

# Banded American Oystercatchers in Georgia: A look at breeding records

**Kristen E. Johnson<sup>1\*</sup>**

<sup>1</sup>Georgia Department of Natural Resources, Manomet Conservation Science

\*kristenjohnson2023@gmail.com



# Dispersal and Breeding Movements

How do species adapt to change?

Fragmented habitat due to coastal development

How are birds using available habitat?

Important for population stability





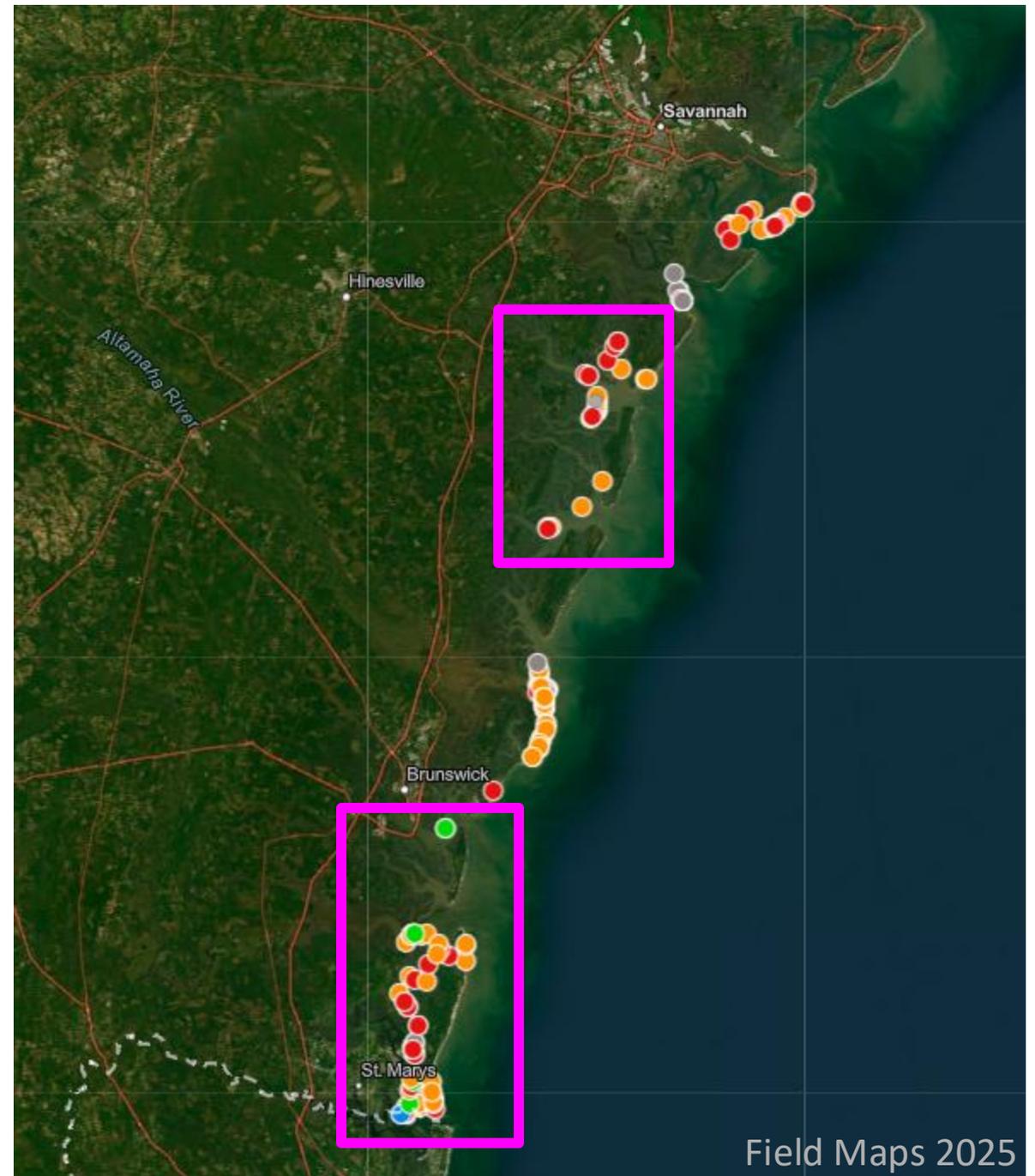
# Monitoring Efforts

A challenging state to monitor!

100 miles of coastline

Around 120 total pairs

Relatively large tides



# Banding Efforts

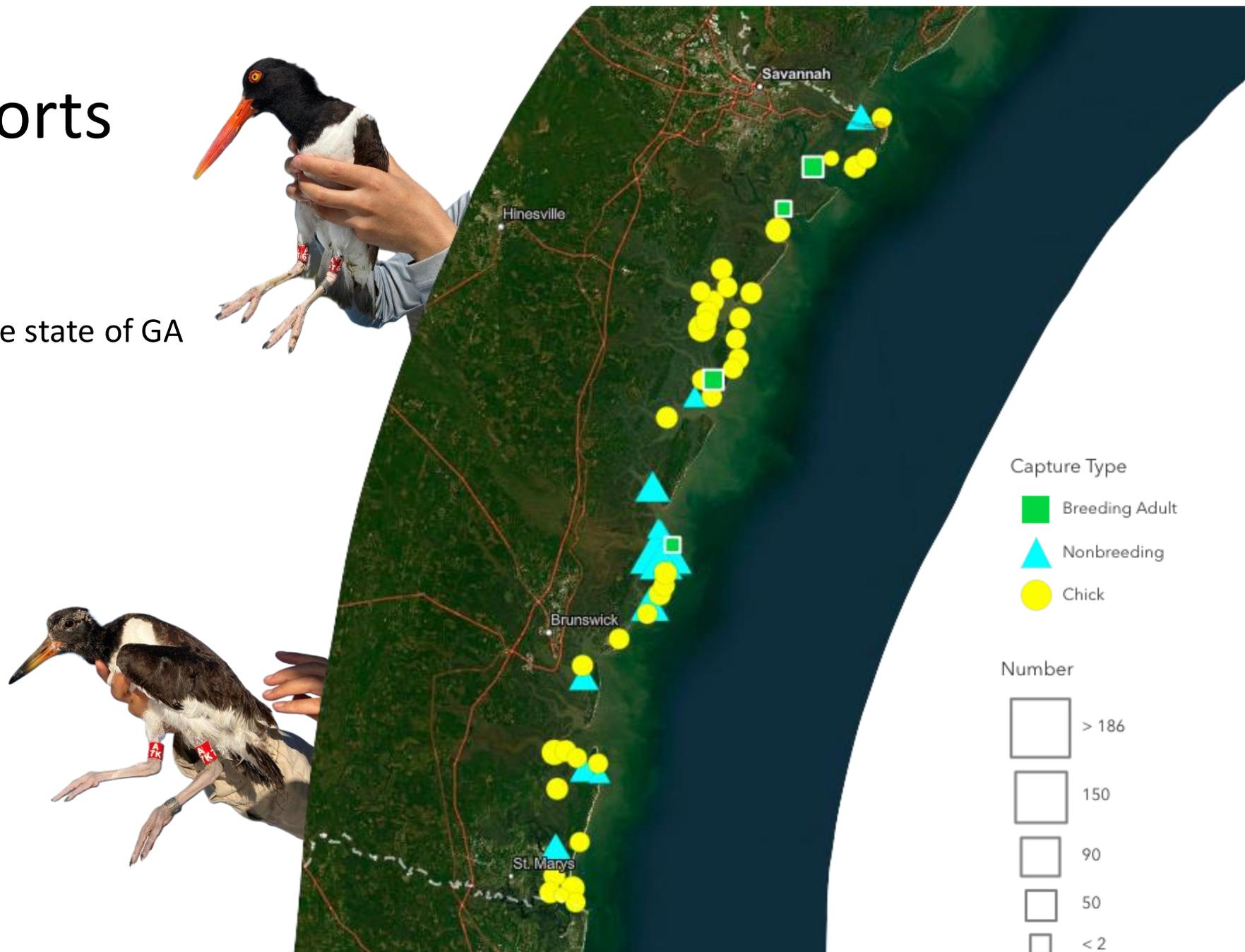
Banding since 2001

975 AMOY banded in the state of GA

Nonbreeding (507)

Breeding Adults (32)

