

Do wading birds nest near alligators by choice? Testing the “nest protector” hypothesis.

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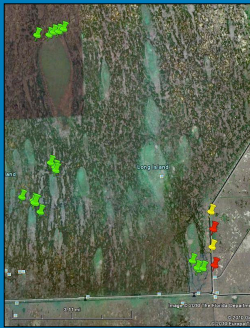
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Wading birds have been anecdotally shown to preferentially nest above alligator holes. To further understand this interaction, I examined whether wading birds were attracted to alligators or vice versa, as well as some of the possible benefits of the interaction for each species.

How could birds benefit from nearby alligators?

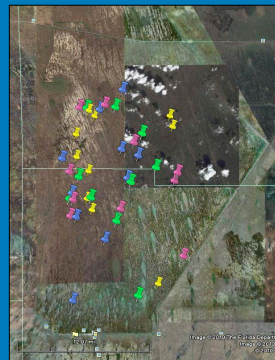


Map of selected predator tracking stations in WCA 3A.

Alligators prey on bird nest predators such as snakes and mammals. To better understand the nest predator community in WCA 3A, I conducted predator surveys using tracking stations on levees and on tree islands of varying sizes at a range of distances from levees. Levees were the only locations where I found potential nest predators.

- = raccoon
- = opossum
- = no nest predator

Are wading birds attracted to alligators?



Map of treatment site locations in WCA 3A.

To determine this, I manipulated densities of alligators and wading birds using decoys in several treatments on small, willow-dominated tree islands with alligator holes in Water Conservation Area 3A:

- **Treatment 1: Alligator decoys** (10/site)
- **Treatment 2: Alligator decoys** (10/site) + **Bird decoys** (20/site)
- **Control 1: Bird decoys** (20/site)
- **Control 2: No decoys**

I expected more birds to be present on islands with alligators versus those without if birds are attracted to alligators via sensory cues. To ensure that the birds saw the alligator decoys, I also included a treatment with white bird decoys which are known to attract wading birds.

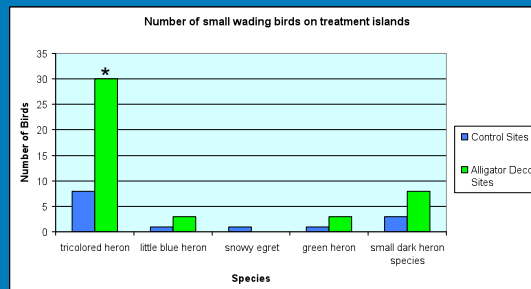


Alligator decoy, great egret decoy.

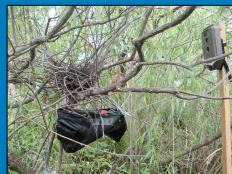


To measure the wading bird response to the decoys, I performed ground surveys via aircraft three times during the wading bird breeding season. Tree islands were approached closely enough to flush nesting birds and all birds that flushed were counted.

There were significantly more small wading birds flushed from the alligator decoy sites than those flushed from the control sites $\chi^2(1, N=58)=8.31, p=0.004$, indicating a preference for the sites with alligator decoys. Tricolored herons showed a strong preference for the alligator decoy sites $\chi^2(1, N=38)=6.95, p=0.008$.

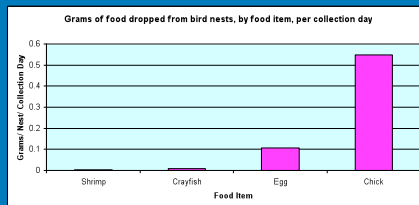


Possible benefits to alligators?



Throughfall trap setup.

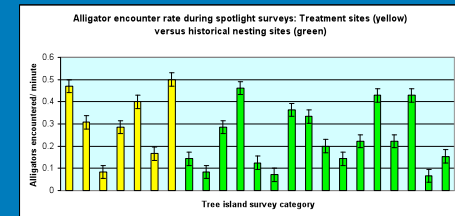
To measure the potential food resources to alligators, I measured chicks and food dropped from nests by placing a “throughfall” trap beneath randomly selected nests (n=237 collection days).



Are alligators attracted to wading birds?

Are alligators more commonly found near islands where birds have nested in previous years versus islands where birds have not nested before? I used night eye-shine surveys to ascertain alligator distribution around tree islands where birds had nested previously and around a subset of my treatment sites, all of which had no previous bird nesting records.

I found no significant difference ($t(22)=1.3226, \alpha=0.1996$) between the treatments sites and historical nesting sites in terms of alligators encountered per minute surveyed.



What does it all mean?

Are birds attracted to alligators via visual cues? Yes.

Are alligators attracted to birds? Maybe.

•Alligator surveys were done prior to the wading bird breeding season to minimize colony disruption, however, this timing makes it difficult to answer this question.

Do birds benefit from associating with alligators? Maybe.

•We know that there are nest predators on the levees surrounding WCA3A, but none were present during the water level conditions this year. However, this could change drastically during a drought year.

Do alligators benefit from associating with wading birds? Yes.

•A colony of 20 birds over a 50-day nesting cycle has the potential to drop 665 grams of food into the water.
•For a colony of 50 birds, that figure increases to 1664 grams.
•A colony of 100 birds could potentially drop 3329 grams of food.

What are you planning to do next year to answer these questions? Ask me!

Acknowledgments

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