

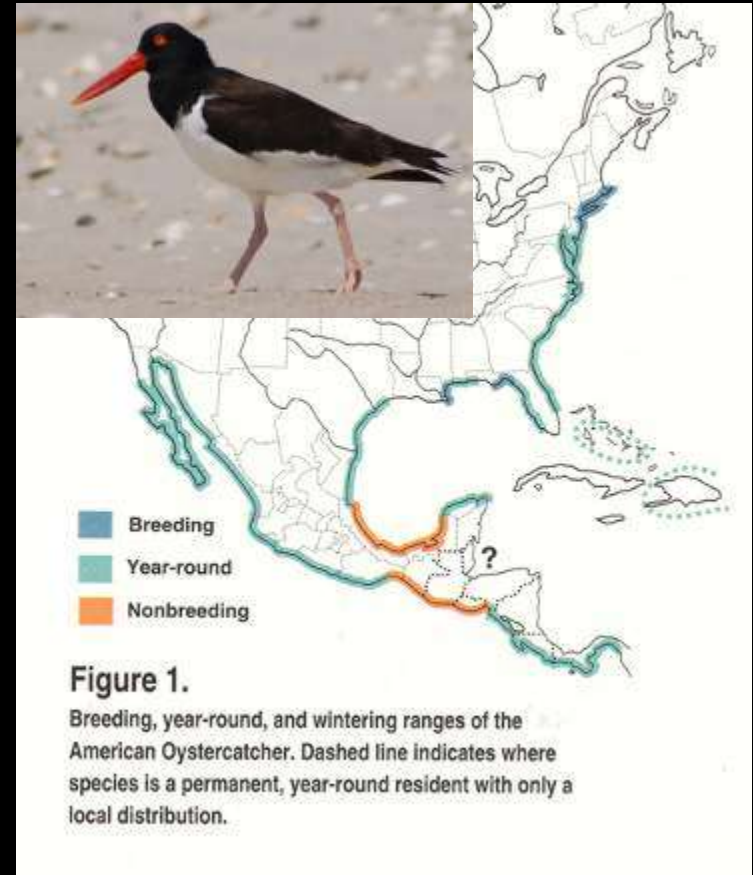
The American Oystercatcher Working Group



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History

- Research on American Oystercatchers (AMOU) prior to 1995 was limited primarily to Nol and Humphrey, summarized in their 1994 BNA account.
- New research began on the Outer Banks of North Carolina in 1995,
- Interested biologists met at the Waterbird Society Meeting in 2000 and agreed to create an informal working group.
- Additional research projects were initiated in Georgia and South Carolina in 2000, Virginia in 2002, and in MA and NJ in 2004.
- Annual meetings at study sites between Cedar Key, Florida and Cape May, New Jersey have been held since 2001



Working Group Affiliations

- 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



American Oystercatchers are good conservation targets

- Widespread along Atlantic and Gulf Coasts
- Sensitive to a variety of factors affecting coastal resources
 - Habitat loss, coastal development
 - Pressure from human recreation
 - Pollution
 - Non-native predators
- Large, charismatic, easily identified
- Long-lived, amenable to long term mark-resight studies



Working Group Goals

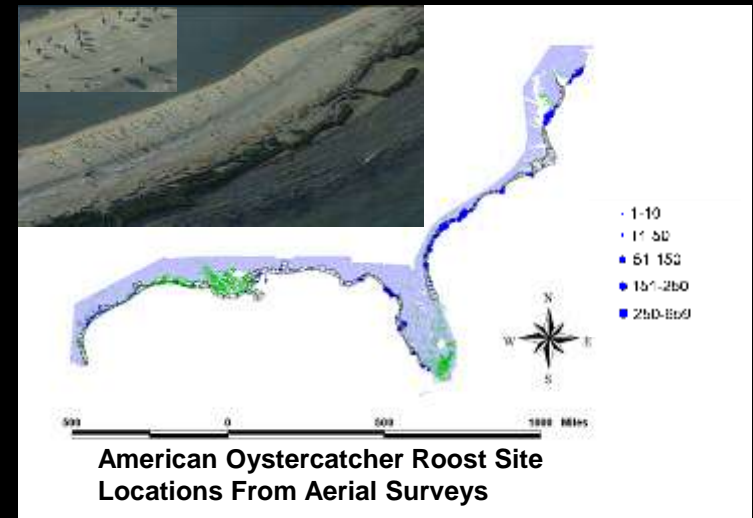
- Conduct research and management activities that contribute to the conservation of American Oystercatchers and their habitats
 - Develop management objectives in a science-based, adaptive management framework
 - Monitor population trends at local, regional, and continental scales
 - Obtain reliable estimates of demographic parameters and the factors that affect them
 - Understand how variations in demographic parameters affect population viability over space and time
 - Identify threats to American Oystercatcher populations
 - Translate these findings into management actions that promote American Oystercatcher conservation

