

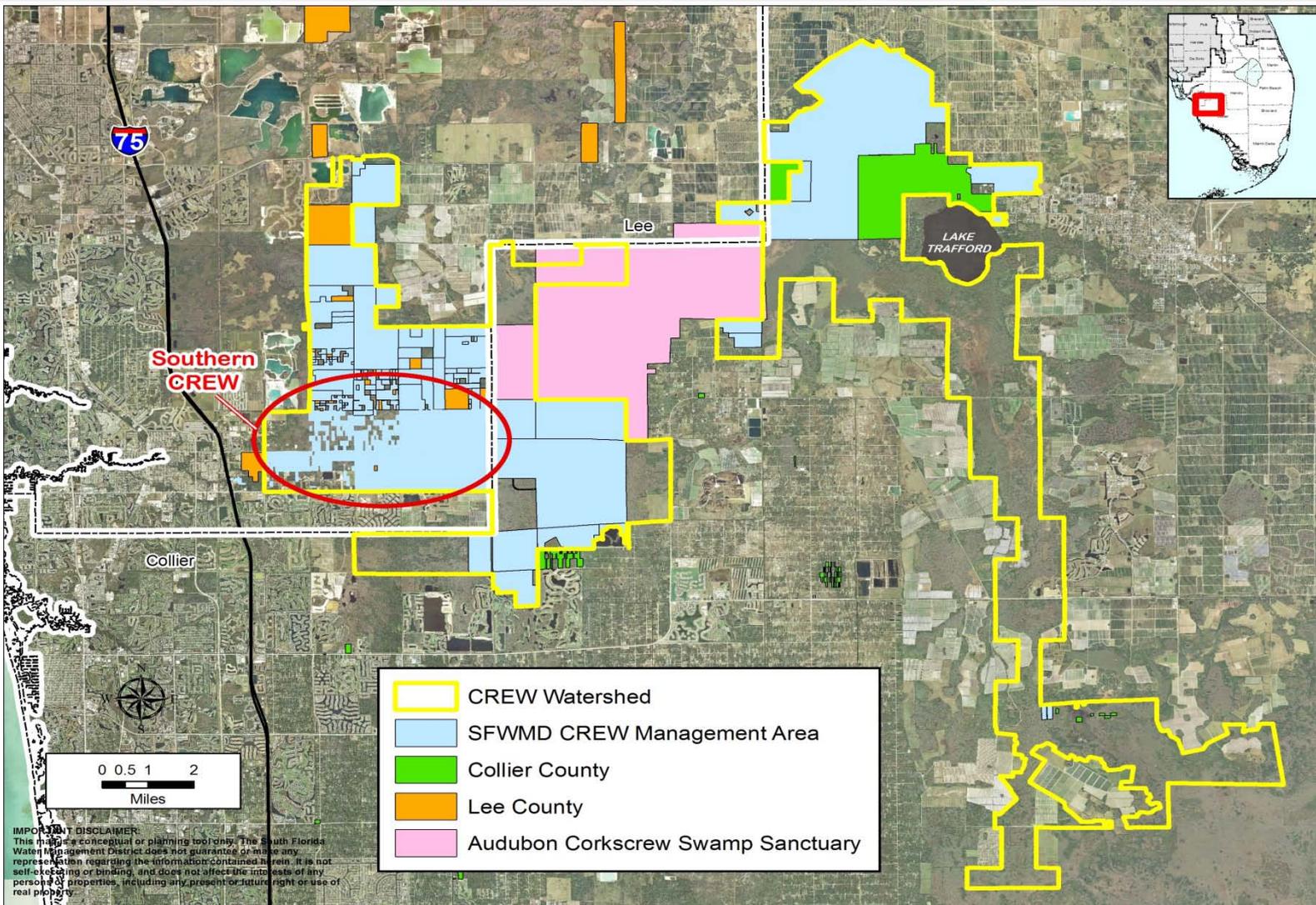


CREW Management Area

Steve Coughlin, Section Leader
Land Stewardship Section



Location and Regional Watershed





Plant Communities



- 33% Cypress Swamp
- 26% Hardwood Forested Wetlands
- 24% Slough and Depression Marsh
- 9% Flatwoods





CREW Wildlife



- Classified as a Priority Wetland for Listed Species and Biodiversity Hotspot by FWC.
- 122 bird species documented to date
- 22 mammals
- 18 listed species





Southern CREW Project

Project Purpose

- Improve flood control in Imperial River
- Restore wetlands in Southern CREW

Floodwater recedes, but fear remains in Bonita Springs

THE ASSOCIATED PRESS

BONITA SPRINGS — The scars from the floods of 1995 didn't disappear when the water abated in this Southwest Florida town.

Six months ago Saturday, the spirits and finances of more than 1,700 eastern Bonita Springs residents sank with their homes and roads under rapidly rising floodwater.

Children again play on those streets, and most of the Lee County residents are back in freshly painted houses with new carpeting, furniture and appliances.

"By the time I get done, it will be

hurricane season again," Chapman Avenue resident Sue Little said. "If this happens again next summer, it will devastate everyone."

The only preventive measure that has been taken to avoid a repeat is last week's cleaning of the Imperial River to allow floodwater to recede a bit faster.

That won't stop floods from coming as they did last summer and fall, when more than 1,700 people were forced to evacuate as Tropical Storm Jerry, Hurricane Opal and an unnamed, monsoon-like storm sent torrential rains ripping into Bonita Springs.

Residents still are reeling from

the disaster. From farming to fishing, finances to fears, the floods continue to take their toll.

