

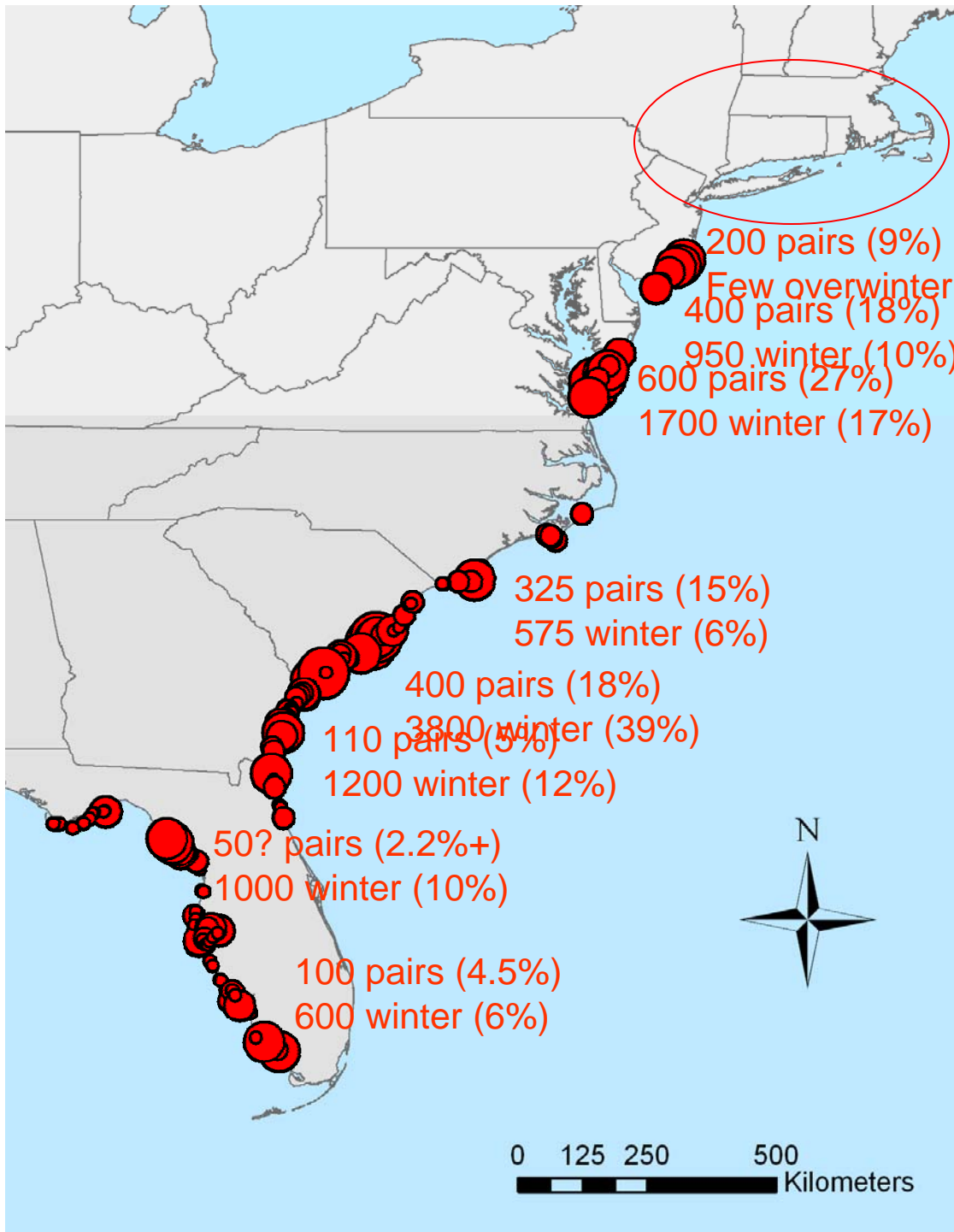
Oystercatchers in Motion



Shiloh Schulte and Ted Simons
North Carolina State University
In cooperation with
The American Oystercatcher working group

Objectives

- Quantify the strength of breeding/wintering connections across the range of the species
- Estimate annual winter site fidelity
- Describe intra-seasonal movement patterns and winter habitat use
- Identify patterns of dispersal and recruitment
- Identify data gaps and opportunities for ongoing collaboration