Accomplishments

- Atlantic and Gulf Coast winter roost survey
- Working Group web site
- Cooperative mark-resight studies
- Range-wide productivity monitoring
- Research on AMOY ecology and factors affecting productivity and survival

2002 Winter Roost Survey

- Aerial surveys November 2002 - February 2003
- Stratified sampling, 239 blocks
- High tide +/- 2 hours survey window
- Detection rates calculated from digital photographs and ground truth surveys
 - Detection rate 0.73 for flocks <50 birds
 - Detection rate 1.0 for flocks \geq 50 birds
- Winter population estimate $10,971 \pm 298$ birds






	Estimate	S.E.
Ground photo	8,354	0
Aerial count	2,460	148
Barrier beach count	157	35
Total	10,971	152

Brown et al. 2005. Journal of Wildlife Management 69:1538-1545

Working Group Web Page

<http://www.ncsu.edu/project/simonslab/AMOY/Research.htm>

- A Working Group Web page created in 2002 provides:
 - A summary of Working Group objectives, activities, and contact information
 - Access to the Working Group list server
 - Banding protocols, banding summaries by state, banded bird reporting form
 - Descriptions of field methods

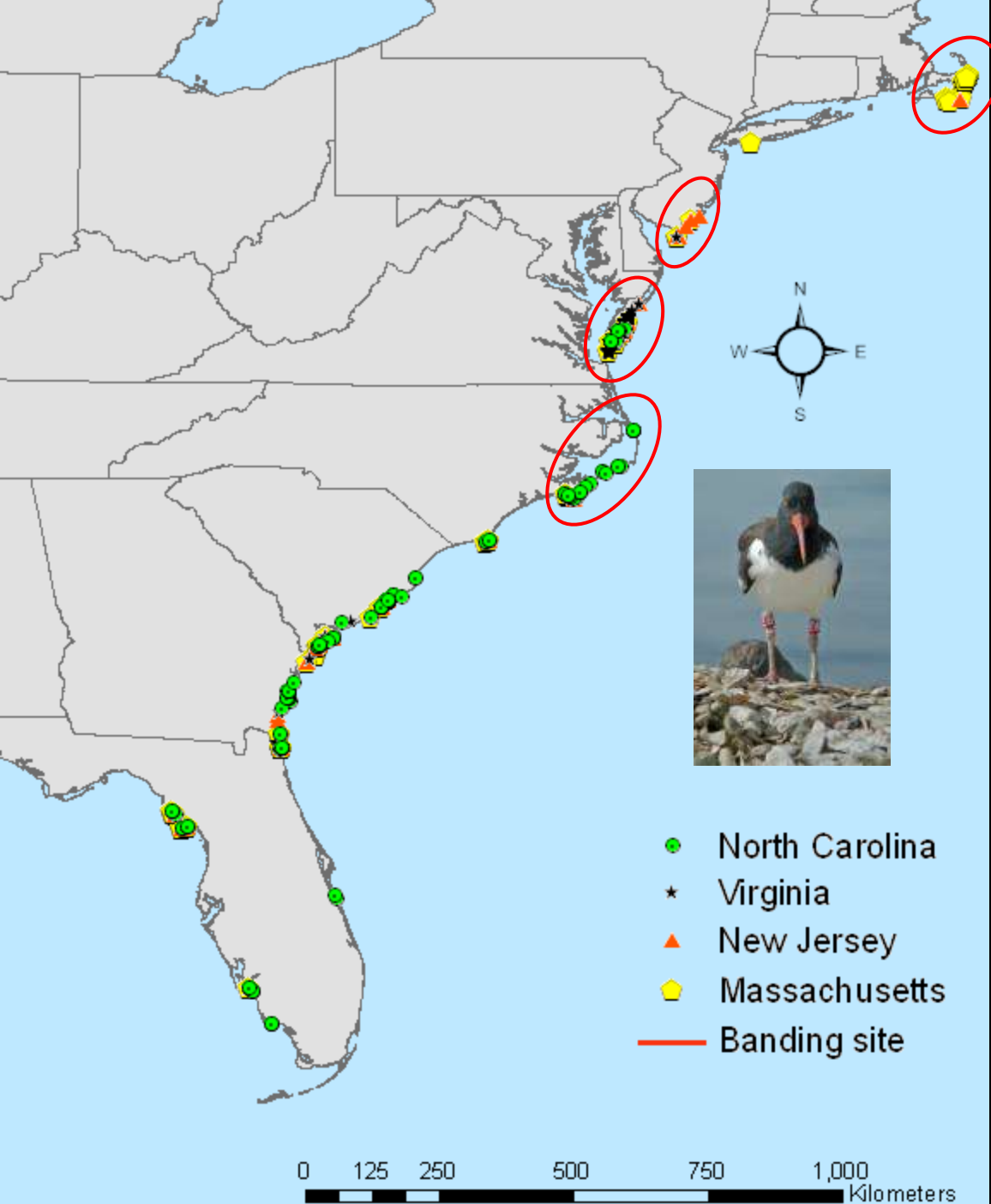
	
Links	Introduction