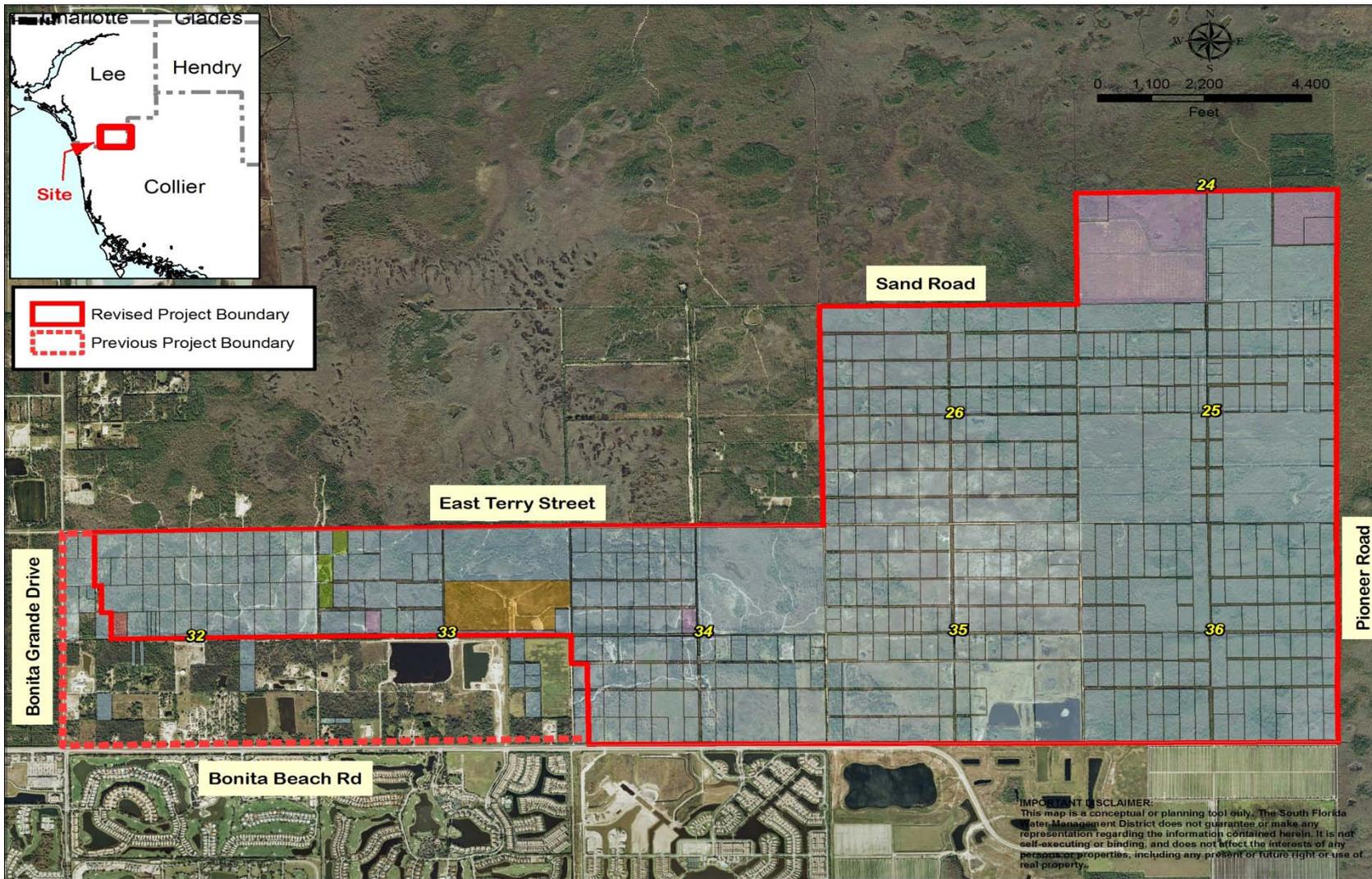
Nancy and Gene Proper still are flood refugees more than three months after the water finally receded. They are living at a relative's home and work all day at their jobs and all night repairing their waterlogged home.

"We're looking at another six to eight weeks before we're home," Gene Proper said. "We get up, go to work, come here, work until 10 or 10:30, go home, go to bed and start all over the next day. We don't like it, but we don't have much choice."





Southern CREW Project Area



IMPORTANT DISCLAIMER:
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Land Management Activities

Primary Management Activities

- Hydrologic restoration
- Prescribed burning
- Exotic plant control





Hydrologic Restoration



- Ditch plugs utilized to improve hydrology on over-drained conservation lands





Exotic Plant Control

- Target species include Lygodium, Melaleuca, and Brazilian pepper
- Treat 3400 – 4400 acres annually for exotic vegetation
- Largest single operational cost within the CREW budget





Prescribed Fire



- Cost-effective land management practice
- Necessary for maintenance of fire dependent plant communities

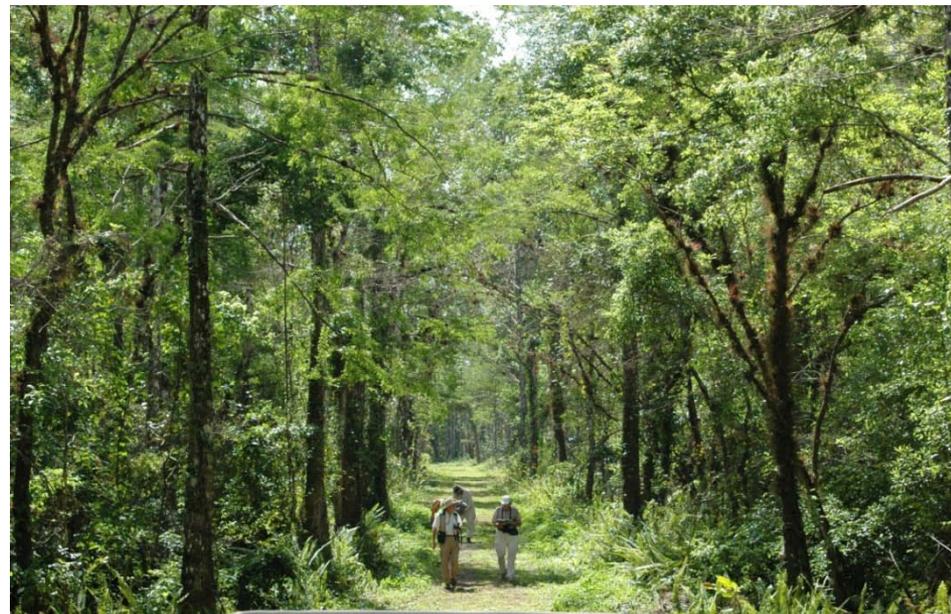
- Desired burn frequency is plant community specific
- Prescribe burned 2338 acres in FY12





Recreation

- Management Area had an estimated 12,000 visitors in FY12



- Popular recreational activities include hiking, biking, wildlife viewing, camping, equestrian use and hunting



Partnerships

Corkscrew Regional Ecosystem Watershed acquisition and management partners:

- Audubon
- Collier County
- CREW Land & Water Trust
- Florida Fish and Wildlife Conservation Commission
- Lee County
- State of Florida