Breeding and wintering regions

New England and Long Island

New Jersey

Delmarva peninsula

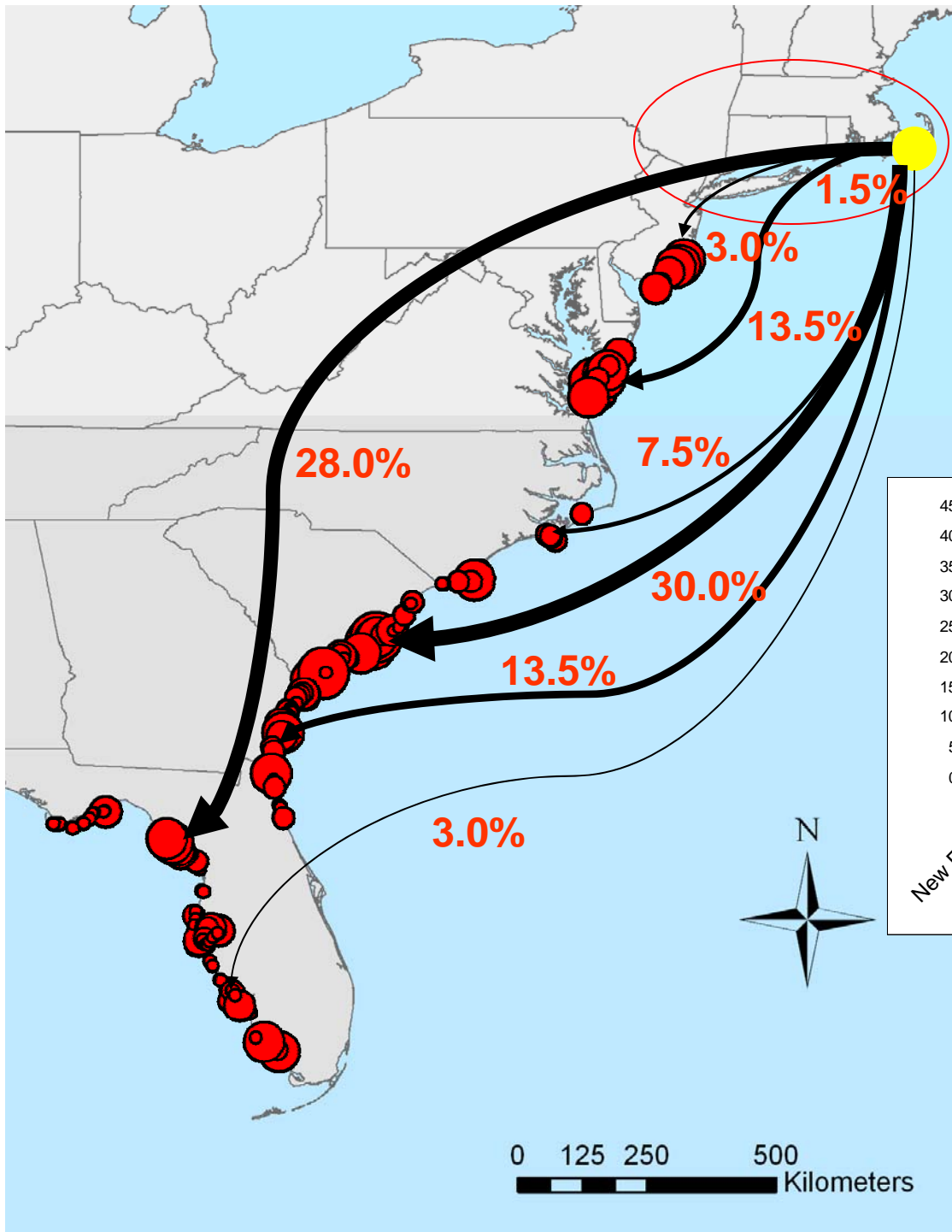
North Carolina

South Carolina

Georgia and NE Florida

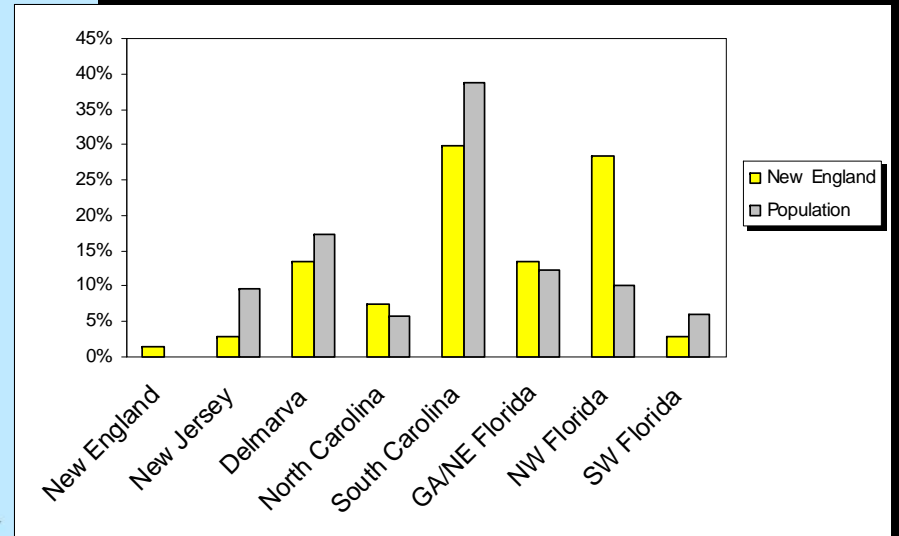
Northwest Florida

Southwest Florida



Breeding/Wintering connections

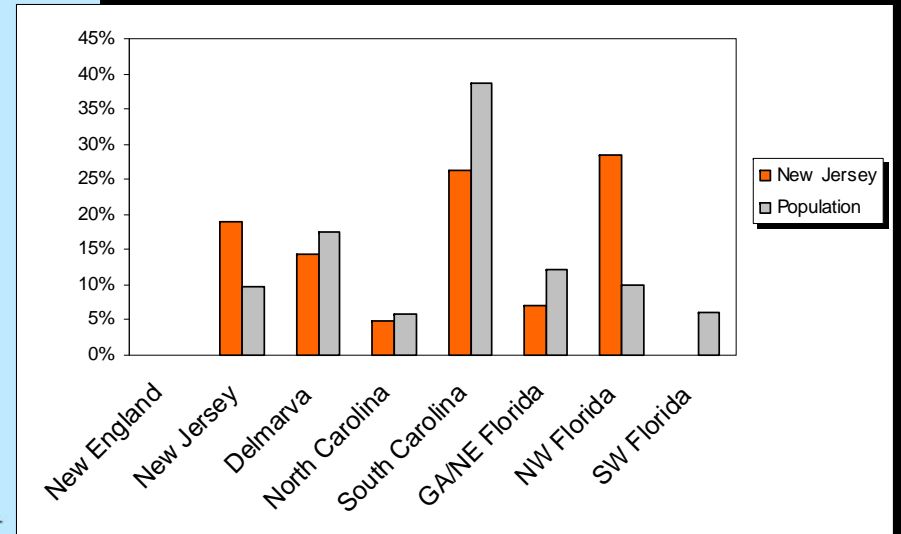
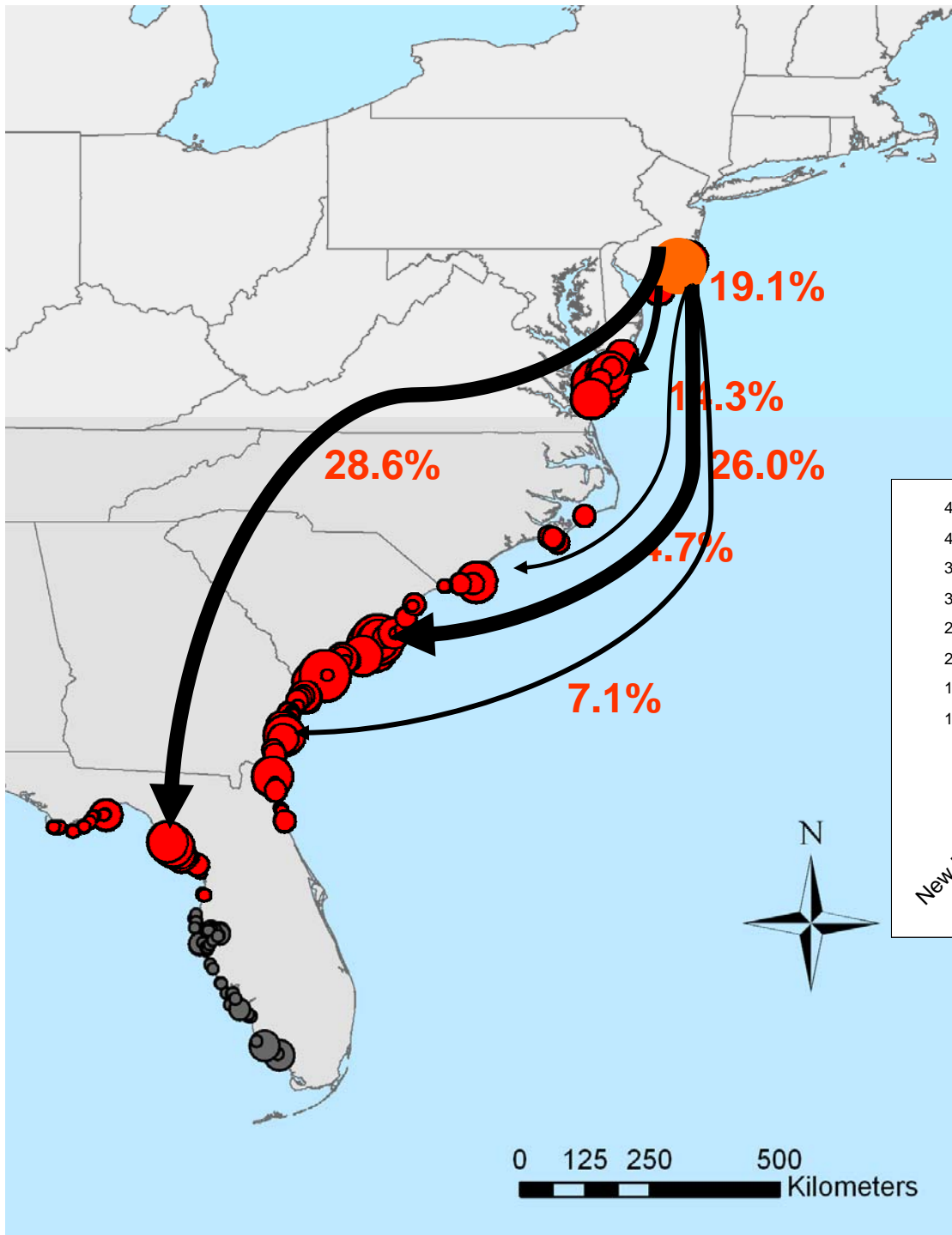
New England and Long Island
Breeding season bands



N = 67 (130)

Breeding/Wintering connections

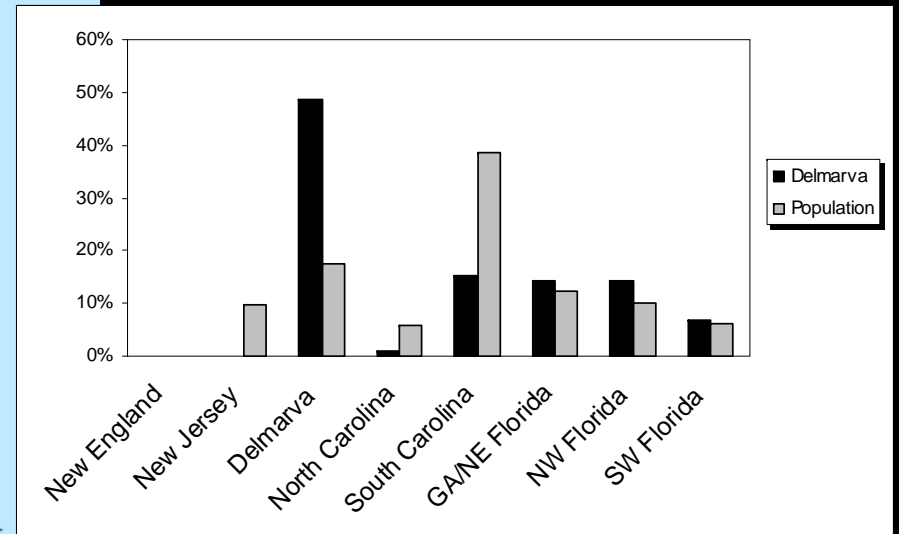
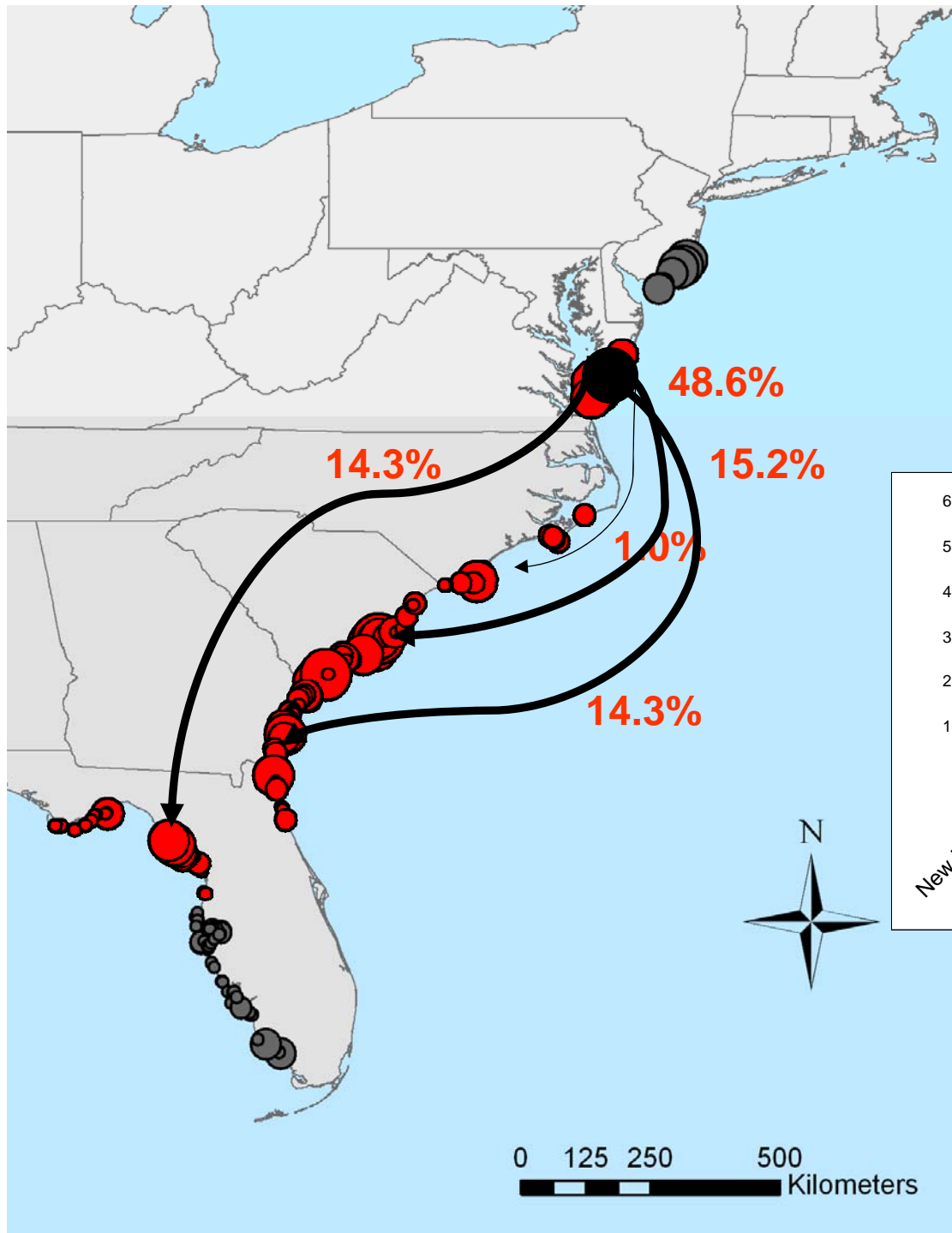
New Jersey
Breeding season bands