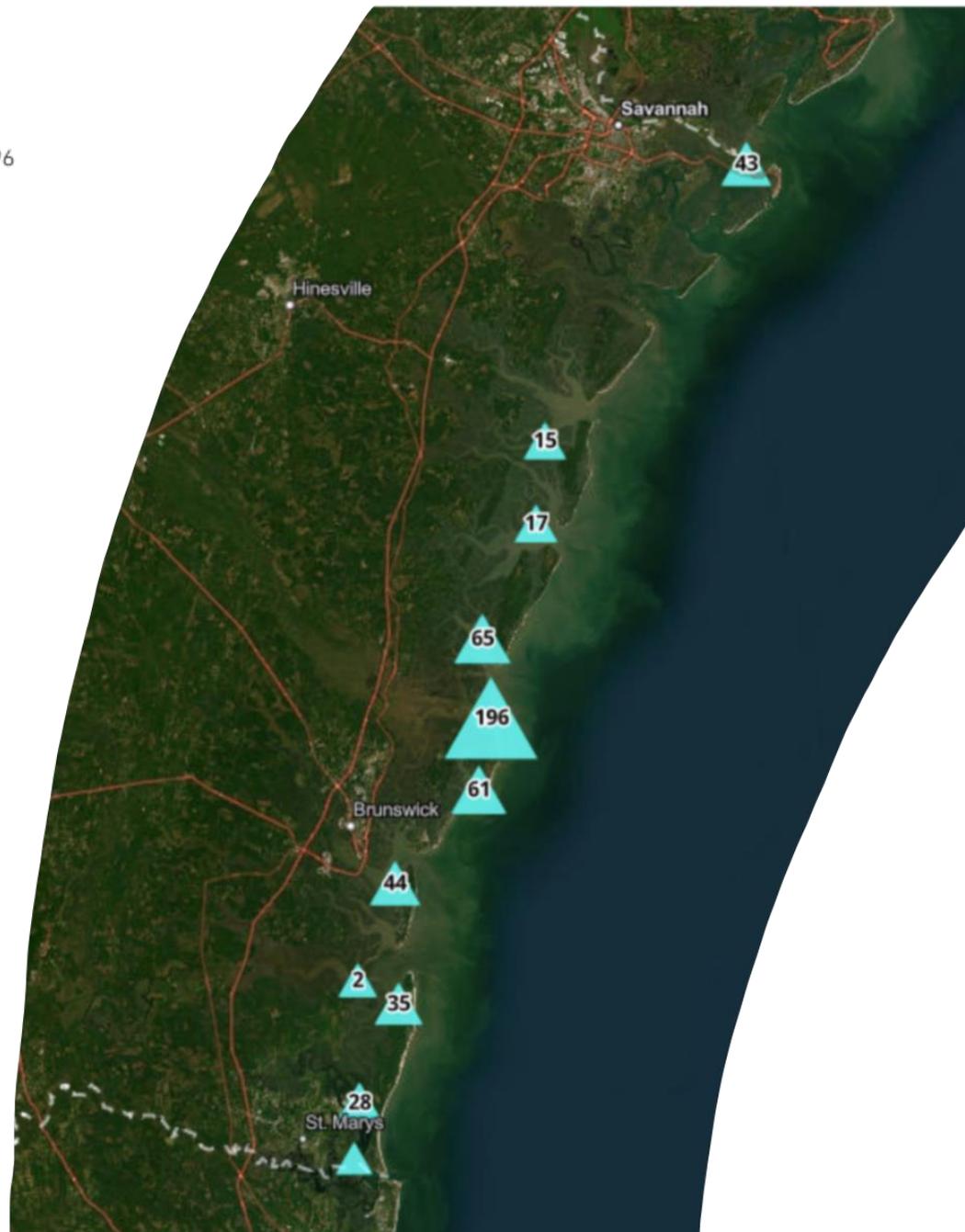
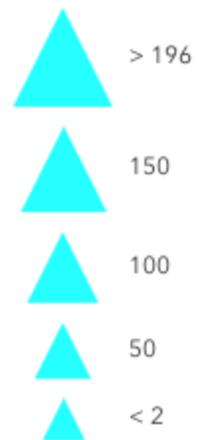
Chicks (436)



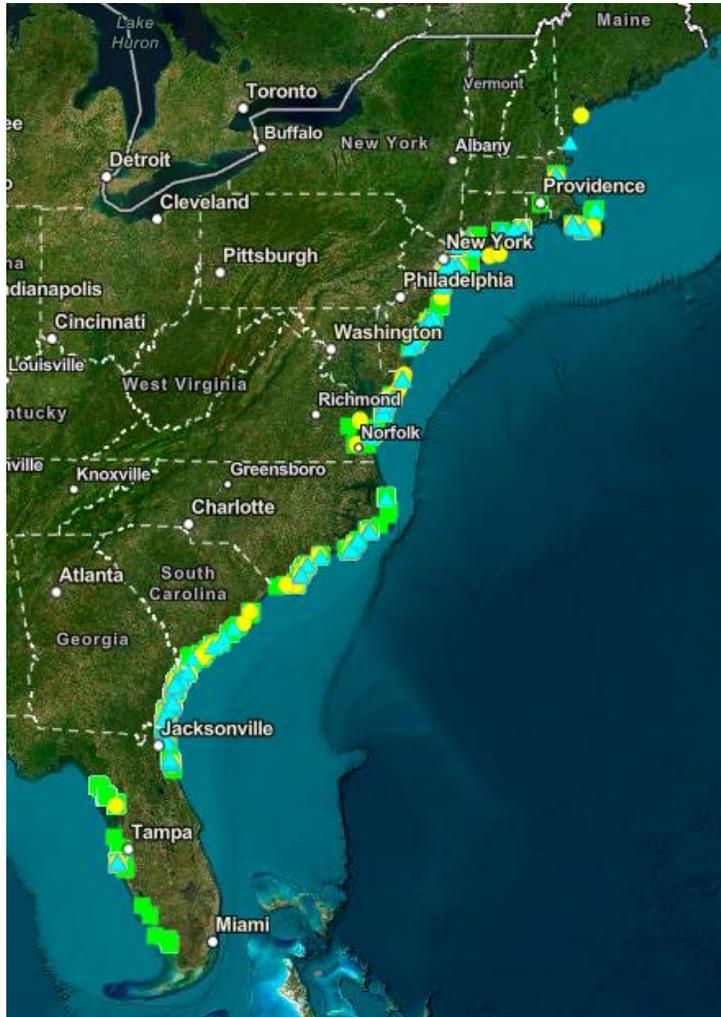
# Nonbreeding Captures

Began in 2010

Typically cannon net capture at a roost



# Resights of Nonbreeding Captures



# What drives natal dispersal?

Are birds breeding at their natal site?

Are birds breeding in their natal landscape?

How do natal dispersal distances vary?