Ben Nelson & Brenda Brooks CREW Land and Water Trust



Corkscrew Regional Ecosystem Watershed Hiking Trail Locations

A CREW Corkscrew Marsh Trails

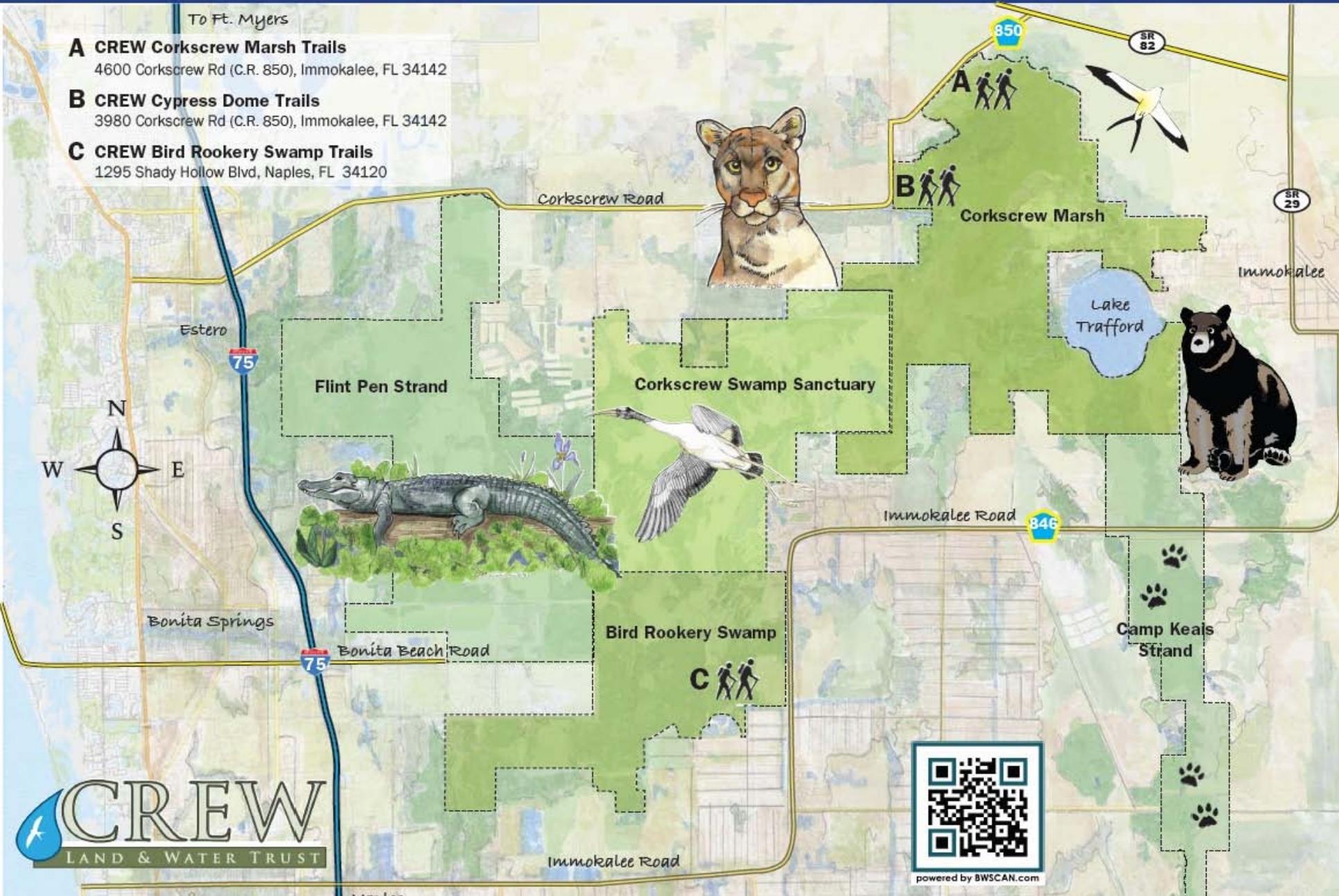
4600 Corkscrew Rd (C.R. 850), Immokalee, FL 34142