N = 42 (64)

Breeding/Wintering connections

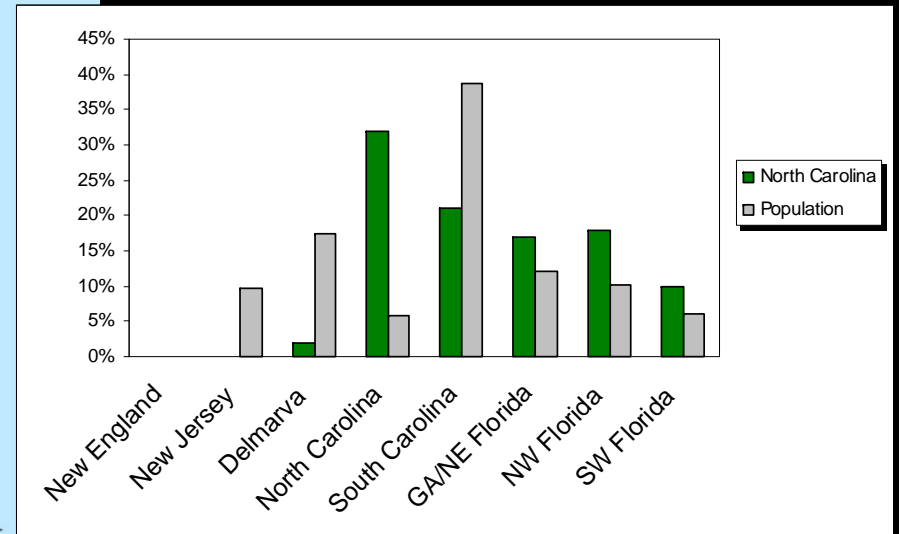
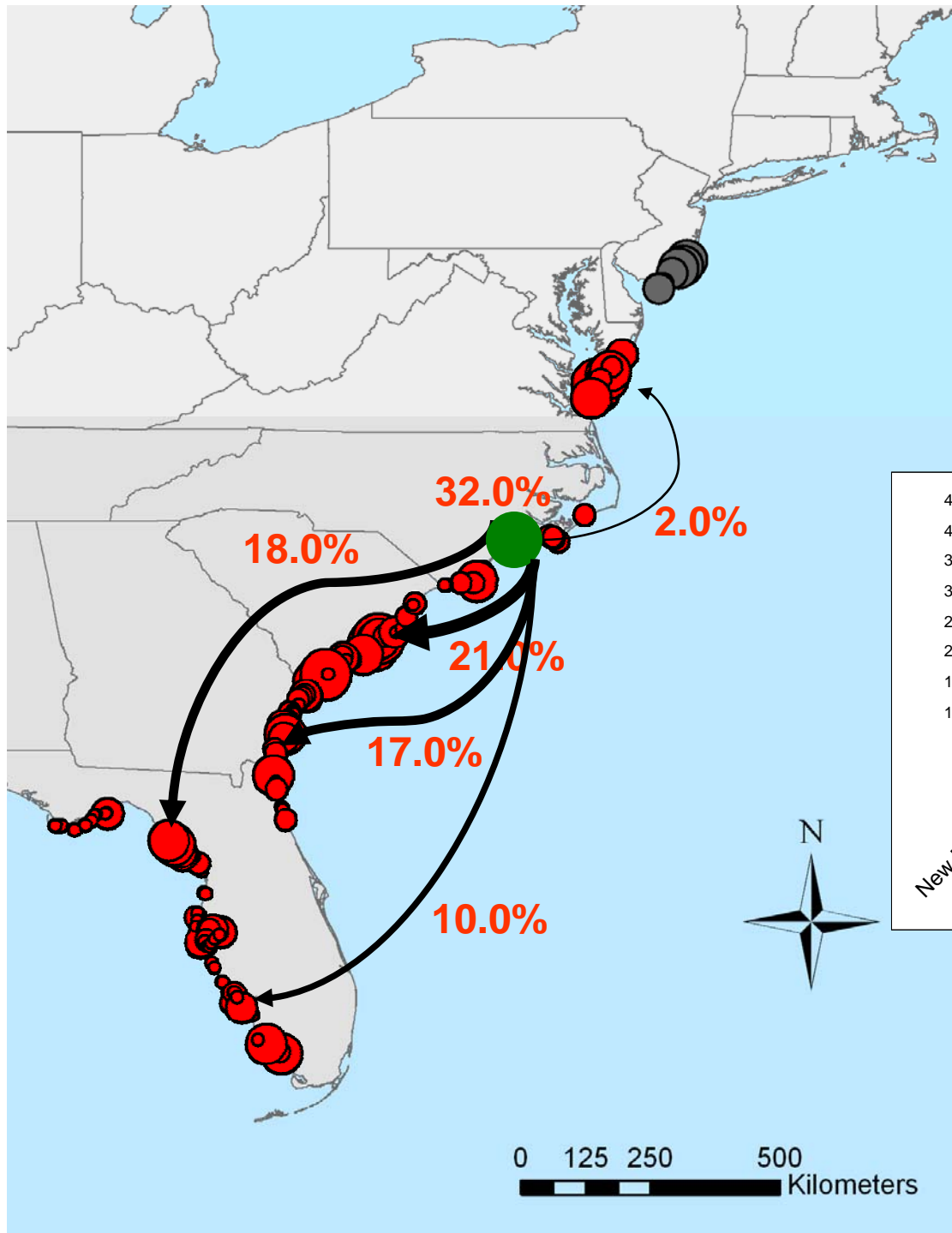
Delaware/Maryland/Virginia
Breeding season bands



N = 105 (242)

