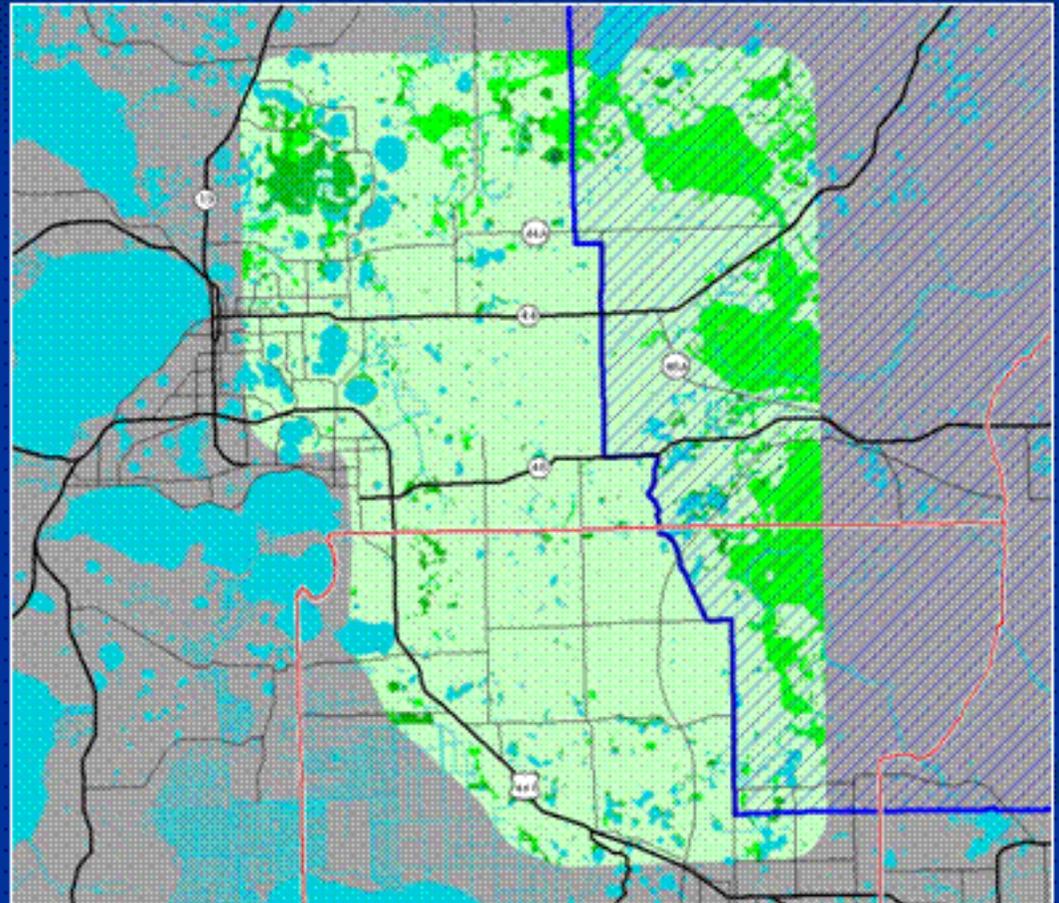
# Florida Black Bear Habitat Layer

- Model emphasizes large, connected blocks of suitable habitat less disturbed by development



# Wading Birds Layer

- Wading Bird colonies (darkest green) and foraging habitat (medium green)



# Q & A

**Jeff Jones, ECFRPC**

**Tom Hocht, UF/Pandion Systems**

**Rich Doty, GIS Associates**