



UNIVERSITY OF
GEORGIA

Warnell School of Forestry
& Natural Resources



Urban Land Use, Movement, and Seasonality of White Ibises (*Eudocimus albus*) in South Florida



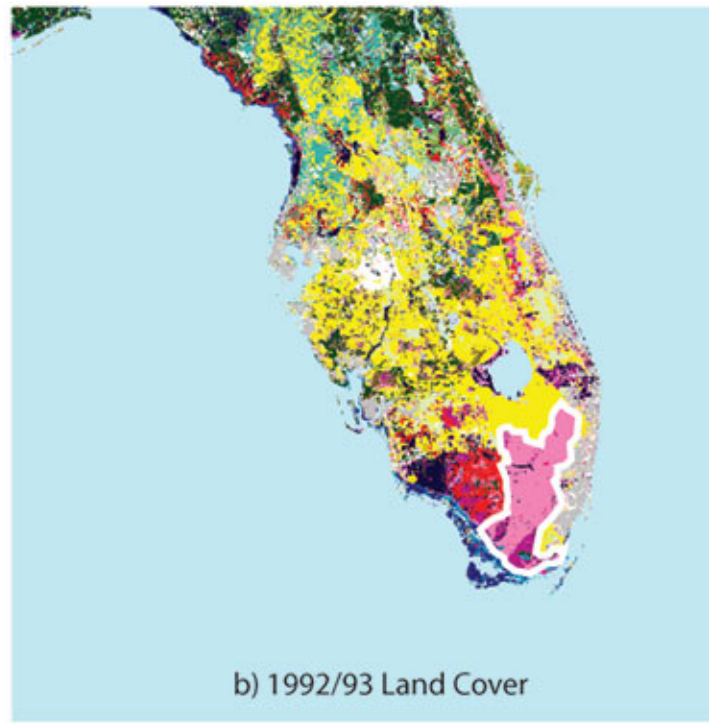
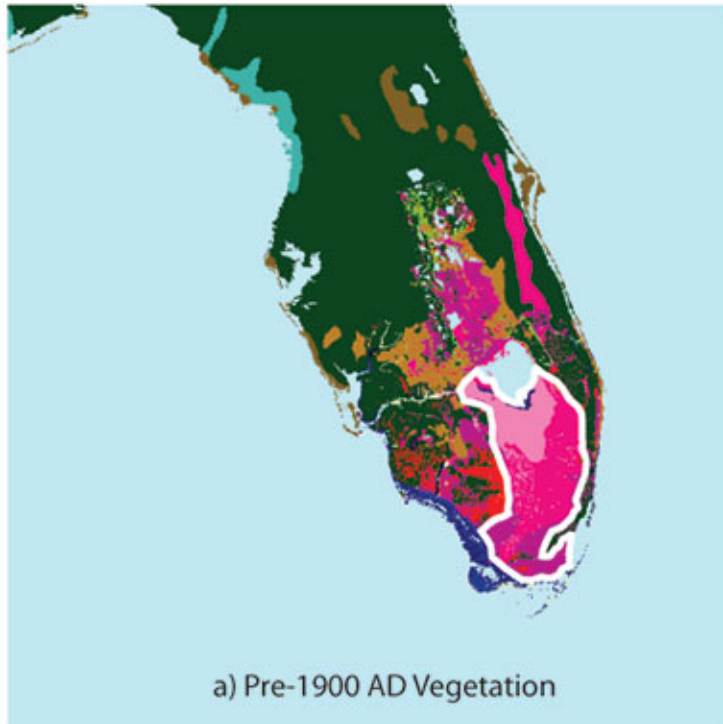
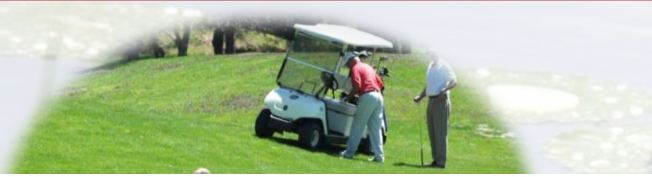
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¹ Warnell School of Forestry and Natural Resources, University of Georgia

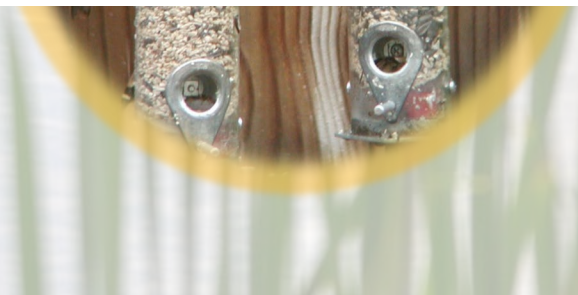
² Department of Forestry and Environmental Conservation, Clemson University

³ Southeastern Cooperative Wildlife Disease Study, College of Veterinary Medicine,
University of Georgia

Urbanization and wildlife



- Open water
- Evergreen needle-leaved tree
- Deciduous broad-leaved tree
- Evergreen broad-leaved tree
- Grasses
- Shrubs
- Mixed woodland
- Crop/mixed farming
- Slough, bog, or marsh
- Urban/roads, rock, sand
- Sawgrass/other marshes
- Evergreen shrub wetland
- Mangroves
- Cypress swamp
- Wet prairie marsh
- Mixed residential
- Woody wetlands
- Saltwater marsh



The White Ibis System



The White Ibis System



What does this shift mean for ibises?