Breeding/Wintering connections

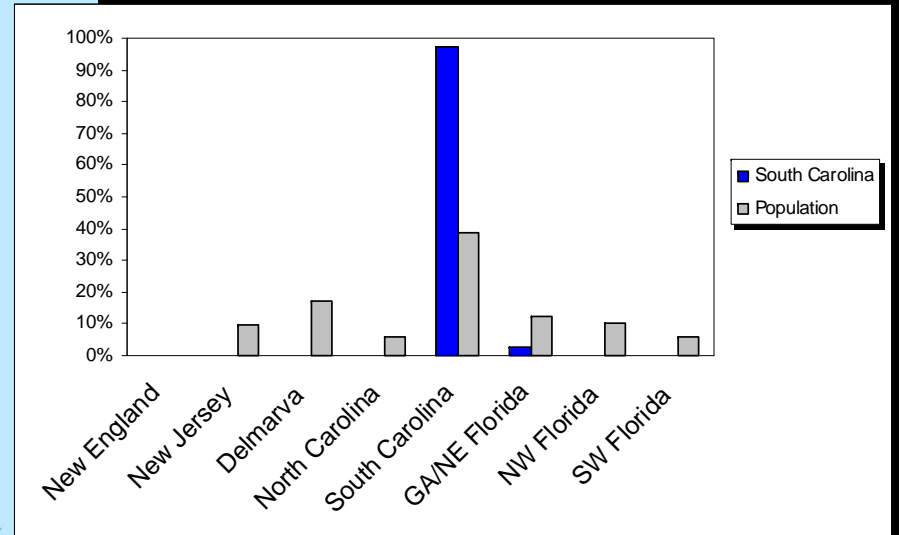
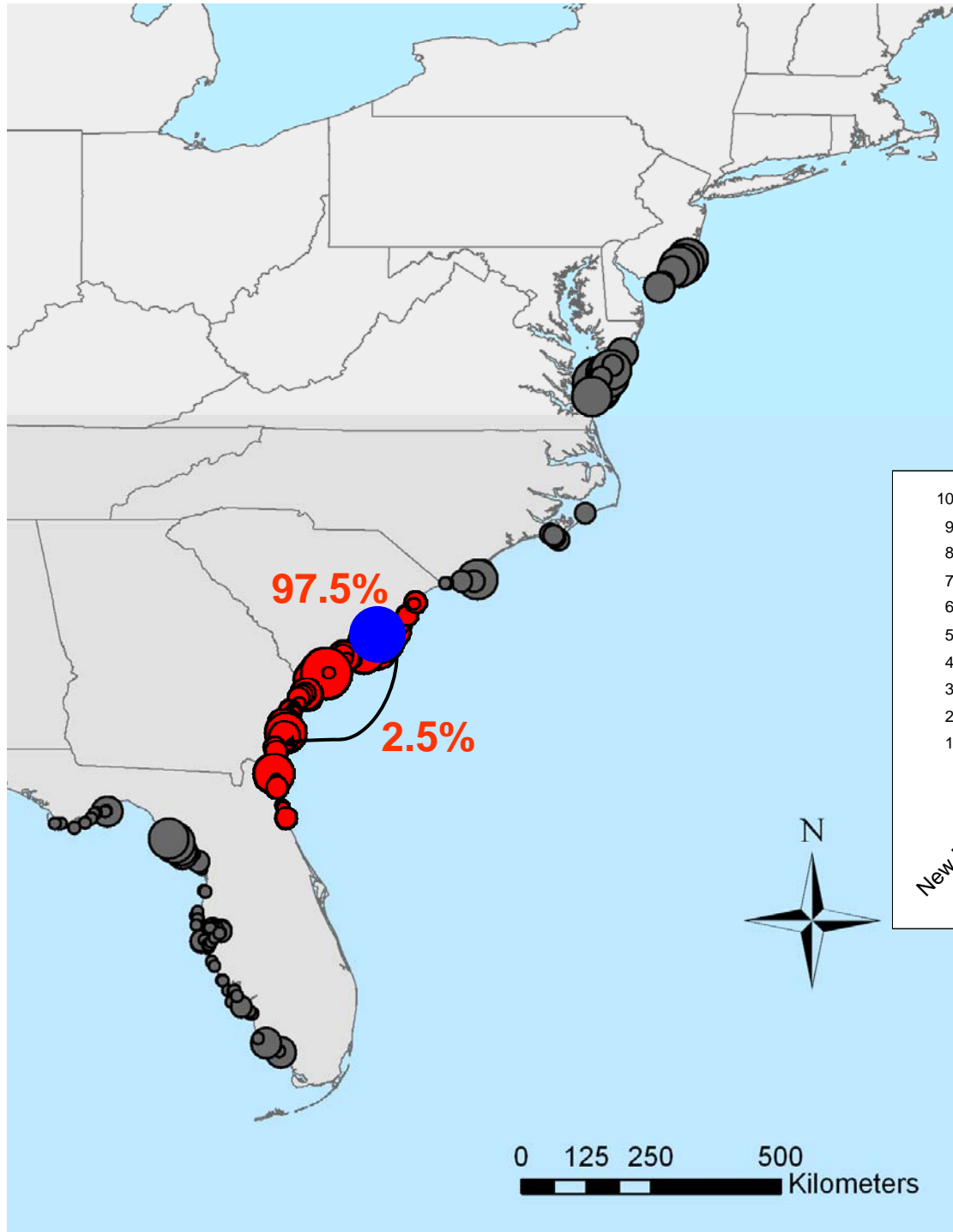
North Carolina
Breeding season bands



N = 100 (303)

Breeding/Wintering connections

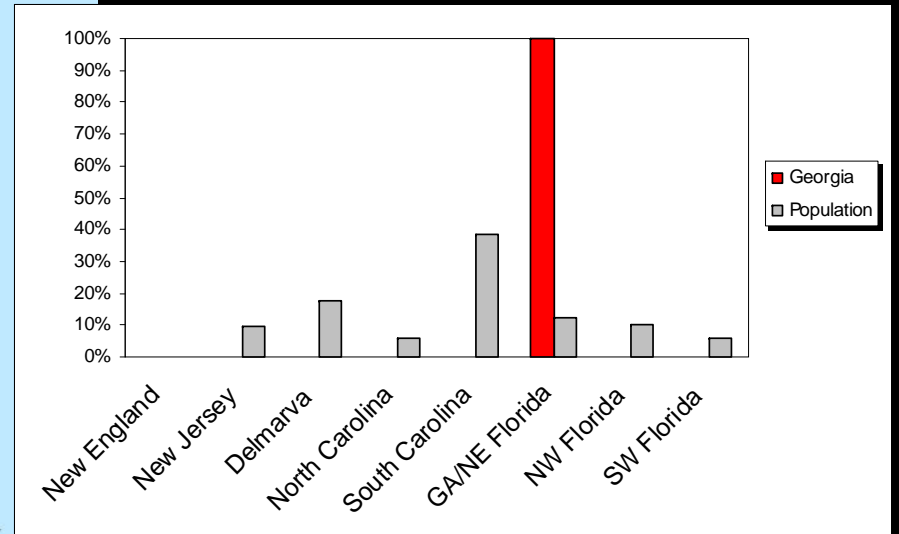
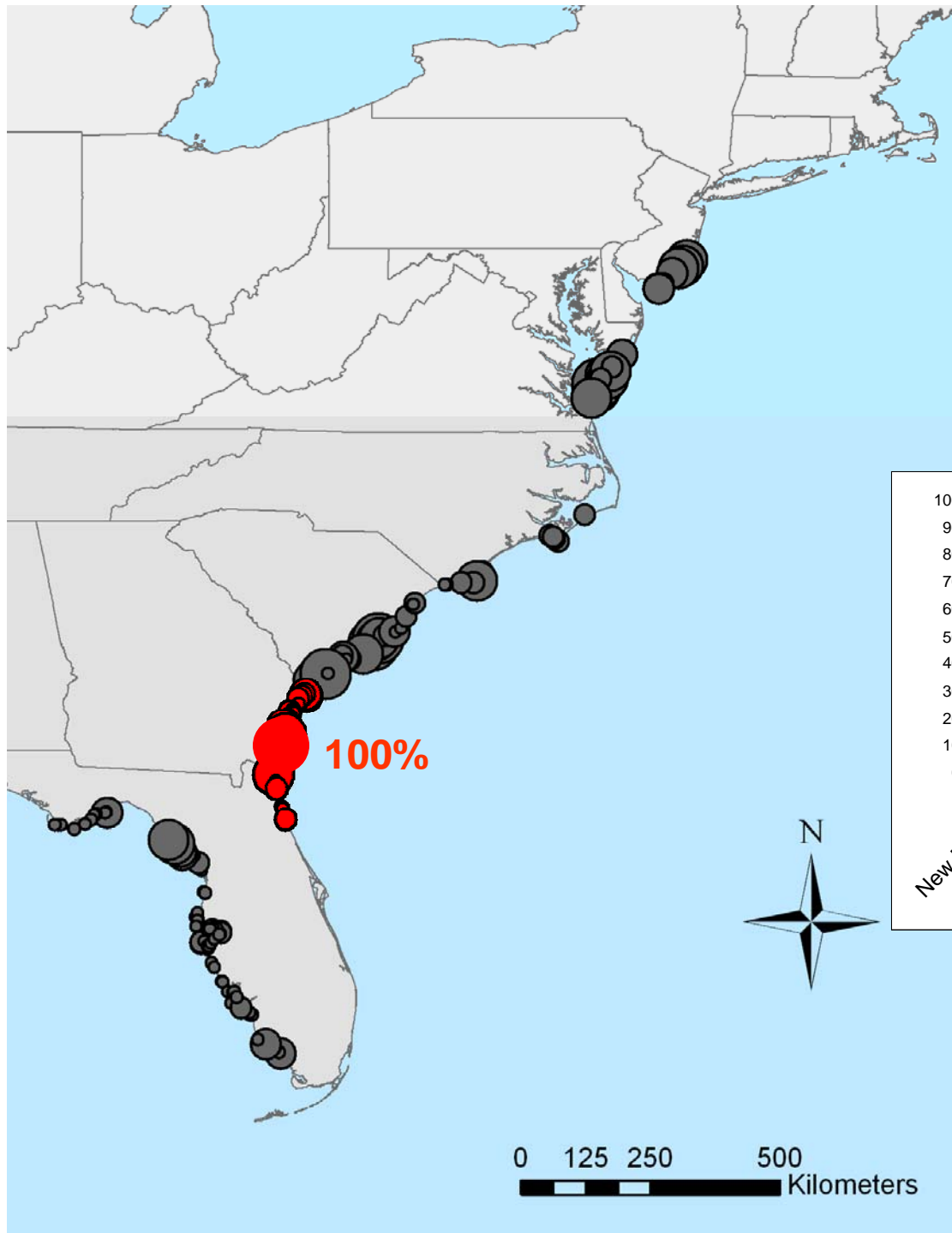
South Carolina
Breeding season bands



N = 40 (104)

