



GETTING THE WATER RIGHT FOR WOOD STORKS:

New Insights From Landscape-Scale Foraging Patterns

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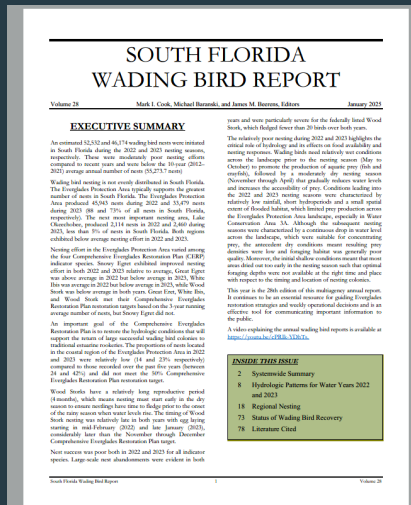
Wood Storks are **Fundamental** to Everglades Restoration



Critical ecological roles



Sensitivity to hydrological conditions



Appeal to humans, communications tool



Nesting **Fails** Most Years!

How do we Recover Wood Storks within a Landscape that has Fundamentally Changed?

1. Improve **understanding** of the hydrological & ecological conditions that can support viable stork populations.
2. Share this understanding & improve **consensus** among stakeholders about stork hydrological & ecological needs.
3. Using this consensus, determine the **potential for synergy/conflict** between storks & other restoration objectives; help define optimal ecological and hydrological **trade-offs** for a restored ecosystem



Healthy Nestlings

Talk Outline

1. Why we need a better understanding of Wood Storks.
2. Initial results of a foraging study that examines Wood Stork hydrological needs in a spatiotemporal context.

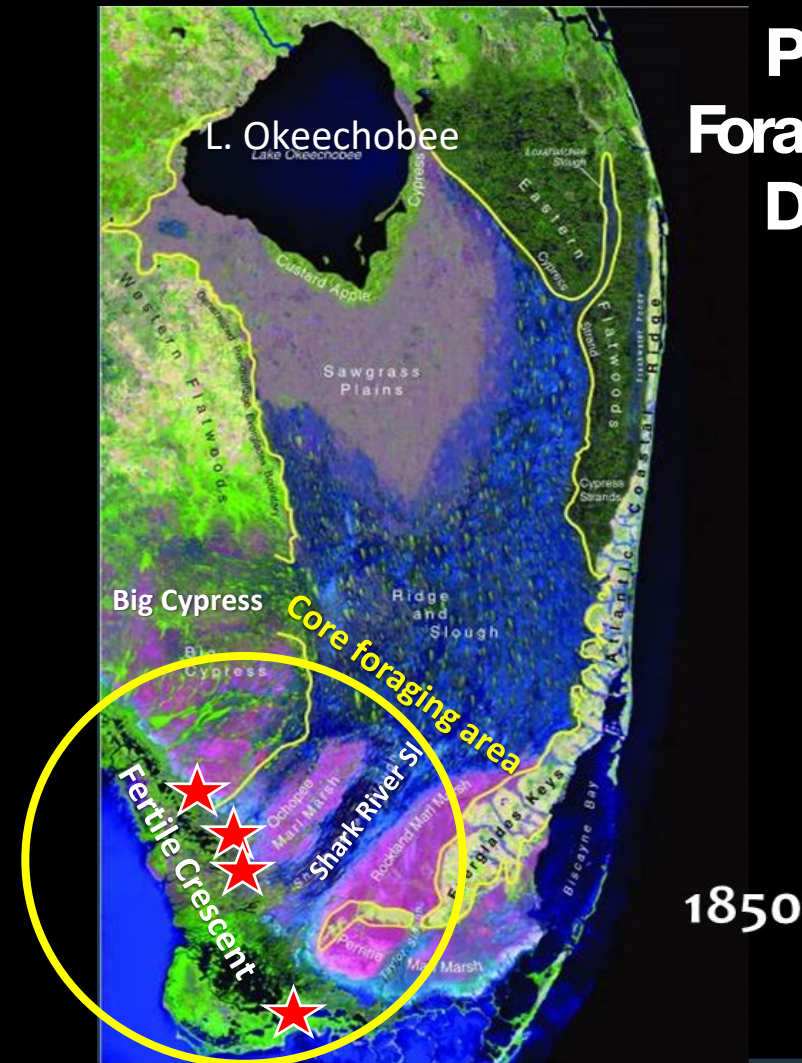


Understanding of **Prey Availability** is Constrained by Today's Overdrained Landscape



