

Citizen science data complements state agency data to fill gaps in species inventories of state parks

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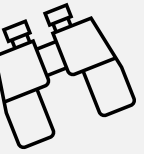
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Introduction

- Species monitoring is a critical component of biodiversity research and conservation
- Comprehensive data collection is labor-intensive, time-consuming, and expensive
- Florida state law (Statute 253.034) mandates that all government-owned lands be monitored and managed by government agencies



Previous work: Utility of citizen science in species and resource monitoring



Limited utility? :

- Similar biases in CS and professional data
 - Ex. Lepidoptera
- Only comparable in quality to professional data sometimes
- Bee biodiversity measured better by professional data (PA, USA)

(Díaz-Calafat et al. 2024; Guerrini et al. 2018; Aceves-Bueno et al. 2017; Turley et al. 2024)

OR

Complementary? :

- Frog biodiversity
- Invasive plant distribution
- Reef fish biodiversity
- Avian species richness
- Invasive mosquito
- Water quality assessments

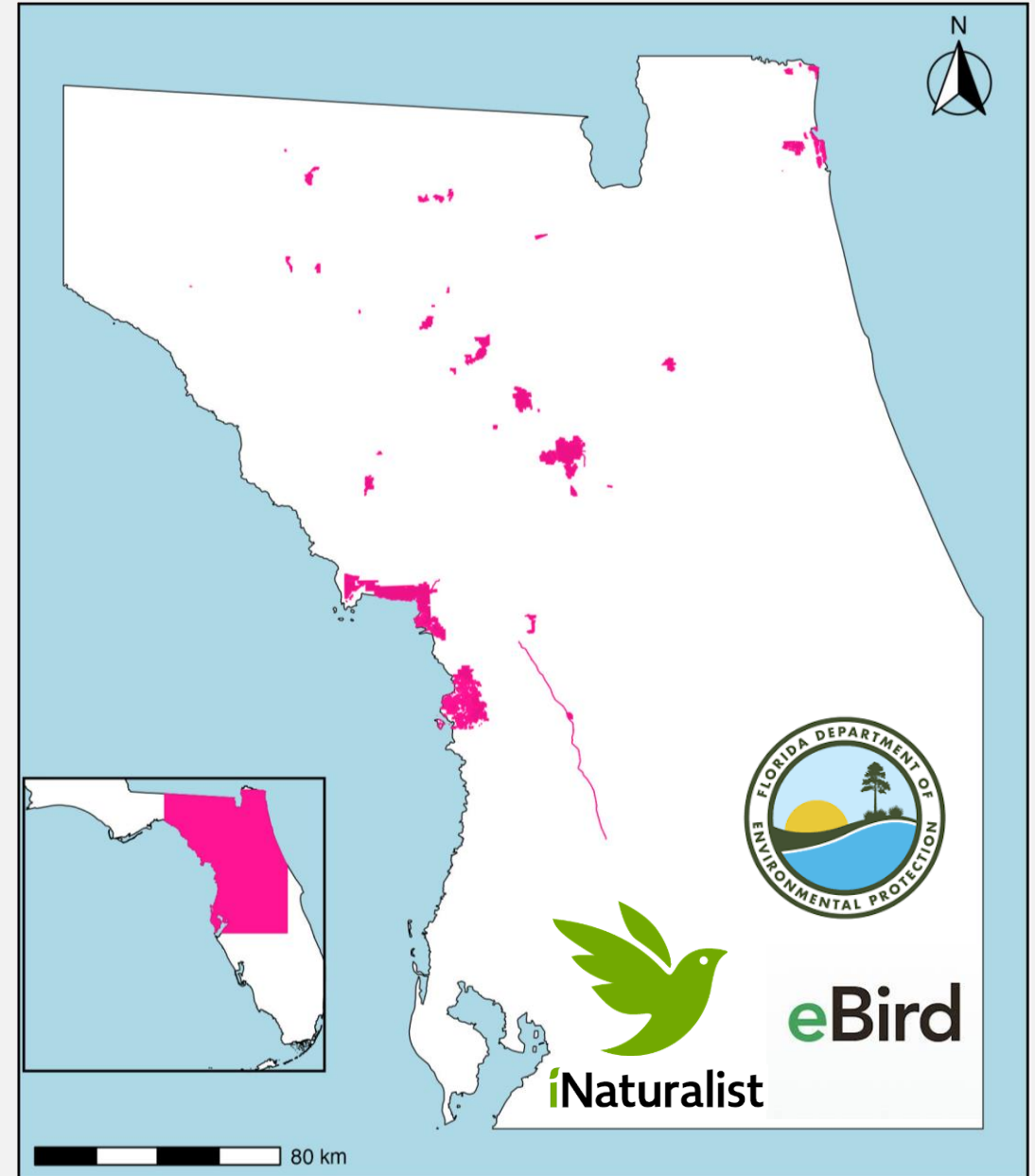
(Callaghan et al. 2020; Dimson et al. 2023; Roberts et al. 2022; Callaghan et al. 2018; Pernet et al. 2021; Hadj-Hammou et al. 2017)