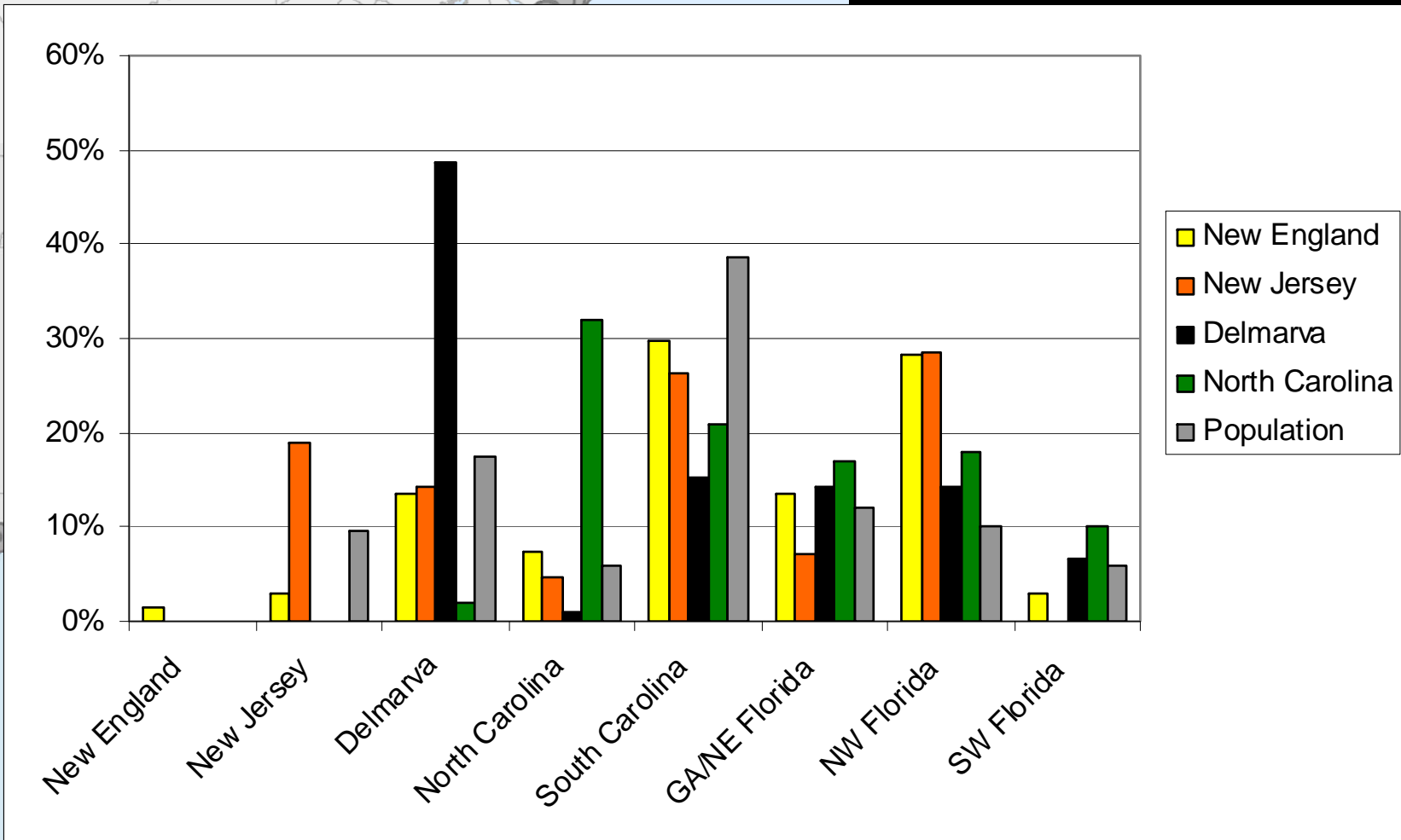
Breeding/Wintering connections

Georgia and NE Florida
Breeding season bands

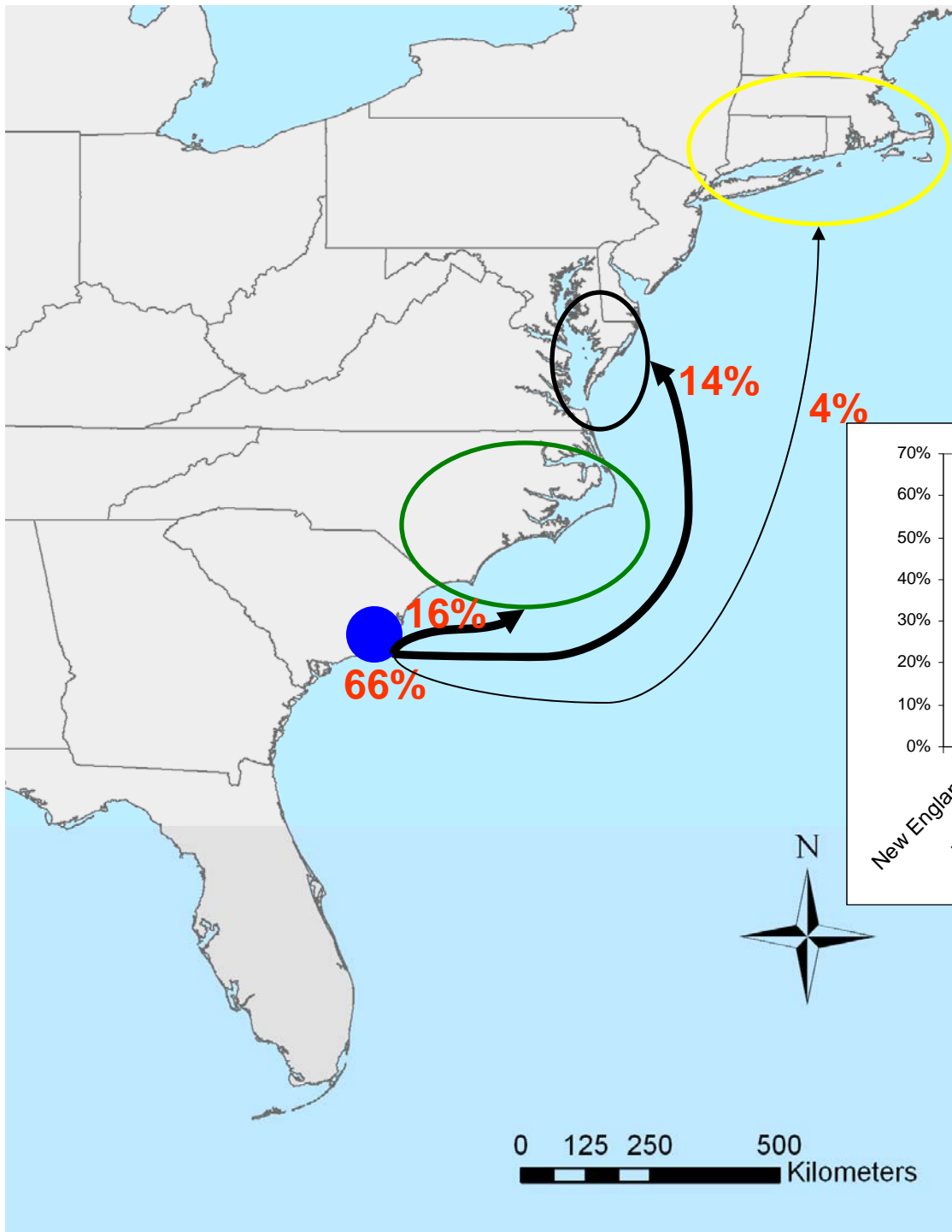


N = 5 (12)

