

Habitat Use and Foraging Flights of Roseate Spoonbills in Florida Bay



FAU ENVIRONMENTAL SCIENCE PROGRAM

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INTRODUCTION



Roseate spoonbills (*Platalea ajaja*) have responded to historical changes in hydrology

- Lower nest success
- Delayed egg-laying
- Shifts in nesting colony distribution



This study will analyze if roseate spoonbill's foraging behaviors are affected by hydrological conditions.

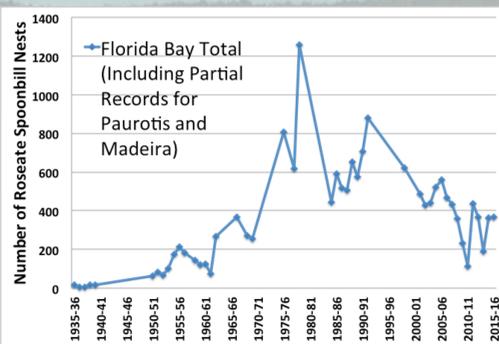


Fig. 1 Roseate spoonbill nest numbers in Florida Bay including inland colonies Paurotis Pond and Madeira Hammock.

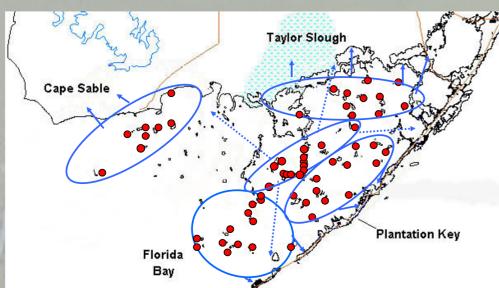


Fig. 2 Map of spoonbill colony locations (red) and nesting regions (blue circles). Arrows indicate primary foraging areas for each region. Dashed lines are speculative.

HYPOTHESES



Hypothesis I – Home range area during the egg stage (~egg laid + 21 days after) will be smaller than the chick stage (~hatch + 21 days later).



Hypothesis II – Foraging range and total trip duration during the egg stage will be shorter than the chick stage.



Hypothesis III – Foraging range and total trip distance will not differ between breeding seasons.

METHODS



Fig. 3 From 2006 to 2008, Audubon of Florida Everglades Science Center equipped twenty roseate spoonbills with a satellite transmitter attached with a backpack made of Velcro strips. A sock is placed over the head of the spoonbill to minimize distress.

PRELIMINARY RESULTS

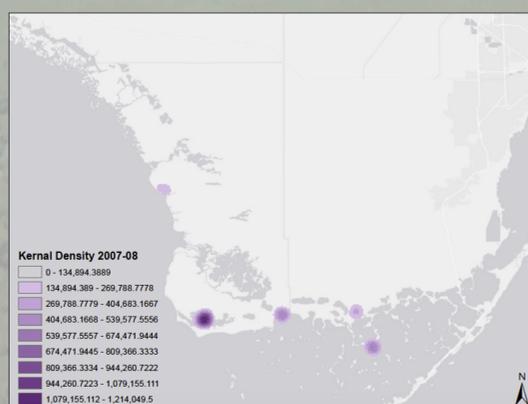
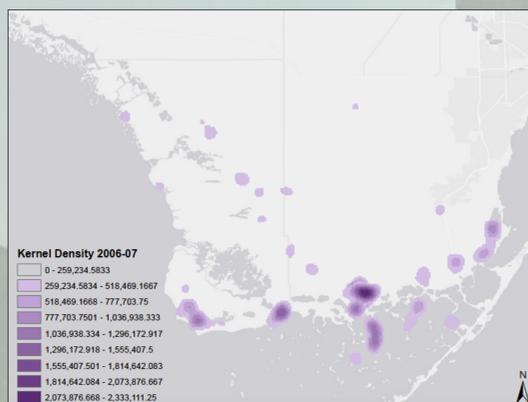
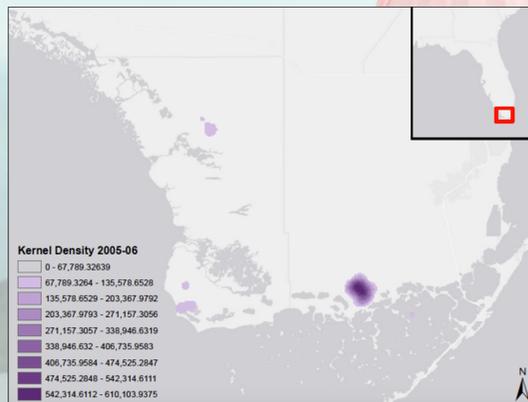


Fig. 4 Kernel Density maps of all roseate spoonbills tracked in the 2005 – 2008 satellite study. Maps only include breeding season dates (November – April). Ten spoonbills were tracked from 2005-2006, 17 in 2006-2007, and nine in 2007-2008. Not all of the birds were breeding during these seasons.