Home Banding and Re-sighting American Oystercatcher Working Group Field Methods	<p>American Oystercatchers (<i>Haematopus palliatus</i>) are striking black and white shorebirds with large reddish-orange bills. Oystercatchers breed on coastal beaches from Baja California to Nova Scotia (Nol and Humphrey 1994). Recent evidence of population declines, particularly in the Southeastern U.S. (Davis et al 2001), has prompted research aimed at understanding the bird's biology and conservation needs.</p>
<p>Inquiries or questions about this web site?</p>	
<p>Contact: Ted Simons 919-515-2689</p>	<p>Have you seen a banded American Oystercatcher? Please let us know! *Click here to report a banded Oystercatcher* NEW!</p>

Cooperative mark-resight studies

- Breeding birds are trapped with noose carpets and decoys or box traps
- Birds on winter roosts are trapped with canon nets
- Birds marked with dual alpha-numeric bands color-coded by state



Mark-resight findings



Winter re-sights:

Winter re-sights of American Oystercatchers banded during the breeding season

~1,250 birds marked with dual alpha-numeric bands color-coded by state

Northern breeders appear to make longer movements

Winter movements of up to 2000 km documented

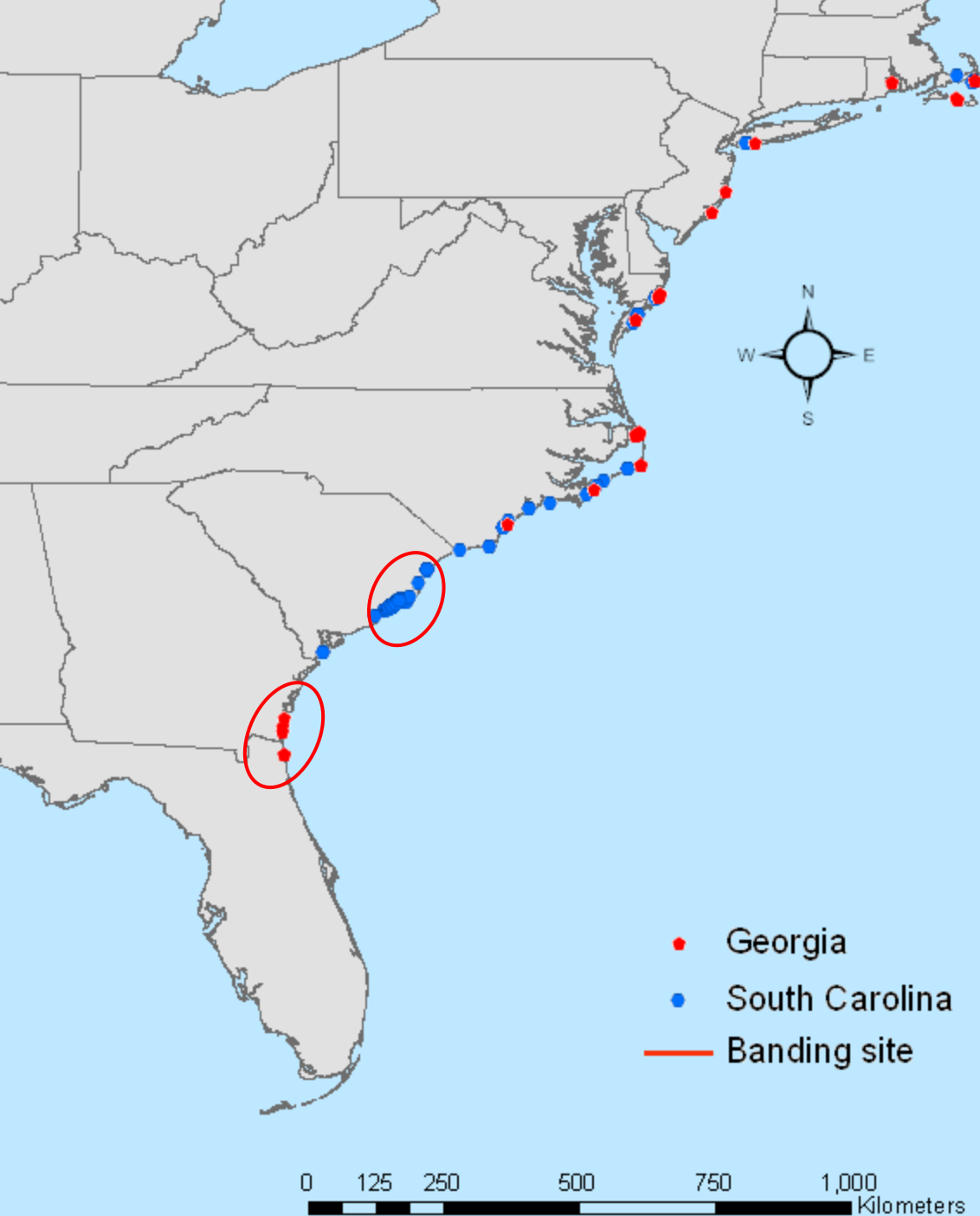
Pairs show strong mate and nest site fidelity