# Landscape Types



Barrier Island  
(includes bars)  
n = 19

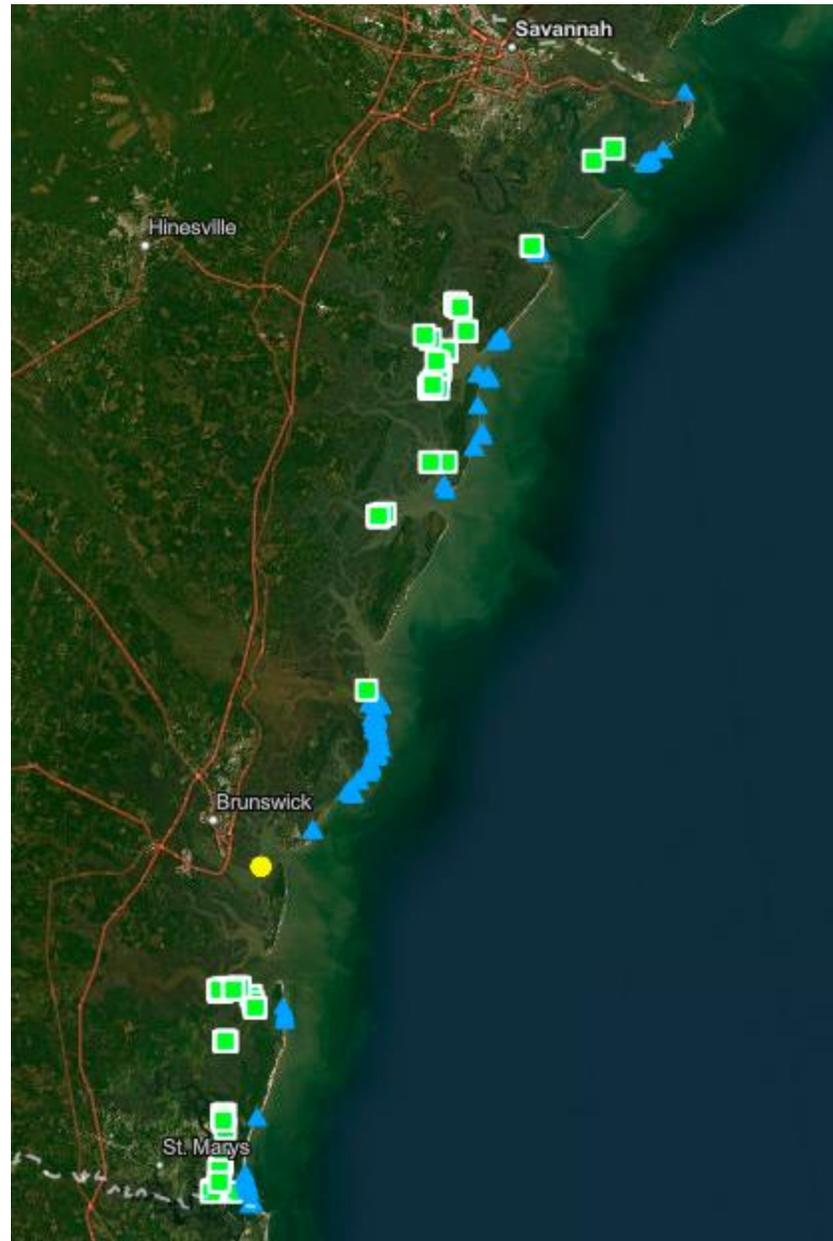


Natural Island  
n = 18



Dredge Island  
n = 1

# Coastal Georgia



## Landscape type

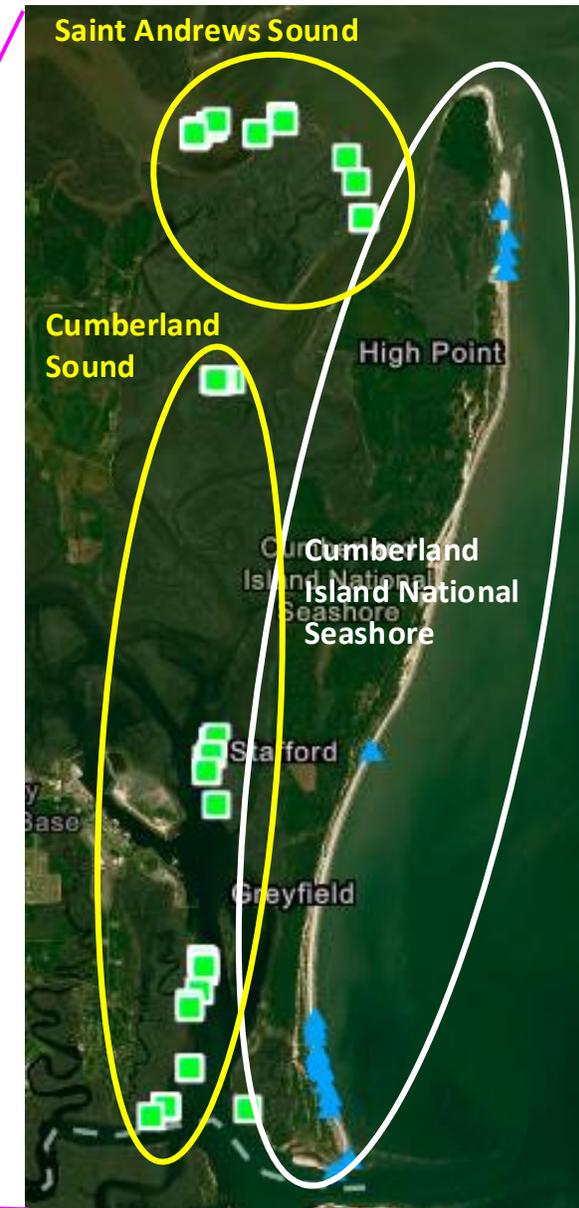
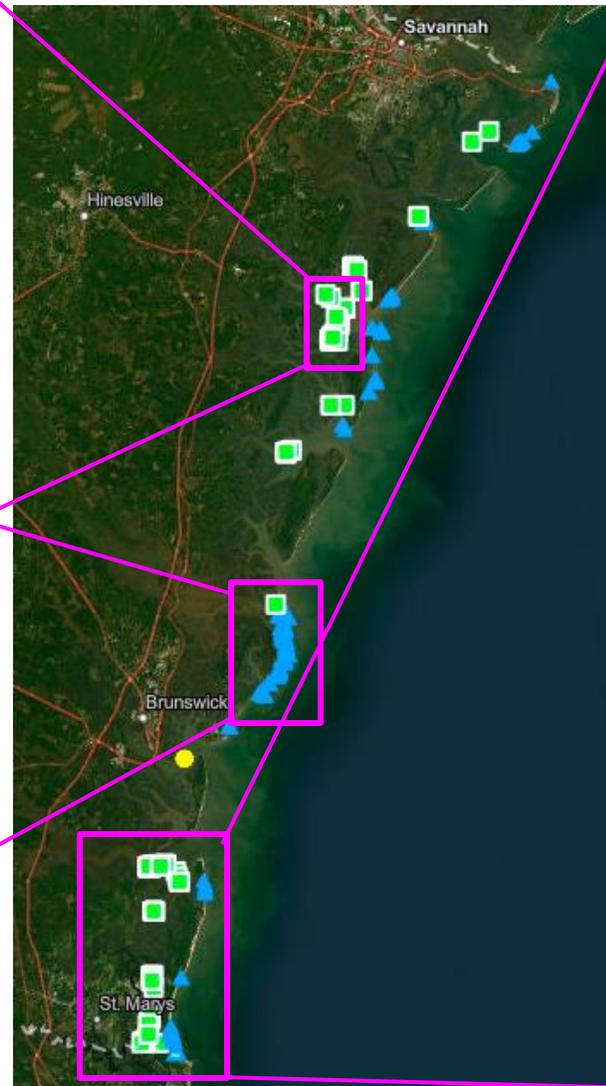
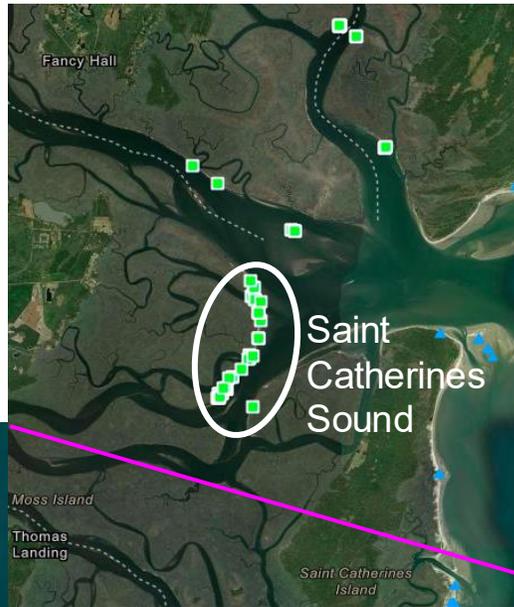
- Dredge island
- Natural island
- ▲ Barrier island

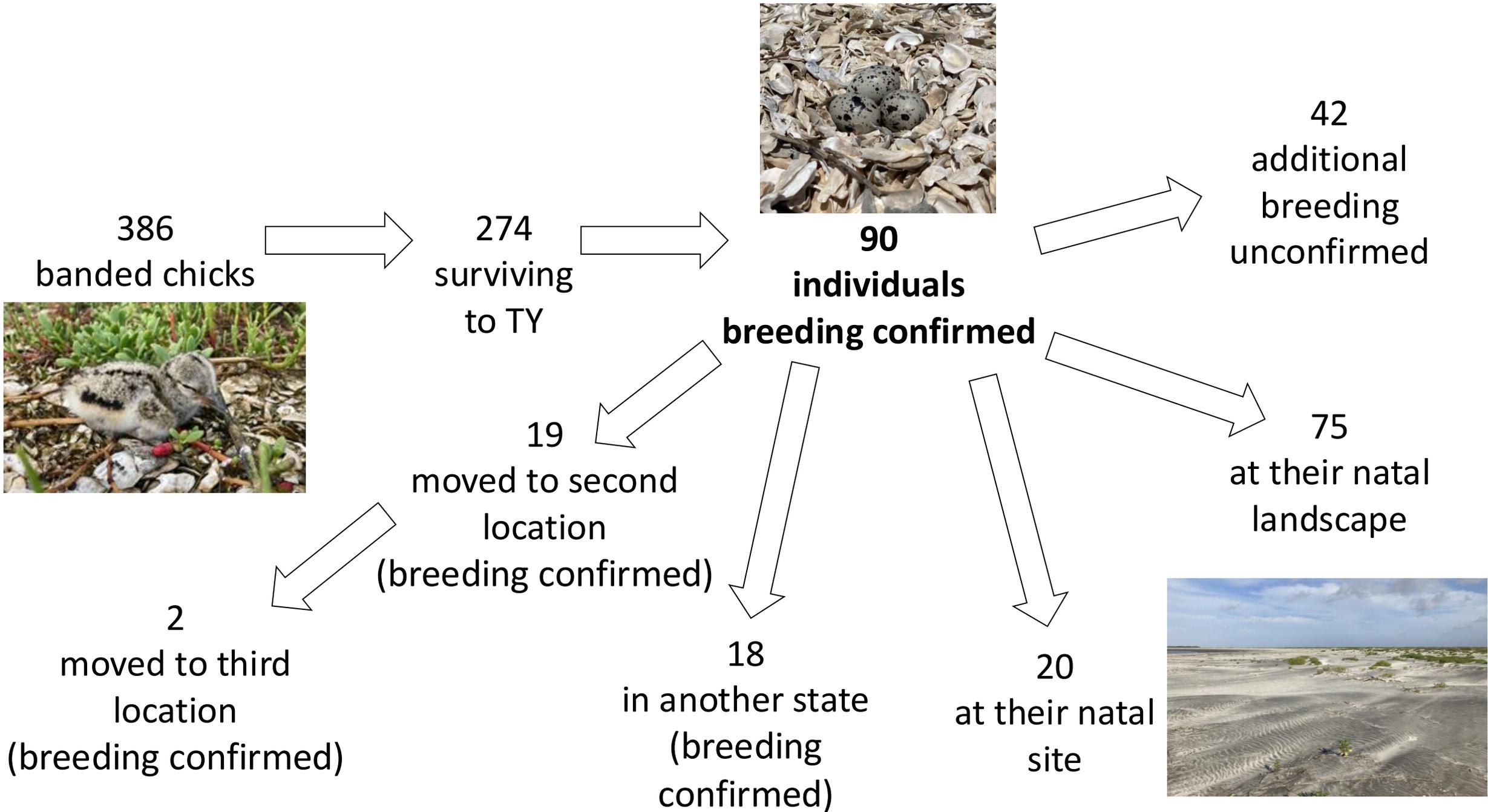


# Study Sites

Landscape type

-  Dredge island
-  Natural island
-  Barrier island





# What drives natal dispersal?

**Are birds breeding at their natal site?**

*Are birds breeding in their natal landscape?*

*How do natal dispersal distances vary?*



# Methods: Data analysis

Summarized breeding individuals across sites

Used Chi-squared test to compare proportions of breeding individuals across sites



