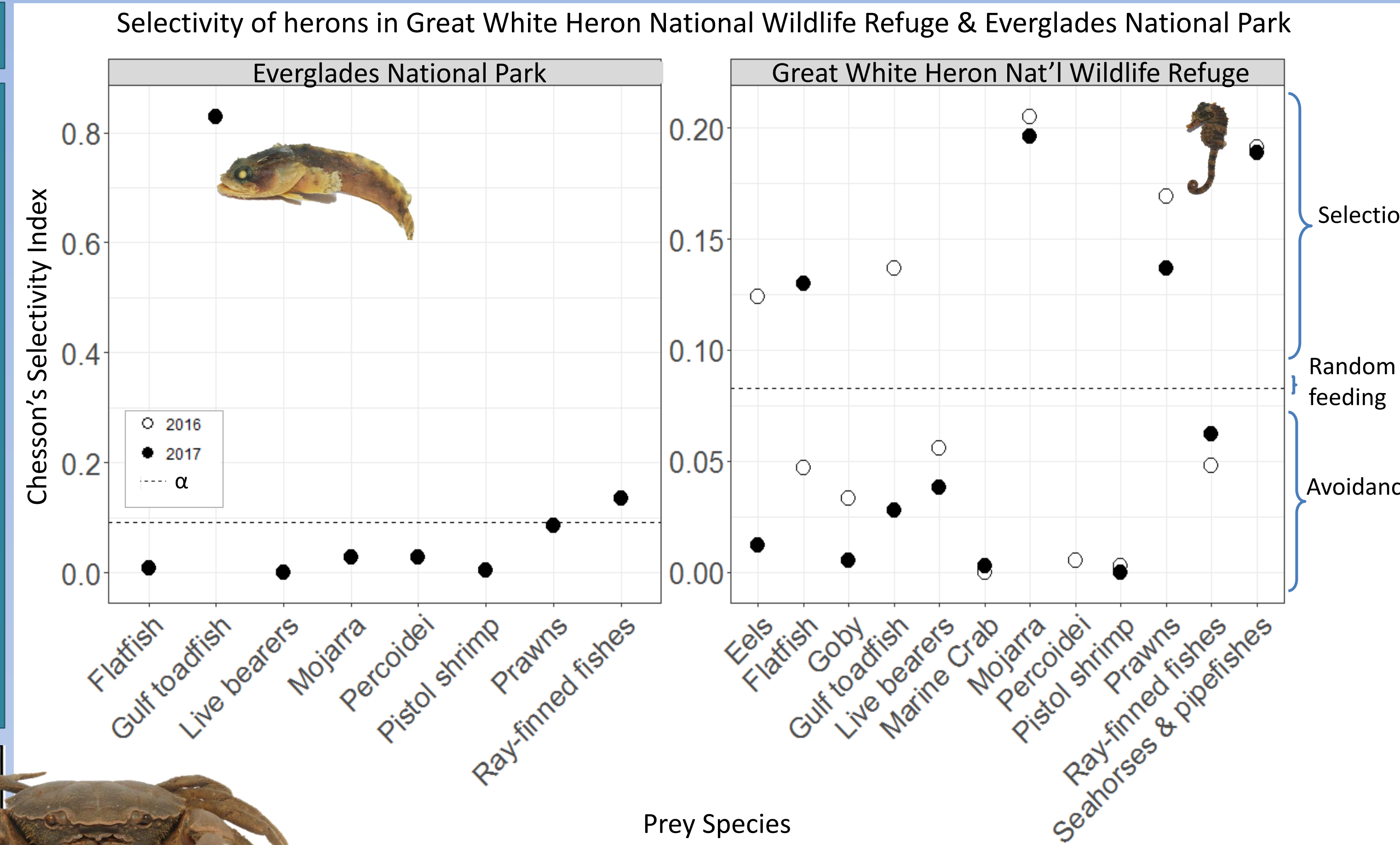


Diet & prey selectivity of the Little Blue Heron (*Egretta caerulea*) in coastal South Florida