Mark-resight findings

Breeding season resights:

Breeding season re-sights of American Oystercatchers banded during the winter

Thanks to Kees Oosterbeek for help with trapping and banding methods!



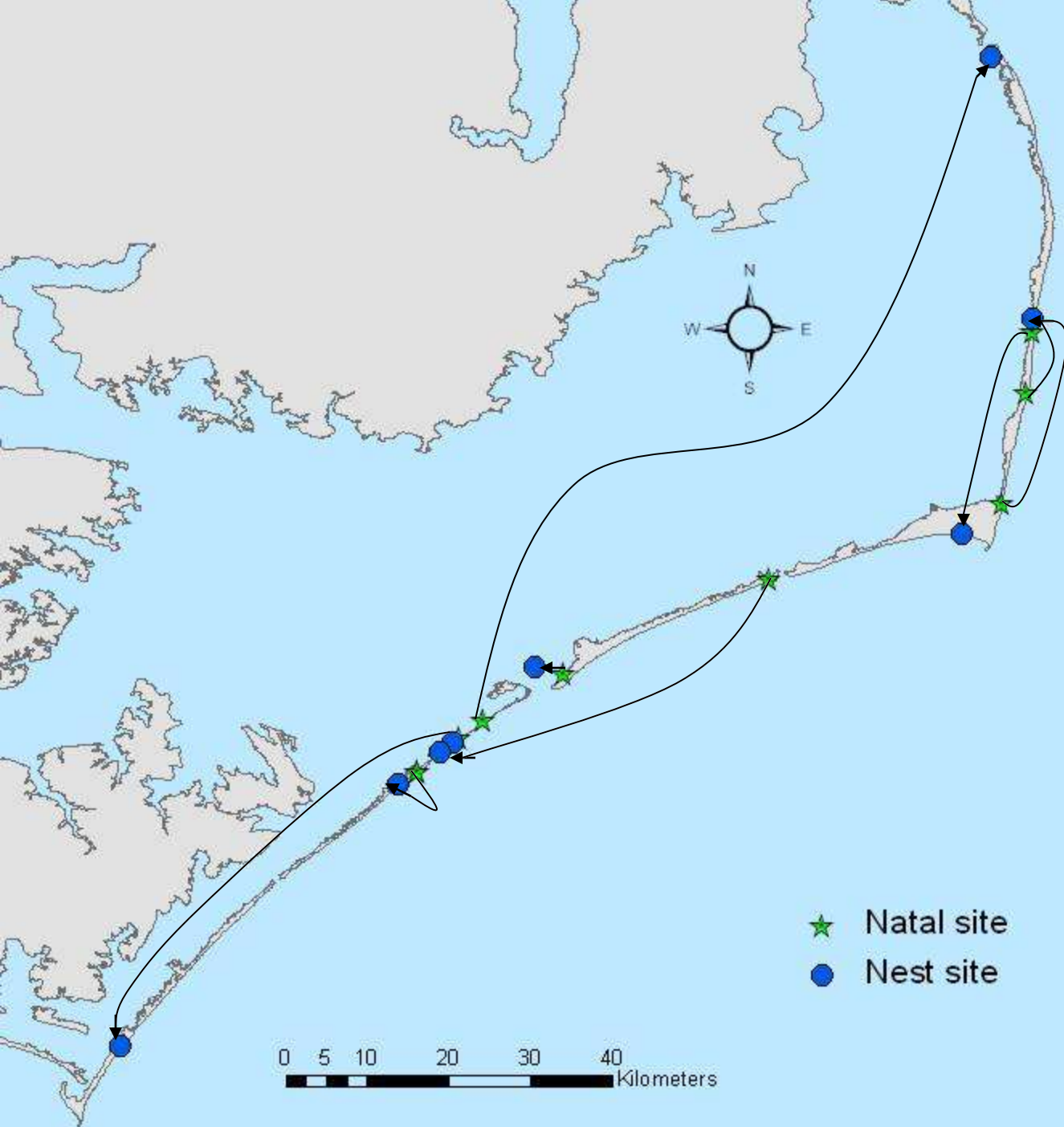
Juvenile Dispersal and Recruitment

Connections between natal sites and nest sites for first-time nesters.

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

Minimum distance:
2.6 km

Age at first
breeding 3-5 years
($n=9$, mean 3.89