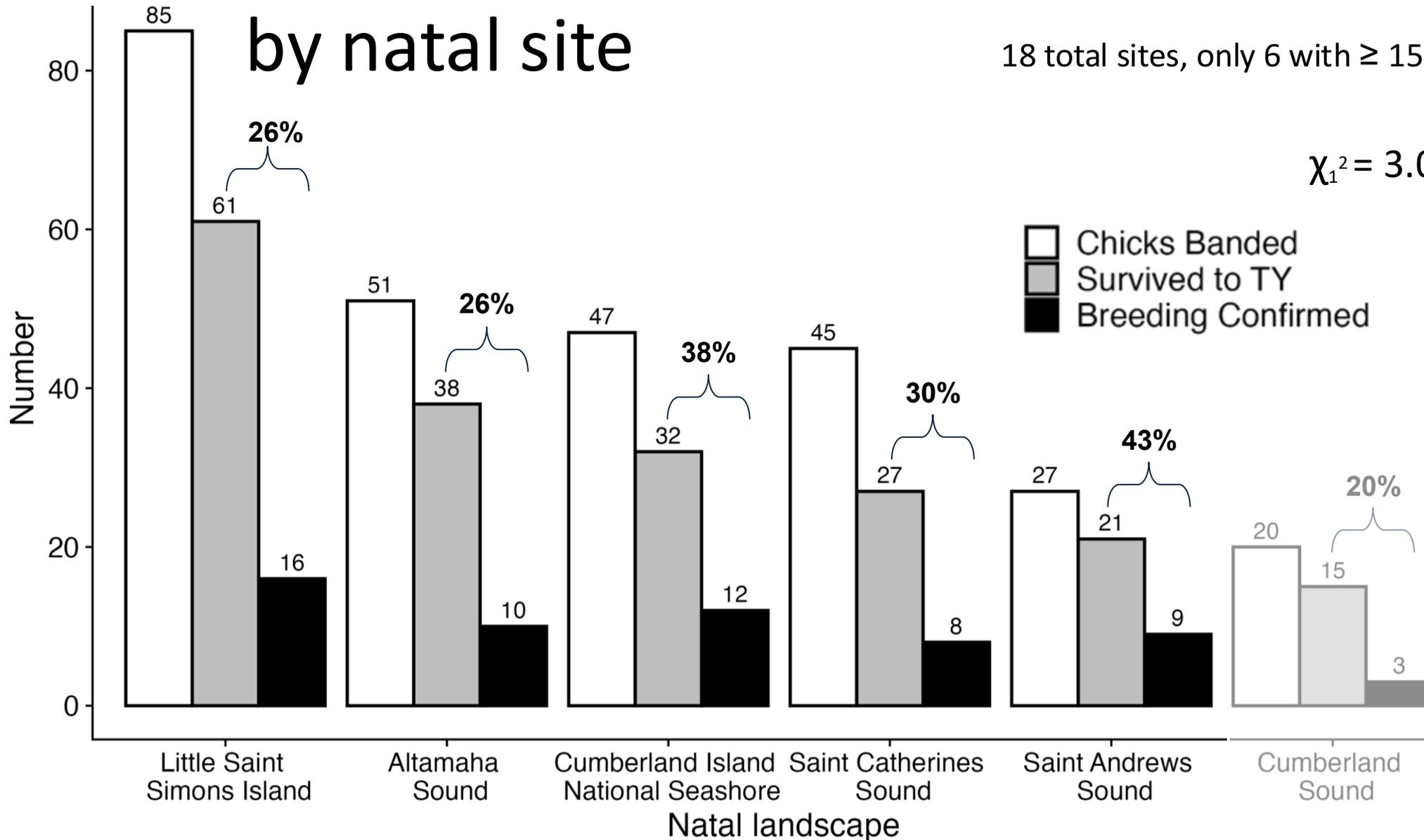
# Proportion of breeding individuals does not differ

## by natal site

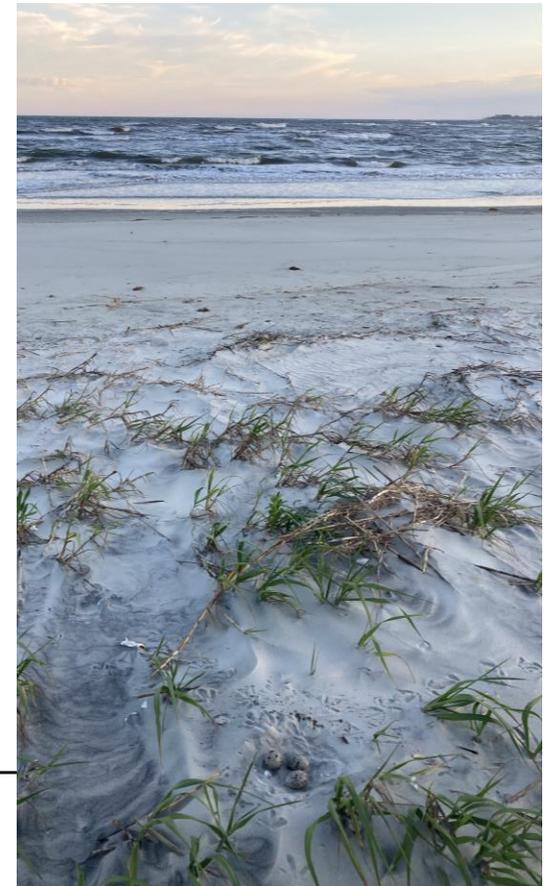
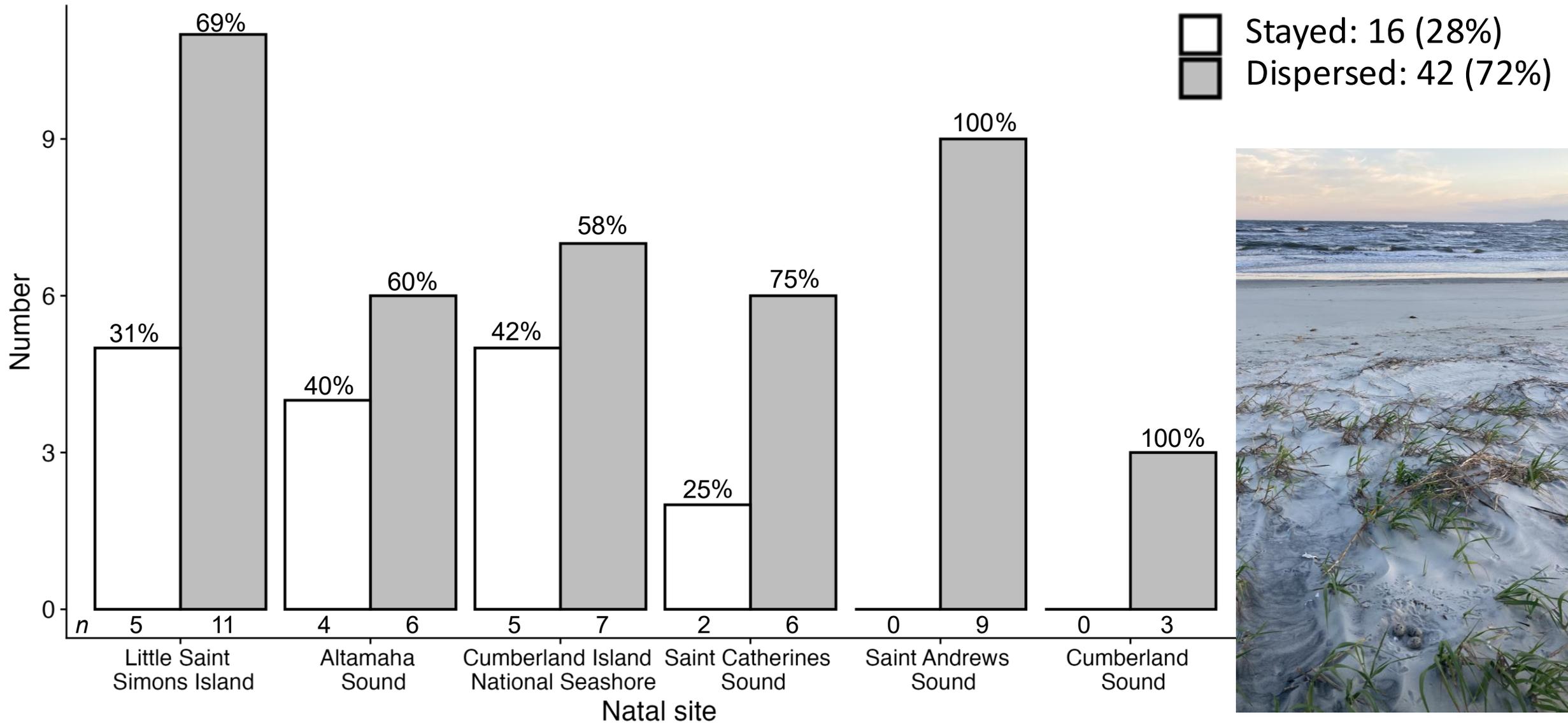
18 total sites, only 6 with  $\geq 15$  surviving birds

$\chi_1^2 = 3.08, df = 4, p = 0.54$

Chicks Banded  
Survived to TY  
Breeding Confirmed



# Most birds disperse from their natal site



# What drives natal dispersal?

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*Are birds breeding in their natal landscape?*