Physiology and health

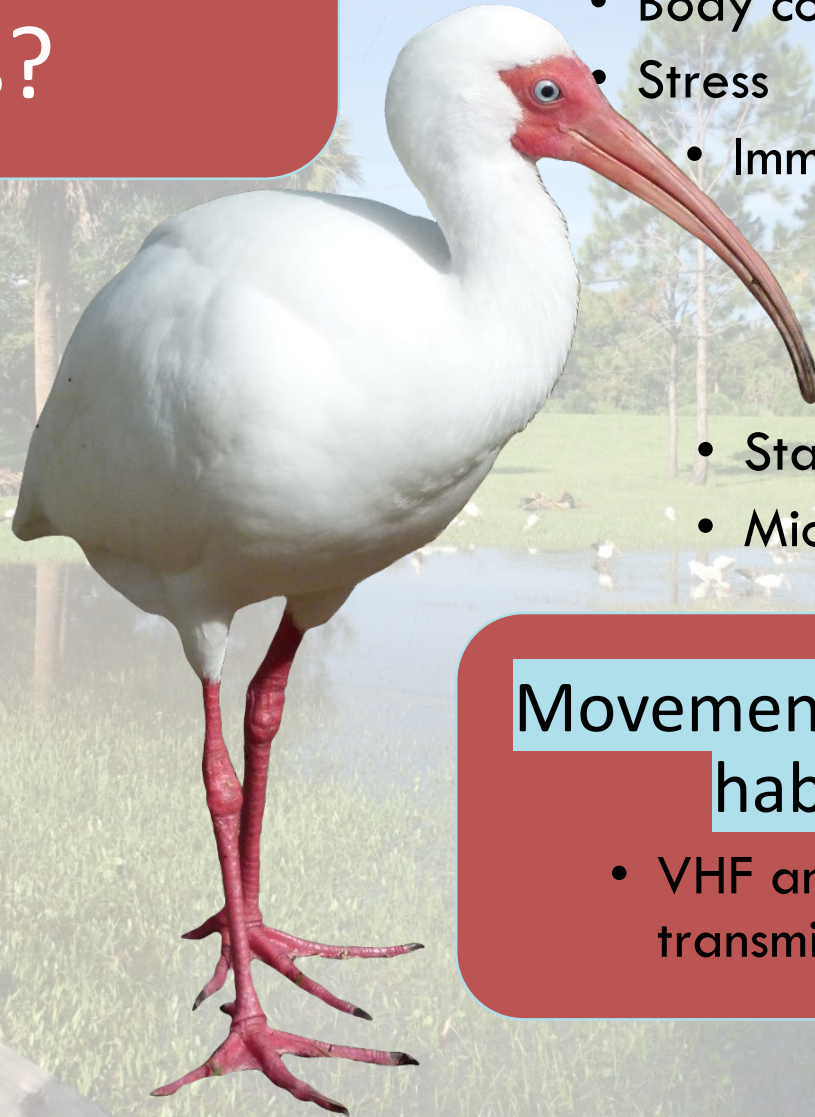
- Pathogen or parasite exposure/infection
 - Body condition indices
 - Stress
 - Immune function