years, S.D. 1.05
years)

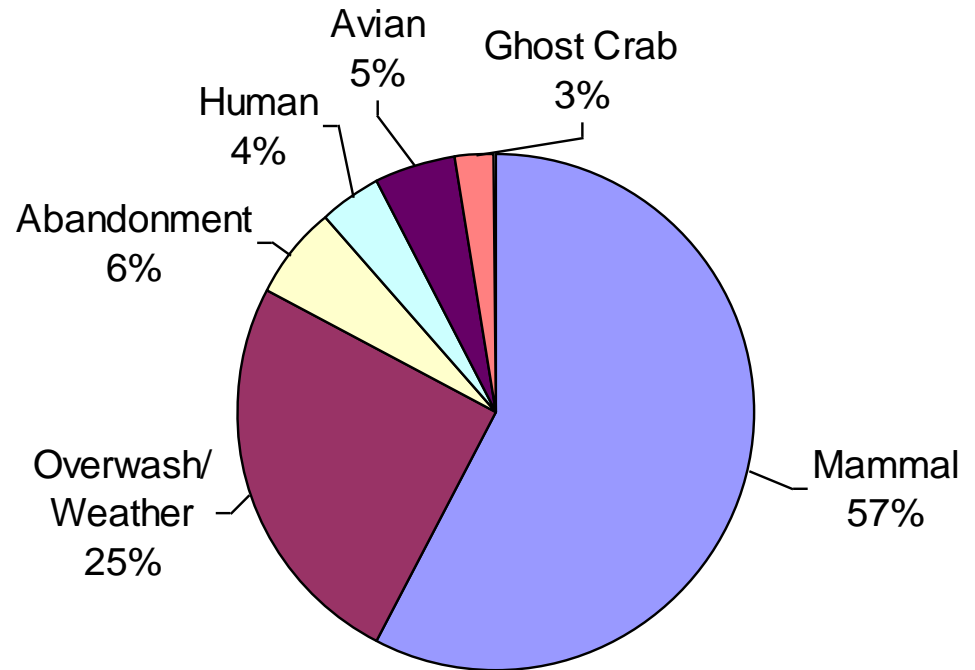


Productivity Monitoring

	# Breeding pairs	# Birds banded	# Nests monitored annually	Genetic data	Winter surveys
Massachusetts	200	131	50-200 2000-present	Yes	No
New Jersey	400	33	50-150 2004-present	No	Yes
Virginia	600	267	100-400 2002-present	No	Yes
North Carolina	325	321	50-100 1995-present	No	Yes
South Carolina	400	324	20-40 2006-present	Yes	Yes
Georgia	90	167	10-50 2000-present	Yes	Yes
Total	2015	1243	>3000 records		