Breeding/Wintering connections

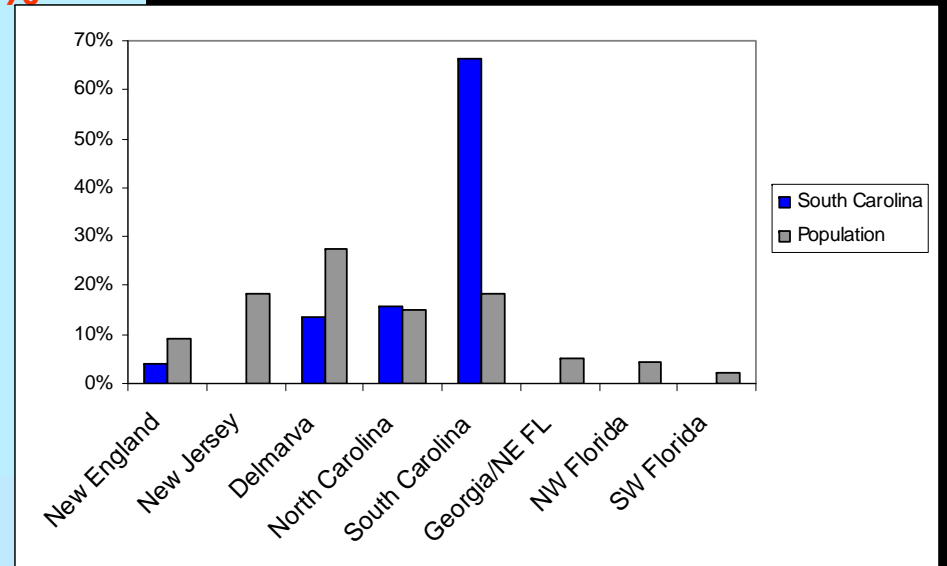


0 125 250 500 Kilometers



Breeding/Wintering connections

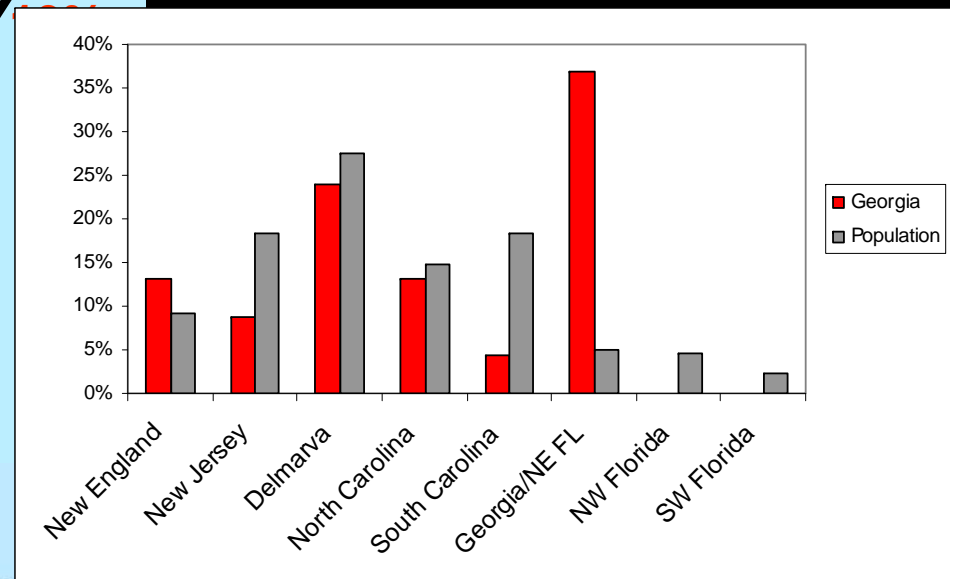
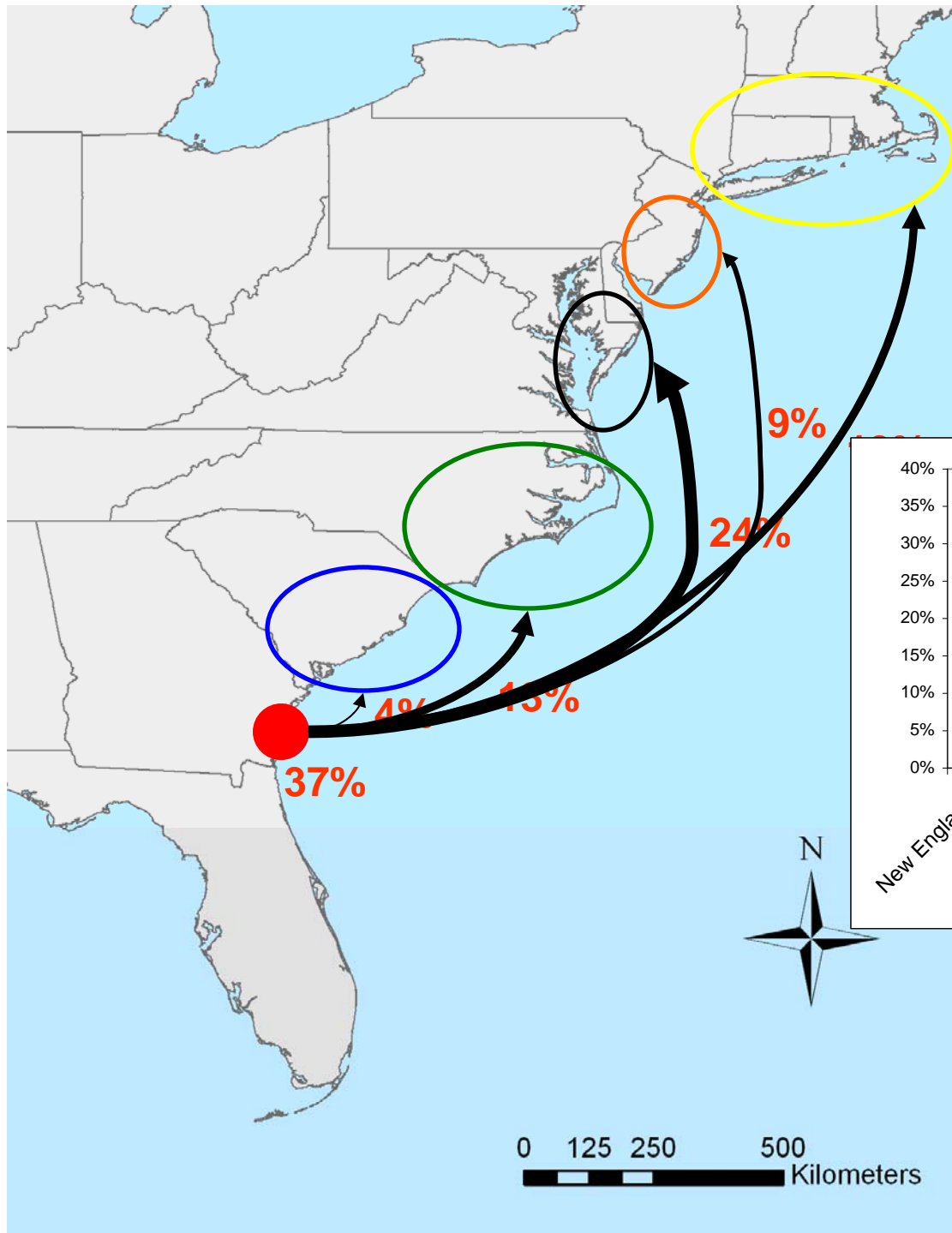
South Carolina winter bands



