

Annual Shorebird & Seabird Workshop Tuesday, March 11th, 2025 9am – 1:30 pm at the SCDNR Marine Resource Division 217 Fort Johnson Road, Charleston SC

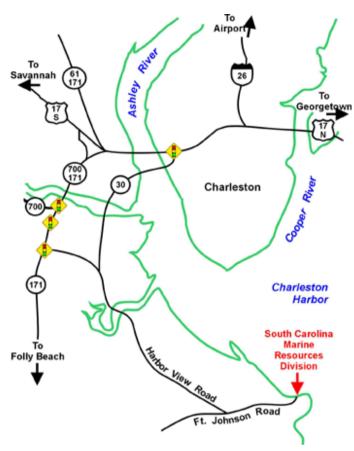
Held in the auditorium inside the Marine Resources Research Institute (MRRI) building

Agenda

- 9:00 Sign In Coffee & Snacks in Lobby
- 9:30 Welcome
- 9:40-10:00 Audubon South Carolina Update-Erin Rogers & Abby Burke
- 10:00 –10:20 Piping Plover 5 year Species Review-Melissa Chaplin, USFWS
- 10:20 –10:40 Red Knot Research and News-Felicia Sanders, SCDNR
- 10:40 –10:55 **BREAK**
- 10:55-11:15 Huntington Beach State Park Jetty Spoil Project-Mike Walker, SCDPRT
- 11:15 –11:35 Black Skimmers: Diet and Banding-Janet Thibaut & Sabrina Cobb, SCDNR
- 11:35 –11:55 Manomet Update: Building Connections Across the Bight-Abby Sterling & Allie Hayser, Manomet
- 11:55 -12:15 Shorebird Safari: A Traveling Educational Activity-Cami Duquet, SCDNR
- 12:30-1:30 **LUNCH** (please bring your own –eat in outdoor classroom.)
- 1:30 –2:00 Staff will be available to discuss other collaborative projects and to answer questions. Feel free to stay and chat.

Driving Directions:

- 1. From Savannah Hwy (17) turn onto Folly Road going South. Turn East onto Harbor View Road. Bear to the right. Stav on Harbor View Road until it ends at Fort Johnson Road.
- 2. Take a left onto Ft. Johnson Road. Continue until you pass through the SC Department Natural Resources gate. Shortly past the gate will be the Licensing Office, which is on the left and up on a small hill. To reach the Marine Resources Division facilities, follow the road for approximately 1/4-mile. The Outdoor Classroom and the Marshlands House (white historical house) will be on the left just before a fork in the road. Proceed on the right fork of the main road to get to the Marine Resources Research Institute (MRRI), which is a one story building on your left with large glass windows.
- 3. You may park in any parking spot not designated as "state vehicles". Be sure not to block any equipment like boats or trailers in. Additional parking is available next to the CofC Grice Marine Lab, across the street from the MRRI building.



Campus Map:



MRRI (workshop location)



Outdoor Classroom (lunch location)

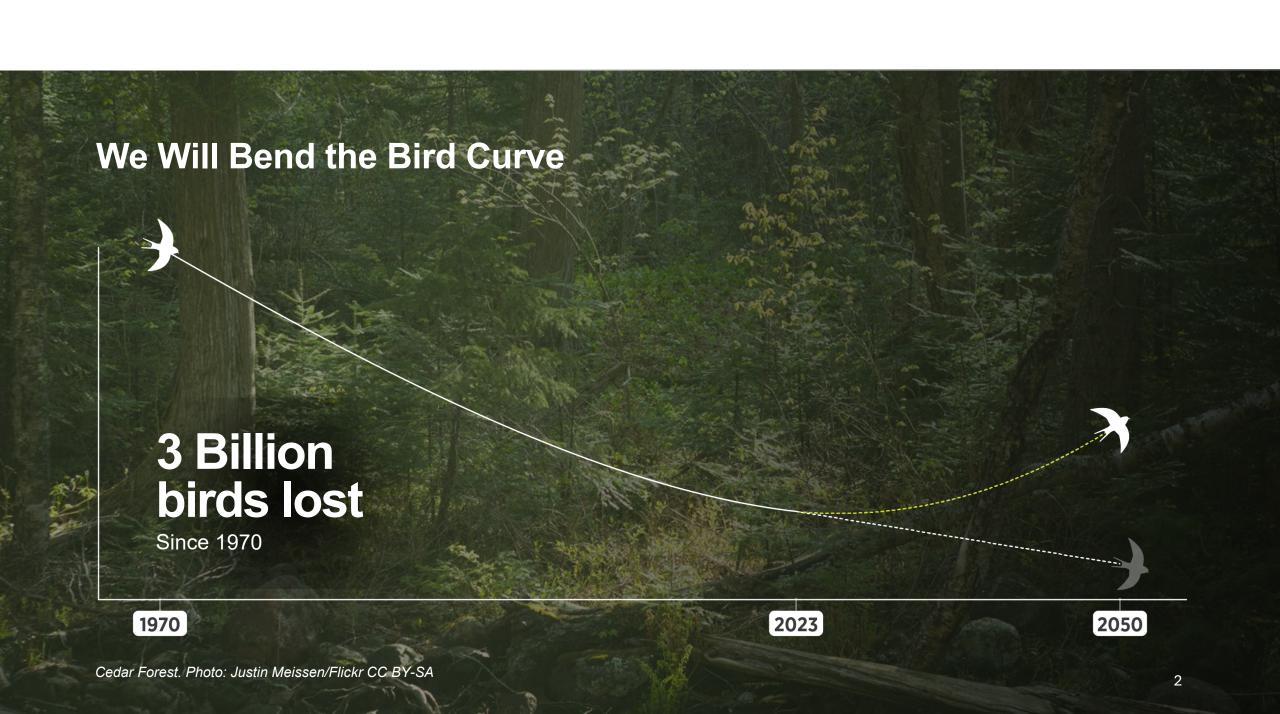


Audubon South Carolina

2025 Shorebird Workshop



Abigail Burke Coastal Stewardship Coordinator Abigail.burke@audubon.org Erin Rogers Coastal Program Manager erin.rogers@audubon.org

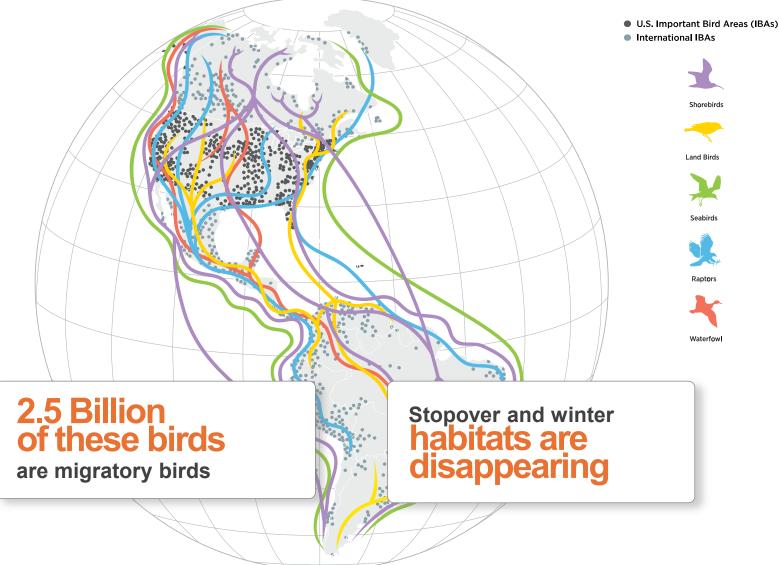


The Challenge

 Half of the birds that breed in the U.S. and Canada spend more than 50% of their lives in Latin America and the Caribbean.

3 Billion
birds lost
Since 1970

2.5 Billion
of these are migra







Mission

Audubon protects birds and the places they need, today and tomorrow.

North Star Vision

A future where birds thrive across the Americas because Audubon is a powerful, diverse, and ever-growing force for conservation.

Purpose

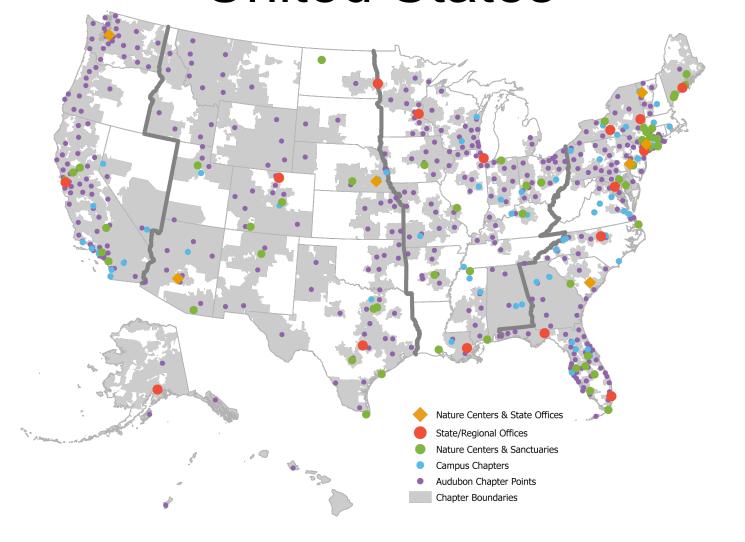
When we create conditions for birds to thrive, we create conditions for people and the planet to thrive, too.

Audubon's unparalleled reach in the United States

2M supporters

507 chapters

15 state and regional offices



31
Conservation
Action Centers

29
Sanctuaries
and Ranches

1M⁺ visitors annually



Flight Plan Conservation Milestones

To move towards a future where birds are thriving, by 2028 Audubon will...



HABITAT CONSERVATION

Conserve 313
million acres of
quality, connected,
and climate-resilient
bird habitat across
the Americas flyway



CLIMATE ACTION

100 gigawatts
of new renewable
generation and
transmission
responsibly sited

30 billion tons of carbon sequestered in forests, wetlands, and grasslands



POLICY

Pass Healthy Birds, Healthy Planet Policy Agenda, securing government action and funding for birds and the planet



COMMUNITY BULDING

Double Audubon membership

Influence high-level decision-makers

Inspire a broad, diverse movement of people to change the world for birds

A THREE-PRONGED APPROACH

The Carolinas Coastal Initiative encompasses a range of activities that reflect our shared efforts to:

Protect

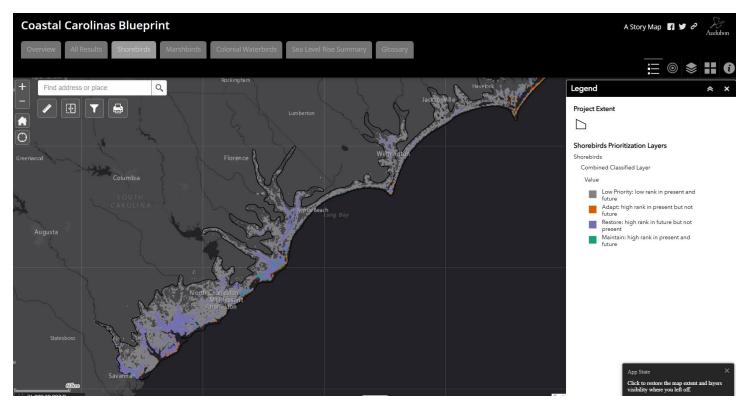
Intensify efforts to safeguard those areas of the Carolinas coast most essential for birds