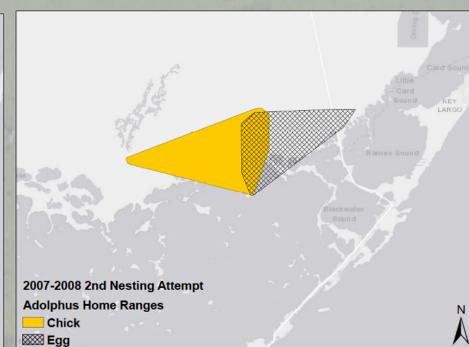
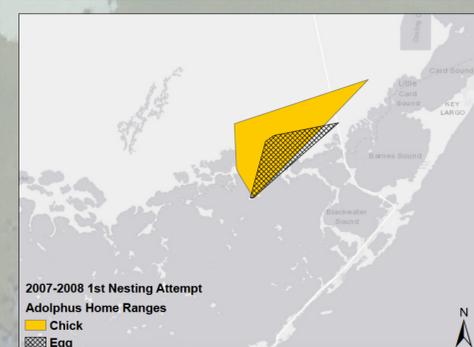
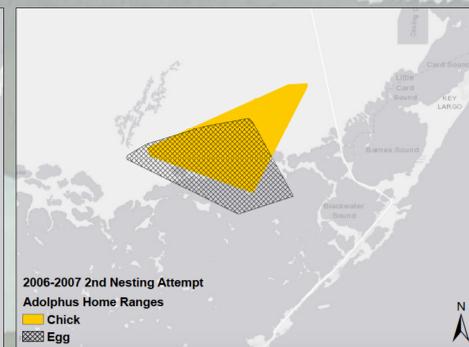
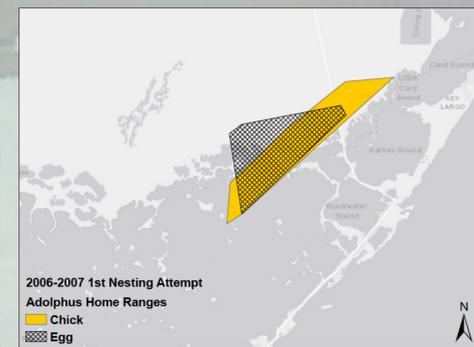
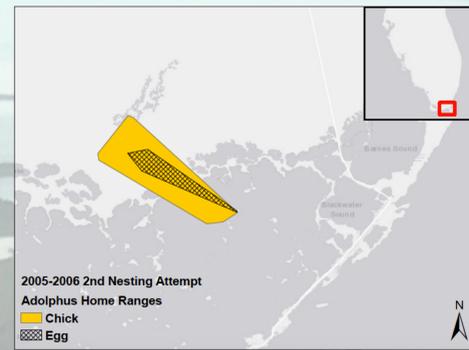
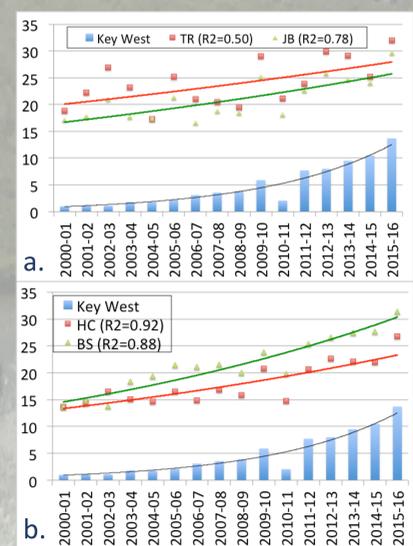


Fig. 5 Home ranges for egg stage (~egg laid date +21 days) and chick stage (~hatch date + 21 days) for Adolphus. Adolphus was tagged on their nest in Tern Key. Despite the name, it is unknown whether Adolphus was a male or female. Second nest attempts are usual for birds that had an unsuccessful first attempt at nesting

CONCLUSIONS

Studying the foraging behavior and foraging habitats of roseate spoonbills is crucial for guiding the restoration of the Everglades ecosystem. Using information gathered from this study will inform water management decisions. Future tracking studies can be compared to data presented here and show how roseate spoonbills respond to sea level rise and if they are using new foraging habitats.

Fig. 6 Correlation between mean water level at Key West Harbor at a) TR and JB and b) HC and Bear Sound (BS).



ACKNOWLEDGEMENTS

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