Ridge & Slough

Pre-drainage Foraging & Nesting Distributions

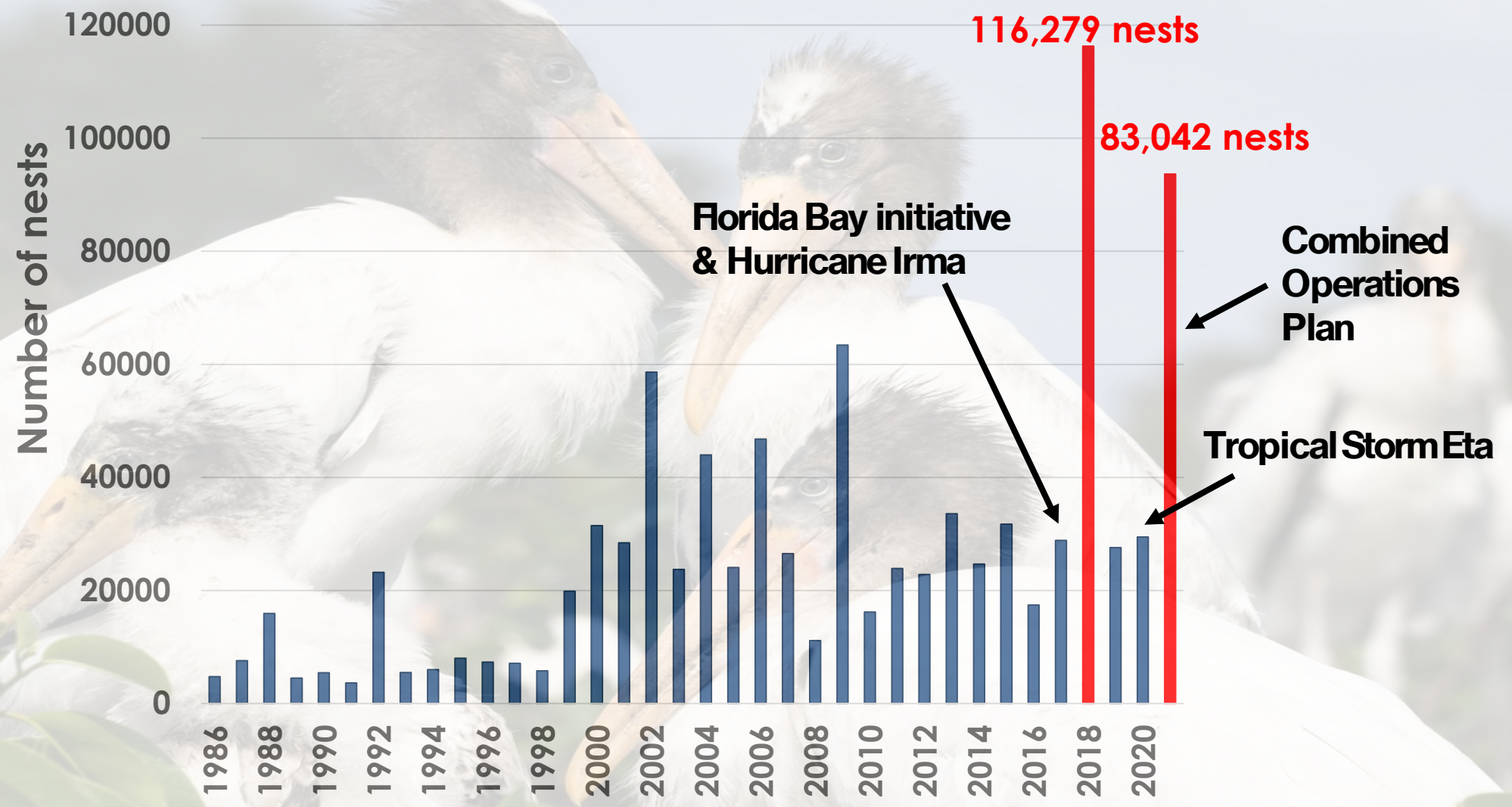
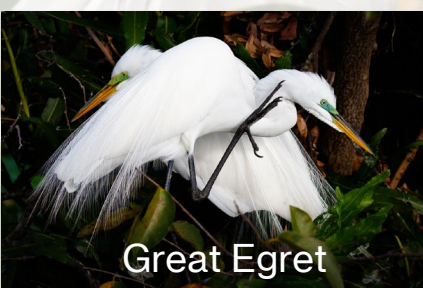


From McVoy et al. 2011

How are hydrological processes and habitat availability linked over multiple temporal & spatial scales?

'Wet' Antecedent Conditions Triggered Irruptive Nesting in 2018 & 2021 Comparable to that of the 1930's!