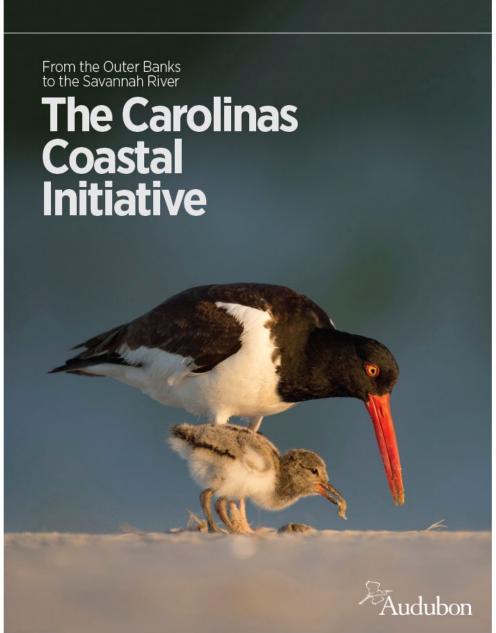
Restore

Restore coastal habitats that have been degraded and fragmented

Engage

Expand and deepen our network of partnerships and stakeholders





Priority Bird Species and Habitats

- Strong indicators of habitat health
- Serve as "umbrella" species



Black Rail Marsh Habitat



Piping Plover Beach Habitat



Black Skimmer Beach Habitat



Gull-billed Tern
Beach Habitat



Clapper Rail Marsh Habitat



Red Knot Beach Habitat



Brown Pelican Beach Habitat



White Ibis Beach Habitat



Saltmarsh Sparrow Marsh Habitat



Royal Tern Beach Habitat



Least Tern Beach Habitat



American Oystercatcher Beach Habitat



Wilson's Plover Beach Habitat

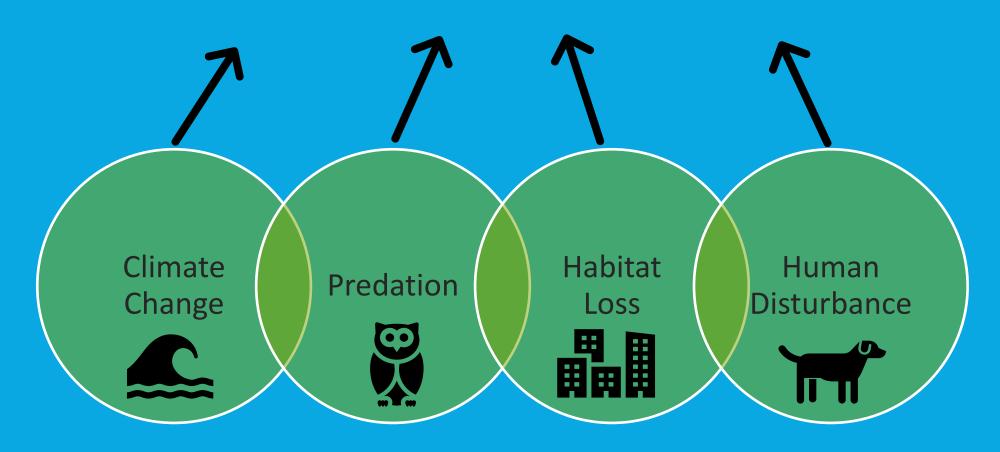


Common Tern Beach Habitat

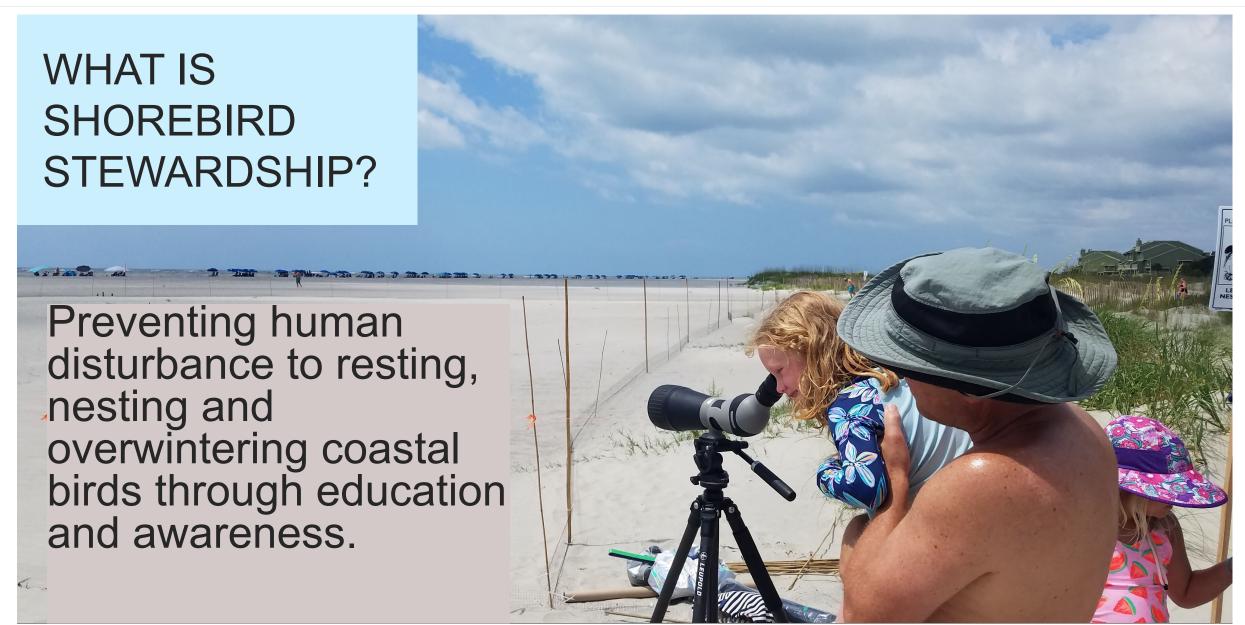
PHOTOS CLOCKWISE FROM BOTTOM RIGHT: PETER BRANNON/AUDUBON PHOTOGRAPHY AWARDS; TOM BENSON/FLICKR (CC BY-NC-ND 2.0); WALKER GOLDER; SARAH DEVLIN/AUDUBON PHOTOGRAPHY AWARDS; SCOTT BOWERS/AUDUBON PHOTOGRAPHY AWARDS; SHAYNA MARCHESE/AUDUBON PHOTOGRAPHY AWARDS; FRANK LEHMAN/AUDUBON PHOTOGRAPHY AWARDS; WALKER GOLDER; CAMILLA CEREA/AUDUBON; LUKE FRANKE/AUDUBON; URSULA DUBRICK/AUDUBON PHOTOGRAPHY AWARDS; DOUGLAS DEFELICE/AUDUBON PHOTOGRAPHY AWARDS; MATTHEW REITINGER/AUDUBON PHOTOGRAPHY AWARDS: WALKER GOLDER



Shorebird Decline









Audubon's Coastal Bird Stewardship Program

Started with 1 island in 1923
Now we protect nesting &
migratory birds at 500+ sites in
the Americas, with
1,300+ volunteers
Stewardship informs our coastal
conservation and policy work





Stewardship Sites

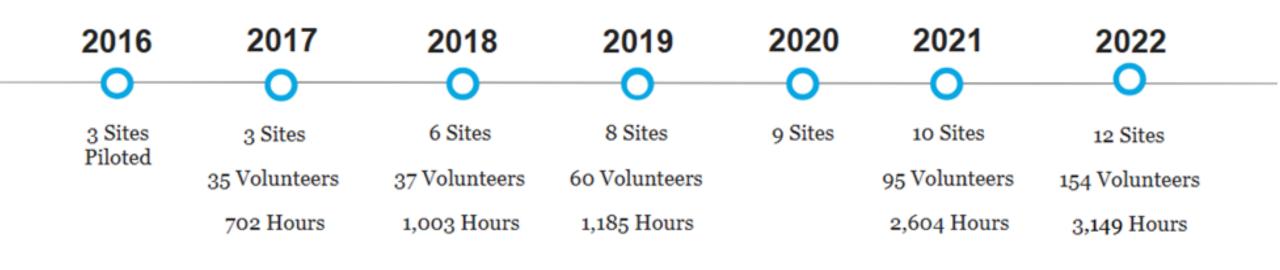


- 1. Huntington 9. Edisto Beach Beach State Park
- 2. Dewees Island
- 3. Isle of Palms
- 4. Morris Island
- 5. Folly Beach Lighthouse Inlet 12. Bull Point
- Kiawah Island
- Seabrook Island
- Botany Bay **WMA**

- State Park & **Edisto Town** Beach
- 10. Harbor Island
- 11. Hunting Island State Park



We've Come a Long Way!



2023 12 Sites 124 Volunteers 3641 Hours 2024 8 sites 135 volunteers 2698 hours



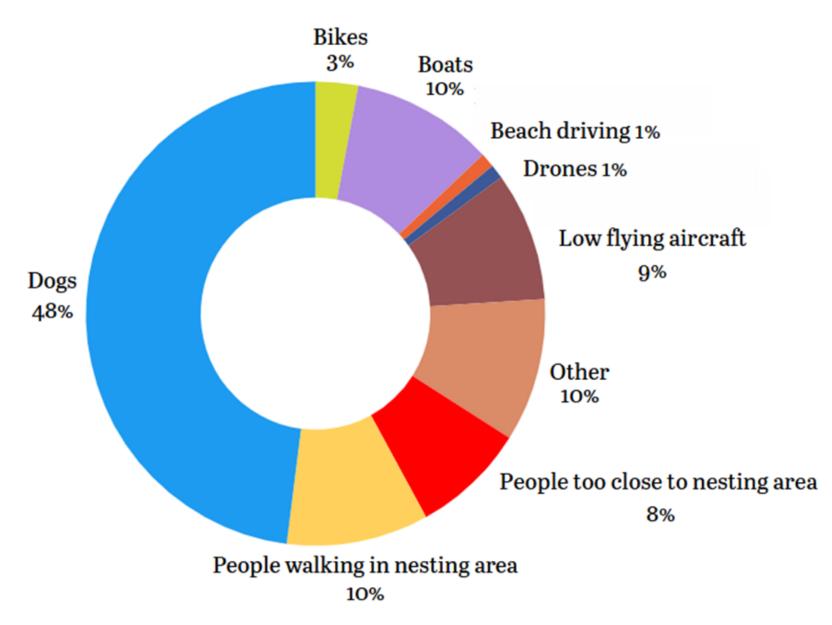


Importance of Steward Gathered Disturbance Data





2024 Stewardship Report – Human Disturbance





Going Forward...

Nest Monitoring Pilot Project!



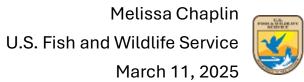


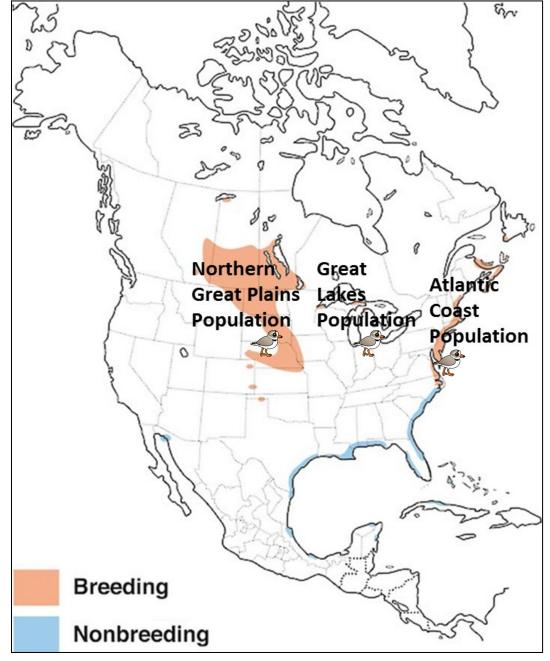






Piping Plover Status Update





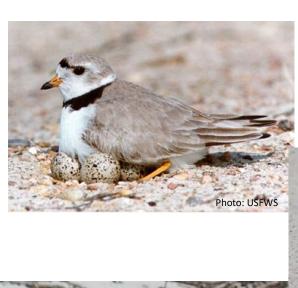




Photo: USFWS

Photo: Sidney Maddock





2025 Status Review

 Required under the Endangered Species Act

 Current status of the species is used to inform changes needed to current classification under the ESA

Five-factor analysis

Piping Plover (Charadrius melodus)

5-Year Review: Summary and Evaluation



Piping plover chick photographed in New Jersey by Richard Kuzminski

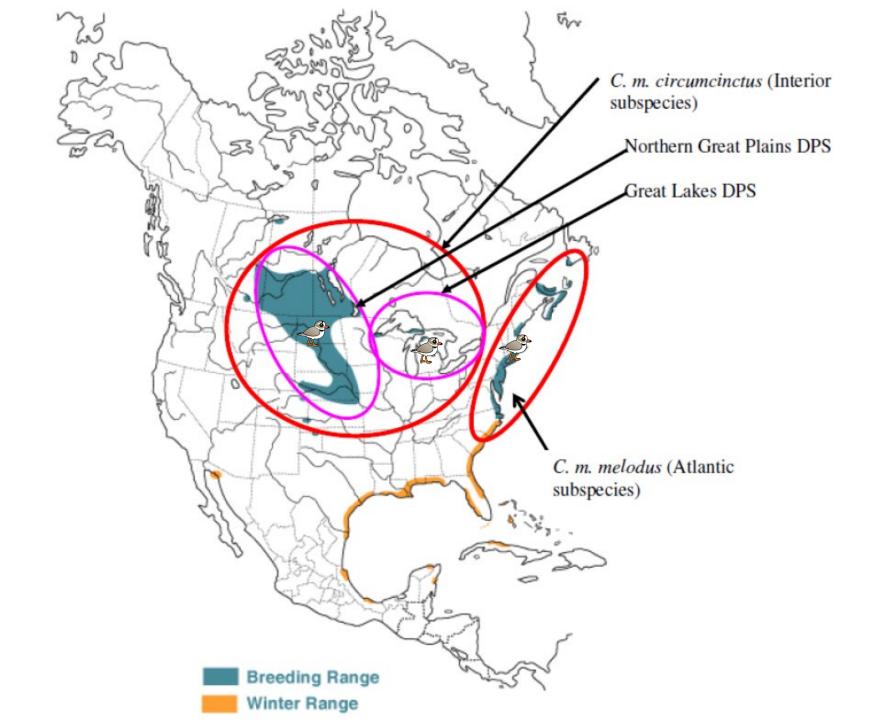
U.S. Fish and Wildlife Service

Northeast Region, Hadley, Massachusetts Michigan Field Office, East Lansing, Michigan

with major contributions from

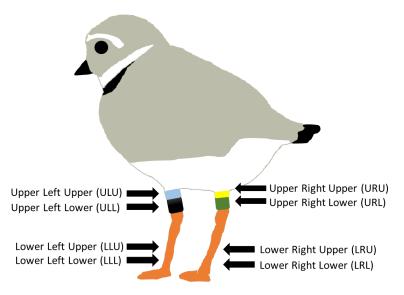
Missouri River Coordinator's Office South Carolina Field Office

December 2024



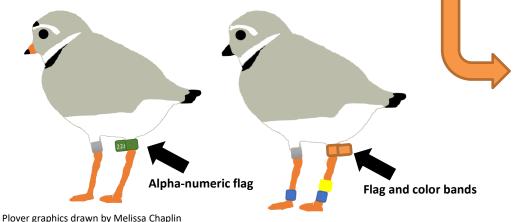
Banded Piping Plovers

Piping plovers from all 3 breeding populations winter in SC



This is an example of a piping plover in nonbreeding plumage banded with two color bands above the joint on both legs on the ULU, ULL, URU, and URL leg positions. The bands on the ULU and URU leg positions are partially obscured by feathers.