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# Methods: Data analysis

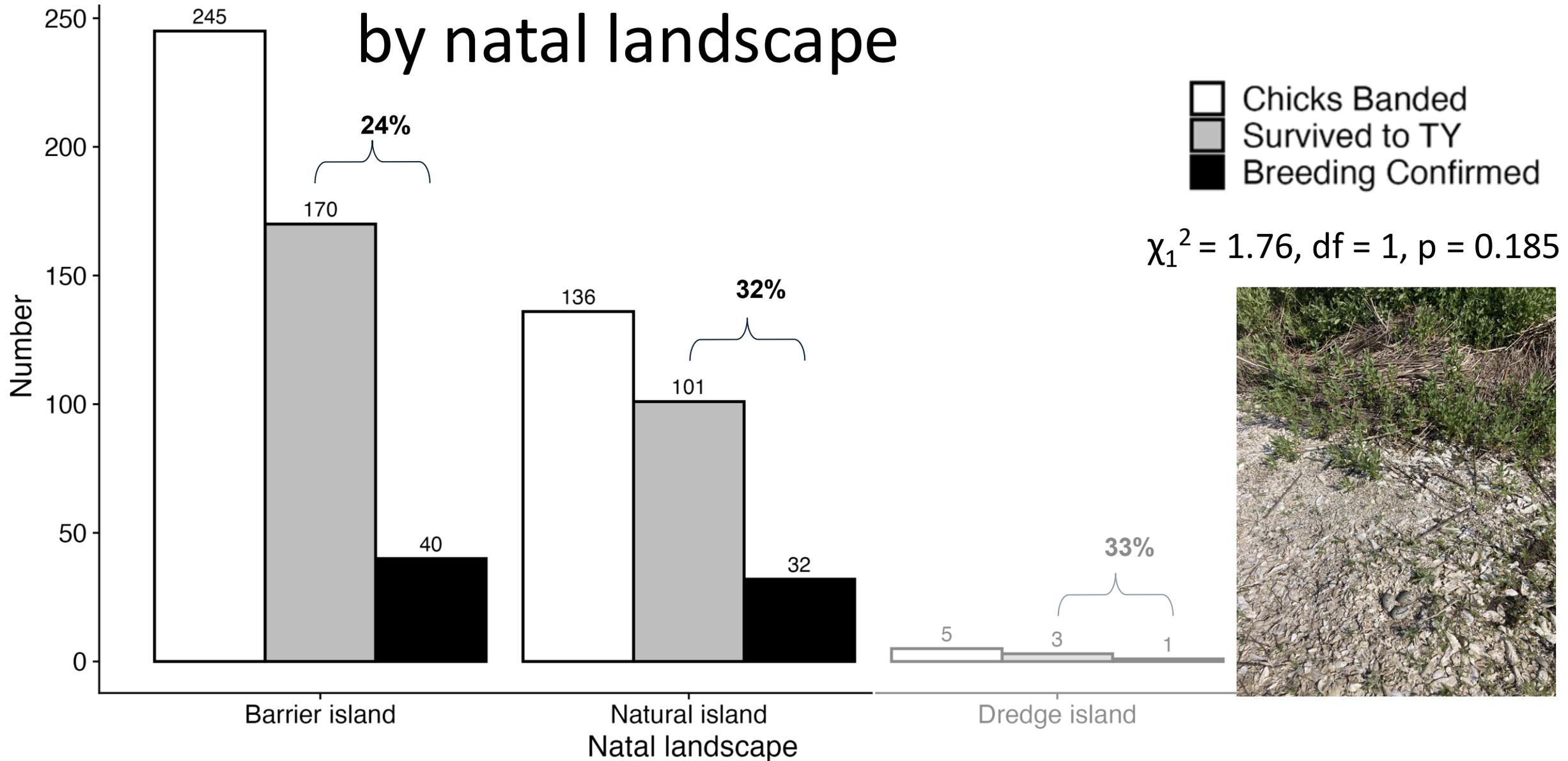
Summarized breeding individuals across landscapes

Used Chi-squared test to compare proportions of breeding individuals across landscapes

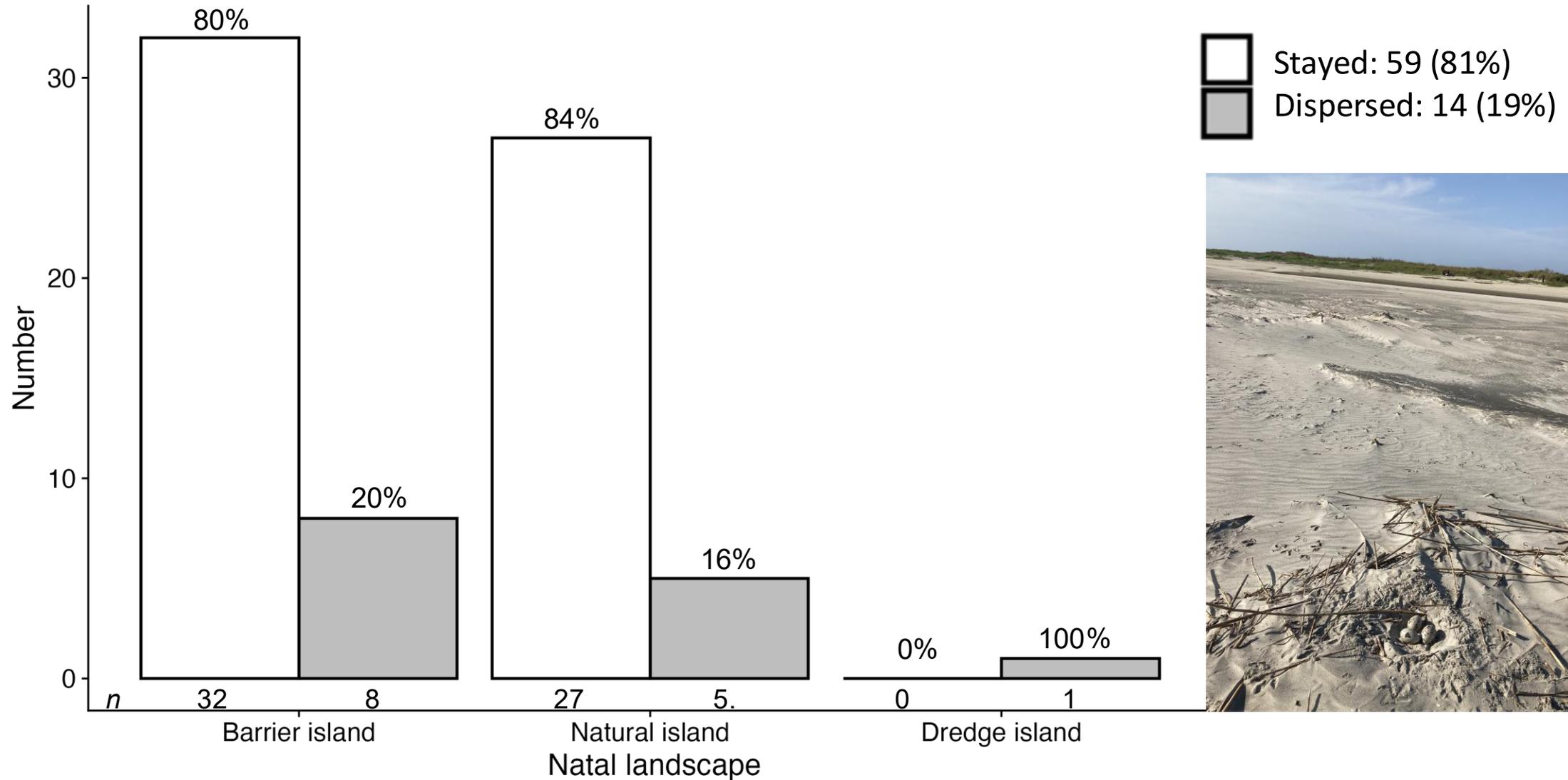
Evaluated factors important to breeding at a bird's natal site using a generalized linear mixed model (glmm)



# Proportion of breeding individuals does not differ by natal landscape

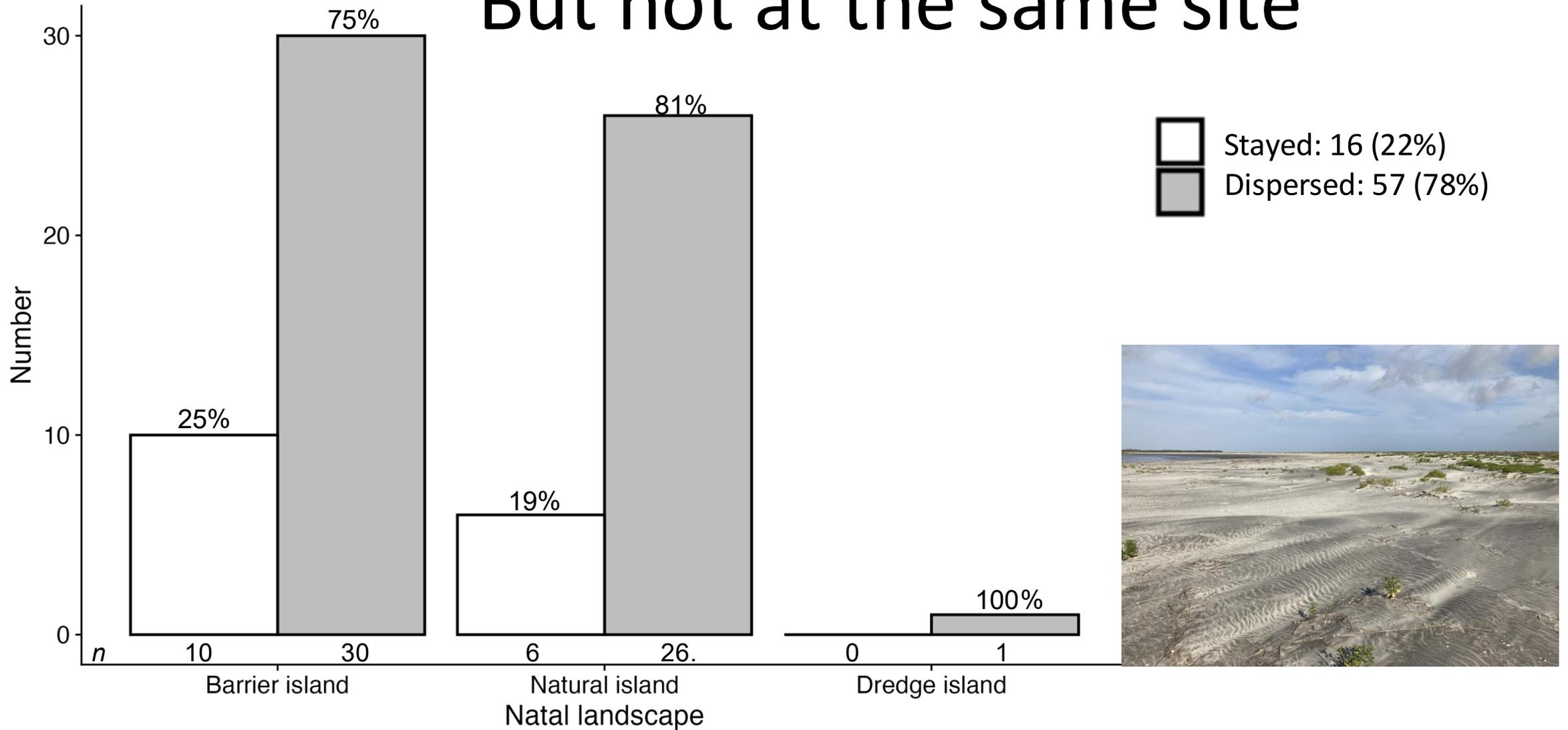


# Individuals nest in the same landscape



# Individuals nest in the same landscape

## But not at the same site



# What drives natal dispersal?

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**Are birds breeding in their natal landscape?**

