FAU ENVIRONMENTAL SCIENCE PROGRAM
Charles E. Schmidt College of Science
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Diet Differences of Small Herons in Response to a Changing Environment



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Human-Induced Rapid Environmental Change (HIREC)

Sih et al. 2011

A Modified Environment

-The Everglades has been extensively modified
-Wading bird food acquisition is strongly correlated to hydrology

Loftus and Kushlan 1987, Gawlik 2002

Nest Initiation Coincides with Pulse of Available Prey

Kahl 1964, Kushlan 1980, Loftus and Eklund 1994

Study Species: Small Herons

Tricolored Heron

Snowy Egret

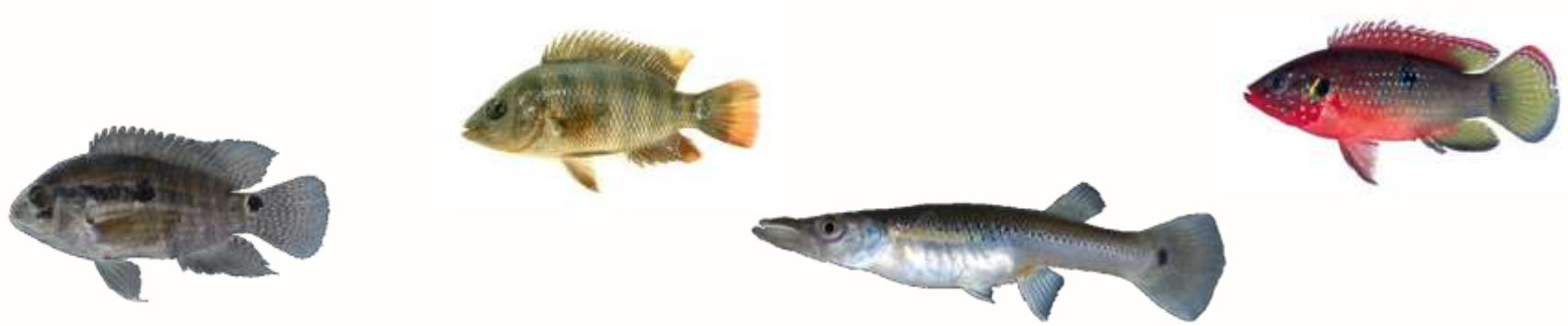
Little Blue Heron

Diet Specialists (fish)