	If The Bird Has	It's From:	Report It To:		
	Color bands (no flag) on just the upper legs	Atlantic Coast Breeding Population (banded in NJ)	christinia.davis@dep.nj.gov and vt.plover@gmail.com		
	Green flag	Atlantic Coast Breeding Population	vt.plover@gmail.com		
	Pink flag	Atlantic Coast Breeding Population (banded in the Bahamas)	vt.plover@gmail.com		
	Black flag or White flag	Atlantic Coast Breeding Population (banded in eastern Canada)	cheri.gratto-trevor@canada.ca		
		Northern Great Plains Breeding Population	npwrc.ternplover@usgs.gov		
or e	Orange flag or metal band and orange band (no flag) on upper leg and color bands on lower leg(s)	Great Lakes Breeding Population	plover@umn.edu		



Fade to: Will be orange on either the top or bottom Blue = B half and any of the other previous colors (other than metal) on the other half. Green = G Blue over orange = B/O Yellow = Y Orange over yellow = O/Y Red = RTriple-split Bands Orange = O Will have an orange stripe in the center of Violet = V one of the previous colors (not metal) Light blue = b Black, orange, black = L/O/L Light green = g **Auxiliary Markings** Watch for and record 3-digit numbers or USGS metal = X colored dots (Red, blue, green or yellow) on color bands of plovers without orange flags. Read bands from bird's left to right

and from top to bottom

Great Lakes Piping Plovers—Color Band Key

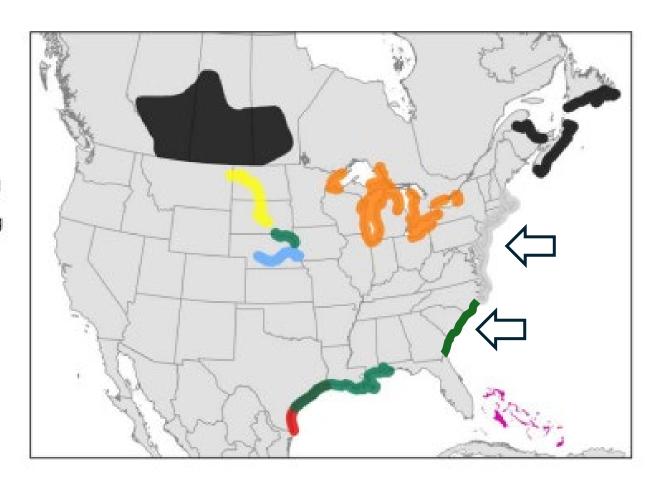
Piping Plover Banding Regions

Breeding Range

- Canada = Black, Gray, or White Flag
- Great Lakes = Orange Flag
- Northern Missouri River = Yellow Flag
- Southern Missouri River = Green Flag
- Platte River = Light Blue Flag
- Atlantic Coast = no bands

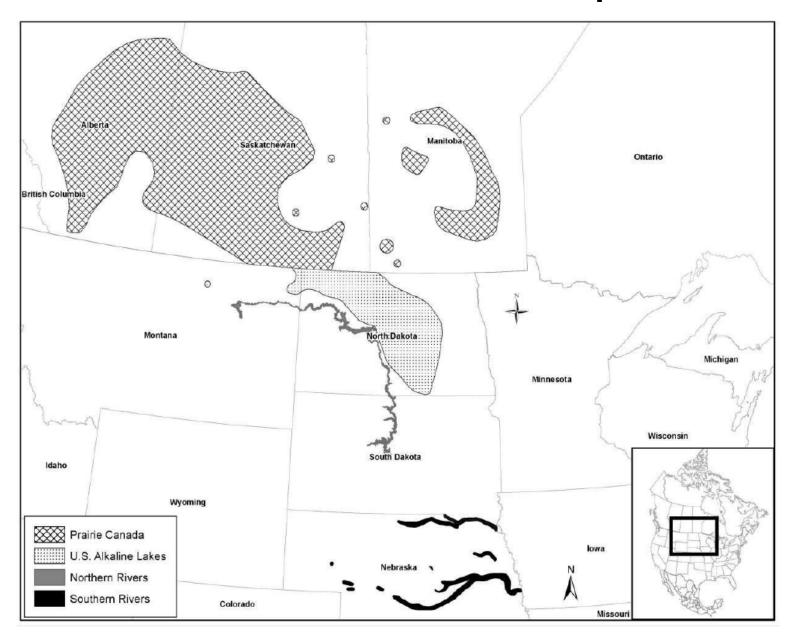
Wintering Range

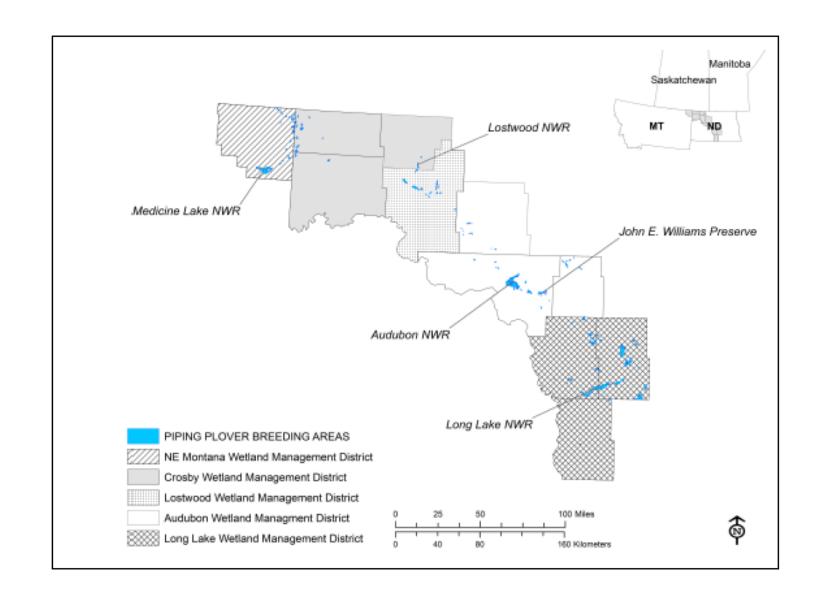
- Gulf Oil Spill Study = Green Flag
- Texas = Red Flag
- Bahamas = Pink Flag





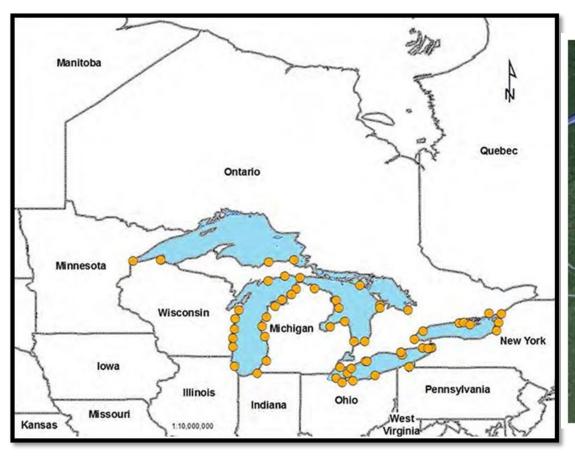
Northern Great Plains Population





Management		Juvenile	Adult	
Region	Section	Survival	Survival	Source
NGP	Entire	0.53	0.75	Swift et al. 2022
SRMR	Platte River	0.20	0.76	Roche et al. 2016
	Lower Platte River (off-channel)	0.34	0.70	Catlin et al. 2016
	Lewis and Clark Lake	0.26	0.73	Catlin et al. 2016
	Missouri River Below Gavins Point Dam	0.09	0.67	Catlin et al. 2019
	Niobrara and Platte Rivers Combined		0.71	Ellis et al. 2021
ALMR	Entire	0.32	0.74	Larson et al. 2000
		0.14	0.76	Swift et al. 2021a
	Entire			Cohen and Gratto 2011;
PCMR	Entitle	0.57	0.88	Ellis et al. 2021
NRMR	Entire	0.19	0.76	Swift et al. 2021a

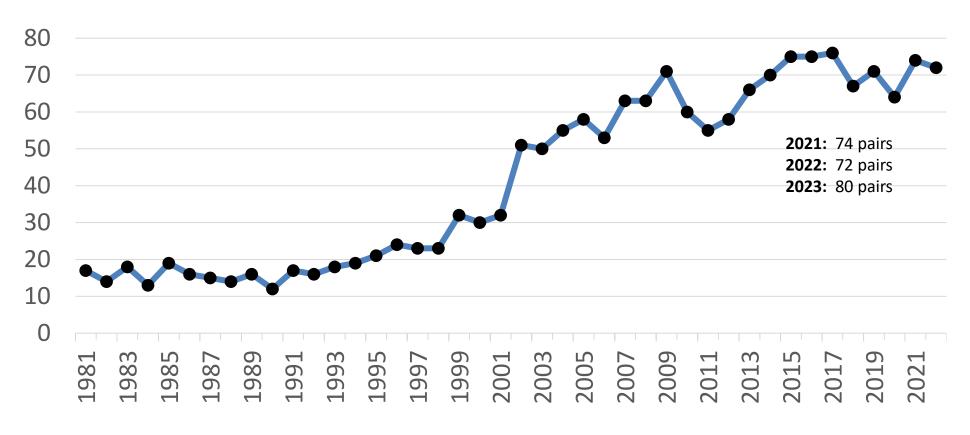
The Great Lakes Population

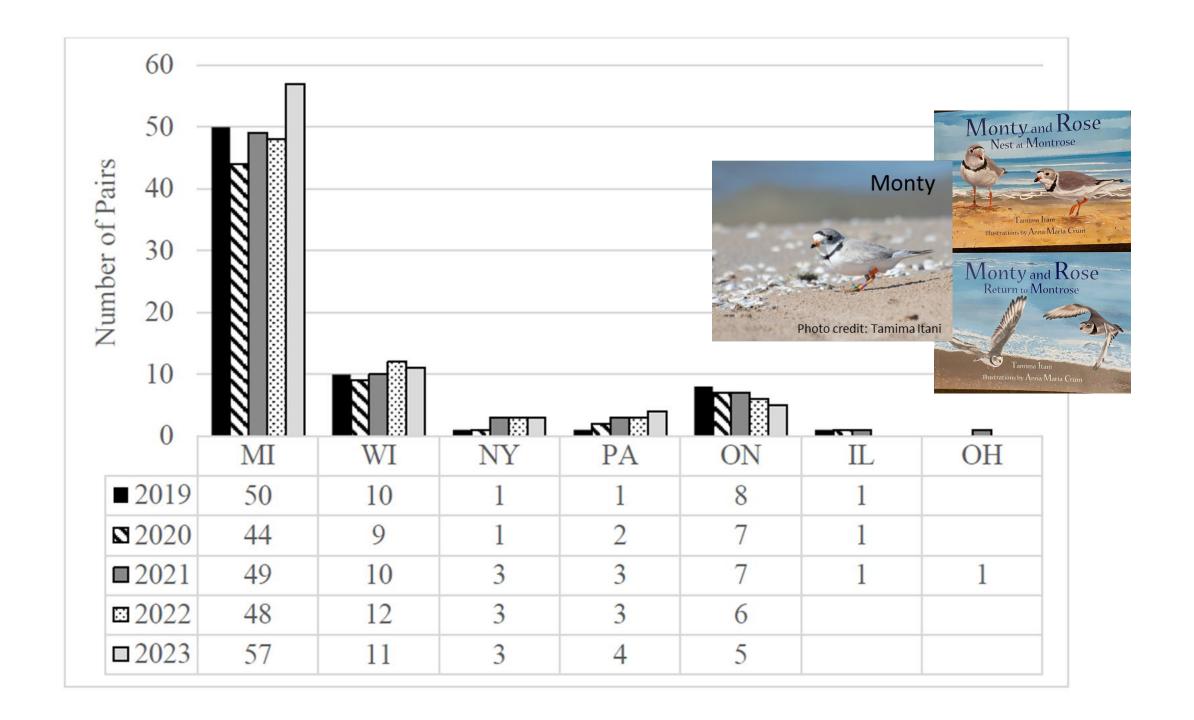




Great Lakes PIPL pairs

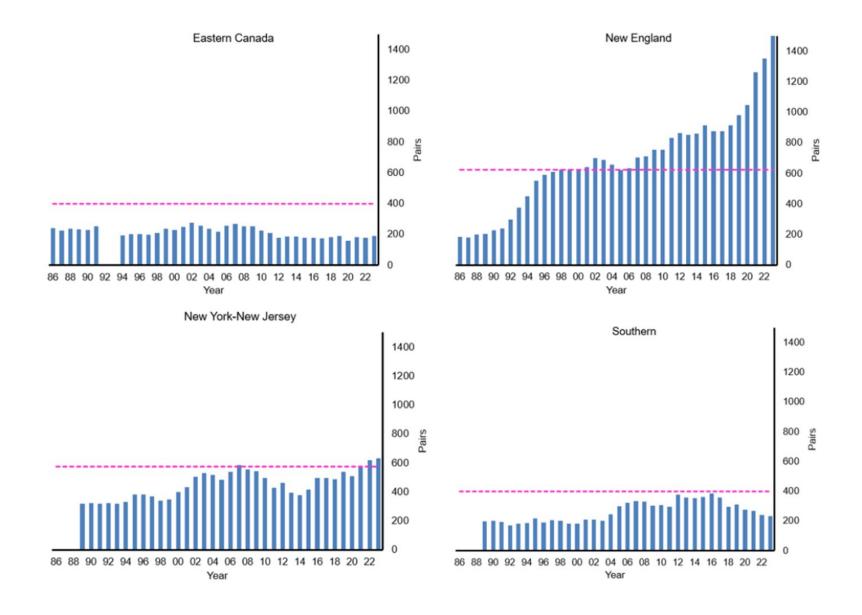
1981-2022







The Atlantic Coast Population

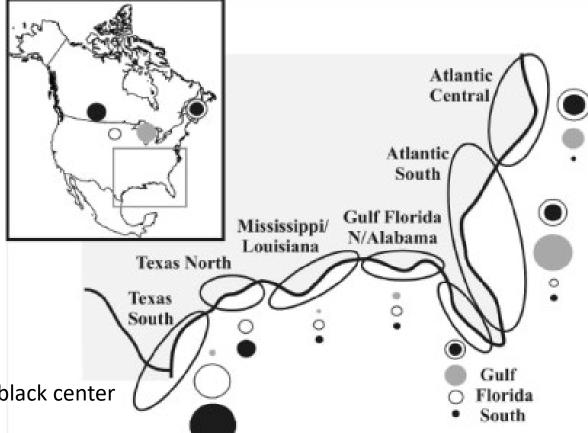


SOCIETY

Population Ecology

Connectivity in Piping Plovers: Do Breeding Populations Have Distinct Winter

Distributions?