Research Question:

Can citizen science data be used in conjunction with state agency data to create more complete species inventories in state parks?

Methods

- 39 state parks in Florida
- Species lists from the Florida Department of Environmental Protection (FDEP) used in management plans
- Species lists from citizen science (combination of eBird and iNaturalist observations)





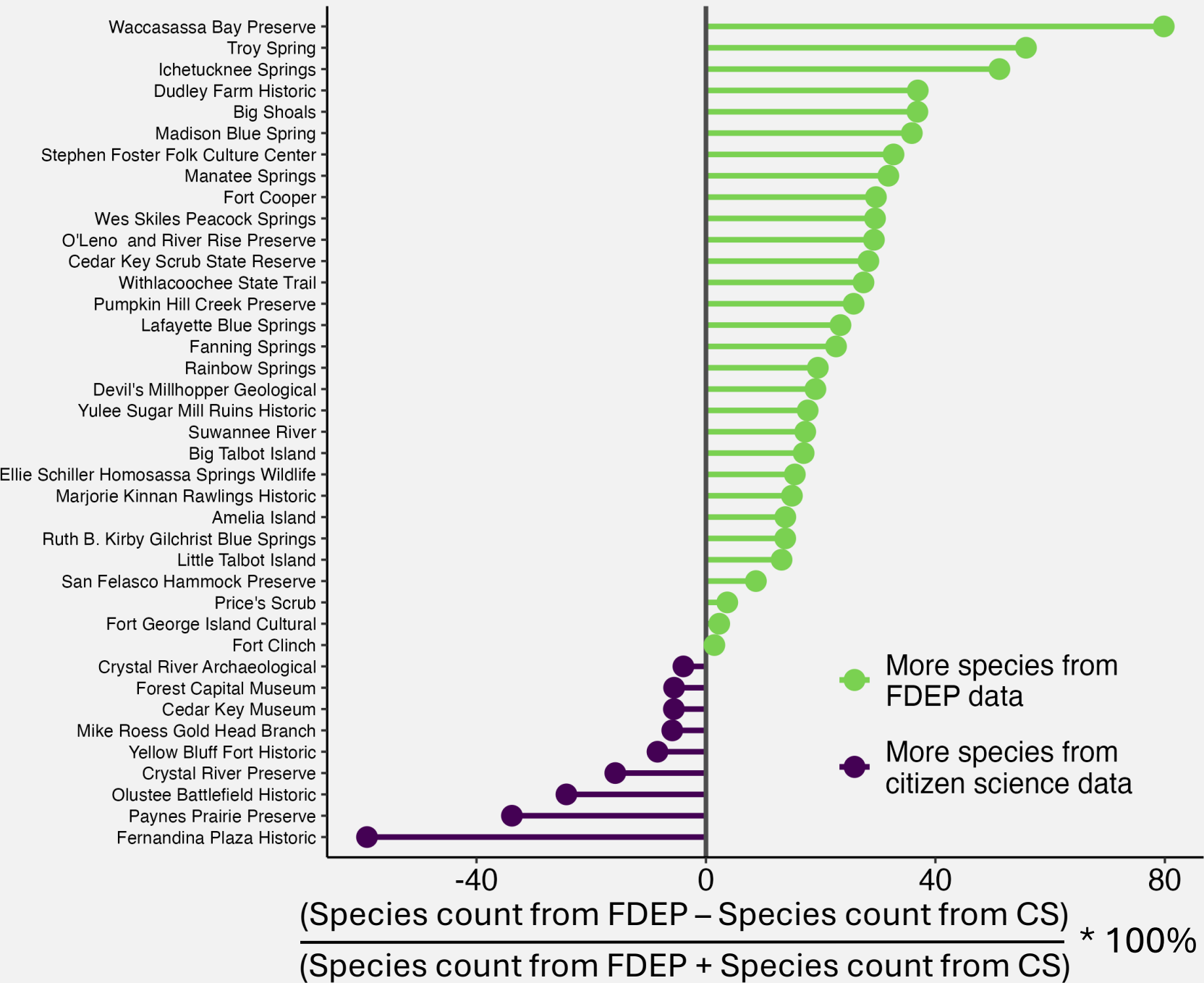