*How do natal dispersal distances vary?*



# What drives natal dispersal?

*Are birds breeding at their natal site?*

*Are birds breeding in their natal landscape?*

**How do natal dispersal distances vary?**



# Methods: Data analysis

Calculated natal dispersal distances using R package Geosphere

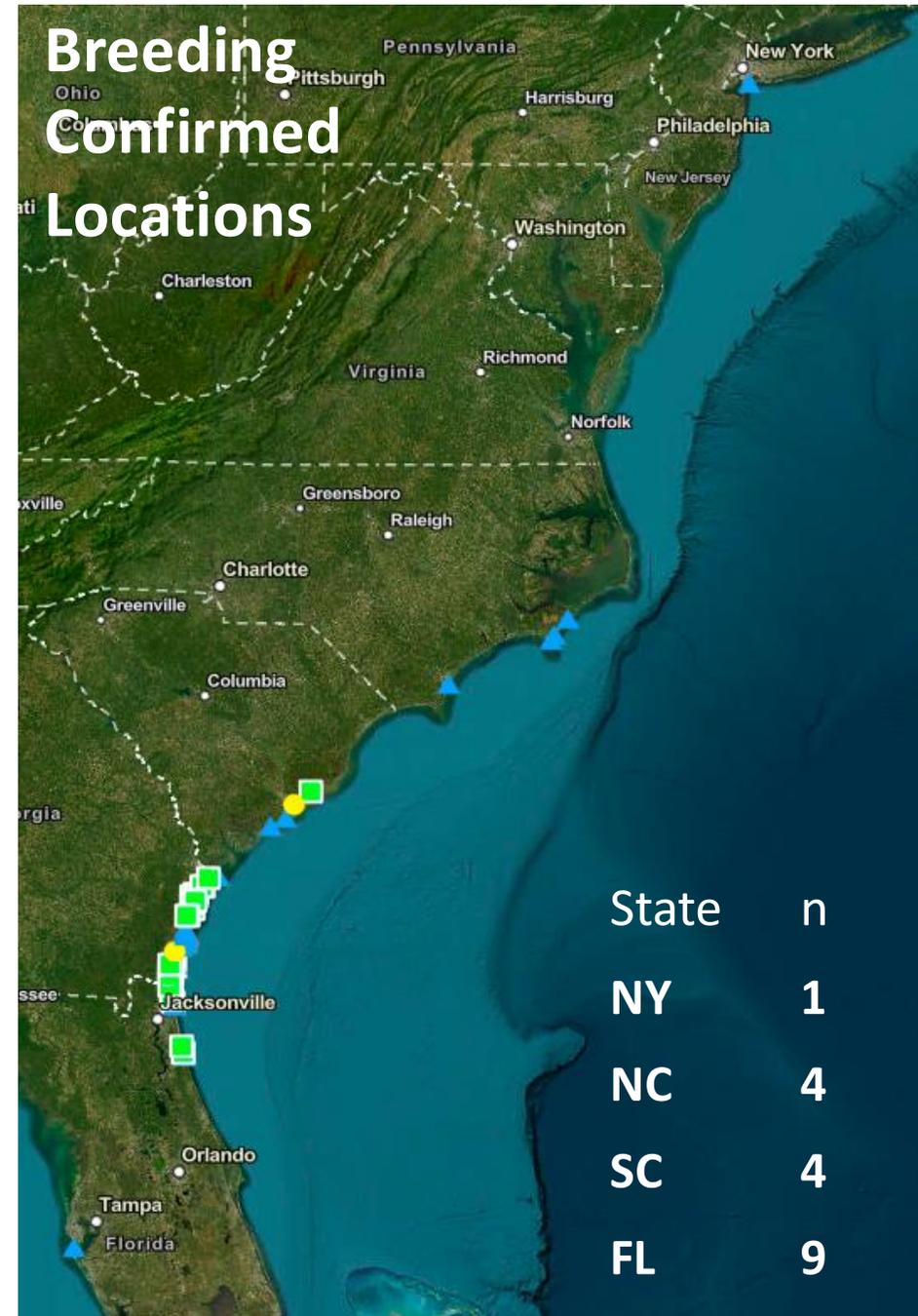
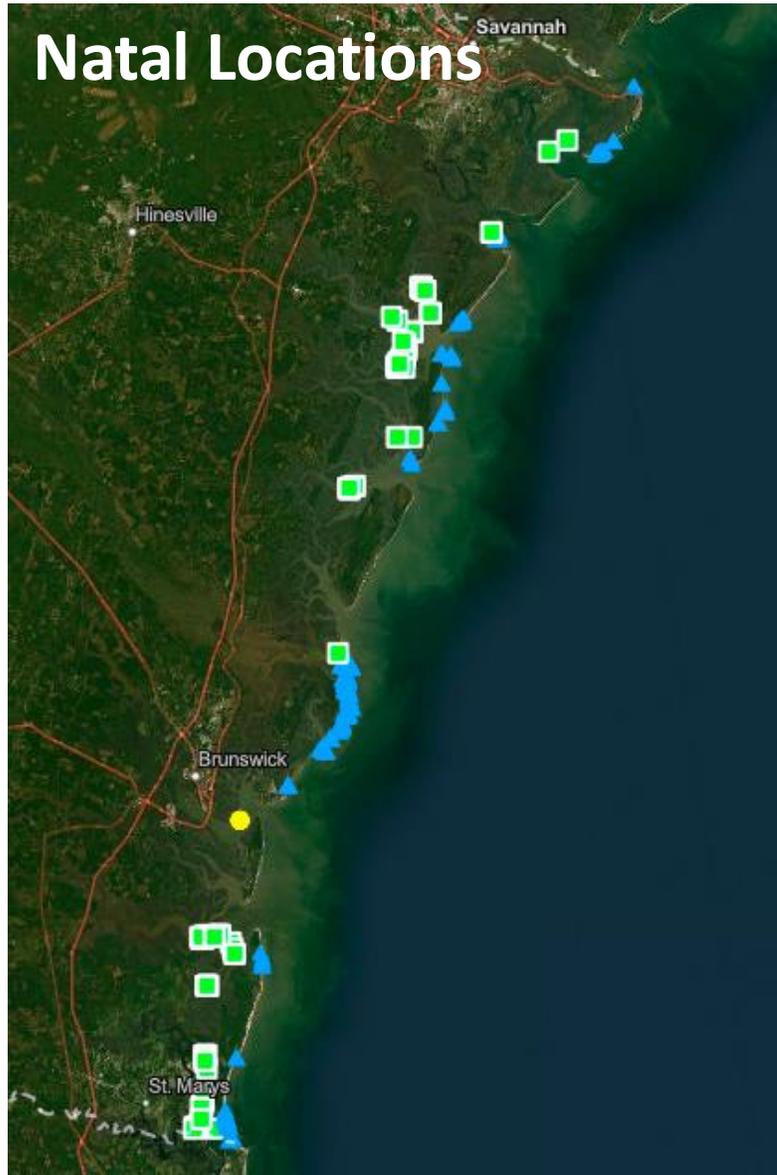
Explored distribution of natal and breeding locations using ArcGIS