Eastern Canada: white circle with black center

Great Lakes: gray circle NGP MR: white circle

Prairie Canada: black circle

Gratto-Trevor et al. 2012

Status Review Results

Primary Threats

Breeding Range

NGP: loss of suitable breeding habitat

GL: habitat degradation, predation, and human

recreational disturbance

AC: habitat degradation, predation, and human

recreational disturbance

Nonbreeding Range: cumulative losses of available habitat, habitat function, and habitat accessibility; cumulatively ALL threats are likely slowing and limiting the recovery potential of all 3 breeding populations

Recommendation: No change in listing status needed

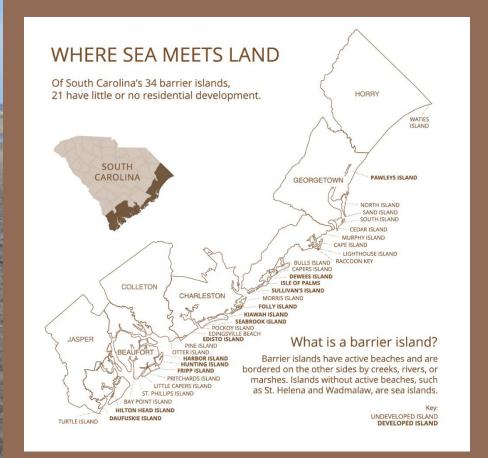
* A revision to the listing language is suggested for the Great Lakes population to extend its endangered status throughout its range

Wintering Distribution In South Carolina

Largest local winter populations occur south of Charleston

 Possibly due to higher #s of inlets and sounds

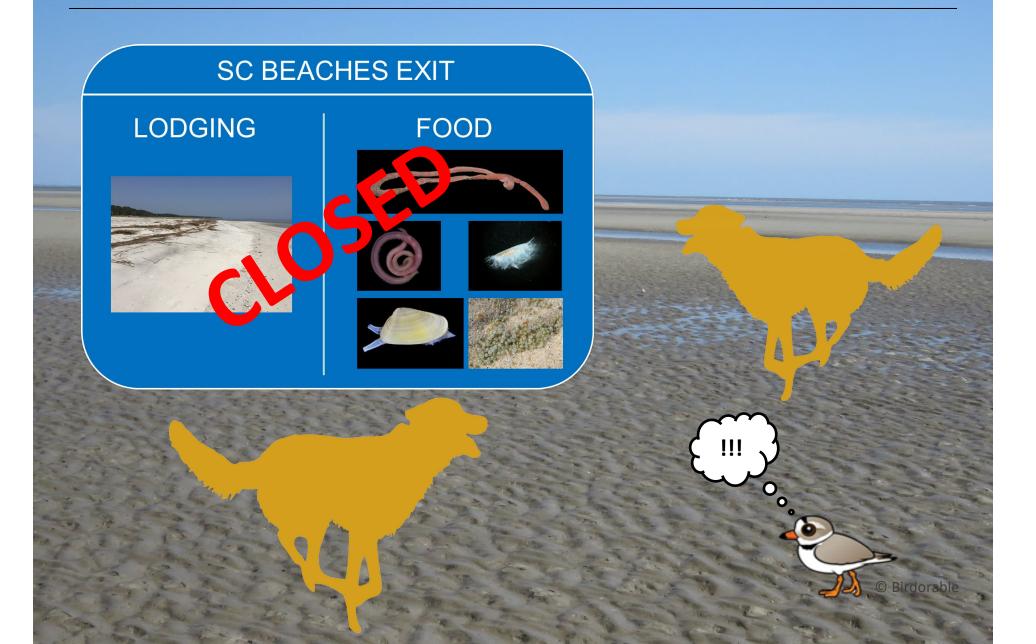
 20-30 PIPLs are high winter counts



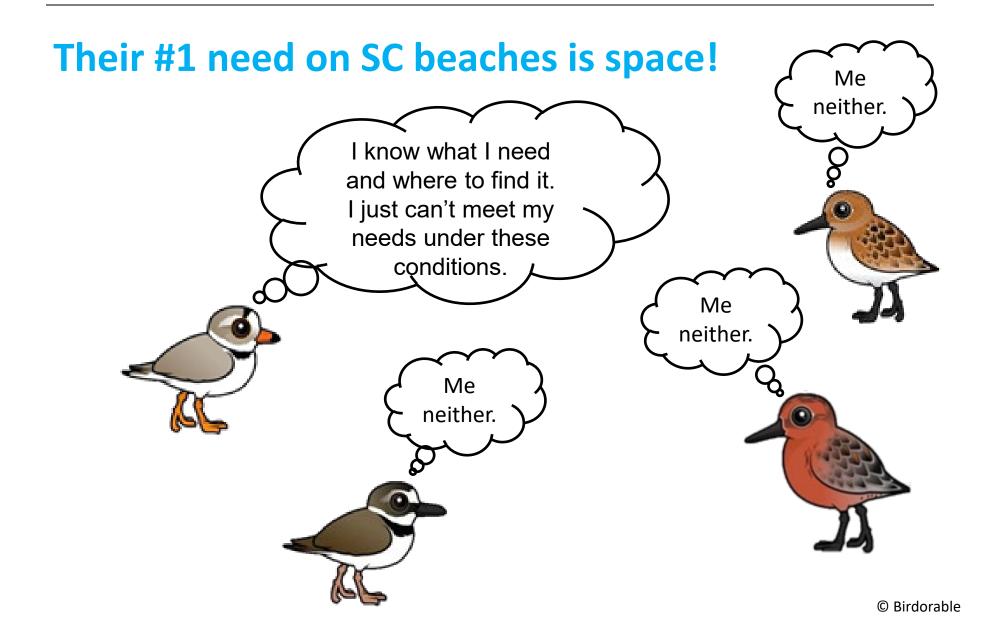
scseagrant.org



Disturbance Lowers Habitat Quality



Sharing The Beach = Space



Managing Disturbance: Providing Space for Shorebirds









Foraging areas (especially rare features)



Questions?





Photo by Pamela Cohen

Red Knots in South Carolina 2025 Update



South Carolina Department of Natural Resources

Wildlife & Freshwater Fisheries- Coastal Bird Program

Rufa Red Knot

- 2014 United States threatened
- 2020 Canada endangered
- Declines
 - South America, southern tip
 - 75%
 - (1980 and 1990s) to (2018–2020)
 - Delaware Bay, New Jersey, USA
 - 70%
 - (1981 1983) to (2005 2014)





Red Knot Capture on Kiawah Island



Sunbird Solar Argos Satellite Transmitters

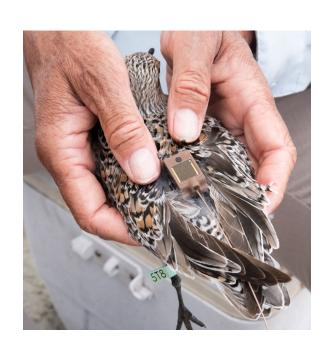










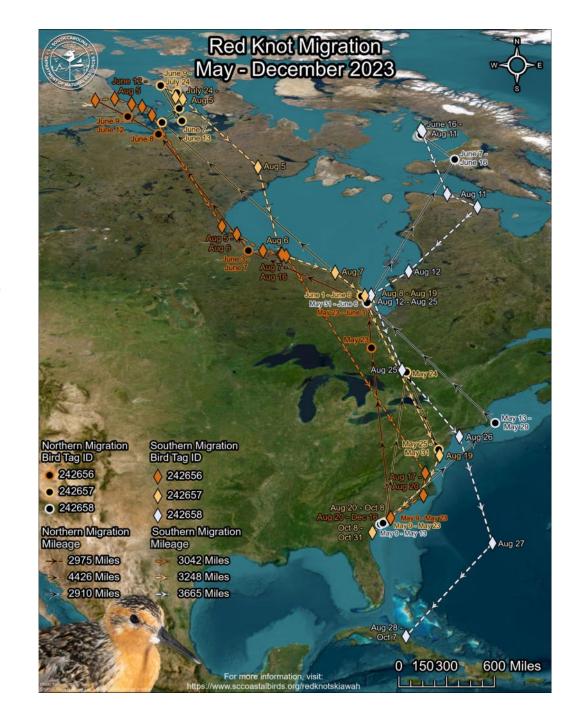


- 2023, 2024, 2025
- 2g
- Up to 10 locations/day
- Local movement



Sunbird Solar Argos Satellite Transmitters

- Migration routes
- Breeding sites



Sunbird Tag Results

- Date left GA/SC May 21 May 23
- All left GA/SC coast between 7-7:30 pm
- Date arrived on nesting grounds
 June 10 19
- Tag retention 1 still working!



Hurricane Ernesto







Connecting Breeding and Wintering Grounds

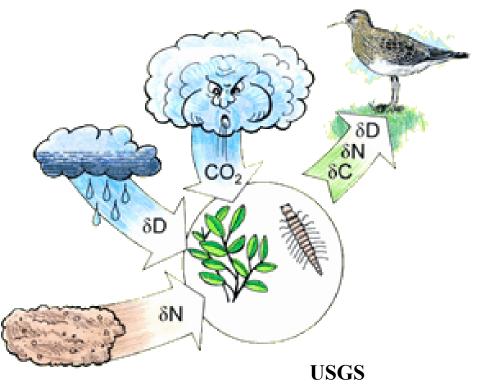
- Genetic differences
 - Argentina
 - Northern Brazil
 - SE US
- Satellite tags
- Feathers stable isotopes





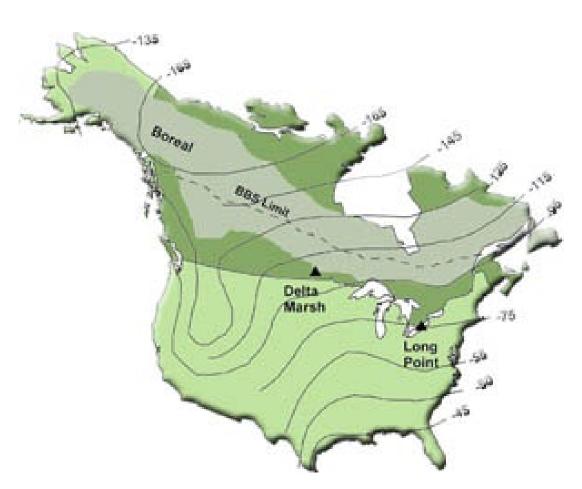
Stable Isotopes

- Isotopes-forms of chemical element with different atomic mass
- Quantity of isotopes in environment varies spatially according to naturally processes (precipitation, temperature)
- Isotope ratios reflected in food chain



Stable Isotopes

- Feathers grow in a short time
- Isotope content of feather reflects bird's diet
- Origin of wintering area can be determined by isotope signatures



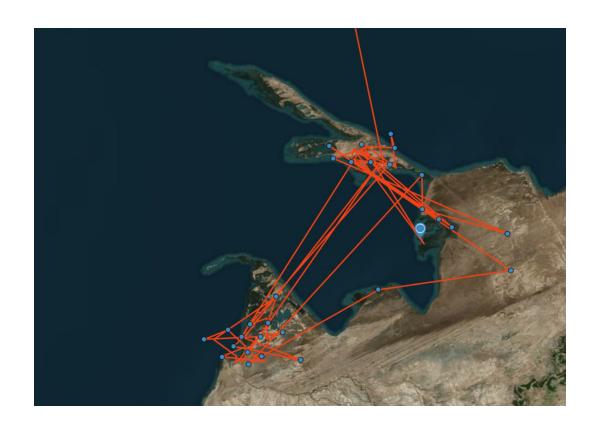
The Science and the Environment Bulletin