Diet Generalist

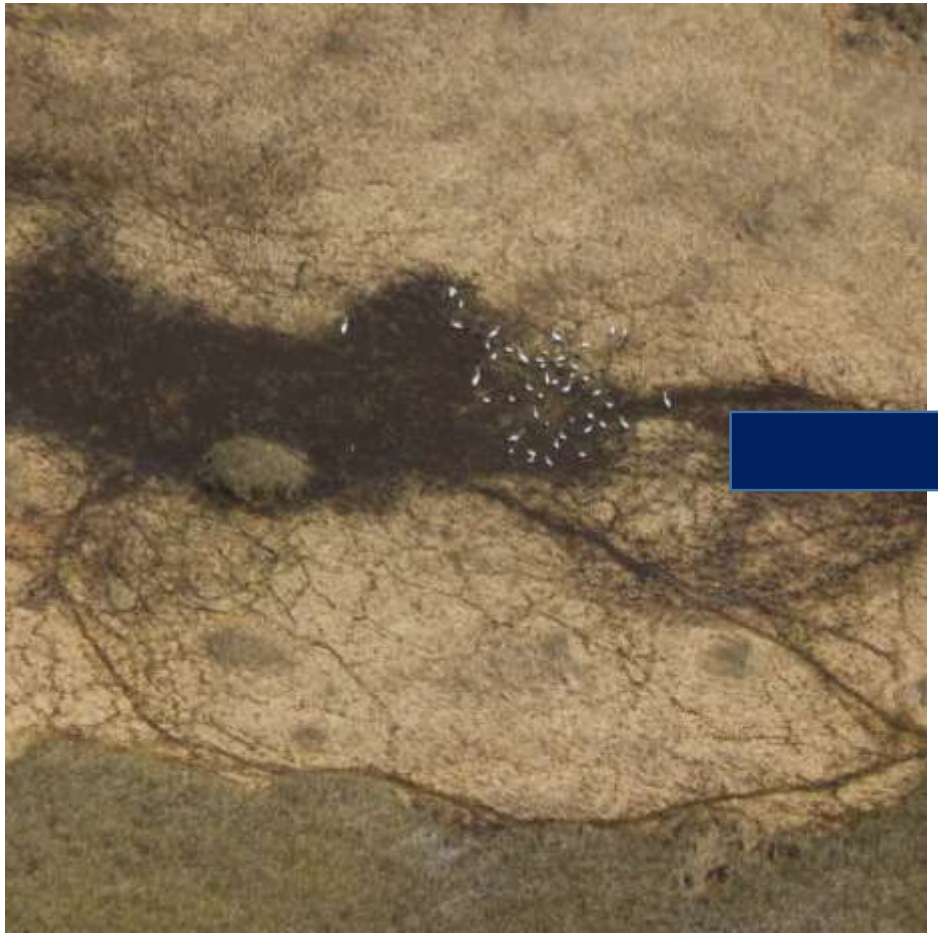
Klassen 2016

Exotic Prey Community



Kline et al. 2014

Natural Marsh

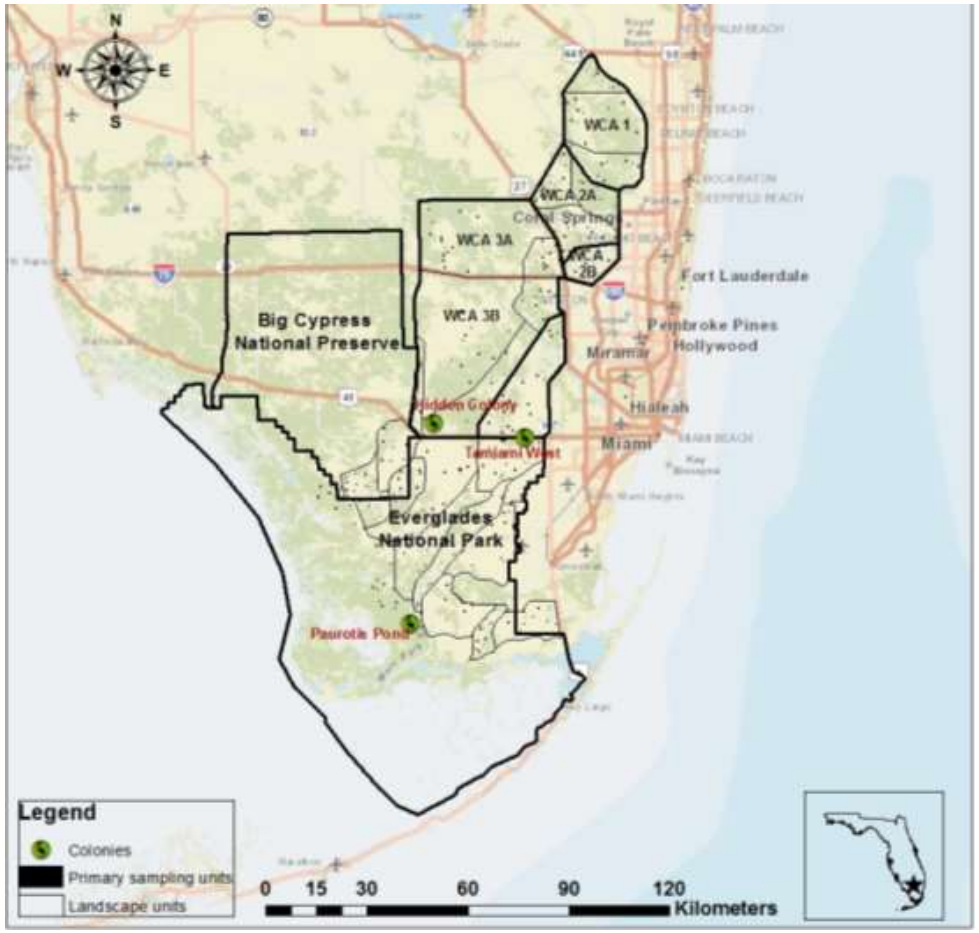


Urban Environments