B CREW Cypress Dome Trails

3980 Corkscrew Rd (C.R. 850), Immokalee, FL 34142

C CREW Bird Rookery Swamp Trails

1295 Shady Hollow Blvd, Naples, FL 34120





Jason Lauritsen Audubon Corkscrew Swamp Sanctuary



Corkscrew Swamp Sanctuary



**National
Audubon
Society**



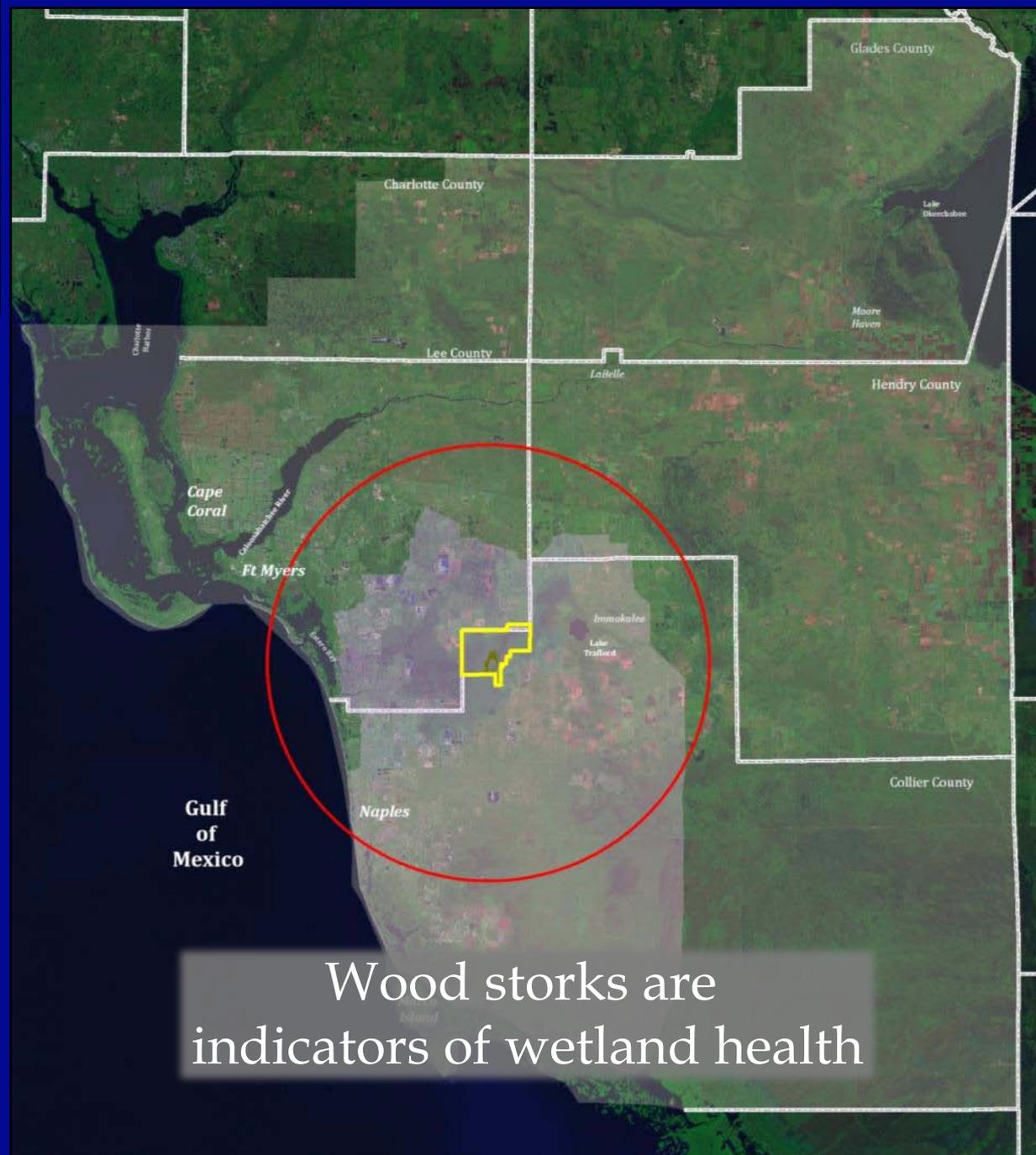
CORKSCREW SWAMP SANCTUARY & BLAIR



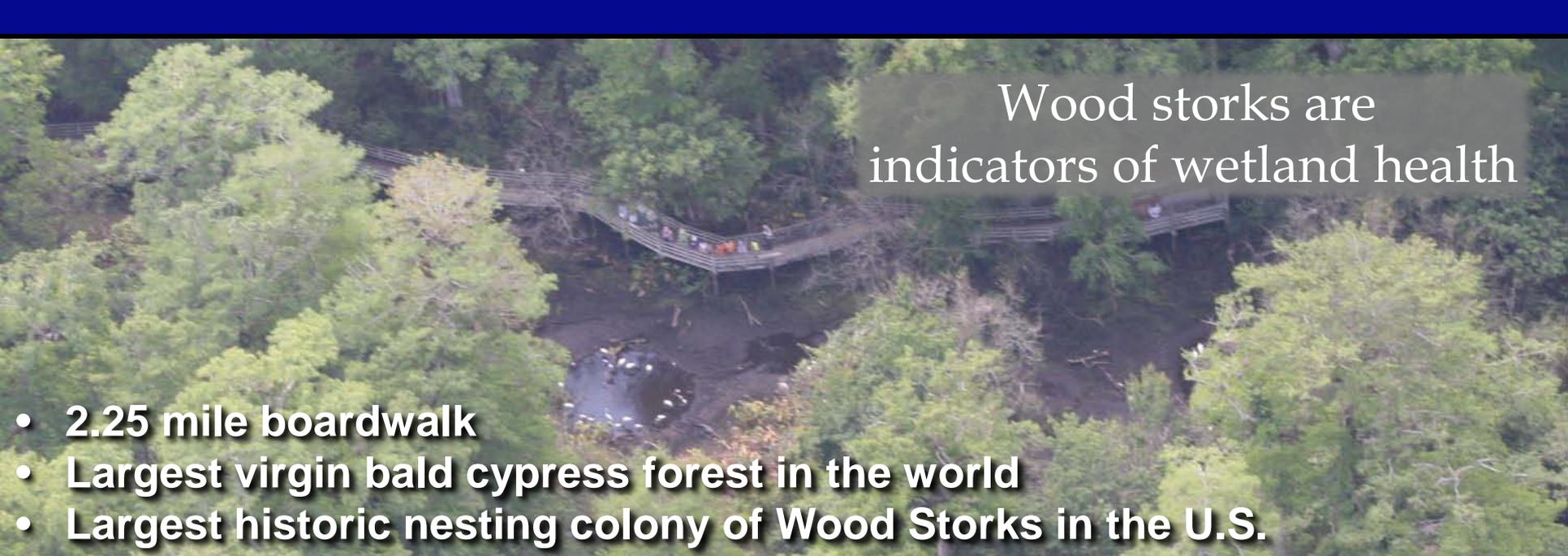
Audubon CENTER

- 13,000 acres
- RAMSAR wetland
- National Historic site
- Top 5 birding spot in US
- IBA

Dependent on health of a much greater eco-region;
Western Everglades



Wood storks are
indicators of wetland health

An aerial photograph of a lush, green swampy forest. A wooden boardwalk winds through the trees, and a suspension bridge crosses a small body of water in the center. The scene is dense with vegetation, and the water appears dark and still.

Wood storks are
indicators of wetland health

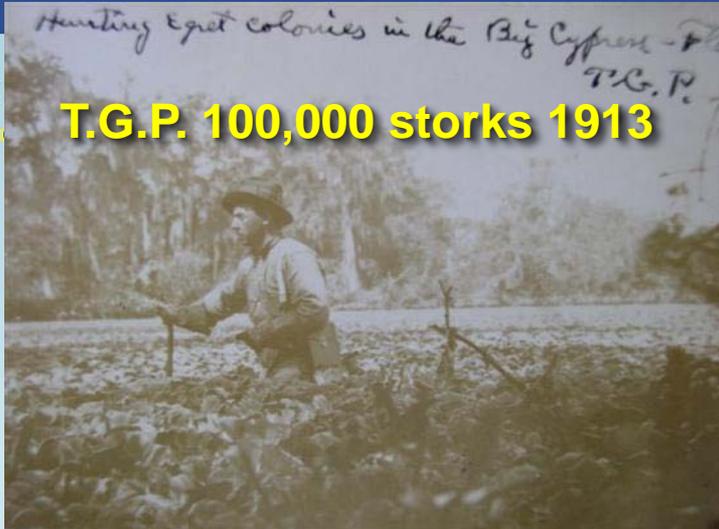
- 2.25 mile boardwalk
- Largest virgin bald cypress forest in the world
- Largest historic nesting colony of Wood Storks in the U.S.

Our Mission

Corkscrew Swamp Sanctuary

- To protect the natural resources of Corkscrew Swamp Sanctuary, its surrounding watershed & the Western Everglades and influence Everglades resotration; for the benefit of the birds, other wildlife & people.

Presettlement



T.G.P. 100,000 storks 1913

**1850
2.5million wading birds**



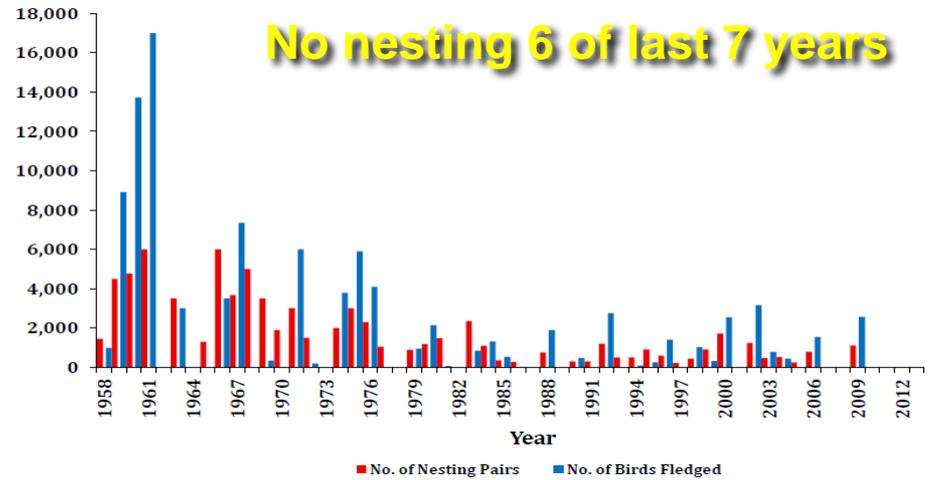
Changing Population 1850



1 person icon = 200,000 People
1 bird icon = 200,000 Wading Birds

Pre-Restoration

Wood Stork Nesting at Corkscrew (1958 - 2013)

