Using citizen science data for Biodiversity

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Citizen Science

- Great ways to engage public in conservation/management
- Powerful tool for gathering data

Questions:
1. How can we effectively use CS to engage with the public
2. How can citizen science data be used in biodiversity studies
3. What are the strengths and weaknesses of this data type?

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BioBlitz Project

- Biannual events throughout Broward County
- Work with county parks, schools, clubs
- Collaboration with Broward Extensions (Lorna Bravo and Julio Perez)
- Engage public and teach awareness of local issues
    - Invasive species, conservation, etc...

Brown watersnake, Tree Tops Park

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What is a Bioblitz?

- Concentrated count of biological life
- Citizens, naturalists, scientists…
- Integration of learning and fun

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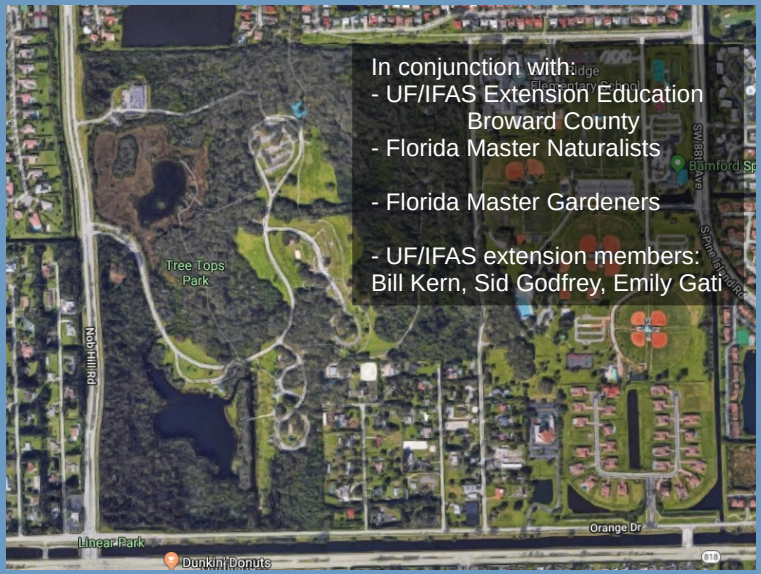
BioBlitz Project

Tree Tops Park
November 3, 2018



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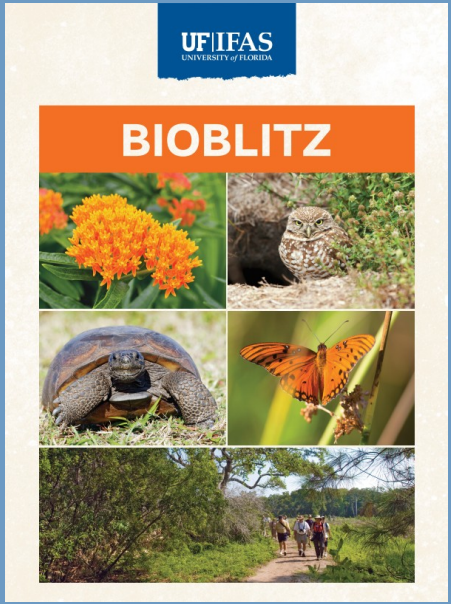
Tree Tops Park Bioblitz

- 7:30AM–9:30AM Focus on birds
- 8:30AM–10:30AM Focus on reptiles
- 10:30AM-12:30PM Mapping
- 2PM–4PM Focus on butterflies
- 4PM–6PM Focus on insects
- 5:30PM–7:30PM Focus on birds
- 5:30PM–7:30PM Focus on reptiles



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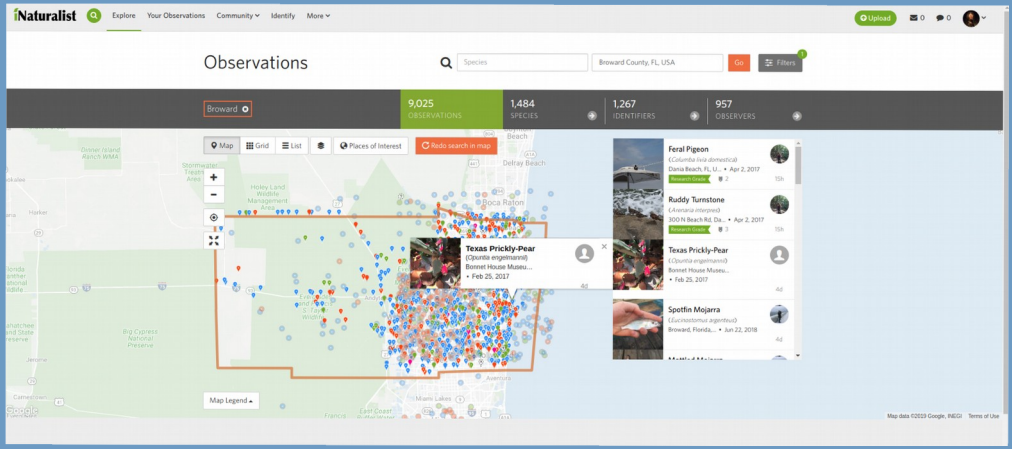
Tree Tops Park Bioblitz