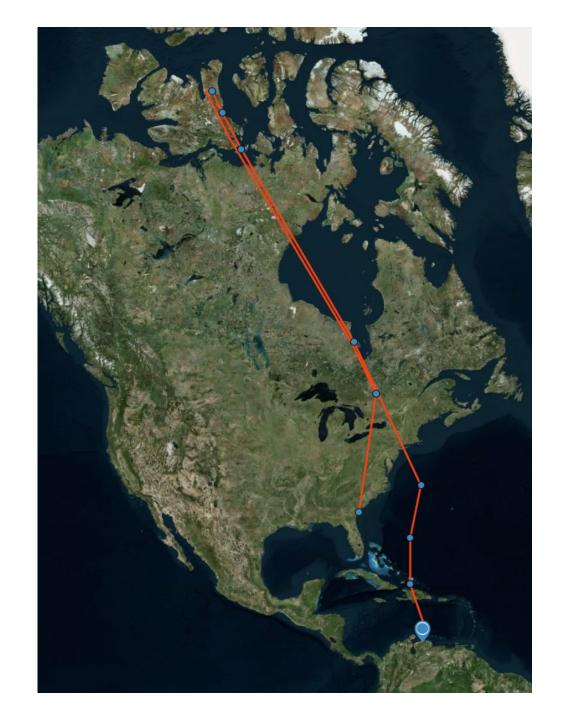


USGS

Venezuela

- Wintering location
- Bred Victoria Island

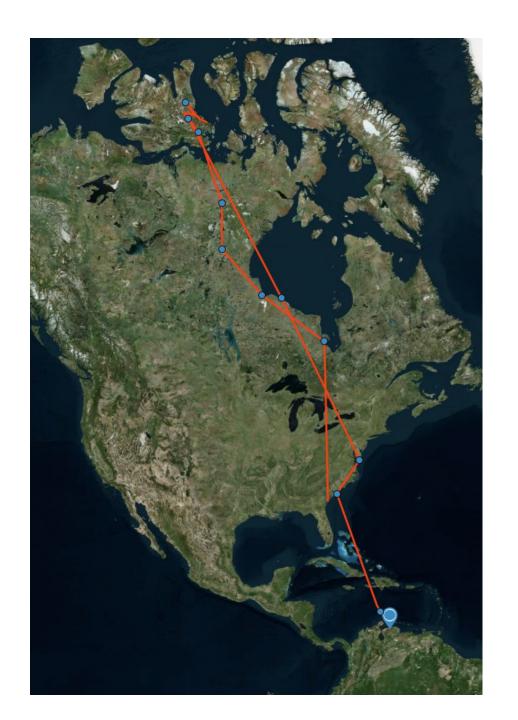




Venezuela

- Wintering location
- Bred Victoria Island





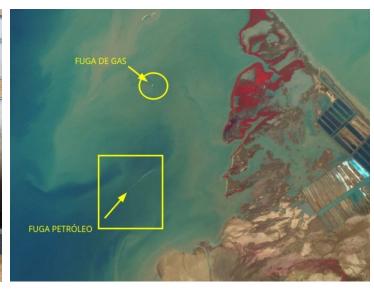
Venezuela

- Sandra Giner
 - Researcher
 - Conservationist fostered the
 participation of
 indigenous groups,
 who participate as
 volunteers for
 shorebird surveys
 along Venezuela's
 western coastline
- Red Knots
 - Next to shrimp farms
 - Feeding on bivalves
 - Resighted our SC knots!









Venezuela - Oil Spills

- 2023 recorded 86 oil spills
- 84% occurred in the focus area

SC Moon Bird

- Banded by Patricia
 Gonzales -Argentinian
 Shorebird Researcher
- Banded in 2005 as adult
- Resighted 15 May 2019 at Jones Beach, SC
- 288,00 miles
- Earth to moon 238,900 miles



Thanks to Fletcher Smith for the Information

Human Disturbance (Research on Shorebirds)

- Reduce the number of shorebirds
- Reduce time shorebirds consume prey
- Migratory shorebirds do not habituate





Outreach & Stewardship

Deveaux Bank TE OF INTERNATIONAL IMPORTANCE Deveaux Bank Site of International

- Whimbrel
- Red Knots

bited island at the mouth of the North Importance coast of South Carolina. The island cycle of erosion and accretion, yet p of mudflats, low marsh, vegetated of species shorebirds. This site was e to migrating Whimbrels and Red own nocturnal roost for the Hudsonian sounted at one time during peak spring stimated North American population.

> rous species of other shorebirds to Dowitchers, Dunlins, Ruddy Turnstones, ell as nesting Wilson's Plovers, American

HOREBIRD RESERVE

shorebirds and their habitats across network of key sites. Deveaux Bank



himbrels flying at sunset. drew Johnson, Cornell Lab of Ornithology



ial view of Deveaux Bank, looking east. hto by Andrew Johnson, Cornell Lab of Ornithology.



Acknowledgements

- US Fish & Wildlife Service: Melissa Chaplin
- Georgia Department of Natural Resources: Fletcher Smith, Tim Keyes
- Manomet: Abby Sterling and Allie Hayser
- American Bird Conservancy: Adam Smith, Garret Rhyne
- University of Massachusetts: Nathan Senner, Maina Handmaker, Maggie Pelton, Sara Padula
- Red Knot Seasonal Staff: Nathaniel Watkins, Aubrey Anthony, Sarah Cantwell, Josh, Maree, and Rachel
- Town of Kiawah: Aaron Given
- Kiawah Island Shorebird Steward: Bette Popillo, Rick Popillo, Pamela Cohen, Cyndy McKinley, Shep McKinley, Shelly Arthur
- Beachwalker County Park: Charlie Vance
- Kiawah Island Conservancy: Adam Wolf, Katie Warner
- Seabrook Island Birders: Mark Andrews, Bob Mercer, Gina Sanders, Lesley Gore
- SCDNR staff: Janet Thibault, Mary-Catherine Martin, Cami Duquet, Amy Tegeler, Kaitlyn Hackathorn, Erin Weeks, Graham Wagner, Megan James, Joe Lemeris, Tanner Harrington, Owen Barker
- · Larry Niles, Amanda Dey, Stephanie Feigin
- Cape Romain National Wildlife Refuge
- State Wildlife Grants
- Section 6/Endangered Species Conservation Fund



Building a Beach for the Birds



with the
US Army Corps
of Engineers at
Huntington Beach
State Park





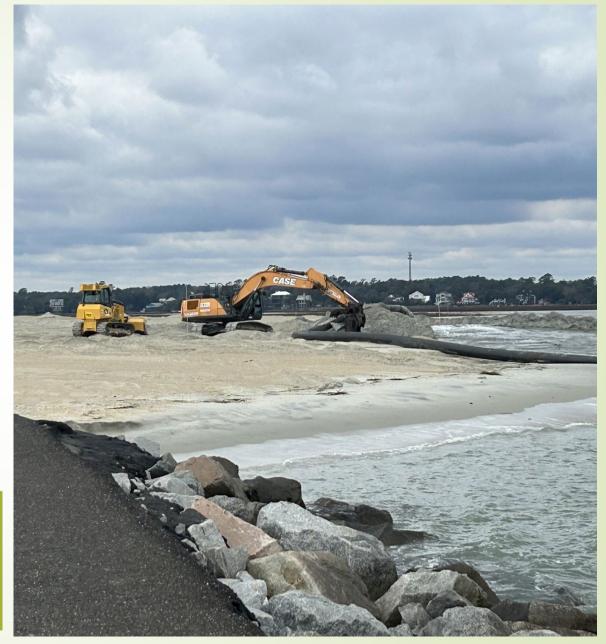


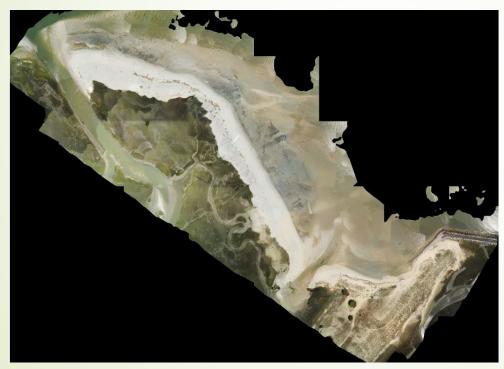


Figure 5. Proposed Depositional Placement Area. The Center Line Indicates Mid-point of Construction Shown in Figure 6

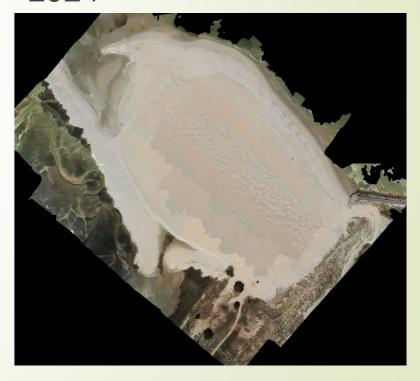
Shorebird/ Least Tern Nesting Area

12 acres of new sand, valued at over \$1.5 million dollars!

2023



2024



Protecting it from Predators:

Solar powered electric fences in 2 parallel rows; 2,500' each.

Spaced 2.5' apart to deter coyotes from jumping over.

Baited scent tabs draw mink to the fence to get shocked: aversion training.









Protecting it from Avian Predators:

Chick shelters provide a haven from the sun and avian predators.



They are also a great way to get students involved in conservation!



Protecting it from People and their Pets:



Signs painted by kids tug on the heartstrings in a way that regulatory signs don't...

...and simpler is better!





There is no substitute for a human presence! The Shorebird Stewards program of Audubon South Carolina is invaluable for both protecting the birds and educating your visitors.

Convincing the Birds it's Safe to Nest:





A combination of audio (Murremaid Sound system) and visual (decoys) cues can be used to attract seabird colonies.





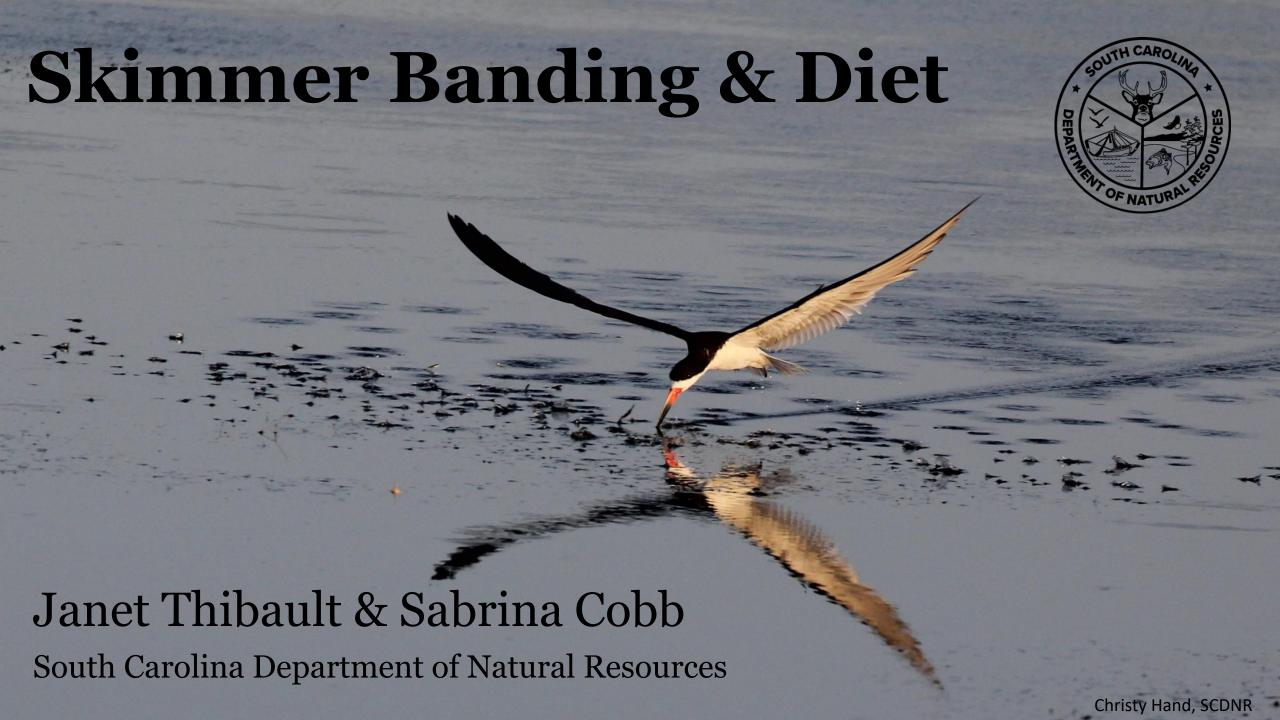


Photos above by Lorraine Holcombe, Shorebird Steward



Questions?