# Breeding from NY to FL

Landscape type

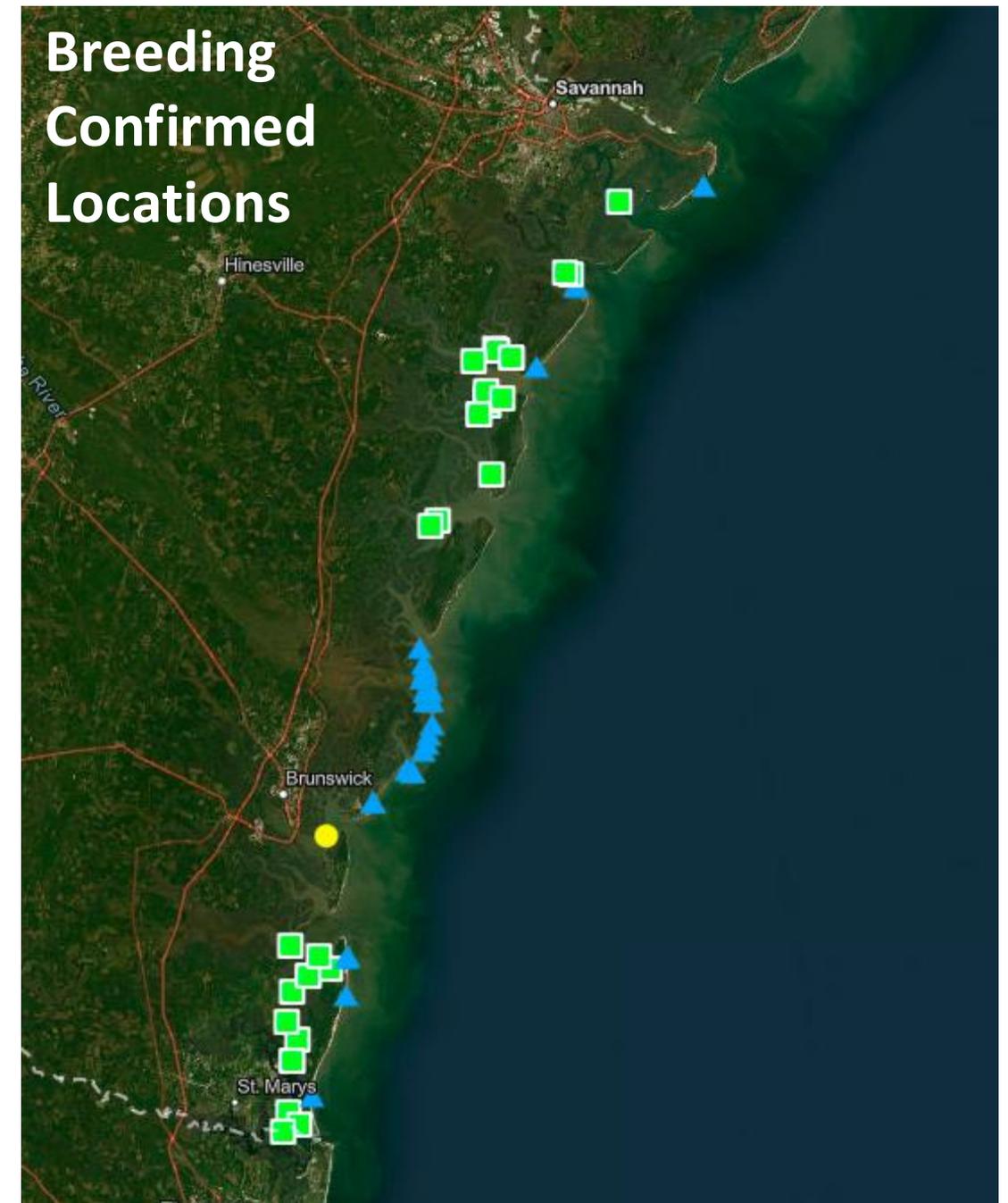
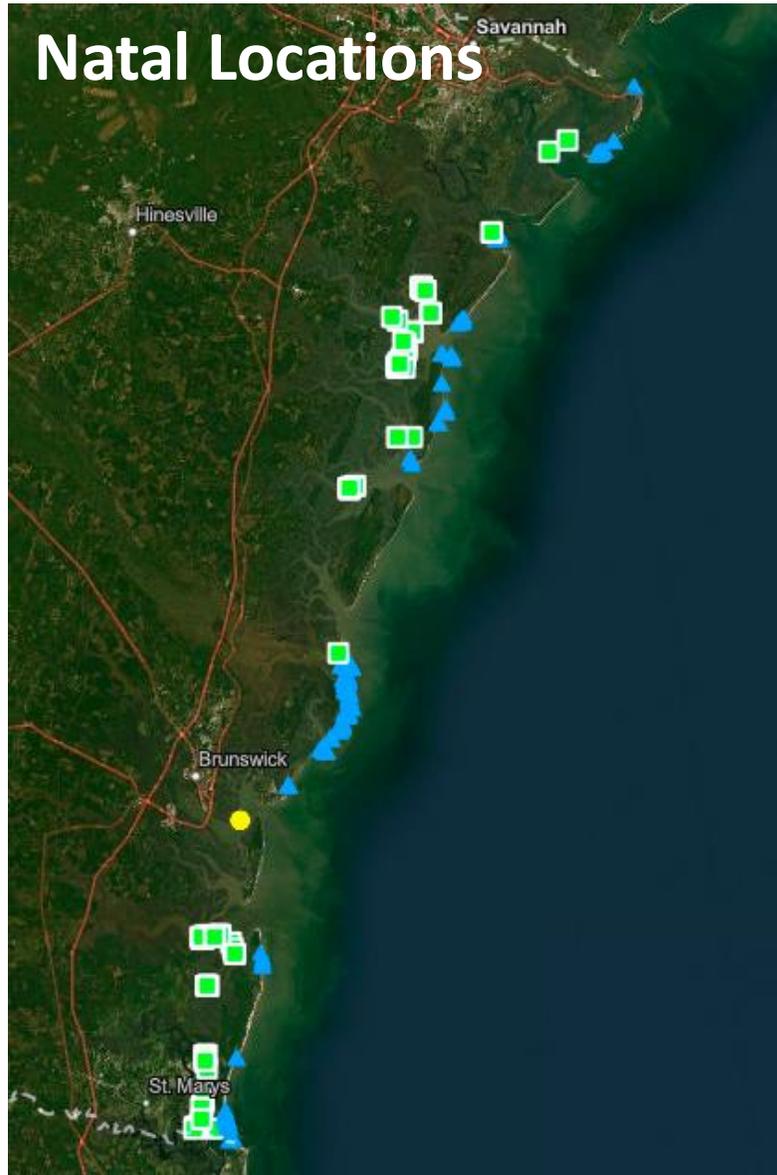
- Dredge island
- Natural island
- ▲ Barrier island



# Breeding in GA

Landscape type

- Dredge island
- Natural island
- ▲ Barrier island



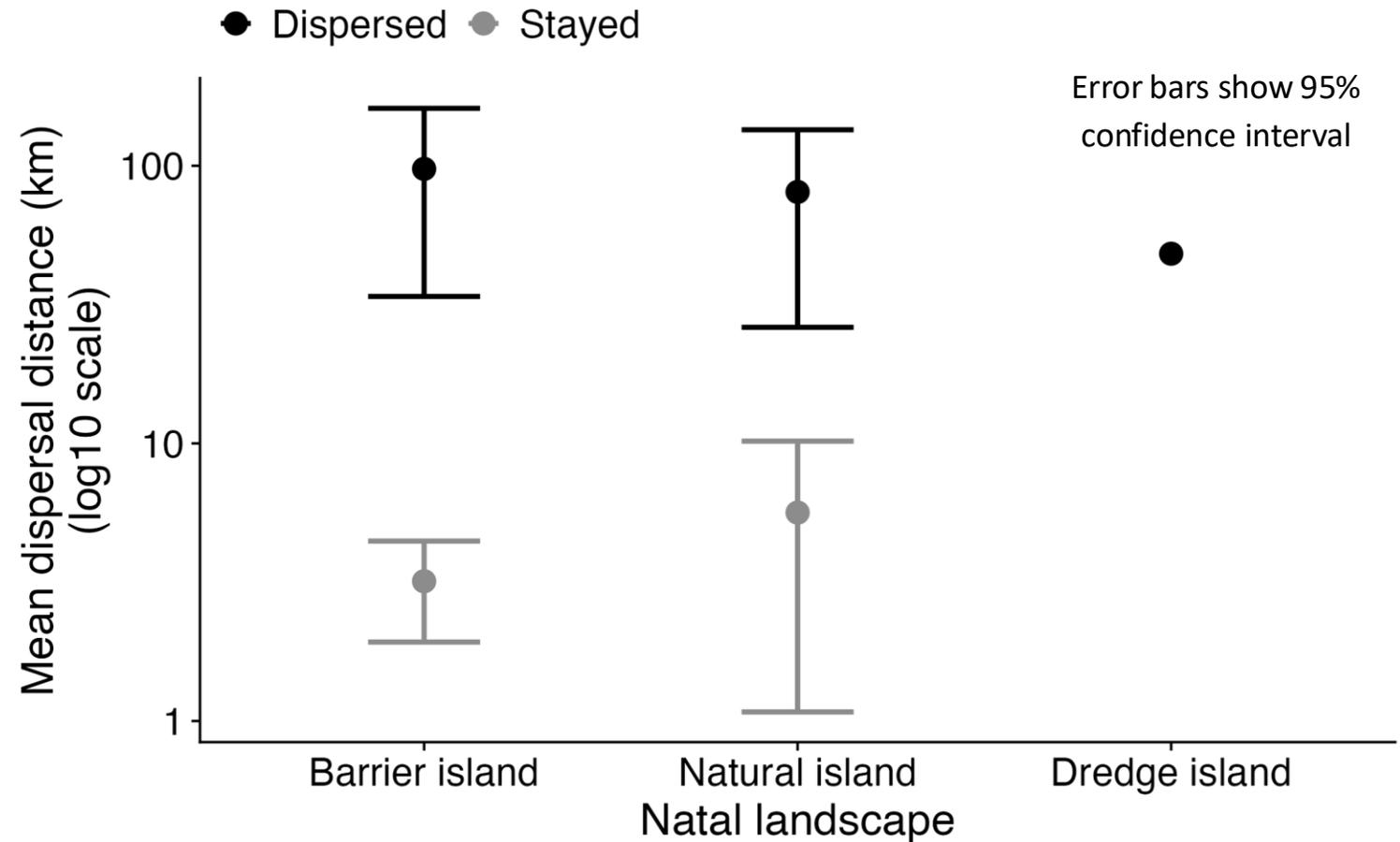
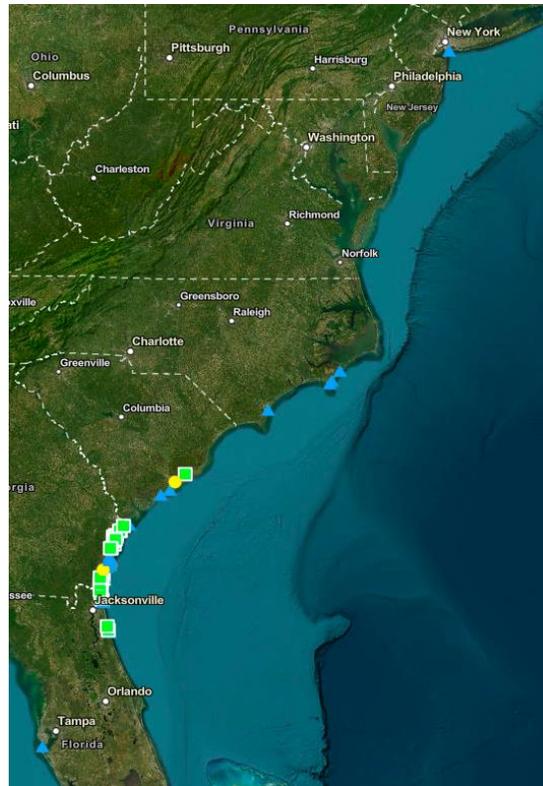
# Dispersal distances are variable

Minimum: 142 m

Mean: 70.28 km

Maximum (within GA): 98.83 km

Maximum (out of GA): 666.36 km



# What drives natal dispersal?

*Are birds breeding at their natal site?*

*Are birds breeding in their natal landscape?*

**How do natal dispersal distances vary?**



# What drives natal dispersal?

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Most birds disperse from their natal site

Are birds breeding in their natal landscape?