Indicator Species



Wading Bird (Wood Stork) Foraging Study

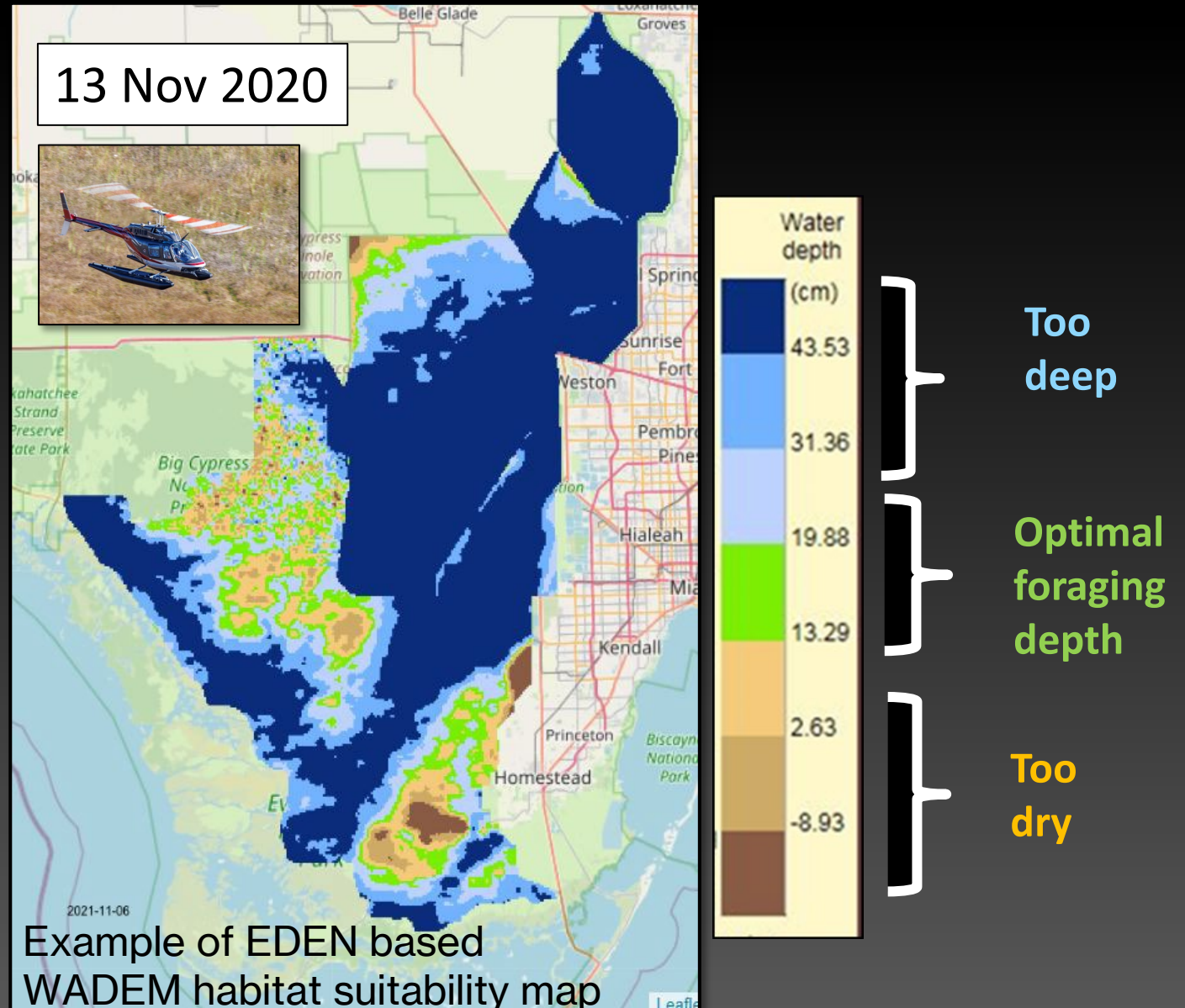
Questions

1. Which foraging habitats trigger & support irruptive coastal nesting?
2. How do hydropatterns regulate the spatiotemporal patterns of Wood Stork foraging across the Everglades landscape?



Methods

- Weekly aerial surveys from November–June, 2020-2025.
- Daily WADEM habitat (depth) suitability maps (Beerens et al. 2011, 2015).
- Flock size/species composition were quantified using digital photography.
- Water depths were measured at a selection of foraging sites (to help set gage based targets)
- Goal is to employ model selection to understand the role of hydrology (EDEN), nutrients, salinity etc on foraging & nesting at multiple temporal and spatial scales.



2021 nesting season

Antecedent wet season: very wet
Nesting season: consistent dry down

Banner Nesting Year
2640 Wood Stork nests
Early Nesting (Mid Jan)
Very Successful fledging



2022 nesting season

Antecedent wet season: Average
Nesting season: consistent dry down

Poor Nesting Year
620 Wood Stork nests
Later Nesting (Mid Feb)
Comprehensive nesting failure



Restoring Flow through Shark River Slough to the Coast is not Enough to Recover Coastal Nesting Storks!

Storks need a **landscape** of suitable conditions to produce sufficient fish & to provide foraging habitat at the **right place & time**.



1. Coastal Marshes (triggers early & coastal nesting)

2. Southern & Eastern Big Cypress

3. Central & southern WCA-3A (critical for nesting success)

4. No foraging in Shark River Slough?



Questions?