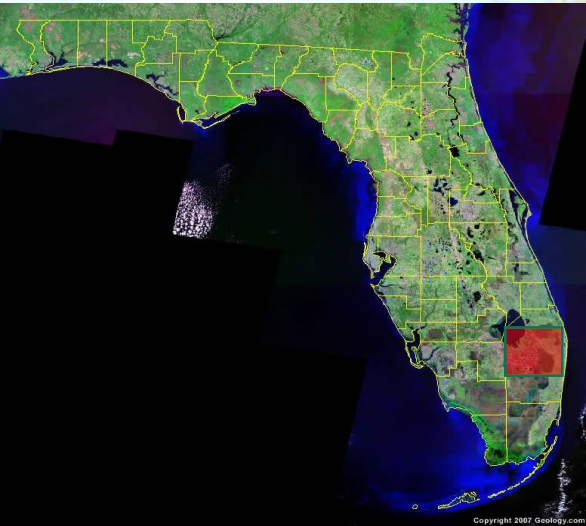
Diet

- Stable isotopes
- Microbiome

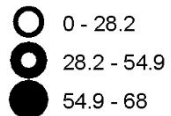
Movement patterns and habitat use

- VHF and GPS transmitters

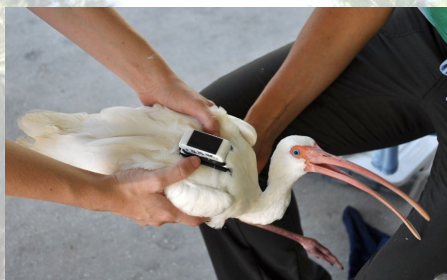
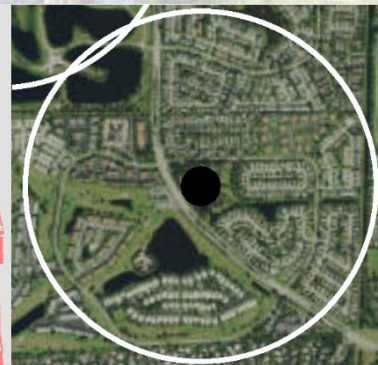
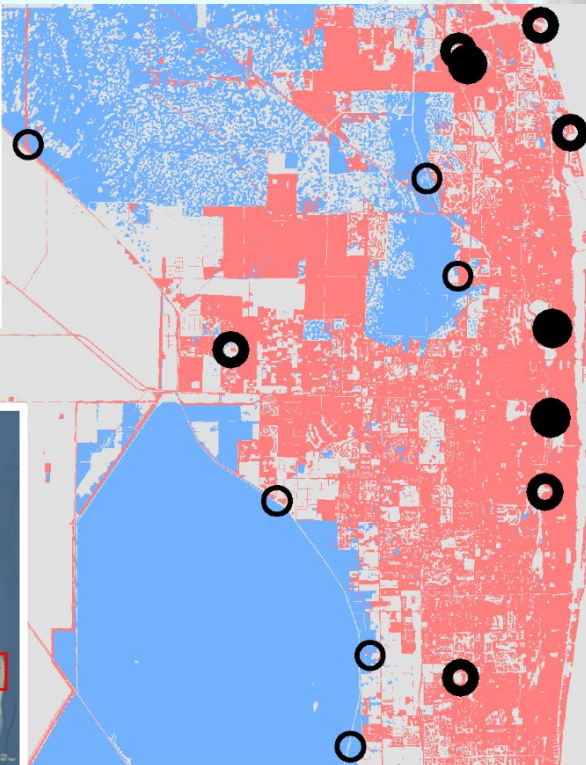
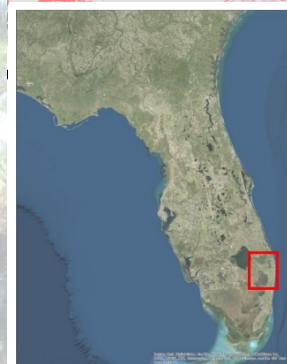




Capture Sites



Land Use Class



Objectives for today's talk

Use Ibis locations and movement data to define

- Behavioral Seasons
- Seasonal Space Use
- Resource Selection



Methods

Behavioral Seasons

- Use movement statistics to determine if an animal is in one of four seasons:
 - Breeding
 - Post breeding
 - Non-breeding
 - Search and Dispersal
- Assign a behavioral season to each ibis point location