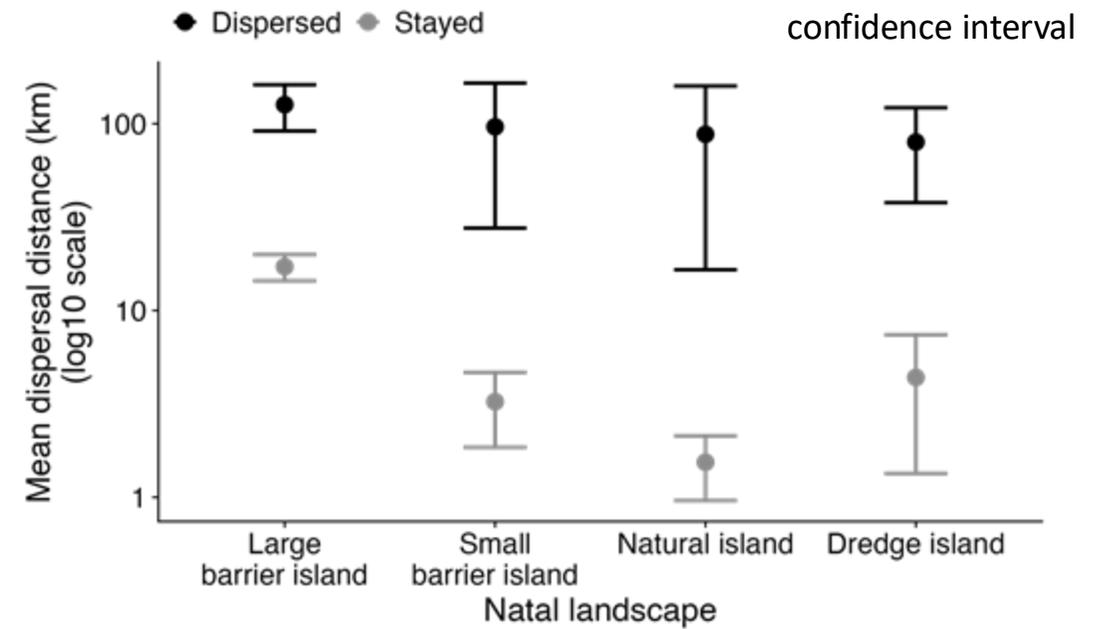
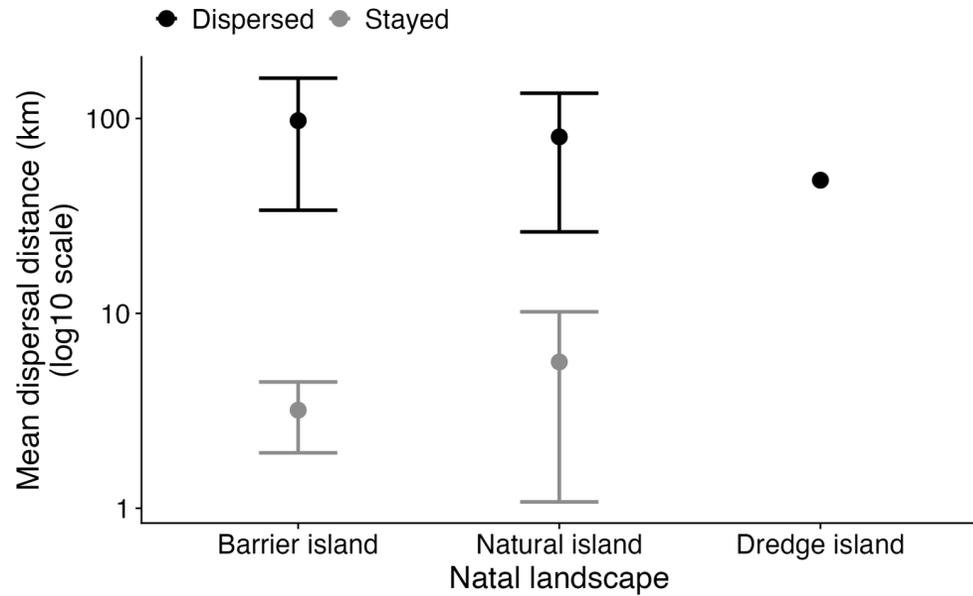
Most birds nest in their natal landscape

How do natal dispersal distances vary?

Birds dispersed from GA South to FL and as far North as NY



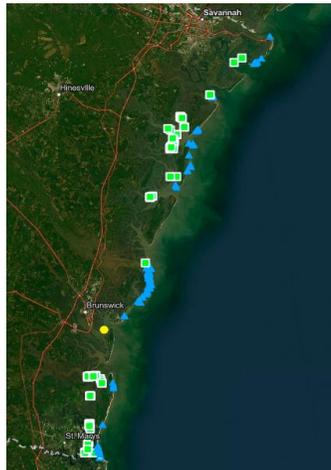
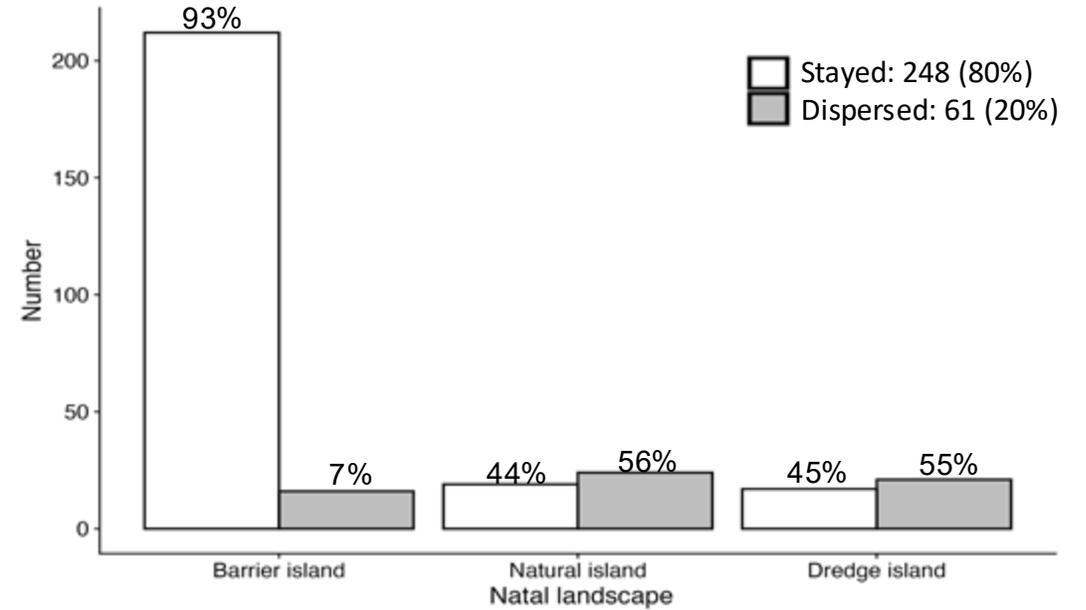
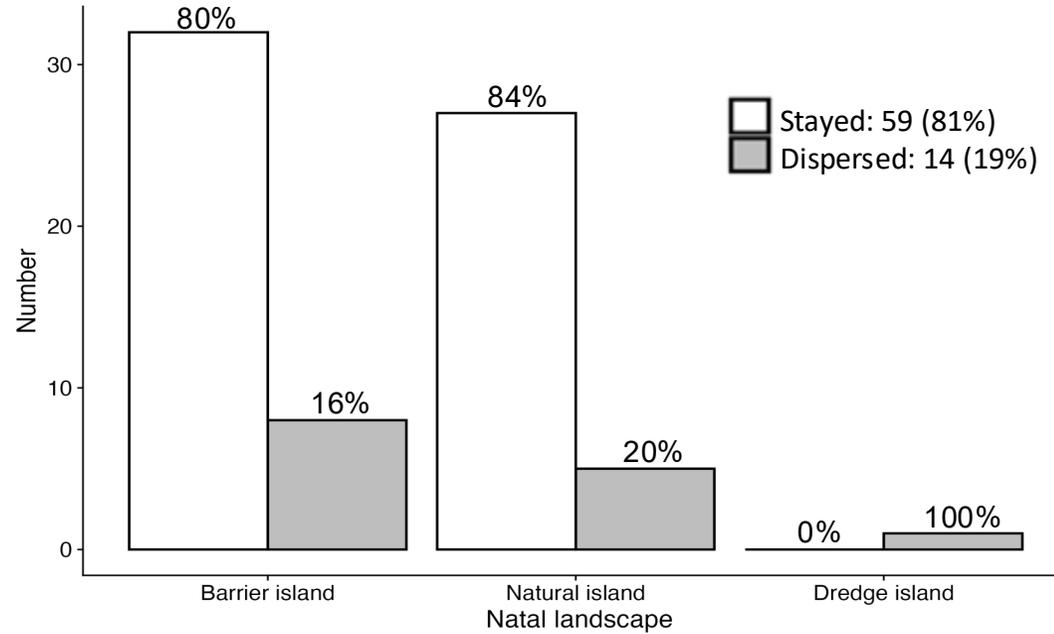
# Dispersal in Georgia vs North Carolina



- Landscape type
- Dredge island
  - Natural island
  - ▲ Barrier island



# Dispersal in Georgia vs North Carolina



Landscape type

- Dredge island
- Natural island
- ▲ Barrier island



# Future work

How does productivity and amount of available habitat affect dispersal?

How does success influence between year breeding movements?





# Thank You!

Thank you to everyone who has banded and/or resighted AMOY from Georgia!

kristenjohnson2023@gmail.com