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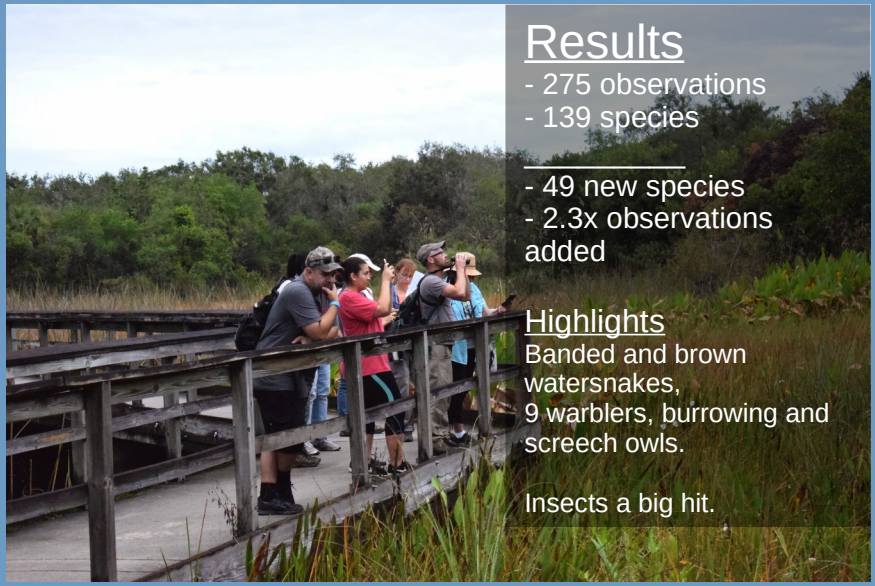
iNaturalist

Tree Tops Park Bioblitz



Results

- 275 observations
- 139 species

- 49 new species
- 2.3x observations added

Highlights

Banded and brown watersnakes,
9 warblers, burrowing and screech owls.

Insects a big hit.

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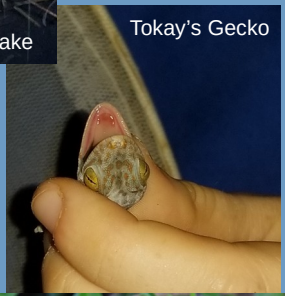
Tricolored Heron

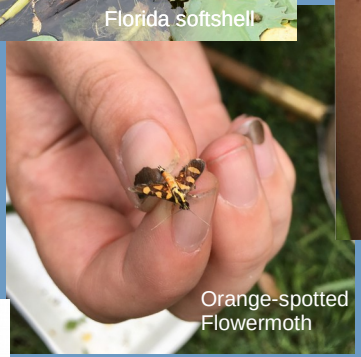
Florida watersnake

Burrowing Owl

Florida softshell


Tokay's Gecko

White-spotted Arvelius


Orange-spotted Flowermoth

Gulf Fritillary

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Mapping the park

- Total distance hiked: **27.2 mile**
  (2.4 mi average)
- Geotagged photos taken: **208**

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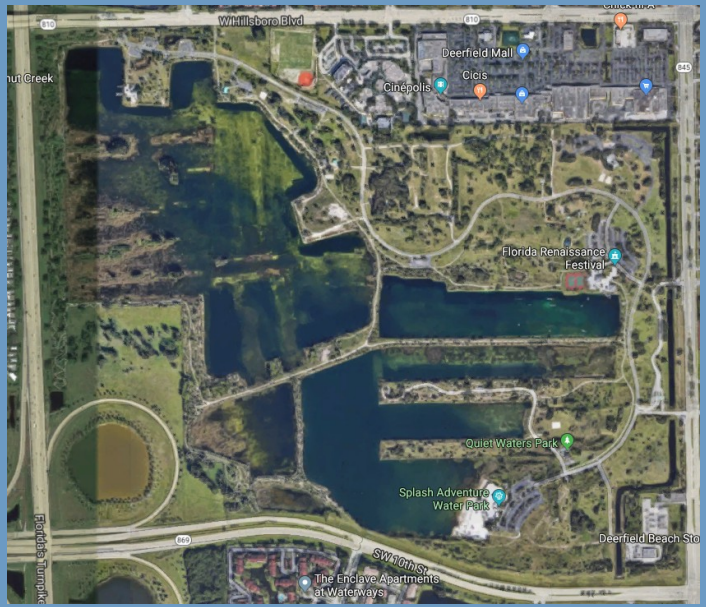
Up next