Space Use

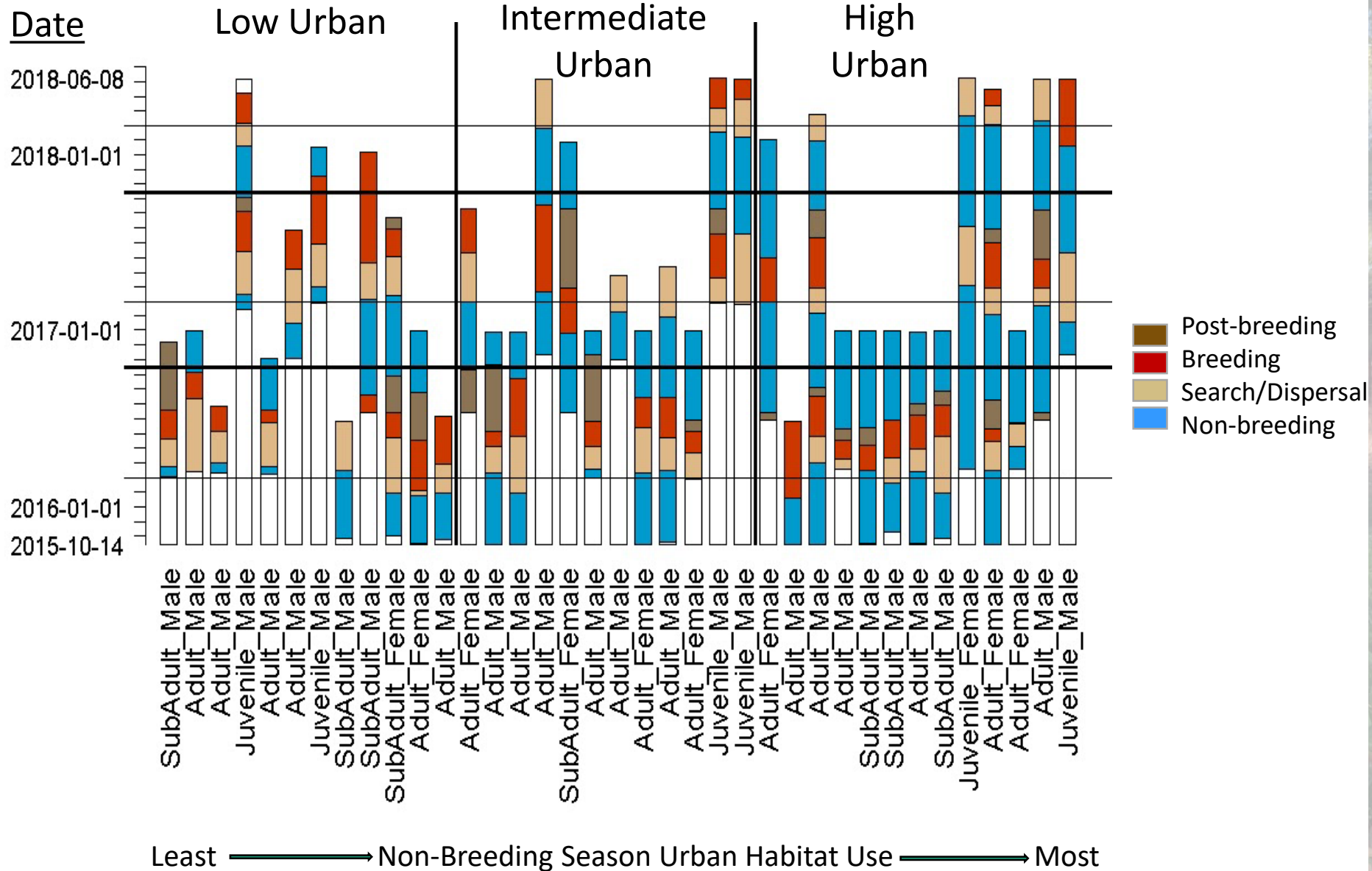
- Develop home range estimates for each animal, for each season