Factors affecting productivity and survival

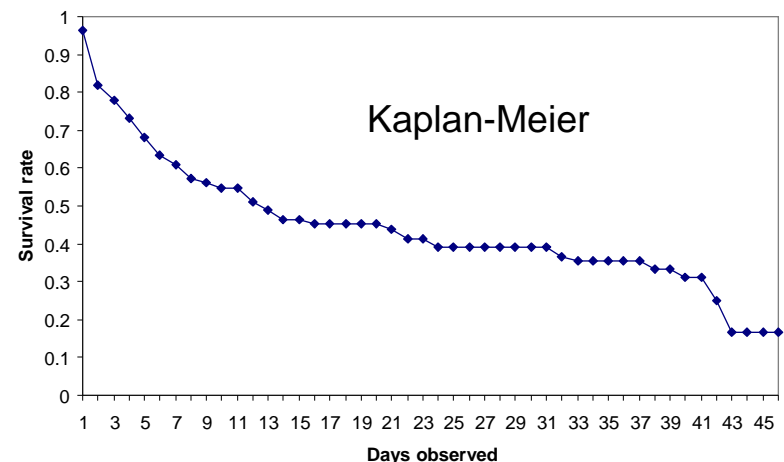
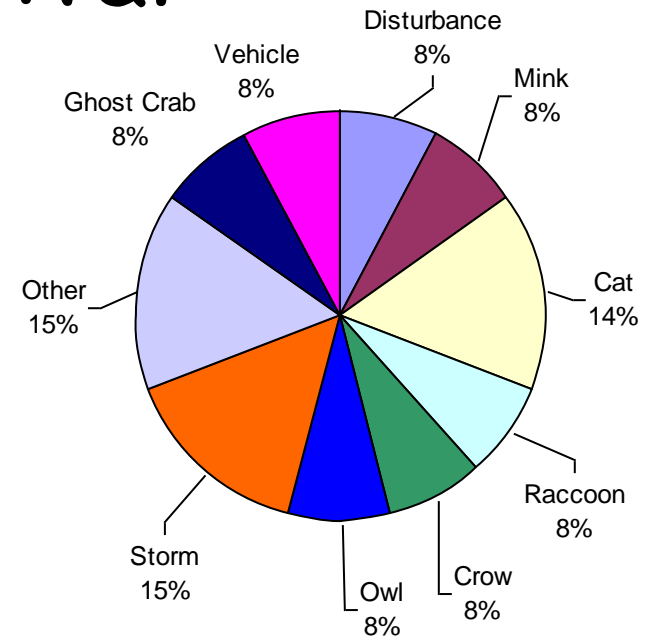
- Nest failure
 - Causes of American Oystercatcher nest failure in coastal North Carolina (1995-2006) where cause of failure could be determined (N=426).
 - Cause of failure could not be determined for 52.5% of nest failures (N=471).



Breeding pairs	Clutches	Nests hatched	Nest survival (observed)	Nest survival (Mark)	Chicks fledged	Annual fecundity (chicks/pair)
850	1313	401	0.305	0.255	262	0.31

Factors affecting productivity and survival

- Chick mortality
 - Causes of pre-fledging American Oystercatcher chick mortality in coastal North Carolina in 2005 and 2006 where source of mortality could be determined (N=25).
 - Source of mortality could not be determined for 55% of chick deaths (N=32).