N = 95

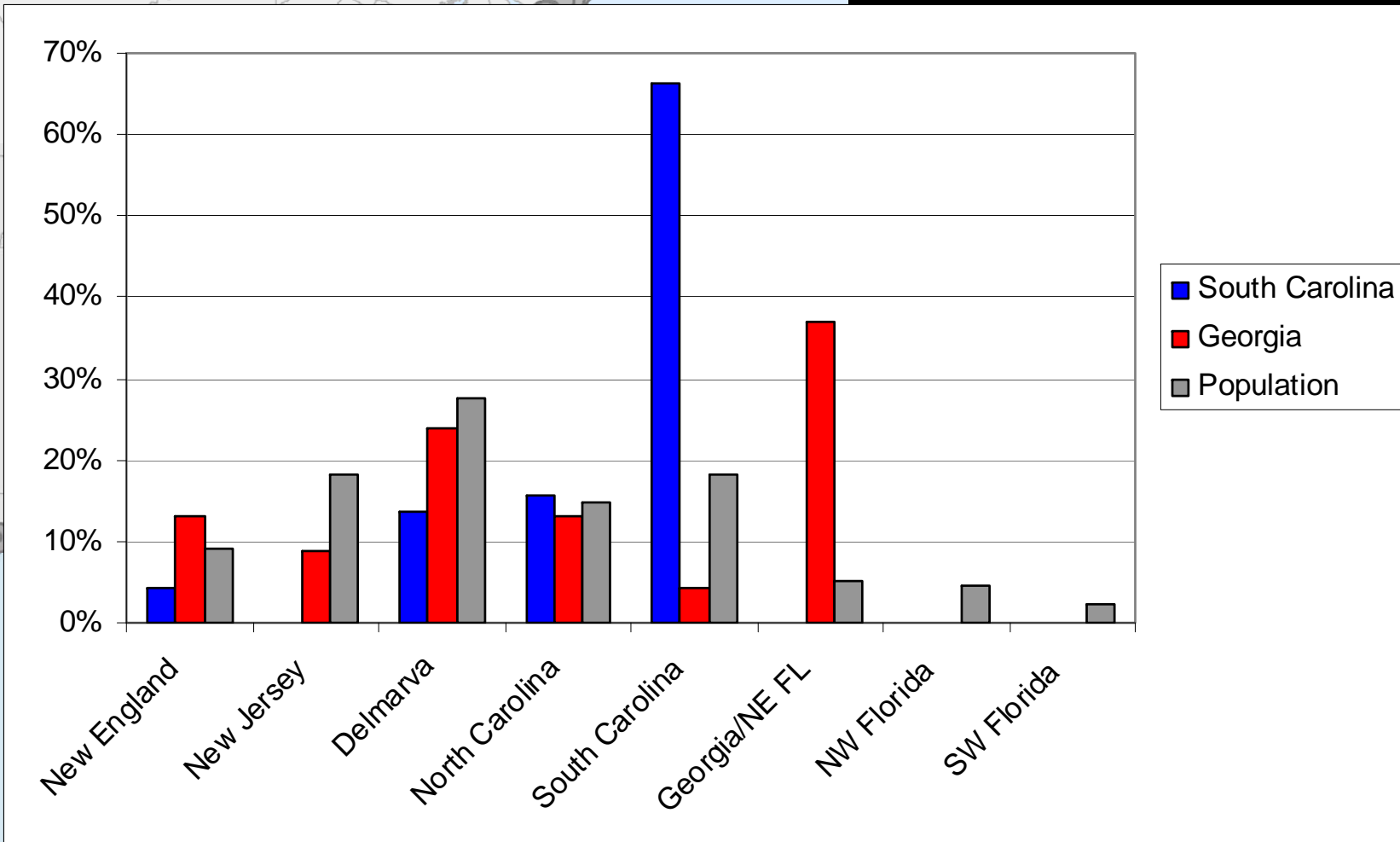
Breeding/Wintering connections

Georgia winter bands



N = 46

Breeding/Wintering connections



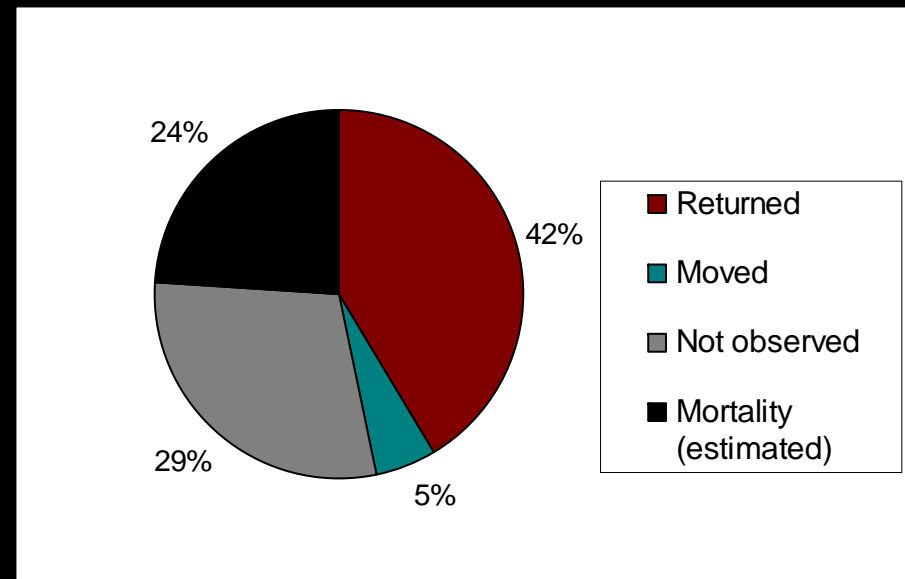
0 125 250 500 Kilometers

Annual Winter Site Fidelity

- Tendency for a bird to return to the same wintering site each year
- Large scale between-year movements
- Birds returning to the same group of roost sites were considered site-faithful
- Three possible outcomes for each individual:
 - 1: Returned
 - 2: Moved
 - 3: Not observed

Site Fidelity – Hatch year

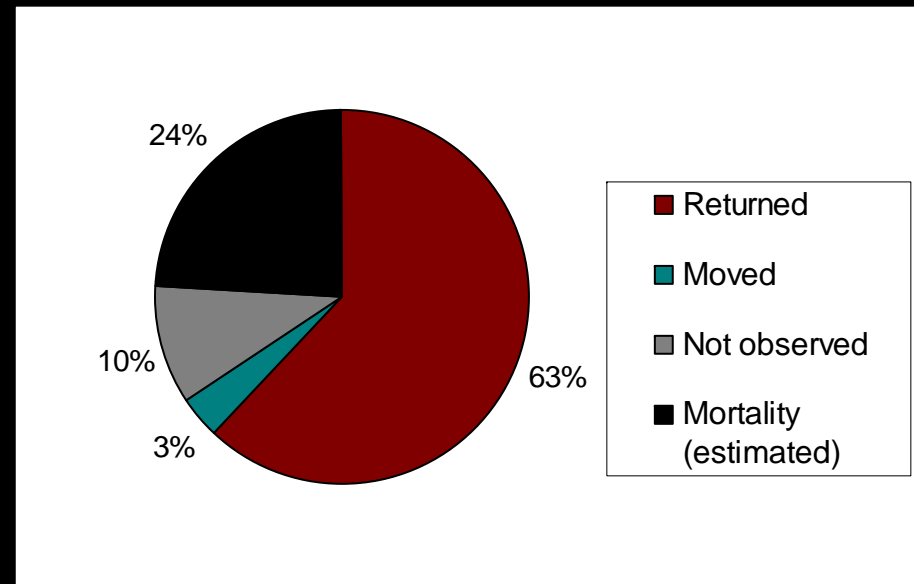
- Over half of first-winter birds not observed in their second winter
- Detection problem or high mortality?



Winter site fidelity of hatch year Oystercatchers
(MA – NC)
N = 44

Site Fidelity – Hatch year

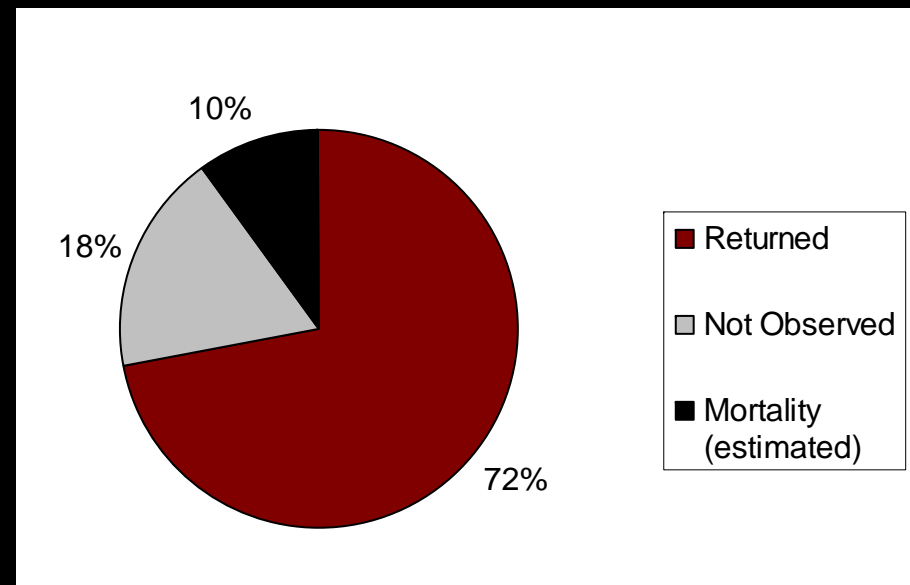
- Sub-set of observations from sites with organized repeated surveys
- Increased detection rate



Winter site fidelity of hatch year Oystercatchers
MA – NC (subset)
N = 19

Site Fidelity - Adults

- Similar pattern with adult Oystercatchers
- No confirmed changes in wintering locations
- Increased detection rate with repeated annual surveys



Winter site fidelity of Adult Oystercatchers
MA MNG (10 Oct)

N = 328

Within-season movement

- Local movement patterns
- Variable between regions
- Possible factors affecting local movement
 - Roost site availability
 - Disturbance
 - Food resources