Quiet Waters Park
March 30, 2019



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Citizen Science Modeling

What are the strengths and weaknesses of using citizen science data in biological modeling

In collaboration with Dr. Hartwig Hochmair and Dr. Rudolf Scheffrahn

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Citizen Science Modeling

Pros:
- Large data sets
- Broad spatial coverage

Cons:
- Identification by amateurs
- Biased sampling effort

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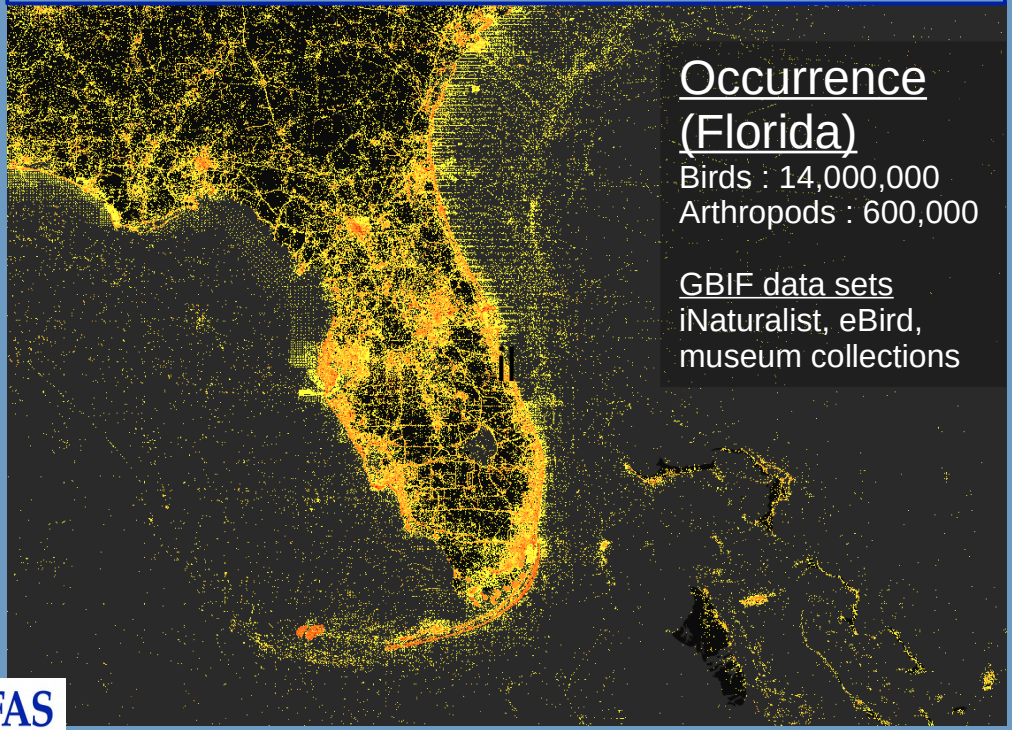
Global Biodiversity Information Facility



Occurrence (Florida)

Birds : 14,000,000
Arthropods : 600,000

GBIF data sets
iNaturalist, eBird, museum collections

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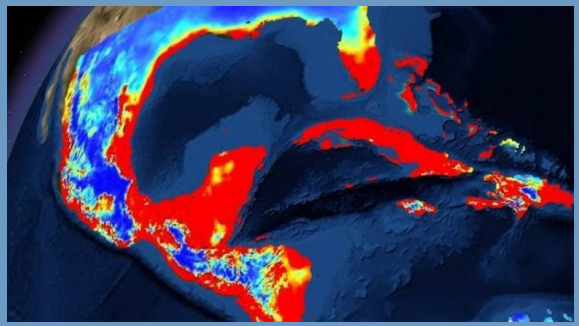
Goals

Citizen Science vs expert data sets

- GBIF and the Termite Collection at UF.
- Calculate quality, scope, scale, saturation..
- Compare species diversity calculations
- Species Distribution Models (SDMs) of
  16 wading birds in Florida



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Thank You

- UF/IFAS Extension Broward County
- Broward County Parks and Recreation Division
- University of Florida's Biodiversity Institute & Informatics Institute
- University of Florida / IFAS

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