**5,454 total
species**

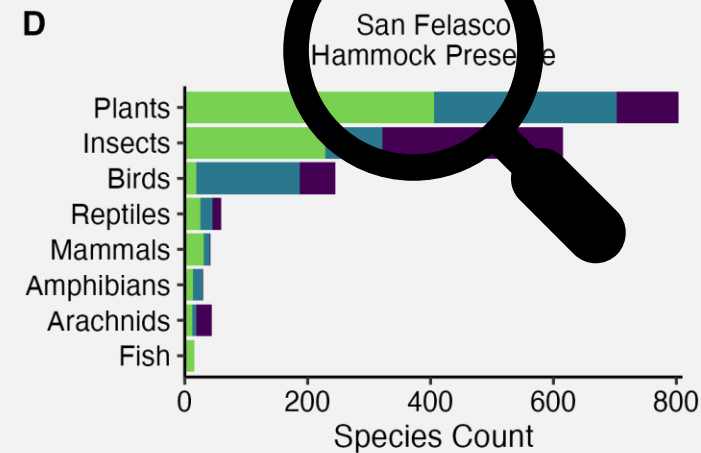
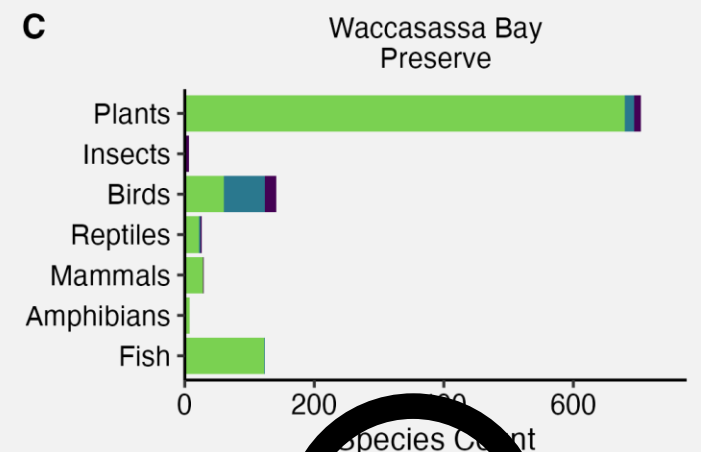
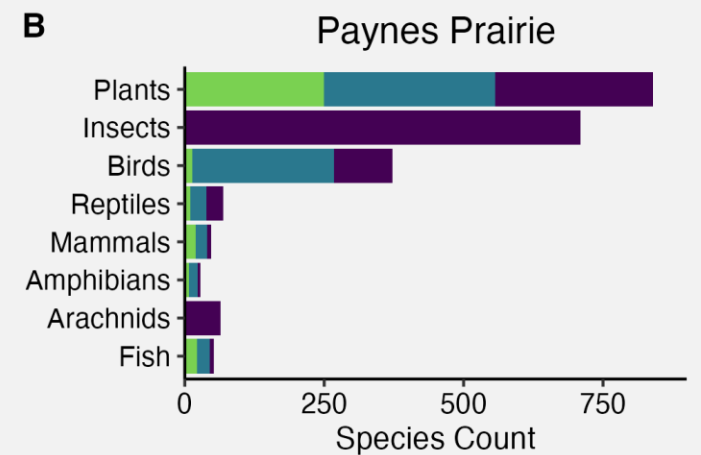
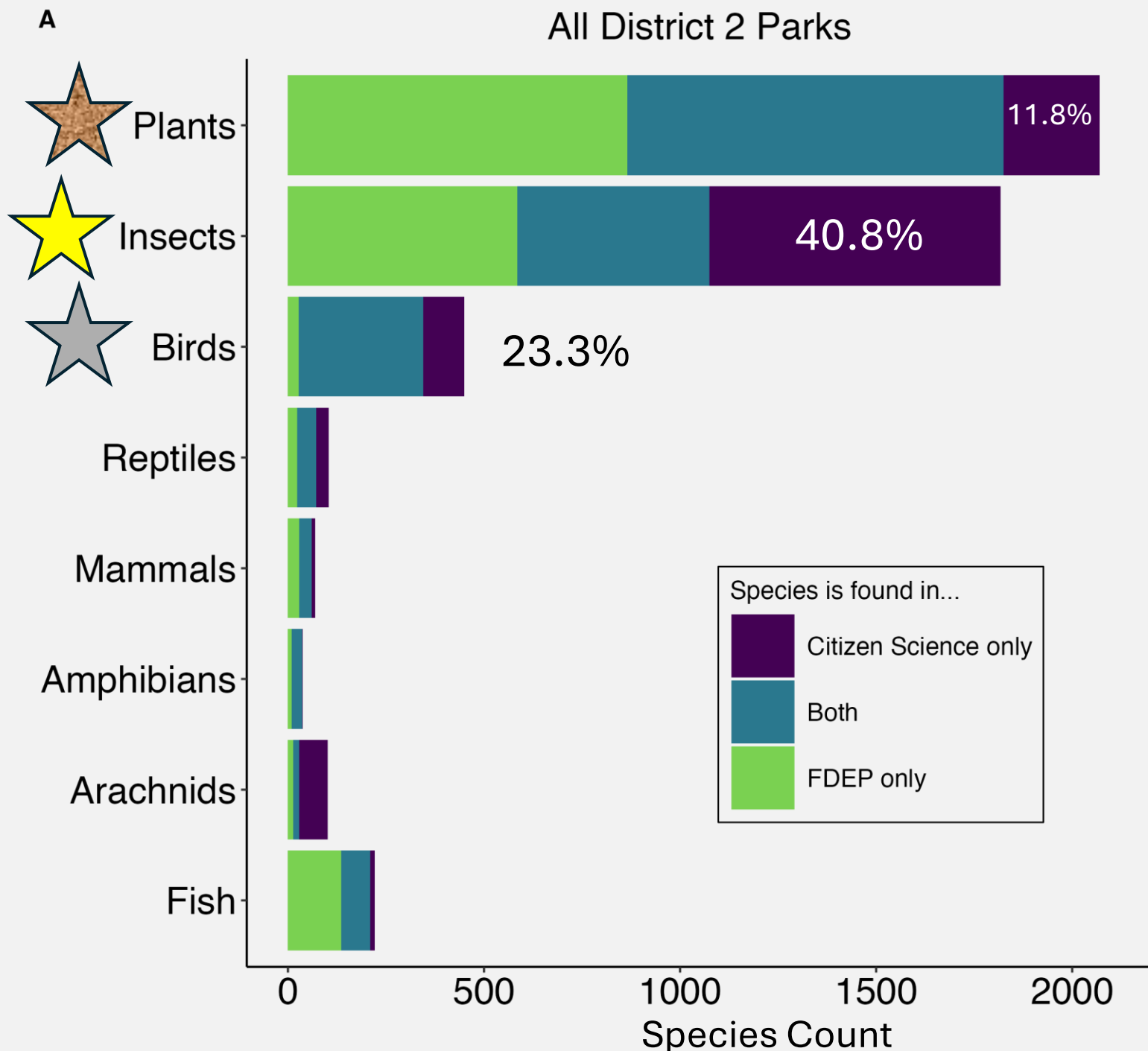