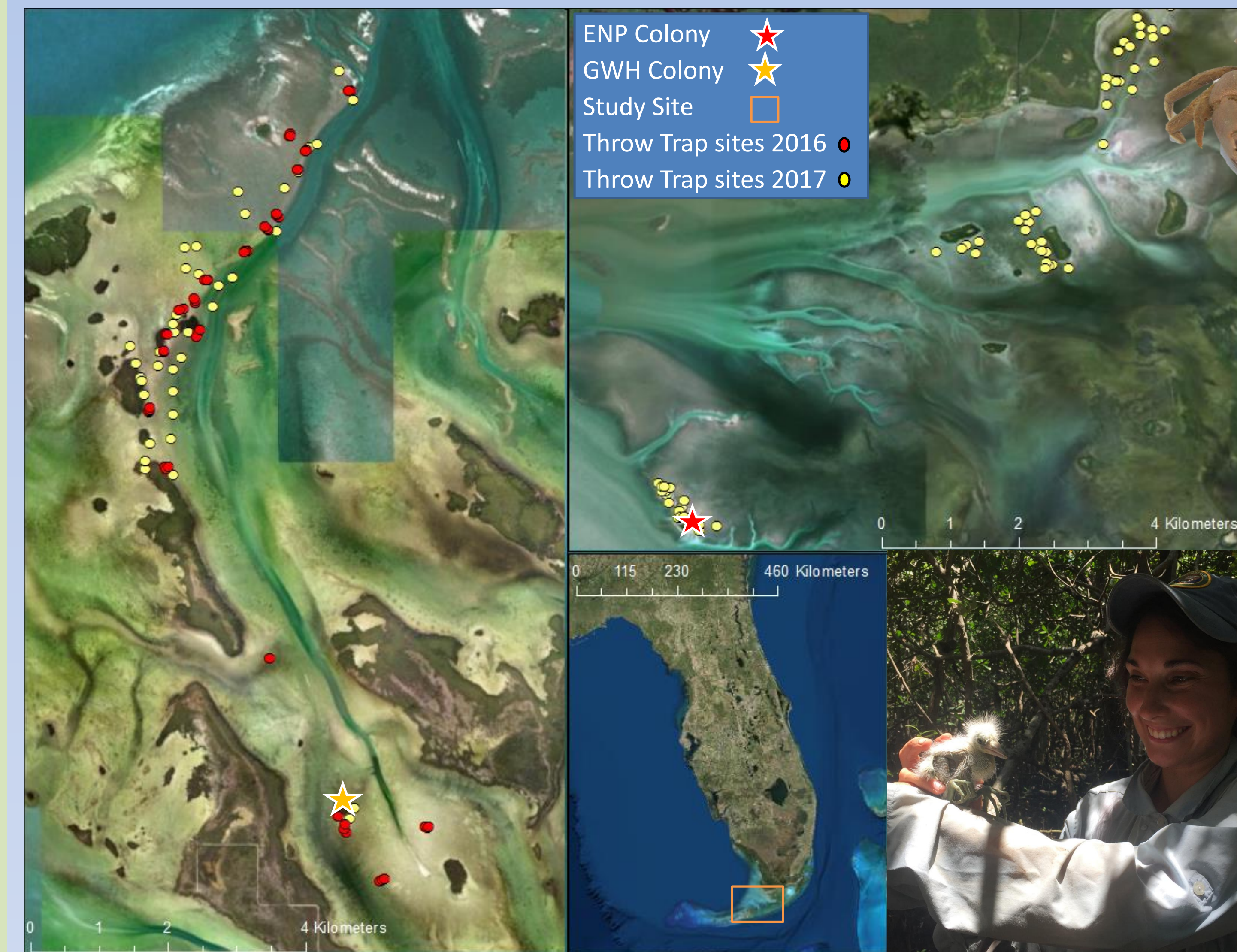
Introduction

- Little Blue Herons (*Egretta caerulea*, hereafter heron) are reportedly generalists that eat insects, crustaceans, annelids & fish⁴, however the diet of herons in the Florida Bay & Florida Keys is unknown
- Diet composition affects wading bird productivity due to varying nutritional values of prey species
- Identifying prey species preferences is important for predicting the effect of environmental stressors on quality foraging habitat
- Investigated prey selection by herons in Great White Heron National Wildlife Refuge (GWH), in the lower Keys of Florida during the breeding season in 2016 & 2017, & the Florida Bay in Everglades National Park (ENP) in 2017
- Hypothesized prey species selection is occurring, therefore no regional diet differences exist between heron colonies in GWH & ENP