Resource Selection

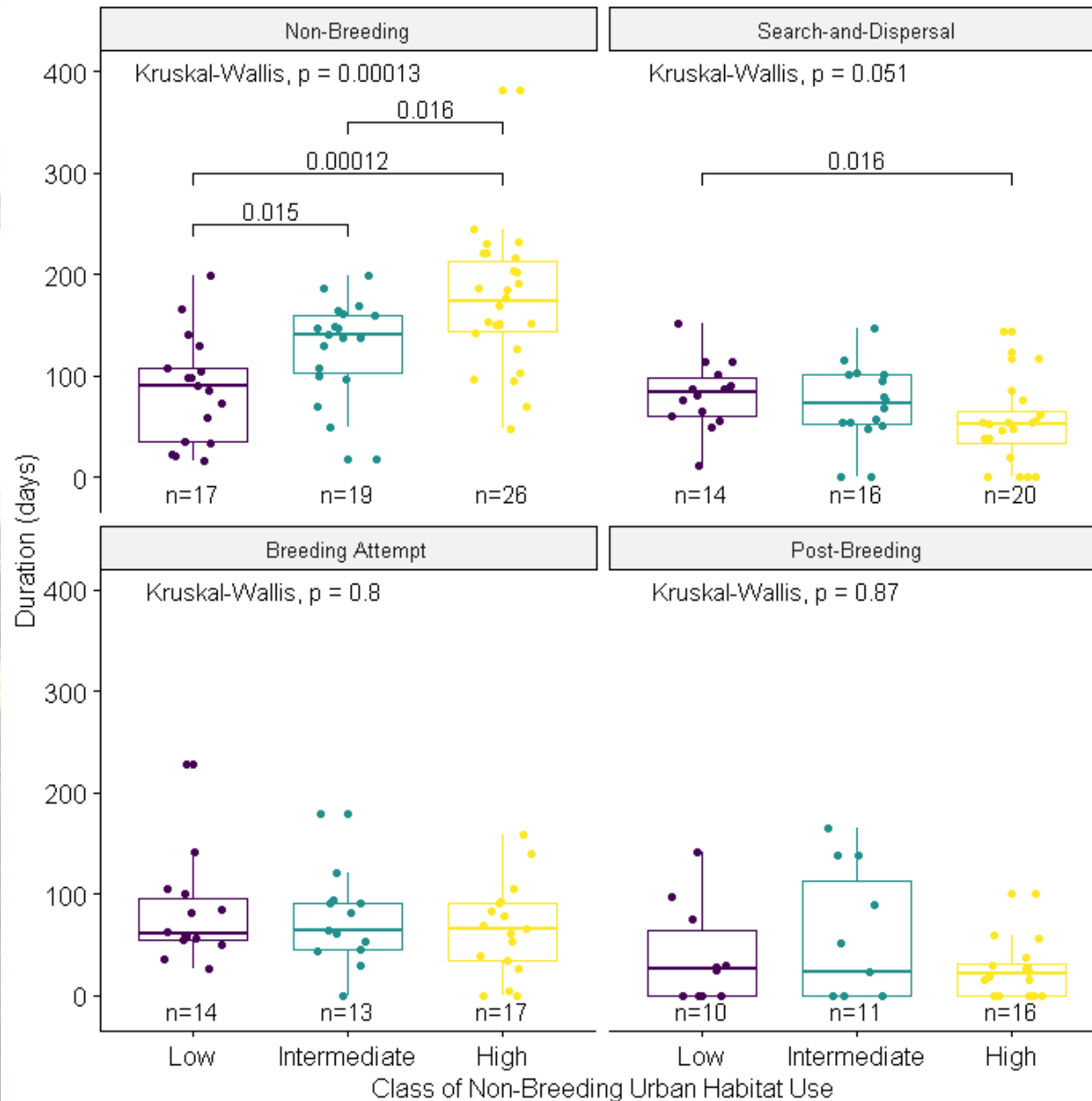
- Compare resource use by animal, by season
- Currently underway...