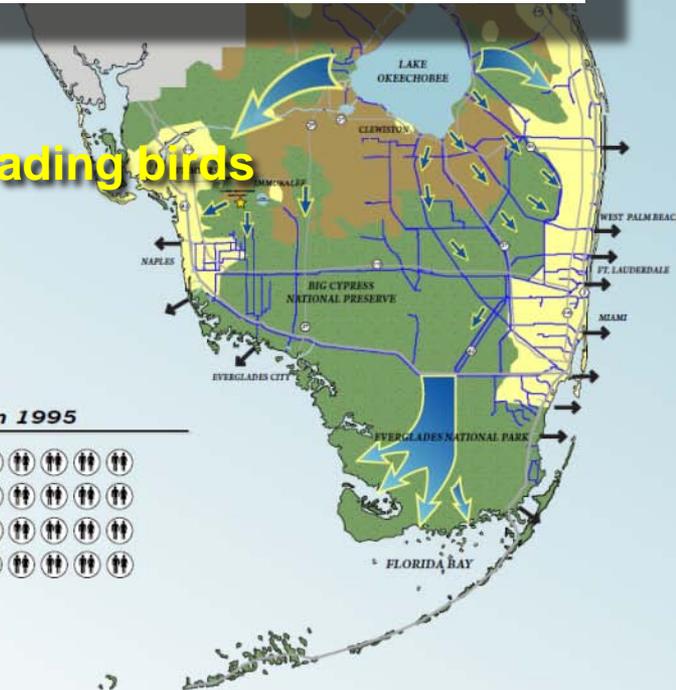


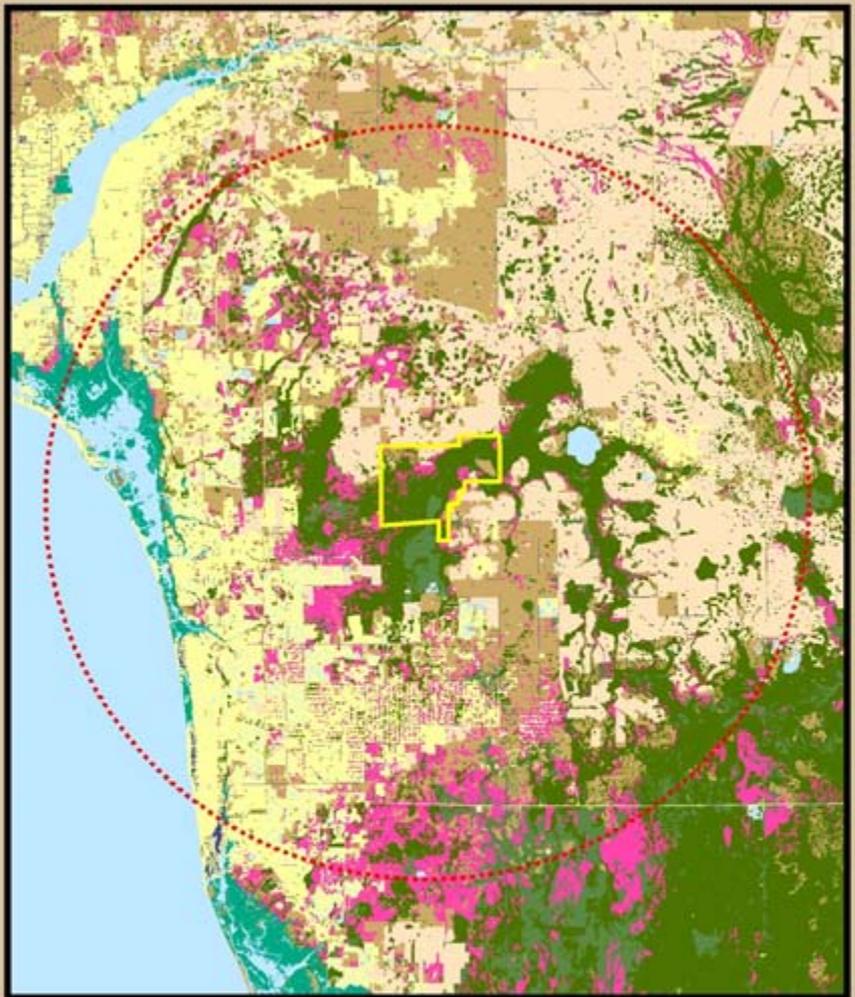
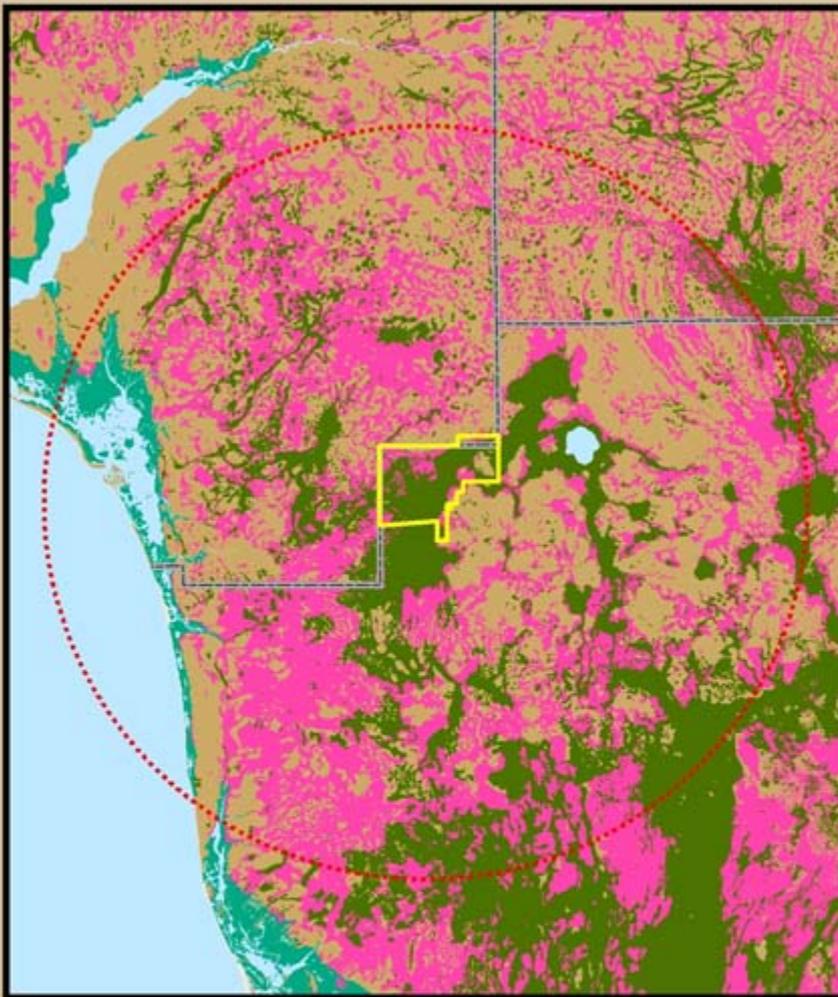
**1995
100,000 wading birds**

Changing Population 1995



1 person icon = 200,000 People
1 bird icon = 200,000 Wading Birds





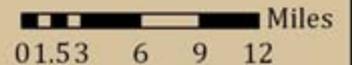
**Shallow wetland losses:
Predevelopment to
2004 Land Cover**

SWFFS PDVM dataset :
2004 LULC dataset SFWMD

- ⋯ Core Foraging Area
- Corkscrew Swamp
- Shallow wetlands
- Uplands
- Deep wetlands
- other wetlands
- Tidal wetlands
- Agriculture
- Urban/Built-up
- Canals
- Water