Objectives

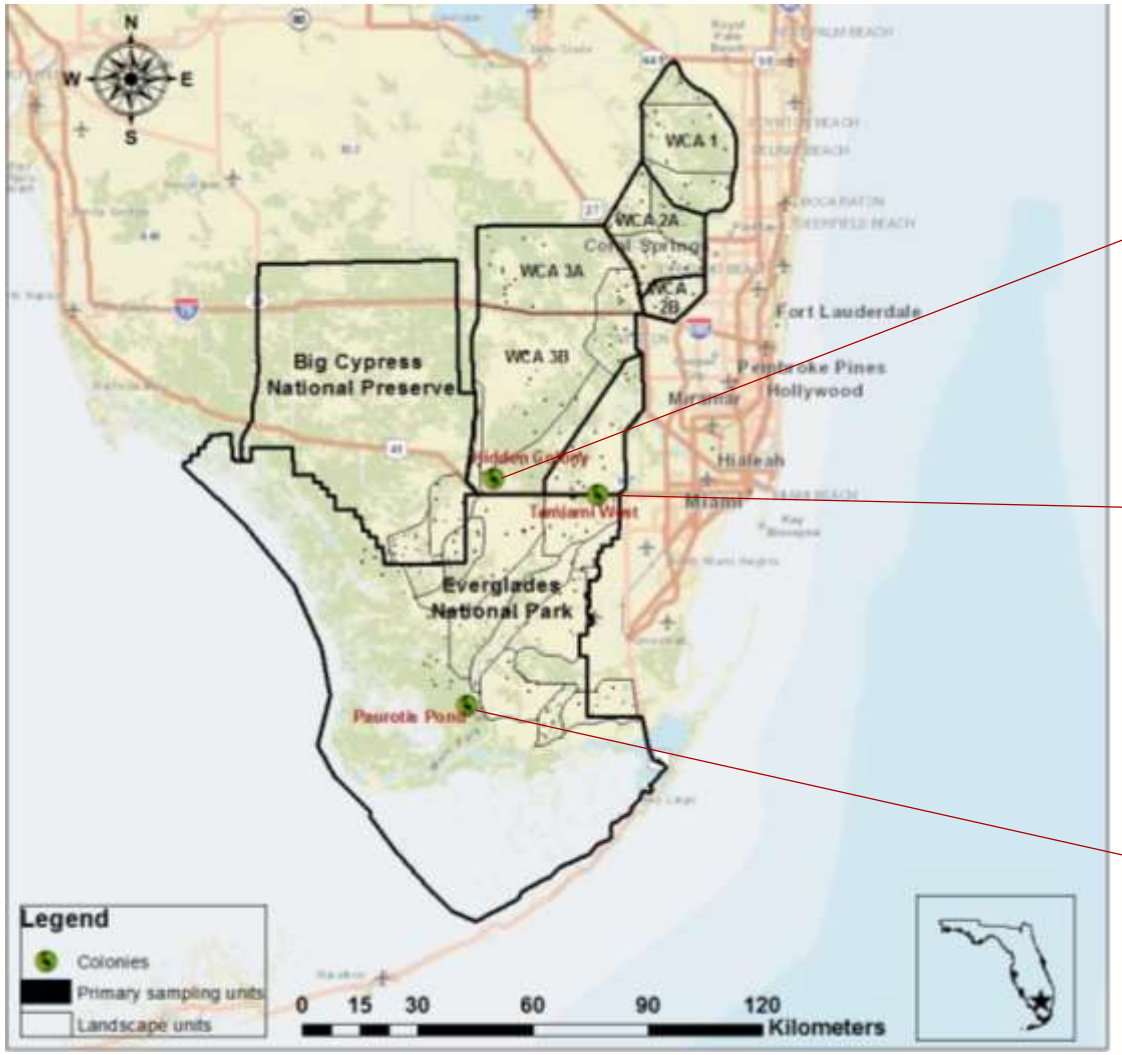
- **Determine how exotic prey preference affects nest success**
- **Determine if exotic prey use is related to hydrologic shifts**