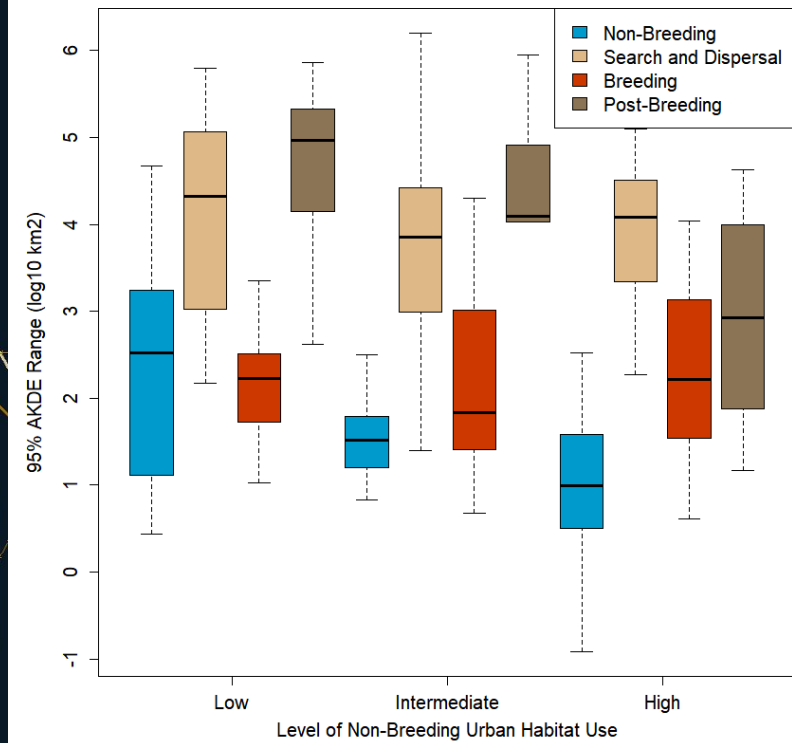
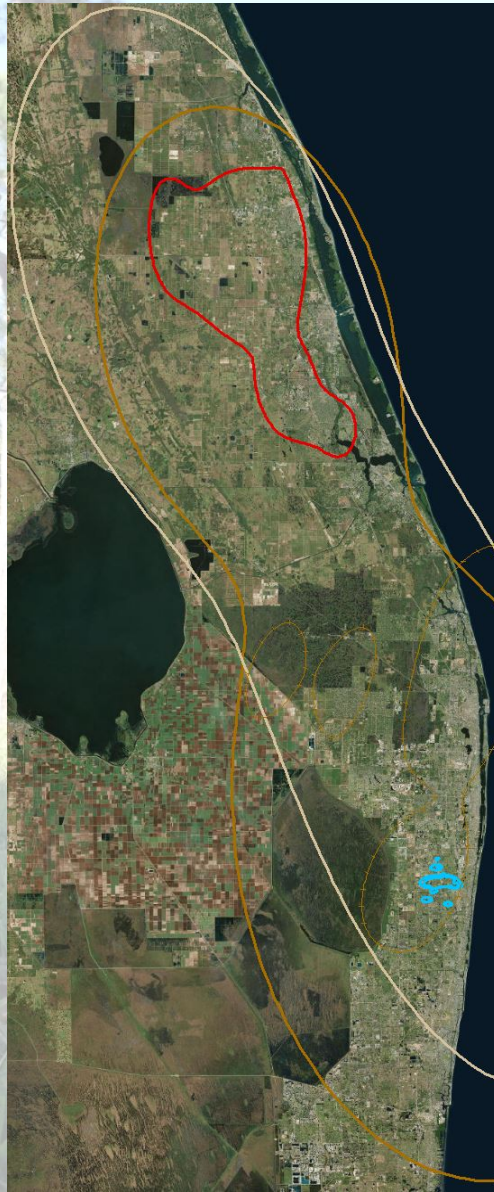
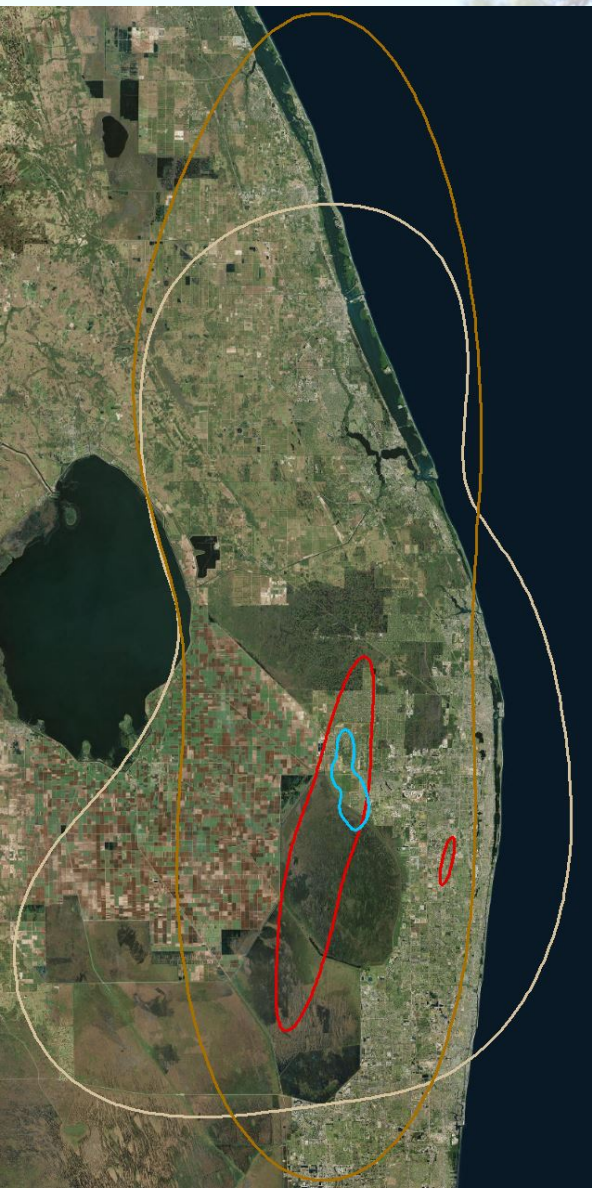
Results: Behavioral Seasons