**Corkscrew
Swamp
Sanctuary**

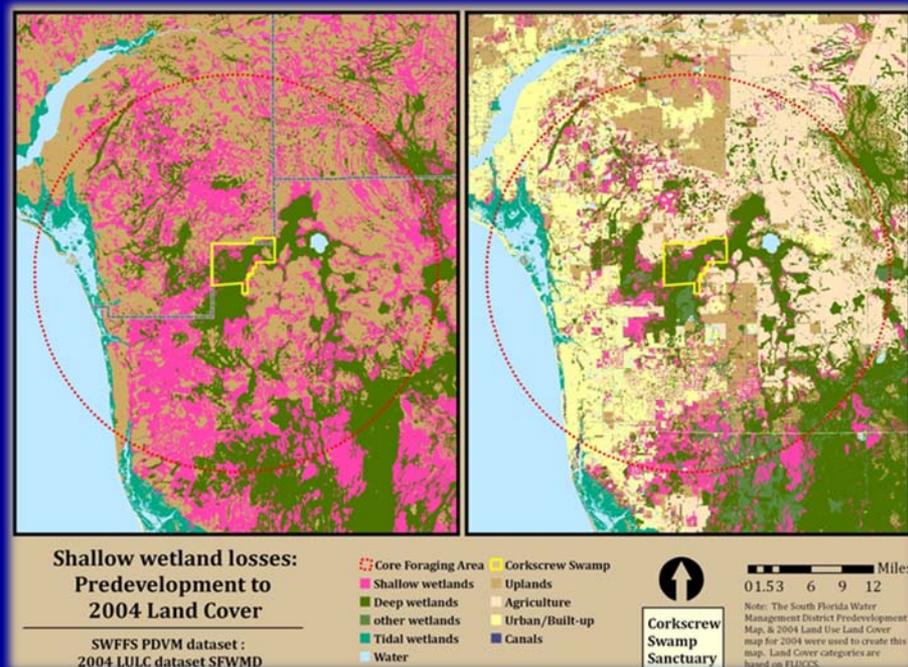


Note: The South Florida Water Management District Predevelopment Map, & 2004 Land Use Land Cover map for 2004 were used to create this map. Land Cover categories are based on FLUCCS.

73 sq. mi. of wet prairie in PDVM CFA, 13 sq. mi. in 2004. Loss of 82%

Wetland losses in the Corkscrew Rookery's Core Foraging Area (30km from colony)

	<u>predevelopment</u>	<u>2004 Land Cover</u>	<u>% remaining</u>
Shallow wetlands	387 mi ²	131 mi ²	34
Deep wetlands	245 mi ²	232 mi ²	95

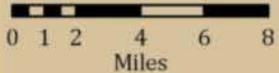


Wood stork foraging:

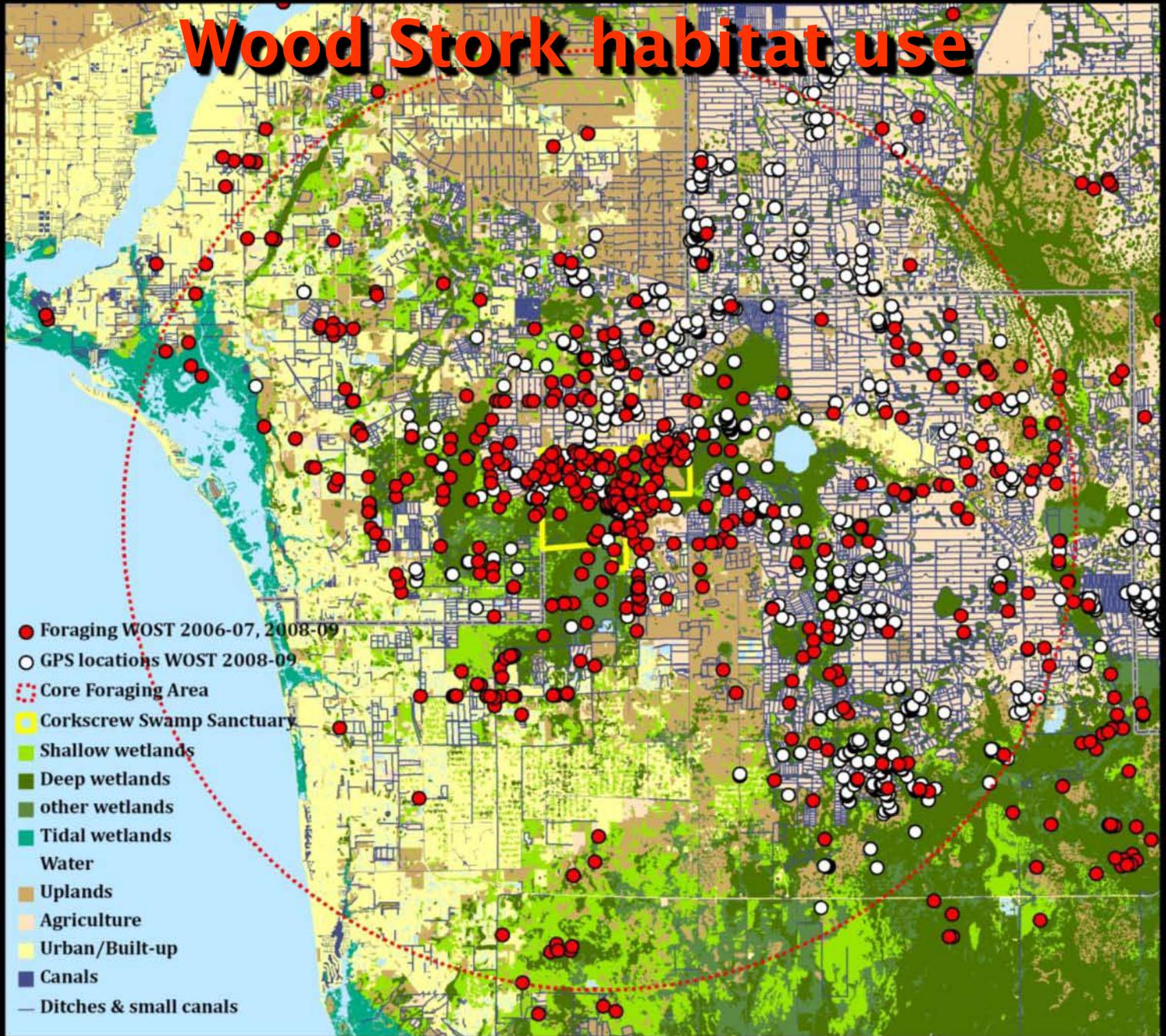
within the Corkscrew Swamp
Core Foraging Area