Within-season movement



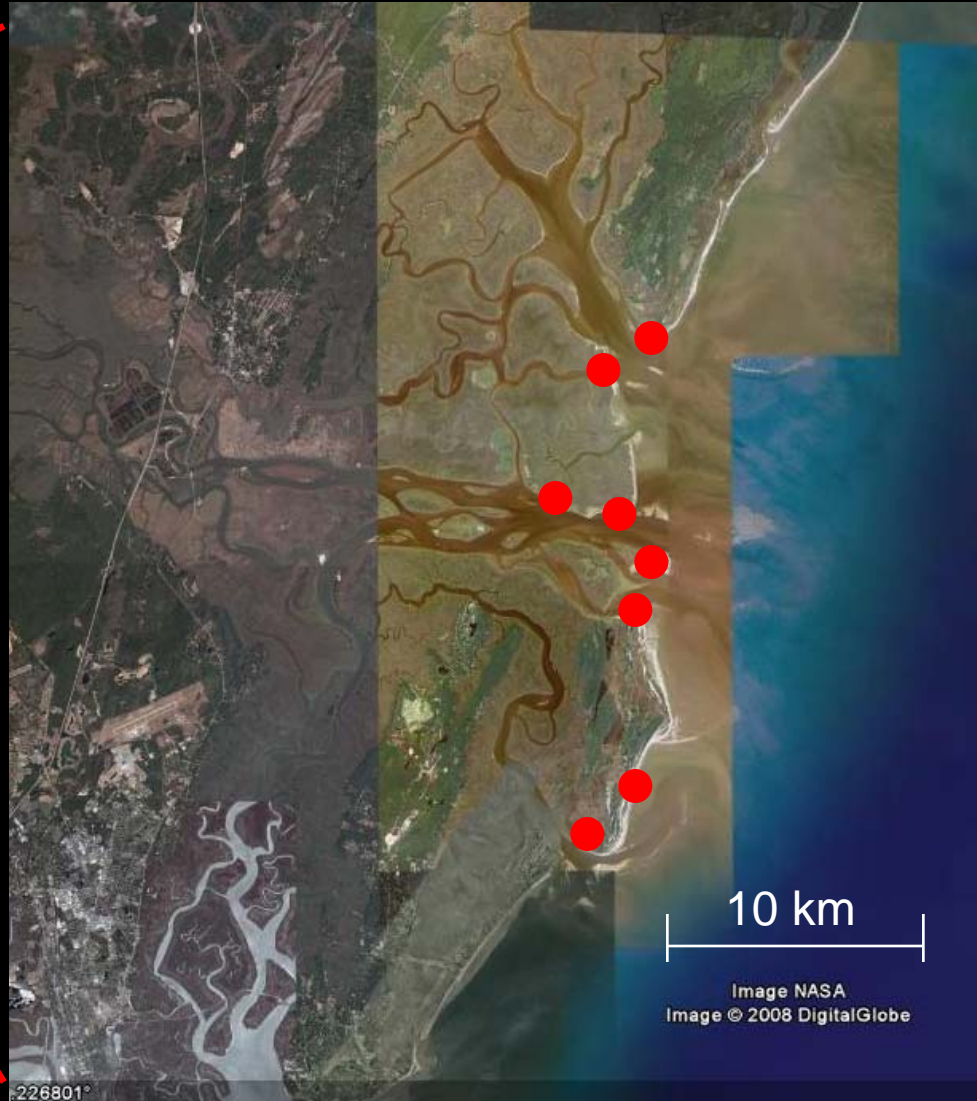
Beaufort,
North Carolina

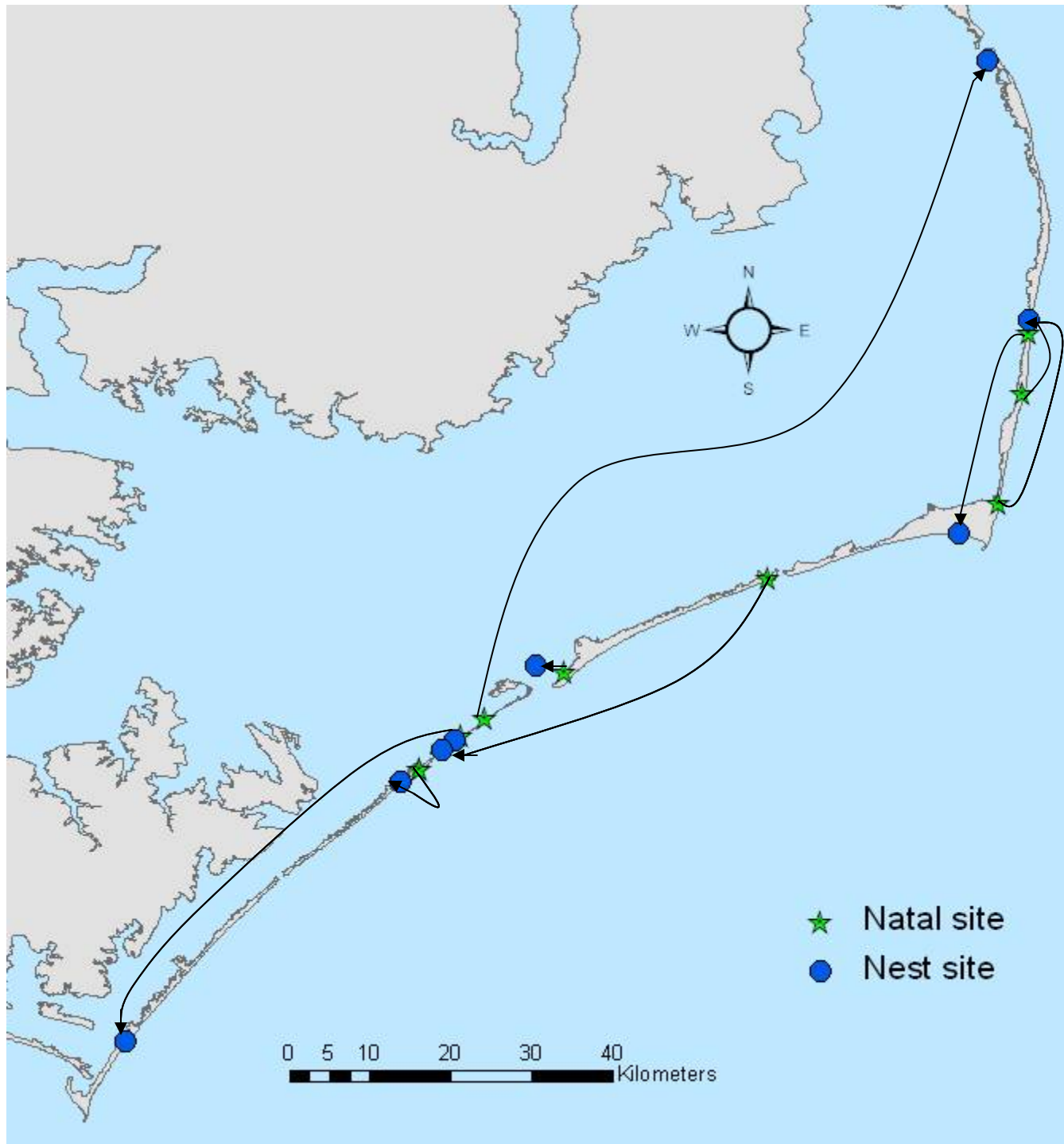


Within-season movement



Altamaha Delta,
Georgia





Juvenile Dispersal and Recruitment

Maximum distance
From natal site for
first-time nesters:
115 km

Minimum distance:
2.6 km

72 chicks banded
between 2000 and
2004

15 (20%) returned to
nest by 2008

Age at first breeding
3-5 years (n=15,
mean **3.27 years**,
S.D. 0.59 years)

Adult Survival

- Key demographic parameter
- Estimated using Program MARK
- Based on history of breeding season re-sights
 - Green (24) - 1011101
 - Green (E3) - 0110110
- Rate of return: 0.88
- Estimated annual survival rate: **0.92**

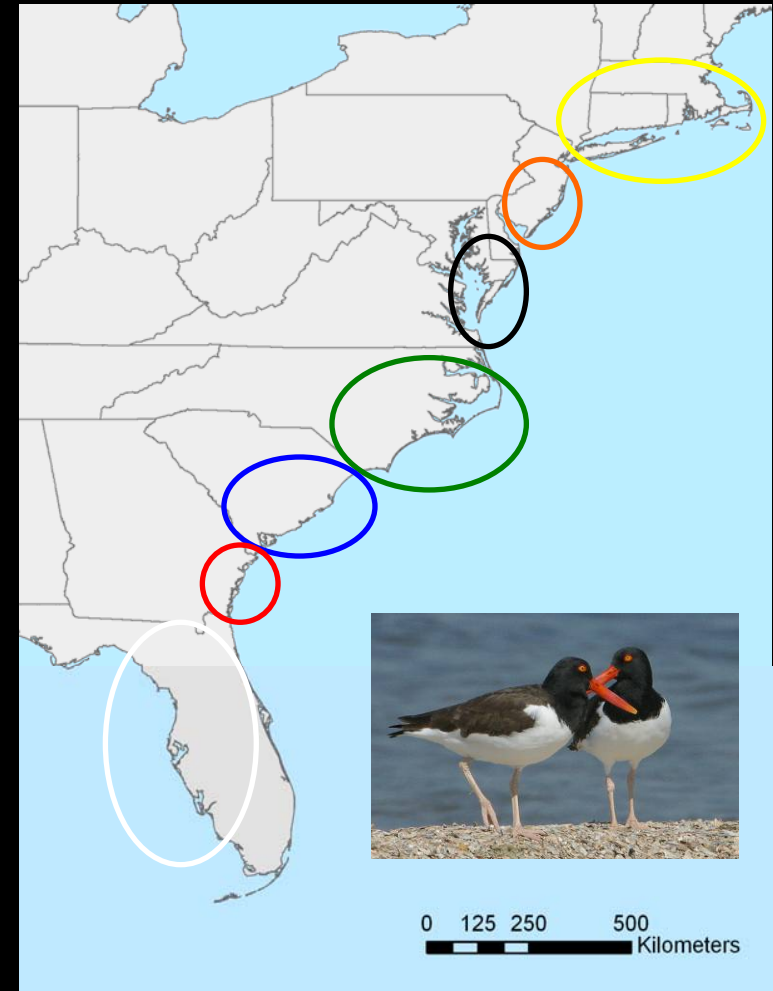
Key Points

- Oystercatchers do not disperse uniformly to wintering sites
- Birds from northern breeding areas often leapfrog over wintering sites on the Atlantic coast
- High winter site fidelity, though young oystercatchers may shift sites as they get older
- An individual's winter range includes multiple roost sites and may vary from 5-50km
- Age of first breeding (in NC): 3.27 years
- Adult survival (in NC): 0.92

Collaboration opportunities

For all regions:

- Estimate major demographic parameters (recruitment, adult and juvenile survival, fecundity)
- Identify dispersal patterns (natal site to nest site)
- Quantify local winter ranges



Actions and Data needs

- Adult Survival, dispersal, and recruitment
 - Annual breeding season resight surveys
 - Organize resighting data in capture history format
 - Identify average dispersal distance and age of FB
- Juvenile survival, migration patterns, winter range, habitat use
 - Annual winter resight surveys
 - Mid Nov – Mid Feb (Dec – Jan best)
 - Estimate size of winter range from repeated roost surveys
- Update and improve access to banding database
- Create a companion database for nesting data
- Keep banding and resighting Oystercatchers!!!
- Other ideas?

Collaborators

- Clemson University
- College of William and Mary
- City University of New York
- Clemson University
- Delaware Division of Fish and Wildlife
- Florida Game and Freshwater Fish Commission
- Georgia Department of Natural Resources
- Manomet Center for Conservation Sciences
- Maryland Department of Natural Resources
- National Audubon Society
- National Park Service
- New Jersey Audubon
- New Jersey Division of Fish and Wildlife
- North Carolina Audubon
- North Carolina State University
- North Carolina Wildlife Resources Commission
- Rutgers University
- South Carolina DNR
- The Nature Conservancy
- Trent University
- University of Georgia
- US Fish and Wildlife Service
- Virginia Department of Game and Inland Fisheries
- Wildlife Conservation Society



David Allen, Jon Altman, Ruth Boettcher, Stephen Brown, Sue Cameron, Jeff Cordes, Pam Denmon, Nancy Douglas, Chrisy Hand, Ann Hodgson, Pat Leary, Doris Leary, Marcia Lyons, Sean Murphy, Erica Nol, Terry Norton, Kim Peters, Todd Pover, John Sabine, Felicia Sanders, Karen Sayles, Shiloh Schulte, Sara Schweitzer, Theodore Simons, Janet Thibault, Barry Truitt, Tom Virzi, Brad Winn, Alex Wilke