Results: Behavioral Seasons

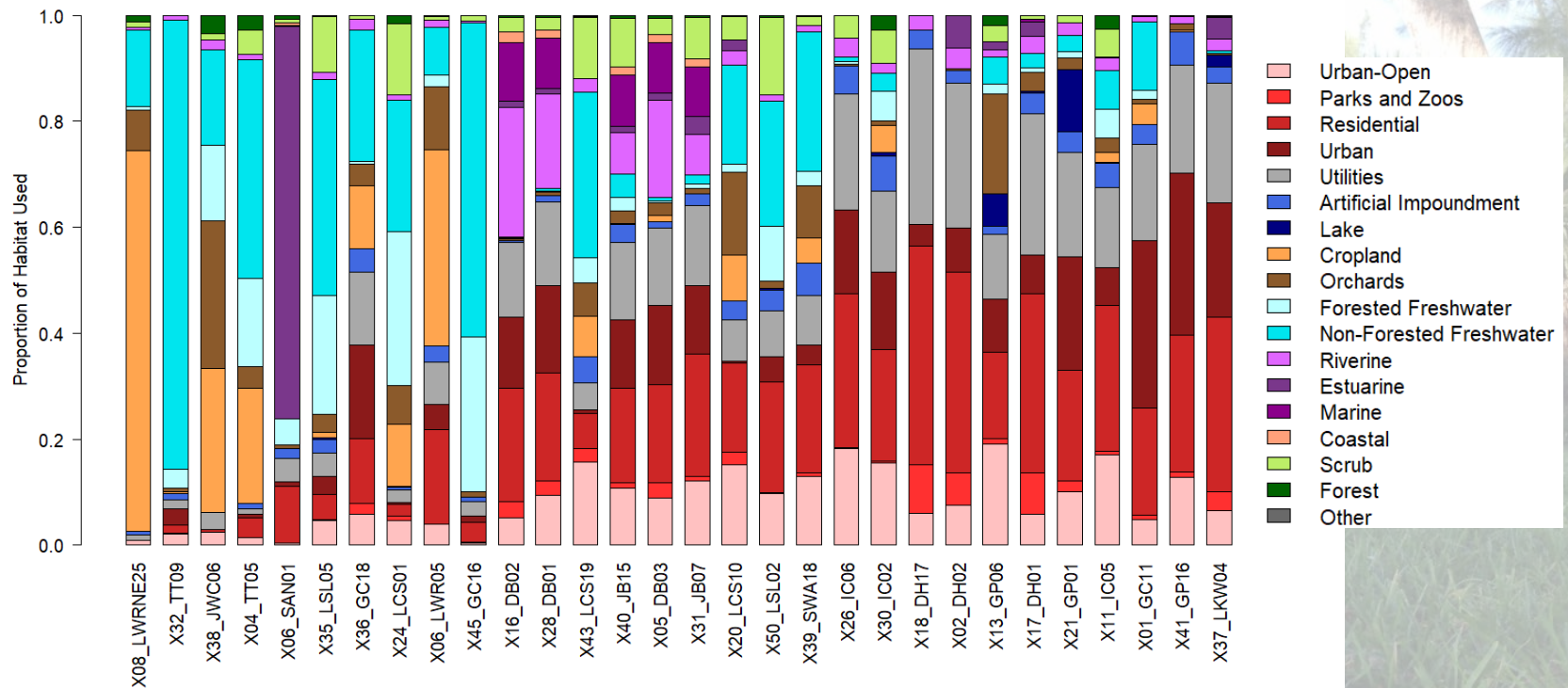


Results: Space Use

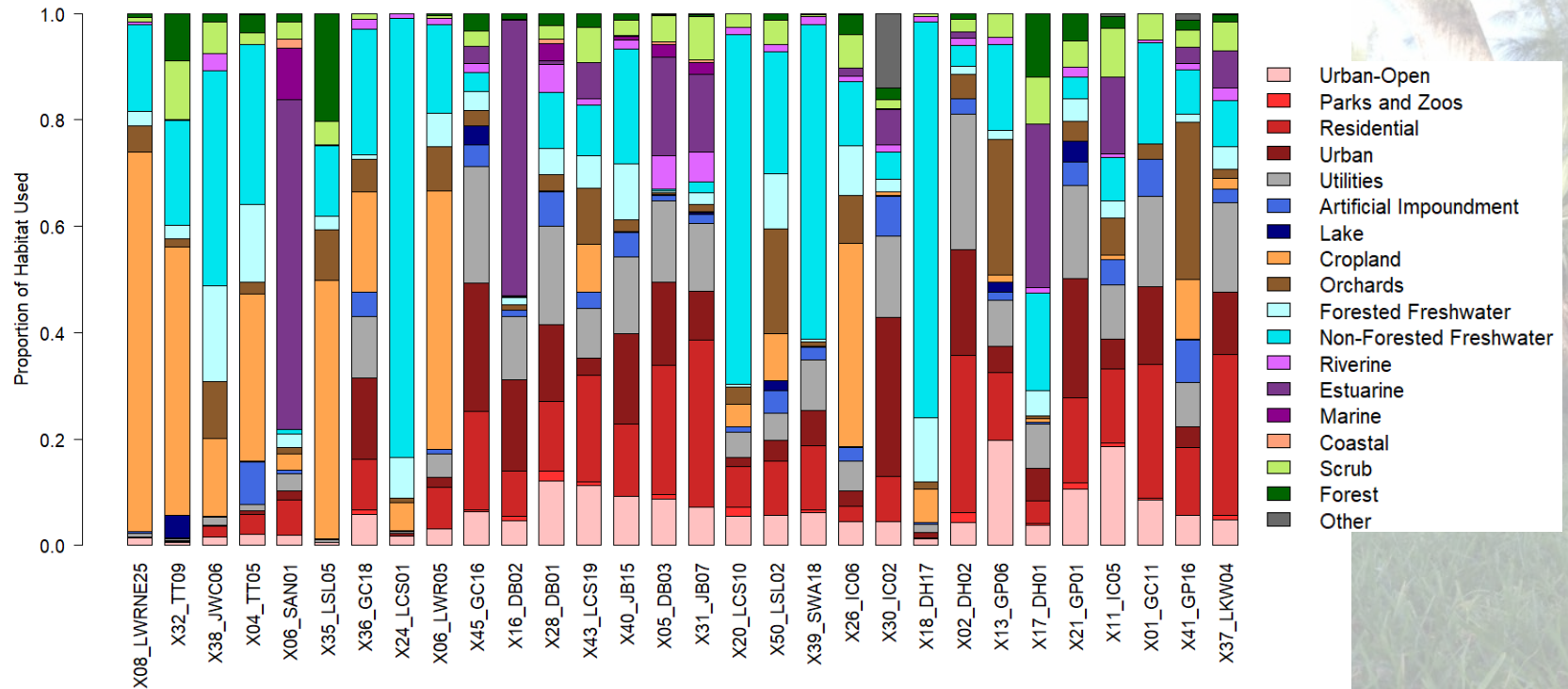


Results: Resource Selection

A: Non-breeding Used Habitat



B: Breeding Used Habitat



Major takeaways...