Wood Stork habitat use

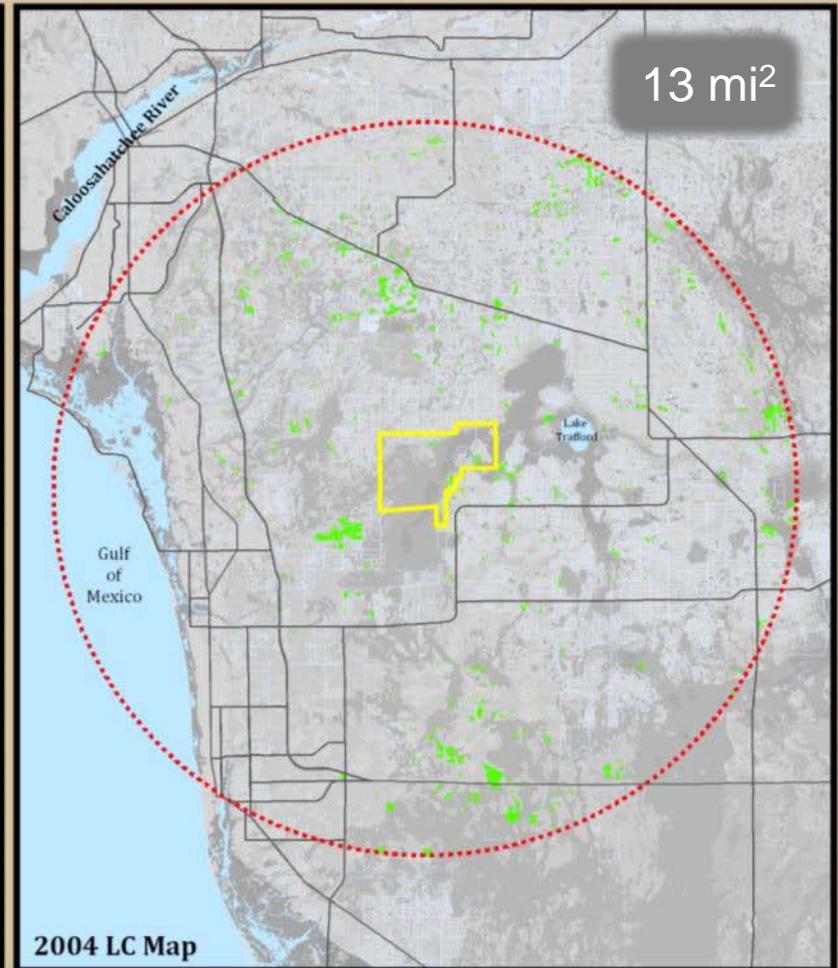
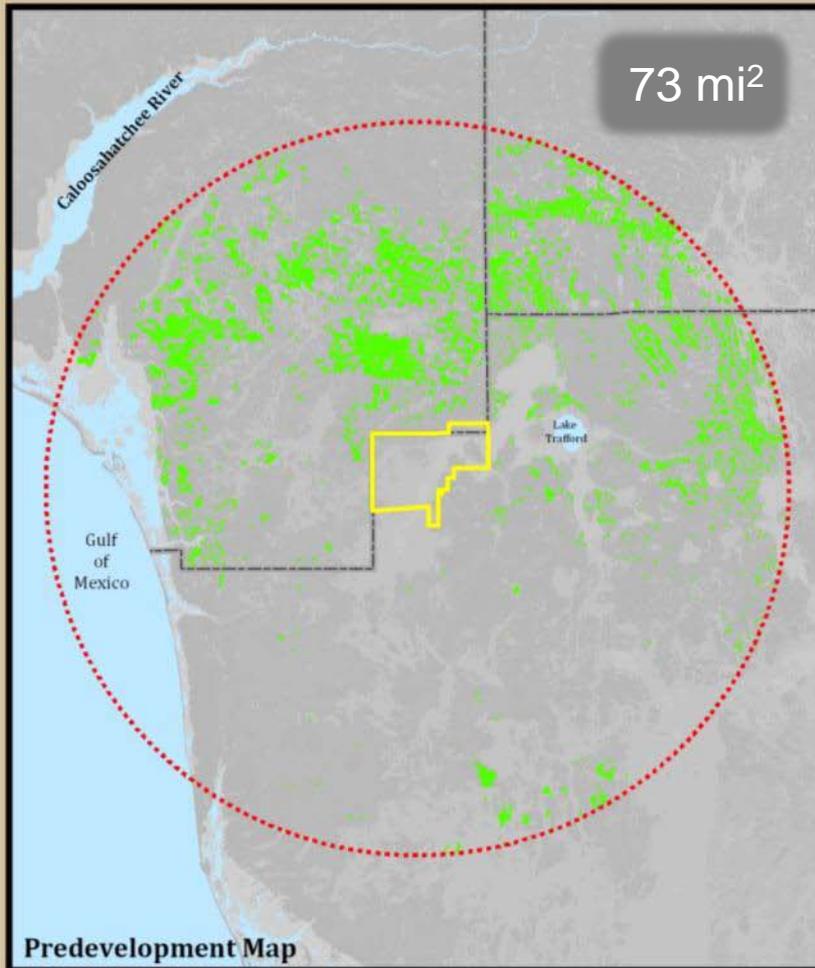
Corkscrew Swamp
Sanctuary



Note: The South Florida Water Management District 2004 Land Use Land Cover map for 2004 was used to create this map. Land Cover categories are based on FLUCCS.



Wet prairies



Wet prairie losses in the Wood Stork CFA

Losses of wet prairie wetlands from the predevelopment era to 2004 within the Corkscrew CFA in Southwest Florida

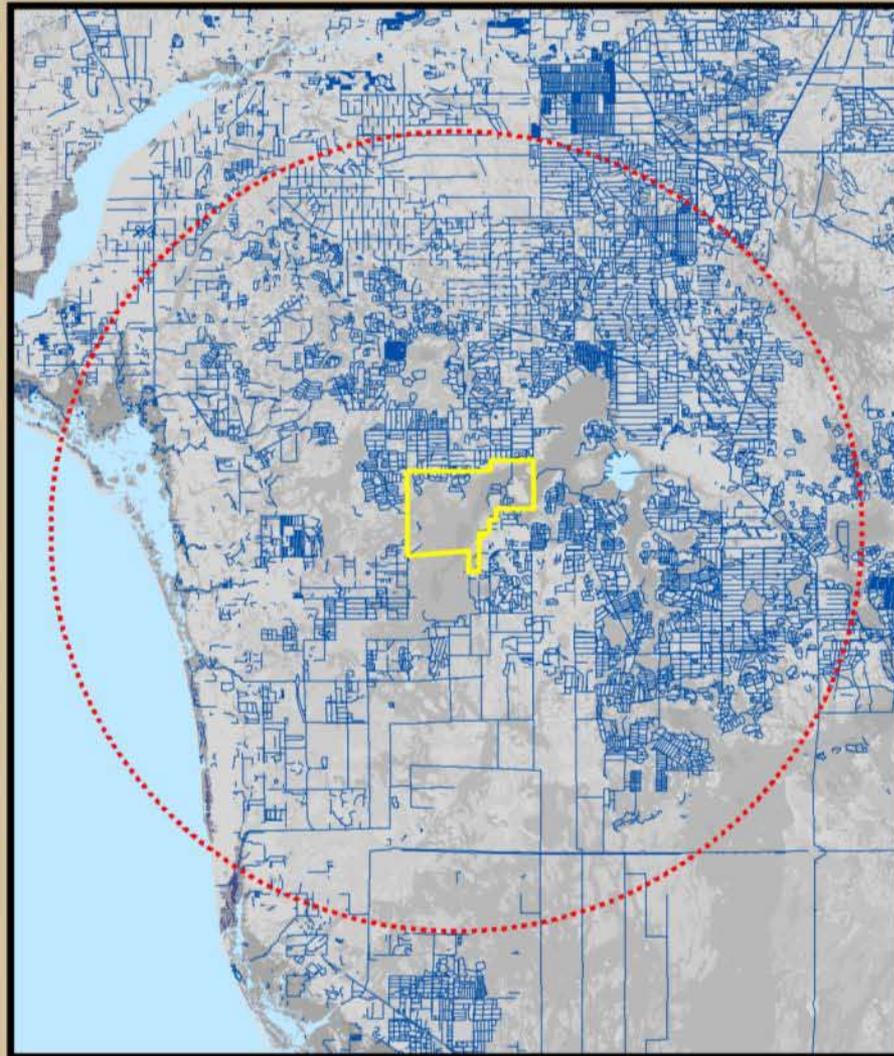
- Core Foraging Area
- Corkscrew Swamp
- Wet prairie