Mike Walker,
Interpretive Ranger
Huntington Beach State Park
mwalker@scprt.com



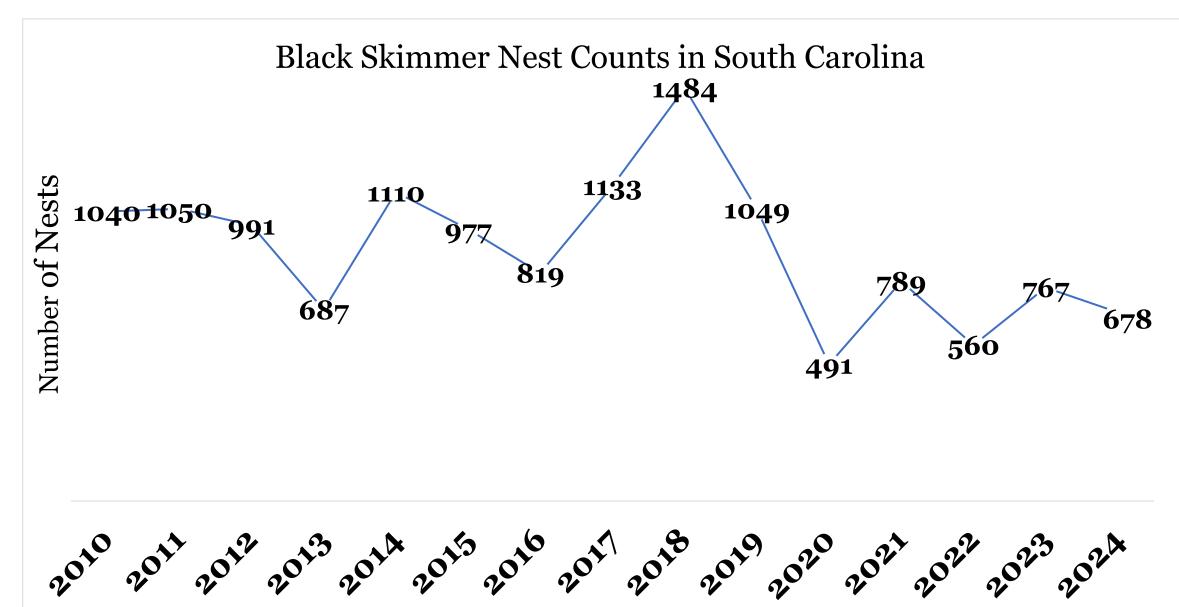
Black Skimmer (Rynchops niger)



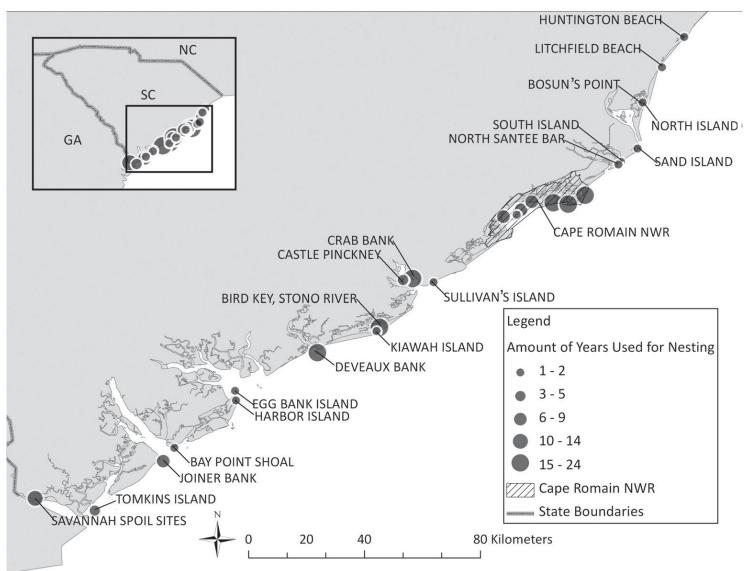




Nesting Data – 2010 - 2024



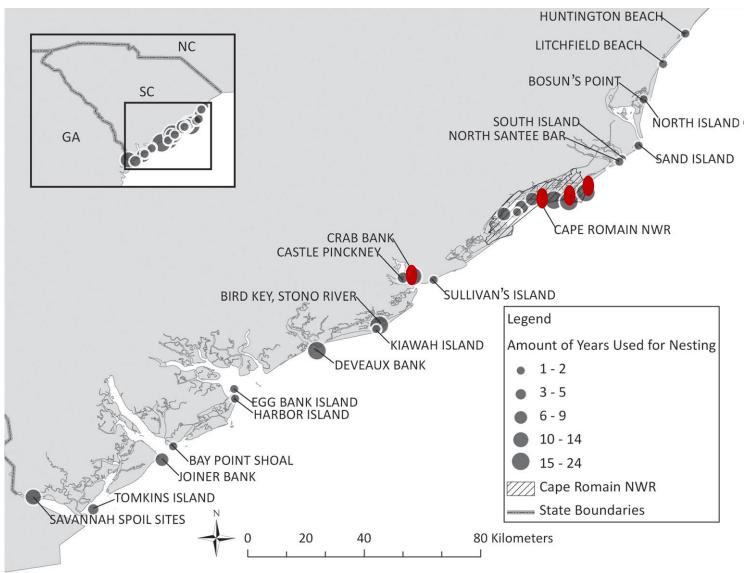
Colony Distribution – 1975 - 2009



Snipes & Sanders, 2012

Figure 2. Locations of Black Skimmer colonies in South Carolina from 1975 to 2009.

Colony Distribution – 2024



Locations of Black Skimmer colonies in South Carolina 2024

Threats – Disturbance





Threats – Overwash





https://tidesandcurrents.noaa.gov/waterlevels.html?id=8665530

Goyette, J., L. Eggert, and J. Thibault. 2011. South Carolina Coastal Bird Colony Monitoring Project Summary. Report number 2011-23 submitted to South Carolina Department of Natural Resources and USGS SC Cooperative Research Unit, Clemson University. Biodiversity Research Institute, Gorham, Maine.

Crab Bank



Nesting Results



283 Nests in 2022 174 Fledglings

528 Nests in 2023 579 Fledglings

397 Nests in 2024 Did Not Count



Banding OOU DOT DOR DUV UUN Cami Duquet, SCDNR



Banding Locations



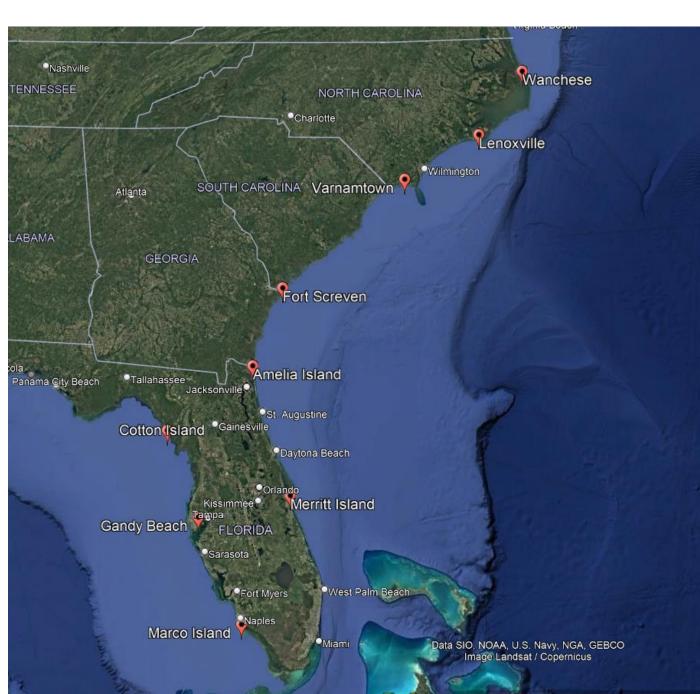




Band Resights



Brett Moyer, Bluebird Pharmacy



How You Can Help







SCDNR needs your help to

resight banded Black Skimmers

Report your sightings of **black**bands to <u>reportband.gov</u> OR
to Janet Thibault at
<u>thibaultj@dnr.sc.gov</u>
and include:

- Your location
- Date and time
- Band color & code
- Photograph
- Flock size (optional)

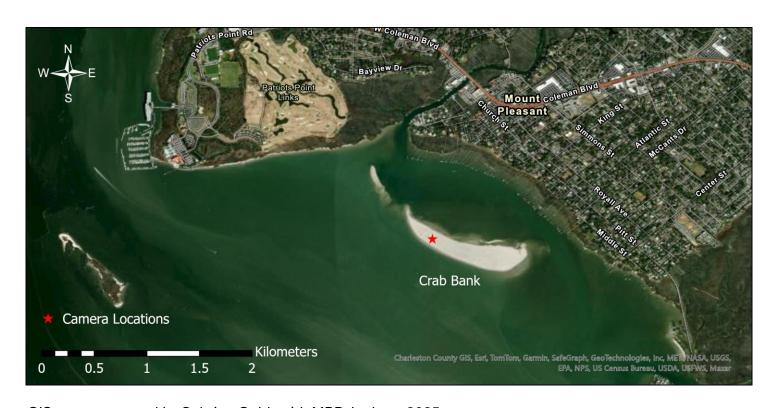
Integrating Game Camera Footage and DNA for Seabird Diet Research

Sabrina Cobb

Janet Thibault

Crab Bank

- Seabird Sanctuary located at the mouth of Shem Creek
- Supports colonies of nesting seabirds such as: Brown pelican, Least tern, Royal tern, Sandwich tern, Common tern, and Black skimmer
- March 15th Oct 15th area is closed and monitored by SCDNR for nesting activity
- Browning Elite HP4 cameras placed for outreach and educational purposes



GIS map generated by Sabrina Cobb with MRD-Inshore 2025

Black Skimmers

- Colonial seabird that forages on small planktivorous fish that are caught while gliding just above the surface
- Determining the species and size of fish fed to chicks is important for Black skimmer conservation because surfaceforaging seabirds are most sensitive to changes in fisheries stocks (Forys 2017)



Photo credit: National Audubon Society

Identifying fish from game cameras

- "Guidance for Sampling Common, Arctic, and Roseate Tern Diet"- Roseate Tern Recovery Team Mtg
- "Falkner Island Provisioning: Fish Guide"
- Average culmen size of 67 mm (Mariano-Jelicich et al. 2007)
- Inshore and observer fish ID knowledge acquired over the past 12 years

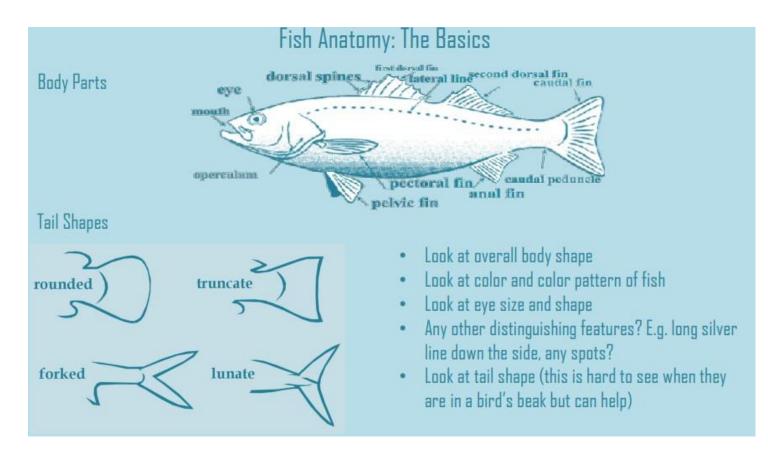


Photo credit: Falkner Island Provisioning: Fish Guide

Observations

- Reviewed 30 sec clips from 3 different cameras
- 7 Species of fish Identified by slowing footage down and taking screenshots to get best quality image of defining characteristics
 - Species included: Atlantic croaker, Atlantic needlefish, Blue fish, Inland silverside, mullet sp., Mummichog, Spot
- Challenges- Distance from camera, Time of day, Prey position in beak



Photo credit: CT.gov

Project Poop

- Regional project started in 2024 to increase knowledge and understanding of common tern and black skimmer diet along the eastern seaboard
- Fecal samples are collected and sent to researcher Gemma Clucas at Cornell University for DNA extraction and analysis
 - ~45 samples collected from black skimmer chicks on Crab Bank





Mission of Project Poop

Create a unified and systematic monitoring system and database to track seabird diets across various species along the Atlantic coast of the U.S. for landscape and climate-scale assessments using fecal samples

2024 Sampling Effort

State	COTE Samples (#Colonies)	BLSK Samples (# Colonies)
NS	90 (2)	
NB	40 (1)	
ME	483 (9)	
NH	99 (1)	
MA	206 (4)	
CT	137 (2)	
NY	85 (1)	52 (1)
MD	30 (1)	
VA	150 (3)	91 (3)
NC		181 (4)
SC		45 (1)
FL		16 (2)
MS		40 (1)
Total	1,322 (24)	475 (13)

Figure Credit: Atlantic Marine Cooperative

Bridging Concepts

- Fecal samples paired with fish identification by way of cameras can help researchers understand forage fish availability
- Can also provide insight to fish species "out of range" with increasing water temperatures through chick consumption of fry
- Scale up information to look at ecosystem patterns using data for forage fish management

Literature Cited

Erwin, R.M. 1977. Black Skimmer breeding ecology and behavior. The Auk 94:709-717.

Forys, E.A.2017.Investigating Black Skimmer Chick Diets Using Citizen Science and Digital Photography. Southeastern Naturalist 16(3):317-325.

Mariano-Jelicich, R.,E. Madrid, and M. Favero. 2007. Sexual dimorphism and diet segregation in the Black Skimmer, *Rynchops niger*. Ardea 95:115-124.

Thank you!!

Email: CobbS@dnr.sc.gov

Office: (843) 953-4707













Updates from Manomet Conservation Sciences Georgia Bight Shorebird Conservation Initiative



Wildlife Beach Areas at Public Beaches



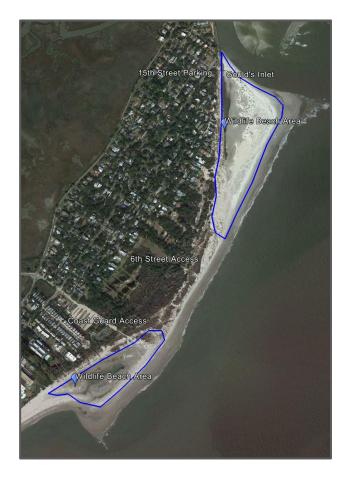






VTSHOREBIRDS















Increased Protection: Signs, Lines and Stewards

- Volunteers
- Standardized training program
 - Materials, messaging, visual aids
- Real time communication
- Cooperation with LE



Messaging to Protect the Wildlife Beach Area



Results from our Wildlife Beach Area



- Signs up and gear storage secured!
- Trained over 100 volunteers
- About 1000 volunteer hours at both WBA
- Three events with pledges signs by the public
- Nearly 1,200 people engaged in campaigns
- Applying techniques to new sites in 2025, engagement from community partners





Coastal Awareness and Responsible Ecotourism Certification Course

Georgia Bight Shorebird Conservation Initiative at Manomet, Inc, University of Georgia Marine Extension/ Georgia Sea Grant, and Coastal Division of Georgia DNR





Sustainable Ecotourism and Shorebird Habitat Protection: Building a Certification Program for Tour Guides





Program Objectives

Ecotourism provides an opportunity to build support for conservation action. This project aims to leverage this opportunity to protect our wild Georgia coast, while supporting local, small business tour operators.