White ibises are adapting their annual cycles

High urban birds are still retaining some natural movement patterns and behaviors

Important example of wildlife actively adapting movement ecologies to urban landscapes & **important implication** for landscape epidemiology



Thank You!

PIs

Sonia Hernandez
Michael Yabsley
Jeff Hepinstall-Cymerman
Sonia Altizer
Richard Hall
Erin Lipp
Kristen Navarra
Emily Lankau

Post-docs

Maureen Murray
Shannon Curry

Graduate students

Anje Kidd
Caroline Cummings

Technicians

Catie Welch
Henry Adams
Taylor Ellison
Ethan Cooper



**Solid Waste Authority
of Palm Beach County**

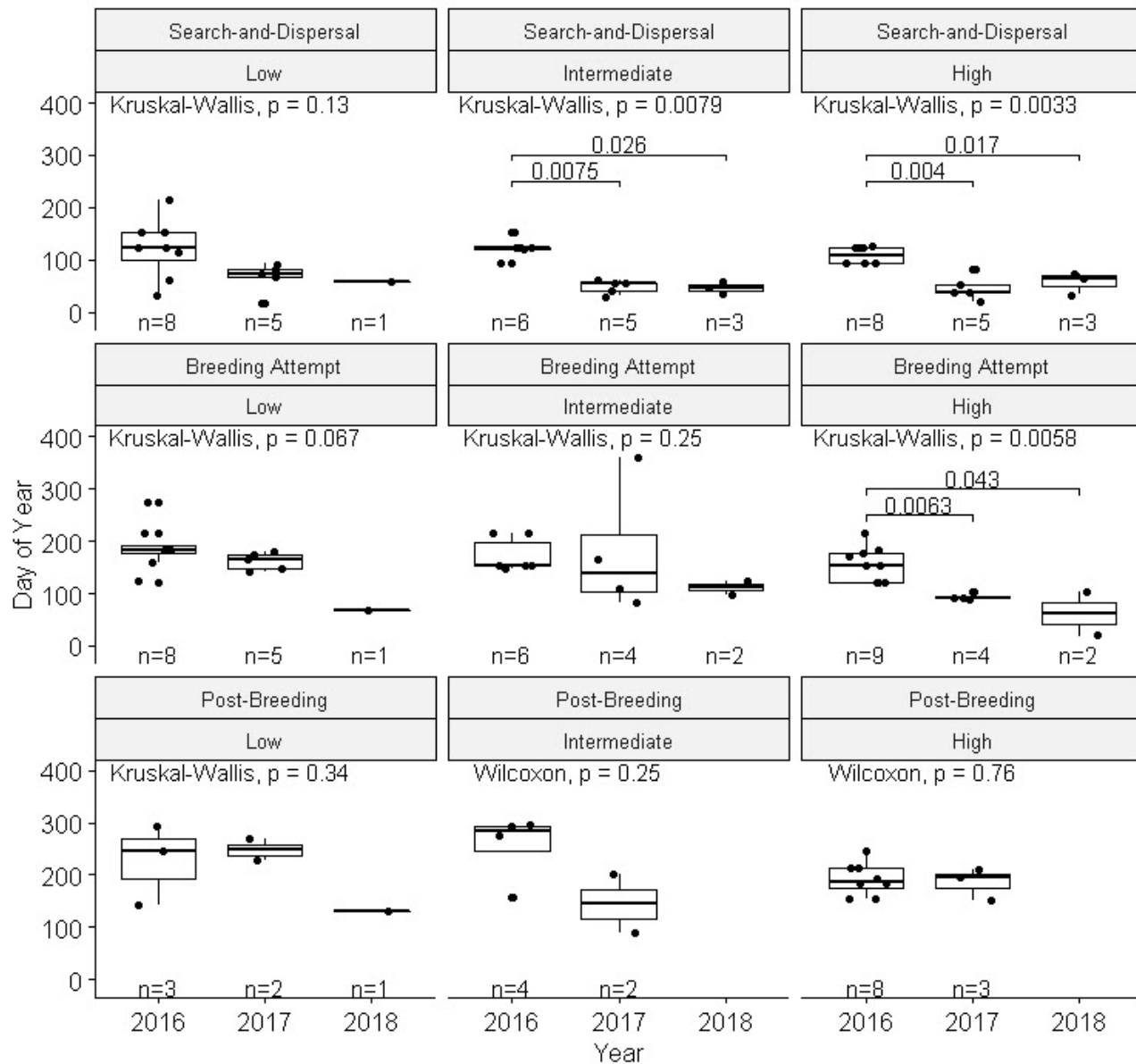
SOLID WASTE AUTHORITY OF PALM BEACH COUNTY



For more info on methods, contact Jeff or Anje:
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Results: Behavioral Seasons



Results: Space Use Site Fidelity



Site Fidelity – ratio of daytime core range (50%) to the total seasonal range area (95%) to represent “high” site fidelity with intensive, repeated use of a few areas or “low” with many areas receiving low to moderate use with limited repeated use.