National
Audubon
Society

Miles
0 1.53 6 9 12

Note: Corkscrew's Core Foraging Area (CFA) has lost 82% of its historic wet prairie wetlands. Wet prairies contribute significantly to woodstork foraging opportunity early in the nesting season. Conservation of the foraging functions provided by shallow wetlands is critical to woodstork recovery. The CFA = 30km radius from a stork colony.



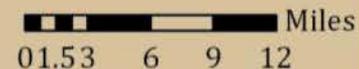
Land Cover & Canals in the Corkscrew Swamp Sanctuary Wood Stork Core Foraging Area

2004 Land Use Land Cover dataset SFWMD

- ⋯ Core Foraging Area
- Corkscrew Swamp
- Shallow wetlands
- Deep wetlands
- other wetlands
- Tidal wetlands
- Water
- Uplands
- Agriculture
- Urban/Built-up
- Canals
- Ditches & small canals



**Corkscrew
Swamp
Sanctuary**



Note: The South Florida Water Management District 2004 Land Use Land Cover map for 2004 was used to create this map. Land Cover categories are based on FLUCCS.

Private landowner involvement

Wood stork foraging on private lands:

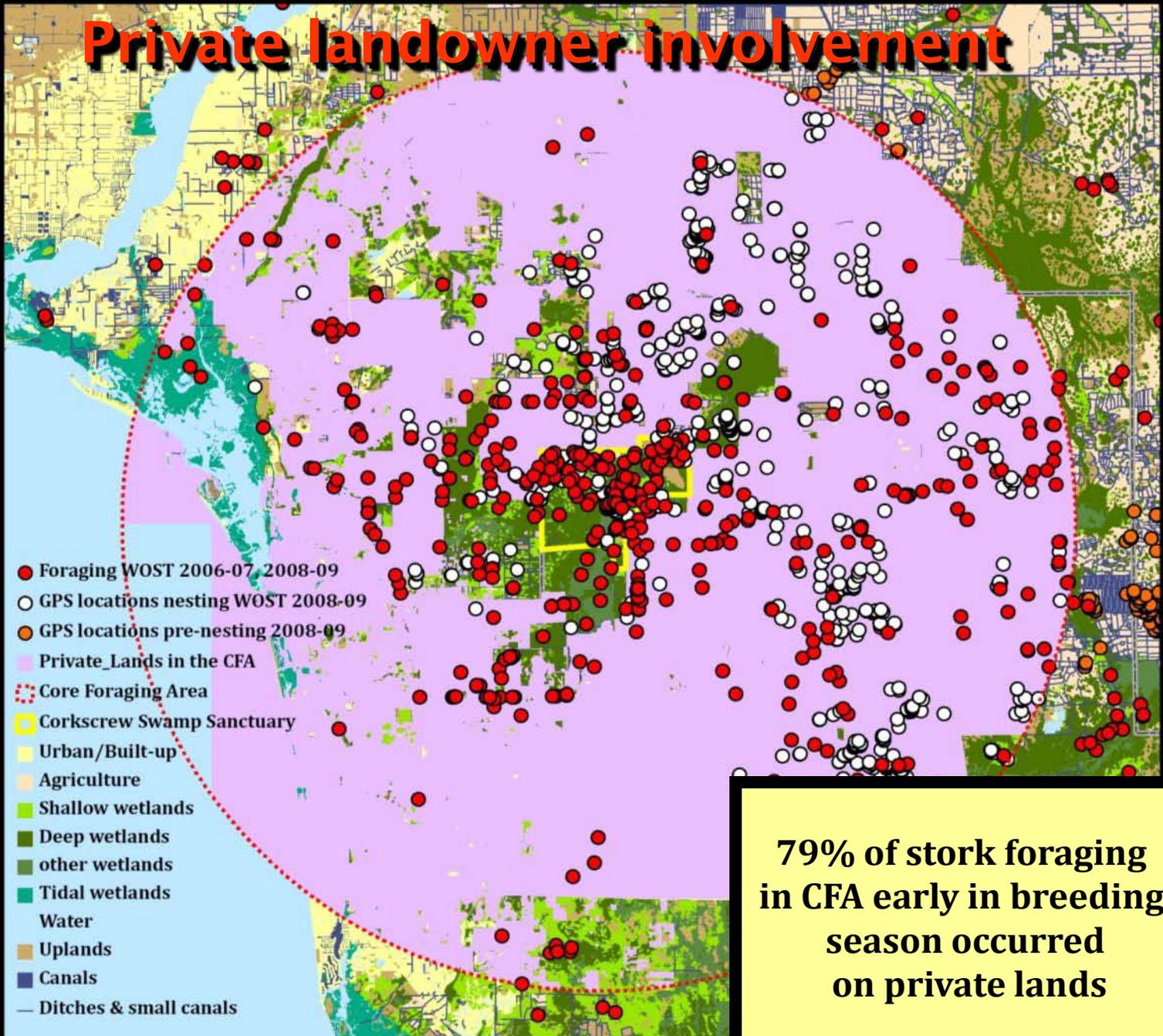
within the Corkscrew Swamp
Core Foraging Area

Corkscrew
Swamp
Sanctuary



0 1 2 4 6 8
Miles

Note: The South Florida Water Management District 2004 Land Use Land Cover map for 2004 was used to create this map. Land Cover categories are based on FLUCCS.



**79% of stork foraging
in CFA early in breeding
season occurred
on private lands**

SFWMD 2012 Wading Bird Report

- 39% fewer wading birds nests than 10 year ave'
- 66% fewer than the 2009 nesting season
- The most extreme declines were for Wood storks, White ibises, Snowy Egrets, Little Blue Herons and Tricolored Herons.
- Fledging success was generally limited for all species in 2012.
- *The survival of Wood Stork nestlings was particularly poor, and it is thought that all nests failed in the Everglades. (800 attempts)*

Wood storks are indicators of wetland health



- Wood storks are:
 - Indicators of wetland health
 - Indicators of Everglades restoration success
- Recovery requires adequate protection of shallow wetlands functions, targeted land acquisition and shallow wetland restoration.