**3,948 species
documented
by FDEP**

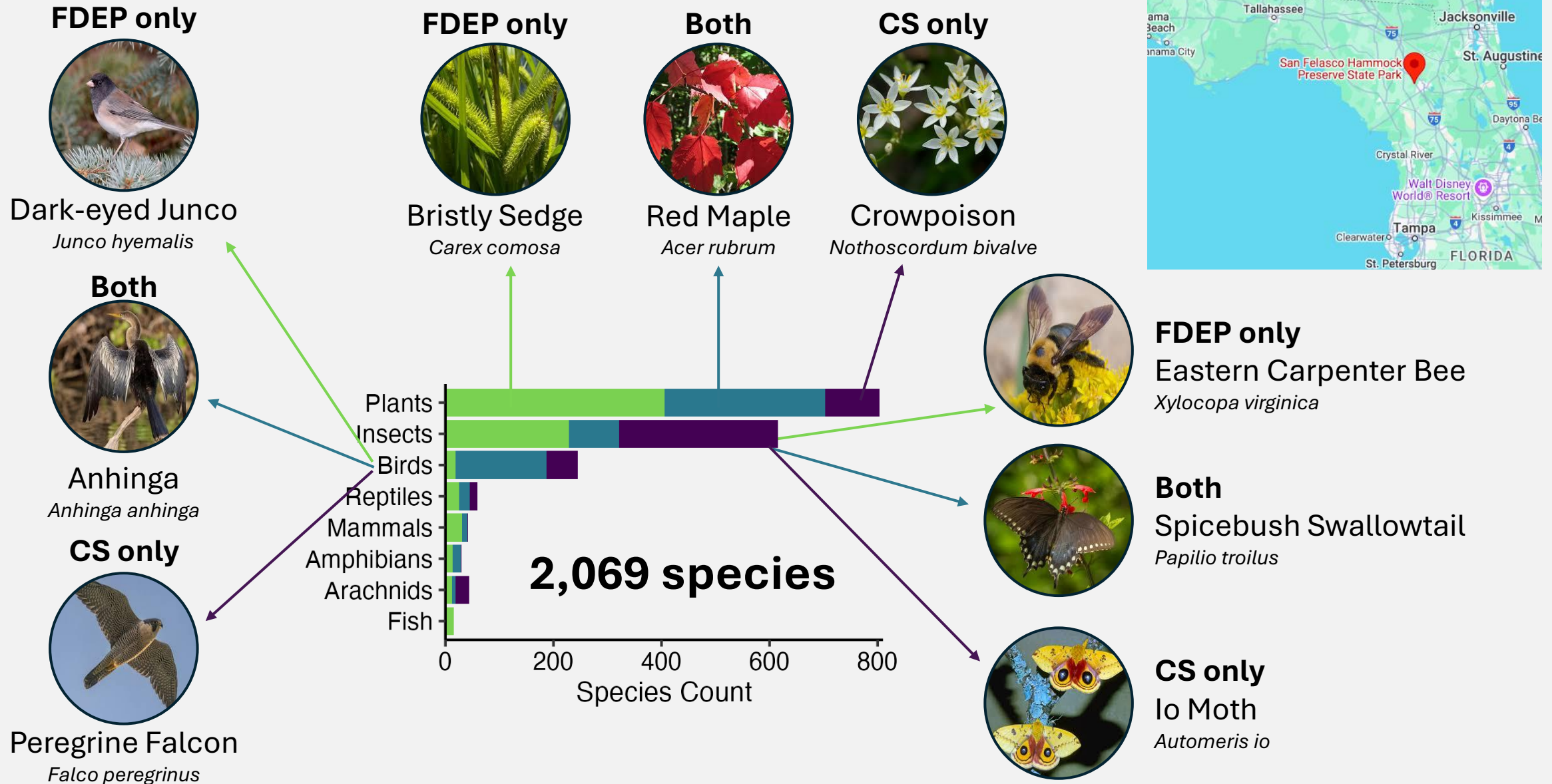


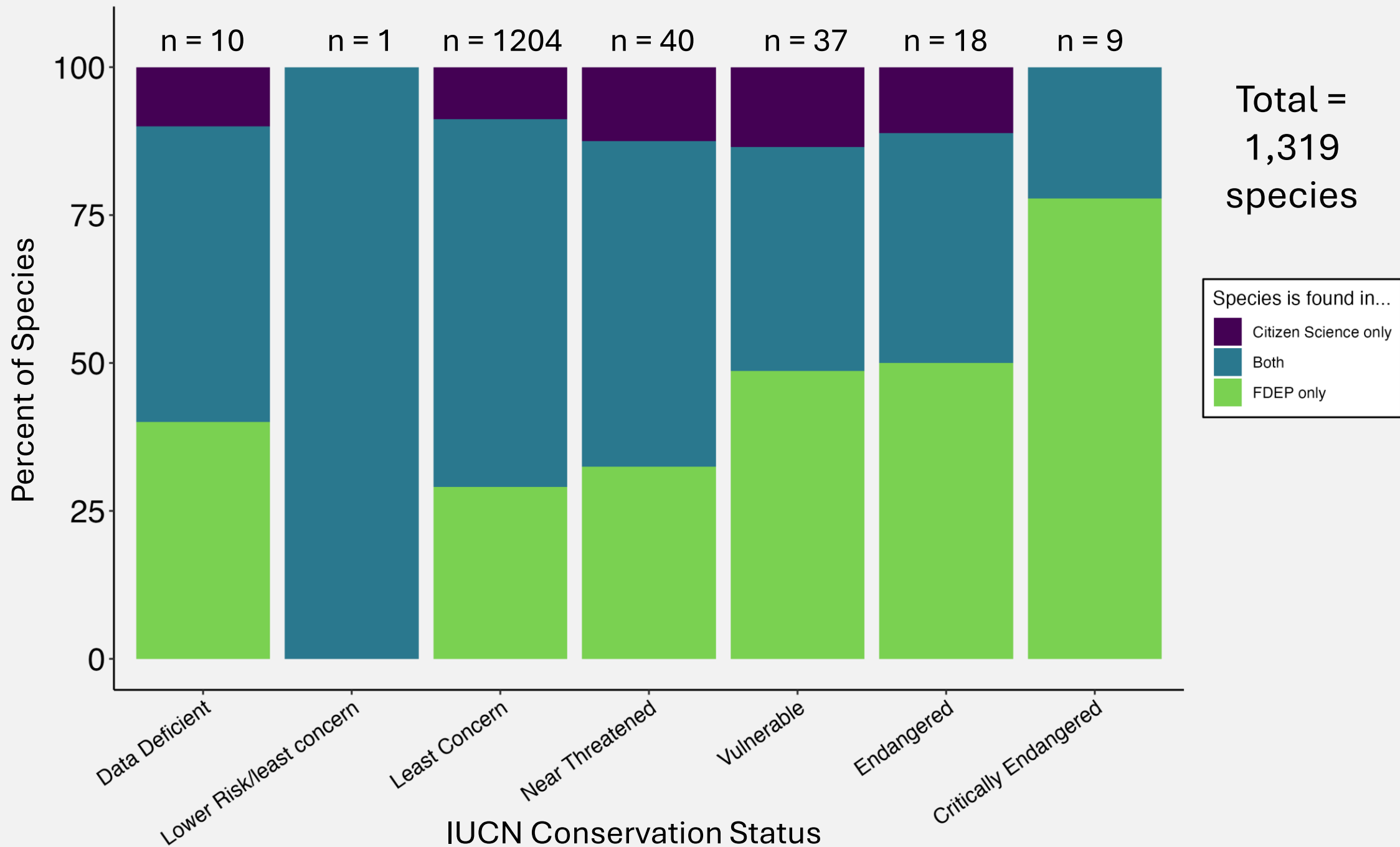
**3,540 species
documented by
citizen science**





Case Study: San Felasco Hammock Preserve





Effect of different park characteristics?

Variables tested:

- Park acreage
- Population of city where park is located
- Park visitation in FY2022-23
- Total unique citizen science observers
- Total citizen science observations

Conclusions

- Citizen science can fill gaps in state agency data in a cost-effective way
- Citizen science consistently provides otherwise undocumented insects & birds and some species of conservation concern
- Potential for more CS data and applications beyond Florida





Thank you!

Questions?