Program objective ONE

To reduce recreational disturbance of coastal habitat, which has serious implication for wildlife, specifically shorebirds.



Program objective TWO

To incentivize responsible ecotourism through a certification process thereby providing a marketable credential.

TASK ONE

Develop database of charter boat, kayak and paddle board tour operators along the Georgia coast.



TASK TWO

Generate interest and garner stakeholder input on content and structure of certification program.



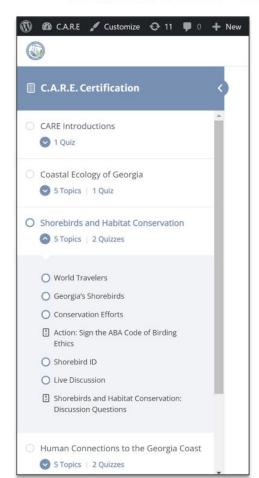
Develop curriculum, online and inperson resources and certify a minimum of 25 tour guides.

Project Deliverables

This project is funded by the Coastal Incentive Grant, managed by GA DNR's Coastal Resource Division. Funding for the first year of the project will allow for stakeholder input, program design and curriculum development.



C.A.R.E. Certification for Ecotour Guides



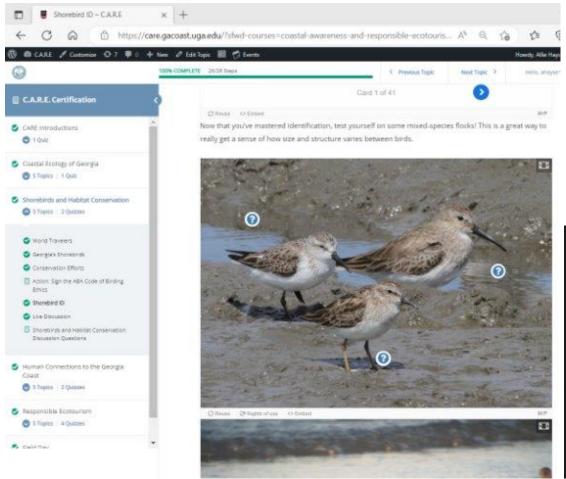












Course Outline:

Introductory teleconferencing session (1hr)

Lesson 1: Coastal Ecology of Georgia/+ Zoom teleconferencing session with Speakers (3 hrs)

Lesson 2: Shorebird and Habitat Conservation/+ Zoom teleconferencing session with Speakers (3hrs)

Lesson 3: Human Connections to the Coast/+ Zoom teleconferencing session with Speakers (3hrs)

Lesson 4: Responsible Ecotourism/+ Zoom teleconferencing session with Speakers (3hrs)

Lesson 5: In person field based component (3hrs)



Course Collaborators

Colleague Name

Dr. Patrick Holladay Cheryl Hargrove Tara Cox

Shana Jones Joel Kostka

Dodie Sanders Elyse Butler

Lindsay Cochran Stacia Hendricks

Tim Keyes Brad Winn

Jennifer Sweeney-Tookes

Christie Lambert

Josh Noble Clay George Brian Crawford Bryan Fleuch Keren Giovengo Tori Stivers Thomas Bliss

Katy Smith Kelly Hill

Hermina Glass-Hill

Dionne Hoskins Brown

Abby Sterling Victoria Smalls

Affiliation

Troy University - Brunswick

Hargrove Intl

Savannah State University Carl Vinson Institute

Georgia Tech University

UGA Marine Extension and Georgia Sea Grant

Georgia Historical Society

University of Georgia Archaeology Laboratory

GA Department of Natural Resources

Manomet

Georgia Southern University

The Nature Conservancy

GA Department of Natural Resources **GA Department of Natural Resources**

UGA

UGA Marine Extension and Georgia Sea Grant UGA Marine Extension and Georgia Sea Grant

Department of Natural Resources

Susie King Taylor Women's Institute and Ecology Center

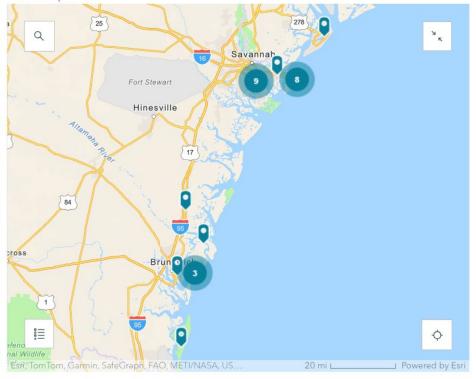
Savannah State University, NOAA

Manomet

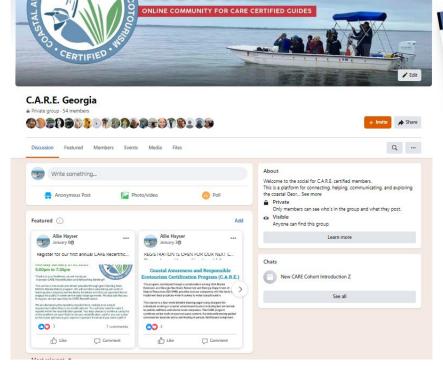
Gullah Geechee Cultural Heritage Corridor

Certified CARE Guides

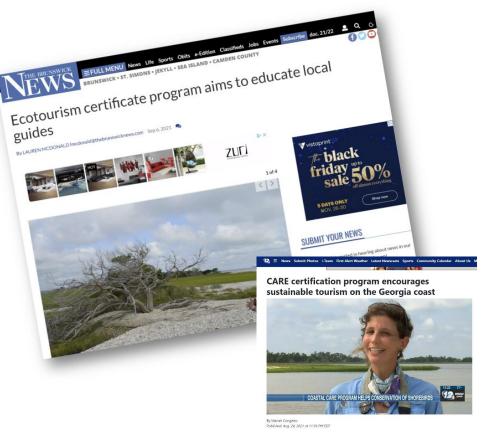
Certified CARE guides include affiliates of ecotour providers from all along the coast of Georgia. The guides that have completed the CARE certification program can be found in the map below.



Building and growing a community



COASTAL



Low Country Drifters is with Manomet and UGA Marine Extension and Georgia Sea Grant in Savannah. · Follow April 12, 2023 - 3

Excited to announce that I'm certified in Coastal Awareness & Responsible Ecotourism (CARE)! The program, launched in 2021 by UGA Marine Extension and Georgia Sea Grant and Manomet provides ecotour companies with the tools to implement best practices when it comes to water-based tourism.

#LowCountryDrifters #Ecotourism #EcoTour #BoatTour #VisitSayannah #GeorgiaCoast #SeaGrant #SavannahGa #SupportLocal #SmallBusiness #VeteranOwned





Coastal Tide Excursions, LLC. · Follow

March 17, 2021 - 3

We are proud to announce both Captain Cameron and Marine Naturalist, Jeffrey Benson, are not C.A.R.E. certified guides! C.A.R.E. or Coastal Awareness and Responsible Ecotourism is a new production through the UGA Marine Extension and Georgia Sea Grant. The program focused on several topi most importantly the relationship and responsibilities we as tour operators and guides have to the beautiful Georgia Coast, as well as all of its inhabitants and visitors (both human and animal), 🐎 🌇 📆 💍

🛒 🗶 We are excited to share this knowledge with all of our quests and look forward to having you aboard soon! UGA Marine Extension and Georgia Sea Grant #exploregeorgia #coastaltideexcursions||c #ladyjane #StSimonsIsland #jekyllisland #brunswickga #goldenisles



National Sea Grant College Program • Follow

Along Georgia's unique coast you'll find abundant wildlife: crabs, sea turtles, and thousands of migrating shorebirds. UGA Marine Extension and Georgia Sea Grant encourages responsible ecotourism through an award-winning training that helps ecotour guides give enriching tours without disturbing fragile ecosystems. The program works to help sustain tourism on Georgia's coast, contributing to the state tourism industry's annual \$54 billion economic impact.

Learn how the program is making a difference: https://www.youtube.com/watch?v=y2Xox8VlyGE

#WhySeaGrant #SeaGrant #Georgia #Coast #Ecotourism #Tourism #Ecosystems #Training #Environment #Wildlife #Boating #Kayaking #Fishing



YOUTUBE.COM

We Are Georgia: Protecting our Coastal Treasures

The CARE (Coastal Awareness and Responsible Ecotourism) program is an extension of UGA's Public ...



Join us for the First Annual C.A.R.E. Recertification and Networking Hangout

FREE EVENT Monday January 27th, 2025 5:00pm to 7:30pm

Thanks to your feedback, we are having an in-person CARE Recertification and Networking Meeting!!!

This will be a free event with dinner provided through grant funding from NOAA's Marine Debris program. We will combine networking with a bit of learning about ongoing marine debris initiatives and discuss opportunities to engage the public in some on-the-water cleanup events. We also ask that you bring your annual reporting for CARE Recertification.

We are decreasing the reporting requirements, making it an annual requirement rather than a six-month interval. You will only need to make 2 reports within the recertification period. You may choose to continue using the online platform on LearnDash to do your recertification, and/or you can come to this event and turn in your reports in-person! Email us if you need a pdf of the reporting form to print.

Scan QR code to register and join us this year!





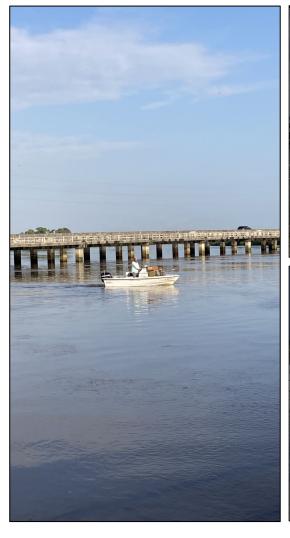


- One guide: visitors from 25 different states!
- Bonding across eco-companies
- Benefit communities on larger scale
- A community with a unified voice to help steer how tourism goes and increased pressure- working together.

Results from engagement with ecotourism



- Cohorts from 2020-2025 with early inquiry list for 2026
- 2023 NET Collaboration Award
- 59 total participants with 55 guides certified
- As of Jan 2025, 26,135 people have been reached through our guides
- Guide buy-in: growing community, partnerships, and volunteering
- Potential opportunities to expand or scale-up





"All in the Same Boat" Outreach For Recreational Boaters



Work completed with support from







What is the problem that the community is trying to address?

Surveyed Recreational Boaters at remote sites to understand needs and access points

- Year-round residents
- Local, generational connection to landscape
- · Avoiding crowded public beaches
- Very little knowledge about shorebird conservation

Marina owners and operators

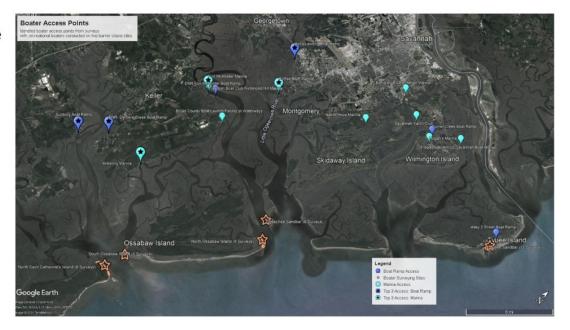
Eager for programming opportunities

Wildlife Resource Managers

- Greater cooperation
- Signage and permitting opportunities

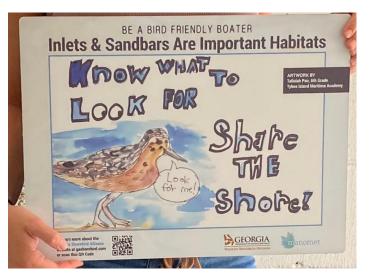
Non-profit organizations

- Education and outreach, volunteer engagement
- More engaged communities
- Habitat protection









Activity:

Split into Teams: Create and draw a sign that shows people how to help birds!



Examples:

Walk Around The Flock. Give Birds Space. Let Birds Eat. Respect Birds.



Protect (year Th

What other messages or ideas do you have????