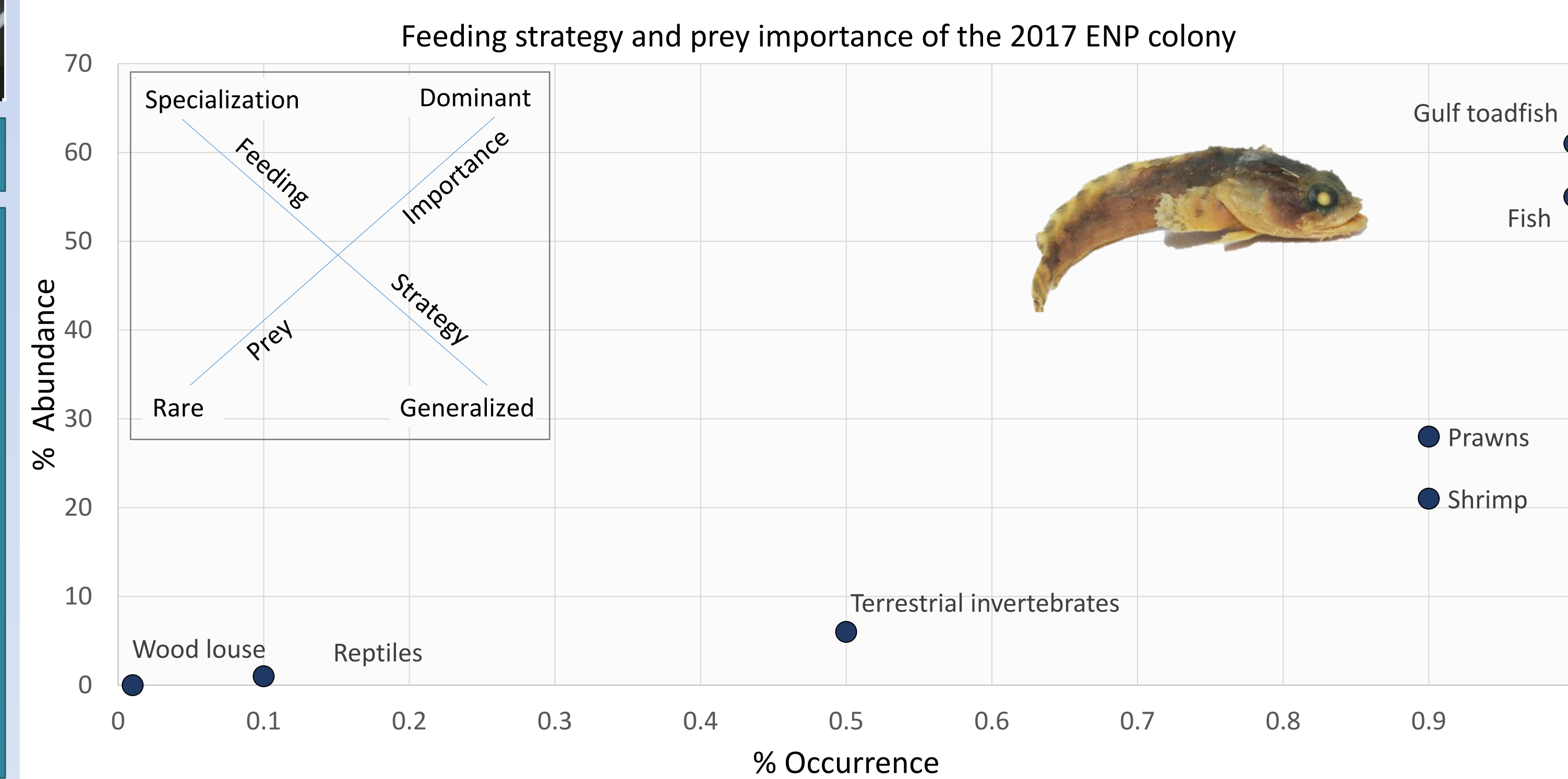
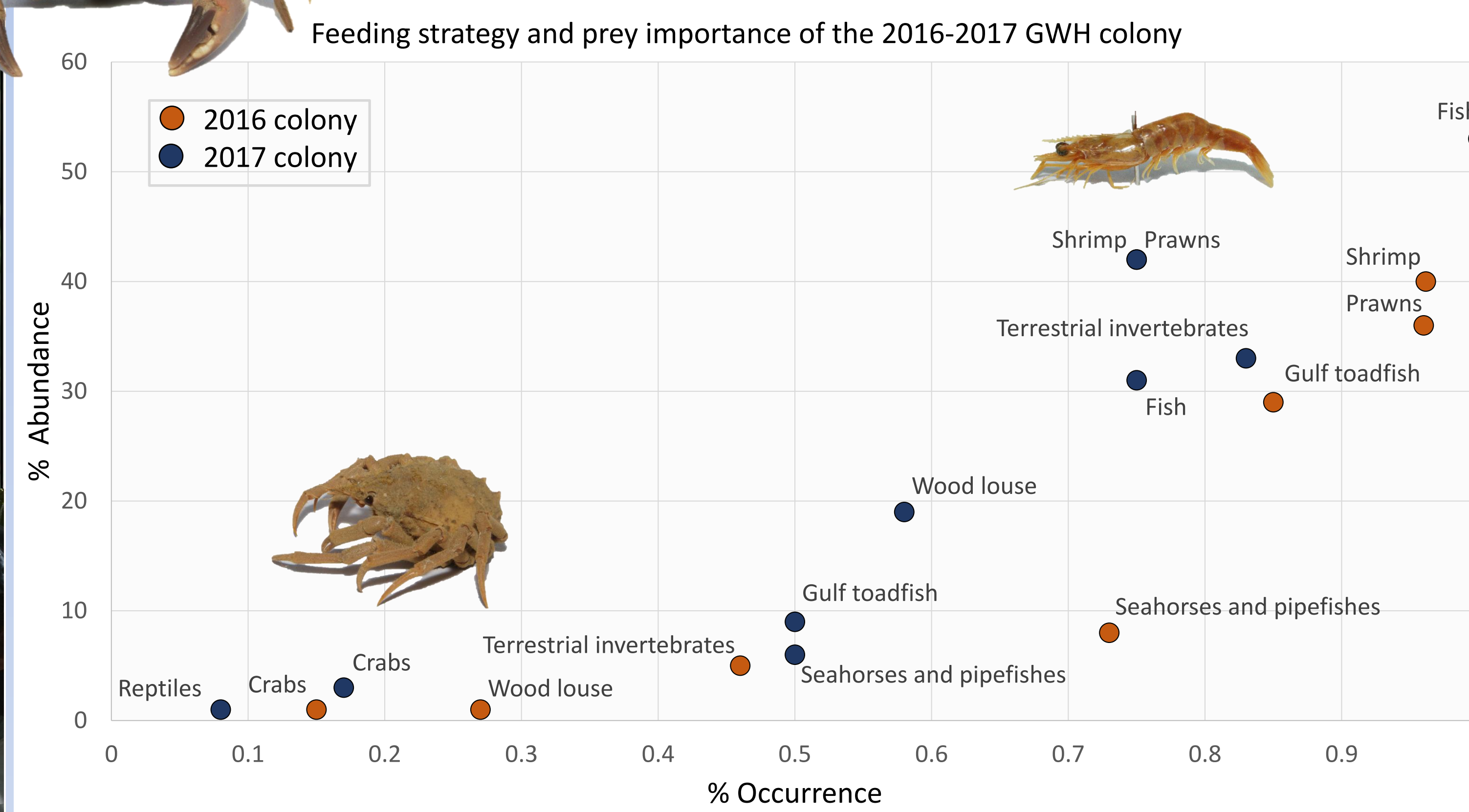
Results and Discussion