Prey Availability



Gawlik et al. unpublished data, CERP MAP project

Prey Use by Small Herons

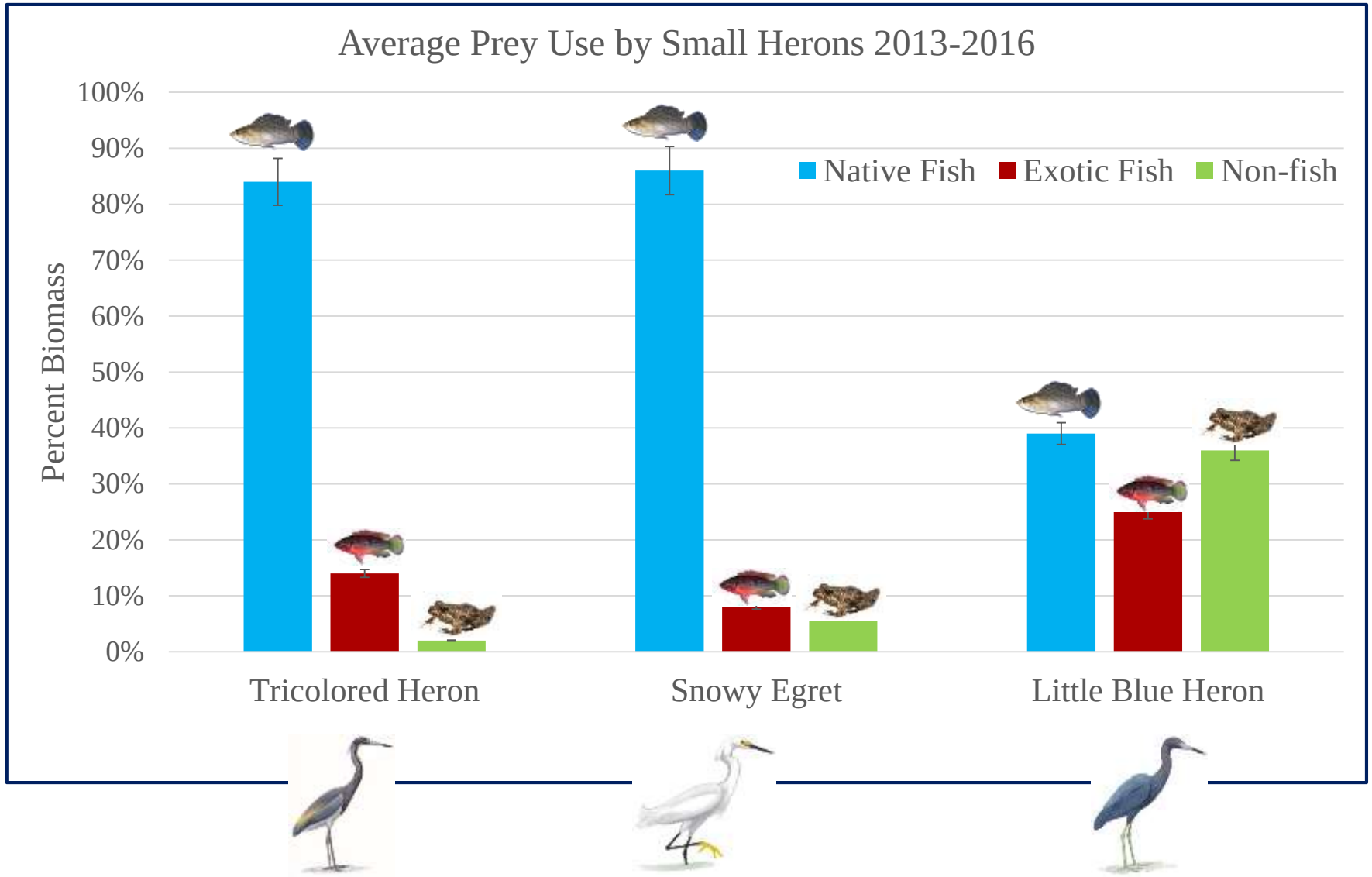


Nest Success:

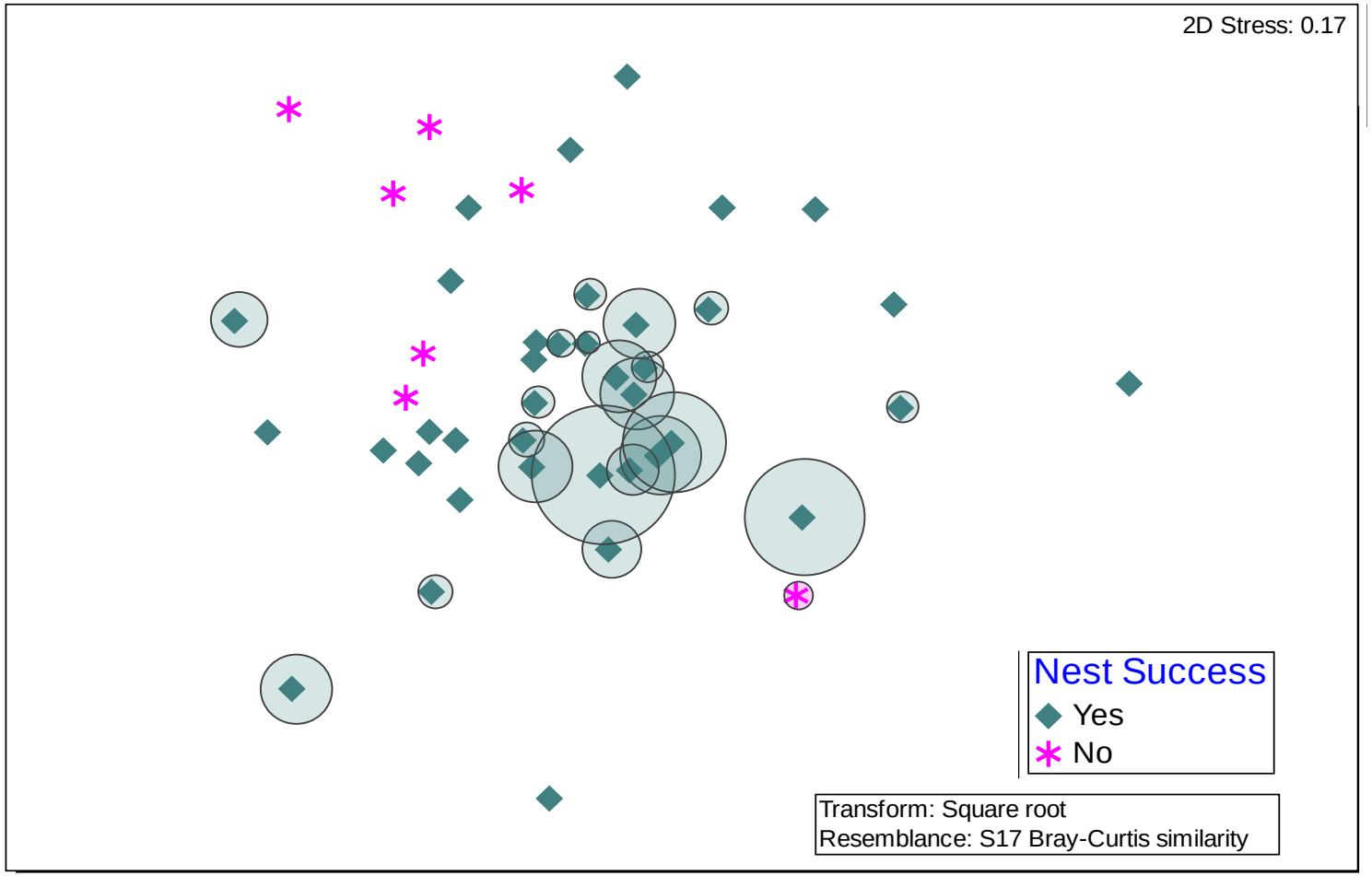
- Nest produces at least one chick to 14 days
  - Age when small herons become mobile

Hensler and Nichols 1981, Frederick and Collopy 1989

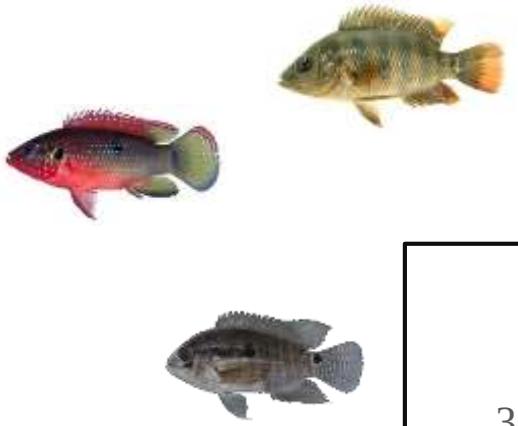
Preliminary Results: What are they eating?