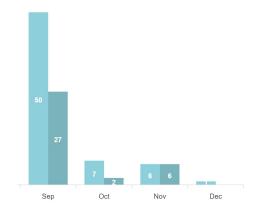


Results from working with recreational boaters



- 40 intercept surveys to boaters in remote sites- over 80% of respondents viewed signs
- Educational events at three high traffic marinas, boater groups including America's Boating Club, Freedom Boat Club, reached 1,751 people
- 25 informational signs up along entire Georgia Coast
- Follow-up survey, sharing toolkit







1st Annual Tybee Spring Shorebird Festival









APPS - \$7

PRETZEL ROLL WITH BEER

SMALL CAPRESE

COLE SLAW

\$11

SLIDER WITH A

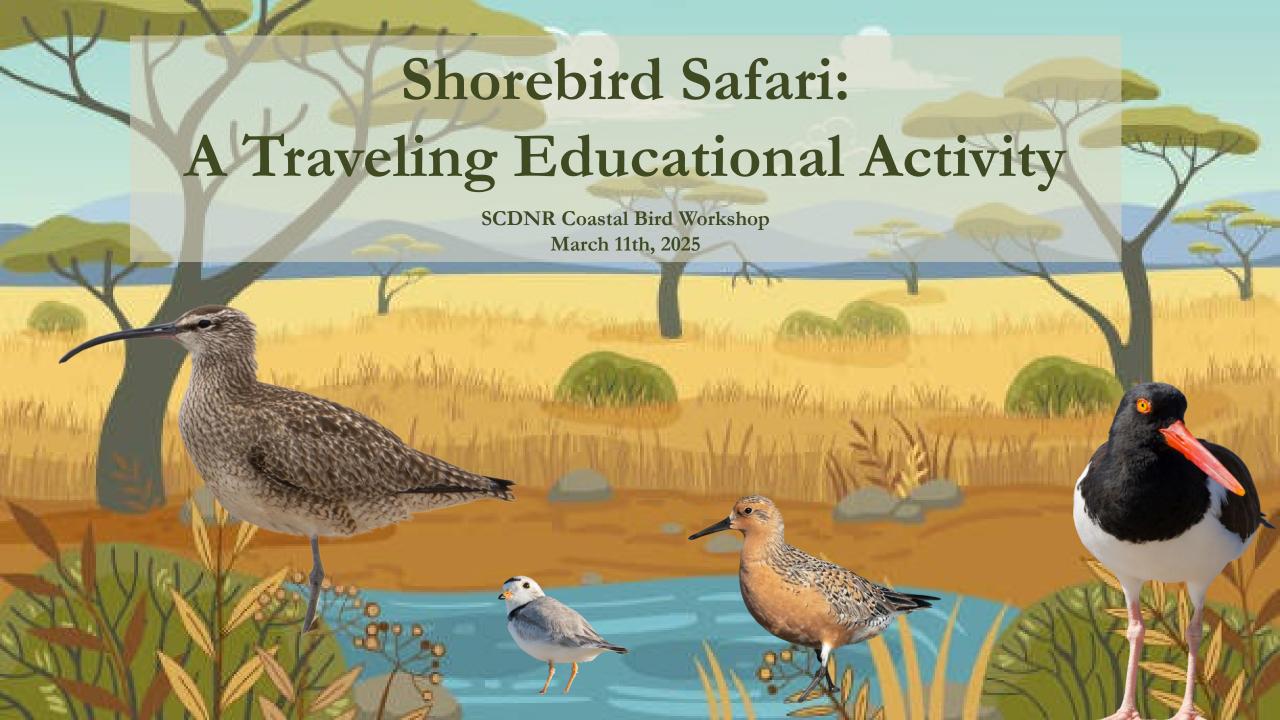
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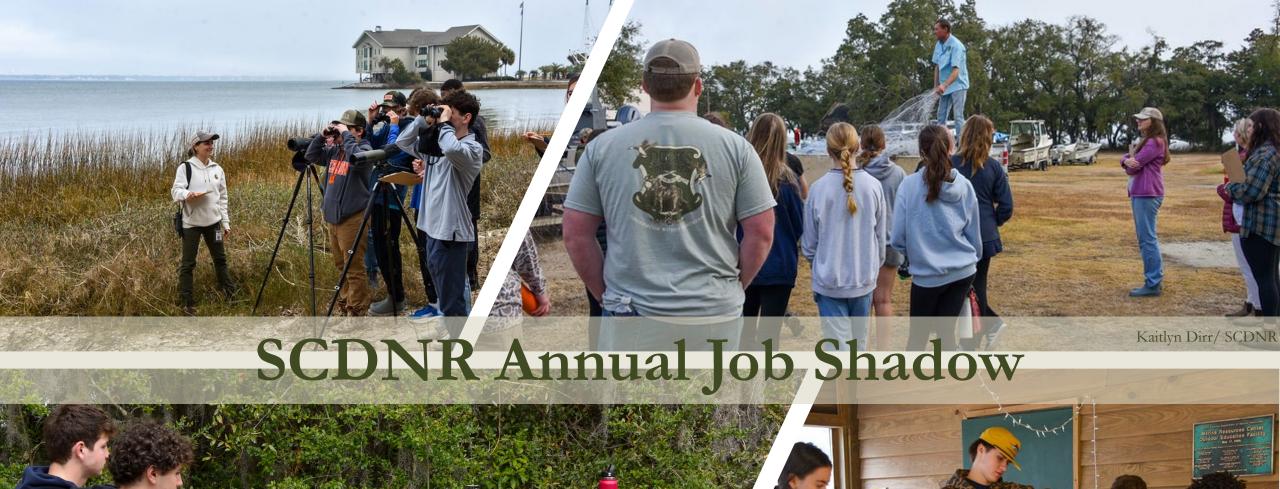
CUCUMBER SALAD















SCDNR 2025 Job Shadow Days









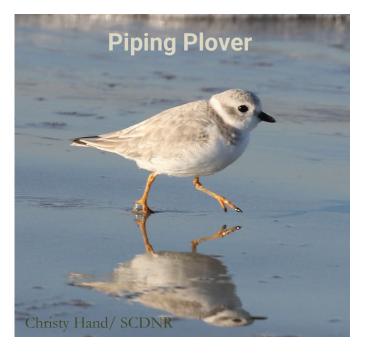
Come join us for a day of exploration and learning at the SCDNR Marine Resources Division! This in-person event is NOT a class field trip but instead offers a unique opportunity to shadow professionals in the field and gain insight into the world of marine resources. If you're interested in marine biology, conservation, or just curious about what we do, this event is perfect for you.

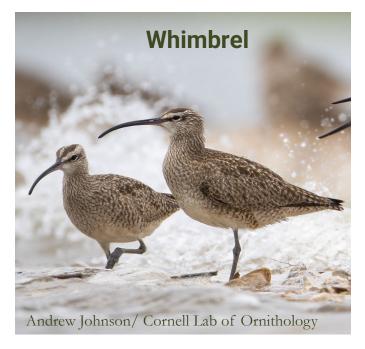


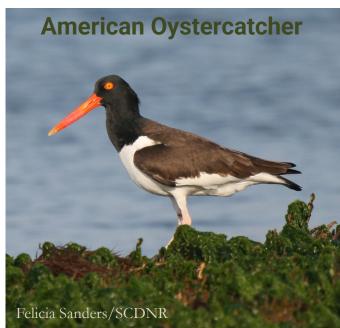
Hosted by the Marine Education team at Fort Johnson

Jan 31st (high school) & Feb 7th (middle school) 73 Students

- 20-30 minutes
- Mimicking job responsibilities and duties of staff
- Highlight research findings
- Age appropriate and replicable for multiple rotating groups
- 8-12 students per group
- + BONUS conservation message!









Activity Focus:

1. Prey Sifting

2. Bill and Diet

3. Resighting

4. Data Entry

Prey Sifting











Bill and Diet

"With my straight bill, I can probe about an inch in the sand for my food, and swallow it whole. I need a lot of these to fuel my long migrations!"

"I use my bill to probe very deep into the mud for my food. My prey item usually likes to hide in burrows but my specialized curved bill allows me to snatch them easily."

"The clue is in my name! I use my strong bright bill to pry open my food."

"With my small feet, I tap the sand in front of me to feel for small vibrations (or wiggles!) from my prey item. Although my bill is short, my preferred food item is quite long, but I don't have to dig very far to get to them."





Resighting











Data Entry

Reporting a Banded Bird Information Sheet:

Date (mm/dd/yyyy): Location (Folly Beach): Time (hh:mm am/pm):

Bird Species (circle one):

Whimbrel American Oystercatcher Piping Plover Red Knot

Activity (circle one): feeding resting walking flying

Upper left color (circle one): blue green orange Upper left code (write code or none):

Lower left color (circle one): red silver Lower left code (write code or none):

Upper right color (circle one): light green orange silver Upper right code (write code or none):

Lower right color (circle one): yellow/orange silver Lower right code (write code or none):

Latitude, longitude (using a GPS): N

W



Red Knot

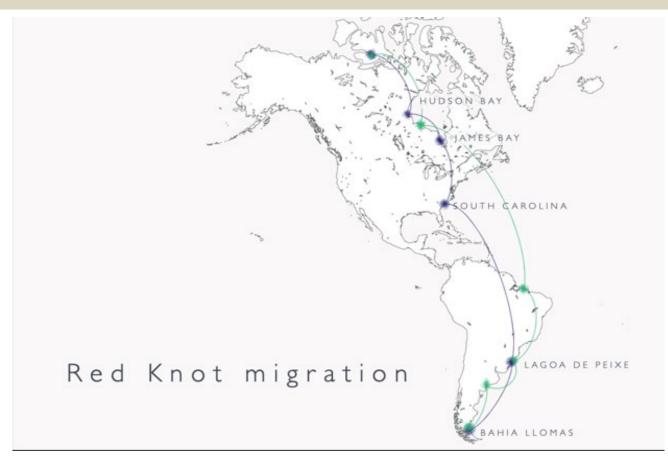
Upper left color: green flag, white ink

Upper left code: MCL

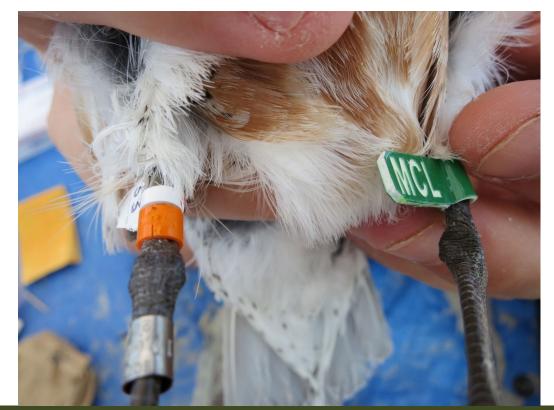
Lower left color: none

Lower left code: none

Upper right color: orange
Upper right code: none
Lower right color: metal or silver
Lower right code: unable to read



<u>Capture:</u> 05/23/2016 on Deveaux Bank, South Carolina by SCDNR biologists <u>Resight</u>: 01/18/2018 at Tierra Del Fuego, Chile



<u>Background:</u> Red Knots are long distance migrants! Although not all birds will winter in the same place, all Red Knots nest in the high Arctic above the Arctic Circle. MCL has been resighted on the southern tip of South America in the winter, making its annual migration of upwards of 20,000 miles a year. A specialized tag revealed its stop overs and nesting site too. South Carolina is an important stopover site where roughly 30% of all red knots stop in the springtime, on their northward migration.

Whimbrel



Upper left color: none
Upper left code: none
Lower left color: silver/metal
Lower left code: unable to read

Upper right color: lime green Upper right code: EJ2 Lower right color: none Lower right code: none



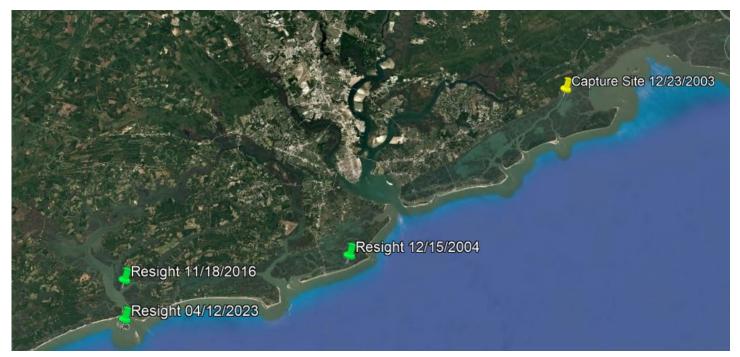
<u>Capture:</u> 05/11/2021 Deveaux Bank Seabird Sanctuary
<u>Background:</u> EJ2 is 1 of roughly 20,000 whimbrels that come to roost on SCDNR's Deveaux
Bank Seabird Sanctuary. It comes from the coasts of northern Brazil where it winters, and stops in South Carolina in the springtime on its way to its breeding site in Canada. Whimbrels utilize the saltmarsh habitat and mud flats to feed on small crabs, fueling their migration and giving them energy to successfully breed and raise their young.

American Oystercatcher

Upper left color: Blue, with white ink

Upper left code: 2R Lower left color: none Lower left code: none Upper right color: Silver/metal
Upper right code: unable to read

Lower right code: none Lower right code: none





Capture: 12/23/2003 on shell rakes in the Intercoastal Waterway, Cape Romain

National Wildlife Refuge

Resight: 12 times during its capture year in the same area.

Resight: Not reported for 12 years, between 2004 and 2016. In 2016, 2017, 2020, 2023, and most recently in 2024 it has been reported along the North

Edisto River, and on Deveaux Bank Seabird Sanctuary.

Background: American Oystercatchers lay eggs and raise their young in South Carolina. They can be on shell rakes or on the beachfront. They will also stay year-round like 2R, or some fly down to Florida seeking warmer weather in the winter. Other American Oystercatchers from northern states like North Carolina, Virginia, New Jersey, and even Massachusetts will spend the winter in South Carolina.

Piping Plover

Upper left color: orange flag
Upper left code: none
Lower left color: red band
Lower left code: none

Upper right color: silver/metal
Upper right code: unable to read
Lower right color: yellow/orange split
Lower right code: none







<u>Capture:</u> 08/05/2020 banded as chick from Grand Marais, Michigan

<u>Resight:</u> 10/10/2020 Seabrook Island, South Carolina by Mark Andrews

<u>Resight:</u> Summer 2021, North Manitou Island, Michigan (on Lake Michigan), nesting.

<u>Resight:</u> Every fall and winter since 2020, on the Seabrook/Kiawah/Deveaux Bank complex.

Background: This bird has been observed every summer breeding in Michigan, and every winter in South Carolina near Seabrook Island since 2020. Last seen in October 2024 on Deveaux Bank Seabird Sanctuary. Breeding in the Great Lakes region, this bird is part of the federally endangered population of Piping Plovers- as only 75 pairs remain. These are heavily monitored and tracked. This male returns to South Carolina every year to spend the winter. During this time, it needs to rest and refuel to recover from a long breeding season, and replenish energy for the next year.

How do I get the Shorebird Safari Box?