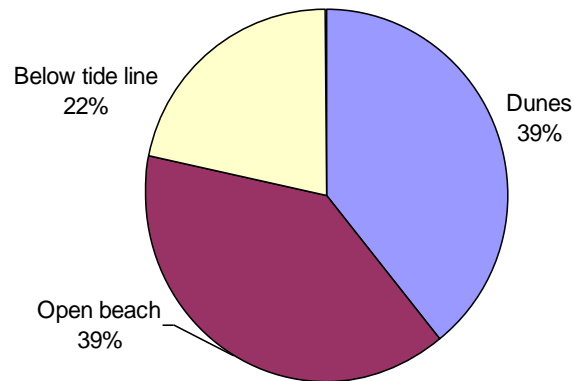


Factors affecting productivity and survival

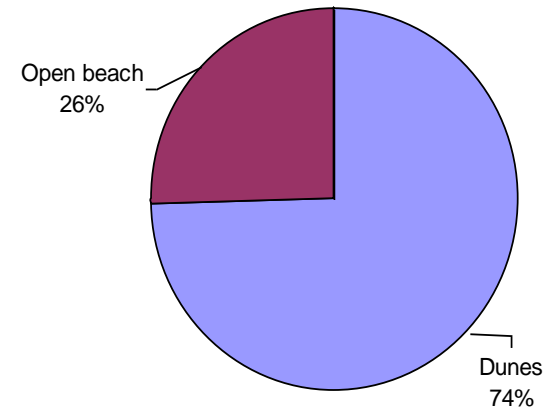
Human disturbance and chick behavior

Chick habitat use

Full beach closures

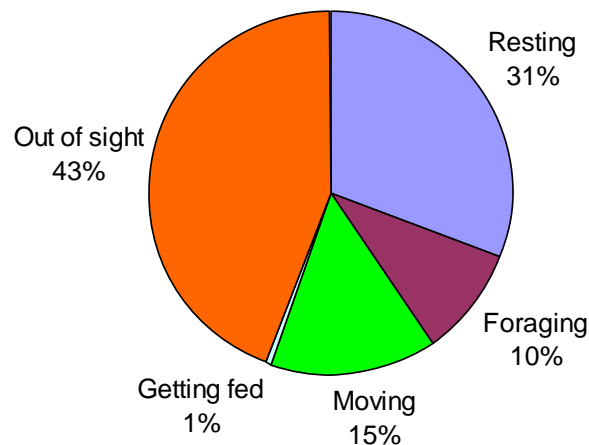


Partial beach closures

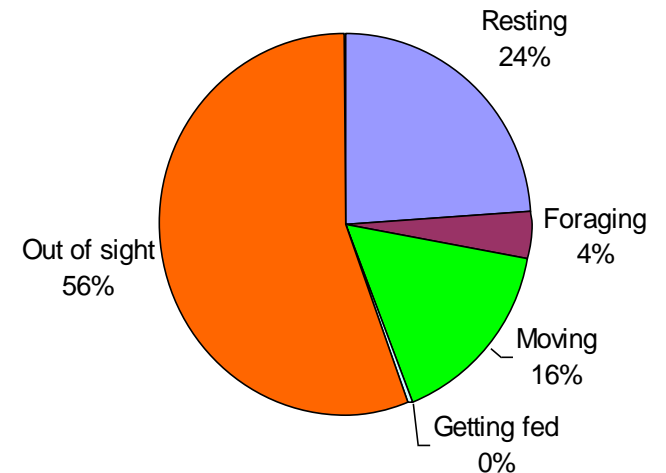


Chick behavior

Full beach closures

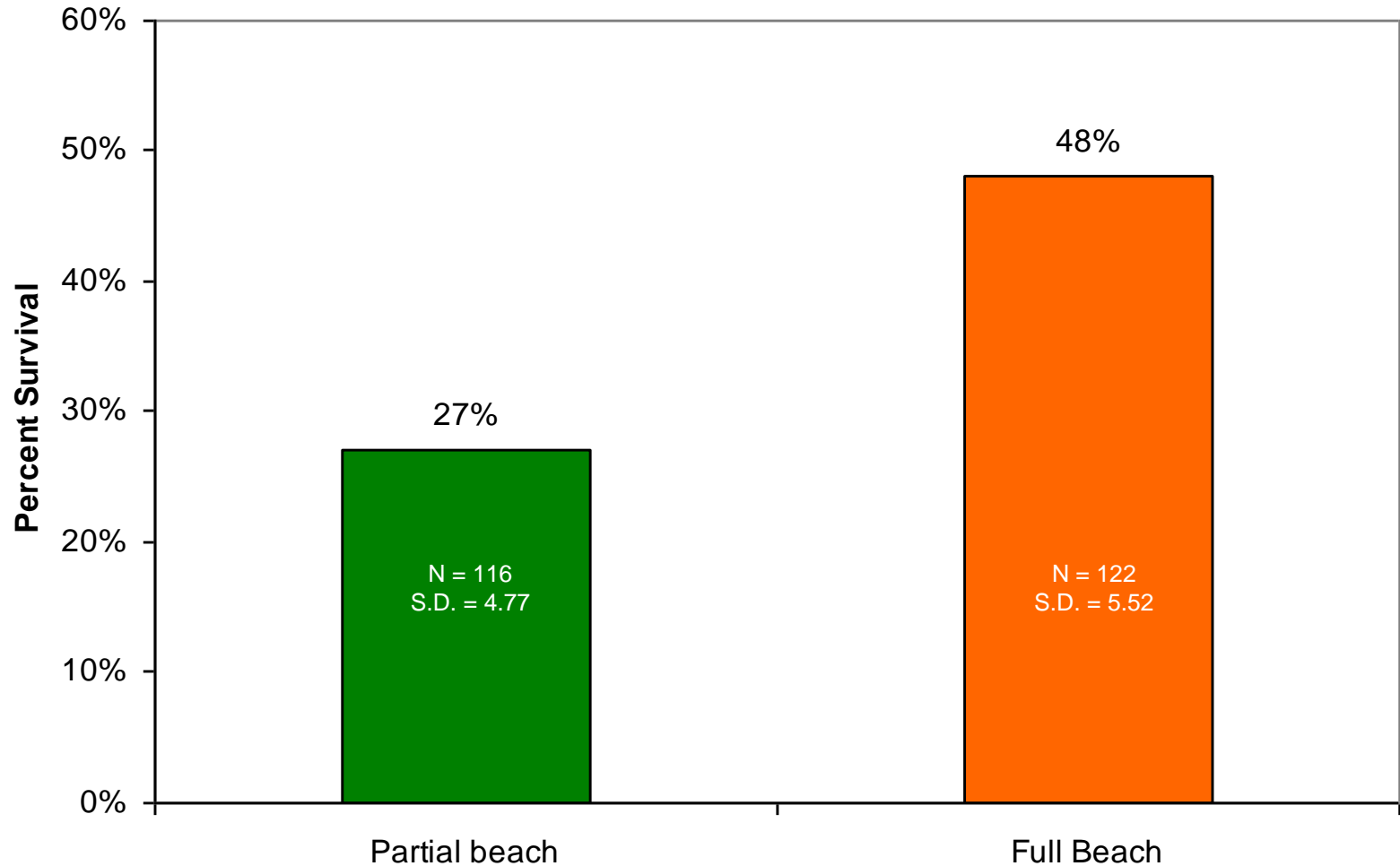


Partial beach closures



Factors affecting productivity and survival

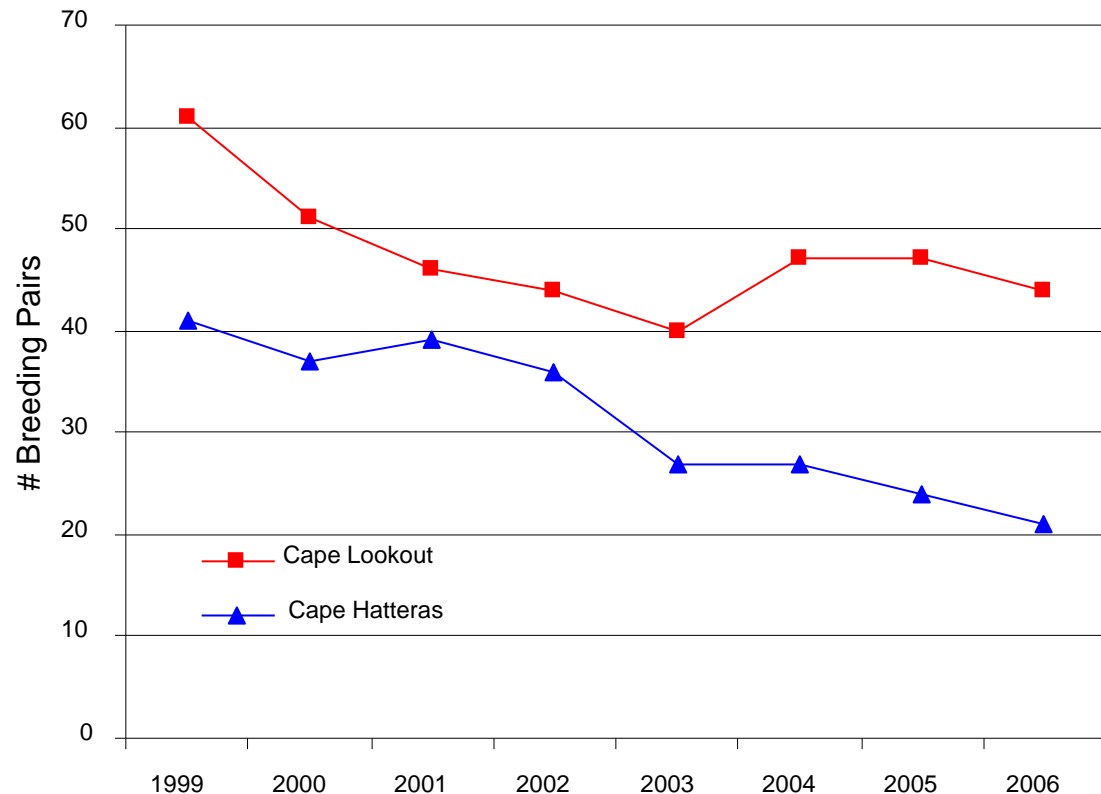
Vehicle Mortality



Chick survival by closure type on Cape Hatteras National Seashore from 1999-2006

Population Trends

- American Oystercatcher populations appear to be declining in some portions of range due to habitat compression and human disturbance
 - ~20% in North Carolina since 1999
- Populations are increasing in areas that birds have recolonized following extirpation early in the 20th century
 - Massachusetts population has grown from no breeding pairs in 1968 to over 200 in 2007



On-going Activities

- Habitat restoration
- Development of genetic models
- Development of demographic models
- Studies of foraging ecology
- Conservation planning
- Mark-resight studies
- Monitoring productivity and survival
- Assessing management alternatives
 - regulating disturbance
 - controlling predators



Summary

- The AMOY Working group represents a diverse group of scientists and conservation practitioners cooperating to protect American Oystercatchers and their habitats along the Atlantic and Gulf coasts of the US
- On-going activities include research, management, technical assistance, public education
- Contact and background information available on the Working Group web site, or Google "American Oystercatcher Research"



<http://www.ncsu.edu/project/simonslab/AMOY/Research.htm>