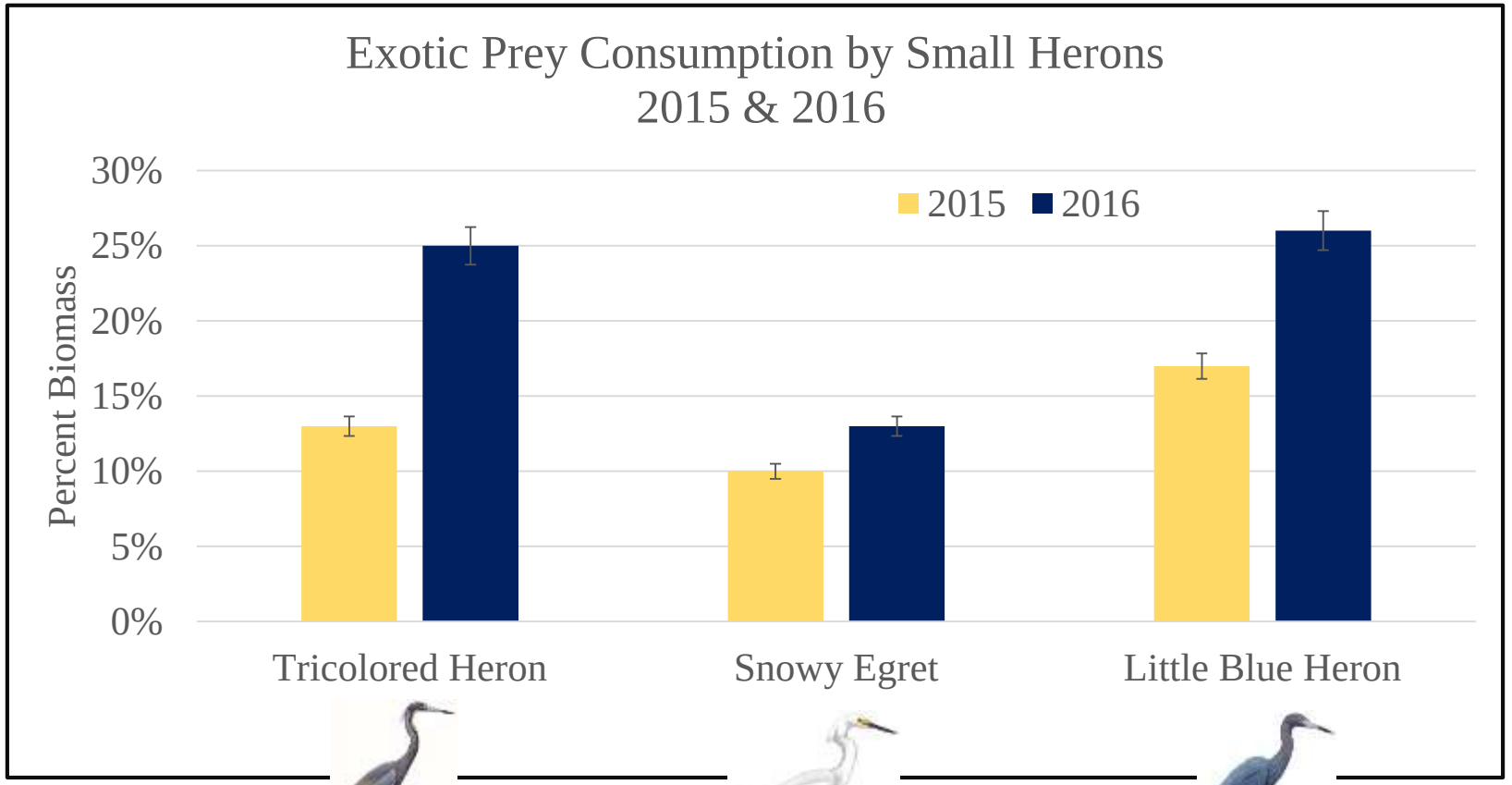
Preliminary Results: Nest success & Exotic Prey Use



Preliminary Results: 2015 vs. 2016



- 2016 experience greater than average rainfall
- Poor nesting season for all wading birds in the Everglades
- All 3 species consumed more exotics in 2016; t-test p-value = 0.03



Discussion

- In 2016 water levels were high
  - Higher percentage of exotic species in all small herons

- Little Blue Herons
  - Diet contained more exotic and non-fish prey
  - Experienced greater nest success than Tricolored Herons and Snowy Egrets
  - May be better suited to adapt to HIREC

- Continued data collection for 2017 nest season

Acknowledgements

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