- Moderately significant separation between 2017 GWH & ENP colony (67% dissimilar) due to gulf toadfish (*Opsanus beta*) & prawns (*Farfantepenaeus spp.*)
- Highly selected species in the 2016 & 2017 GWH colonies are mojarra (*Eucinostomus*) (CSI = 0.205; 0.196), pipefish (*Syngnathidae*) (0.191; 0.189), & prawns (0.169; 0.137)
- Heron avoid marine crabs despite their high abundance on tidal flats
- In the 2016 GWH colony, dominant and important prey were fish (53%) and shrimp (40%), specifically prawns (36%)
- In GWH 2017 shrimp (42%) & terrestrial invertebrates (33%), specifically prawns (41%) were important and dominant
- The 2017 ENP colony highly selected gulf toadfish (CSI = 0.829)
- Dominant and important prey in the 2017 ENP colony were fish (55%), specifically gulf toadfish (61%)
- Prawns are not heavily selected, but are largely abundant in heron diet & thus are more important than highly selected mojarra or pipefish
- Gulf toadfish were dominant and important in the 2017 ENP colony, but only moderately so in the 2016 GWH colony & not in GWH 2017 colony
- Aquatic species dominate heron diet, but terrestrial prey has a high occurrence suggesting foraging habitat is not exclusive to tidal flats and underscoring herons as generalists
- Deviating from typical foraging habitat could be due to oscillating prey availability on tidal flats
- Heron specialize in fish and shrimp, differing from herons in Brazil which highly select crabs & shrimp³



Methods & Materials

- Sampled tidal flat prey communities near low tide using a 1-m² throw trap at GWH in 2016 (n = 74) & 2017 (n = 123), & ENP in 2017 (n = 86)
- Collected bolus (stomach regurgitate) samples (n = 53) from 1-4 week old heron chicks from 26 nests in 2016 in GWH, 12 nests in 2017 (n = 34), & 10 nests in ENP (n = 29) in 2017
- Investigated prey species selection using Chesson's index of selectivity
- Diet represented using aggregate percentage approach as (1) average percent of sample weight & (2) the percent occurrence in nests^{1,2}
- Analyzed regional diet differences using analysis of similarity (ANOSIM) & similarity percentages (SIMPER) with PRIMER v7



Future Work

In the Florida Bay & Florida Keys, the diet of herons was previously unknown; therefore testing whether herons specialize on key prey species is important for conserving this species of concern. Further research is needed to confirm the importance of gulf toadfish in heron diets. These findings can also be applied to future work determining whether food resources could affect heron habitat use & reproductive success.

Selected References

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